

Factors That Influence the Intention of the Use of eCNY among University Students in China

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Abstract

This study investigates the factors influencing Chinese university students' intention to adopt the eCNY, China's Central Bank Digital Currency (CBDC). While the eCNY has gained traction domestically, its potential for cross-border transactions and global reach necessitates understanding user acceptance. Focusing on the perspectives of potential users, this research examines the influence of perceived value, perceived usefulness, perceived ease of use, perceived safety, and transaction processing functionality on intention to use eCNY. A survey was conducted among Chinese university students who expressed interest in research, resulting in 291 usable responses. Data analysis using SPSS revealed significant positive relationships between the independent variables and the dependent variable. Moreover, perceived usefulness emerged as a crucial mediator in this relationship, highlighting its importance in shaping user acceptance. The findings suggest that fostering positive perceptions of eCNY's value, ease of use, safety, usefulness and transaction processing functionality, particularly among younger generations, is essential for successful adoption and wider societal acceptance of this digital currency. The study offers both theoretical and practical implications for promoting the adoption of CBDCs, particularly within the context of China's rapidly evolving digital economy.

Keywords

Digital Currency, eCNY, Blockchain, eCNY APP

1. Introduction

China is actively testing Digital Currency Electronic Payment (DCEP) in its own currency. The news about the next steps in this field appears with enviable regularity. The 2022 Beijing Olympic Games is a landmark event to launch the

Olympic Games to the broad masses of the people. Tourists have been provided with the opportunity to pay in eCNY. Plans by the People's Bank of China (PBOC) for introducing a Central Bank Digital Currency (CBDC) represent an important step that in the long run can improve its international role and help transform the international economic order (Allen et al., 2022). In addition, the adoption of digital currency by many developing countries is impeded by their lack of technology and the infrastructure required for it. The level of investment needed for a digital transformation of the entire financial system is enormous and not within the capacity of every country. The transformation demands not only financial resources but also an understanding of the modern world as well as experience with the dynamics of the financial system and the concomitant technological advancements. The success of blockchain technology in the evolution of the financial industry has become the reason for China's priority investment in building a solid domestic distributed registration ecosystem.

eCNY temporarily according to international usage practice, is a legal tender in the digital form issued by the People's Bank of China. It is operated by designated operating institutions and exchanged to the public (Harahap et al., 2017). Based on the generalized account system, it supports the loose coupling function of bank accounts, is equivalent to banknotes and coins, has value characteristics and legal compensation, and supports controllable anonymity.

The concept of eCNY has two key points. One is that eCNY is the legal tender in digital form; another point is that it is equivalent to notes and coins. eCNY is mainly positioned at M0, that is, cash and coins in circulation. It is mainly positioned as a cash payment voucher (M0), which will coexist with physical eCNY for a long time. It is mainly used to meet the public's demand for digital cash and help Inclusive Finance (Kumhof & Noone, 2018).

The research and development test has basically completed the top-level design, function research and development, system commissioning, and other work. Following the principles of stability, safety, controllability, innovation, and practicality, some representative regions are selected to carry out pilot tests (Dyson & Meaning, 2018).

However, despite this, digital assets have not yet fully become mainstream—few people use them for daily payments, and not all retailers around China accept them for payment. Let us figure out what obstacles stand in the way of the mass use of digital currency, how they can be bypassed, and whether the situation will change in the near future.

The movement toward a cashless society seems to be inevitable, as is what Internetization is heading for. The importance of CBDC has been well acknowledged by central banks in major economies, not only due to the impact of Internetization but also the declining use of physical cash. Thus far, the CBDC remains one of the hottest topics among central banks across the world (Shen & Hou, 2021). Many have been keeping a close eye on it for years, and some even

launched their own digital currency, though most, if not all, have failed. It might be something historic that China, as the first large economy, experimentally launched the digital version of the RMB, termed DCEP, in April 2020. Given the gigantic size of the Chinese economy, as well as the rapid internationalization of RMB, the DCEP deserves immediate investigation and analysis, particularly on its implications from the perspectives of monetary regulation and business competition.

So far, fiat money used in our daily life always bears some physical forms, in most cases paper notes or metal coins. The CBDC, by contrast, is a digital version of fiat money centrally issued by sovereignty and universally accessible to the public. It is designed to have the equivalent legal effect of physical cash as both a monetary tool and payment instrument (Mancini Griffoli et al., 2018).

The transformation to digital currency can not protect a country's economy from the risks brought by currency issuance: inflation, exchange rate changes, etc. The circulation of a digital yuan leads to the circulation of a cash yuan. However, in this case, financial intermediaries are no longer needed between sellers and consumers of goods or services (Agur et al., 2019). Digital money will be transferred directly from one e-wallet to another, bypassing the transit channels of commercial bank accounts. Moreover, even without internet access, remittances will be made online.

However, it is impossible without commercial banks—"digital wallets" will be stored on their servers. However, no fee is expected for remittance services between buyers and sellers. This may fundamentally change the whole concept, first China and then the World Bank business (Bindseil, 2019).

Chinese economists generally believe that national digital currency is a promising tool that can significantly simplify payment and even optimize the international monetary system. According to the speech of Professor Jiu Jiandong, director of the International Financial and Economic Research Center of Tsinghua University (Beijing): "China is interested in a new monetary system in which the eCNY will help form (Kim, 2020). To do this, the economist said that China's mutual settlement alternative should be faster and cheaper than the traditional cross-border bank transfer structure".

Given that the scope of the success of digital currency is dependent on gaining public acceptance, the Technology Acceptance Model (TAM) was adopted and utilized to quantify several subjective adoption factors (Hazra et al., 2021). An online survey approach was used, which expanded TAM to 6 constructs: intention to use eCNY as the dependent variable; perceived usefulness as the mediating variable; functions of transaction processing, perceived ease of use, perceived safety of eCNY and perceived value as independent variables. Cognizant of limitations in sample size and representation, this study aims to provide a further theoretical and practical background for digital currency integration initiatives.

Section 2 reviews relevant theoretical frameworks and prior studies on the digital yuan and its adoption, focusing on the influence of perceived value, use-

fulness, ease of use, safety, and transaction processing functionality. Section 3 details the research methodology, including data collection procedures, sampling strategy, and statistical techniques employed. Section 4 presents pre-test analysis and initial data exploration, while Section 5 presents formal statistical analysis and findings regarding the impact of these factors on eCNY adoption. The study concludes in Section 6 with a discussion of the results, implications for policy and practice, and recommendations for future research directions.

2. Literature Review

2.1. System of the Digital Yuan

China's DCEP framework, often described as "one CBDC, two databases, and three centers", operates through a two-tiered system. The People's Bank of China (PBOC) issues the digital yuan to commercial banks, which then distribute it to customers. This creates two separate databases: one for the PBOC's DCEP issuance and another for commercial banks (Assenmacher et al., 2021; Auer et al., 2021b). This approach aims to reduce the influence of private digital payment providers like WeChat Pay and Alipay and establish a universally accessible digital currency (Goodell & Al-Nakib, 2021).

DCEP has the potential to significantly impact global finance by enabling efficient transaction surveillance, creating a vast database for tracking economic trends, analyzing value generated by goods, and detecting criminal activity (Meaning et al., 2018; Dostov et al., 2021). This comprehensive monitoring system could give China an advantage in global markets by allowing for strategic resource allocation and enhanced economic stability.

2.2. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), rooted in the "Theory of Reasoned Action", provides a framework for understanding the adoption of new technologies, with perceived ease of use and perceived usefulness as key drivers of user intentions (Davis, 1989). To assess these constructs, researchers often employ surveys with established scales and instruments (Liu & Hou, 2020).

TAM has been widely applied to understand the adoption trends of innovative technologies across various fields, including information systems, education, and marketing (Kiff et al., 2020). This study applies TAM to examine the factors influencing individuals' intentions to use eCNY in China, incorporating constructs such as perceived value, perceived safety of eCNY, and functions of transaction processing alongside the core TAM constructs of perceived usefulness and perceived ease of use.

2.3. Perceived Value and Perceived Usefulness

While numerous payment systems exist, traditional currencies persist due to familiarity, not inherent superiority in functionality, speed, cost, or security

(Auer & Böhme, 2021; Bossu et al., 2020). This highlights the ongoing tension between rapid technological advancement and the adoption of new payment systems.

Understanding the factors driving individual acceptance of new technologies is crucial. The Theory of Innovation Diffusion posits that the spread of new ideas, including technologies, occurs through a gradual process of adoption within social systems (Goldsmith & Foxall, 2003; Kochergin, 2021a). Additionally, individuals' technology readiness, or willingness to embrace new technologies, influences their adoption decisions (Allen et al., 2022; Bindseil, 2019). The Theory of Reasoned Action suggests that individuals' behavioral intentions are driven by their attitudes and subjective norms regarding the action in question, with perceived control over the action further influencing their choices (Agur et al., 2022).

Based on this theoretical framework, this study posits that perceived value has a positive impact on the perceived usefulness of digital currencies, forming the basis for the research's first hypothesis:

Hypothesis 1 (H1): The perceived value positively affects the perceived usefulness of eCNY.

2.4. Perceived Safety of eCNY and Perceived Usefulness

Security is paramount for any CBDC, including the digital yuan. Essential security features include preventing double-spending, anti-counterfeiting, non-repudiation, and verifiability, all of which contribute to user confidence and perceived usefulness (Kumar & Sharma, 2022; Laboure et al., 2021; Dupuis et al., 2022; Hazra et al., 2021). Double-spending prevention ensures a CBDC cannot be used for multiple transactions simultaneously, while anti-counterfeiting maintains the integrity of the digital currency. Non-repudiation ensures that all transactions are logged and verifiable, enhancing transparency and accountability.

Perceived safety is critical in online transactions, as users are deeply concerned about the security of payment systems. The perceived safety of a system significantly influences its adoption (Lim et al., 2021; Yao et al., 2023).

The digital economy's rapid expansion necessitates a shift in payment methods, with digital currencies like eCNY having the potential to reshape the global economic landscape (Wang, 2023). Protecting user data is crucial, and cryptographic techniques can be employed for both centralized and distributed ledger systems. While centralized platforms rely on administrators for privacy enforcement, distributed or device-based environments present unique challenges.

As the perceived safety of eCNY increases, particularly regarding user data protection, its perceived usefulness and user adoption are expected to rise accordingly, which leads to the second hypothesis:

Hypothesis 2 (H2): Perceived safety of eCNY positively affects the perceived usefulness of eCNY.

2.5. Functions of Transaction Processing and Perceived Usefulness

The digital yuan (eCNY) offers several benefits associated with transaction processing, including no fees, 24/7 availability, fast transactions, and high security (Samek & Vlasta, 2021). These advantages contribute to the perceived usefulness of using eCNY. This section explores these benefits in more detail:

1) Access to Central Bank Money: As cash access declines, the digital yuan could serve as “digital banknotes”, ensuring access to risk-free central bank money, crucial for public confidence (Náñez Alonso et al., 2021).

2) Increased Payment Diversity: The eCNY could provide a standardized means to transfer funds between fragmented closed-loop payment systems, mitigating the inefficiencies and inconveniences of current systems (Sanchez-Roger & Puyol-Antón, 2021; Jung & Jeong, 2021).

3) Resilience: The eCNY could act as an additional payment method, enhancing operational resilience, particularly in emergencies or geographically remote locations. However, robust offline capabilities would be necessary to ensure its functionality. Cybersecurity concerns are also significant, as the digital yuan would have a larger attack surface than current wholesale central bank systems.

4) Financial Inclusion: The digital yuan could help bridge the digital divide and improve financial inclusion by addressing barriers like trust, digital literacy, and data privacy concerns (Lee et al., 2021; Auer et al., 2021a). However, successful implementation requires addressing underlying causes of exclusion and integrating with broader reform initiatives (Chorzempa, 2021).

5) Privacy Protection: While complete anonymity is not feasible, the digital yuan could offer a degree of privacy for electronic payments compared to traditional financial systems (Bian et al., 2021). Striking a balance between public privacy and AML/CFT compliance will require coordination with government agencies.

6) Facilitating Fiscal Transfers: The digital yuan, linked to a national digital identity system, could streamline government transfers to businesses and individuals during crises (Kochergin, 2021b).

These advantages suggest a positive relationship between eCNY’s transaction processing capabilities and perceived usefulness, supporting the third hypothesis:

Hypothesis 3 (H3): Functions of transaction processing positively affect the perceived usefulness of eCNY.

2.6. Perceived Ease of Use and Perceived Usefulness

With unchanged conditions, the apps that for users easier to use are more acceptable than more difficult ones. When individuals think that technology is effort-free and easy to use, they perceive it as applicable to themselves—they suppose that the technology would be more beneficial for the users if it is easier to

use (Piazzesi & Schneider, 2020). There is a positive relationship between the perceived ease of use and the perceived usefulness.

Perceived ease of use could be understood as the extent to which whether or not using a specific system is easy (Dong & Xiao, 2021). Furthermore, Ha and Stoel (2009) and Stocchi et al. (2019) define perceived ease of use as consumers' feeling of effortlessness (and convenience) while using a specific technology. Therefore, based on these definitions, this study defines perceived ease of use as people consumers' judgment in which the technologies they are about to implement will be easy to learn and use, as said in the fourth hypothesis about the connection of the perceived ease of use and perceived usefulness of the digital currency.

Hypothesis 4 (H4): The perceived ease of use positively affects the perceived usefulness of eCNY.

2.7. Perceived Usefulness and Intention to Use eCNY

Perceived usefulness, defined as the belief that using a technology will be beneficial and enhance performance (Li et al., 2021; Li & Huang, 2021), is a key driver of technology adoption (Teo, 2008, 2011). Research consistently demonstrates that perceived usefulness influences intention to use technology (Jiang & Lucero, 2021).

The eCNY, China's digital currency, aims to improve payment convenience and usefulness while ensuring safety. As of June 30, 2021, the eCNY pilot program had recorded over 1.32 million transactions for goods and services, with over 20 million individual and 3.5 million corporate wallets. The program's success is evident through the distribution of 200 yuan to 200,000 citizens via a lottery, highlighting the increasing adoption of the eCNY.

Based on the strong correlation between perceived usefulness and technology adoption (Jiang & Lucero, 2021), this research hypothesizes that perceived usefulness positively affects the intention to use digital currency among students, as detailed in the fifth hypothesis.

Hypothesis 5 (H5): The perceived usefulness positively affects the intention of students to use eCNY.

2.8. Perceived Ease of Use and Intention to Use eCNY

Perceived ease of use, defined as the belief that using a technology requires minimal effort (Davis, as cited in Bofinger & Haas, 2020), is a crucial factor in technology adoption. This perception is influenced by factors such as computer playfulness, self-efficacy, and anxiety reduction (Bofinger & Haas, 2020).

The global economy is rapidly transitioning to a cashless society, driven by the convenience and cost-effectiveness of digital transactions (Jia et al., 2020). Central Bank Digital Currencies (CBDCs), like the eCNY, facilitate this shift.

Research shows a positive correlation between perceived ease of use, perceived usefulness, and the intention to use eCNY (Bindseil, 2020). Individuals are more

likely to adopt digital currencies if they believe them to be both beneficial and easy to use.

Familiarity and experience with technology can increase self-efficacy and reduce anxiety related to adopting new technologies (Dhar, 2020). This research acknowledges the importance of lowering technological barriers to entry for successful digital currency adoption. The eCNY network, with its accessible and user-friendly computing devices, aims to address this challenge.

The sixth hypothesis explored in this research focuses on the relationship between perceived ease of use and the intention to use the digital currency, highlighting the importance of this factor in driving eCNY adoption.

Hypothesis 6 (H6): Perceived ease of use positively affects the willingness to use eCNY.

2.9. Theoretical Framework

The Technology Acceptance Model (TAM) by Davis (1989) is a foundational theory in understanding how people adopt and use technology. It's a simple yet powerful framework that focuses on two key factors:

Perceived Usefulness: People are more likely to use a technology if they believe it will help them perform their tasks better or achieve their goals.

Perceived Ease of Use: People are more likely to use a technology if they believe it is easy to learn and use.

So, the TAM model suggests that if a technology is perceived as useful and easy to use, people are more likely to adopt and use it. This model has been widely used in research on technology adoption and remains influential even today.

The TAM construct was first stimulated, which had a positive impact on mental health. In addition, it provided theoretical justification for the significance of the TAM concept. Finally, it determined an addition to the original TAM construct (Cullen, 2022).

So, in the current research, the research model is based on Davis' TAM model. The Davis' model (Figure 1) is changed according to hypotheses, and the comprehensive research model is presented in the third chapter (Research methodology).

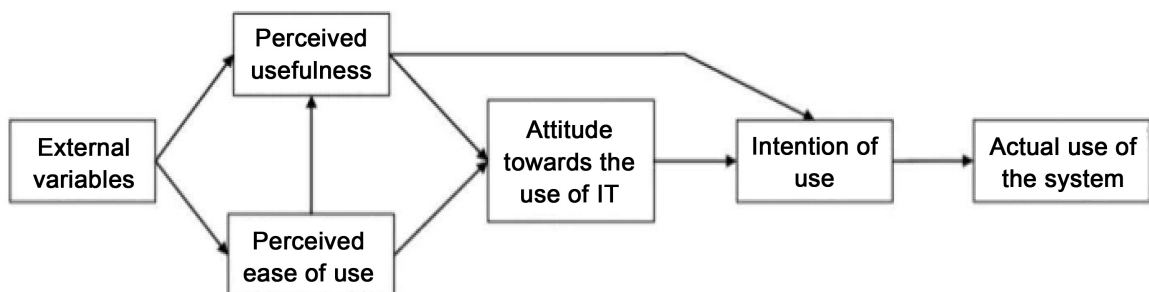


Figure 1. Technology acceptance model. Source: Davis (1989).

2.10. The Research Gap

The emergence of CBDCs has sparked global interest, with China leading the way with its digital yuan. While research on CBDCs is growing, a significant gap remains in understanding the factors influencing adoption, especially among the younger generation, who are crucial for future economic growth. This paper aims to fill this gap by examining the factors influencing the intention to use eCNY among university students in China, focusing on the perspectives of potential users.

Specifically, this research examines the influence of five key factors: perceived value, perceived usefulness, perceived ease of use, perceived safety, and transaction processing functionality on the intention to use eCNY.

Existing research often focuses on broader societal trends, overlooking the specific nuances of technology adoption within a particular demographic. University students, with their digital proficiency, unique financial behaviors, and perceptions of digital currencies, represent a distinct population with potentially different motivations and barriers to eCNY adoption.

Current literature lacks sufficient focus on:

- 1) Student-specific motivations and barriers to eCNY adoption—existing studies often generalize, failing to capture the unique needs, concerns, and motivations of this generation.
- 2) The influence of perceived value, usefulness, ease of use, safety, and transaction processing functionality—while these factors are acknowledged, a more in-depth analysis of their specific impact on student intention to use eCNY is needed.

This research will make a significant contribution to the growing body of knowledge on eCNY adoption, providing valuable guidance for policymakers, financial institutions, and technology developers seeking to promote the widespread adoption of digital currencies. By understanding the factors influencing student adoption, this research will contribute to a more informed approach to developing and promoting eCNY in China.

3. Research Methodology

3.1. Model and Measurements

Based on the literature, the current study examines the factors influencing individuals' intention to use digital currency, for example, university students. The key feature of this research model is its emphasis on the perceptions of the potential user. Survey data were collected from university students in China who expressed interest in the digital currency known as eCNY. This research proposes theoretical and practical implications for the digital currency context based on the empirical findings.

As perceived usefulness has a mediating effect between perceived value, perceived ease of use, perceived safety of eCNY, functions of transaction processing,

and intention to use eCNY, more emphasis the society should be put on satisfaction and adoption of the digital currency among a young generation. This study answers the critical question of which factors have a significant influence on the adoption of eCNY among students in China. This research investigates the mediating role of perceived usefulness in the relationship between perceived value, perceived ease of use, perceived safety, and functions of transaction processing (as independent variables) and intention to use eCNY (as the dependent variable).

Nevertheless, the conceptual framework (Figure 2) shows that as perceived usefulness has a mediating effect between perceived value, perceived ease of use, perceived safety of eCNY, functions of transaction processing, and intention to use eCNY, more emphasis the society should be put on satisfaction and adoption of the digital currency among a young generation. This study answers the critical question of which factors have a significant influence on the adoption of eCNY among students in China. For this purpose, the data has been collected from the students of Chinese universities who are interested in digital currency or even used eCNY before, and the data has been collected through survey questionnaires.

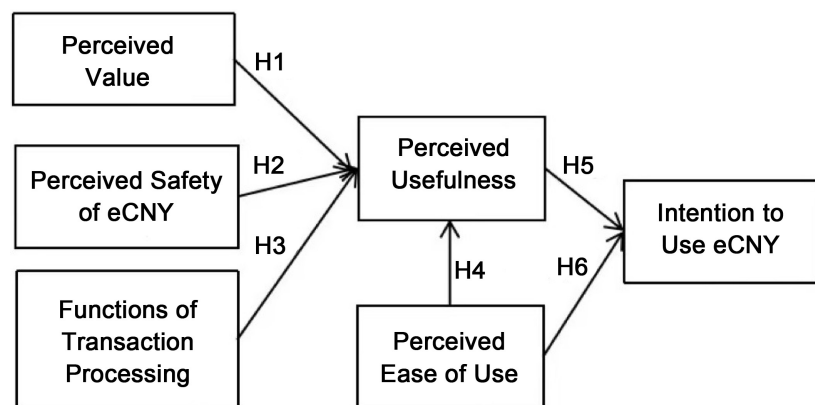


Figure 2. Conceptual framework. Source: (Author).

A total of 291 responses were utilized, which data was analyzed through analytical and statistical tools as SPSS, and the results have been obtained. A sample size of 291 university students was selected using a stratified random sampling method, ensuring representation across different universities, majors, and academic years. This sample size provides adequate statistical power to detect relationships between the variables while remaining manageable for data collection and analysis. The diversity of the sample, including its representation across different demographics, suggests that the results can be generalized to the broader population of Chinese university students. The results of this research clearly show that there are positive relations existing between both independent variables and dependent variables. Also, the mediating variable, perceived usefulness, has a significant impact on the variables mentioned above.

3.2. Measurement Items

A survey method was utilized in this study, in which all of the data that were required to be collected to ensure the completion of this analysis were collected using questionnaires. All of the questionnaires were administered electronically to all of the respondents. The measurement items for this study were adapted from past published studies. Some suitable amendments were made for the present research. The perceived usefulness and the perceived ease of use were in light of [Davis \(1989\)](#) and [Pierce \(1989\)](#). The scales of perceived safety of eCNY, perceived value, perceived safety of eCNY and functions of transaction processing (four items) were based on [Böhme \(2016\)](#) and [Ahn and Lee \(2019\)](#). Finally, the intention to use eCNY was measured according to [Shahzad et al. \(2018\)](#) and [Davis \(1989\)](#).

Meanwhile, regarding the measurement scale which was implemented in this study, a five-point Likert scale was implemented in the research, in which respondents were required to give their responses regarding each statement presented on the questionnaire.

3.3. Research Methods

In order to ensure the innovation and practicability of the thesis, the scientificity of the research process, and the effectiveness of the conclusion, this paper comprehensively uses the following methods:

1) Literature research

By reading a large number of domestic and foreign literature and research materials related to the intention to use digital currency and TAM theory, this paper establishes the framework of this paper and relevant research models based on the collected relevant literature research in the initial stage of the research. Refer to the previous research methods and establish the research methods of this paper.

2) Questionnaire survey

After constructing the theoretical model, this study designs the questionnaire based on the maturity scale in relevant research. Moreover, conduct a small-scale pre-test before the official data collection. Following pre-test data collection, data were cleaned, analyzed, and filtered to remove invalid entries. This resulted in a refined empirical dataset representative of the current situation, providing accurate data for the present research.

3) Statistical analysis

Following the formal questionnaire survey, statistical analysis of the collected data was conducted using SPSS. This analysis aimed to validate the proposed model, test the research hypothesis, and assess its tenability.

3.4. Pre-Test and Data Collection

A 28-item survey was developed to collect quantitative data for this research. The survey included demographic questions (e.g. age, gender) to gather qualita-

tive data about the participant group. The survey was distributed to a targeted group of leading students in China.

This study employed a two-phase data collection approach. Initially, a pre-test survey was conducted using the WeChat WenJuanXing mini-program, targeting students of Southwest Jiaotong University. The questionnaire was designed in Chinese to minimize language barriers and potential errors in responses. A total of 80 pre-test questionnaires were collected to assess questionnaire design and the accuracy of measurement items. Reliability and validity analyses were performed on the pre-test data to ensure the instrument's suitability for data collection.

Following the pre-test, a formal survey was conducted utilizing the refined questionnaire. This online survey garnered 291 responses from students across various universities in China. The formal data collection process extended over a two-month period.

4. Results

4.1. Pre-Test Results and Analysis

4.1.1. Pre-Test Results

A pre-test was conducted to assess the reliability and validity of the research questionnaire. A convenience sample of 80 participants was recruited from the undergraduate, graduate, and Ph.D. student populations at Southwest Jiaotong University.

The pre-test data were analyzed using the Statistical Package for the Social Sciences (SPSS) software. Reliability analysis was performed using Cronbach's alpha to determine the internal consistency of the measurement items. Validity analysis was conducted using factor analysis to examine the extent to which the survey questions measured the intended constructs.

The findings from the pre-test informed adjustments to the questionnaire design, ensuring its suitability for the formal data collection phase.

4.1.2. Reliability Analysis

Reliability refers to the consistency of the answer results of the questionnaire. Among the methods to test reliability (Cronbach's α), it is recognized as the most common method. This method is also used in this paper. The results are shown in **Table 1**.

Generally speaking, the Cronbach's α coefficient should be between 0 and 1. If it is below 0.5, it is best to round it off; if the result is not satisfactory between 0.5 and 0.7, it is the minimum acceptable value; If it is between 0.7 and 0.8, the reliability is acceptable; between 0.8 and 0.9 is a very satisfactory result; If it is greater than 0.9, it is an ideal reliability result. Accordingly, Cronbach, whose result is greater than 0.7, is used in this paper α values are considered valid data. After the analysis, the results are shown in **Table 1**. It can be seen that all questions' α value is 0.986, which is an ideal result. And all mediating variables and dependent variables have their own questions α exceed 0.8. It shows that the

Table 1. Reliability analysis results.

Variables	Question content	Cronbach's α
Perceived ease of use	I think eCNY is a not difficult system to understand or use.	0.907
	I don't feel confused when I talk with someone about digital currency.	
	For me, it's not hard to figure out how to use eCNY.	
	I don't need proper training to use the eCNY.	
Perceived usefulness	I think eCNY will become more easy to use in the future.	0.898
	eCNY's payment is much more useful than other payment systems.	
	I think eCNY can complete transaction faster, than other payment systems.	
	eCNY is more desirable than fiat money.	
Functions of transaction processing	The government supports the expansion of digital currency.	0.914
	eCNY let me to complete transactions all over China in a second.	
	It's useful that I can send eCNY unlimited times.	
	It's very fast to transfer money through application.	
Perceived safety of eCNY	I think digital currency provide fast transaction processing.	0.893
	Transactions are possible in any part of China with eCNY.	
	I think eCNY enables me to transfer money safely.	
	I think digital yuan is safe and protected from hackers.	
Intention to use eCNY	I don't worry about stealing my personal information.	0.900
	I think the blockchain behind the digital currency is fully capable of providing high safety.	
	The digital yuan app is the safest transaction system.	
	I'd like to intend to use eCNY on a regular basis.	
Perceived value	I intend to use digital yuan to buy or sell products in the future.	0.915
	I think digital yuan will be used by many people in future.	
	I think eCNY is better, than any other payment systems.	
	Does digital currency meet your needs and expectations regarding quality and performance?	
	How do you value the eCNY system?	
	I think digital yuan is capable to become the most popular system in China.	
Total	I think eCNY has great prospects in the future.	0.986
	For me, as for student, digital yuan is useful and convenient.	
	I think app's usage is very simple and clear.	
	I think supporting offline transactions makes digital yuan very useful.	
	I think device-to-device transactions is very unique function, it makes using this app highly convenient.	

Source: Author.

question items of the whole questionnaire are reasonable and can pass the reliability test.

4.1.3. Validity Analysis

Firstly, the KMO value and Bartlett spherical test were carried out to verify whether the scale is suitable for factor analysis. Therefore, in this paper, the KMO value is greater than 0.8, and the significance of the Bartlett sphere test not even reaches 0.05 and is used as the standard for validity analysis. After analysis, the results are shown in **Table 2**.

Table 2. Validity analysis results.

Variables	KMO	Bartlett
1) Perceived ease of use	0.838	0.00
2) Perceived usefulness	0.828	0.00
3) Functions of transaction processing	0.892	0.00
4) Perceived safety of eCNY	0.856	0.00
5) Intention to use eCNY	0.836	0.00
6) Perceived value	0.884	0.00

Source: Author.

It can be seen that all variables' KMO value is between 0.8 and 0.9, and the significance of the Bartlett spherical test is $0.000 < 0.05$. Therefore, the whole questionnaire is suitable for factor analysis.

4.1.4. Pre-Test Results and Post-Modification

The pre-test results, combined with feedback from student participants, indicated that the research framework and questionnaire design were deemed appropriate. Based on these findings the decision was made to expand the scope of the survey to include university students from across China. This expansion aimed to enhance the representativeness of the formal data and provide a more comprehensive understanding of the research topic.

Subsequent to data collection, a series of statistical analyses were conducted to assess the reliability and validity of the questionnaire.

Cronbach's alpha for the entire questionnaire was 0.986, indicating excellent internal consistency. Additionally, all mediating and dependent variables exceeded the threshold of 0.8 for Cronbach's alpha, further supporting the reliability of the measurement items.

The KMO values for all variables ranged from 0.8 to 0.9, demonstrating sampling adequacy for factor analysis. The Bartlett's test of sphericity was significant ($p < 0.05$), indicating that the correlation matrix was not an identity matrix and that factor analysis was appropriate.

These findings provide evidence that the questionnaire design is valid and reliable, supporting the accurate measurement of the relevant variables in the

study.

4.2. Descriptive Analysis

Formal data collection commenced following questionnaire modifications and distribution via the WeChat application to Chinese university students. A total of 291 questionnaires were distributed, of which 291 were successfully collected and screened for quality based on responses to the first five questions. Data from low-quality questionnaires were subsequently removed. Descriptive analysis (**Table 3**) revealed a predominantly youthful population, with 44.4% of respondents aged 18 - 22 and the next largest group aged 23 - 26. This age distribution, coupled with the majority holding bachelor's or master's degrees, aligns with the target population and is conducive to predicting digital currency adoption among Chinese students. Gender distribution was skewed towards males (53.1%) and the majority of respondents demonstrated a strong interest in new technologies and actively engaged in online information seeking. Furthermore, a significant proportion (82%) had encountered or expressed interest in the digital yuan system, underscoring its relevance to the study population. Overall, the demographic and attitudinal characteristics of the respondents provide a strong foundation for examining the factors influencing the adoption of digital currencies within the context of Chinese university students.

Table 3. Demographics.

Items	Answers	Quantity	Percentage (%)
1) Age (in years)	18 - 22	129	44.48
	Under 18	35	12.07
	23 - 26	100	34.48
	27 - 30	18	6.21
	More than 30	8	2.76
2) Gender	Female	136	46.90
	Male	154	53.10
3) Your higher education	Ph.D.	14	4.83
	Bachelor degree	241	83.10
	No higher education	1	0.34
4) Are you interested in new technologies?	Master degree	34	11.72
	No, I'm a conservative person	41	14.14
	Yes, I always check on news	114	39.31
5) Have you ever experienced digital yuan system or you are interested?	Sometimes I have a look on interesting topics	135	46.55
	Yes	239	82.41
Total	No	51	17.59
		290	100.0

Source: Author.

This study employed a questionnaire to investigate the intention to use the eCNY among Chinese university students. To ensure data quality, questionnaires with identical responses across all items were excluded from the analysis. While 51 respondents indicated an absolute lack of interest in the eCNY, these data points were retained to provide a more comprehensive understanding of adoption intentions across the broader student population, not solely those with pre-existing interest in new technologies.

Normality tests revealed an average value significantly less than 3, indicative of a potential non-normal distribution. However, demographic variables exhibited substantial standard deviations, suggesting heterogeneity within the sample. The observed skewness, particularly for gender and interest in new technology, further indicated potential non-normality in these variables. Despite these deviations, normality tests did not reveal any significant negative factors (Table 4), and the overall distribution of responses appeared satisfactory. These findings suggest that the data, while exhibiting some non-normal characteristics, are generally appropriate for analysis and provide valuable insights into the attitudes and behaviors of Chinese university students towards eCNY adoption.

Table 4. Normality test.

Items	Sample size	Average value	Standard deviation	Skewness	Kurtosis	Kolmogorov-Smirnov test		Shapiro-Wilk test	
						Statistic D Value	<i>P</i>	Statistic W Value	<i>P</i>
1) Age (in years)	290	2.107	1.131	0.511	-0.767	0.281	0.000**	0.807	0.000**
2) Gender	290	1.531	0.500	-0.125	-1.998	0.357	0.000**	0.635	0.000**
3) Your higher education	290	2.190	0.697	1.818	2.852	0.486	0.000**	0.511	0.000**
4) Are you interested in new technologies?	290	2.324	0.710	-0.560	-0.865	0.295	0.000**	0.769	0.000**
5) Have you ever experienced digital yuan system or you are interested?	290	1.176	0.381	1.712	0.936	0.502	0.000**	0.461	0.000**

Note: *, **, and *** represent statistical significance at the level of less than 10%, 5%, and 1%, respectively. Source: Author.

4.3. Variance Analysis

According to the variance analysis results (Table 5), it is evident that the maximum variance is observed in the case of higher education, which is 0.76. Overall results indicate that the *p*-value is above 0.05, which also shows the minimum gap that exists between the different data points collected from the analysis. Still,

there is no surface error on the basis of which it could be said that the variance directly affected the overall quality of findings. On the basis of results, all the four questions that are analyzed for the conflict must show significant outcomes as they are positively related to the perception of information in the data and also provide adequate statistics to have better effects for overall data analysis results.

Table 5. Analysis of variance results.

	Your gender (mean)				<i>F</i>	<i>p</i>
	Female (<i>n</i> = 136)	SD	Male (<i>n</i> = 154)	SD		
1) Age (in years)	2.04	±1.11	2.17	±1.15	0.985	0.322
2) Gender	2.19	±0.69	2.19	±0.70	0.001	0.972
3) Your higher education	2.28	±0.76	2.36	±0.66	1.017	0.314
4) Have you ever experienced digital yuan system or you are interested?	1.18	±0.38	1.18	±0.38	0.001	0.980

Source: Author.

Table 6. Effect quantity index.

Items	SSB (difference between groups)	SST (total deviation)	Eta (partial η^2)	Cohen's <i>f</i>
1) Age (in years)	1.260	369.686	0.003	0.058
2) Gender	0.001	140.569	0.000	0.002
3) Your higher education	0.512	145.531	0.004	0.059
4) Have you ever experienced digital yuan system or you are interested?	0.000	42.031	0.000	0.002

Source: Author.

The quantity index is also calculated (**Table 6**), which shows very noticeable and significant developments in the case of all the four questions analyzed.

4.4. Reliability Analysis

According to the finding (**Table 7**), it is evident that the perceived ease of use has achieved a reliability value of 0.953, which is above 0.7, which means that all the reliability statistics are high for the variable. The same is true for all of the other variables in the study because they are all greater than 0.9. High reliability indicates better use of information in the statistical evaluation because overall

results show effective relationships between the variables and also the unique behavior that is present in every development of the questionnaire. The comprehensive reliability analysis is refined, and there is no factor observed that indicates any abnormal behavior according to the accepted values.

Table 7. Reliability analysis results.

Variables	Question content	Cronbach's α
Perceived ease of use	1) I think eCNY is not difficult system to understand or use.	0.953
	2) I don't feel confused when I talk with someone about digital currency.	
	3) For me, it's not hard to figure out how to use eCNY.	
	4) I don't need proper training to use the eCNY.	
	5) I think eCNY will become more easy to use in future.	
Perceived usefulness	6) eCNY's payment is much more useful than other payment systems.	0.949
	7) I think eCNY can complete transaction faster, than other payment systems.	
	8) eCNY is more desirable than fiat money.	
Functions of transaction processing	9) The government supports the expansion of digital currency.	0.947
	10) eCNY let me to complete transactions all over China in a second.	
	11) It's useful that I can send eCNY unlimited times.	
	12) It's very fast to transfer money through application.	
Perceived safety of eCNY	13) I think digital currency provide fast transaction processing.	0.943
	14) Transactions are possible in any part of China with eCNY.	
	15) I think eCNY enables me to transfer money safely.	
	16) I think digital yuan is safe and protected from hackers.	
	17) I don't worry about stealing my personal information.	
Intention to use eCNY	18) I think the blockchain behind the digital currency is fully capable of providing high safety.	0.912
	19) The digital yuan app is the safest transaction system.	
	20) I'd like to intend to use eCNY on a regular basis.	
Perceived value	21) I intend to use digital yuan to buy or sell products in the future.	0.938
	22) I think digital yuan will be used by many people in future.	
	23) I think eCNY is better, than any other payment systems.	
	24) Does digital currency meet your needs and expectations regarding quality and performance?	
Perceived value	25) How do you value the eCNY system?	0.938
	26) I think digital yuan is capable to become the most popular system in China.	
	27) I think eCNY has great prospects in the future.	
	28) For me, as for student, digital yuan is useful and convenient.	

Source: Author.

4.5. Validity Analysis

The purpose of applying validity analysis is to effectively indicate the stability of data and determine the core relations that could exist between the variables, which significantly help in establishing prospects for the inconsistent behavior and overall fulfillment of research objectives. The KMO value should be greater than 0.5 (**Table 8**); otherwise, it indicates low significance according to standard criteria, and the Bartlett value should be less than 0.05. Otherwise, it suggests no correlation between the data. According to the findings, we can see that KMO value of every variable is higher than 0.8, and the Bartlett value is 0.00 for every variable. It is evident that both criteria are fulfilled because the values are significantly higher than the accepted ranges, which means that there is a strong correlation between the variables considered in the study. It is clear evidence that the validity analysis has provided an adequate perception of information as all the correlations are evident. It could show that feature applications of the data are highly critical as the correlation can help to determine the validity of the hypothesis and also promote the development of a framework that could be used to create further a better perception of digital currency among the students.

Table 8. Validity analysis.

Variables	KMO	Bartlett
1) Perceived ease of use	0.907	0.00
2) Perceived usefulness	0.873	0.00
3) Functions of transaction processing	0.912	0.00
4) Perceived safety of eCNY	0.907	0.00
5) Intention to use eCNY	0.848	0.00
6) Perceived value	0.912	0.00

Source: Author.

4.6. Correlation Analysis

According to the results (**Table 9**), it is evident that the perceived value has a better correlation with perceived safety of eCNY as it is going to 0.688. Perceived usefulness has a better correlation with the intention to use and perceived ease of use and perceived value; all parameters indicate a more excellent value of correlation above 0.5. The acceptable range of correlation is obtained even in the case of perceived usefulness and transaction processing because they are above 0.55. A high degree of correlation exists between the variables, and this relates to the research objectives because it shows the significant dependency of the variables on each other and also provides the fact that there is better acceptability of the model which exists. The results provide substantial evidence of acceptance of all the research hypotheses involved in the study because all correlations are positive, which means that they are affecting each other with respect to the standard

statistical principles. On the basis of this argument, it is essential to say that the intention to use the digital currency significantly depends on the perceived ease of use and perceived usefulness accordingly. The six variables: perceived ease of use, perceived usefulness, functions of transaction processing, perceived safety of eCNY, intention to use eCNY, and perceived value—are all significant, and the correlation coefficient values are 0.615, 0.742, 0.712, 0.596, and 0.654, respectively. It's evident that the correlation coefficient values are greater than 0, which means that there is a positive correlation between all variables.

Table 9. Correlation analysis results.

Variables	Perceived ease of use	Perceived usefulness	Functions of transaction processing	Perceived safety of eCNY	Intention to use eCNY	Perceived value
Perceived ease of use	1					
Perceived usefulness	0.615	1				
Functions of transaction processing	0.742	0.554	1			
Perceived safety of eCNY	0.712	0.558	0.686	1		
Intention to use eCNY	0.596	0.610	0.602	0.619	1	
Perceived value	0.654	0.626	0.658	0.688	0.646	1

Source: Author.

Similarly, the perceived ease of use positively affects the digital currency's perceived usefulness and has a positive impact on the intention to use digital currency. Functions of transaction processing variable is also positively affects the perceived usefulness of eCNY. The usefulness is positively affected by the perceived safety of eCNY and also positively affects the intention of use the digital yuan. There is also a strong indication of perceived value that is positively affects the perceived usefulness of the digital currency. There is no specific evidence that could suggest a negative correlation or reduction of the hypothesis depending on the scenario that all variables are core related effectively, which is the case, and it does not contain any sort of negative factor that could create rejection of all research hypotheses.

4.7. Factor Analysis

According to the factor analysis results (Table 10), it is evident that the perception of use has significant validity because all factors are above 0.5, which indicates

Table 10. Factor analysis results.

Variables	Items	Load factors						Common degree (common factors)
		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	
Perceived ease of use	I think eCNY is not difficult system to understand or use.	0.337	0.353	0.550	0.278	0.214	0.227	0.715
	I don't feel confused when I talk with someone about digital currency.	0.300	0.222	0.805	0.274	0.179	0.185	0.929
	For me, it's not hard to figure out how to use eCNY.	0.319	0.222	0.762	0.233	0.234	0.182	0.874
	I don't need proper training to use the eCNY.	0.285	0.179	0.793	0.261	0.196	0.188	0.884
	I think eCNY will become more easy to use in future.	0.289	0.206	0.783	0.214	0.238	0.176	0.873
Perceived usefulness	eCNY's payment is much more useful than other payment systems.	0.192	0.256	0.230	0.239	0.791	0.169	0.867
	I think eCNY can complete transaction faster, than other payment systems.	0.136	0.200	0.195	0.197	0.800	0.307	0.869
	eCNY is more desirable than fiat money.	0.201	0.230	0.171	0.250	0.803	0.204	0.871
	The government supports the expansion of digital currency.	0.134	0.229	0.214	0.242	0.814	0.198	0.877
Functions of transaction processing	eCNY let me to complete transactions all over China in a second.	0.787	0.274	0.291	0.185	0.156	0.205	0.881
	It's useful that I can send eCNY unlimited times.	0.736	0.279	0.317	0.217	0.120	0.166	0.809
	It's very fast to transfer money through application.	0.782	0.188	0.245	0.258	0.121	0.193	0.825
	I think digital currency provide fast transaction processing.	0.748	0.195	0.254	0.232	0.216	0.213	0.808
	Transactions are possible in any part of China with eCNY.	0.744	0.242	0.250	0.268	0.184	0.199	0.820
Perceived safety of eCNY	I think eCNY enables me to transfer money safely.	0.228	0.217	0.228	0.768	0.235	0.143	0.816
	I think digital yuan is safe and protected from hackers.	0.257	0.284	0.283	0.709	0.259	0.229	0.848
	I don't worry about stealing my personal information.	0.247	0.289	0.193	0.701	0.249	0.240	0.793
	I think the blockchain behind the digital currency is fully capable of providing high safety.	0.278	0.211	0.240	0.741	0.210	0.244	0.833

Continued

	The digital yuan app is the safest transaction system.	0.243	0.255	0.280	0.724	0.235	0.163	0.808
Intentions to use	I'd like to intend to use eCNY on a regular basis.	0.282	0.222	0.185	0.136	0.233	0.744	0.788
	I intend to use digital yuan to buy or sell products in the future.	0.132	0.219	0.147	0.254	0.167	0.795	0.812
	I think digital yuan will be used by many people in future.	0.169	0.233	0.174	0.196	0.208	0.771	0.790
	I think eCNY is better, than any other payment systems.	0.249	0.262	0.195	0.162	0.246	0.737	0.798
Perceived value	Does digital currency meet your needs and expectations regarding quality and performance?	0.214	0.763	0.156	0.207	0.237	0.227	0.803
	How do you value the eCNY system?	0.190	0.770	0.237	0.208	0.159	0.233	0.809
	I think digital yuan is capable to become the most popular system in China.	0.251	0.733	0.180	0.272	0.231	0.227	0.812
	I think eCNY has great prospects in the future.	0.238	0.752	0.175	0.222	0.217	0.228	0.801
	For me, as for student, digital yuan is useful and convenient.	0.256	0.738	0.231	0.226	0.224	0.195	0.803
KMO					0.964			

Source: Author.

the effective dependency of proceeds is used for the production of intention to use currency among the students. It is clear from the evidence that this usefulness has valid outcomes. In response to the factor analysis, it indicates a positive factor that could provide more relationship between the dependent and independent variables in the case of perceived usefulness. Functions of transaction processing also provided better data as the values are significantly acceptable, and they show a significant impact on the analysis because the functions of transaction processing itself is the principal element of better intention to use. After all, it provides safety and reliable performance. Coming toward the deposit, it is evident that it involved significant valid results. That means it is more valuable for the respondents who provided beneficial responses in understanding the factor, as overall, the analysis is above 0.5. Then intentions to use and perceived value have similar behavior. In response to the factor test, because these show adequate information regarding the ability of the variables to respond to the validity test. The KMO value is 0.964, which indicates high validity

above 0.5. It also shows a short p -value, which should have been less than 0.05 to make the data valid or more helpful in testing the research hypothesis.

4.8. Mediation Regression Analysis

To assess the mediating effect of a variable on the relationship between an independent variable and a dependent variable, a series of linear regression analyses were conducted following the Baron and Kenny method (Baron & Kenny, 1986) for testing mediation hypotheses:

Influence of the Perceived Ease of Use on the mediation model of Intention to Use eCNY through Perceived Usefulness.

Table 11. Mediation regression analysis on perceived ease of use.

	Intention to use eCNY		Perceived usefulness		Intention to use eCNY	
	β	T	β	T	β	T
Perceived ease of use	0.596	12.602***	0.615	13.238***	0.355	6.405***
Perceived usefulness					0.392	7.057***
R ²	0.355		0.378		0.451	
Adj R ²	0.353		0.376		0.447	
F	158.801***		175.236***		117.755***	

Note: *, **, and *** represent statistical significance at the level of less than 10%, 5%, and 1%, respectively. Source: Author.

The results in **Table 11** show that in the first case, perceived ease of use has a significant positive effect on the intention to use eCNY ($\beta = 0.596$, $p < 0.001$). In the second and third cases, perceived ease of use has a significant positive effect on the perceived usefulness ($\beta = 0.615$, $p < 0.001$), also perceived ease of use has a significant positive effect on the intention to use eCNY ($\beta = 0.355$, $p < 0.001$) and perceived usefulness has a significant positive effect on the intention to use eCNY ($\beta = 0.392$, $p < 0.001$), indicating that some mediation effects are established. Perceived ease of use has a positive impact on the intention to use eCNY through perceived usefulness. Influence of the functions of transaction processing on the mediation model of Intention to Use eCNY through Perceived Usefulness.

The results in **Table 12** show that in the first case, functions of transaction processing has a significant positive effect on the intention to use eCNY ($\beta = 0.602$, $p < 0.001$). In the second and third cases, functions of transaction processing has a significant positive effect on the perceived usefulness ($\beta = 0.544$, $p < 0.001$), also functions of transaction processing has a significant positive effect on the intention to use eCNY ($\beta = 0.384$, $p < 0.001$), and perceived usefulness has a sig-

nificant positive effect on the intention to use eCNY ($\beta = 0.401$, $p < 0.001$), indicating that some mediation effects are established. Variable “functions of transaction processing” has a positive impact on the intention to use eCNY through perceived usefulness.

Influence of the perceived safety of eCNY on the mediation model of Intention to Use eCNY through Perceived Usefulness.

Table 12. Mediation regression analysis on functions of transaction processing.

	Intention to use eCNY		Perceived usefulness		Intention to use eCNY	
	β	T	β	T	β	T
Functions of transaction processing	0.602	12.805***	0.544	11.007***	0.384	7.541***
Perceived usefulness					0.401	7.876***
R ²	0.363		0.296		0.476	
Adj R ²	0.361		0.294		0.472	
F	163.981***		121.155***		130.382***	

Note: *, **, and *** represent statistical significance at the level of less than 10%, 5%, and 1%, respectively. Source: Author.

Table 13. Mediation regression analysis on perceived safety of eCNY.

	Intention to use eCNY		Perceived usefulness		Intention to use eCNY	
	β	T	β	T	β	T
Perceived safety of eCNY	0.619	13.364***	0.658	14.813***	0.383	6.628***
Perceived usefulness					0.358	6.195***
R ²	0.383		0.432		0.456	
Adj R ²	0.381		0.43		0.452	
F	178.606***		219.412***		120.077***	

Note: *, **, and *** represent statistical significance at the level of less than 10%, 5%, and 1%, respectively. Source: Author.

The results in **Table 13** show that in the first case, the perceived safety of eCNY has a significant positive effect on the intention to use eCNY ($\beta = 0.619$, $p < 0.001$). In the second and third cases, perceived safety of eCNY has a significant positive effect on the perceived usefulness ($\beta = 0.658$, $p < 0.001$), also perceived safety of eCNY has a significant positive effect on the intention to use eCNY ($\beta =$

0.383, $p < 0.001$) and perceived usefulness has a significant positive effect on the intention to use eCNY ($\beta = 0.358, p < 0.001$), indicating that some mediation effects are established. Perceived safety of eCNY has a positive impact on the intention to use eCNY through perceived usefulness.

Influence of the Perceived Value on the mediation model of Intention to Use eCNY through Perceived Usefulness.

Table 14. Mediation regression analysis on perceived value.

	Intention to use eCNY		Perceived usefulness		Intention to use eCNY	
	β	T	β	T	β	T
Perceived value	0.646	14.361***	0.626	13.626***	0.434	8.007***
Perceived usefulness					0.338	6.238***
R ²	0.417		0.392		0.487	
Adj R ²	0.415		0.39		0.483	
F	206.24***		185.676***		136.146***	

Note: *, **, and *** represent statistical significance at the level of less than 10%, 5%, and 1%, respectively. Source: Author.

The results in **Table 14** show that in the first case, perceived value has a significant positive effect on the intention to use eCNY ($\beta = 0.646, p < 0.001$). In the second and third cases, perceived value has a significant positive effect on the perceived usefulness ($\beta = 0.626, p < 0.001$), also perceived value has a significant positive effect on the intention to use eCNY ($\beta = 0.434, p < 0.001$), and perceived usefulness has a significant positive effect on the intention to use eCNY ($\beta = 0.338, p < 0.001$), indicating that some mediation effects are established. Perceived value has a positive impact on the intention to use eCNY through perceived usefulness.

Table 15. Parameter estimates.

	Unstandardized coefficients		Standardized coefficients	t	p	VIF	R ²	Adj R ²	F
	Std. error		β						
Constant	1.123	0.197	-	5.695	0.000**	-			$F(1, 288)$
Perceived usefulness	0.663	0.051	0.610	13.068	0.000**	1.000	0.372	0.370	$= 170.761, p = 0.000$

Dependent variable: Intention to use eCNY

Note: *, **, and *** represent statistical significance at the level of less than 10%, 5%, and 1%, respectively. Source: Author.

The results in **Table 15** show that perceived usefulness has a significant positive effect on the intention to use eCNY ($\beta = 0.610, p < 0.001$), which show how significant mediator (perceived usefulness) is for the research framework. Perceived usefulness has a positive impact on the intention to use eCNY also as mediator, determining the connection between independent and dependent variables.

According to the regression coefficient results, all questions are positive. Further, the p -value indicates that these are less than 0.05, which means that all hypotheses are accepted with respect to the regression analysis. On the basis of the provided analysis information, it is evident that the β value is greater than the p -value in all cases, which offers evidence of acceptance of the research hypothesis.

On the basis of the developed regression model, it is entirely appropriate to have the impact of independent variables on the intention to use through the mediator perceived usefulness because the evidence is positive and robust with respect to the statistical criteria.

The model summary indicates very high-quality results because the dependency of dependent variables on the basis of analysis has shown the critical ability to say that all research hypotheses are further accepted, and it proves the concept of the independent variables that are affecting the intention to use the digital currency through the perceived usefulness. On the basis of the regression model summary, it is therefore important to say that the perceived usefulness and perceived ease of use have a direct impact on the intention to use them, and this is further verified by the coefficients. The evidence from the analysis of regression shows a very high relationship between the independent, mediating, and dependent variables and further indicates positive prospects on the basis of which the decision-making can be carried out by following the accepted hypothesis. It is true that the linear regression analysis results showed the valid outcomes on the basis of the questionnaire, which was quantitative, and further, it has indicated that the model is perfect with respect to the understanding of research hypotheses that are affecting the intention to use eCNY among the students.

The mediating effect of perceived usefulness, perceived ease of use, perceived value, perceived safety of eCNY, and functions of transaction processing have a particularly positive impact on the intention to use eCNY according to hypothesis and their relationship (**Table 16**). The data analysis results proved the existence of mediating effects.

4.9. Regression Analysis

It can be seen from the above table that, taking perceived ease of use and perceived usefulness as independent variables and the intention to use as dependent variables for linear regression analysis, the model formula is: intention to use = $0.685 + 0.356$ ease of use + 0.426 usefulness, and the R-square value of the model is 0.451, which means ease of use and usefulness can explain 45.1% of the change

Table 16. Summary of mediation test results.

Subject	c Total effect	a	b	a*b Mediation effect value	a*b (Boot SE)	a*b (z)	a*b (p)	a*b (95% Boot CI)	c' Direct effect	Test result
Functions of transaction processing → Perceived usefulness → Intention to Use eCNY	0.614**	0.510**	0.436**	0.223	0.029	7.715	0.000	0.162 - 0.277	0.392**	Partial mediation
Perceived ease of use → Perceived usefulness → Intention to use eCNY	0.597**	0.566**	0.426**	0.241	0.035	6.958	0.000	0.173 - 0.309	0.356**	Partial mediation
Perceived safety of eCNY → Perceived usefulness → Intention to use eCNY	0.613**	0.599**	0.389**	0.233	0.039	5.968	0.000	0.158 - 0.313	0.380**	Partial mediation
Perceived value → Perceived usefulness → Intention to use eCNY	0.770**	0.686**	0.368**	0.252	0.035	7.143	0.000	0.143 - 0.284	0.518**	Partial mediation

Note: *, **, and *** represent statistical significance at the level of less than 10%, 5%, and 1%, respectively. Source: Author.

Table 17. Linear regression analysis.

	Unstandardized coefficients		Standardized coefficients	t	p	VIF	R ²	Adj R ²	F
	B	Std. error	Beta						
Constant	0.685	0.197	-	3.474	0.001	-			F(2, 287)= 117.755, p = 0.000
Perceived ease of use	0.356	0.056	0.355	6.405	0.000	1.608	0.451	0.447	
Perceived usefulness	0.426	0.060	0.392	7.057	0.000	1.608			

Source: Author.

in intention to use. During the F-test on the model, it is found that the model passes the F-test ($f = 117.755, p = 0.000 < 0.05$), which means that at least one variable between perceived ease of use and perceived usefulness will affect the intention to use eCNY.

In addition, the correlation matrix (Table 9) of independent variables reveals a low level of multicollinearity, with all correlations below 0.8. While two correlations approach this threshold at 0.742 and 0.712, this suggests a moderate level of potential collinearity. Furthermore, the Variance Inflation Factor (VIF) values in the linear regression model are all less than 5 (Table 17), indicating that multicollinearity is not a significant concern. This suggests that the model is relatively robust and the regression coefficients can be interpreted with a reasonable level of confidence.

5. Discussion and Conclusion

5.1. Discussion

Digital currency is the modern world's revolution, and it will undoubtedly take some time for people to accept it. According to the study, there are many advantages of digital currency. Still, with respect to the perceived ease of use, it is one of the most crucial factors in which students can decide whether to choose the digital currency or not. Depending on the result obtained from quantity analysis, it is evident that a positive relationship exists between the perceived usefulness of the digital Chinese yuan and the perceived ease of use, which is the overall perception that any student can get through the convenience and simplicity in using new technology. Because of the need for digital currency in the modern world, it is the most crucial variable on the basis of which the perception of its use can be established. It further contributes to establishing the relationship for the students to better contribute to selecting the currency. The proceed is critically related to the fact that if there are no certain advantages to using digital currency and the system is too hard to understand and use, it will not be possible for Chinese students to accept it as part of their routine currency exchange. Perceived ease of use significantly creates the perception among the students that it is more advantageous and easier to use the latest currency than the standard one, which has been used in Chinese society for decades.

Perceived usefulness exerts a significant influence on the adoption of digital currencies, while perceived ease of use positively impacts perceived usefulness. This implies that widespread societal adoption of a digital currency enhances its perceived usefulness among university students in China. The strong correlation between perceived ease of use and usefulness underscores the importance of user-centric design in driving digital currency adoption. The positive impact of perceived usefulness on adoption highlights the role of perceived value in shaping user behavior. These findings provide empirical evidence that informs strategies for promoting the adoption of digital currencies among specific population segments.

Transaction processing capabilities significantly influence the perceived usefulness of digital Chinese currency among university students in China. This implies that a robust and efficient transaction processing system is a key factor in promoting adoption. The positive impact of transaction processing capabilities on perceived usefulness highlights the importance of user experience and the reliability of the digital currency system. These findings suggest that students are more likely to adopt digital currencies that offer secure, convenient, and efficient transaction processing. By addressing the concerns and preferences of users, digital currency providers can enhance adoption rates and foster wider acceptance.

Perceived security significantly influences the adoption of digital Chinese currency (eCNY) among university students in China. A secure system minimizes

risks such as fraud, data breaches, and unauthorized transactions, thereby enhancing user trust. This positive impact of perceived security on adoption highlights the importance of robust security measures in promoting the widespread acceptance of digital currencies. By addressing security concerns and providing reliable transaction experiences, digital currency providers can foster a sense of trust among users, leading to increased adoption rates.

Perceived usefulness positively influences the intention to use digital Chinese currency (eCNY) among university students in China. This implies that the perceived value and benefits of eCNY play a crucial role in driving adoption. Users are more likely to adopt a digital currency that offers tangible benefits and enhances their daily financial experiences. The relationship between perceived usefulness and intention to use highlights the importance of designing digital currencies that meet the specific needs and preferences of users. By providing valuable features and demonstrating the practical applications of eCNY, digital currency providers can foster positive perceptions and encourage widespread adoption.

Perceived value significantly influences the intention to use digital Chinese currency (eCNY) among university students in China. This implies that the perceived worth and desirability of eCNY play a crucial role in driving adoption. Users are more likely to adopt a digital currency that offers comparable or superior value to traditional currencies. The relationship between perceived value and intention to use highlights the importance of establishing the credibility and legitimacy of eCNY. By demonstrating the value proposition of eCNY and ensuring its stability and reliability, digital currency providers can foster positive perceptions and encourage widespread adoption.

5.2. Conclusion

Conclusively, it is evident from the analysis that there is a significant relationship that exists between the intention to use and the perceived usefulness. This further highlights the importance of digital currency's utility, as it demonstrates that if the currency is not helpful in the context of everyday life, Chinese students will not adopt it. The usefulness is there for significant variables that are directly affected by the functions of transaction processing as well as security because they are the main features of digital currency, and they always must be present at the highest possible limits to provide more reliable performance to the total user currency and also not promote any factor that could have a negative impact on the intention to use. It is highly likely that the adoption of digital currency can work best for those who try to adopt it on the basis of usefulness because it is critically related to the fact that if security and transaction processing systems are reasonable, it means more trust and usefulness is present among the Chinese students. They will be adopting it in their routine life. The same is the case with the value of digital Chinese currency because if the value is not sustainable compared to the regular currency, there will be no reason to use it on a regu-

lar basis. It will be highly important for Chinese students to develop the prospects on the basis of the usefulness of the currency because it effectively determines its consumption within society and also promotes the fact that the students have to think financially about the sustainability of the digital currency and then take decisions about adopting it in their routine life.

Overall, all the hypotheses of the research are accepted, and no one is rejected because the variables considered independent in the study are found to have a correlation with the dependent variable, which was the intention to use the digital Chinese currency. On the basis of this study, it can be established that the intention to use is highly affected by the usefulness of digital currency, and that usefulness is affected by the perceived ease of use, the value of the currency, functions of transaction processing, and perceived safety of the digital Chinese currency which is being offered by the government institutions to the public. On the basis of this research, it can be further stated that Chinese students will not adopt the digital Chinese currency if there is no usefulness, or more specifically, their intentions to use it will be highly affected if there are no certain valuable features present in the system. In this regard, functions of transaction processing and perceived safety of eCNY can be taken as the most important variables that have an impact on the usefulness of the digital currency and that further affect the attention paid to the use of digital Chinese currency among university students.

5.3. Implications

From the future perspective, the research is fundamental because it provides an adequate understanding of the intention to use Chinese currency among university students, and their future research must focus on finding the challenges and further variables that can promote the growth of consumption of the Chinese currency among students and the general public. Behavioral changes always happen in society, but the intention to accept any specific currency depends on its core features, which are highlighted by this research. Therefore, future studies have to focus on finding solutions to challenges and also promoting the variables, or more specifically, perception of these factors, among the Chinese people, so that they adopt the Chinese digital currency without any problem. It is true that there are many possibilities by which the Chinese digital currency can make progress. Still, there is also evidence from the study that its implications are directly added to the existing literature in the form of the framework by which intentions to use the digital currency are directly or indirectly affected.

The theoretical applications are entirely related to fulfilling the research gap and also promoting the research outcomes in the context of understanding the true and accurate relationship between the dependent and independent variables. It is feasible to fill the research gap without conducting a quantitative analysis. Still, its limitation is that it only provides the perspectives of Chinese university students, and their research may be fully or partially theoretically applicable to

the general public. The respondents involved in this study are further vital because they have provided valuable responses in terms of understanding the use of digital currency among Chinese students, and their behavior can be replicated at other universities if the proper methodology is followed by future studies. From the perspective of the practical implications, it is evident that the research is showing strong evidence of interventions that could be made in the financial system by the government of China to improve the understanding and perception of the intention to use the digital Chinese currency, which will automatically promote the development of a positive attitude among the Chinese people towards the currency.

It is also a practical implication of this research that the factors highlighted can be directly improved by the excellent quality of perceived safety of eCNY and functions of transaction processing systems in the digital currency because it will automatically enhance its usage among Chinese people. There is also an effective relationship that exists between the theoretical and practical implications because all the independent variables can be considered for a positive change in the implementation of the digital Chinese currency, making it entirely possible for the Chinese economy to survive on only the digital currency if the intention to use it among the people is increased. Therefore, it is expected that future studies will make completely opposite contributions to the research as well as practical interventions that will automatically promote the expansion of Chinese digital currency.

5.4. Recommendations

It is recommended on the basis of results that the digital Chinese currency must be easy to use as it is an essential factor in understanding the consumption of currency in Chinese society. If the currency is difficult to use, it will directly affect the intention to use it among Chinese students. Recommendations are only related to the young population of China because they have a better perception of the digital world, and they can easily promote its acceptance in society if they critically focus on the variables like functions of transaction processing or perceived safety of eCNY. It is true that the transaction processing system is very important for the development of better prospects for Chinese society and individuals, for if all the variables contribute toward an understanding of the digital currency, then it will also be possible for the system to expand the uses of the currency altogether. There is a need to increase advertising and awareness among Chinese students in order for them to embrace the benefits of Chinese digital currency. The government and other authorities that are governing the production and usage of digital Chinese currency have to enter the matter, and they have to develop a policy on the basis of which the trust of consumers is not directly or indirectly affected. All of this policy must be based on the interests of students because if they are not taking care of the functions of transaction processing and other essential elements of the system, then it will no longer be

possible for the authorities to expand the use of currency in a society ultimately. It is true that there are many possibilities by which the Chinese digital currency can provide successful opportunities for students to grow and develop.

Therefore, it is recommended at the university level to promote the Chinese digital currency or make it compulsory in the primaries of university, which will encourage the students to use the eCNY. It will also be possible for Chinese students to get a better perception of the currency. It is also possible by separating the positive benefits of digital Chinese currency on the internet and also using social media as a tool to clear out the concerns among the students about privacy or, more surprisingly, the security dangers. The challenges, however, exist in the complete acceptance or intention to use the Chinese digital currency. Still, it will take time and resources to ultimately deliver the narrative of using the digital currency among Chinese students. Overall, it will be highly possible for the Chinese people and students to adopt the currency if the governments and all their regulatory bodies integrate matters of improving the currency efficiency and not compromise any privacy factor that has a negative impact on the satisfaction of students using that currency.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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