

The Moderator Roles of Subjective Norms and Marketing Mix in the Acceptance of the Non Fungible Tokens Technology on the Artwork Customer in China

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Abstract

This study aims to 1) investigate the factors affecting the acceptance of using NFT technology by consumers on the artwork products based on the moderated effect of subjective norms and marketing mix; 2) test the model of factors influencing the acceptance of consumers on the NFT technology and 3) explain the relationship between factors of consumers' acceptance of NFT technology on the artwork products. This study was mixed method research. Quantitative research employed a questionnaire as a data collection tool from investors 520 people obtained by purposive sampling. Data analysis including percentage, mean and Structural Equation Model (SEM). In Qualitative research, key informants of 30 people were obtained by purposive sampling and used in-depth interviews is a data collection tool. Data analysis including content analyst

The results were as follows: 1) Chinese NFT collectors and consumers are influenced by peers and family members in initiating the collection and use of NFT. Consumers pay attention to various NFT characteristics, emphasizing safety, trading aspects, quality, and the purchase and usage process, particularly focusing on payment security. 2) NFT consumers are very obviously positively influenced by their family members, peers and friends. As long as consumers have family members or peers and friends in the consumption, collection or use of NFT and 3) the quality of NFT artworks, the distribution platform, the purchase and use process, and the price of NFT artworks will also affect consumers' consumption and use of NFT. How to provide cheap and fine NFT art, to provide consumers with a good and convenient way to buy and use, this is also an important question whether NFT can achieve consumption.

Keywords: Subjective Norms, Marketing Mix, Non Fungible Tokens



Introduction

In recent years, spurred by the rise of online transactions and the impact of COVID-19, virtual commodity trading on the Internet has experienced swift growth in China. Non-Fungible Tokens (NFT), functioning as reliable digital stock certificates, have flourished on the web due to their unique, traceable, and scarce characteristics distinct from traditional artworks. Throughout the developmental stages of NFT art trading in China, various factors have played a significant role.

The 51st Statistical Report, released by the China Internet Network Information Center in March 2023, highlighted that by December 2022, China had 1.067 billion internet users, with an internet penetration rate of 75.6 percent. This high internet penetration has altered people's habits, fostering a new trend of online trading and the emergence of network art communication.

Network art communication, expressed in digital form, is a distinctive art form. NFT, as a virtual art product, relies on digital technology and platforms for dissemination, marking the inception of a novel art market. Whether in NFT art collection or other art industries like jewelry, the belief persists that industries wax and wane together. The art environment is influenced by myriad external factors such as politics, economy, culture, population, and technology (Tang Yi, 2011). Hence, NFT art collection thrives when society flourishes, and consumers have disposable income for online art purchases. Therefore, understanding the art market and NFT artwork collection and usage necessitates a focus on the evolving environment in China and globally.

China's stable political environment, burgeoning economic scale, and vast population have laid a robust foundation for the growth of NFT art trading. The rapid development of online art trading in China over the past few years, catalyzed by the pandemic's impact, is evident from relevant data. In 2022 alone, global NFT transaction volume reached \$55.5 billion, a 175% YoY increase and 320 times more than in 2020. Despite this rapid global NFT development, Chinese consumers exhibit less enthusiasm for collection, influenced by various factors. This paper seeks to explore the determinants of Chinese consumers' willingness to collect and use NFT based on subjective norms and marketing combinations.

Using both quantitative and qualitative research methods, including questionnaire surveys and structural equation models within the Technology Acceptance Model (TAM) framework, this paper analyzes the factors impacting Chinese consumers' NFT purchase and usage decisions. The research aims to not only broaden the understanding of NFT acceptance

behavior but also provide insights and guidance for NFT issuers and distribution platforms seeking more effective and efficient NFT sales.

Research Objectives

1. To investigate the factors affecting the acceptance of using NFT technology by consumers on the artwork products based on the moderated effect of subjective norms and marketing mix.

2. To test the model of factors influencing the acceptance of consumers on the NFT technology.

3. To explain the relationship between factors of consumers' acceptance of NFT technology on the artwork products.

Literature Review

The Technology Acceptance Model (TAM) was proposed by Davis as a framework for studying users' acceptance of information systems using the theory of rational behavior. This model excels at explaining and predicting behavior. The technical acceptance model encompasses factors like perceived usefulness, perceived ease of use, intention to use, and external variables. Two intermediary variables, Perceived Usefulness and Perceived Ease of Use, are integral to the model. In alignment with the research methodology employed in this paper, the independent variables comprise subjective norms, NFT, and marketing combination.

Subjective norms

As defined by Ajzen (1985), encapsulate the social pressure individuals feel when deciding whether to engage in a specific social behavior. This pertains specifically to the norms, expectations, and support of others regarding their behavior (Morton, 2002). Subjective norms shed light on the influence of important individuals on personal behavior (Zhang Baosheng, 2023). When individuals perceive that influential figures desire and request a certain behavior, they align these expectations with corresponding behavioral intentions and tendencies, ultimately manifesting specific behaviors (Ajzen, 1985).

In general, the motivation behind purchasing virtual products is either to fulfill personal spiritual desires, engage in speculative endeavors, or capitalize on potential financial gains (Company, 2021). Subjective norms actively shape consumers' intentions to purchase NFT (Xiaodong & Jian, 2023), subsequently driving their acquisition of NFT.



In China, due to legal restrictions, there is limited advertising for NFT. Consumers primarily understand NFT through connections with friends, family, and relatives. Consequently, consumers' attitudes towards purchasing directly or indirectly impact their collection and utilization of NFT (Morton, et al., 2019). Based on this, the following assumptions are made:

H1: The subjective norms of Chinese consumers positively influence their intentions to purchase and collect NFT artworks.

H2: The subjective norms of Chinese consumers contribute to their perception of the practicality of NFT art.

Non Fungible Tokens: (NFT)

On March 12, 2021, artist Mike Winkman's "Day: 5000 Days" (Day: First 5000 Days) was sold for \$69,346,250 at Christie's. Metaowan (Vineesh Sundaresan) and Twowadu (he) both saw their values reach \$100 million over 13 and a half years, catapulting NFT into a hot topic in the art world (Xuedong, 2021).

NFT art is a product of internet culture, a testament to the era's development in science and technology (Chunyan, 2022). In China, spurred by the impact of the epidemic, the "cloud" art market is rapidly gaining momentum, with NFT art taking the spotlight in platforms, auction houses, art finance, and various other venues (Zhong, 2022). Noteworthy characteristics include:

1. Verifiability: NFTs, with their token metadata and ownership, can be publicly verified.
2. Transparent Execution: NFT activities, encompassing minting, selling, and purchasing, are publicly accessible.
3. Availability: The NFT system remains operational continuously, ensuring tokens and issued NFTs are perpetually available for sale and purchase.
4. Tamper-Resistance: NFT metadata and trading records persistently stored are immune to manipulation once transactions are confirmed.
5. Usability: Every NFT features the most up-to-date ownership information, presented in a user-friendly and information-clear manner.
6. Atomicity: Trading NFTs can be seamlessly completed in one atomic, consistent, isolated, and durable (ACID) transaction. NFTs can operate in the same shared execution state.
7. Tradability: Every NFT and its corresponding products are subject to arbitrary trading and exchange (Wang, et al, 2021).

Drawing from these NFT characteristics, the following assumptions are proposed:

H3: NFT features influence consumers' perception of their usefulness.

H4: NFT features impact consumers' perception of its ease of use.

Marketing Mix

The marketing mix is a valuable strategy that enables organizations to simplify their marketing efforts (Suyanto & Dewi, 2023). Traditional 4P marketing theory, including product, price, location and promotion. In 1981, Booms and Bitner proposed a 7p marketing mix based on a 4p base. Three elements are added: human, physical display system and process. The study of consumer behavior is the beginning of the marketing process (Alkandi, et al., 2023), and the content and cognition highly influence the user's behavioral intention (Gupta, 2023). In addition, among the three elements increased from 4P to 7P, the process is very important for the collection and use of NFT.

Building upon the established marketing mix, the following assumptions are proposed:

H5: The marketing mix enhances consumers' perception of the usefulness of NFTs.

H6: The marketing mix enables consumers to perceive the ease of use of NFTs.

Willingness to Use

The willingness to use refers to a person's desire to use something. There is a relationship between intention, attitude and subjective norms, in which intention reflects motivation and predicts attitude and subjective norms (Hisamuddin, 2023), which indicates that the product will cause a person to be willing to use it, and it must meet certain conditions. Consumers' consumption choices are influenced by many factors, and consumers decide their needs for different products according to their own preferences and budget restrictions. (Fangbao, 2019) Therefore, I propose the following assumptions:

H9: Consumers' intention to use NFT will influence their purchasing and usage behavior of NFT.

Figure 1 illustrates the framework developed on the basis of TAM theory. This framework comprises seven variables: subjective norms, NFT, marketing mix, perceived usefulness, perceived ease of use, willingness to use, use behavior (NFT), along with nine hypotheses elucidating their interrelationships.

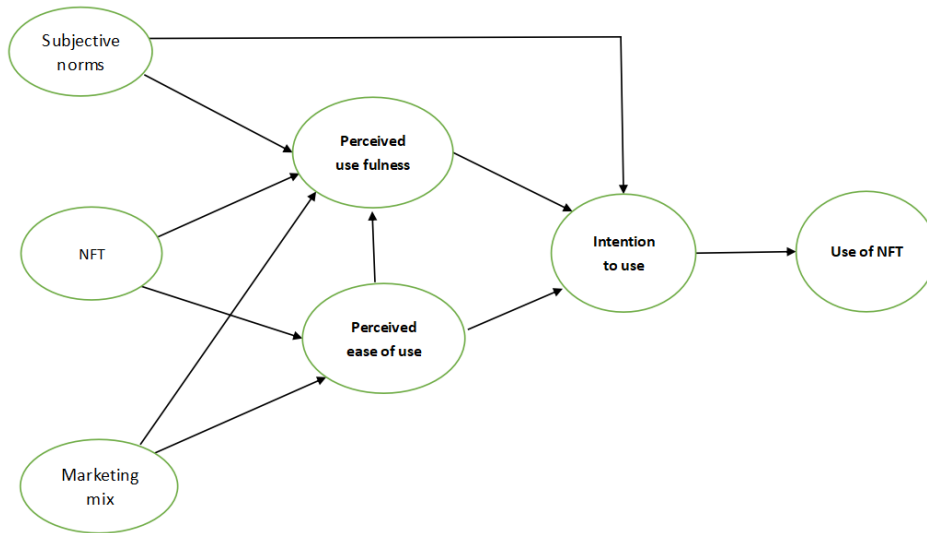


Figure 1 The conceptual framework of research

Research Methodology

Quantitative studies

Population and Samples

According to the data of blockchain Cheese "2022 China NFT Investor Population Portrait Market Research" in March 2023 edition, the highest proportion of NFT investors is: 31-40, accounting for 36.8%; 26-30, accounting for 35.1%, and 18-25 accounting for 14%. The income distribution of NFT investors is relatively polarized, with an annual income of less than 200,000 people accounting for 37.5%; those with an annual income of more than 1 million people account for 26.8%, while most of the million people have cryptocurrency investment experience. (Issuelabs, 2022). According to the above data, I will select some people from JINGTAN NFT platform with different age groups, mainly 18 to 40, and 40 to 60.

In this study, for the accuracy of the investigation and the data analysis of the latter, a suitable sample size was extracted from the total sample. According to the actual situation of my investigation, I investigated 26 dimensions, and 20 people were sampled in each dimension, so I mainly selected about 520 people obtained by purposive sampling.

Data collection tools

The researchers use the questionnaire to collect data. Because this survey involves a wide range of people, the traditional paper questionnaire is difficult to implement, so it is only online survey. According to the actual situation of my survey with Wechat, I used the Wechat small program WENJUXING to distribute the questionnaire. WENJUANXING To build a professional online questionnaire survey, inspection, evaluation, voting platform, focusing on

providing users with powerful and humanized online design questionnaire, data collection, customized reports, survey results analysis and a series of services.

Data analysis

A typical data analysis may include the following three steps (Kai &Zhiyao, 2016):

1. Exploratory data analysis: When the data is just obtained, it may be chaotic and irregular. Explore the possible forms of regularity by drawing, making tables, fitting various forms of equations, calculating some possible forms of regularity, that is, what direction and how to find and reveal the regularity hidden in the data.

2. Model selection analysis, put forward one or several types of possible models on the basis of exploratory analysis, and then select certain models through further analysis.

3. Inference analysis: mathematical statistical methods are usually used to infer the degree of reliability and accuracy of the model or estimate.

Structural equation model is a statistical method to analyze the relationship between variables based on the covariance matrix of variables, and it is an important tool for multivariate data analysis. The structural equation model has the following characteristics (Kaiming, 2006):

Qualitative study

Key Informants

The researchers collected information from key informants of 30 people. There were 7 variables included in this study. In addition to the variable NFT, there were 6 other variables, with 4 persons selected for each variable, The variable NFT selected 6 persons, and a total of 30 persons were selected for the interviews.

Data Collection tools

Face-to-face interviews, unstructured interviews, one-to-one or one-to-many interviews. NFT industry practitioners, art management agents, and NFT enthusiasts. Prepare small souvenirs to thank the interviewees for accepting the interview. After the interview, according to the interview data, and then case study. The case study should follow moral principles and protect the privacy of the research subjects; eliminate subjective interference; accurately grasp the scope of the case study; do not lightly push the conclusion from the whole; ensure that the data collected is relatively complete, true and reliable. (Zhongfeng, 2018)

Result

In this investigation conducted in Chongqing, China, a total of 520 users were surveyed on the platform. It was anticipated that 104 valid questionnaires would be predicted and 416 valid questionnaires would be formally received. The anonymous random sampling method was employed for the questionnaire distribution. The data collected aimed to provide insights into user consumption patterns. The formal test resulted in 416 valid questionnaires, achieving an effective recovery rate of 99.04%. Among these, male consumers constituted 75%, while female consumers accounted for 25%. The age distribution included 13.9% in the 18-25 age group, 35.1% in the 26-30 age group, and 37% in the 31-40 age group. Regarding annual income, 13.9% earned below 200,000, 20.5% earned between 200,000 and 500,000, and 27.6% earned over 500,000. The gender ratio, age composition, and income distribution align with the 2022 Baidu NFT Index and the "2022 China NFT Investor Population Portrait Market Research" mentioned above.

This study examined the influence of subjective norms and the marketing mix on consumer acceptance of NFT art. Data were collected through a structured questionnaire, incorporating variables such as subjective norms, NFT, marketing mix, and mediating variables like perceived usefulness and perceived ease of use. The collected data revealed a clear correlation between family norms, peer norms, and consumer subjective norms. NFT consumers were significantly influenced by their family, peers, and friends, indicating that the involvement of family members or friends in NFT consumption, collection, or use directly influenced consumers' intentions to collect and use NFT.

Consumers' comprehension of NFT characteristics played a crucial role in their decision to purchase and use NFT. Understanding the seven features of NFT—Verifiability, Transparent Execution, Availability, Tamper-resistance, Usability, Atomicity, and Tradability—enabled consumers to perceive the usefulness and ease of use of NFT. Similarly, the intention to use NFT arose when consumers perceived these attributes.

The marketing mix also exerted a significant impact on consumers' NFT purchase and use. Factors such as NFT art quality, price, promotion methods, trading platforms, and the consumer purchasing and usage process influenced consumers' decisions to purchase and use NFT.

The study identified that subjective norms had a particularly significant impact on consumers during NFT purchase and use. Consumers with NFT consumption experience were heavily influenced by family members or fellow friends. Establishing positive relationships

between NFT creators, distribution companies, platforms, and consumers emerged as a crucial factor for the sustained issuance and consumption of NFT. Quality, distribution platform, purchasing and usage processes, and pricing of NFT artworks in the distribution process all affected consumers' consumption and use of NFT.

Utilizing in-depth interviews, the study collected data on the effects of subjective norms and the marketing mix on consumer purchase and use of NFT artwork. The results highlighted a clear correlation between family norms, peer norms, and consumer subjective norms. Overall, the involvement of family members in NFT collection, especially if it resulted in financial gains, directly led to consumers engaging in the collection and use of NFT. The study also found that consumers paid close attention to the characteristics of NFT when collecting and using it. Security and tradability, including features such as verifiability, tamper resistance, and atomic nature, were significant considerations for consumers, ensuring the security and safe execution of NFT transactions. Tradeability was a major concern, particularly for consumers viewing NFT as an investment opportunity. The study identified three categories of NFT consumers: pure enthusiasts, hobbyists and investors, and pure investors. Enthusiasts and hobbyists tended to consume smaller quantities, with a relatively stable preference for art styles. Conversely, investors showed greater diversity in style, quality, and price range, engaging in NFT collection for investment purposes.

In conclusion, when consumers collect NFT, their attention is not only drawn to NFT characteristics but is also influenced by family and friends, as well as the style, quality, price, and marketing channels of NFT artworks.

Discussion

Although NFTs have recently emerged as a form of digital asset, the advent of this technology provides digital content with a unique identity and value in the digital realm. Due to its characteristics of execution, traceability, tamper-proofing, trading, and sharing, an increasing number of NFT artworks are continuously being introduced.

As previously mentioned, consumers' subjective norms and marketing combinations significantly influence the collection and use of NFTs. To effectively market NFTs, it is imperative to create a conducive online community environment and leverage online media platforms to promote NFTs.



(1) Leverage Social Media

In promoting NFT art, individual artists and platform companies should actively engage with fans and supporters on popular social media platforms such as TikTok, WeChat, QQ, and others in China. Establishing and nurturing special communities comprising supporters, collectors, and enthusiasts is essential. Intriguing titles and visuals can be utilized to capture attention, and the sharing of artists' works, along with interesting design stories, can attract more people to participate. For instance, using the #NFT tag on video platforms like Douyin (TikTok), following individuals interested in the NFT field, browsing NFT artworks, and engaging with their posts can facilitate interaction. Responding promptly to FAQs and addressing questions from collectors or fans contributes to a positive online presence.

(2) Utilize NFT Market Platforms

Individual NFT artworks should be uploaded to various NFT market platforms, including domestic platforms like Whale Exploration, as well as international platforms such as OpenSea and OnlyArt. This enables people to discover and purchase digital art from the creators. Many platforms offer community and search functionalities, aiding individual NFTs in gaining more exposure within the field.

(3) Explore Cultural Connotations:

Delve deeply into the cultural connotations of Chinese heritage, identifying points of fusion between Chinese culture and modern society. This exploration can be achieved through research into historical documents, folklore, art, and technological innovations in China or specific regions.

(4) Utilize Online News and Advertising Exposure:

Collaborate with market platforms, media outlets, and other cryptocurrency platforms that regularly send newsletters. While this may involve fees, such partnerships significantly enhance the exposure and potential collection of NFT artworks.

Conclusion

It is evident that the findings of this article will be advantageous for NFT art creators and trading platforms. As the NFT market intensifies in competition, effective marketing becomes pivotal for the success of any NFT series or project. Employing robust marketing strategies can assist creators and project founders in building awareness, sparking interest, and ultimately generating sales. Simultaneously, it can enhance the visibility of the trading platform and broaden sales channels.

In this study, limited by the researchers' exploration status, the investigation primarily focused on the whale exploration platform. A more comprehensive survey across multiple platforms and regions in China, with a broader coverage in valid questionnaires, would yield better insights into the actual impact on NFT art creators and trading platforms. Additionally, during the research process, it was discovered that, aside from subjective norms and marketing combinations, legal restrictions, payment security, price systems, and other factors also hinder Chinese consumers from fully embracing NFT. To ensure the healthy and rapid development of China's NFT art industry, in-depth research on these aspects is imperative.

Non-homogenized tokens have achieved a breakthrough in the concept for the human economy and society. NFT's value transmission, intellectual property protection, and optimized circulation process present new value capture points, offering a novel technical logic and operational pathway for art collection and various industries in the future. Through multi-channel and multi-angle publicity and marketing, more NFT art enthusiasts, technicians, and investment institutions are likely to express keen interest and actively participate in discussions, potentially bringing new focal points to the currently weak global economy.

As a new type of digital asset, coupled with the market bubble, the ecosystem has the potential for uncoordinated development. Transaction pricing, value evaluation, and judgment mechanisms have yet to form unified market standards and industry rules. Under the condition of homogenous tokens in business logic and product operation, the differentiation of NFT value circulation and implementation needs further enhancement of the underlying technology and concept.

While assessing the existing NFT art trade, careful evaluation and research are crucial. Although non-homogenized tokens have introduced a new value direction to the economic development of blockchain, financial crimes such as money laundering and illegal fundraising in NFT art collection and consumption present challenges. The prosperity of the NFT art market has introduced new issues for regulation and the rule of law. Only through ownership confirmation, the establishment of an NFT conventional value system, and improvement of the relevant supervision system can the sustainable development of Chinese NFT art transactions be realized.



Suggestions

1. Take advantage of social media

In order to promote NFT art, individual authors or platform companies try their best to interact with fans and supporters in social media, common timely social software such as TikTok, Wechat, QQ and other social media platforms in China, and establish and cultivate special communities composed of supporters, collectors and enthusiasts. Interesting titles and images can be used to attract people's attention, and to share art from individual authors or platforms, interesting stories in design, etc., so that they can get more people's attention and participation.

For example, you can follow people interested in the NFT field with the # NFT tag in the video number. You can also browse the NFT artwork and comment under their work posts to facilitate interaction. Of course, as an NFT art provider, you should also respond to FAQ answers, timely respond to questions from collectors or fans, and provide timely feedback.

2. Make good use of the NFT market platform

Personal NFT artworks will be uploaded to various NFT market platforms, such as domestic whale exploration, OpenSea, only art, etc., so that people can find and buy the author's digital art, etc. Many platforms offer community capabilities and search capabilities that can help an individual author's NFT gain more exposure in the field.

3. Dig deep into the cultural connotation

Explore the connotation and essence of Chinese culture deeply, and find the combination point of Chinese culture and modern society. All these can be realized through the research of historical documents, folklore, art works, and scientific and technological innovation in China or a certain region of China.

4. Use online news and advertising exposure

Most markets, media, and other encryption platforms send some newsletters every week. NFT creators or holders can work with them, of course, which may require fees, but this will significantly enhance the exposure of the work, and significantly enhance the potential collection of the work.

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