

OTDK-dolgozat

2023

ANDRÁSSY GYULA NÉMET NYELVŰ EGYETEM
MANAGEMENT AND LEADERSHIP MSc

**A HAGYOMÁSOS ÉS NFT ALAPÚ MŰKINCSPIACOK
HASONLÓSÁGAINAK ÉS KÜLÖNBSÉGEINEK MEGÉRTÉSE**

**THE POINTS OF NFTS AND WHERE TO FIND THEM:
UNDERSTANDING THE DIFFERENCES AND SIMILARITIES OF THE
TRADITIONAL AND NFT BASED ART MARKETS**

Bendicskó Lilla

Konzulens: Borsos András PhD, dr. Sárvári Balázs

Kézirat lezárásának dátuma: 2022.04.19.

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*“Of course it is happening inside your head, Harry,
but why on earth should that mean that it is not real?”*

Albus Dumbledore

1. INTRODUCTION

If you had to describe the 21st century in one word, it would be FAKE. Fake news is all over the internet, on the radio, lies in advertising, statistics, people getting plastic surgery to make themselves look different, real communication is dying out. It is interesting that along with fake, this is also the age of high tech. Technology is the new religion, the basis of our thinking, the determinant of our everyday life. These two things also define what we call fine art. It is changing the way we look at it, our values, our definition, and what is more, our historical knowledge about it. Because nowadays, it takes only a matter of moments to discover that something is a fake. And much less often, that it is original. New trends have also emerged, both stylistically and technologically. And this is more radical than any revolution that has ever taken place, not only in terms of recreating the legacy of the old masters, but also in terms of creating a market with completely new tools and new rules of the game.

Art, including fine art, paintings, etc., has always been seen somewhere as a symbol of truth, of authenticity. The artist's vocation should be to show the true face of the times. Film director Akira Kurosawa summed this thought beautifully: “To be an artist means never to look away”. But somehow this abstract point of view started to fade away as we forget the meaning and essence of art. In parallel with this, we must ask ourselves: what is exactly the value of art. Is it the historical value of creations, handmade objects, the fantasy, or ability to represent the world or is it something that develops together with the humankind, growing into something that is valuable for people in that very moment of the age?

Defining the art itself is only slightly harder than drawing borders to the concept of art market. This is one of the most mysterious economical phenomena, an inexhaustible storehouse of secrets, a harmony of sophisticated relationships, a wealth of sensitive information. And now this already complex issue has been further expanded by the latest innovations, which now extend well into the realm of digital art.

In recent years, one could have heard more and more about so-called NFTs, some of which are increasingly being referred to as "digital art" in the public discourse. At the same time, there are also more and more skeptical voices: "is it art?", "I don't understand why someone would pay horrendous sums of money to buy something that can only be seen on a laptop", "but if I make a print screen of it, I can still watch it, can't I?".

Therefore, it is very interesting to look at how the world has changed: what can be considered a work of art today? What are the characteristics of the art markets and, in the light of new trends, can the NFT art markets actually be considered art markets? The research will explore the similarities and differences between the classical art market and the NFT art market. The methodology will be to compare the markets based on certain specific characteristics. The main question is: can the NFT art market be considered an art market based on the attributes that have been circulated? Or are they really two different things, similar only in appearance but not in substance? The aim is to get a detailed picture of what is considered to be an art market and how far it can be distinguished from the evolving technologies.

The relevance of the topic is self-evident: creation, artistic objects and concepts, permeate the whole history of humankind. They are indicators of their own time, of societies, cultures and human identity in general. For this reason, the commercial practices that have developed and the drastic expansion and transformation of the concept of the work of art may also have important social dimensions that will leave an imprint about us, our time, for posterity.

2. RESEARCH METHOD

This research seeks to answer the question of whether NFT art markets can be considered art markets in the classical sense of the word. It will explore the similarities and differences between traditional art markets and NFT art trading, the dynamics that drive them, and the dominant motivations and influences.

In this research, fine art will be understood in the narrower context, i.e. as visual art. According to Zorloni (2013), fine art is defined as a kind of collectible that satisfies the needs of a particular market niche, while also having a symbolic function. Visual art, on the other hand, includes within this, "exposed to and appreciated by sight, for instance the different art forms that arise from painting and sculpture". (Zorloni, 2013, p. 2) Within this, for the sake of comparability with NFTs, it will be mainly paintings.

Activities in the art market are wide-ranging and heterogeneous. As the NFT art market will be currently compared with the traditional one, this research will be mostly concerned with the commercial transactions in the primary and secondary market, with a strong focus on contemporary art. In case of contemporary art, the exact stylistic definition of that is difficult to define, as opinions are very divided, even between the two largest auction houses, Christie's and Sotheby's. (Zorloni, 2013) However, the definition of the contemporary market is a little simpler. This is "an aggregate of such size and complexity that it can be considered as a cluster of operators of varying value and importance, offering, for different purposes (with commercial or cultural goals) and in appropriate structures (galleries, auction houses, fairs, museums, foundations), luxury goods with a high symbolic content that are designed to satisfy an aesthetic and cultural need that the consumer expresses as an alternative use of his economic power." (Zorloni, 2013, p. 35) Based on this, it is understood to refer to works from the 1960s onwards. Within this, however, the focus will be on paintings, in parallel with the previous clarifications. This is, after all, the most highly rated and most heavily proportioned segment of contemporary art, so this narrowing will not be very distorting. (Zorloni, 2013)

In defining the criteria, the aim was to highlight those factors that are truly unique to the art market. The focus will therefore be on three broad categories: the product itself, the functioning of the market and the value.

2.1.PRODUCT

For each product, different characteristics will be summarized, for which Miracle's (1965) classification of product groups with different characteristics is a very useful guide. In the present research, the attributes relevant to works of art will be taken from Miracle's article. They represent a well-defined group of products on the market, even though there is an amazing diversity in both the art and NFT art markets. The characteristics used are broadly in line with most of Miracle's nine categories (Miracle, 1965, pp. 20), and based on his conclusion (Miracle, 1965, pp. 21-23), two extra elements (Promotion policy, Product variety) have been added to the list:

1. “Unit value
2. Significance of each individual purchase to the consumer
3. Time and effort spent purchasing by consumers
4. Rate of technological change (including fashion changes)
5. Technical complexity
6. Frequency of purchase
7. Rapidity of consumption
8. Extent of usage (number and variety of consumers and variety of ways in which the product provides utility)”
9. Promotional policy
10. Product variety

2.2. THE FUNCTIONING OF THE MARKET

Understanding how the market works is important because, for example, as Day's (2014) analysis highlights, market dynamics and anomalies are often a great way to highlight the specificities that influence them, which is particularly useful in the case of art. This is because art-related markets are difficult to compare with financial or commodity markets, as they do not (only) have monetary or functional value, but also a host of other characteristics that

influence the course of trade. (e.g. cultural value, changes in value, etc.) It should be noted that market functioning will be examined primarily in terms of trade. In this category, it is difficult to single out the characteristics studied in detail, as there are many interrelated explanations. So here the processes are compared and, without being specific, some attributes that can be named are highlighted: market players, motivations to buy, market anomalies, price, and network externalities. The latter is a very interesting approach that needs to be further elaborated.

It is rather not an obvious or straightforward thought to analyze the topic of art through network approach. However, there are examples for that (Fraiberger et al, 2018) and it also relatively easy to imagine art as a huge network of the society. The meaning is simple: art is alive by the people who care for it. It really needs the trade, the events, the connections – the lively actions - to be valuable, interesting or something that worth the attention and the money. Although by comparing an online and a mainly offline art market - encountering networks of different natures – it's necessary to understand if they are working in the same way, or even on the contrary: they are working quite differently.

Network effects can be best identified by observing the star phenomenon in both markets studied. The phenomenon, as defined by Adler (1985), occurs when a few players emerge who dominate a given market and earn extremely high returns. To complement this, stars also exist when only minimally more talented or similarly talented people earn disproportionately more than others. In conclusion, the star effect is attributed to the fact that the phenomenon arises in industries where knowledge is necessary for consumption, thus the flow of information between consumers is efficient when they have similar prior knowledge, which helps some well-known people, the stars, to become even more well-known, thereby generating and amplifying the phenomenon.

2.3. VALUE

The definition of value in art cannot be one-sided. This is because it is not just a means to a function, but something valuable in its own right, which cannot necessarily be expressed in monetary terms. This could be the aesthetic value of a work of art, which is the result of the way in which a picture is made of materials or the way in which it is made. (Nozick, 1981, pp. 162-164, cited in Füss, 2021) This aesthetic value arises from the intrinsic value of a painting. It is best defined as what the work of art elicits from the viewer. It depends on one's cultural background, emotions and personal experiences, education, etc. Intrinsic value is what reflects somewhere on the individual in discussions about artistic value, it represents individual value. (Bastoni, 2022) So whether it is digital or physical, old or new, this value influences the decision

about buying or liking a work of art or not.

Defining values is particularly important for art. At first it may seem a very subjective issue, but if the concept of value is broken down into different aspects, it becomes more comprehensible. Here, it is worth taking a look at Erwin Dekker's (2015) study, in which he uses two approaches that aim to define the value of art to form a third one.

The two starting approaches are the commercial and the economics of art approach. The former focuses mainly on the relative value of art in society, including the so-called intrinsic value. Crucially, it distinguishes art from other goods. In contrast, in the economics of art approach, the value of art is derived from consumption preferences, so that if many people value something, that something becomes available to them because artists working for profit will produce it. However, a recurring problem with this approach is the definition of non-monetary value. These give rise to a third perspective, the valuation approach, which deals with both the fact that the value of art is not fully reflected in prices and that it plays a special role in culture. It takes into account the uncertainty and the interpersonal and intersubjective issues that characterize art markets. (Dekker, 2015)

This shows that there are many ways to approach values and many aspects to consider. For this reason, the descriptions will also seek to identify cultural, intrinsic, and economic values.

3. TRADITIONAL ART MARKET

There are many perceptions of the art market: it is extremely mysterious and exciting, yet few people actually dare to "get in". Or maybe they just cannot, because if someone wants to buy the best pieces of art, you need a lot of capital. If we look at the media communication side of the art world, journalists are limited to sensationalism. Churchill's painting sold for a record amount. (Luckel, 2021) The Knoedler scandal broke - hundreds of paintings may have been forged. (Miller, 2016) The Mona Lisa was stolen - a world scandal! (McKenzie, 2013) In short, if the art market is under the noses of regular people, it's bound to be in connection with some fantastic event. However, when it comes down to it, very little is actually known about this truly fascinating and mysterious market.

Product

In general, art as a commodity is distinguished from the others. The heterogeneity is almost extreme, since each work of art is completely unique, no two are alike (if they are, it is a matter of counterfeiting or reproduction). However, this does not mean that they cannot be classified according to certain characteristics, such as the style in which they were made or the artist who created them. Hence the product variety is extremely high. Technical complexity results from the heterogeneity and diversity of styles. The aesthetic value that works of art represent is coupled with a set of social qualities: the mere fact that they can be viewed is a value or an experience. However - and this is the current focus - works of art can be sold, bought: in short, they can be traded. However, prices are mostly an expression of how much people are willing to pay and how many people want to buy them. This creates a hierarchy between works of art and artists. (Gérard-Varet, 1995)

In the trading process, several researchers have found that works of art are neither financial assets nor consumer goods. It is the use or purpose for which it is traded that makes it similar to one category or the other. This means that if one buys an art object for investment purposes, purely for the sake of a high long-term return, this makes the art object comparable to, for example, farmland. Whereas if someone buys a painting purely for its aesthetic beauty, they will look at it more from a consumer perspective. This is why some people consider that the art market is a paradoxical mixture of aesthetic and economic incentives. (Resch, 2011) Based on that the extent of usage could range from a purely investment focus to a purely aesthetics-based use, which includes some mixture of these.

Getting to know the product in the light of the defined categories is worth starting at the beginning, at the possible definition of the typical product. It is worth outlining what exactly the most typical product might be, to help you understand the different characteristics. In this case, we are talking about a painting, which is very likely to be contemporary. The painter is listed, but not a superstar, but his paintings sell at relatively good prices, even at the contemporary auctions of the major auction houses. So, the unit value is high, more precisely, the price can move in a very wide range, because such a creation would be a luxury for the average person. The significance of its purchase to the consumer depends on the artist's recognition and the individual's preferences for art consumption. It can be argued that it can be very high for the better painters. When buying art, one tends to choose either a safe investment (e.g. buying paintings by celebrities (Adler, 1985)) or to spend a lot of time and energy

searching for good works. If one is really competent in collecting, buying or trading, it requires an awareness and a background that can be acquired with a great investment of energy.

The frequency of purchase and rapidity of consumption are closely correlated with the liquidity of the artworks. The main reason for this is that if someone is looking for a liquid investment, they are likely to want to obtain liquid goods more quickly and to resell them quickly. Someone who buys an art object for aesthetic reasons will clearly not want to dispose of it in a short time, except in cases of *vis major*. It is therefore important to note that the art market is not liquid. On the one hand, as mentioned above, it takes a lot of time and energy to successfully buy as well as to successfully sell. This can take months. In addition, the value of artworks, although it increases over time, is only appreciable after a long period of time (Day, 2014). In addition, especially for high value paintings, the transaction costs of auction houses, for example, do not encourage a sale at a similar price to the purchase price - the seller would simply not come out of the transaction positively. So, the artwork as an investment is not liquid and therefore not frequent. (Resch, 2011, p. 71)

Art, like almost everything, is constantly changing. This can mean technological change, with the first video-based artworks, nowadays AI-created artworks, or even VR or blockchain-based artworks being a prime example. However, it is not only the production that changes, but also the interpretation, accessibility or even the current fashions. (Christie's, 2019) It's worth thinking about how much people's access to art has changed in just the last few decades: with the advent of the internet, it's just a click away to view any masterpiece, to visit major museums and to access millions of textual contents. The rate of technological change is therefore constant and relatively rapid.

Finally, the definition of promotional policy is very much related to the functioning of the art market. The most important thing to consider here is the platforms on which trading takes place, which requires the identification of art intermediaries, as shown in Figure 1. The most common intermediaries are dealers or auction houses, which implies that trading is either highly personalized or takes place in a regulated auction tailored to an elite tier.

The functioning of the market

The introducing of the art market can be approached from many angles, but in the case of this research, the focus is on its economic actors, functioning and dynamics, along with some basic regulatory provisions. This will be based on the article by Day (2014), which provides an excellent illustration of exactly what problems and operational anomalies cause the market to

function inefficiently. This approach is essentially based on the theory of efficient markets: the principle that all markets strive to be so, thereby continuously eliminating market anomalies.

Looking at the art market from an economic point of view, the first thing to understand is how it is different from the others, why it cannot be treated in the same way as, for instance, shares or classical tangible assets. The reason is very simple: works of art have not only monetary value, but also cultural and aesthetic value. Consequently, their valuation is also possible using a different approach, which has been the subject of professional debate in recent decades as to exactly how this is possible. Different evaluations play an important role in determining why art is valuable and what values define it most. (This topic will be discussed further on the basis of the study of Dekker (2015) and Zorloni (2013)).

A closer look at the art market, it is worth first outlining the players and the trading process. First, there are the artists, collectors, museums, and intermediaries (auction houses, dealers, etc.). It is their relationships that map out the network of the primary and secondary markets of the contemporary art market. In the case of the primary market, works can usually be bought directly from the artist's studio or at one of his exhibitions. In the case of the secondary market, the collectors, intermediaries, even museums, mentioned above, are the sellers and, in practice, the demand side. (Resch, 2011) Basically, the secondary market can mean much higher prices, more explicitly, the size of the primary market dwarfs that of the secondary market. (Day, 2014)

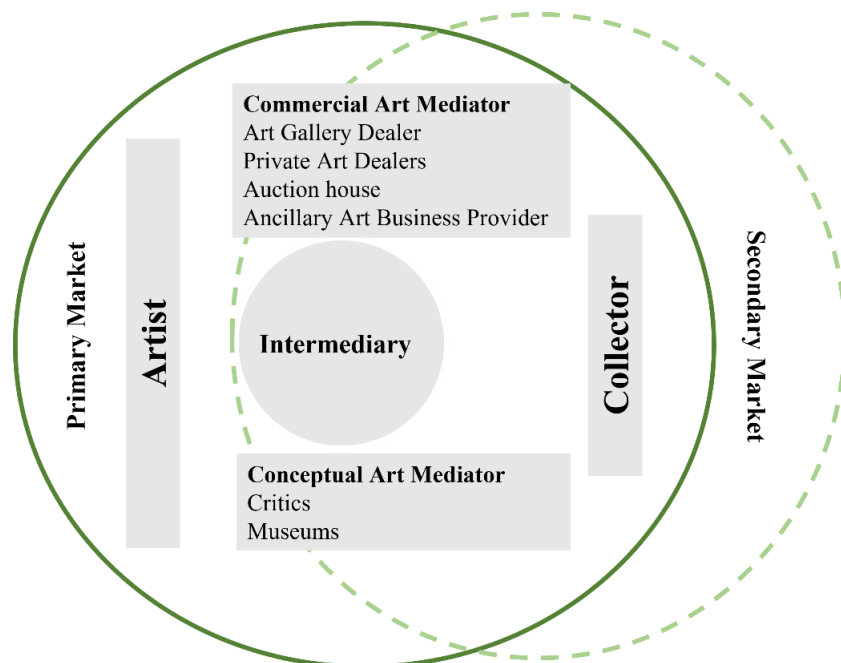


Figure 1 Players in the Art Market (Source: Resch, 2011, p. 48)

If the market is seen from an investor's perspective, it seems a risky business. Actually, it is. The value of an artwork depends on a lot of factors, which will be discussed later. However, value is a very fragile and volatile thing in this respect. Imagine a painting, for example: it could be damaged, it could be stolen, the artist's popularity could decline, it could turn out to be a forgery (even the shadow of suspicion could affect its value) ... These are all factors that rarely pose much risk, for example in the case of shares or other tangible investments. So, it would seem that investing in art is not exactly a safe bet. Overall, when compared to other investments, the average expected return is only medium. (Dimson and Spaenjerst, 2014) However, what is quite an interesting feature of artworks is that their value is expected to increase over time (unlike any other tangible asset). (Day, 2014)

What is particularly relevant in the case of the art market is the persistent market failure in its operation. The market is inefficient, which is because the information available is not all incorporated into the price, as it should theoretically be in efficient markets. This phenomenon is due to the fact that the market is full of secrecy, which is exacerbated by the way it operates. This may be because the relationship between buyers and sellers is very interesting: normally the ideal situation would be that the seller wants to sell the product for the highest possible price and the buyer wants to buy it for the lowest possible price. However, in the case of works of art, buyers adopt a seller's attitude even before the transaction. They see that they can later make an even greater profit on the investment, so they are willing to forgo some information and pay a higher price for less visibility. In fact, their aim is to make a profit later on precisely because of such inefficiencies. This dynamic leads to a market stuck in a state of market failure. (Day, 2014)

This could probably be mitigated by legislation, transparent consultation and investigation. The latter is needed because nowadays, with increasingly accurate physical and chemical tests, it is increasingly easy to tell a work is fake. And in this case, if a stylistic expert has previously claimed to be an original, he or she faces serious lawsuits, and the professionals are increasingly discouraged. (Day, 2014)

A very interesting nuance of market functioning can be seen in the approach to network externalities. It may provide a plausible explanation for why such striking differences between artist and artist, painting and painting, emerge. The networks - the tiny vibrations of the webs of connections - may explain why it is a privilege to own truly fine art, and why someone who is equally talented but dies poor is often not appreciated, even though he is later proclaimed a world-class artist.

As it is easy to presume that the traditional art market has a huge influence from its constantly operating networks, as it is hard to prove it and discover the connections. However, it is explainable that there are certain indirect network externalities, which affects the markets. (Zorloni, 2013) Yet it is difficult to explore these effects, as the information that would allow proper network research is difficult or impossible to obtain in the market. However, Zorloni (2013) suggests that network externalities influence the functioning of the art market on the demand side, and it can be assumed that this can be demonstrated by network science tools if the right information is available (e.g., identity of buyers, knowledge between actors, etc.).

Network externalities are essentially the result of the fact that the value of a product to an individual buyer is affected by the number of people who buy that product. In the case of paintings, this can best be represented as the willingness to pay of a buyer being influenced by how many and which prestigious collections the artist whose painting is being considered is already in. Therefore, externalities can occur in both positive and negative ways. The negative ones arise mainly when too many people start buying the paintings of a particular artist, so that sooner or later it is no longer only an elite group that owns them. There is then a high chance of a snob effect developing, which will lead to a devaluation of the artwork. However, the same situation can also lead to positive externalities. In this case, the growing interest makes the artist more attractive to collectors, which becomes a self-exciting process with a celebrity effect. This later makes it more attractive to potential buyers who want a secure deal and do not want to invest a lot of effort in finding out more information, and so on. This led to the idea that the hierarchy between artists reflects the tastes of groups with elite networks of connections. (Zorloni, 2013, pp. 96-97)

Value

In the case of works of art, determining the market value is not a simple task, there are many influencing factors. These include the identity of the artist, the age of the painting, the material, the size. The period in which the artist painted, the history of the painting, its uniqueness, the technique used, or what it depicts, are all important. However, it can also be influenced by the number of paintings the artist has on the market, how much the artist is in demand, whether the artist is alive, how many paintings he has, etc. To generalize a little, uniqueness can be singled out from this set, and originality is also infinitely important. (Day, 2014)

It is from this uniqueness that artworks have no substitute. Think about it, if someone bids for a self-portrait of Frida Kahlo, they can't say, "Excuse me, we only have Picasso's portrait of

Dora Maar, is that all right?" Thus, it can be seen that it is the uniqueness and unrepeatability of the works that makes some of them so amazingly valuable. (Day, 2014)

Another very important quality is authenticity. Surprisingly, as long ago as 2008, the former director of MOMA (The Museum of Modern Art, New York) estimated that about 40% of the art market was fake, and this is only an indirect estimate. (Thompson, 2008, p. 202 cited in Bocart and Oosterlinck, 2011) It is therefore particularly important to prove beyond doubt that a work is authentic. However, this brings us to one of the peculiarities of the art market: information is hard to come by. It is worth looking at this problem more closely: the provenance of a painting can be verified firstly by its provenance (in short, by listing and confirming its owners (Spencer and Sesser, 2013)), by checking its physical parameters and by stylistic analysis. However, without all of these, it is uncertain whether the work of art is beyond doubt authentic. If authenticity is questioned, this can mean a partial or even total loss of value for the work. (Durney & Proulx, 2011)

Based on the work of Dekker (2015) mentioned earlier, a more complex way of determining the value of an artwork is also possible. This does not, of course, give a concrete, quantifiable result, but it does bring one closer to an understanding of value as a complex concept that encompasses many contexts. Based on this and other research (Zorloni, 2013, Salisbury, 2018), economic value, intrinsic value and cultural and social value are the most prominent.

Economic value is highly volatile: it changes from time to time and can be influenced by certain events, criticisms, and circumstances. Zorloni (2013) argues that the reason for this influence is that the price of art treasures cannot be linked to almost any objective critical factor. Therefore, the price is highly variable, but the expectation is generally that it will move upwards. (Day, 2014) A lot of variables play a role in this price: the history of the painting, its stylistic value, the artist's reputation, provenance, materials, etc.

Somehow, intrinsic value is the opposite of economic value, it's the essence that makes works great, that leaves a mark on a person. It's not linked to how famous or expensive a painting is, it's the effect it has. What this means in practice is that even if a Rothko painting were in someone's possession, its economic value is very high, so that if that person doesn't understand it, doesn't like it, thinks it's just a blob, then the intrinsic value for them is close to zero. (Bastoni, 2022)

Finally, cultural value is discussed. In practical terms, this means the impact of a work on a particular culture. This is not necessarily only possible in the sense of art history, it is also a kind of cultural value or dowry, in that in Western societies the collection of art has become a

measure of social value, a way of expressing that one is a cultured, wealthy, and educated family. (Zorloni, 2013, p. 119) This is reinforced by Salisbury (2018), who argues that some people choose to invest in art objects rather than, for example, large quantities of corn because it gives them a sense of sophistication.

4. UNDERSTANDING NFT ART

NFT (Non-Fungible Token) technology is a new, innovative technology, based on blockchain. However, unlike cryptocurrencies in the classical sense, such as Bitcoin, NFT does not mean identical, interchangeable "coins", but different, completely unique units. As such, it is an excellent way to use smart contracts to clearly mark the ownership of an image, video, ticket, etc. (Wang et al., 2021, pp. 1-2) It is also possible for creators to receive a royalty fee for each subsequent transaction. Since one of the basic features of blockchain technology is that transactions are transparent and NFTs are indivisible, indestructible, and verifiable (Popescu, 2021, p. 27), Wang et al. (2021) conclude that it is a new tool that is reforming the world of intellectual property.

With this in mind, it is no wonder that NFT technology has become the newest form of expression in the art world and has gained incredible popularity. NFT art has become so popular that even the big auction houses themselves are now dealing with it. For example, some of the most famous NFT series, CryptoPunks, were hammered in the normal way on paper at Sotheby's London auction. The five unique lithographs are extremely rare and a privilege to acquire, and the prices reflected this: the cheapest sold for GBP 151 200, while the most expensive sold for GBP 226 800. (Sotheby's, 2021a) Auctions of genuine NFTs are also now being organised. (Sotheby's, 2021b)

This outlook also shows that NFT art has made its way into the A-list of art intermediaries, meaning that one can conclude that it has reached the art patron elite.

Estimates of the size of the art market last year show that although the market was hit by the covid, it is back to its old form as online trade booms and the virus eases. NFT art was included in this, but only items sold through agents who are also present in the art market. This suggests that NFT has generated relatively small revenues of around \$230 million for the major auction houses, compared to gross revenues from traditional sources of around \$14 billion. (McAndrew, 2021, p. 40) In addition, 6% and 5% of dealers and second tier auction houses respectively sold NFTs. (McAndrew, 2021, p. 40)

However, these figures do not take into account the traffic generated by NFT platforms. The total art market turnover in 2021 was \$65.1 billion, in addition to which NFT sales on platforms based on the Ethereum, Flow and Ronin blockchain were around \$11.1 billion in 2021, of which NFT art accounted for around \$2.6 billion, an increase of around 100 times compared to the previous year. (McAndrew, 2021, p. 14)

The NFT market will also be examined in terms of product, market functioning and values. These aspects are largely tailored to the art market, so the differences between the nature of the two markets will be highlighted.

Product

The definition of "product" in the NFT market covers a fairly broad spectrum. Basically all Non-Fungible Tokens fall into this category, so it is worth separating art related stuff from this later. NFTs are also used for gaming and sports collectibles. Originally NFTs were only available for the Ethereum cryptocurrency, but more and more cryptocurrencies are creating their own NFTs. (Nadini et al, 2021)

So NFT is basically a kind of dataset stored on a blockchain, but it differs from coins in that here each piece of NFT is unique and interchangeable, and all the while proving ownership of that dataset. Hence, it is very easy to trace the "provenance" of the data, i.e. the chronological order of its ownership. In addition, the technology also ensures that the original data set can be found among the copies. The data can be image, audio or video, but for the purpose of this research we will focus on image based NFTs. (Nadini et al, 2021)

As in the case of traditional works of art, there is a high degree of heterogeneity in the case of NFTs, which means that the price range is very wide, and the unit value can vary widely. However, it is important to note that most of the trading is done in cryptocurrencies, but not exclusively. (L'Atelier BNP Paribas, 2021, p. 18)

The price of NFTs often depends on the current cryptocurrency exchange rate, so they are likely to be much closer to the financial markets in this respect than the art market. This feature, coupled with the fact that day trading is also significant, makes the NFT market a much faster and more frequent form of investment. (Nadini et al, 2021) The market is dominated by the NFT art category, which overlaps slightly with the highly popular collectibles category. The latter changes hands much more quickly, while transactions within the art category account for only 10% of transactions, which is disproportionately low compared to their market size (71% of transaction volume in 2020). (Nadini et al, 2021, p. 2)

The technical complexity and the rate of technological change is quite fast, given that the market is very new, has been around for a few years and is expanding at a very fast pace, so as blockchain technology refines and evolves, so does the NFT market from a technological point of view. (Nadini et al, 2021) However, it is difficult to compare this aspect with the traditional art market, given that "technology" means quite different things in the two cases.

The time and energy consumers invest in buying is less than in the traditional art market. At this point, it is worth reflecting on the expectations of traditional artworks: authenticity is one of the most important qualities, and one of the most difficult to prove in the case of physical artworks. So that is where NFTs provide security and bring the technological perfection that is the greatest weakness of classical art markets, where information is scarce. So, it is safer to invest, and faster for the ordinary person, because the technology itself protects against the purchase of counterfeit or stolen art. It should be noted, however, that the art category may still require stylistic savvy to make a good investment.

The extent of usage and the significance for the user are quite category-dependent for NFTs. Research by the NonFungible Corporation (L'Atelier BNP Paribas, 2021, p. 15) suggests that there are six broad categories within NFTs: Art, Collectables, Video Games, Metaverses, Utilities and Other. A more detailed discussion of these should be the subject of further research. The extent of usage therefore varies within these categories, with investment and ownership being the main benefits in the Art category, where it is not really possible to, say, admire the masterpiece on the wall. Thus, the significance for the user for each purchase is also mostly related to the investment and the possession of the collection.

As regards promotional policy, the possibilities are already outlined above. On the one hand, there are independent platforms for NFT trading and, on the other hand, there is a growing involvement of large auction houses and smaller art intermediaries on the art side.

The functioning of the market

As with the art markets, there is a primary and a secondary market, but trading is only done online. The market players differ from the traditional art market in that there are fewer intermediaries and the role is largely played by online platforms.

To understand the NFT trade market, it is worth observing how it works. Looking at the characteristics of NFT trading from a slightly more practical point of view, it could be basically seen that there are several platforms available where one can buy certain "pieces of art". These platforms can be OpenSea, Foundation, SuperRare etc. They are broadly similar on the buy and sell side: generally, individual pieces of a series of similar parameters, grouped in collections,

can be bought for a bid or a specific amount of cryptocurrency (usually Ethereum, but cryptocurrency is not exclusive) and then resold. On the seller (or creator) side, what is worth highlighting, that basically smart contracts will be used for the transaction, and the purchase price will be transferred to the wallet of the artist or seller. Both collectors and creators have the wallets with which transactions can be made. (OpenSea, 2022)

It is important to note, however, that the transparency provided by an NFT market can be deceptive, linking information to identifiers (contract addresses) rather than to specific individuals. For example, Vasan, Janosov and Barabási (2022) provided the contract address of NyanCat, a highly successful animated NFT contract on the Foundation platform, which looks like this: `s 0x3B3ee1931Dc30C1957379FAc9aba94D1C48a5405`, and the other information associated with it is the token id, which is 219. (Vasan, Janosov and Barabási, 2022, p. 2)

The main differences between NFT markets and traditional art markets are the availability of traceable and complete information, the fact that items cannot be counterfeited and the security. However, this is only the surface, there are also market anomalies that call into question the efficient functioning. Taylor and Sloane (2021) raise the issue that following Christie's highly significant Beeple auction, there has been increased attention to the trading of NFT art and there are doubts that have been raised.

First, the sudden popularity of the platforms is, according to the authors, largely due to speculators. Market data can be tracked continuously, giving the NFT platforms a kind of stock exchange character. There have been record selling prices where the price was generated only by the bidding of interested parties in a swirling market. However, this phenomenon is in fact a fraud: it is called wash-trading, which is banned in most developed markets, but is also practiced in many NFT markets. It is also facilitated by the use of cryptocurrencies, which have no direct link to government-backed currencies. (Taylor & Sloane, 2021) NFT markets are therefore not immune to fraud.

Another aspect worth highlighting is the network approach. Here, as there is relatively more data available than in traditional art markets, network science methods can be used to investigate the operation. An excellent example is the research of Vasan, Janosov and Barabási (2022), who analysed data from the Foundation platform.

It also raised the question of what patterns might lead to success for some artists. On the one hand, there is an advantage for early adopters, i.e. those who got into the technology at the beginning. Such artists earned more, and also the first collectors spent more, and had more opportunities to invest in more successful items. Thus, early adopters and collectors could realize a kind of first mover advantage. They also investigated whether a hierarchy similar to

the traditional art market is established here, based on the reputation of the artists, but without the presence of " gatekeepers " such as auction houses to influence this. It has been found that the prices of works associated with a single artist move with greater amplitude and do not show an overall upward trend. However, on closer examination, when artists were categorized by performance (into three groups, from low to high performance), they generally performed in line with their group in later years. So, artists in the high-performance group were more likely to continue to achieve higher prices, while artists in the low performance group were much less likely to do so. (Vasan, Janosov and Barabási, 2022) Thus, it seems that a kind of self-exciting process has been created here, which creates the star effect.

It was also found that prices for NFTs also reflect the popularity of the artist, but that this differs from the traditional art market in terms of the degree of fluctuation. In addition, the relationship between collectors and art is also crucial, with a kind of collector elite emerging that can be opinion-forming. What is different is that the results suggest that it is more worthwhile for an artist to invest in NFT art to make it attractive to his former buyers again, rather than to attract new investors into the world of NFTs. Thus, the network effect is pronouncedly strong. (Vasan, Janosov and Barabási, 2022, p. 9)

Value

Here too, NFT art will be examined according to the complex concept of value, first from the perspective of economic value, then from the perspective of intrinsic value, and finally from the perspective of cultural value.

As a matter of fact, all the information above begs the question: what is than the value of NFT art? The first thing that comes to most people's minds is that if someone is buying one of these objects for the aesthetic experience, why bid higher when one can actually see the visual content without buying it, and even use it by "making a Print Screen". It is therefore important to understand why it is worth buying NFT art.

The economic value should be examined first. It has therefore been found that the price of NFT art is influenced by the popularity of the artist, networks of connections, etc (Vasan, Janosov and Barabási, 2022), so price alone can be a measure of value, but obviously this is not perfect. A good example of this is the research of Taylor and Sloane (2021), who argue that often some NFT art sells for the high prices it does only because of speculative bidding. This reveals a very important economic incentive: speculation. This phenomenon makes the market uncertain and risky. This is more manageable in the art market, as there, with professional help, it is possible to determine the approximate value of something.

This brings us to the next important value: cultural value. In the case of a Van Gogh painting or a Cézanne, where the uniqueness and unrepeatability of the image is given by its physical uniqueness: the experience could not be reproduced by digital copies. However, in the case of digital art, the aesthetic value can be practically reproduced if all one wants to do is to look at a particular piece of art. Obviously, the artistic parameters, technique, etc. can be appreciated, however, especially in the case of a popular collectable (e.g. the previously mentioned CryptoPunk collection) it is difficult to admire the skill of the creator to the same extent as, for example, an oil painting. What can be appreciated in digital art, however, from a quasi-aesthetic perspective, is the rarity and primacy within the collection. NFT art has thus become more of a medium with exchange potential, where enjoying the art is not a priority. As Taylor and Sloane (2021, p. 161) put it, "cryptoart represents something that resembles an art market without much consideration for the art itself, or, quite simply, an art market without art."

Hence, the intrinsic value may also be more related to the execution of transactions, or scarcity. The very knowledge of owning a scarce NFT can create intrinsic value. (Storey, 2022) Therefore, it can be argued that a different kind of intrinsic value, based more on collection, possession and exchange, can be observed for NFTs, rather than the stronger aesthetic focus in the case of the traditional art market.

5. NFT- ART? - COMPARISON AND DISCUSSION

Art without artworks, or market without products? NFT-based art compares very interestingly with the traditional art market. A divisive topic? Absolutely. Confusing? Extremely. Yet the many comparisons from similar perspectives are beginning to paint a picture that can be used to answer the question of whether the NFT art market can be considered an art market on an online-only basis.

To find the answer, one should first look at the big picture. The art market is a historical phenomenon that has existed and evolved for centuries. Digital art can ultimately be seen as a continuation of it, but digital art and NFT art are not the same concept. The latter is a narrower category with specific characteristics. The NFT markets have grown out of art NFTs and have gained in just a few years an incredible popularity and a huge amount of invested capital. (Nadini et al, 2021)

Product characteristics show that the two markets are very similar in terms of heterogeneity and high price volatility. However, in the traditional art market, products can generate returns over a much longer time horizon and buying is not quick. In contrast, the NFT

market is practically a perpetual motion stock market, bombarding potential buyers with real-time prices and data, with daily turnover. The buying process is also different, given that NFT trading is almost exclusively done on online platforms, which do not have the same control as art markets. (Vasan, Janosov and Barabási, 2022) Indeed, the large auction houses and other otherwise traditional art intermediaries have only a small share of the NFT trade. Still, the biggest difference in the product's case is its tangibility. NFT products do not have a physical embodiment behind them, they exist only in the virtual world.

In terms of market operation, the buying process itself is therefore much faster in the NFT markets, and there are a number of other differences between the two markets apart from the trading process. The most important of these is the information available. In the art market, there is a lot of hidden or unknown information, and in fact buyers have no interest in finding it out or investing resources in finding it out, as they will want to profit from it in the future. In contrast, in the NFT markets, the advantage of transparency and decentralized trade due to blockchain technology is that the provenance of an item is complete and traceable. However, other types of market failures may exist here. The sudden huge growth of the market is also attributed to people investing speculatively. Thus, wash trading, i.e. artificially created record prices by parties interested in high prices and market gyrations, is not unprecedented. This activity is also banned in many places. (Taylor & Sloane, 2021)

However, the biggest and most significant difference was found in the values. In each case, the market was approached from three angles: economic, cultural and intrinsic value.

By the economic value, when looked at from an investment perspective, there is overlap: prices broadly reflect the hierarchy of value between works, but NFT markets are dominated by speculators, making investments more uncertain, and the wash trade also raises doubts when it comes to the price of an item. (Taylor & Sloane, 2021)

In terms of cultural value, for classical art, it is broadly clear that there is an art historical and cultural value, which is mostly derived from the work itself as a unique unity. (Day, 2014) Another important issue is authenticity. It is also worth looking at the impact of aesthetic or cultural value from a social perspective: fewer people are now exposed to art, fewer people go to museums, and it is becoming a luxury to understand and enjoy art. It is therefore particularly important that authenticity, quality and cultural and art historical qualities are valued. To lose sight of these values is also a loss of value for society: tolerance of fake art leads further and further away from real values. (Salisbury, 2018)

In terms of intrinsic value, the classic art market can best offer a kind of cultural experience for the recipient. For NFT markets, the value provided by art is not a priority. More

important is the value provided by exchange, collection and transactions, which shows a very different nature of trade than art markets.

6. CONCLUSION

NFT markets have only been around for a few years, so there is nowhere near the amount of research available to give an accurate picture. Still, the positive outcome of going digital is the large amount of data available, which can provide a different but useful insight into them. However, this is difficult to compare with the traditional art market, as it is precisely the lack of information that makes the latter inefficient as a market. It is therefore difficult to analyze the two markets in parallel and to determine uniformly whether the NFT market is an art market. Yet, the answer is no, but this does not mean that it has no place in the art world.

This means that while there are technical and external similarities between the two markets, the very essence that makes the art market what it is, is not present in NFT art. The key to this lies in the values. Although not everyone in the art market is driven by how culturally valuable or even how appealing a work is to them, these incentives drive the market, for the elite it is valuable. And that is why the presence of the art market is very important: it sustains and develops fine art; it can provide value to society beyond monetary values. In contrast, the value of NFT art for society is marginal. The market does not exist to trade products, products exist to give a reason to trade.

The research question was whether the NFT art market could be considered as an art market, but in digital form. The answer is therefore no. However, it should also be taken into account that, although it is not considered an art market on the basis of the present analysis, there are many examples that do consider it an art market. These include the efforts of the major auction houses Christie's and Sotheby's to modernize and increasingly engage with different forms of digital art, and to bridge the gap between digital and physical artworks (e.g. in the case of CryptoPunk lithographs (Sotheby's, 2021a)). However, this is still in the early stages. It cannot therefore be argued that NFTs should be completely separated from art markets.

However, it should be kept in mind that the two, the NFT art market and the art market, are not the same. The rules are different for one and the other, the weaknesses in the systems are different and the ways to profit from them are different.

The development of digital art and NFTs can point the way to solutions to the information problems of traditional art markets, and mature control practices of art markets can help limit the errors in the functioning of the NFT market. The difference between the two markets can

therefore also be an opportunity for cooperation and complementarity, but this requires cooperation between the relevant actors.

This research is a taste of what could be the basis for many more research topics. On the one hand, in addition to a qualitative comparative analysis, a quantitative analysis can be very helpful in understanding markets. In addition, the tools of network theory can reveal a number of important interrelationships, which may open up further perspectives for research on art markets. Furthermore, there are still relatively few resources available on the subject of NFTs, so their functioning, a better understanding of the actors, and the legal background could be very important areas of research. In addition, addressing the purchasing motivations of the buyer side could also yield significant results.

In the case of traditional art markets, investigating the possibilities of how to recover from market failure could also be a breakthrough. This has already been attempted by Day (2014).

Both markets could be the subject of in-depth scoping and study of counterfeiting and fraud. Moreover, the return of originality and uniqueness in the age of digitalisation can also be interesting.

Overall, it can be argued that it is important to deal with the economic aspects of art, as it is one of the most extraordinary achievements of humanity that needs to be taken care of. However, we must also remain open-minded, as art evolves with society, so protecting its values should not mean rejecting the new. In this spirit, NFT art should not be closed off, and time will tell how lasting it is.

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