International Journal of Law in Changing World

Special Issue: NFTs and the Legal Landscape (2023) ISSN 2764-6068

Research article
JNL: https://ijlcw.emnuvens.com.br/revista
DOI: https://doi.org/10.54934/ijlcw.v2i3.57

KNOW YOUR NFTS:

COMPLIANCE AND ENFORCEMENT CHALLENGES IN TRADING OF NON-FUNGIBLE TOKENS

Dimitris Kafteranis
Centre for Financial and Corporate Integrity, Coventry University, UK

Huseyin Unozkan
Haliç University, Istanbul, Turkey

Umut Turksen
Centre for Financial and Corporate Integrity, Coventry University, UK

Article Information:
Received
December x, 2023
Approved
December x, 2023
Accepted
October x, 2023
Published
November x, 2023

Keywords:

NFT,
illicit financial flows,
cryptocurrency,
money laundering

ABSTRACT

Non-Fungible Tokens (NFTs) is a new virtual asset phenomenon the trade of which has spread quickly without any regulation as no legislation has been adopted in the EU, USA or the UK where the majority of NFT trading takes place. Concerns have been raised about NFTs and their relation to fraud and money laundering as anonymity and price volatility of NFTs create a unique and profitable asset for criminals. This paper addresses two main issues: (1) trading statistics on NFTs, their analysis, and if and to what extent NFTs are used for financial crimes purposes; and (2) the legal challenges posed by the misuse of NFTs for fraud and other economic crimes. The final section of this paper provides feasible regulatory and business solutions that can help businesses to mitigate risks emanating from NFTs. It is argued that legal scholars, businesses and/or regulators cannot solve the challenges and risks posed by NFTs on their own, requiring multidisciplinary research from academia and knowledge exchange between private and public stakeholders to close this gap.

FOR CITATION:

Kafteranis, D., Unozkan, H., & Turksen, U. (2023). Know Your NFTs: Compliance and Enforcement Challenges in Trading of Non-Fungible Tokens. International Journal of Law in Changing World, Special Issue NFTs, 18-51. DOI: https://doi.org/10.54934/ijlcw.v2i3.57

1. BRIEF OVERVIEW OF NFTS AND THEIR GROWING POPULARITY

Non-Fungible tokens (NFTS) refer to cryptographic assets that represent ownership of unique digital items such as art pieces, music files, and other forms of media. Unlike cryptocurrencies such as Bitcoin and Ethereum, which are fungible and interchangeable with one another based on their value equivalence, NFTs are non-interchangeable owing to their uniqueness. NFTs employ blockchain technology that certifies the authenticity and provenance of a specific virtual asset by recording it in an immutable ledger. This means that once an NFT is created on a particular blockchain network such as Ethereum or Binance Smart Chain, it cannot be altered or replicated due to its unforgeability. The demand for NFTs has increased significantly in recent years owing to the unique attributes they possess and the profits they have yielded. They can serve as proof of ownership over rare virtual property; moreover, artists can use them as new models for monetising their work [5]. Notwithstanding these benefits offered by NFTs, there remain significant concerns surrounding their potential misuse for financial crimes such as money laundering and fraud schemes because they operate outside regulated markets.[1] In other words, NFTs are a product of decentralised financial sector. The anonymity afforded by some decentralised marketplaces makes it challenging for auditors and regulators to monitor such trading effectively. It remains crucial for both buyers and sellers involved in NFT transactions to understand the associated risks.

NFTs made their first appearance in 2017 with the launch of a video game, CryptoKitties on the Ethereum blockchain. This game allowed for the ownership and trading of unique digital cats, each with its own distinct attributes stored on the blockchain. CryptoKitties allowed users to buy, sell, and breed unique digital cats represented as NFTs, which could not be replicated or exchanged for identical tokens. This concept of unique virtual assets represented on a blockchain caught on quickly and has since expanded to various other types of virtual assets, including art, music, and collectibles.

Arguably, the most significant expansion of NFTs' has happened in the art market whereby NFTs have been presented as a new form of digital art. Traditionally, we think of art - or high art – as a painting by Picasso, Dali or Modigliani. The times are changing so does art. NFTs are a new trend and, maybe, the

[1] On 14 April 2023, the Virtual Assets Contact Group of the FATF raised concerns again about the misuse of virtual assets for money laundering and other illegal activities. The group is concerned that many countries have failed to implement legal measures. Available at: https://www.fatf-gafi.org/en/publications/Virtualassets/Press-Release-FATF-VACG-2023.html (accessed, 20.05.2023)

https://doi.org/10.54934/ijlcw.v2i3.57

future of art. They became particularly "famous" in 2021 when Beeple's collage, 'Everydays - The First 5000 Days' was sold by Christie's for USD 69 million (Reyburn, 2021).[2] During the COVID-19 pandemic, art found new ways to expand or, from a more critical perspective, the rise of NFTs has coincided with the traditional art market being subjected to stricter anti-money laundering (AML) rules in the European Union (EU).[3] For instance, the EU AML Directive designates "persons trading or acting as intermediaries in the trade of works of art, including when this is carried out by art galleries and auction houses, where the value of the transaction or a series of linked transactions amounts to EUR 10 000 or more" as obliged entities. These persons have a duty conduct 'know your customer' (KYC) practices, due diligence in trading of art and report suspicious activity transactions to the financial intelligence units.[4] Putting the traditional art market on the radar of AML rules, Financial Intelligence Units (FIUs) and law enforcement agencies (LEAs) may have driven criminals to search for alternative methods of laundering their proceeds of crime.

Apart from the art market, NFTs have expanded to other sectors. For example, NFTs have become very popular in the online gaming industry. Numerous online video games allow players to own and trade unique-in-game items, such as weapons and armour, represented as NFTs. Others allow players to own and trade unique characters, represented as NFTs, that can be used in multiple games. For instance, Sandbox is an Ethereum-based decentralised NFT gaming metaverse which enables non-tech savvy users to create, sell, use and monetize their own virtual reality NFTs (www.sandbox, accessed 25.05.2023).

NFTs can also be found in the music, audio and video industry. For instance, in March 2021, the rock band "Kings of Leon" offered an NFT-limited edition of their latest album (www.nme.com, accessed 25.05.2023). NFTs are used in charity as well. In March 2021, Jack Dorsey raised USD 2.9 million for charity by selling the first ever tweet. He donated the money to an African charity (Harper, 2021). An increasing number of charitable organisations use NFTs to raise funds. In the USA, Taco Bell sold 25 taco-themed NFT GIFS (NFTacoBells) to support the Taco Bell Foundation's Live Más Scholarship (Clark, 2021). These NFTs sold out within 30 minutes, with one selling for USD 3,646 (3,368 euros

[2] This has been the highest amount of money paid for an NFT so far.
[3] European Parliament and European Council Directive 2018/843 of 30 May 2018 amending Directive 2015/849/EU on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives 2009/138/EC and 2013/36/EU [2018] OJ L156/43.
[4] Directive (EU) 2018/843 of the European Parliament and of the Council of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives 2009/138/EC and 2013/36/EU; available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32018L0843 (accessed, 29.06.2022)

https://doi.org/10.54934/ijlcw.v2i3.57

approx). The foundation will also receive 0.1% of every subsequent sale, meaning the foundation will continue to benefit long after the initial auction as NFTs can contain smart contracts whereby royalties can be built into them [6]. Newly established Covid:aid is the first UK charity wholly dedicated to supporting people affected by the pandemic. Covid: aid auctioned off its logo as an NFT, offering the winning bidder the chance to be the world's first founding charity crypto-philanthropist (https://covidaidcharity.org, accessed 25.05.2023).

In recent years, the fashion industry has also shown tremendous effort to digitally transform and adapt fashion in the digital era. Brands are using NFTs to attract, verify and connect with consumers from all over the world (https://zipmex.com, accessed 18.05.2023). For fashion brands, digital fashion opens up a completely new field of activity. They can sell their fashion not only in the real world, but also in the virtual world via NFTs - especially in the gaming world. There, too, clothing plays an increasingly important role. The RTFKT brand was, as an example, established in 2019 and became a specialist in selling virtual sneakers (https://rtfkt.com, accessed 18.05.2023).

Last but not least, NFTs are becoming popular in the sports industry. For example, the National Basketball Association (NBA) launched a new NFT initiative, the Association NFT, where NBA's highlight moments become collectibles (https://nbatopshot.com, accessed 18.05.2023). The appearance of the NFTs will evolve based on players' performance. The more accomplished a player is throughout the season, the more their NFT will visually change. Top Shot is about video moments whereas the latest NBA initiative is closer to collectible cards, with a dynamic twist. In regard to the football industry, Sorare comes to mind in the realm of fantasy sports leveraging gamified NFTs (https://sorare.com, accessed 18.05.2023). It is currently the biggest platform for trading football NFTs. Players can purchase player card NFTs and each week, they can create line-ups and earn points based on players' real-life performances.

These examples of the expansion and use of NFTs as part of virtual asset trading demonstrate that NFTs have become well established business activity and it is clear that they will continue to grow. What is also clear is that authorities have not responded swiftly to regulate this decentralised financial sector.

This paper aims to analyse the legal status of NFTs in relation to money laundering and other financial crime risks. The focus of this legal analysis is to identify the legal status of NFTs under EU law, and examples from other jurisdictions are provided, when appropriate. In the first part, the analysis focuses

https://doi.org/10.54934/ijlcw.v2i3.57

on the potential use of NFTs for money laundering and other financial crimes with reference to a number of examples of the use of NFTs for illegal activities. In the second part, the challenges posed by NFTs for detecting and preventing illegal activities are scrutinised. This is followed by statistics on the transactions of NFTs in order to highlight the growing demand of NFTs, the growing value of NFTs trade and the lack of official NFT statistics. Following the analysis of the statistics, the EU legal landscape pertaining to NFTs is explored which demonstrates that NFTs are in a grey legal zone for the time being. In the final part, proposals for further regulatory responses, research and training are offered.

This article uses doctrinal and analytical methods to review the current legal literature on the issue of NFTs and money laundering. Apart from the legal analysis, the article explores statistics which give a unique and inter-disciplinary perspective to this study. The originality of this article lies on the combination of legal analysis and statistics as well as the proposals made which will enhance the safe use of NFTs and limit the criminal use of NFTs. In addition, this study is timely following the recent adoption of relevant EU legislation on crypto-assets which excludes NFTs. This article recommends that the EU consults relevant business stakeholders, adopts specific rules on NFTs in relation to anti-money laundering rules and invests in more research and training to be conducted.

2. EXPLANATION OF THE POTENTIAL FOR NFTS TO BE USED FOR MONEY LAUNDERING

NFTs have recently gained significant popularity and value in the art and virtual asset world. At the same time, the rise of NFTs has also brought concerns about their misuse as part of financial crimes and money laundering schemes (Department of the Treasure, 2022). This is because NFTs provide a convenient and practical means for illicit transactions with minimal physical interaction, thereby avoiding detection by law enforcement agencies (Kafteranis and Turksen, 2022).

The anonymity provided by NFTs, coupled with the lack of regulation in the industry, makes it difficult for authorities to trace or prevent illicit transactions involved in NFT trade. Furthermore, NFTs can be used as a tool to facilitate money laundering since they offer a high degree of flexibility in moving value across borders without oversight, taxation or detection (Kafteranis and Turksen, 2022). One of the main challenges with NFTs is the ability to verify the identity and legitimacy of both parties involved in a transaction.

https://doi.org/10.54934/ijlcw.v2i3.57

This lack of transparency and accountability in transactions may encourage criminals to utilise NFTs for fraudulent purposes, such as using fake identities, transferring proceeds of crime, or manipulating the value of NFTs for personal gain. Given the decentralised nature of the NFT industry, their susceptibility to being exploited for financial crimes is a growing concern among financial regulators worldwide (Department of the Treasure, 2022), (FCA, 2022). To address these concerns, some NFT marketplaces such as OpenSea and Quantus have voluntarily implemented their anti-money laundering (AML) protocols and KYC requirements for NFT transactions (https://opensea.io, accessed 18.05.2023), (www.quantusgallery.com, accessed 18.05.2023). These self-imposed rules require NFT marketplaces to conduct due diligence on their customers, including identity verification and transaction monitoring, to ensure compliance with relevant anti-fraud and AML laws. While, self-regulation could provide a degree of deterrence for criminal use of NFTs, given the major fraud, corruption and money laundering scandals in the regulated financial services markets such as banking and investment, we argue that voluntary self-regulation would not suffice to safeguard the public against malfeasant use of NFTs. Similar concerns were raised when crypto currencies first emerged as a decentralised virtual asset[5] which then led to the inclusion of cryptocurrency market to be included in the relevant legal regimes for countering financial crime and AML. Authorities have had a chance to be proactive about regulating NFTs yet we have not seen any legal developments to date.

The anonymity and lack of regulation make NFT trading susceptible to money laundering. Unlike traditional banking systems, which require identity verification and compliance with AML laws, NFTs can be bought and sold anonymously on blockchain platforms, making it difficult to trace the origin of the transactions.[6] This makes it easier for criminals to transfer and convert their illegally acquired funds into NFTs, which can then be sold on exchanges or marketplaces without leaving a paper trail. Another way in which NFTs can be used for money laundering is through their high value and volatility.

[5] The same characteristics make crypto currencies attractive to criminals. See: Congressional Research Service. (2019) Virtual Currencies and Money Laundering: Legal Background, Enforcement Actions, and Legislative Proposals. available at: https://sgp.fas.org/crs/misc/R45664.pdf (accessed 29.06.2022)

[6] Anonymity is a major issue in relation to NFTs. From the trading perspective, there is a risk that users will trade with themselves (wash trading) and, thus, will be able to launder their money themselves. Criminals, by abusing anonymity, can create their own NFT, register it on a marketplace and then purchase it themselves.

https://doi.org/10.54934/ijlcw.v2i3.57

Because NFTs can be bought and sold for millions of euros, criminals can use them to obscure the source of their illicit funds.[7] They can purchase high-value NFTs using their illegally obtained money and then sell them for cash, appearing as though they obtained the funds through legal means. This process enables criminals to evade detection by law enforcement agencies and financial regulators. Furthermore, the lack of regulation in the NFT market allows criminals to inflate the price of a particular NFT artificially (Chainalysis, 2022). This can be achieved through 'wash trading', where an individual or group of individuals would artificially inflate the price of NFTs by continuously buying and selling them among each other, creating false demand and driving up the price. Criminals can then sell their NFTs for a profit, even though the true value of the asset does not align with its original sale price.

While not all NFTs are used for illicit activities, and many legitimate buyers and sellers use them in a transparent and legitimate manner, the potential for NFTs to be used as a tool for money laundering highlights the need for increased regulation and oversight in this emerging market to prevent misuse and criminal activities.

3. EXAMPLES OF NFTs BEING USED FOR ILLICIT ACTIVITIES

As the NFT trade increase, it is inevitable that they will be increasingly used for money laundering, allowing individuals to transfer illicit funds anonymously. Criminals can hack into user accounts on NFT marketplaces and transfer NFTs to their own accounts, making it difficult to trace the origins of the funds (Owen and Chase, 2021). The lack of KYC checks on blockchain transactions also makes it easier for individuals to transfer funds without oversight or detection.

In tandem with the warning from the U.S. Treasury Department that "the ability to transfer some NFTs via the blockchain without a centralized intermediary may make them attractive to those seeking to launder illicit proceeds" (Department of the Treasure, 2022). Indeed, we have identified some of the emerging criminal schemes involving NFTs.

[7] The sale of an NFT for USD 69 million and the rise in prices of CryptoPunks demonstrate a volatile market where exorbitant amounts of money are involved. Christies. (2008). 10 things to know about CryptoPunks, the original NFTs; available at: https://www.christies.com/features/10-things-to-know-about-CryptoPunks-11569-1.aspx (accessed 29.06.2022).

https://doi.org/10.54934/ijlcw.v2i3.57

In one case, a trader on the online marketplace OpenSea was charged with wire fraud and money laundering for insider trading in NFTs (U.S. Attorney's Office, 2022-a). In another case, in March 2022, the US Department of Justice arrested two people for NFT fraud and money laundering (U.S. Attorney's Office, 2022-b). The defendants executed a one million-dollar NFT fraud scheme in January 2022 and were preparing to execute a second one prior to their arrests. In the UK, the HM Revenue and Customs Authority (HMRC) arrested three people who were hiding drug money of 1,4 million pounds using NFT purchases (www.bbc.co.uk, accessed 12.04.2023). It was later revealed by the police that the suspects were using sophisticated methods like stolen identities, false addresses, unregistered mobile phones, and fake invoices to disguise their original identities. HMRC stated that it had seized three digital NFTs which were being used for illegal investments (www.bbc.co.uk, accessed 12.04.2023).

4. CHALLENGES POSED BY NFTs FOR DETECTING AND PREVENTING ILLICIT ACTIVITIES

The emergence of non-fungible tokens (NFTs) has created a new avenue for the purchase and sale of unique virtual assets, such as artwork or music. However, it has also introduced challenges in detecting and preventing money laundering. On one hand, NFTs can potentially make it easier to identify the origin and ownership of virtual assets. This is because each NFT is a unique and identifiable virtual asset which can be traced on the blockchain back to its owner. On the other hand, NFTs can also facilitate money laundering by allowing criminals to convert their illicit funds into virtual assets through online payments.

The decentralised and anonymous nature of blockchain transactions can make it difficult for law enforcement agencies to identify money laundering activities. Decentralised exchanges such as Venus allow users with unhosted wallets to exchange crypto assets without a centralised party that would be obliged to conduct KYC, Customer Due Diligence (CDD), and AML checks (Department of the Treasure, 2020). Unhosted wallets facilitate anonymity in the blockchain and it is very difficult to establish who the beneficial owner is and that puts into question the benefits offered by blockchain technology.

https://doi.org/10.54934/ijlcw.v2i3.57

Additionally, the lack of clear regulatory guidance and industry standards for NFTs adds to the complexity of detecting and preventing money laundering through this avenue. As the placement stage is seen as the most critical for money launderers, NFTs provide an avenue to launder proceeds of crime successfully. The current legal frameworks in the EU, the US and the UK (leading jurisdictions in the Financial Action Task Force) do not address the challenges posed by NFTs nor do they provide a legal definition of NFTs (www.fatf-gafi.org, accessed 12.04.2023). This point will be discussed later in more detail, but it is certainly a basic and urgent issue that needs to be addressed by legislators. Apart from the regulatory gap on NFTs, it seems that government agencies do not fully understand the concept of NFTs and their functioning and they may not be able to differentiate them from fungible crypto-assets [7]. The fact that authorities have not actively engaged with the regulation of NFTs creates another barrier to the detection and prevention of financial crimes involving NFTs.

Furthermore, wash trading is a serious issue which hampers the detection and investigation of illegal activities involving NFTs. Wash trading can be defined as when the buyer and seller in a transaction are the same person or two persons colluding [9]. The wash trading activity is done to inflate the value of a specific asset with the hope that it will attract new buyers to support that false pricing level. In these cases, the seller will plan the pricing and different wallets involved and make the market look very profitable when, in reality, the action is being entirely orchestrated behind the scenes. According to the Commodity Futures Trading Commission in the USA, wash trading involves entering into or pretending to enter into transactions in order to create the appearance of purchases and sales, without incurring market risk or changing the trader's market position (www.cftc.gov, accessed 25.05.2023). The Financial Conduct Authority (FCA) in the UK has also assessed wash trading and its relation to money laundering. The FCA considers certain market-abuse practices, including wash trading, as potential indicators of money laundering activities. The FCA has highlighted wash trading incidents in connection with money laundering and has referred to the Financial Action Task Force's (FATF) reports on trade-based money laundering risks (FCA, 2019).

The FATF identified various techniques of trade-based money laundering some of which include over- and under-invoicing of goods and services, over- and under-shipment of goods and services, multiple invoicing of goods and services, and falsely described goods and services (FATF, 2020). In conventional financial markets, this is banned as it misleads the rest of the market about the true level of demand, distorts the prices and entices others to trade based on fake information and misleading value. Coordinated

https://doi.org/10.54934/ijlcw.v2i3.57

wash trades can be effective in artificially pumping price floors. Wash trades may also be a tactic used by money launderers to wash money into a more verifiable asset. These types of trades are typically characterised by NFTs selling at a price that is much higher than their market price (Grossman, 2023).

Finally, sleep-minting is a new form of fraud that may occur in NFT trading when an individual exploits a vulnerability in a smart contract or creates a limited-edition NFT contract to mint NFTs in the representation of other users and later claim ownership of those NFTs [1]. This type of fraud is particularly advantageous for individuals seeking to profit in the NFT industry by obtaining an endorsement from a well-known NFT user.

All the aforementioned elements pertaining to NFTs illustrate the urgent need for regulatory authorities to establish clear and specific rules for NFT trading. Before discussing the regulatory response to NFTs, some statistics will be presented in relation to NFTs and money laundering which will help to understand the extent of the transactions and funds involved in NFT trading.

5. STATISTICS ON MONEY LAUNDERING AND NFTS

5.1. Overview of recent money laundering statistics in the EU

Basel Anti Money Laundering Index evaluates the risk of money laundering and terrorist financing in 203 countries.[8] This calculation depends on reports released by international organisations such as; Financial Action Task Force (FATF), Transparency International, the World Bank, and the World Economic Forum. According to the latest report in 2022, in the European Union and Western Europe zone, "Belgium, Cyprus, the Netherlands, Spain, and the UK are listed by the US as major money laundering

[8] Basel AML Index 2022, Public Edition Ranking money laundering and terrorist financing risks around the world; available at: https://index.baselgovernance.org. (accessed, 25.05.2023)

https://doi.org/10.54934/ijlcw.v2i3.57

destinations. Malta is grey-listed by the FATF as a jurisdiction with strategic deficiencies in its AML /CFT framework".[9]

The mutual evaluation report (MER) conducted by FATF represents an assessment of the measures a country takes to fight money laundering (ML) and terrorism finance (TF) as well as the proliferation of weapons of mass destruction.[10] A MER entails a detailed 'description and analysis of a country's system for preventing criminal abuse of the financial system [and] focused recommendations to the country to further strengthen its system'.[11] When FATF conducts a MER, it uses the 40+ AML Recommendations as its benchmarks to measure the effectiveness and compliance of a country's AML framework with the recommendations.[12] One of the recommendations is on suspicious transactions reporting, which states, in part, that: 'The reporting requirement should be a direct mandatory obligation, and any indirect or implicit obligation to report suspicious transactions, whether because of possible prosecution for a [ML] or TF offence or otherwise (so-called "indirect reporting"), is not acceptable' (FATF, 2012-2022, p.87).[13]

The endeavours of countries in the fight against ML depict the seriousness of the countries' willingness to fight against illicit events in cryptocurrencies. The wish of countries in fighting ML shows important clues for future regulations which may include NFT trades.

The analysis of the MER here is focused on the compliance component involving some EU Member States whose reports were released in recent years of 2022 and 2023, as well as bordering countries of Norway, Turkey and the UK whose reports were released in 2022 and 2023 respectively. In these MERs, there is a section on compliance with the FATF standards, whereby the categorised outputs of each recommendation are divided into the following elements: non-compliant with the recommendations, partly compliant with the recommendations, largely compliant with the recommendations, and compliant with the recommendations. In this regard, Table 1 is composed of an analysis of these compliance levels from the MERs for 2021 and 2022.

Table 1. *FATF Mutual Evaluation Reports Recommendation Results*

[9] https://www.fatf-gafi.org/
[10] https://www.fatf-gafi.org/en/publications/Mutualevaluations/More-about-mutual-evaluations.html.
[11] https://www.fatf-gafi.org/en/publications/Mutualevaluations/More-about-mutual-evaluations.html.
[12] https://www.fatf-gafi.org/en/publications/Fatfrecommendations/Fatf-recommendations.html;
[13] FATF (2012-2022), International Standards on Combating Money Laundering and the Financing of Terrorism & Proliferation, FATF, www.fatf-gafi.org/recommendations.html.

https://doi.org/10.54934/ijlcw.v2i3.57

	Non Compliance	Partly Compliance	Largely Compliance	Compliance	Non Compliance Rate	Partly Compliance Rate	Largely Compliance Rate	Compliance Rate
Bulgaria-2022	0	23	15	2	0.0%	57.5%	37.5%	5.0%
Croatia-2022	0	19	17	4	0.0%	47.5%	42.5%	10.0%
Estonia-2022	0	15	18	7	0.0%	37.5%	45.0%	17.5%
Finland-2022	0	7	24	9	0.0%	17.5%	60.0%	22.5%
France-2022	0	3	18	19	0.0%	7.5%	45.0%	47.5%
Germany-2022	0	5	18	17	0.0%	12.5%	45.0%	42.5%
Ireland-2022	0	6	17	17	0.0%	15.0%	42.5%	42.5%
Poland-2022	0	17	21	2	0.0%	42.5%	52.5%	5.0%
Norway-2023	0	3	18	19	0.0%	7.5%	45.0%	47.5%
Turkey-2022	2	4	22	12	5.0%	10.0%	55.0%	30.0%
UK-2022	0	1	15	24	0.0%	2.5%	37.5%	60.0%
EU-Average	0	12	19	10	0.0%	29.7%	46.3%	24.1%

According to Table 1, the UK has the biggest compliance rate with 60%, and France follows with 47.5%. When the EU average of the compliant rates in the MERs is considered, according to Table 5, the compliant rate is 24.1%, the largely compliant rate is 55.6%, and the partly compliant rate is 19.8%. To notice the differences more clearly, the analysis in Table 1 has been converted to Figures 1 and 2, which can be found below.

https://doi.org/10.54934/ijlcw.v2i3.57

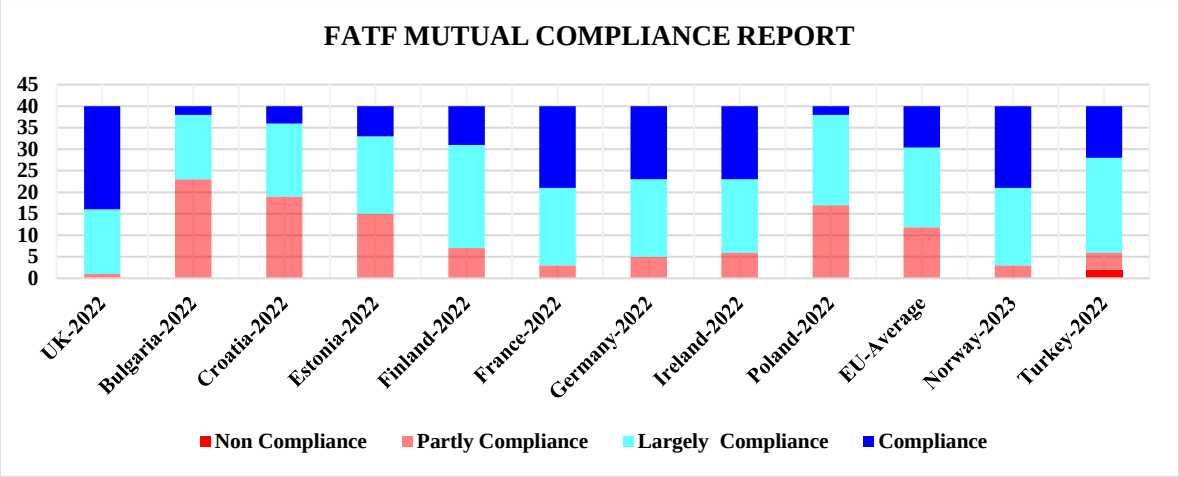


Figure 1. *FATF Recommendations Results of States in 2021 and 2022*

In Figure 2, blue bars compose of compliance and largely compliant fields, while red bars compose of partly compliant and non-compliance fields.

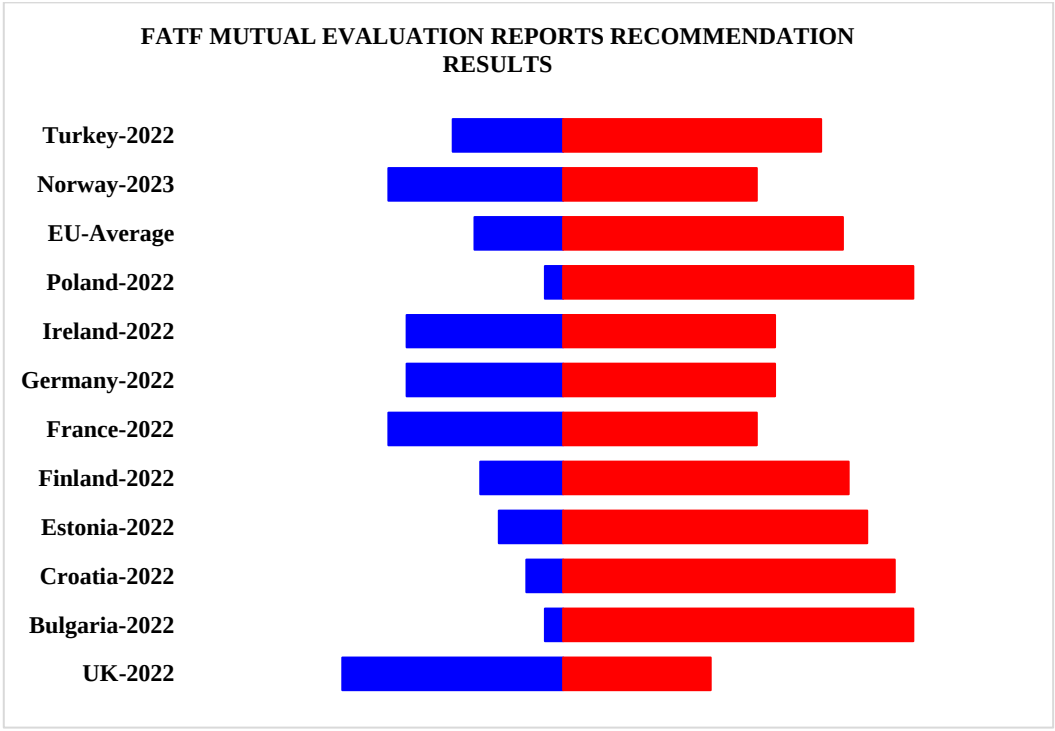


Figure 2. *FATF Recommendations Results of States in 2021 and 2022 with two categorized perspectives*

https://doi.org/10.54934/ijlcw.v2i3.57

Based on the results from these jurisdictions, the average compliance levels of each EU Member State can be seen. According to Figure 3, the average compliance rate in EU Member States is 24.1%, and the largely compliant rate in EU Member States is 46.3%. On the other hand, the average partly compliant rate in the EU Member States is 29.7%.

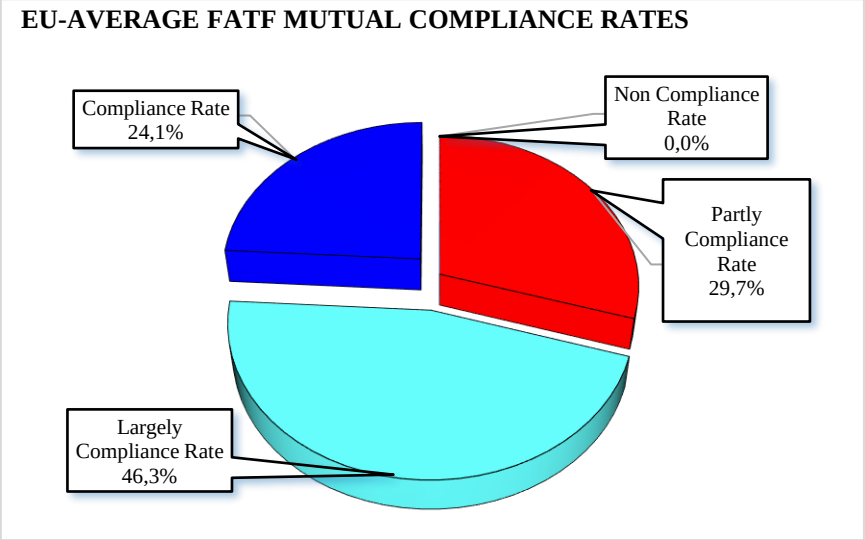
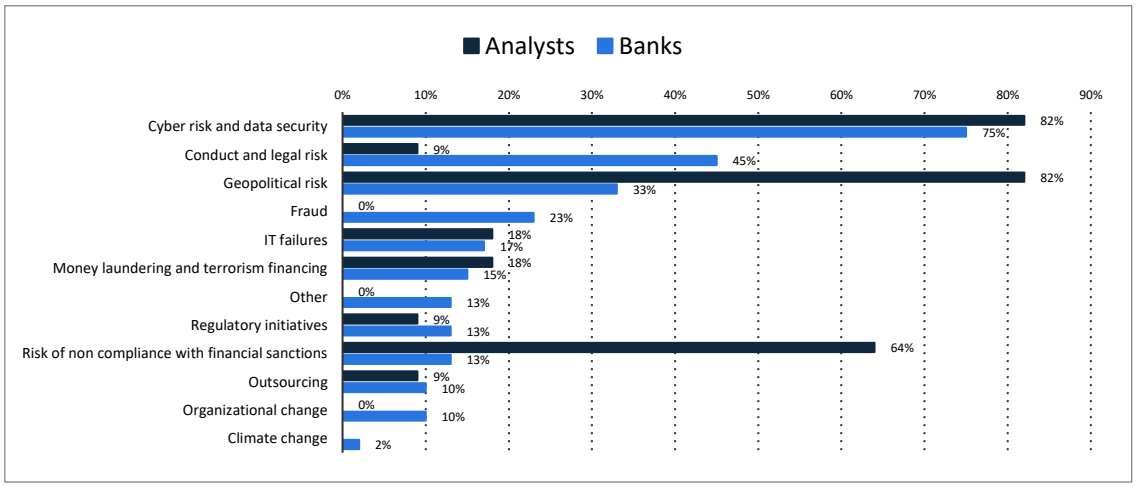


Figure 3. *EU Member States' Average in Compliance with FATF Recommendations*

For the European banking system in 2022, among the operational risk factors, money laundering and terrorist financing composed 18% of total risk according to analysts, whereas banks evaluated this risk rate by 15%. Money laundering activities not only relate to banking sector transactions but also includes other financial actors and trades in which proceeds of crime can be laundered. Figure 4 depicts the main drivers of operational risk for the banking sector in Europe (Statista, 2022-a).



https://doi.org/10.54934/ijlcw.v2i3.57

Figure 4. *Main drivers of operational risk for the banking sector in Europe according to European banks and analysts in 2022.*

The United Nations Office on Drugs and Crime (UNODC) predicts that the amount of money laundering worldwide may be up to 1.87 trillion euros (www.unodc.org, accessed 25.05.2023). Eurojust's statistics indicate that money laundering cases made up almost 15% of cases notified to the Agency between 2016 and 2021. These findings underpin the scale and seriousness of ML and the likelihood that NFTs can be utilised for ML.

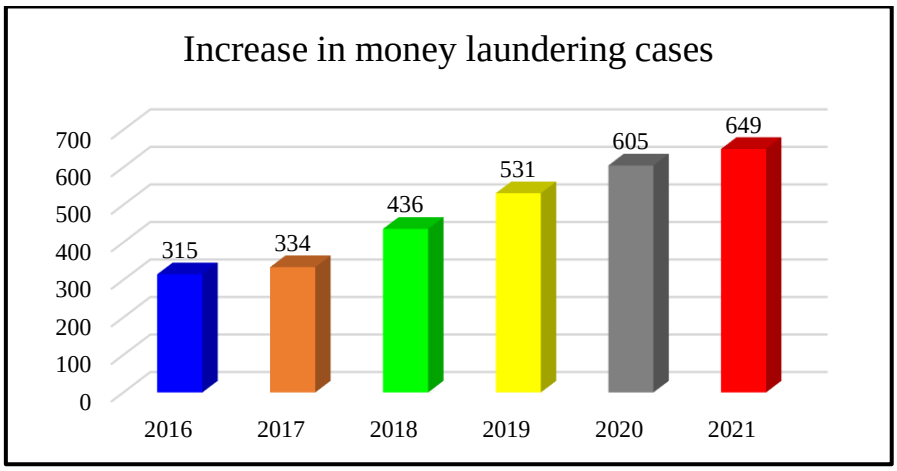


Figure 5. *Money laundering cases registered at European Union Agency for Criminal Justice Cooperation, Source: www.eurojust.europa.eu*

The number of cases related to money laundering events notified to Eurojust has constantly increased since 2016, making up 12–14 % of all notified cases. [14] In the same report, Eurojust shares the money laundering events in which EU Member States are involved. In Table 2, this is presented.

In Table 2, it can be seen that in some EU member states ML events are higher than others. When we order the countries in descending order, the first five countries are; Italy (723), France (637), Spain (578), Germany (569), and the Netherlands (398).

[14] European Union Agency for Criminal Justice Cooperation. "Eurojust Report on Money Laundering", 2022. available at: https://www.eurojust.europa.eu/publication/eurojust-report-money-laundering (accessed, 25.05.2023)
Eurojust assessed that, virtual assets were still outside the scope of EU legislation and this situation increase the risks related with crypto assets. Although virtual asset service providers (VASPs) have to provide information and send transaction details in suspicious situations, virtual asset transactions need additional regulations.

https://doi.org/10.54934/ijlcw.v2i3.57

The analysis of the descriptive statistics on money laundering demonstrates that the phenomenon is ongoing and large amounts of money are involved even in strictly regulated jurisdictions such as the EU, the UK and the US. The involvement of NFTs in money laundering and other financial crime activities makes the picture more complex as it will be analysed below.

Table 2. *EU Member State Involvement in money laundering cases*

EU Member State Involvement in Money Laundering Cases			
State	As owner	As requested participant	Total
BE	60	219	279
BG	87	185	272
CZ	90	116	206
DK	20	70	90
DE	133	436	569
EE	37	68	105
IE	13	78	91
EL	133	73	206
ES	167	411	578
FR	267	370	637
HR	24	88	112
IT	380	343	723
CY	59	155	214
LV	147	105	252
LT	31	103	134
LU	22	145	167
HU	113	172	285
MT	16	110	126
NL	154	244	398
AT	47	160	207

https://doi.org/10.54934/ijlcw.v2i3.57

PL	70	217	287
PT	107	120	227
RO	128	202	330
SI	96	72	168
SK	74	110	184
FI	49	49	98
SE	92	80	172

5.2. Digital structure, transaction details and statistics related to popularity of NFTs

NFTs consist of two different components in their digital structure. The first component is smart contracts, which are stored on ERC721-Etherchain. The second component is the content and metadata, which is too large to be stored on Etherchain. As a result, the smart contract addresses the metadata on Etherchain permanently, but the user/owner can only access the metadata until it is deleted (Benson, 2021). If the data storage field no longer supports the NFT, the owner will no longer be able to access his/her NFT (Ravenscraft, 2022).

This temporary situation makes NFTs vulnerable, and additional regulations are required to protect individuals, especially against risks stemming from structural weaknesses.

Moreover, data mining activities on NFT transactions to collect transaction details are limited due to the privacy-based structure of smart contracts. In the case of NFTs, each NFT is assigned a unique code group generated as a distinct identifier. This code, obtained through computer science abilities, serves as the Application Binary Interface (ABI), enabling communication between two program modules, typically between the metadata for NFTs (operating systems) and the smart contracts for NFTs (user programs) (Quicknode, 2023).

In data mining processes for transaction details, researchers and quantitative analysts in finance commonly focus on capturing the total value of the transferred products. However, in the case of NFT transfer transactions on ERC721 and ERC1155, extracting the value of the product is not straightforward without the use of ABI. While researchers and quantitative analysts can gather transaction details for ERC721 and ERC1155, the value of the product cannot be obtained without ABI.

https://doi.org/10.54934/ijlcw.v2i3.57

Furthermore, another challenge in the data purification process for NFT transactions arises from dependent transactions. Some transactions on ERC721 and ERC1155 involve activities such as airdrops or non-transfer/non-mint processes, which need to be taken into consideration during the data cleansing process.[15]

In the minting, transfer, or safe transfer method IDs within transactions, a new ownership is acquired through the transaction. However, in other types of transactions, there is no transfer of ownership for any NFT. Due to this distinction, when analysing new ownership of NFTs, the data purification process needs to specifically collect, mint or transfer details from transactions. It is important to note that although there are designated code groups for each of these transaction types, users have the flexibility to utilise other codes in their mint or transfer transactions.

To visualise these transfers and examine the transaction methods, a screenshot of the transfers on Etherscan is provided in the figure below.

Transaction Info	Method	Age	From	To	Type
0x08c3b69f31b13a581...	Borrow	23 secs ago	*深大高财生.eth	0x294693...8D98a20B	ERC-721
0x79e832223e5d05ae...	0x00000000	23 secs ago	fastrabbit.eth	0xbbFEa9...35688Cf7	ERC-721
0x07f34171fbb8668ffe...	Mint Batch	23 secs ago	Null: 0x000...000	0xD52b58...C9a8161E	ERC-1155 x2
0xdc8a69a70e279ac6...	0x00000000	23 secs ago	sladdict.eth	0x700b8B...e03CF33b	ERC-721
0x2e0de4d6e813d081...	Mint	35 secs ago	Null: 0x000...000	bookiedew.eth	ERC-1155
0x5060b19e19c7f4a0f...	Claim And Burn	35 secs ago	0x23916B...0779f323	0x0fE959...867aEa3B	ERC-721
0x9525fabe745836925...	Safe Transfer ...	35 secs ago	0x988351...9A358477	0x81cB16...044a68eB	ERC-721
0x812e2639e35b1fea5...	Bulk Transfer	47 secs ago	0x1f588d...1Bc42caA	0x9a201E...7F57E92e	ERC-721
0x812e2639e35b1fea5...	Bulk Transfer	47 secs ago	0x1f588d...1Bc42caA	0x9a201E...7F57E92e	ERC-721
0x8c8fb58c31ad3ab5f...	Match Advanc...	47 secs ago	0xee5A43...Aa221Bb4	0x17F081...18330Cd0	ERC-1155
0xb4e26cea053d0b62...	Mint	47 secs ago	Null: 0x000...000	141344.eth	ERC-721

Figure 6. *Transaction samples on ERC721 and ERC1155.*[16]

[15] Available at: https://ethereum.org/en/developers/docs/standards/tokens/erc-721/ (accessed 11.05.2023)
[16] Available at: https://etherscan.io/nft-transfers (accessed 11.05.2023, time 11.00 am in GMT+1)

https://doi.org/10.54934/ijlcw.v2i3.57

In the specified transaction procedures on ERC721 and ERC1155, each of these methods has a designated code group, and transactions must begin with these method IDs. As a result, individuals can easily trace the movements of these products on the blockchain, enabling market evaluation and token analysis. However, users may not always adhere to the transaction code rules defined in smart contracts. Consequently, the data purification processes require additional improvements to accurately identify ownership transactions.

Due to these challenges, data and statistical report providers often resort to utilising all transaction numbers, total wallet numbers, or total payment amounts for transfers. These alternative measures are employed to compensate for the difficulties in precisely tracking and categorising ownership transactions. [17]

Moreover, at the time of writing this paper, there has been no statistical output or analytical reports related to NFTs by state or public authorities. All the available datasets and statistical information on NFTs have been released by private entities. The statistics provided by crypto research companies are limited because of the reasons related to the smart contracts, ABI and transaction method IDs difficulties which were explained above.

Because of the difficulties in tracking transaction details of NFTs, NFTs are seen as vulnerable products for illicit financial activities. Fraudsters do not want to be tracked and NFT based illicit activities provide a field in which fraudsters could not be tracked easily.

Although the popularity of NFTs has increased in general, there are variations in terms of their use or popularity in different segments of the NFT market. In the calculation of the amount of total sales, the transaction details of wallet movements are taken into account. Therefore, the in-game transfers of NFTs are not considered in NFT game sales values. As explained in Table 3, it is clear that sales in game and art segments have consistently increased and these two segments were not affected by the decrease in 2019. The general NFT sales amount increased enormously in 2021 (Statista, 2022-b).

Table 3. *Value of sales involving a non-fungible token (NFT) in different segments from 2018 to 2021 (in million U.S. dollars only recordings on ETH transactions)*

[17] Available at: https://api.a16zcrypto.com/wp-content/uploads/2023/04/State-of-Crypto.pdf (accessed, 25.05.2023)

https://doi.org/10.54934/ijlcw.v2i3.57

	2018	2019	2020	2021
All	36.77	24.02	66.78	13981.9
Collectible	13.86	2.71	16.45	7130.05
Game	5.19	11.59	15.26	2153.82
Art	0.05	0.45	17.11	2107.57
Metaverse	16.35	5.38	15.97	630.99
Utility	1.29	4.11	2.41	75.5
DeFi	0	0	0	19.75
Undefined	0.03	0	0	1864.22

The increased rate and amounts of NFTs in various segments in 2021 were different from each other. Accordingly, each segment analysis may give specific and unique information about NFT trading.

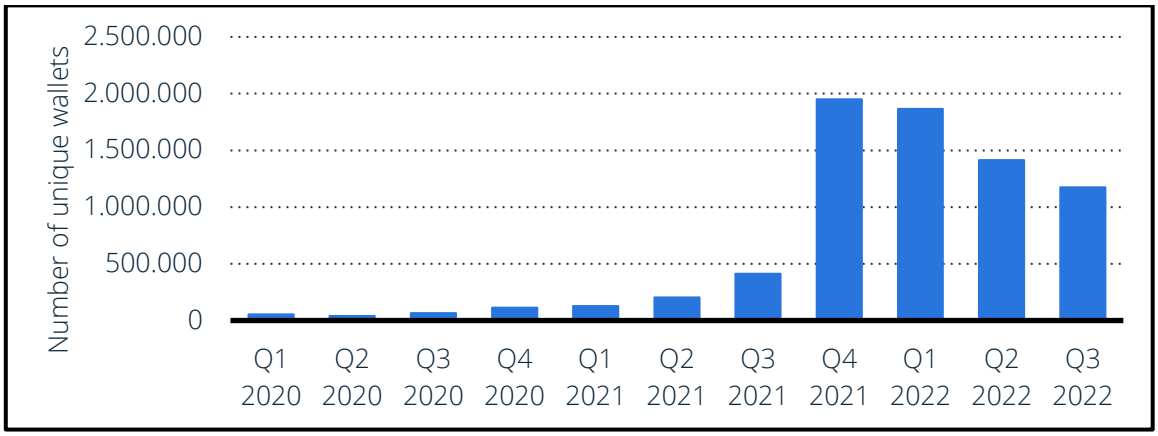


Figure 7. *Number of unique wallets that either bought or sold an NFT asset worldwide from 1st quarter of 2020 to 3rd quarter of 2022*

Figure 7 shows that NFT usage and popularity in the crypto world reached the top level in the third quarter of 2021 and the first quarter of 2022 (Statista, 2022-c). This indicates that NFT popularity was still very high in 2022.

Table 4. *Search interest of consumers in the search term "NFT" in 206 different countries and territories worldwide from December 2021 to November 2022*

https://doi.org/10.54934/ijlcw.v2i3.57

World General		European Union		Population on 1 January 2022
Rank	**Country**	**Rank**	**Country**	
1	China	12	Cyprus	**904,705**
2	Hong Kong SAR	27	Malta	**520,971**
3	Singapore	46	Estonia	**1,331,796**
4	Gibraltar	49	Netherlands	17,590,672
5	Macao	50	Slovenia	2,107,180
6	Cayman Islands	55	Romania	19,038,098
7	Nigeria	56	Portugal	10,352,042
8	Andorra	57	Latvia	1,875,757
9	Taiwan	75	Belgium	11,631,136
10	Mongolia	76	Lithuania	2,805,998
11	Philippines	77	Ireland	5,060,005
12	Cyprus	86	France	67,842,582
13	Bermuda	90	Sweden	10,452,326
14	Lebanon	94	Austria	8,978,929
15	South Korea	97	Croatia	3,879,074
16	Guam	102	Spain	47,432,805
17	Venezuela	106	Bulgaria	6,838,937
18	French Polynesia	107	Denmark	5,873,420
19	Sint Maarten	112	Italy	58,983,122
20	Canada	124	Germany	83,237,124
29	United States	127	Hungary	9,689,010
53	United Kingdom	131	Greece	10,603,810
58	Albania	132	Slovakia	5,434,712
85	Turkey	160	Poland	37,654,247

https://doi.org/10.54934/ijlcw.v2i3.57

According to search results on Google, the crypto interest of customers can be gained state by state (Statista, 2022-d).[18] In Table 4, the Worldwide rankings of the countries are presented.

In Table 4, it is clear that among EU member states, Cyprus and Malta have a bigger interest in NFTs than other EU Member States. Besides, Asian countries' interest in NFTs is higher than EU Member States. According to Table 4, between EU countries, the total populations of the countries lesser than 1.5 million have a bigger interest in NFTs than higher than 1.5 million total populations.

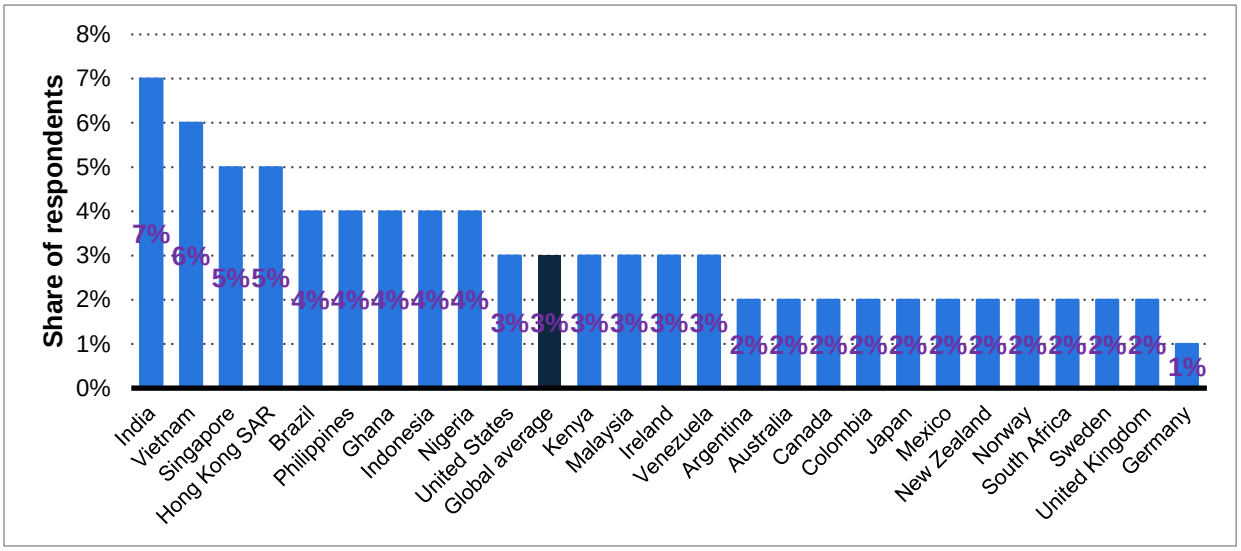


Figure 8. *Percentage of adults who own an NFT in selected countries worldwide as of September 2022*

In Figure 8, NFT adoption in 26 countries is presented (Statista, 2022-e). In Figure 8, the share of adults who own NFTs is given. The data used in this chart is composed of observations from July 2022 to September 2022. The owning rate assessed the individuals who are 18 years or older. The results are the average rates of these three months. As seen in Figure 8, there is no European Union Member State in the first 10 countries in the adoption of NFTs. The rate of NFT ownership in the EU is lower than the global average.

[18] Available at: https://european-union.europa.eu/principles-countries-history/key-facts-and-figures/life-eu_en (accessed 21.05.2023)

https://doi.org/10.54934/ijlcw.v2i3.57

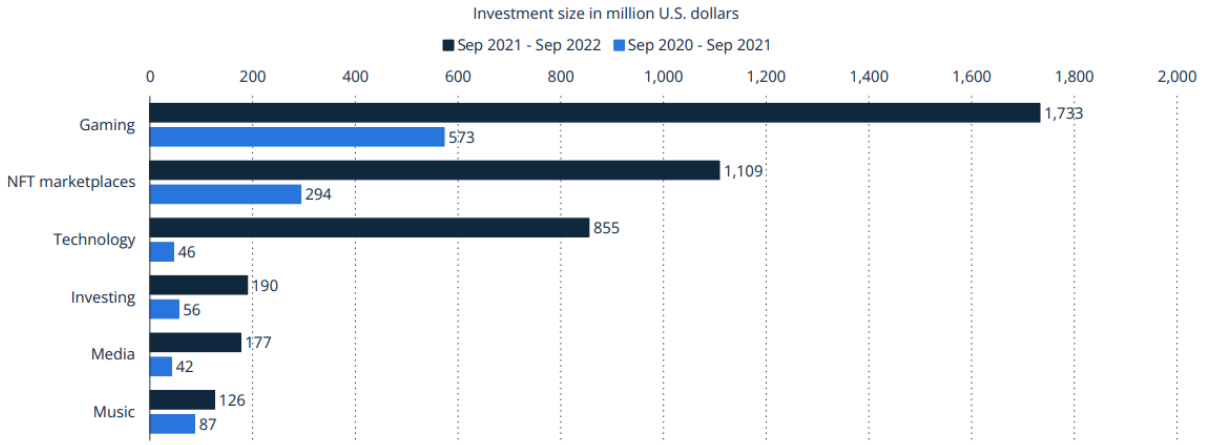


Figure 9. *NFT categories with the highest value of investments from September 2020 to September 2021, and September 2021 to September 2022 (in million U.S. dollars)*

According to Figure 9, it is clear that the investments in NFTs in each segment were higher in 2022 than in 2021 (Statista, 2022-f). Thus, it can be concluded that the returns from NFTs in the markets of these segments will increase in 2023.

The biggest investment in NFTs was in the game segment in 2022. This can be another important issue for suspicious transactions because in-game transaction detection is not as easy as EtherScan transactions. Because in-game transactions happen in a private database and the database is managed by the game company, each game company has the ability to share suspicious transactions because in trade-based regulations customers' privacy is under protection. This means that, under the current legal framework, the game companies can assess if transactions are suspicious or not but they have no legal duty to report these.

Besides, many new companies declared their interest in NFTs and allocate a budget to invest in NFTs in the near future.[19] One of the biggest investors in NFTs in the near future may be Amazon (Basulto, 2023). The company declared its interest in NFTs and this may help formal and informal actors to understand the complicated structure in detail and construct regulations more efficiently because Amazon

[19] https://www.nftculture.com/sponsored/latest-nft-projects-to-invest-in-2023/
https://wellfound.com/startups/industry/nft-5
https://www.analyticsinsight.net/top-ten-nft-development-companies-in-2023/
https://www.nftme.tv/

https://doi.org/10.54934/ijlcw.v2i3.57

declared the new initiative as "NFTMe", which explores NFT culture and disruption worldwide (Bhardwaj, 2023), (Iddenden, 2023).

Some of the crimes on NFTs are; money laundering (Zeljko B and Momcilo), fraud [10], theft (Elliptic, 2022), wash trading (Gilbert, 2022) and sleep minting [1].

In the "Global Financial Stability Report" from International Monetary Fund (IMF), cryptocurrencies' reliability in terms of an investment tool was assessed as weak and evaluated as a regulation need field. In this report, IMF offered a large and urgent regulation for virtual assets and virtual asset service providers (VASPs). [20]

5.3. Analysis of the limitations of current data on NFT-related financial crime

Table 1 presented some of the different segments in which NFT sales are involved. These include; Collectibles, Games, Art, Metaverse, Utility, DeFi and Music.

Especially NFT-based game industry should be seen as different from other segments because transaction details of users therein cannot be traced on-chain transactions. The money paid for game creatures in the NFT world happens in a private platform in which only the game company has the transaction details. As per the user terms and conditions, especially customer privacy, game companies in the NFT-based game industry do not wish to share the transaction details some of which may include ML.

NFT marketplace transactions are another important issue to focus on. When the transactions happen in a cryptocurrency marketplace the details can be gained via chain transactions because these kinds of transactions put traces on chains. Whereas the transactions in private companies such as game-based NFT marketplaces like Aixie Infinity, do not place any trace in any public field. Thus, tracking in-game transactions is not easy because they are not recorded in a publicly open area like Etherchain

[20] International Monetary Fund (IMF). "Global Financial Stability Report", 2022, available at: https://www.imf.org/en/Publications/GFSR (accessed, 20.05.2023)
According to classical investment methods such as equities, there is an increasing trend with investment methods and market volatility, and in crypto markets volatility is higher. In 2022, bitcoin price decreased by more than 50 percent, and some crypto funds were unwound. In this period, stable coins, which are expected to have a stable value close to dollar, such as Terra, collapsed.
Other stable coins such as Tether, the largest collateralized stable coin, decreased significantly too. On the other hand, some other stable coins received some additional money inputs and gained capability to maintain parity during this high volatile period.

https://doi.org/10.54934/ijlcw.v2i3.57

transactions. The transaction details are obtained only by the game companies in which these transactions happen.

On 28 March 2023, a suspicious in-game money laundering event was submitted to the San Francisco federal court in the USA. In Roblox which is one of the biggest children's gaming platforms, over 300 users were confronted with ML by buying fake in-game items with in-game currency.[21]

In another event involving Roblox, the company was charged with fraud and arbitrarily deleting trading records. During the court proceedings, it was stated that: "The trick is simple: Roblox encourages users to purchase in-game content on the platform which it has made available—and from which Roblox earns real money—without performing any meaningful oversight to ensure that the content coming into its marketplace complies with the platform's policies. After its users have paid for their purchases, Roblox then performs sham 'content moderation' by deleting content which it has determined violates its policies. Roblox then refuses to refund anything to its users for their deleted content. When users report that their content has disappeared in error and demand refunds, Roblox cleverly deflects its irresponsible profit-seeking behavior by alleging that the content violated the platform's policies, without any actual detail, offering Roblox cover to engage in a fraudulent content deleting scheme" (Neale, 2023).

The charges were upheld and Roblox agreed to pay $7.5 million to affected users (Neale, 2023).

These kinds of illicit activities could not be detected without complaints from game users because in-game transactions are not publicly open like Etherchain transactions.

Another important factor for illicit financial activities with NFT is the definition of these structures (McDowell, 2023). In a case in the Southern District of New York on the 8th of February 2023, an artist Mason Rothschild was found to have violated the brand protections of Hermès, and the First Amendment of the US Constitution did not protect his 100 "Metabirkins" NFTs due to not being artistic creatures.[22]

Moreover, as stated earlier, collecting the transaction details on Etherchain is not easy. The transaction procedures implemented by Etherchain must be carried out under the whitepaper procedures

[21] United States District Court Northern District of California San Francisco Division Case 3:21-cv-03943-WHO

[22] U.S. District Court for the Southern District of New York, No. 1:22-cv-00384.
The court decision is: "The nine-person jury found Rothschild liable for trademark infringement, trademark dilution and 'cybersquatting' (the practice of using a name in bad faith with the intent of making a profit) and awarded Hermès $133,000 in total damages (an estimation that at least includes the amount he is thought to have earned from the works) on 8 February, the third day of deliberations."

https://doi.org/10.54934/ijlcw.v2i3.57

declared by Ether. However, not all of the NFT transactions have been constructed according to the procedures correctly. This is why the codes for transfers and mints (in which transaction hash starts with defined codes) have not been created according to the whitepaper correctly in each transaction. Because of this reason, attention to the data purifying process is needed to prepare datasets to analyse illicit flows. In this purifying process, researchers have to focus on the metadata (other than NFT structural component) from the transactions which includes mint and transfer details.

6. REGULATORY RESPONSES TO NFTs AND MONEY LAUNDERING

6.1. Overview of current EU regulatory responses to NFTs and money laundering

Given the complexity and vulnerabilities inherent in NFTs, it is imperative to establish a regulatory framework that ensures the safety, transparency, accountability and stability of markets in crypto assets and NFTs. The EU's proposed Markets in Crypto Assets Regulation (MiCAR) is a step towards an innovation-friendly regulatory framework for crypto assets. The MiCAR proposal aims to provide rules on the public offering of crypto-assets, the admission of crypto-assets on a trading platform, the licencing of crypto-asset service providers and the implementation of market abuse rules for crypto-assets businesses.[23] On 20 April 2023, the European Parliament approved with 529 votes in favour the adoption of MiCAR.[24] The text should now be formally endorsed by the Council, before it is published in the EU Official Journal.

MiCAR provides a definition for crypto-assets, the first EU legal instrument to do so. MiCAR thus defines crypto-assets as "digital representation of value and rights which may be transferred electronically, using distributed ledger technology or similar technology".[25] However, the MiCAR may not address all challenges posed by NFTs specifically. The worth of NFTs can be attributed to their distinct features and the usefulness they offer to token holders. While these tokens are traded, they are not easily exchangeable, and their relative value cannot be determined by comparing them to existing markets or similar assets because they are unique. Consequently, MiCAR appears to exclude NFTs from its scope due to their limited financial utility. However, fractionalised NFTs, which are fractions of an NFT, or NFTs released

[23] European Commission, Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937, COM/2020/593 final, p. 2.
[24] Available at: https://www.europarl.europa.eu/news/en/press-room/20230414IPR80133/crypto-assets-green-light-to-new-rules-for-tracing-transfers-in-the-eu (accessed, 20.05.2023)
[25] European Commission, Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937, COM/2020/593 final, Article 3(1)(2).

https://doi.org/10.54934/ijlcw.v2i3.57

in large series or collections, are not unique or non-fungible in and of themselves and, as such, are not exempted by MiCAR.

There are three main categories of token in the proposed MiCAR. These are asset-referenced token, e-money token and other crypto-assets with different requirements for each in relation to licencing and issues. NFTs may fall under the last category, "other crypto-assets". In this last category, issuers of crypto-assets do not have any specific licensing obligations but are required to be a legal entity (even if they are established outside the EU) and to comply with certain business and governance conduct requirements.[26]

While this category of "other crypto-assets" will be subject to specific rules on *inter alia* admission to trading on a trading platform, the authorisation of related service providers and market abuse rules, the proposal **exempts** issuers of crypto-assets which are unique and non-fungible from the requirement to publish a white paper for public offerings. Consequently, NFT providers and traders will be exempted from the obligation to publish such a white paper but they will be subject to anti-money laundering and counter-terrorist financing rules. In the recitals of the MiCAR, special reference is made to "virtual assets" as defined by the Financial Action Task Force (FATF). According to this definition, a virtual asset 'is a digital representation of value that can be traded, or transferred, and can be used for payment or investment purposes' (FATF, 2020). In its latest draft guidance on March 2021, FATF replaced a previous reference to "assets that are fungible" with "assets that are convertible and interchangeable" (FATF, 2021). This definition from FATF may involve NFTs but this is not clear, yet.

The latest development on MiCAR indicates that the European Parliament proposed changes to the upcoming anti-money laundering proposal for reform and insisted that NFT platforms and companies providing NFT-related services are within the scope of the regulation (Field, 2023). The changes proposed by the European Parliament will fill the gap created by MiCAR which leaves NFTs out of its scope. This new information seems to confirm unofficial reports from September last year that the European Parliament was pressing for the inclusion of decentralised finance (DeFi),[27] decentralised autonomous organisations (DAOs), and NFTs into the proposed AML/CFT legislative reform which is currently under

[26] European Commission, Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937, COM/2020/593 final, Article 13.
[27] "DEFI is a kind of distributed ledger-based finance and applications contemplated to alter the present financial means-centralized finance."

https://doi.org/10.54934/ijlcw.v2i3.57

discussion. Unfortunately, this information is based on leaked documents from the European Parliament therefore, they should be treated with caution until an official announcement is made.

Overall, it is evident that regulations for markets in crypto assets and NFTs are necessary to promote stability, transparency, and sustainability. As the market continues to evolve and grow, regulators must remain vigilant and adaptable to ensure that regulations keep pace with developments in these markets while promoting innovation and protecting investors and consumers. The proposals below highlight the importance of establishing a regulatory framework for markets in crypto assets and NFTs.

6.2. Proposals for future regulatory action

With the emergence and growing popularity of NFTs, there has been a call for regulation to address potential legal, financial, and ethical issues. The lack of clear regulatory oversight for NFTs has led to concerns within the art world, particularly regarding issues of intellectual property, ownership rights, taxation, and financial crime. Therefore, it is important to consider potential proposals for future regulatory action on NFTs [8].

One possible proposal is to require NFT creators and platforms to provide clear disclosures regarding ownership rights, including any potential limitations or restrictions. This would help to mitigate disputes over ownership and prevent fraudulent or unauthorised sales. NFTs serve the purpose of establishing undeniable digital ownership over various types of assets, including but not limited to digital collectibles, crypto art, intellectual property rights, online games, real estate, jewellery, vehicles, licenses, and financial documents. When classifying a particular NFT, it is essential to consider the type of asset it represents. For example, the definition put forward by MiCAR would apply only to NFTs that do not represent financial instruments under other financial laws of the EU, such as Directive 2014/65/EU (known as MiFID II). If MiFID II is enacted and provides a clarification of the current definition of financial instruments to include crypto assets within its scope, then NFTs that represent financial instruments may be considered as financial assets.

Given the diverse nature of assets that NFTs can represent, one could argue that their classification should align with the underlying nature of the goods they represent. For instance, if an NFT represents a financial asset, it should be classified accordingly, while if it represents digital art or crypto collectibles,

https://doi.org/10.54934/ijlcw.v2i3.57

it should have the same status as traditional art or collectibles. As such, the classification of NFTs should be based on the underlying asset type, which can vary from financial instruments to virtual assets. It can be suggested that national supervisory authorities outlined in MiCA should be responsible for classifying NFTs. Relying solely on legal opinions drafted by the private sector to classify crypto assets may result in a "race to the bottom" among EU jurisdictions,[28] as crypto asset service providers (CASPs) and token issuers may relocate their businesses to countries where lawyers are more likely to draft favourable legal opinions. Therefore, placing the responsibility of NFT classification under the jurisdiction of national supervisory authorities could mitigate this issue and create a standardised framework for NFT classification across the EU.

According to the analysis by the UK Jurisdiction Taskforce in its Legal Statement on Cryptoassets and Smart Contracts,[29] it is suggested that NFTs can be classified as intangible property known as "things in action" and consequently qualify as property [4]. This perspective has been supported in various court cases in England,[30] New Zealand,[31] and Singapore.[32] By treating NFTs as property, these legal decisions enable the assignment of property rights to NFTs and contribute to providing legal certainty to both NFT holders and CASPs involved in NFT transactions. This marks a crucial step forward in establishing a solid legal framework for NFTs.

If an NFT is a property that is traded then just like any other tangible and intangible asset, it should be subject to a degree of oversight and due diligence. Accordingly, there should be a requirement for NFT platforms to implement Know Your Customer (KYC) and AML procedures to verify users' identities and prevent illegal activities such as money laundering, terrorism financing or tax evasion. A further proposal is for regulators to work with industry stakeholders to develop standards and best practices for NFT creation, distribution, and sales. This could involve developing guidelines for identifying and addressing potential legal issues, ethical considerations such as artist compensation and attribution, and consumer protection concerns. Overall, proposals for future regulatory action on NFTs should involve a combination of measures to promote transparency, accountability, and ethical behaviour. Furthermore, efforts should

[28] European Commission, Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937, COM/2020/593, Article 81.
[29] UK Jurisdiction Taskforce. 2019. Legal statement on cryptoassets and smart contracts. Pp. 09-12. available at: https://35z8e83m1ih83drye280o9d1-wpengine.netdna-ssl.com/wp-content/uploads/2019/11/6.6056_JO_Cryptocurrencies_Statement_FINAL_WEB_111119-1.pdf, (accessed, 27.11.2022)
[30] AA v Persons Unknown [2020] 4 WLR 35; Fetch.AI Ltd v Persons Unknown Category A [2021] EWHC 2254 (Comm).
[31] Ruscoe v Cryptopia Ltd [2020] NZHC 728; Jonathan Dixon v R - [2015] NZSC 147.
[32] [2022] SGHC 264. Originating Claim No 41 of 2022 (Summons No 1800 of 2022).

https://doi.org/10.54934/ijlcw.v2i3.57

be made to balance regulation with innovation to ensure that NFTs can continue to thrive and evolve as an important element of the digital economy.

One additional proposal for future regulatory action on NFTs could be the establishment of a dispute resolution mechanism to handle disputes related to ownership, provenance, and authenticity of not only NFTs but also other types of virtual assets. This would provide a way for parties to resolve their disputes without resorting to expensive litigation or arbitration. This proposal aligns with the regulatory standards promulgated for mandatory dispute resolution mechanisms within governance frameworks, as it can help to ensure that any disputes related to NFTs are addressed efficiently and in a transparent manner. Furthermore, the establishment of a dispute resolution mechanism for NFTs could potentially increase confidence among buyers and sellers, thereby promoting greater participation in NFT market activities. This proposal would also address the current lack of clarity and consistency in resolving disputes related to NFTs, as there is currently no established legal framework or mechanism for resolving such disputes. Additionally, the establishment of a dispute resolution mechanism for NFTs would enable parties to obtain legal and impartial solutions in a cost-effective and time-efficient manner, which would be beneficial for all stakeholders involved in the NFT market.

Another potential proposal for future regulatory action on NFTs is to require the use of Distributed Ledger Technology (DLT) to track and manage the ownership and transfer of NFTs.[33] This would provide greater transparency and accountability for NFT ownership, as well as help prevent fraudulent activity. In addition, regulations should also address the potential environmental impact of NFTs, particularly in terms of energy consumption. It is important to strike a balance between regulation and innovation so that NFTs can continue to evolve as an integral component of the digital economy while also ensuring that they adhere to ethical standards and do not harm the environment. Moreover, the usage of Blockchain-enabled solutions has been proposed for asset identification by binding tokens to physical properties.

[33] 'Distributed Ledger Technology' or 'DLT' means a database system in which information is recorded, consensually shared, and synchronised across a network of multiple nodes as further described in the First Schedule of the Innovative Technology Arrangements and Services Act, whether the same is certified under that Act or otherwise; 'DLT asset' means – (a) a virtual token; (b) a virtual financial asset; (c) electronic money; or (d) a financial instrument, that is intrinsically dependent on, or utilises, Distributed Ledger Technology;"
available at: https://www.mfsa.mt/wp-content/uploads/2018/12/fintech-main-legislation.pdf (accessed 25.05.2023)

https://doi.org/10.54934/ijlcw.v2i3.57

6.3. Training and research

The domain of NFTs is a rapidly developing area that merges technology and art and lacks a well-defined regulatory framework. The surge in sales of NFTs and their increasing production and distribution have created a growing demand for training among the entities responsible for governance, law enforcement, and suspicious transaction reporting in this sphere. Law enforcement agencies (LEAs) need to remain current and well-informed regarding the workings of NFTs and the associated risks. The US Department of the Treasury's report on "Money Laundering and Terror Finance Through the Trade in Works of Art" published in February 2022 highlights the need to regulate and oversee NFTs as a developing domain of digital art (Department of the Treasure, 2022). The report emphasizes the necessity of updating guidance and providing training to LEAs, as well as customs and asset recovery agencies, to identify the risks and opportunities available to launderers (Department of the Treasure, 2022). However, the question of the most efficient way to organise this training remains unresolved, given the scarcity of specialised academic training programs on NFTs and the limited expertise in this domain.[34]

On an academic level, the teaching of art law, NFTs, and money laundering is minimal. Higher education institutions do not provide courses on NFTs, limiting the ability of LEAs to benefit from these courses individually (www.qmul.ac.uk, accessed 29.06.2022), [2].[35] While private organisations such as Christie's and the Blockchain Council provide courses on NFTs that offer a good understanding of NFTs,[36] they do not concentrate on the nexus of NFTs, money laundering, and other crime risks and anti-money laundering (AML) policies. In addition, some initiatives for training in the crypto world, such as Crypteya, are not compatible with the traditional academic approach to professional training and development.[37]

To resolve this scarcity of specialised training, LEAs must establish Public-Private Partnerships (PPPs) with experts in the field by combining expertise from academia, industry, and independent actors [3].[38] The ideal solution for LEA training would be to bring all stakeholders together in PPPs to provide

[34] At the time of writing this article, several LEAs around Europe indicated that they have not received any specific training on NFTs.
[35] The first one is an LLM about art, business and law where, this year, certain classes are introduced for NFTs. The second is the recent announcement of Miami Law School introduction of its innovative NFTs course.
[36] Christie's Education. (2022) Virtual Course Understanding Crypto Art and NFTs. available at: https://education.christies.com/courses/continuing-education/short-courses/understanding-crypto-art-nfts (accessed 29.06.2022) and Blockchain Council. available at: https://www.blockchain-council.org (accessed 29.06.2022).
[37] Crypteya Academy. available at: https://crypteya.academy (accessed 29.06.2022).
[38] The authors propose the introduction of public-private partnerships with law enforcement practitioners, lawyers, computer science experts and cyber-forensics specialists in the framework of crypto currency regulation and enforcement.

https://doi.org/10.54934/ijlcw.v2i3.57

valuable insights that will aid in the rapid emergence of NFTs. If PPPs are not feasible, a particular NFT training program should be established within the police academies. It is well-known that police academies have their own training programs to educate and prepare their personnel. The course should include NFTs from legal and technological perspectives, designed by legal scholars, technology experts, and other related professionals. LEAs should understand the technological structure of NFTs, their position in the art market, and the combination of technology and art. An analysis of the business risks of NFTs should also be included in the training. NFTs represent a new "asset," and it is not typical to have a new "asset" in the market, let alone one that combines art and technology.

The training should also cover the legal aspects of NFTs, including the definition of NFTs from a legal standpoint, the legal uncertainties surrounding NFTs in the art market, and the application of AML policies to NFTs. Finally, the quality of training may be affected by the lack of financial resources and the absence of personnel, equipment, and facilities. Thus, it is essential to demand better financial resources to reorganize and modernize LEA training. Given the global expansion of technology, NFTs and the crypto world, in general, should receive special attention.

7. CONCLUSIONS

NFTs have traits that make them attractive to money launderers, such as anonymity, volatility, and a lack of regulatory rules (Congressional Research Service, 2019).[39] One solution to the challenges posed by NFTs is legal and regulatory certainty. Regulators should define NFTs and provide AML rules that should apply to those trading in NFTs. Legal uncertainty surrounding NFTs creates challenges not only for LEAs and regulators but also affects legitimate traders of NFTs who respect AML rules. By regulating NFTs, legal clarity and consistency would be provided to legitimate traders of NFTs and to NFTs holders, which in turn could boost the functioning of this new asset and optimize its benefits for society (Congressional Research Service, 2019). A legislative framework governing NFTs can be achieved via the EU and national laws of the Member States and other legal systems. Whilst a new EU legislation may take several years, regulators and LEAs or international organisations such as the FATF can issue guidelines as a soft law instrument. Guidelines should be issued for NFTs in which more information on how to handle suspicious NFTs transactions and on how to apply AML rules and policies are articulated. Compliance professionals will most likely follow these guidelines to keep their businesses "clean," and

[39] The same characteristics make crypto currencies attractive to criminals.

https://doi.org/10.54934/ijlcw.v2i3.57

FIUs and LEAs will benefit from more information on NFTs to investigate suspicions of money laundering. Such guidelines should be carefully drafted in consultation with key stakeholders.

In summary, the rapid growth of NFTs raises important regulatory considerations within the art world and beyond. Therefore, policymakers must carefully consider potential proposals for future regulatory action on NFTs to ensure that this new asset class is subject to appropriate transparency, accountability, and ethical standards.

REFERENCES

[1] Guidi, B., & Michienzi, A. (2022). Sleepminting, the brand new frontier of Non Fungible Tokens fraud. GoodIT '22: *Proceedings of the 2022 ACM Conference on Information Technology for Social Good*, pp: 75-81

[2] Skipp, C. (2022). Innovation and Tech at Miami Law – First Law School in U.S. with NFTs Course. Miami School of Law. Available at: https://www.law.miami.edu/news/2022/january/innovation-and-tech-miami-law-first-law-school-us-nfts-course (last visited 29.06.2022)

[3] Courtois, N.T., Gradon, K. T. & Schmeh, K. (2021) Crypto Currency Regulation and Law Enforcement Perspectives. *arXiv preprint arXiv*:2019.01047. Section 11.1. available at: https://arxiv.org/abs/2109.01047 (last visited 29.06.2022)

[4] Cooper, G. (2022). Personalty+, (2022) *Trusts & Trustees*, 28(5), pp. 447–450, available at: https://doi.org/10.1093/tandt/ttac029 (last visited 05.04.2023)

[5] Cooper, G. (2021). Virtual Property: Trusts of Cryptocurrencies and Other Digital Assets. *Trusts & Trustees*, vol 27(7), pp. 622-624. available at: https://doi.org/10.1093/tandt/ttab027 (last visited 25.05.2023)

[6] Ellul, J., & Revolidis, I. (2023). Non-Fungible Tokens (NFTs), Smart Contracts and Contracts: The need for Legal and Technology Assurances. *SSRN*, available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4325415 (last visited 20.05.2023)

[7] Houser, K., & Holden, J. T. (2022). Navigating the Non-Fungible Token. *Utah Law Review*, 2022(5), p.891-939. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4055535 (last visited 5.04.2022)

[8] Aksoy, P. Ç. (2023). The applicability of property law rules for crypto assets: considerations from civil law and common law perspectives. *Law, Innovation and Technology*, 15(1), 185-221. Available at: https://doi.org/10.1080/17579961.2023.2184140 (last visited 05.04.2023)

[9] Serneels, S. (2023). Detecting wash trading for nonfungible tokens. *Finance Research Letters*, 52:103374. Available at: https://doi.org/10.1016/j.frl.2022.103374 (last visited 5.05.2023)

[10] Trozze, A., Kamps, J., Akartuna, E. A., Hetzel, F. J., Kleinberg, B., Davies, T., & Johnson, D. S. (2022). Cryptocurrencies and future financial crime. *Crime Science*, 11, 1-35.

ABOUT THE AUTHORS

Dimitris Kafteranis – PhD, Assistant Professor in Law at Centre for Financial and Corporate Integrity, Coventry University, Coventry, UK
e-mail: ad8164@coventry.ac.uk
ORCID ID: https://orcid.org/0000-0001-9895-6112
Google Scholar ID:
https://scholar.google.com/citations?user=kf0vXVIAAAAJ&hl=el

Huseyin Unozkan – PhD, Assistant Professor at Haliç University Industrial Engineering, Istanbul, Turkey
e-mail: ae1008@coventry.ac.uk
ORCID ID: https://orcid.org/0000-0001-9659-287X
Web of Science Researcher ID:
https://www.webofscience.com/wos/author/record/ABF-8486-2021
Google Scholar ID:
https://scholar.google.com/citations?user=fhRlGj8AAAAJ&hl=tr
Scopus ID:
https://www.scopus.com/authid/detail.uri?authorId=57969037100

Umut Turksen – PhD, Professor in Law at Centre for Financial and Corporate Integrity, Coventry University, Coventry, UK
e-mail: aa8628@coventry.ac.uk
ORCID ID: https://orcid.org/0000-0002-3143-6072
Google Scholar ID:
https://scholar.google.com/citations?user=NSP_sx0AAAAJ&hl=en

ABOUT THIS ARTICLE

Conflict of interests: Authors declare no conflicting interests.

Funding: The research for this paper is funded by the Scientific and Technological Research Council of Turkey (TUBITAK) and the TRACE project which is supported by the European Union.