Araştırma Makalesi / Research Article

THE RULES ARE REWRITTEN: NFT /CRYPTO ART

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Abstract
The developments in information and communication technology in the 21st century, and especially during the Covid-19 epidemic, are changing many areas of life, from banking transactions to shopping. One of the areas experiencing this change; it is the art sector from production to sale. In this period, new concepts such as NFT and Crypto art have entered our lives. Artists and higher education institutions that have to adapt to these changes, especially in this sensitive period, have started to research methods of finding crypto art and online creative markets.

In this context, the aim of this study is to provide information about the production and exhibition of a new work of art called crypto art, NFT platforms and methods of being a part of NFT. At the same time, while discussing the advantages and disadvantages of NFT, it is also important to explain the subject with important examples. The study is a qualitative research based on an explanatory literature review.

In the research, it is seen that the majority of the artists who actively use NFT platforms are graphic designers. Very few of the artists who produce works in the old generation and other branches of art are actively present on these platforms. When our education system is investigated, it is seen that there was no basic course that gave information about such platforms. It has been seen that NFT has been added as a course to the elective pool of only Yıldız Technical and Ankara University. In order for our other universities to be a part of the changing world, they need to include current developments in their programs. It shows that artists, especially graphic designers, follow the current with their individual efforts. In this study, how NFT provides economic advantages to artists is explained with examples.
Keywords: Blockchain, Crypto Art, NFT.
JEL Codes: Z1

KURALLAR YENİDEN YAZILIYOR: NFT /KRİPTO SANAT

Öz
21. yüzyılda bilgi ve iletişim teknolojisindeki yaşanan gelişmeler ve özellikle de Covid-19 salgını, bankacılık işlemlerinden alışverişe kadar hayatın pek çok alanını değiştirmektedir. Değişim yaşayan alanlardan biri de; üretiminden satışına sanat sektörüdür. Bu dönemde NFT, Kripto sanat gibi yeni kavramlar hayatımıza girmiştir. Bu yaşanan değişimlere uyum sağlamak zorunda olan sanatçılar ve sanatçı yetiştiren yüksek öğretim kurumları, özellikle bu hassas dönemde kripto sanatı ve çevrimiçi yaratıcı pazar bulmanın yöntemlerini araştırmaya başladılar.

Bu çalışmanın amacı; kripto sanat olarak adlandırılan yeni bir sanat eserinin üretilmesi, sergilenmesi, NFT platformları ve NFT'nin bir parçası olmanın yöntemleri hakkında bilgi vermektir. Aynı zaman da NFT'nin avantajları, dezavantajları tartışılırken, önemli örneklerle konuyu açıklamaktır. Çalışma açıklayıcı literatür taramasına dayalı nitel bir araştırmadır.

Araştırmada, NFT platformları aktif olarak kullanan sanatçıların büyük çoğunluğunun grafik tasarımcılar olduğu görülmektedir. Bu platformlarda eski jenerasyon ve diğer sanat dallarında eser üreten sanatçıların çok azı aktif olarak bulunmaktadır. Çünkü eğitim sistemimizi incelediğimizde bu tür platformlar hakkında bilgi veren temel bir dersin olmadığı görülmüştür. NFT'nin sadece Yıldız Teknik ve Ankara üniversitesinin seçmeli havuzuna ders olarak eklendiği görülmüştür. Diğer üniversitelerimizin de değişen dünyanın bir parçası olması için güncel gelişmeleri programlarına dahil etmeleri gerekmektedir. Sanatçıların özellikle grafik tasarımcıların bireysel çabaları ile günceli takip ettikleri sonucuna ulaşılmıştır. Bu çalışmada NFT'nin sanatçılara ekonomik anlamda nasıl avantajlar sağladığı örneklerle açıklanmıştır.
Anahtar Kelimeler: Bockchain, Kripto Sanat, NFT.
JEL Kodları: Z1

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Introduction

In today's digital technology era, the change in the way of life and thought in society with technological developments has caused changes in people's understanding of "art". One of the innovations that entered the art life in this period is the concept of Crypto art and Non-Fungible Token (NFT). In the simplest terms, NFTs mean digital certificates that turn digital artworks and collectibles into registerable and tradable assets. It is thought that NFT will affect the shaping of future art with its contributions to art. People with high incomes invest in unique works of art for different reasons besides the stock market or precious metals. Today, digital art, which is bought and sold with crypto money with the same thought, has started to be investments with the same feature in NFTs. Why do people give millions of dollars to a digital work? If it is copied or loses its value, questions may come to our minds. The concept arising from the uniqueness of a physical work of art is hidden in blockchain technology. Thanks to this technology, the owner of the work can mark their digital products with a signature. In other words, one can have the digital original of the product.

NFT provides the opportunity to buy and sell all kinds of digital products. For example, a tweet, the most viewed TikTok video, an academic article, project, game, drawings, animations, effects, clips, and GIF. Currently, the most popular products are illustrations and designs in the digital art category. In short, anything that can be produced and stored in a digital environment and characterized as unique can be sold as NFT. Art-loving collectors are turning into digital collectors with the changing age. The market and demand determine the value of NFTs. For example, the founder of Twitter, Jack Dorsey, shared the message "Just setting up my tweet" on the platform in 2006, and this message was recorded as the "first tweet". This tweet was purchased as NFT at auction on March 5, 2021 for $2.9 million (https://www.bbc.com/; Yurdabak, 2022). In Turkey, a tweet of Cüneyt Özdemir was purchased as NFT for 10 thousand dollars.

Another NFT artist, Murat Pak, sold 91.8 million dollars with his work The Merge. Digital artist Pak, who broke records worldwide, is known as a programmer, cryptocurrency investor, and also at the same time the founder of Archillect, a curation platform. This platform, which has a large following, has the feature of being an internet bot that reshares media based on users' interactions (Özbucak, 2021).

Image 1. *Beeple- "Everydays: The First 5000 Days"*

Resource: https://hwp.com.tr/nft-olarak-satilan-en-pahali-10-sanat-eserini-sizler-icin-derledik-182510, Date accessed: 28.06.2021

The work titled "Everyday: The First 5000 Days" (Image 1), which is the one of the most expensive NFT artwork, belongs to Graphic Designer Beeple, whose real name is Mike Winkelman. This work was auctioned in digital currency using the blockchain method on March 11, 2021, for $ 69.3 million (Özcan, 2021). With this work, the artist

took his place in history as the third most expensive work creator among living artists (Pittwire, 2021; Dursun, 2021).

Image 2. *Tolunay Tolunay "Fractal İstanbul – Pandemi" (Courtesy of the artist)*

Resource: https://theanatoliapost.com/" Date accessed 08.07.2021

The works of Tarık Tolunay from Turkey can be cited as an example. Tolunay is known for his collection called "Fractal Istanbul" (Image 2). The artist digitally signed his work and put it up for sale on a platform called Foundation, and was able to sell his work for 20 Ethereum, or about 36 thousand dollars, within a few hours (Elden, 2021; https://theanatoliapost.com). These sales made in the digital environment are made and recorded using blockchain technology.

Image 3. *Refik Anadol "Machine Hallucinations – Nature Dreams"*

Resource: https://www.donanimhaber.com/refik-anadol-dan-rekor-nft-satisi--142852 Date accessed 24.12.2021

Famous Turkish artist in the NFT world, Refik Anadol's technological work Machine Hallucinations – Nature Dreams, supported by artificial intelligence, was sold as NFT on Opensea. The artwork was bought by a collector named Mabu for a record 300 ETH. Anadol earned more than $1.2 million from this sale. Along with the work, the collector also purchased a computer containing a 3D physical certificate signed by Anadol, the source backup files of the installation and special software (https://webrazzi.com/2021/12/19/refik-anadol-nft-).

1.What is Blockchain?

Since 2008, a decentralized system called "Blockchain" technology and a new "crypto", that is, crypto money system, have started to be discussed. Blockchain is a distributed database that manages data encrypted over a network that is protected against security vulnerabilities and easy to access. Features that make blockchain technology different:

- Peer to Peer Network: In Blockchain technology, each participant in the network has a simultaneous working copy of itself. Thus, participants participating in the system can see and approve transactions made on this network and are directly connected to each other.
- Distributed Ledger: All transactions in the blockchain network are recorded simultaneously in digital ledgers.
- Consensus Mechanism: When the participant enters data in the personal digital account book, this process is coded using known algorithms and all users in the network are informed about it. The data is permanently added to the records when the transaction is agreed between the users.
- Cryptography: With the encryption method called "hash" in blockchain technology, a unique digital signature is created through a mathematical algorithm and these transactions are turned into blocks. Previous records are added to this block and linked to the hash of previous blocks. This information is recorded in the digital ledgers of all users. When these records are interfered with from outside, they trigger each other because the blocks are interconnected. This will make it easier to detect (Cited by Yavuz, 2019; Pisa & Juden, 2017).

2.NFT and Its Features

NFTs contain a unique code, cannot be exchanged for another digital asset, cannot be divided or reproduced. This is enough to make NFTs special in themselves. The uniqueness of NFT is that it is unique and there is no second smart contract with the same token number. NFT has the property of registrability. If requested, it is produced by the manufacturer with NFT copyright. This ensures that the buyer has all the commercial rights of that product over Block chain. This feature also increases the commercial value of the product. NFTs are rarity because they are unique and non-replicable. Conversion of a product to NFT means ensuring its existence forever. It can be traded or held for years. The tradability feature can be traded by converting any product into NFT, thus making it tradable (Erfidan, 2021; Doğan, Ersöz & Şahin, 2022).

3.What are the Necessary Steps to Join the NFT System?

First of all, it is necessary to be a member of a digital platform to be a part of this system.

Step 1: Wallet: Wallet is the area where digital currencies and identity information are stored and stored. A crypto wallet is required to generate NFT and use it on exchanges.

Step 2: Joining the NFT Platform: It is necessary to open an account according to the instructions by choosing a platform that you want to join. Since NFT asset accounts are usually Ethereum-based, tokens are needed. In order to generate, add and trade NFTs, ETH (Ethereum) must be loaded into the account. These transaction fees may vary according to platforms.

3. Step-Creating NFT: After adding Ethereum to the account, the artwork object is uploaded to the system and digitally signed by saying create (Dursun, 2021).

4.Where and How to Buy NFT?

NFTs can be accessed from different platforms depending on the product to be bought or sold. These trades require you to pay a transaction fee of around 100 Gwei (gas). A higher transaction fee may be required if a faster transaction is desired.

The cryptocurrency code is ETH. Ethereum is a crypto-asset and has a blockchain infrastructure that supports numerous crypto-assets. In Ethereum, users can control their account data both with the user account with a private key and with the codes formed by contracts, which is a second method seen as a mainstay, especially in crypto art. Although the two methods differ, a fee is

charged for each transaction. Gass is required to operate. Gas is a unit of measurement used in the processing of Ethereum. The transaction fee can be determined in advance or can be determined by the user. When starting the transaction, the amount of Ether is determined and gas is consumed and decreased in each transaction. If the processes are successful, continuity is ensured according to the principle of returning the gas to the source (Dursun, 2021).

The best-known digital art NFT platforms such as Enjin, MakersPlace, Rarible, NBA Top Shot, Decentraland, Mintable, BakerySwap, Knownorigin, Portion, Async (Influencer, 2021), Snark, Unique, Artsy (Tellinga, 2021) are:

4.1.NFT Showroom: NFT Showroom is a digital art marketplace. It is built on Hive, a fast and free blockchain, and all you need to use is a Hive account and Hive Keychain. NFT Showroom takes 10% commission on the first sale, 5% for secondary sales and 5% to the original artist (Martinique, 2021).

4.2.OpenSea: Founded in 2017, the Platform supports Ethereum and ERC721 or ERC1155 standards for developers' digital assets (Aureliano, 2021; Willing, 2021). It allows you to buy and sell crypto collectibles, game items, digital art and other blockchain-based digital items on its portal (Martinique, 2021). OpenSea requires an active wallet (Walker, 2021).

4.3.SuperRare: It is a digital art auction house that selects artists by evaluating their work and meets them in the social network (Walker, 2021; Martinique, 2021). Artists can submit their portfolios by filling out the forms on the website. All transactions are done using ether. The platform takes a commission of 15% from the first sale, while the creators receive 10% royalties (Martinique, 2021).

4.4.Foundation: The platform, which has a community-oriented structure, was established in 2021. For artists to join the site, the artists in the system must select and invite the works of that artist (Martinique, 2021).

4.5.Nifty Gateway: NiftyGateway is an accessible platform for everyone that allows to buy, sell, trade and display Nifties (Walker, 2021; Martinique, 2021). The platform offers a limited number of Nifties every three weeks. Art objects are available for a limited time only. Tokens purchased here will be listed under the profile and can be withdrawn to a wallet or an external account. It can also transfer from external wallets to the Nifty Gateway account (Martinique, 2021).

4.6.CryptoKitties: The platform that was established in 2017 and it is the first platform uses the ERC-721 standard. It is one of the world's first blockchain games. On the platform developed as a game, in the CryptoKitties game, players raise and sell CryptoKitties virtual cats for profit on the Ethereum network (Willing, 2021; cited in Dursun, 2021; Yuan, 2018).

New NFT platforms are increasing day by day and digital assets are diversifying in this sense. According to the 2021 Non-Fungible Tokens Quarterly Report, 48% of sales rates are Art, while others share less than 10% of the market. According to the report; Sales rates in the arts have increased from 35% in 2020 to 61% in the first quarter of (2021https://nonfungible.com/subscribe/nft-report-q1-2021).

According to the 2022 Non-Fungible Tokens Quarterly Report, the collection segment continues to be the main segment of the sector in the first quarter of 2022 with its total transaction volume. The crypto art segment is the second with $673 million. However, the volume of active wallets and sales is much lower, indicating that the NFT art segment is in the hands of certain wealthy people (https://20137703.fs1.hubspotusercontent-na1.net/hubfs/).

5. Crypto Art

As a result of the interaction of rapidly developing software technologies with art in our age, a new understanding of art has created the crypto art; It is defined as "digital art created by a limited number of cryptographic assets registered on a blockchain". In this understanding, which is based on conceptual art, the biggest feature that distinguishes this kind of art from traditional art is that it has the ability to produce structured or unstructured data that can be accessed openly. Accordingly, the immaterial nature of artworks is the rejection of traditional art market spaces and institutions (Akt: Oduncu, 2022; 197).

Graphic products created using digital production methods, especially by graphic design artists, are transformed into a value as Crypto Artwork with ERC721, Ethereum blockchain technology. Thus, the product is used as an NFT artifact by associating it with codes by the system in the digital environment in which it is produced. After a photo or video of a work that has not been produced in digital media is taken, these images are converted to NFT with ERC-721 or similar technologies (ERC-1155). Media in formats similar to JPEG, MP4 or GIF associated with crypto codes are products that are verified by contract and wallet and are rare as their ownership can be proven (Dursun, 2021; Franceschet et al., 2021).

The key point is that the artifact or value is associated with immutable crypto codes and stamps the digital item with a cryptographic token of authenticity and maintains a permanent record of its ownership. It is worth noting that NFT creates a signature that cannot be forged. This is a rare value for collectors (Dursun, 2021: 1043).

It is seen that especially graphic designers are active in the world of Digital Art. This is due to the fact that graphic designers closely follow and use technological developments and adapt to changes more quickly. It has become a necessity for designers who are studying or working in this field to be successful in order to be successful, as well as to follow the current updates throughout their lives with their own individual efforts. It is also important that a work produced with today's technological developments is delivered to art lovers. These developments, in which the transition from exhibition halls to digital media occurs, should be followed. Artists and designers must be able to adapt to these rapid changes in order to be able to exist.

In order to investigate the effect of the education received by the graphic designers who are the best adapted to these changes, the education programs of two universities selected by the random method are examined.

The contents of the courses (Table 1) taught during eight semesters of two universities in Turkey, Eskişehir Osmangazi University & Faculty of Art and Design and İnönü University Faculty of Fine Arts and Design, Graphic Design Department are examined.

Table 1: *Programs of the departments that provide art education in the Faculties of Fine Arts of at İnönü University and Eskisehir Osmangazi University*

İnönü University Faculty Of Fine Arts And Design	Eskisehir Osmangazi University & Faculty of Art and Design
GT 1. Basic Design I and II, Drawing I and II, Art History I and II, Perspective, Basic Information Technologies I and II, Hist. Of Tur. Rev.&Prin.of M. K. Atatürk I ve II, Turkish I ve II, English I ve II, Graphic Design History, Mythology and iconography	Basic Design I and II, Drawing I and II, Art History I and II, Basic Concepts of Art, Visual Communication, Basic Computer Use I ve II, Hist. Of Tur. Rev.&Prin.of M. K. Atatürk I and II, Turkish I ve II, English I and II, Basic Photography, Text and Typography
GT 2. Graphic Design I and II, Typography I and II, Computer Aided Graphic design I ve II, Printmaking I and II, Photography I ve II, Elective Courses I and II (Ceramics I and II, Painting I and II, Music I and II, Interior Architecture)	Computer Aided Graphic Design I ve II, Typography I ve II, History of Visual Design, Applied Basic Photography, Etkileşim ve Arayüz Tasarımı Elective Studio Course and Elective Theoretical Course (Graphic Design Studio I ve II, Information Design, Printmaking I and II, Typface Design, Visual Culture, Mythology, Art of Photography and Theories, Communication Theories, History of Moving Images, Research and Project Development, Illustration, Advanced Photgpraphy Techniques, Visual Analysis Methods, Communication Ethics, Sustainable Design)
GT 3. Graphic Design III and IV,Semiotics, Illustration, Aesthetics and Art Philosophy in Visual Disciplines, Free Elective Courses III and IV (Ceramic III, Painting III, Music III, Landscape Architecture Drawing Technique, Architectural Simulation, Marbling, Miniature, Tile, Ceramic Jewelry Techniques, Plaster Forming and Molding Methods) Modeling and Modeling, Interactive Media Design, Experimental Design Field Elective Courses I and II (Packaging Design, Sociology of Art, Communication History, Web Design, Mythology, Cultural History, Visual Perception, Museum Education, Semiotics in Visual Disciplines, Information Design Marketing Communications and Advertising Information)	Multimedia Design, Art and Design Culture, 3d Modelling and Animation I and II, Editing Techniques I ve II, Socially Responsible Design, Photography Atelier Elective Studio Course and Elective Theoretical Course (Audio Design, Commercial Photography, Kinetic Typography, Desktop Publication Design, Printmaking III, Animation Techniques, Package Design, Video Art, Aesthetics of Image, Theories of Contemporary Art, Marketing, Brand Communication Management, Audio Design, Video Practices, Image Design, Semiotics, Exhibition Stand Design, Copywriting, Photography Culture, Marketing Communication)
GT4. Graduation Project I and II, Digital Illustration, Animation I and II, Field Electives III- IV and V, Contemporary Art and Interpretation, Portfolio Design Field Electives (Typeface Design, Computer Aided Image Processing, Interactive Multimedia, Brand and Corporate Identity Design, Exhibition Design, Animation, Digital Printmaking, Publication Design, Internet and Interface Design, Digital Photography)	Portfolio Design, Interdisciplinary Design Studio, Visual Communication Project, Advertisement Design Elective Studio Course and Elective Theoretical Course (Comics Design, Character Design for Animation, Experimental Typography, Stop Motion, Video and Film Criticism, Media Literacy, Advertisement Design, Documentary Photography, Web Design, Video Post-Production Stage and Decor Design, Design Rights, Communication and Motivation at Work, Cyberculture)

Resource: http://www.inonu.edu.tr/gsf and https://stf.ogu.edu.tr/Sayfa/Index/15/gorsel-iletisim-tasarimi-bolumu

When the course contents of Eskişehir Osmangazi University & Art and Design Faculty Visual Communication Design Department are examined, "Marketing" is given as an elective course in

the 3rd grade. When the content of the course is examined, it is seen that it includes "Marketing concept and scope, environmental factors in marketing, Marketing information system, Strategic planning, Target market selection, Products and product strategies, Services, Distribution channels and retailing, Pricing, Promotion". Also in the 3rd year, "Marketing Communication" (https: There is a course called //stf.ogu.edu.tr/Sayfa/Index/15/gorsel-iletisim-design-section).

Inonu University, Faculty of Fine Arts and Design, Graphic Design Department, 3rd year elective courses include the course titled "Marketing Communication and Advertising Information". Although the name of the course includes the phrase "marketing", the content of the course is not suitable for the information we are looking for. Course Content "The course, which analyzes the promotion of a brand, product, institution or even through applied examples such as television advertisements, newspaper and magazine advertisements, outdoor promotional pieces, examines the relationship between the message to be conveyed to the target audience and the brand identity; it aims to convey the structures and channels that define this relationship as parts of the marketing communication that form and define the whole" (http://www.inonu.edu.tr/gsf).

When the course contents of Eskişehir Osmangazi University & Art and Design Faculty Visual Communication Design Department and İnönü University Fine Arts and Design Faculty Graphic Design Department are examined, no concept related to NFT or any content about such platforms is found.

Education programs in universities should also be updated and renewed. In addition to how to make a work in universities, up-to-date information on how to reach consumers and art lovers should be given.

As a result of the research, it was found that only Ankara University Faculty of Fine Arts Department of Basic Art Education (https://twitter.com/necdetunuvar) and Yıldız Technical University (https://www.youtube.com/watch?v=FI_kBill4Ow) added the "Introduction to NFT" course to the general social elective course pool of the University.

6. Discussion and Conclusion

The changing world order, and especially the Covid-19 pandemic, affects people's lives in every aspect and causes them to change. This period has triggered people to be more in the digital world. The transfer of artworks to the digital environment is not new, but nowadays NFT has provided both accessibility and economic advantages, especially to artists.

For example, Alana Edgington, one of the artists who discovered the world of NFT, stated that she could not exhibit her works in any art gallery due to her introverted personality, and that she lived in debt. Alana says digital images of her 16 paintings were sold at an internet auction for US$79,500. Another artist is Darius Puia; He sold his work for 12 thousand 497 dollars thanks to these platforms (Thorn, 2021).

By using these platforms, artists do not need auction companies or art galleries to sell their works, and they do not pay high commission fees to intermediaries. While the galleries receive a commission of around 60-70% from the sales, these new platforms take a commission of 15% and allow the artist to receive a share of varying percentages when the digital work changes hands again. This becomes a system that strengthens the artist's hand. One of the best aspects of the system is the opportunity to open exhibitions anywhere in the world and reach art lovers.

According to Jenée Iyer, Blockchain applications have increased the transparency of the industry and reduced shipping risks by reducing costs, including insurance premiums (Barsotti, 2019). Beeple's historic sales have attracted international media attention, and these results have attracted many artists to the world of NFT. Such agendas point to the beginning of a new era especially in art.

Raghavendra Rau points out that the reason for this increased interest in NFT may be that people are confined to their homes due to the pandemic and cannot find the opportunity to go out and spend money. Rau thinks that the prices of the works will not increase constantly, but will decrease after a certain period of time, and perhaps only a few artists' works will retain their value in the long run (Thorn, 2021).

There is also the possibility of short-term excitement for artists, art lovers and investors. However, there will always be systems that are constantly renewed and developed.

Following, researching and hoping for such innovations will keep artists or artist candidates excited and dynamic.

It is seen that especially graphic designers are active in the digital art world. Following and being prone to developing technology, having the necessary technical equipment to convert studies into NFT and publish them on platforms are important factors. Especially in the field of art, it is seen that very few of the artists who work in the old generation and other branches of art are active, cannot adapt to the system and even have no knowledge about this system.

When the programs of the departments that provide art education in the Faculties of Education and Fine Arts of Universities in Turkey are examined, it is seen that the students are given basic information about computer use, programs and field information. However, it has been observed that a basic course that gives information about such platforms and digital developments is not given. It should be added to the training programs as a course and constantly updated. University students receiving art education should be informed about the changing and developing technological systems and their awareness should be raised in order to keep up with the innovations. Over time, open seminars and training programs may be organized to inform about such innovations. It is aimed that this study will contribute to the literature for future studies.

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