

# Research on the Development of Digital Cultural and Creative Industry under the Background of Metaverse

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**Abstract:** The "Three Year Action Plan for the Development of Digital Economy in Jiangxi Province" clearly requires the implementation of a support plan for digital cultural and creative design projects, with a focus on supporting the development of digital cultural and creative enterprises, and building provincial-level digital cultural and creative industry demonstration bases. With the rapid development of blockchain technology and Internet applications, the digital economy has become a hot topic in today's era. Digital collectibles, as an important emerging industry in digital cultural and creative industries, are also developing rapidly. Studying the factors influencing user purchases of digital collectibles plays an important role in the industrialization and efficiency of digital cultural and creative industries. This study hopes to contribute to the realization of the vision of Digital China. This article takes the willingness of users to purchase digital collectibles in the context of the digital economy as the research object. Through a combination of online questionnaires and offline interviews, the influencing factors of Chinese netizens' willingness to purchase digital collectibles are investigated, and the contact and use of digital collectibles by Chinese residents are collected. At the same time, the collected data will be summarized, classified, and descriptive statistics will be conducted, combined with various analysis methods such as cross analysis, reliability analysis, and validity analysis. At the same time, relevant models will be established to analyze the degree of exposure and use of digital collectibles by Chinese residents, as well as the influencing factors of their selection.

**Keywords:** Digital economy, Digital collectibles, influence factor.

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## 1. Introduction

### 1.1. Research Background

The physical barrier caused by the global epidemic from 2020 to now has prompted the world to pay more attention to the virtual economy. In October 2021, the US Internet social media platform Facebook officially changed its name to Meta, marking the development strategy of this technology giant's transformation to the metaverse, and also opening the prelude to the explosive development of the metauniverse. The digital asset based on block chain technology - NFT is an important underlying asset and creative output source in the concept of the metaverse. In 2021, American digital artist Beeple's NFT digital artwork "Every Day: The First 5000 Days" was sold at Christie's for \$69.34 million, and NFTs quickly gained popularity, becoming one of the most talked about topics in the art and block chain fields.

2021 is the first year of "NFT" in China. Alibaba, Tencent, NetEase, Baidu and other large Internet companies quickly build their own "NFT" projects. Because foreign NFT targets block chain currencies, while China is prohibited by law, most "NFT" platforms call themselves "digital collections" platforms to prevent financial risks related to NFT, and use the non centralized alliance chain, Completely eliminating financial risks while retaining cultural and artistic attributes. According to institutional research, relying on Alibaba's leading digital collectibles platform, "Whale Detective" APP, there are over ten million users. The 100 million digital collectibles sold on "Whale Detective" with a unit price of 19.9 yuan can be quickly sold out in just a few seconds, making it difficult to find a single digital collectible.

The 14th Five Year Plan of the People's Republic of China and the Long Range Objectives for 2035 clearly state that the digital strategy of the cultural industry should be implemented,

and the development of new cultural enterprises, cultural formats, and cultural consumption models should be accelerated. Various regions are also actively formulating incentive policies for digital cultural and creative industries. The "Three Year Action Plan for the Development of Digital Economy in Jiangxi Province" clearly requires the implementation of support plans for digital cultural and creative design projects, with a focus on supporting the development of digital cultural and creative enterprises, and building provincial-level digital cultural and creative industry demonstration bases. At present, digital collectibles are an important part of the digital cultural and creative industry, and the purchase intention of users is an important prerequisite for the sales of digital collectibles. Therefore, investigating the influencing factors of users choosing digital collectibles can help digital cultural and creative enterprises understand user needs, issue more and more popular digital collectibles, and thus create greater cultural and industrial value, which is of great significance for promoting the digital development of the cultural and creative industry.

### 1.2. Research significance

#### 1. Theoretical significance

There is very little research on digital collectibles in China by domestic and foreign scholars. This article takes the perspective of digital collectibles users, combines existing research results on NFTs abroad, uses research methods such as questionnaire surveys and telephone interviews, and based on interaction theory, designs an indicator system from both macro perspectives (policy environment, economic environment, public opinion environment, etc.) and micro perspectives (user's economic strength, social needs, aesthetic preferences, etc.). By comprehensively reflecting the factors that influence user selection of digital collectibles, it enriches the theoretical research on the needs of domestic digital

collectible users to a certain extent and has certain theoretical significance.

## 2. Realistic significance

This study has certain reference significance for digital artists to create digital collections and digital cultural and creative enterprises to improve the distribution of digital collections. The development of China's digital economy is still in its infancy, and digital collectibles are only in the initial stage of "small lotus can reveal sharp edges", with many problems. The popularity and acceptance of the digital collectibles market are relatively low, platforms do not understand user preferences and intentions, the compliance of digital collectibles platforms is questionable, and there is a legal gap in the regulation of the digital collectibles industry... Based on the analysis of the report, the conclusions drawn from the willingness of users to choose digital collectibles platforms and purchase digital collectibles and their influencing factors can provide a basis for legislative regulation of the digital collectibles industry. In addition, the study of influencing factors can not only gain a deeper understanding of the willingness of digital collectibles users, but also effectively meet their needs; Moreover, it can also enable digital cultural and creative enterprises to create more popular digital collectibles for users, achieving the goal of digital cultural and creative industrialization and efficiency, and thus contributing to the realization of the vision of Digital China.

## 1.3. Research Objectives

Block chain technology in foreign countries is relatively mature, and the NFT trading market is also active. After studying existing literature at home and abroad, it is found that foreign scholars have rich academic research on NFTs, and domestic scholars have a high level of attention to foreign NFTs. However, there is relatively little research on domestic digital collectibles. Most scholars at home and abroad study the financial and artistic attributes of digital collectibles from the perspective of intellectual property or blockchain technology, but they overlook the research on the influencing factors of users' willingness to purchase digital collectibles from the perspective of user demand. Due to the flourishing development of the digital collectibles industry and cultural and creative industries in China, relevant policies are still in the formulation stage, and the market size of the digital collectibles industry is also relatively small. Therefore, in this academic and market context, this article uses a questionnaire survey method to conduct a survey of digital collectibles users across the entire network, collecting data on individual characteristics, aesthetic preferences, social needs, and inviting several senior digital collectibles users to conduct telephone interviews to gain a deeper understanding of their needs and preferences, as well as to inquire about their subjective feelings about various platforms of digital collectibles and their views on the future development of digital collectibles.

Using descriptive statistical analysis, validity analysis, cross analysis, and model building methods, this study aims to analyze the willingness of users to purchase digital collectibles and its influencing factors. The aim is to explore the relevant factors that significantly affect the willingness of Chinese netizens to purchase digital collectibles, and provide targeted references for the sales of digital collectibles platforms and the formulation of relevant industry policies.

## 1.4. Research Methods

1. Questionnaire survey method: Based on the research results of existing digital collectibles and NFTs, and the theory of interactive decision-making, a network survey questionnaire is designed and distributed through social media platforms such as WeChat, QQ, Weibo, and Xiaohongshu. Analyze the influencing factors of digital collection purchase intention by screening out invalid questionnaires.

2. Telephone interview method: Based on the telephone information left by users who are willing to accept telephone interviews in online questionnaires, select users who have more exposure to digital collectibles and spend a large amount of money. Through telephone communication, gain a detailed understanding of the factors influencing the selection of digital collectibles platforms and the purchase of digital collectibles by experienced users.

3. Model building method: Based on the results of the questionnaire survey, construct a model of the importance level of the influencing factors for users to purchase digital collectibles, quantify the importance level of each influencing factor, screen for unimportant influencing factors, and retain significant influencing factors for analysis.

## 1.5. Innovation points

### 1. Innovation in research content

At present, scholars have conducted more research on NFTs abroad, with very little research on digital collectibles in China. However, digital collectibles are an important part of digitalization in the cultural and creative industry. This article focuses on the research of digital collectibles in China and explores the market model of digitalization in the cultural and creative industry.

### 2. Innovation in research perspectives

The research on NFTs and digital collectibles both domestically and internationally mostly focuses on the perspectives of platform owners, publishers, and regulators, with very little research on the relationship between users and digital collectibles. This article studies the willingness and influencing factors of users to purchase digital collectibles from their perspective.

## 2. Survey Plan Design

### 2.1. Survey Topic and Object

This article conducts market research and analysis on the exposure and understanding of digital collectibles among Chinese residents in the context of the current digital economy. The survey targets all internet users on social media.

For this questionnaire survey, this article distributed questionnaires online and offline. As of November 2nd, a total of 685 questionnaires were collected. Among them, questionnaires that had never been exposed to digital collectibles and those with conflicting options were considered invalid. After screening, there were 368 questionnaires that had never been exposed to digital collectibles and 10 questionnaires with conflicting options. Therefore, the final number of valid questionnaires determined in this article is 307.

### 2.2. Sampling survey method

To ensure the authenticity, reliability, and accessibility of the data, this article refers to previous literature and comprehensively considers various factors, and the final

survey method is to use a combination of online and offline methods to conduct a sampling survey of all residents in China. The following sampling survey methods are specifically adopted:

1. Stratified sampling: Stratified sampling, also known as categorical sampling or type sampling. Divide the population into several homogeneous layers, and randomly or mechanically sample within each layer. The characteristic of stratified sampling is the combination of scientific grouping and sampling methods. Grouping reduces the impact of variability in each sampling layer, and sampling ensures that the selected samples have sufficient representativeness. This article stratifies the age and gender of the survey subjects, dividing them into youth, middle age, and elderly; Divide gender into males and females to ensure universality of the survey subjects.

2. Simple random sampling: Simple random sampling is the process of selecting sampling units from a population, where each possible sample has an equal probability of being selected. The samples are completely independent of each other and have no certain correlation or exclusion. After stratification, random sampling was used for each age group and between men and women to ensure the randomness and objectivity of the survey subjects.

### **3. Investigation Conclusion**

#### **3.1. The popularity of digital collectibles needs to be improved**

According to survey data, the total number of questionnaires distributed this time is 685, of which 307 are valid, with an effective rate of 44.8%, which is not yet 50%, indicating that more than half of the people are not very familiar with digital collectibles. As an emerging industry in the context of the digital economy, digital collectibles have a low popularity rate, but they have a profound driving effect on China's traditional culture and art. Compared to traditional cultural and art industries, digital collectibles have undergone new changes and even guide the development direction of the entire cultural and art industry. Therefore, more people should be encouraged to participate in the digital collectibles industry, providing more impetus for the development and dissemination of China's culture and art.

#### **3.2. Younger users and networked transmission channels are the main characteristics**

At the same time, the proportion of males is 66.78%, which is relatively large compared to females and pays more attention to the current social hot topics. Therefore, the current users of digital collectibles are mainly young males, and the trend is towards networked transmission channels.

#### **3.3. Users are more sensitive to the quantity and price of digital collectibles**

According to effective survey data, when purchasing digital collectibles, 62.87% of users value the issuance price, and 61.89% of users value whether the quantity is limited. Due to the involvement of consumption, users are concerned about the issuance price of collectibles, which is also in line with public psychology; As the saying goes, rarity is precious. When purchasing digital collectibles, users also hope that their collections are relatively rare. Whether it is in terms of

collection value or appreciation, the smaller the quantity, the greater the desire of the vast majority of users. Therefore, whether digital collectibles are limited in quantity is also an aspect that users attach great importance to.

#### **3.4. Users value the strength and background of digital collectibles platforms**

According to the effective survey data, 78.18% of users have heard of or used the digital trading platform "Jingtan" under Ali, followed by 71.01% of users have heard of or used the digital trading platform "ibox" under Huo Coin. These digital collection platforms have strong background and professional platforms. It is reported that iBox has reached cooperation with over 500 top IPs, covering multiple fields such as art, fashion brands, celebrities, animation, film and television, sports, intangible cultural heritage, and cultural heritage. It has completed the entire process of traditional IPs from mining, secondary creation, digital collection distribution to value discovery, thus forming a stable supply chain system for digital collection of traditional IPs, which can fully bring users better digital collection subscription services. This can not only meet the needs of users, but also bring more convenient, reliable, and satisfactory collection service quality, making it more attractive. Therefore, digital collectibles platforms should focus on enhancing their strength background in order to develop better.<sup>[1]</sup>

#### **3.5. Low credibility and low value are important issues with digital collectibles**

At present, the digital collectibles industry has just started and is in the exploration period of emerging industries. There are no explicit policies and regulations, and people's credibility is low. For digital collectibles platforms, the first thing users consider is the platform's security, convenience, and standardized operation. For a user, a digital collectible platform has high security, which can better protect their interests. At the same time, convenience and standardized operation can increase the user's experience; Users hope that digital collectibles can reflect other values besides their collectible value. Unlike traditional art, currently digital collectibles, as virtual collectibles, are visible but intangible. If they only have collection value, their meaning is too singular. Therefore, users believe that in addition to this, digital collectibles should also be connected to real entities, combined with agriculture, services and other industries, to jointly drive the development of China's economy.

#### **3.6. Personality value and artistic value are key areas that users focus on**

According to effective survey data, it is known that 77.07% of men choose anime, games, virtual images, and digital collections related to aerospace and technology, which is consistent with the preferences of contemporary young men. Unlike men, 91.18% of women choose digital collections of cultural and creative, traditional Chinese style, museums, intangible cultural heritage, and original design, while they have very few choices in the field of aerospace technology, which is consistent with the hobbies of contemporary women; Faced with the platform of digital collectibles, users are still more willing to choose their favorite collectibles, highlighting their individuality. Secondly, 59.61% of users will choose digital collectibles of original design, artistic creation, and other types. The rise of digital collectibles not only activates various IP and cultural industries, but also combines with

physical entities to promote the development of the physical industry. And combined with trends, art, etc., to enhance the popularity of the collection, while also enhancing its artistic value.<sup>[2]</sup>

#### 4. Suggestions for the Development of Digital Cultural and Creative Industries

The digital economy, as a representative of the new economy, plays an important role in the development of the national economy. In recent years, a large number of excellent digital economy enterprises have emerged in China, and various new concepts such as metaverse, block chain, and NFT have frequently "gone viral" and attracted a lot of attention. Digital collectibles are a new type of digital cultural and creative product that utilizes block chain technology and originated from foreign NFTs. Around June 2021, digital collectibles platforms began to emerge in China and developed rapidly. However, relevant control policies in China have not been introduced yet, and the digital collectibles industry has gradually become chaotic in the situation of "bad coins driving good coins".

Based on the results of questionnaire surveys and telephone interviews, taking into account the participants and various stakeholders in the digital collectibles market, combined with the above research conclusions, this article proposes targeted suggestions from three levels: government, platform, and user. The aim is to regulate the various chaos in the digital collectibles industry and promote the sustainable development of China's digital economy.

##### 4.1. Government level

Raise the entry threshold and standardize the industry market. In the absence of entry barriers, numerous small and fake platforms have emerged, illegally obtaining user identity information and infringing on the distribution of artist works... This seriously infringes on the personal rights and interests of users, seriously disrupting the market order of the digital collectibles industry. It is necessary to raise the entry barriers for digital collectibles and regulate them.<sup>[3]</sup>

Strengthen financial supervision to prevent money laundering and speculation. Based on the questionnaire, we found that the only digital collectibles platforms that users frequently use, such as Art and Ibox, have all opened up secondary market transactions. We conservatively estimate that the daily transaction volume of digital collectibles on a platform is over 10 million yuan, and it is highly likely that the daily transaction volume of all digital collectibles platforms that open up secondary transactions will exceed 100 million yuan. There is no government related financial regulation, which provides a soil for money laundering. Disrupting the stability of financial markets can easily lead to social problems. It is recommended that the government strictly control transactions in the secondary market, suspend the secondary market of some non compliant platforms, and prevent money laundering risks.

##### 4.2. Platform level

Control the issuance quantity and safeguard user interests. Based on the above conclusion, it can be concluded that users value the unit price and price of digital collectibles when purchasing, and many people believe that the scarcity and value of digital collectibles are relatively low. The technical

characteristics of digital collectibles at the bottom level are immutability, indivisibility, possession and preservation, and uniqueness of the chain. However, some platforms, in order to maximize the benefits of a single IP, exceed market acceptance and issue excessive digital collectibles, which seriously lowers the value of individual digital collectibles, falls below the issuance price, and even triggers user rights protection, resulting in extremely poor social impact. It is recommended that the platform control the artistic quality and distribution quantity of digital collections, and try to protect the interests of users as much as possible, so that the platform can attract more users to participate.<sup>[4]</sup>

Proactively embrace compliance and prevent financial risks. According to the survey, we found that digital collectibles platforms such as Whale Exploration and Qinchu, which are commonly used by users, have simplified and formalized information censorship issues. The platform also does not adopt a daily limit system for payments, which can easily attract criminals to use the platform's secondary market for money laundering transactions. At present, although there is less regulation in the digital collectibles industry, actively controlling risks, strictly adhering to legal operations, actively maintaining the positive image of the digital collectibles industry, and timely discovering potential risks in platform operation can help digital collectibles platforms gain a first mover advantage and quickly occupy the market after industry regulation.

##### 4.3. User level

Keep your eyes open and avoid the trap of fake platforms. There are very few small platforms that have been online for less than a month and then run away with money. It is recommended that users use software such as "Tianyancha" to determine the registration time, registered capital, and shareholder information of the platform company, in order to avoid property damage and information leakage caused by registering small or fake platforms.

Maintain a mindset and avoid hype about "red eyes". According to the questionnaire, the only digital collectibles platforms that users frequently use, such as Art and Ibox, we found through our actual download experience that they have all opened up secondary market transactions. In situations where information is not transparent and rules are not perfect, users should always maintain a good mentality to prevent addiction to hype. In the face of drastic fluctuations in the prices of digital collectibles in the secondary market, they do not consider their own economic affordability, only see high returns and ignore the huge risks involved.

#### Acknowledgment

This work was supported by the 2023 National College Student Innovation and Entrepreneurship Training Program of Jingdezhen Ceramic University, titled "Research on the Business Model of Innovative Development of Jingdezhen Ceramic Cultural and Creative Industry from the Perspective of Digital Economy", with project number 202310408021.

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