



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

IJIRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 11, Issue 4, April 2022

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.118



9940 572 462



6381 907 438



ijirset@gmail.com



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A Comprehensive Study on the Evolution of the NFT Market & Future Prospects

Smriti Agrawal¹, Mohneet Sandhu¹

B.Sc. Applied Statistics & Analytics, Sunandan Divatia School of Science, SVKM's NMIMS, Navi Mumbai, India ¹

ABSTRACT: A time when everyone's activities were limited due to Covid-19 pandemic, NFTs became a center of attention for wallet holders in the cryptocurrency world. Our research paper is motivated by observing an upsurge in the role of investors, traders and artists in the NFT market since mid 2020. So in order to provide a wider view of NFT marketplace we have visualized it by 1)analyzing total profits/losses incurred by 5 major sectors, 2)proportion of various blockchains in NFT market, 3)sales & transaction analysis of top 250 NFTs, 4)correlation between various aspects of the market . In the final analysis of the paper we find that NFTs are sweeping across industries and have become a sensation for the crypto investors.

KEYWORDS:NFTs, NFT Market, Blockchain, Ethereum

I. INTRODUCTION

Living in the techno-social world of 2022 we come across various memes, artworks, infographics and other forms of digital assets on a daily basis. But have you ever pondered about the origin of these digital properties or who created them? The answer to all these questions lies in NFTs.

Non - Fungible Tokens (NFTs) are a unique version of digital assets that are traded on Blockchain and have distinct identification codes and metadata that distinguishes them from each other. Its 'digital smart contract' and 'mutually not interchangeable' characteristics are what makes it different from other crypto assets.

Starting from Quantum, the first known NFT minted in 2014 to various Blockchains like Ronin, Flow , Solana etc. building their own version NFTs shows that NFTs have come a long way in just 7 years. The scarcity of limited edition digital resources and the constant aspiration of crypto investors to increase the value of their digital economy has created an inexorable hype for NFTs. Not only being a unique component of digital ownership but also the ability to distribute, license, or even resell make it a cherry on top for the NFT propaganda.

The aim of this study is to reflect on the latest trends, development, growth and profitability of NFTs market on the basis of associated variables. Since the NFTs market bloomed in a way that very few people anticipated since the beginning of the last year, the study also aims to foresee the scope of NFTs in the near future.

II. DATA AND METHODOLOGY

For this study a sector-wise analysis of the NFTs market was conducted to understand the profit and loss incurred by different NFTs categories. Further, a breakdown of the number of sales between 4 of the main NFT blockchains in 2021. Data for this purpose was collected from www.nonfungible.com [1].

To analyze the proportion of NFTs that have crossed the 100 million benchmark a sales & transaction analysis of top 250 nfts that are currently being traded on ethereum was done. Data for the same was collected from www.cryptoslam.com[2] .

The dataset comprised observations between January 01,2018 to December 31,2021 for volume of NFT sales in USD, the number of active market wallets holding or interacting with NFTs, volume of Ethereum (ETH) and Bitcoin (BTC) in USD. The first two metrics were collected from NonFungible Corporation[1] and the next two from the cryptocurrency exchange www.coingecko.com[3]. ETH was used because it accounts for a majority of the

NFT market and thus is the most relevant currency for issuing and trading NFTs and BTC as it is the most substantial and significant cryptocurrency. Further, the analysis of dependencies between the cryptocurrency market and active market wallets, sales USD and active market wallets was done by computing the Karl Pearson correlation coefficient.

III. ANALYSIS 1: TOTAL PROFITS/LOSSES INCURRED BY 5 SECTORS OF NFT MARKET[1]

Exemplar NFTs market is broadly divided into 5 sectors namely- Art, Collectibles, Gaming, Metaverse and Utilities. In order to get a deeper insight about the profitability of the NFTs market, an analysis of total profits and total losses incurred in these sectors is done.

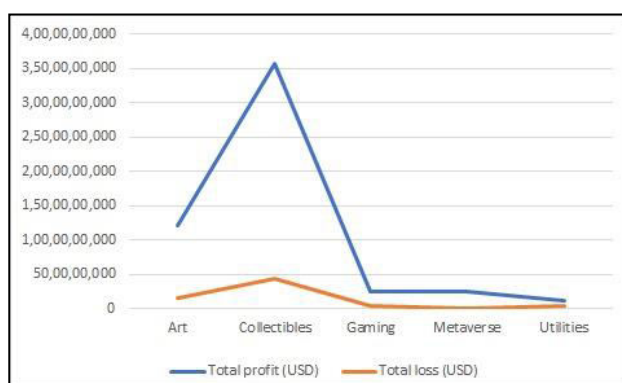


Fig. 1. Total Profit & Losses Incurred in different sectors of NFT market.

From Fig. 1 the inference made is that the total profit has reached up to 3.5 Billion USD in the collectibles sector and utilities have observed the minimum profit of around 10 million USD. On the other hand, The highest loss of around 50 million USD has been observed in the collectibles sector. But overall, the difference between total profits and the total losses is very large, making NFTs market a volatile yet profitable investment portfolio.

IV. ANALYSIS 2: PROPORTION OF VARIOUS BLOCKCHAINS IN THE NFTs MARKET[1]

NFTs are a type of cryptocurrency-based token traded on blockchain. It is traded on multiple blockchains. So, further is an analysis of top blockchains to determine the major market holders for trading NFTs.

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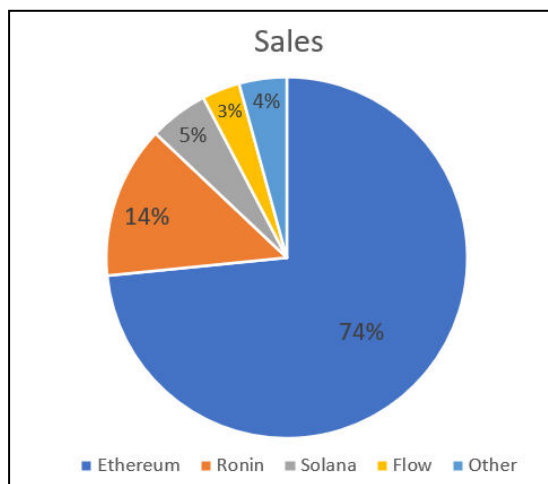


Fig. 2. Proportion of NFTs sales in various blockchains.

Ethereum remains by far the main blockchain when it comes to NFT sales with 74% of the entire market. Ronin (Axie Infinity) took an important place on stage in less than a year and represented 14% of the market, on the other hand Flow (NBA TopShot, MotoGP) represent 3% of the volume.

V. ANALYSIS 3: SALES-TRANSACTION ANALYSIS OF TOP 250 NFTs TRADED ON ETHEREUM[2]

From Fig. 2 the inference obtained showed that the Ethereum blockchain holds the major market for trading NFTs. NFTs have a very unstable price structure; from being minted for free (CryptoPunks in 2017) to being sold for \$69.3 million to a single owner (Everydays: The First 5000 Days in 2021). Henceforth, a sales & transaction analysis of top 250 nfts collections that are currently being traded on ethereum has been performed.

Here all these NFTs collections have been divided into 2 major groups. These groups are:

A. 100 Million Club - It includes all those collections whose total number of transactions are either equal or greater than 100 million.

B. Not in 100 Million Club - It includes all those collections whose total number of transactions are lesser than 100 million.

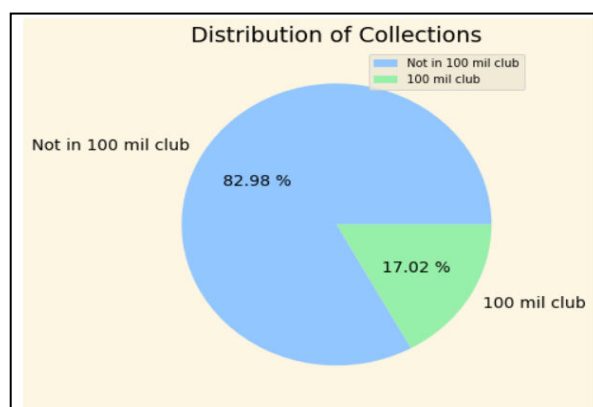


Fig 3. Distribution of NFTs in the respective groups.

Through Fig. 3 we observe that 17.02% i.e. almost 42 out of 250 NFTs have crossed the 100 million club and the remaining 208 NFTs do not belong to the 100 million club. Hence, a major proportion of NFTs have experienced less than 100 million transactions.

Moving forward here is a visual representation of average sales of these NFTs.

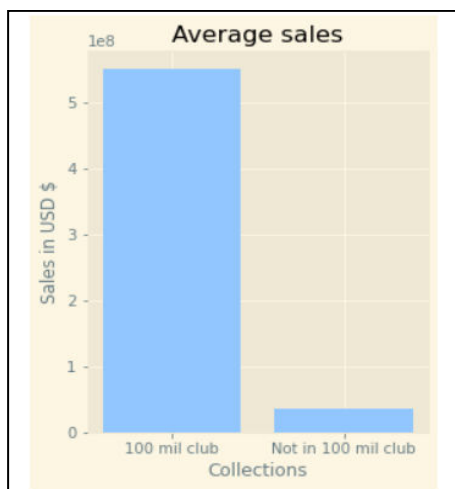


Fig 4. Average sales of top 250 NFTs on Ethereum.

Average sales of the 100 million club is \$550,188,260. The NFT Collection having maximum sales is Axie Infinity. Total sales of Axie Infinity are \$4,037,689,765.

The observations from Fig. 3 and Fig. 4, leaves us to question 'does more number of transactions prove more sales?'

So to get a clarity on the above point we found correlation between sales and transaction for NBA Top Shot as it has 18055341 transactions (Highest amongst all 250 NFTs) and CryptoPunks that has 20589 transactions (Relatively lower transaction as compared to other NFTs).

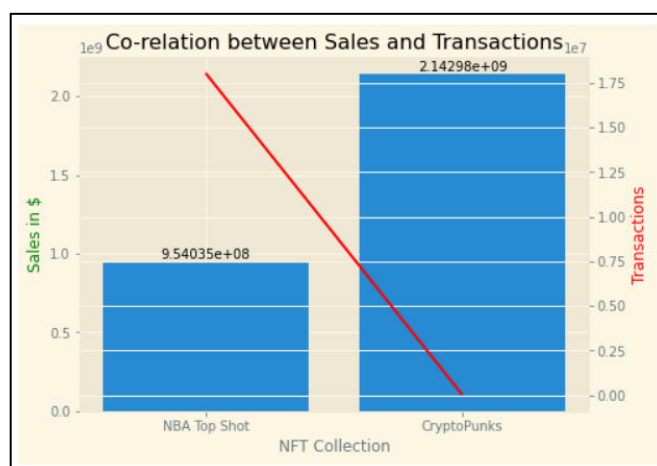


Fig 5. Correlation between sales and transactions for NBA Top Shot and CryptoPunks.

From Fig. 5 it is clear that there is a high negative correlation between sales and transactions for NFTs. It can also be comprehended with the fact the sales of NFTs is more or less similar to the concept of auction i.e. the potential buyer offering the higher money amount for the NFTs and gets the ownership. Hence, this analysis proved that more transactions does not necessarily lead to more sales.

VI. ANALYSIS 4: KARL-PEARSON'S CORRELATION[1][3]

User engagement is one of the most crucial aspects to determine the scope of almost any type of market. In digital markets users own a digital wallet through which all types of transactions take place. Hence keeping a track on the active market wallets ensures the participation and interest of users for particular digital asset(s). In order to determine the user interaction in NFT market an analysis of sales/volume and active market wallets has been conducted by using Karl Pearson correlation coefficient to determine the level of relation between the specified variables.

S.No.	Variable 1	Variable 2	Correlation Coefficient
1.	Sales (in USD)	Active Market Wallets	0.95
2.	Ethereum Total Volume	Active Market Wallets	0.12
3.	Bitcoin Total Volume	Active Market Wallets	0.04

Table 1: Karl-Pearson's Correlation Coefficient

From Table I, the results show a low co-movement with coefficients around 0.04 and 0.12 between bitcoin and ethereum with active market wallets respectively; that is, the relation is practically non-existent. We observed almost no volatility transmission effects between cryptocurrencies and NFT trade. Thus NFTs are mainly independent of shocks from Ethereum and Bitcoin. Though as compared to Bitcoin, Ethereum does show a slightly higher correlation

coefficient which is due to the fact that Ethereum accounts for the majority of the NFT market. There is a very high positive correlation between the total sales of NFTs and the active market wallets which implies that as the number of active market wallets increases Sales of NFTs increases as well.

VII. CONCLUSION

In recent years, NFTs have tapped into the cultural need for new content, new experiences, new entertainment, and new topics of conversation, particularly at a time when activities are more limited due to the pandemic.

The findings of our study indicated that the NFTs are the largest tradables on the ethereum blockchain along with the fact that they are highly profitable as the previous total profits are far more higher than the previous total losses. NFTs are a more secure way to buy and sell digital properties as they are secured with complicated codes that cannot be altered by anyone.

But every coin has two sides. NFTs unregulated and the mania surrounding them may lead to volatility: buyers may purchase an expensive NFT only to discover later that it's not worth much. NFTs aren't readily exchangeable for cash, so liquidity is an issue. Since NFTs started to gain hype in the year 2020-21 therefore we can't really predict what the future is gonna look like.

A high negative correlation between sales and transactions indicate that NFTs have become a sensation. Digital or crypto investors are always keen to grab an opportunity that would increase the value of their digital money to keep up with the trend. Notably, it is relevant to highlight that the increase of IGOs, and the extreme positive performance of NFTs, seem to indicate the beginning of a new crypto bubble. Thus, researchers and policymakers should continue analyzing the behavior of this market segment.

VIII. ACKNOWLEDGEMENT

We would like to express our gratitude to NMIMS for giving us this golden opportunity and a special thanks to Prof. Amrita Banerjee whose help, stimulating suggestions and encouragement helped us in conducting a meaningful research. We also sincerely thank for the time spent proofreading and correcting our many mistakes. All in all, we would like to thank everyone involved in this project directly or indirectly and helped us with their suggestions to make this research better.

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