

An Empirical Analysis of the Impact of NFT on the Cultural Industry

A Comparative Study Based on Opensea and Jingtian NFT Platform

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ABSTRACT

2021, as the first year of the development of the Non-Fungible Token (NFT), has formed a wide impact on the development of the cultural industry in all aspects. This paper will compare and analyze the Jingtian and Opensea platforms through qualitative and quantitative methods, and at the same time analyze the correlation between Alibaba's U.S. stock data, Poly Culture Group's Hong Kong stock data, and Jingtian platform user data, as well as the correlation between Facebook's U.S. stock data and Opensea platform user data, to deduce the difference and correlation between foreign NFTs in promoting the development of cultural industries and domestic NFT industry phenomena and put forward the suggestion that China should use policies to escort NFT with eliminating policy risks, to motivate more companies to invest in NFT. In this case, the Chinese government can promote the development of China's cultural industry and enhance China's soft power.

Keywords: NFT, Cultural Industry, Jingtian Digital Exhibit Platform, Opensea.

1. INTRODUCTION

1.1. Background

In 2021, with the emergence of the concept of the metaverse, the NFT based on the blockchain and the hash algorithm will come. 2021 has become the first year of NFTs. NFT is decentralized and cannot be tampered with. Therefore, artworks built on NFTs have improved information security and property rights, and become unique artworks. Due to the unique nature of NFT artwork, platforms like DappRadar (<https://dappradar.com/>) appear in people's field of vision. The demand will be much higher than the supply, and the price of NFT artwork will increase significantly, resulting in a lot of economic benefits.

Since the above NFTs can bring dual benefits to artists and merchants, many digital trading platforms have begun to deploy, such as overseas Opensea and domestic whale scout digital exhibit platforms. Even artist Beeple's "Every Day: The First 5,000 Days" sold for \$69.34 million. Therefore, many people believe that

the increase in income and the protection of intellectual property rights can greatly promote the development and progress of the cultural industry.

However, due to the high prices of products, a large number of celebrities and Internet giants have invested in the NFT game, and many people think that NFT artworks are nothing more than gimmicks of capitalists, deliberately taking this as an opportunity to drive up stock prices and harvest leeks. Global has criticized that NFT is suspected of hype.

1.2. related research

Ante mainly talked about the relationship between the NFT and Bitcoin as well as Ethereum. The author explored the NFT ecosystems in several aspects. Ante started with an overview of state-of-the-art NFT solutions, then provided their technical components, protocols, standards, and desired proprieties. Afterward, Ante gave a security evolution, with discussions on the perspectives of their design models, opportunities, and challenges [1]. Wang et al. investigated the

interrelationships between NFT sales, NFT users (unique active blockchain wallets), and the pricing of Bitcoin and Ether. Using daily data between January 2018 and April 2021, the authors showed that a Bitcoin price shock triggers an increase in NFT sales. Also, Ether price shocks reduced the number of active NFT wallets. The results suggested that (larger) cryptocurrency markets affect the growth and development of the (smaller) NFT market, but there is no reverse effect [2]. Nadini et al. used a mathematical model to predict the trend of the NFT industry. Results showed that the profit of this industry would increase dramatically by about 12% in the future and NFT would be utilized in more realms including the cultural industry. However, the data they collected is not enough, so the result of this research is doubtful [3].

Chohan investigated the "value" and "scarcity" of NFT. The consequence was that if the alternate space of NFTs grows at a pace and to an extent similar to cryptocurrencies, then it will constitute one more significant avenue of blockchain technologies, and further affirmation that the full extent of decentralized, distributed ledger technology has yet to be discovered [4]. Chevet offered an analysis of cryptocurrencies and blockchain's technical underpinnings, specifically of NFTs and "crypto-collectibles", and the changes these innovations can bring about in the art market and creative industries at large based on a resource-based analysis of creative industries [5]. Abou Elnasr focused on the technology impact via Blockchain to change consumer behavior in the digital art industry. The result showed that NFT is a new industry that not many researchers have done on it. NFT theft is an issue that has yet to be entirely resolved. The recommendation in this paper emphasized the importance of rationality and thinking twice before entering this business in order not to lose huge amounts of money, as in this business anyone can either get high profit or lose a huge amount of money, as this business depends on the price of the cryptocurrency [6].

Ante introduced NFTs and explored the 14 largest submarkets using data from the Ethereum blockchain between June 2017 and May 2021. As of 2021, fewer transactions occur but the traded value is much higher. The study found that NFT submarkets are cointegrated and feature various causal short-run connections between them. The success or adoption of younger NFT projects was influenced by that of more established markets [7]. Kong et al. utilized one of the earliest and largest NFT collections to investigate the pricing and the risk-return profile of NFTs. In general, NFTs had higher returns but also higher standard deviation than traditional financial assets. Also, the pricing of NFT largely depends on a token's scarceness and an investor's aesthetic preference. Hence, conventional asset-pricing models are unlikely to explain NFT returns. The study provided the first comprehensive analysis that NFTs serve as a novel investment vessel in this Fintech era [8]. Dowling

explored if NFT pricing is related to cryptocurrency pricing, given the NFT market emerged out of cryptocurrencies. A spillover index showed only limited volatility transmission effects between cryptocurrencies and NFTs. But wavelet coherence analysis indicated comovement between the two sets of markets. This suggested that cryptocurrency pricing behaviors might be of some benefit in understanding NFT pricing patterns. However, the low volatility transmissions also indicated that NFTs can potentially be considered as a low-correlation asset class distinct from cryptocurrencies [9]. Bao and Roubaud concluded other studies dealing with the NFT. As an emerging field of research, an important feature was that almost all existing papers provide a brief introduction to NFT. Research on the efficiency and spillover effects of the NFT market was the most abundant and representative direction of existing papers. The paper also listed a group of studies for us to learn more about the recent study on NFT [10].

1.3. Objective

1.3.1 Experimental objects

This study adopted the Jingtian Platform and OpenSea Platform as objects.

1.3.2 The reason for choosing objects

The Jingtian Platform's public account discloses the number of active users from November to December 2021, so the data is easy to find. And it is one of the largest Chinese digital exhibition platforms, which is typical. OpenSea is the world's largest NFT trading platform. One is a Chinese platform, and the other is a western platform, both of which are typical. Comparing these two platforms to learn the advantages of the western NFT platform will also be able to improve the development of China's NFT platform and cultural industry.

1.3.3 Experimental tool

python and its data analysis module, Matlab.

1.3.4 Objective

Through empirical analysis, it will be able to answer whether NFT can promote the development of the cultural industry. This article will compare the Chinese NFT platform and the Western NFT platform to provide some reliable suggestions for the development of NFT in China.

2. METHOD

2.1. Data resource

2.1.1. User data of Jingtian online platform

The user data of the Jingtian platform in this study comes from the official public account of the Jingtian platform "Digital Collection Encyclopedia". The official account will release the active user data at regular intervals, and the period is generally one month to two months. This research uses the data published in the article "Alipay Whale Discovery Digital Collection Issuance Data" published by the official account on December 23, 2021. The data time range is from October 23, 2021, to December 23, 2021.

2.1.2. User data of Opensea platform

The Opensea platform user data used in this study was sourced from the DappRadar platform, the world's largest Dapp market data and Dapp distribution platform. The platform counts the daily sales and users of the platform since 2019. This study uses data related to the Opensea platform that was updated by the platform on February 1, 2022.

2.1.3. Alibaba stock data.

The Alibaba stock data used in this study comes from the stock data of Alibaba listed on the New York Stock Exchange published by Yahoo Finance. The full name of the stock is "Alibaba Group Holding Limited" and the stock code is "BABA". To fit the time range of the data of the online platform mentioned above, this research obtained 43 stock data of the stock in 62 days from October 23, 2021, to December 23, 2021, through Python.

2.1.4. Polyculture group stock data

The stock data of Poly Culture Group used in this research comes from the stock data of Poly Culture Group listed on the Hong Kong Stock Exchange. The data is published by Oriental Fortune.com. The full name of the stock is "Poly Culture" and the stock code is "03636". To fit the time range of the data of the online platform mentioned above, this research obtained 44 stock data of the stock in 62 days from October 23, 2021, to December 23, 2021, through Python.

2.1.5. Baidu heat, Google trend data

Baidu heat and Google trends collect the amounts of searches related to a certain thing by many internet users. Using Baidu heat, it will be able to get the change of word search volume per day over time to better portray the change of the heat of the item over time. After compiling the data of Jingtian digital exhibit platform and Baidu heat

for 10 days before and 20 days after the launch of a project, this paper also collects the data of Opensea platform and Google trend for 10 days before and 20 days after the launch of a product. Although all the progress, python is used to analyze the data.

2.1.6. Facebook Stock Data

The Facebook stock data used in this study were obtained from Yahoo Finance's data on Alibaba's stock traded on the New York Stock Exchange under the ticker symbol "Meta Platforms, Inc. FB". To fit the time frame of the above-mentioned Opensea platform data, the stock data was obtained in Python for a total of 85 bars for 122 days from September 1, 2021, to December 31, 2021.

2.2. Method

2.2.1. Qualitative analysis

Through a qualitative analysis of the feature of NFT and the Jingtian platform, and the development of the cultural industry, a logical explanation about whether NFT can promote the development of the cultural industry can be given, and predictions for quantitative analysis will also be provided afterward. This paper also discusses whether Alibaba uses this platform for financial hype.

2.2.2. Quantitative analysis.

2.2.2.1. Analysis of Jingtian platform

In this part, python is used to analyze the positive correlation between the number of users of the digital exhibit platform and Alibaba's stock to infer whether Alibaba has used the concept of NFT to hype and drive up the stock price. Of course, since Alibaba has many businesses and a large volume, it is not a purely cultural industry. As a result, news about Alibaba from November to December is found and the impact of other factors on Alibaba's stock is excluded. Python is also used to get the linear fitting function of the data and to see whether the slope of the function is high enough.

Logging into the Jingtian platform, it can be observed that Poly Culture Co., Ltd. has posted many products with cultural elements on the platform and cooperates closely with the platform. Therefore, python programming is used to crawl data and analyze the stock price of Poly Culture Group and the number of users on the platform. If they are positively correlated, it can infer that the digital exhibit platform has a role in promoting listed companies in the cultural industry such as Poly Culture. Python is also used to get the linear fitting function of the data and to see whether the slope of the function is high enough.

The data of Baidu Heat can also make good use. Selecting the data ten days before and twenty days after the product is released, it will be able to form a fitting function with the number of users to observe whether the number of users of the Jingtian platform is positively correlated with the popularity of the cultural element. If there is a positive correlation, then the platform can promote the popularity of cultural elements.

2.2.2.2. Analysis of Opensea

For the data analysis of Opensea, the same approach can be adapted to analyze the Opensea platform as for the quantitative analysis of the Jingtian platform. Statistics on the number of users of Opensea and the popularity of the terms related to the items sold on Opensea are collected to form linear regressions and positive correlation analysis to quantify whether Opensea's user volume and word popularity were positively correlated. As Facebook (now renamed Meta) sells a lot of NFTs on the platform, the same method as for Poly Culture is also used to analyze whether Opensea's user volume and Facebook stock are positively correlated. If there is a positive correlation, it can be inferred that Opensea can facilitate businesses selling cultural products on the platform. As a result, the cultural industry is promoted.

3. RESULTS AND DISCUSSION

3.1. Qualitative Analysis

3.1.1. The digital transformation and development of the cultural industry with the help of NFT

According to the 2021 annual academic report of China Cultural Industry Research, with the in-depth implementation of the digitalization strategy of the cultural industry, the role of digital technology in promoting the development of the cultural industry has become more and more significant. Wait for new business. The metaverse is an important application environment that promotes the landing of virtual games, and NFT plays an important role in the metaverse.

Taking the application of NFT in art as an example, due to the epidemic's impact, the global art market has been suspended, and art trading venues represented by auction houses and galleries are facing the risk of closing, losing money, or even closing. However, this has also brought a good impact, that is, it has promoted the application of NFT in the art market, and the major NFT trading platforms are all active in the cultural market, and the transaction volume is amazing. At present, the application of NFT in the field of art is at the forefront, and in the future, it will focus on mining cultural value and improving the supervision system for further development.

3.1.2. NFT promotes the solution of inherent problems in the cultural industry

As known, the issues of rights confirmation, anti-counterfeiting, and traceability of works in the cultural industry have always existed and are difficult to solve completely. Using the unique attributes of NFT to chain cultural products can perfectly solve these problems. While promoting the transformation of copyright, NFT can also bring new opportunities to the cultural market in all aspects. First, cultural products can be traded more freely in the decentralized network platform through the application of NFT, which greatly improves the circulation of works; provide richer personalized application scenarios for cultural product transactions. In addition to the major application field of copyright, NFT can also promote the solution of inherent problems in the cultural industry for a long time in all aspects, thereby opening up new fields of the cultural industry.

3.1.3. Relevance of Jingtian Platform and Opensea platform management methods to the development of NFT

The Jingtian Platform focuses on the development and operation of IPs related to traditional culture in various high-quality countries and launched the "Treasure Plan" for the field of culture and museums in 2021, linking up with provincial museums and releasing digital products with distinctive cultural creations. Its digital collections cover a wide range of fields, including cultural tourism, sports, art, etc. Opensea is a large trading platform for NFT, which relies on charging 2.5% transaction fees for seller transactions to make profits, with historical sales of over \$10 billion and a very high market share in NFT transactions, greatly promoting the development of NFT. Both Jingtian and Opensea provide a broad platform for the development and circulation of NFT and help NFT to expand in different fields. To sum up, the development of the two complement each other.

3.2. Quantitatively analyze the relationship between platform users and culturally related terms

3.2.1. Quantitative analysis of the relationship between the Jingtian Platform and the popularity of entries

3.2.1.1. Quantitative analysis process

This study uses user data from the previously used digital exhibit platform Official Accounts and data from Baidu's popularity. Five projects for sale on the digital exhibit platform are selected to collect entries related to these five projects, including Small Wild Goose Pagoda, Forbidden City, Chang E, Ren Bonian, Jinsha Site

Museum, and searched for data related to them on Baidu Index. The search volume of these terms and the data of the active users of the whale scouting platform are linearly fitted and correlated. Ultimately, the results are as follows:

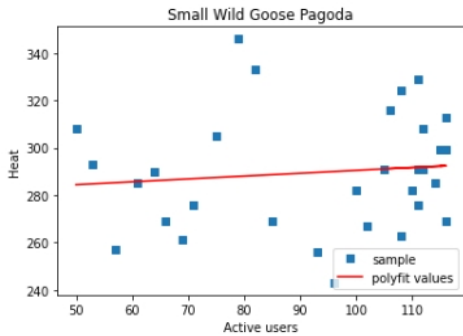


Figure 1 Analysis of the popularity of the Small Wild Goose Pagoda and active users on the Jingtian Platform.

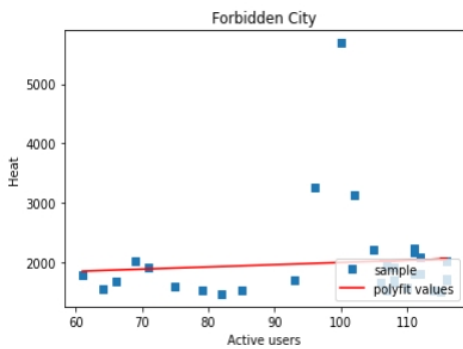


Figure 2 Analysis between the popularity of the Forbidden City and active users on the Jingtian Platform.

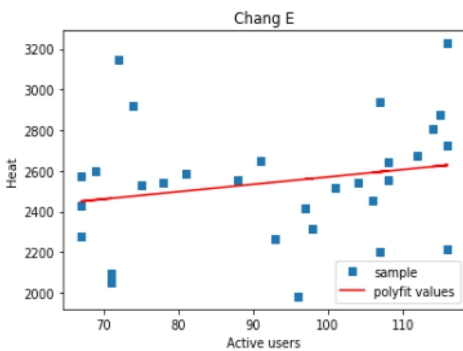


Figure 3 Analysis between the popularity of Chang E and active users on the Jingtian Platform.

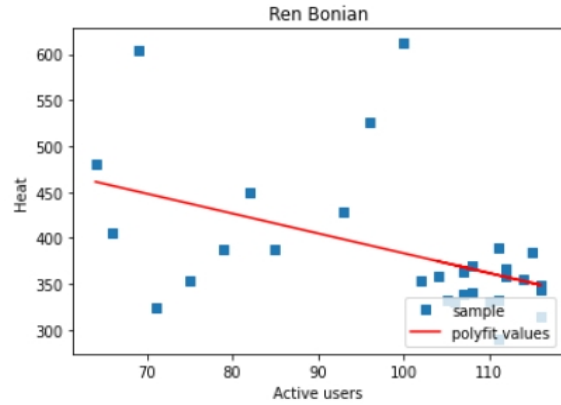


Figure 4 Analysis of the popularity of Ren Bonian and active users on the Jingtian Platform.

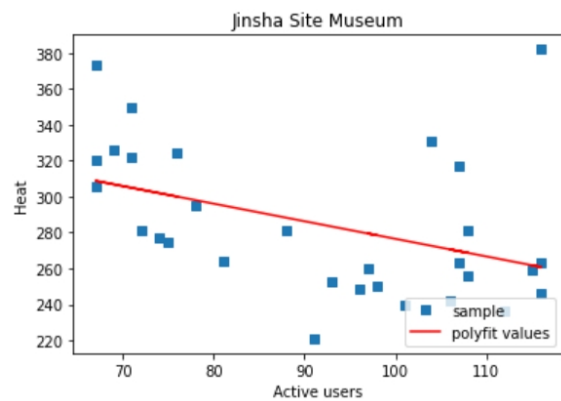


Figure 5 Analysis of the popularity of the Jinsha Site Museum and active users on the Jingtian Platform.

3.2.1.2 Result analysis:

It can be observed that the slope of the fitting function is low, and the correlation coefficient is much less than 1, indicating that the degree of positive correlation between the two data is not obvious. Therefore, it can be inferred that the positive correlation between the number of active users of the digital exhibit platform and the popularity of the entry is not obvious. The detailed information of this research is as follows.

Table 1. Linear fitting and positive correlation analysis of user volume and word popularity on the Jingtian platform

Entry name (searched in Chinese)	Fit function (Coefficient to two decimal places)	Correlation coefficient (two decimal places)
Small Wild Goose Pagoda	$y = 0.12x + 278.30$	0.11
Forbidden City	$y = 3.74x + 1617.10$	0.03
Chang E	$y = 3.63x + 2208.06$	0.03
Ren Bonian	$y = -2.16x + 599.68$	-0.47
Jinsha Site Museum	$y = -0.98x + 374.30$	-0.41

3.2.2. Quantitative analysis of the relationship between the number of users of the Opensea platform and the popularity of entries

3.2.2.1. Quantitative analysis process

After reading various current affairs news, it is found that many celebrities in the art circle have entered the NFT overall situation and cooperated with related companies to sell their related NFT artworks on Opensea. Several superstars are selected including Jay Chou, Zhang Daqian, and Japanese artist Takashi Murakami. Data analysis is based on the number of users of Opensea and the popularity of search terms of their names. The results are shown below.

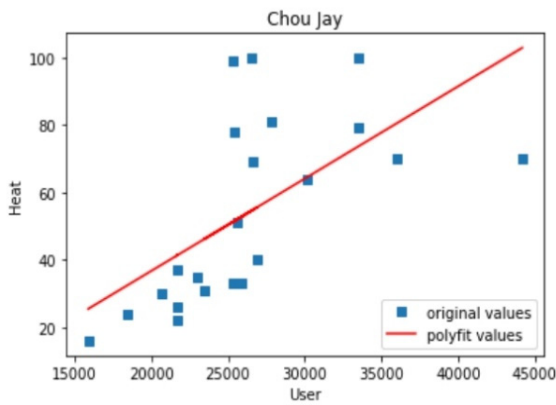


Figure 6 Analysis of the popularity of Chou Jay and active users on Opensea.

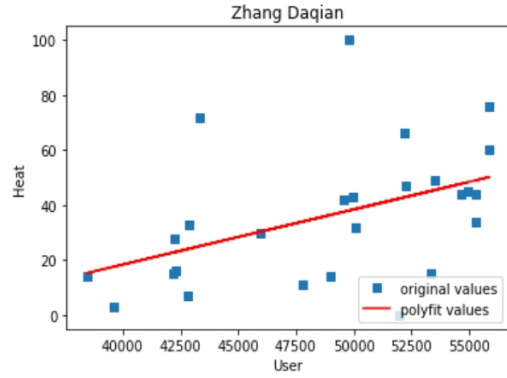


Figure 7 Analysis between the popularity of Zhang Daqian and users on Opensea.

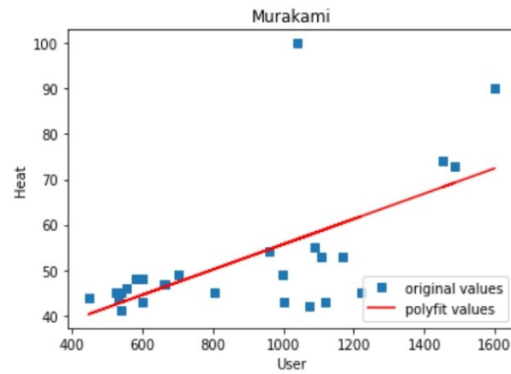


Figure 8 Analysis of the popularity of Murakami and active users on Opensea.

It can be observed that the slope of the fitting line is higher, and the degree of inclination is more obvious than that of the Jingtian Platform. And Opensea has a lot more users than the Jingtian Platform, and its attention is far greater than that of the Jingtian Platform. The correlation coefficient for these data is shown as follows:

Table 2. Linear fit and positive correlation analysis of user volume and word popularity of Opensea platform

Entry name (searched in English)	Fit function (Coefficient to two decimal places)	Correlation coefficient (two decimal places)
Chou Jay	$y = 0.0027x - 18$	0.62
Zhang Daqian	$y = 0.0020x - 62$	0.45
Murakami	$y = 0.028x + 28$	0.63

3.2.2.2. Analysis of results

Through the functions and correlation above, it can be inferred that the positive correlation coefficient between Jay Chou and Takashi Murakami's entries and Opensea's user volume is greater than 0.5, which has reached a moderate correlation, while Zhang Daqian's entry has a low degree of correlation with the platform's user volume. In short, the positive correlation of this set of data is much better than that of the Jingtian Platform.

3.3. Quantitatively analyze the number of platform users and the stocks of listed companies related to culture

3.3.1. Correlation between Alibaba's US stock data and user data of the Jingtian Platform

3.3.1.1. Quantitative analysis process

This part uses Python as the main tool to collect and process data, establishing and analyzing regression models and correlations.

The specific process of analysis is roughly as follows: first, obtain the specific data of Alibaba's US stock price and the number of users of the Jingtian Platform in batches through Python, then clean the data, take all the dates with specific data in both data sets, and get a header as the date - A table of stock prices - number of users.

The sorted data is shown in the following graph, the horizontal axis is the date, the vertical axis is the price of the stock and the number of users on the platform, the blue dot set is the stock data, and the green dot set is the user data.

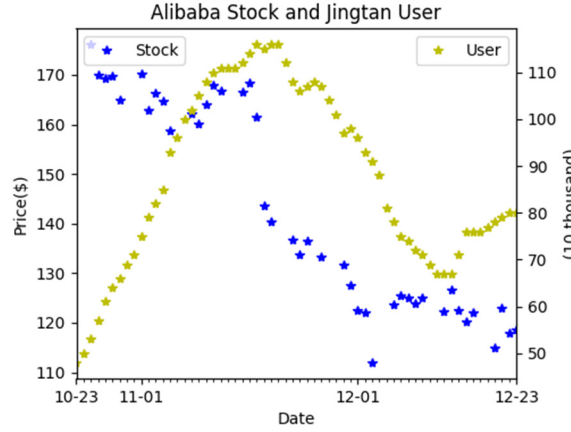


Figure 9 Analysis between Alibaba stock and User on Jingtian.

Then, through the statsmodels module of Python, the stock data is used as the dependent variable, and the user data is used as the independent variable to establish an OLS model. The specific model is as follows. Among them, $P_{stock}^{Alibaba}$ represents the stock price of Alibaba, N_{user} represents the number of users of the Jingtian

Platform, and β_0 and β_1 are the regression coefficients, and ϵ is the random error term.

$$P_{stock}^{Alibaba} = \beta_0 + \beta_1 \times N_{user} + \epsilon \quad (1)$$

The results after the regression are shown in the following figure.

Table 3. Specific analysis results for the stock price of Alibaba and user volume of Jingtian Platform

Independent variable	Coefficient	$P > t $
Intercept	318.1588	0.000
User	0.0009	0.001

Linear model Adj. $R^2 = 0.117$

Finally, the fitting function between stock data and user data is established by the Python matplotlib module according to the above regression results as follows, the horizontal axis is the number of users, the vertical axis is the stock price, the blue point set represents the stock price under different numbers of users, and the red straight line is the fitting function.

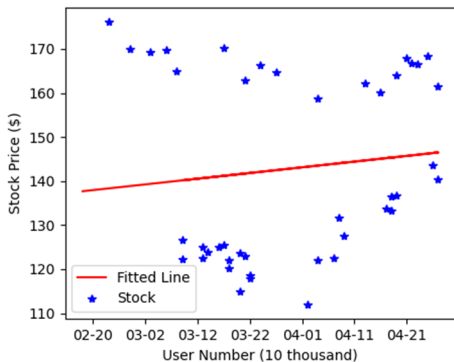


Figure 10 Linear regression analysis of Alibaba stock price and user volume of Jingtian Platform.

3.3.1.2. Analysis of results

After the above regression model is established, it can be seen that the R^2 of the regression model is 0.013. Although the value is greater than 0, it means that there is a positive correlation between the two, but it also means that only 1.3% of the change in the stock data can be determined by the number of users. Explanation; at the same time, the value of the coefficient in the regression model is 0.1293, but its P-value is 0.47, which is much larger than 0.05, indicating that the probability that the coefficient of the independent variable is equal to 0 is 47%, that is, the correlation between the independent variable and the dependent variable is not significant is very likely.

Through the above analysis, it can be concluded that there is no significant correlation between Alibaba's stock data and the number of users of the Jingtian Platform. It can be considered that the number of users of the Jingtian Platform does not have a significant impact on Alibaba's stock data.

3.3.2. Correlation between Poly Culture Group's HK stock data and user data of the Jingtian Platform

3.3.2.1. Quantitative analysis process

This part also uses Python as the main tool to collect and process data, establishing and analyzing regression models and correlations.

The specific process of analysis is roughly as follows: first, obtain the specific data of Poly Culture Group's HK stock price and the number of users of the Jingtian Platform in batches through Python, then clean the data, take all the dates with specific data in both data sets, and get a header as the date - A table of stock prices - number of users. The sorted data is shown in the following graph, the horizontal axis is the date, the vertical axis is the price of the stock and the number of users on the platform, the blue dot set is the stock data, and the green dot set is the user data.

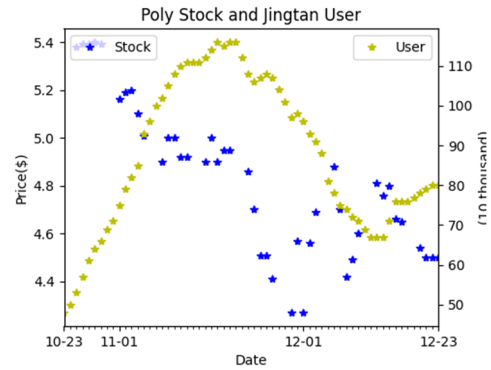


Figure 11 Analysis between Poly stock and User on Jingtian.

Then, through the statsmodels module of Python, the stock data is used as the dependent variable, and the user data is used as the independent variable to establish an OLS model. The specific model is as follows. Among them, P_{stock}^{Poly} represents the stock price of Poly Culture, N_{user} represents the number of users of the Jingtian Platform, and β_0 and β_1 are the regression coefficients, and ϵ is the random error term.

$$P_{stock}^{Poly} = \beta_0 + \beta_1 \times N_{user} + \epsilon \quad (2)$$

The results after the regression are shown in the following figure.

Table 4. Specific analysis results for the stock price of Poly Culture and user volume of Jingtian Platform

Independent variable	Coefficient	$P > t $
Intercept	131.4887	0.000
User	0.1293	0.470

Linear model Adj. $R^2 = 0.013$

Finally, the fitting function between stock data and user data is established by the Python matplotlib module according to the above regression results as follows, the horizontal axis is the number of users, the vertical axis is the stock price, the blue point set represents the stock price under different numbers of users, and the red straight line is the fitting function.

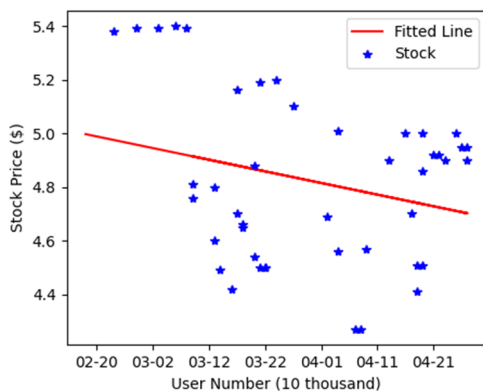


Figure 12 Linear regression analysis of Poly Culture stock price and user volume of Jingtian Platform.

3.3.2.2. Analysis of results

After the above regression model is established, it can be seen that the R^2 of the regression model is 0.065. Although the value is greater than 0, it means that there is a positive correlation between the two, but it also means that only 6.5% of the change in the stock data can be determined by the number of users. At the same time, the value of the coefficient in the regression model is 0.0043, but its P-value is 0.094, which is much larger than 0.05, indicating that the probability that the coefficient of the independent variable is equal to 0 is 9.4%, that is, the correlation between the independent variable and the dependent variable is not significant is very likely.

Through the above analysis, it can be concluded that there is also no significant correlation between Poly Culture Group's stock data and the number of users of the Jingtian Platform. It can be considered that the number of users of the Jingtian Platform does not have a significant impact on Poly Culture Group's stock data.

3.3.3. Correlation between Facebook's US stock data and user data of the Opensea Platform

3.3.3.1. Quantitative analysis process

This part uses Python as the main tool to collect and process data, establishing and analyzing regression models and correlations.

The specific process of analysis is roughly as follows: first, obtain the specific data of Facebook's US stock price and the number of users of the Opensea Platform in batches through Python, then clean the data, take all the dates with specific data in both data sets, and get a header as the date - A table of stock prices - number of users. The sorted data is shown in the following graph, the horizontal axis is the date, the vertical axis is the price of the stock and the number of users on the platform, the blue dot set is the stock data, and the green dot set is the user data.

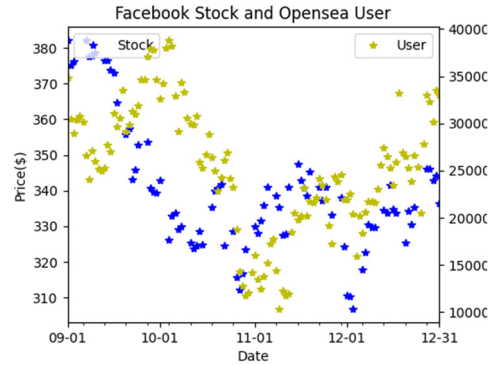


Figure 13 Analysis between Facebook stock and User on Opensea.

Then, through the statsmodels module of Python, the stock data is used as the dependent variable, and the user data is used as the independent variable to establish an OLS model. The specific model is as follows. Among them, $P_{stock}^{Facebook}$ represents the stock price of Facebook, N_{user} represents the number of users of the Opensea Platform, and β_0 and β_1 are the regression coefficients, and ϵ is the random error term.

$$P_{stock}^{Facebook} = \beta_0 + \beta_1 \times N_{user} + \epsilon \quad (3)$$

The results after the regression are shown in the following figure.

Table 5. Specific analysis results for the stock price of Facebook and user volume of Opensea Platform

Independent variable	Coefficiency	P > t
Intercept	318.1588	0.000
User	0.0009	0.001

Linear model Adj. $R^2 = 0.117$

Finally, the fitting function between stock data and user data is established by the Python matplotlib module according to the above regression results as follows, the horizontal axis is the number of users, the vertical axis is the stock price, the blue point set represents the stock price under different numbers of users, and the red straight line is the fitting function.

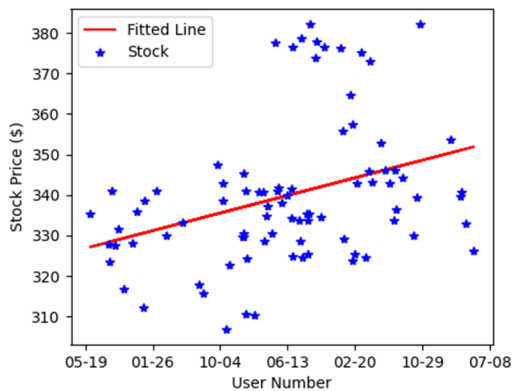


Figure 14 Linear regression analysis of Facebook stock price and user volume of Opensea Platform.

3.3.3.2. Analysis of results

After the above regression model is established, it can be seen that the R^2 of the regression model is 0.117. As the value is greater than 0, it means that there is a positive correlation between the two. Also, it means that 11.7% of the change in the stock data can be determined by the number of users. At the same time, the value of the coefficient in the regression model is 0.0009, and its P-value is 0.001, which is smaller than 0.01, indicating that the probability that the coefficient of the independent variable is equal to 0 is only 0.1%, that is, the correlation between the independent variable and the dependent variable is significant is very likely.

Through the above analysis, it can be concluded that there is a significant correlation between Facebook's stock data and the number of users of the Opensea Platform. It can be considered that the number of users of the Opensea Platform has a significant impact on Facebook's stock data.

4. CONCLUSION

4.1. Conclusion

Through the research above, there is no significant positive correlation between the user volume of the Jingtian Platform and Poly Culture Group's stock price and word search volume. This indicates that the Jingtian Platform currently cannot effectively bring economic benefits to cultural enterprises, nor can it promote the heat of cultural elements. Thus, it can be inferred that NFT cannot currently promote the development of the Chinese cultural industry. Secondly, it is also found that the Jingtian Platform has not changed the declining trend of Alibaba's stock either. This means that the Chinese NFT is less capable of promoting the economic benefits of the cultural industry and the popularity of cultural elements.

On the contrary, the western platform Opensea has a positive correlation between its user volume and Facebook stock price, and a positive correlation with the popularity of artists such as Jay Chou. It shows that this platform can bring economic benefits to the cultural industry and also promote the heat of artists and facilitate the spread of culture.

By comparing the two platforms, it can be inferred that western NFT is better than the Chinese NFT industry in promoting the development of the cultural industry.

4.2. Error analysis

Since China's NFT became popular in 2021, there are data about NFT so far. Therefore, this paper has also collected a few samples, which will generate errors. Therefore, the research on Chinese NFT is limited to analyzing only one listed company, Poly Culture Group, and five projects, which also generates some errors in the results.

In addition, since Poly Culture, Facebook and other companies do not just have NFT as their business. Other businesses also affect the share prices of these listed companies, so some errors are also generated.

4.3. Further analysis and advice for the Chinese government

Based on the research, NFT is not currently contributing to the cultural industry in terms of the results of quantitative analysis in China. While NFT is beneficial to the cultural industry qualitatively and in terms of quantitative analysis in western countries. It can be inferred that because Chinese NFT is just starting, the heat and technology of NFT are not yet completed. Therefore, the role of NFT in the cultural industry is not yet explicit.

At the same time, it is noted that the Chinese policies and western policies on NFT are different. Foreign countries have a laissez-faire attitude towards bitcoin and blockchain due to the concept of the free market, so NFT based on blockchain technology has been able to develop rapidly, for it is not bound by policies.

In contrast, the Chinese government has banned Bitcoin trading. So NFT, which has similar technology to Bitcoin, has also suffered the ripple effect. Although China has not banned NFT transactions, various entrepreneurs are cautious about NFT due to the pressure on the policy risk of NFT. Under such circumstances, it is difficult for NFT to be fully developed, which is the reason why the role of China's NFT in the cultural industry is not obvious.

Therefore, considering the positive impact of NFT, this paper suggests that China should use policies to escort NFT by eliminating policy risks, to motivate more companies to invest in NFT. In this case, the Chinese government can promote the development of China's cultural industry and enhance China's soft power.

4.4. Future study

In the following study, the analysis of NFT and the cultural industry will be continued by selecting more NFT platforms and collecting more samples for analysis. Listed companies that have business about culture such as Facebook will also a focus on considering the impact of other factors on these listed companies related to the cultural industry, making the analysis of NFT more accurate.

Besides, other approaches will also be taken including distributing questionnaires to collect opinions from the public about the role of NFT in promoting the cultural industry.

In addition, an in-depth understanding and analysis of the technologies related to blockchain and NFT will be conducted to understand the technical principles and development prospects. In future research, new ways can be taken to promote the development of NFT and the research can help promote the development of the cultural industry.

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