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New NFT Marketplace and Challenges of Transactions on Islamic NFTs

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Abstract

As a result of technology advancements, all parts of life benefit from the ability to access information at any time and from any location, without restriction. Legal concerns for transactions in previously unimaginable domains may arise, notably for NFT-based buying and selling transactions. The aim of this study is to provide a thorough overview by thoroughly analyzing NFT transactions. By citing several statements of Shariah scholars and various scientific bodies, and clarified the concepts of tokens and tokenization, their classifications, and the Islamic concept of money, which must satisfy specific requirements in order to fulfill its monetary function as money. This study showed that opinions on non-fungible token transactions vary. There are those who believe that non-fungible token transactions should be prohibited because they involve deception, those who support such transactions if the non-fungible item is compliant with Islamic law, and those who support such transactions from a Qiyas Khafi perspective in order to uphold the values of Maqasid al-Sharia.

Keywords: Non-Fungible Token, Cryptocurrency, PMBCs, Islamic Finance, Shariah-Compliant.

INTRODUCTION

What Islamic finance specialists agree on is the necessity of adopting an innovative approach that enables institutions of all sorts to preserve tempo with the fast trends taking area in the economic arena. And that is with the aid of finding products that are credible, reliable and economically efficient.

However, the transparency and accountability are modern matters of issue as well (Cornelius, 2021). Therefore, transparency is a valuable tool that promotes corporate sustainability by incorporating stakeholders' voices and interests into new possibilities and holding people accountable for the economic, social, and environmental results (GIESEL & NOBRE, 2021). As a result, experts, policymakers, and the general public are searching for the best method to hold the huge digital businesses that shape our everyday behavior responsible for the data they collect and sell (Cornelius, 2021). Transparency may be developed and increased in this context as a blockchain quality to promote secure access to local and global data, minimizing probable fraud, and boosting strategic decision-making (GIESEL & NOBRE, 2021).

Blockchain technology is a revolutionary advancement that has the potential to disrupt or perhaps replace conventional business structures that rely on third parties for trust (Regner, Urbach, & Schweizer, 2019). Blockchain technology is built on blocks of data and is regarded one of the most secure solutions for keeping data safe. Blockchain technology is a quick, open, low-cost, simple-to-use, transparent, and programmable technology that allows for the instantaneous transmission of information and/or financial assets from one location to another. It is a protocol that controls the norms and regulations governing the exchange of value. Blockchain technology can store any sort of data, and the link between one block and

the next is referred to as a chain since the blocks are linked in an immutable fashion (Muddasar & Sikha, 2021).

A second generation of blockchains (such as Ethereum) was developed in 2014, allowing for the programming and execution of software (so-called smart contracts) across all participating blockchain nodes. As a result, any user may design and deploy applications on a worldwide shared infrastructure. (Regner, Urbach, & Schweizer, 2019). Blockchain technology's uses have grown to include cryptocurrencies, smart contracts, and non-fungible tokens (NFTs), among others, following a recent spike in use and popularity between 2016 and 2017 (Cornelius, 2021).

NFTs are digital asset ownership rights that are securely mapped to blockchain-based tokens. NFTs give a mechanism to indicate ownership or possession of digital goods such as art, music, games, or collectibles, similar to possessing a real work of art (which visitors to a museum may also gaze at without owning). Since early 2021, the market for non-fungible tokens (NFTs), transferable and unique digital assets on public blockchains, has gotten a lot of attention and seen a lot of growth. An entirely digital work of art in the form of a non-fungible token (NFT) was auctioned for the equivalent of \$69 million on March 11, 2021. Anyone can watch or access this work of art by the artist Beeple on the Internet for free. So, why was there such a high price paid for it? Because this particular work of art is an NFT, perhaps (Ante, 2021).

BACKGROUND AND PRELIMINARIES

Tokens and Tokenization

The Token concept has gotten a lot of attention. To put it simply, a Token is the digital representation of an asset on the Blockchain, or "programmable money" as it is known. A Token is a technical term for an algorithm that is implemented as a Smart Contract on a Blockchain. All aspects of the Token are defined by the algorithm, including its value, how and how many Tokens are generated, which denominations are permitted, how Tokens are spent, and under whose name and address they may be utilized. Voting, for example, is a sophisticated function that may be accomplished. By establishing herself as the owner of the address, the user gains access to her Tokens. Wallets make it easier to use since they store the user's private keys as well as the Tokens' contract address (Weingärtner, 2019). Tokens can be used to represent digital assets in the blockchain realm. The notion of a token, however, is not unique to the blockchain. Tokens have historically been used to safeguard digital transactions, such as financial transactions. Tokens are now considered one of the most important applications of blockchain technology, with tokens being defined as "essential to most social and economic developments produced using blockchain technology." (Wang & Nixon, 2021).

In terms of economics, a token may be defined as "a unit of value created by an organization to self-govern its business model and empower its users to interact with its goods while allowing the distribution and sharing of rewards and benefits to all its stakeholders". A token can have a variety of purposes, but in general, it can be used as a socioeconomic dummy tool to enhance the coordination of participants in a controlled ecosystem toward the achievement of a network goal function via a collection of incentive systems (Freni, Ferro, & Moncada, 2020). Tokens are a piece of digital information, such as lines of computer code, that describes what the token represents from a technological standpoint.

Tokens, on the other hand, can represent digital assets that can essentially describe any value that has been agreed upon and safeguarded by cryptographic protocols, such as cryptocurrencies, from a legal standpoint. Some rights, such as access rights, can also be expressed using tokens (Wang & Nixon, 2021). Tokenization is the process of transforming data/assets into a random digital sequence of characters (aka. a token). It streamlines the process of representing physical/virtual assets and provides some security for sensitive data, for example, by replacing sensitive data with non-sensitive data in a token (Wang & Nixon, 2021). The process of tokenization may be defined as the encapsulation of value in tradable units of account known as tokens or coins. To put it another way, tokenization is a type of value digitalization, and the blockchain allows for the "nearly free" and borderless movement of digitized value, much as the Internet allowed for the free and rapid circulation of digitized information.

Once tokenized, every type of value (in a broad sense) may be maintained as a digital asset with a specific virtual token as the unit of account. Any individual or organization can create virtual tokens by defining the set of rules that govern them, such as the token characteristics, the monetary policy, and the users' incentive structure. As a result, the tokenization process may also be regarded as the establishment of a self-governing (tok)economic system, with rules set by the token issuer (Freni, Ferro, & Moncada, 2020).

The benefits of tokenization on the blockchain are numerous. Tokenization, for example, removes most financial, legal, and regulatory middlemen, lowering transaction costs dramatically. To fully achieve the promise of tokenization on blockchains, however, the tokenization process on the blockchain is still in its early stages, and there are numerous hurdles and dangers to overcome, including legislative and technological challenges. The absence of legislative certainty for tokenized assets, for example, becomes a substantial barrier to widespread use. Furthermore, there is no reliable mechanism to maintain consistency between on-chain assets and the underlying off-chain assets from a technological standpoint (Wang & Nixon, 2021).

Classification On Blockchain Tokens

To enable transactions, assets on the blockchain are represented by tokens. Tokens are divided into two types: fungible tokens (FT) and non-fungible tokens (NFT), depending on whether they are interchangeable and similar. The lifecycle of the tokens must be defined from the time they are issued until they are redeemed in order to implement NFT and FT. To take the tokens through the lifespan, methods and algorithms must be developed and implemented, and any obstacles must be identified and appropriately addressed (Karandikar, Chakravorty, & Rong, 2021).

There are numerous well-known crypto-tokens in the literature: crypto-coins, asset-tokens, and utility-tokens. In terms of fungibility, we classify tokens into different categories regarding these fungibility of represented digital assets, namely, fungible tokens (FT), non-fungible tokens (NFT), and semi-fungible tokens (SFT). (Wang & Nixon, 2021).

Fungible tokens are exchangeable and identical in all respects and are typically divisible. Crypto-currencies are a famous example of fungible tokens, in which all coins created for crypto-currencies with the help of blockchain, which can be used as a medium of exchange of currencies without resorting to any centralized banks are identical and indistinguishable. Fungible tokens of the same type are identical (just like coins) since they may be divided into smaller pieces (like coins of different values) (Wang & Nixon, 2021).

On the other hand, Non-fungible tokens (NFTs) are a relatively new notion that is altering our perceptions of digital assets. Non-fungible tokens are collectible, one-of-a-kind tokens that can only be possessed by one person (Hanim, 2021). They are an abbreviated form of Non-Fungible Tokens. Due to the unique character of each token, these tokens are non-exchangeable cryptogenic assets. This is also what sets them apart from fungible tokens like bitcoin. They may be used to indicate ownership of goods such as artwork, collectibles, and even real properties due to their intrinsic uniqueness (Masryef Group, 2021).

Semi-fungible tokens are a new type of token that combines the characteristics of fungible and non-fungible tokens (Wang & Nixon, 2021). Tokens that are semi-fungible are fungible in the same class or at the same moment, but not in other classes or at separate times. SFTs provide for additional flexibility when representing complicated assets or processes. Because a charter ticket may be traded for another charter ticket but not for a first-class ticket, a plane ticket can be thought of as a semi-fungible token. In blockchain-based games, the notion of semi-fungible tokens is crucial, since it decreases the overhead of non-fungible tokens. (Bamakan, Nezhadsistan, Bodaghi , & Qu, 2022).

Table 1: Tokens Classification

	<i>Fungible</i>	<i>Non-fungible</i>	<i>Semi-fungible</i>
<i>tokens</i>	<i>ERC-20</i>	<i>ERC-721</i>	<i>ERC-1155</i>
<i>started</i>	<i>19th November 2015</i>	<i>24th January 2018</i>	<i>17th June 2018</i>
<i>Real-world purposes</i>	<i>Cryptocurrency</i>	<i>NFTs</i>	<i>Charter tickets and vouchers</i>
<i>uniformity</i>	<i>Non- unique</i>	<i>Unique</i>	<i>Unique</i>
<i>exchangability</i>	<i>Interchangeable</i>	<i>Irreplaceable</i>	<i>Semi-interchangeable</i>
<i>fractionalisation</i>	<i>Divisible</i>	<i>Indivisible</i>	<i>Partially divisible (The total supply can be divided into fractional ownership)</i>
<i>Content stored</i>	<i>Value</i>	<i>Data</i>	<i>value & data (can change state)</i>
<i>smart contract accessibility</i>	<i>Need separate token</i>	<i>Unique smart contract is needed for each token</i>	<i>single smart contract</i>
<i>Transfer nature</i>	<i>1 or 2 token can be transferred at once</i>	<i>Only one token can be transferred at once</i>	<i>Batch transfer</i>
<i>Cost of transaction</i>	<i>Cheaper</i>	<i>Expensive</i>	<i>Cheaper</i>

Note. Reprinted by author

Non-fungible tokens (NFTs)

An NFT is issued to represent digital or non-digital assets. These include both digital art (music, films, images, gifs, and so on) and real-world items (art, cars, legal documents, event tickets, Collectibles and so on) (KELLY & MENOZZI, 2022).

Originally, they were stored on a blockchain as a certificate of authenticity or proof of ownership, reflecting the uniqueness and scarcity of goods. As a result, an NFT is a representation of a real-world object but not the actual object (Dalai, May 2022). NFTs are currently generated or "minted" on a blockchain, auctioned off, or sold at a predetermined price in NFT markets (online NFT exchanges), and "stored" in a buyer's digital wallet (Busch, 2022).

The following figure depicts the process of generating a digital wallet, minting an NFT, selling an NFT on an NFT marketplace, and transferring ownership.

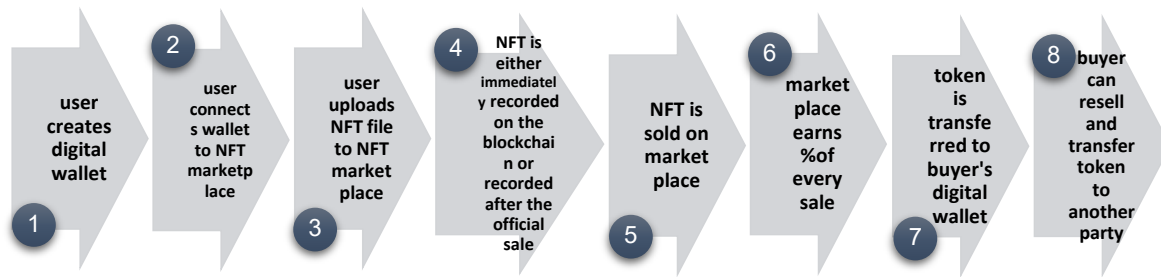


Figure 1: NFT Transaction Process. Reprinted from Non-Fungible Tokens (NFTs), by Busch, K, 2022, Washington, DC: Congressional Research Service and Law Librarian, Retrieved 09 12, 2023

NFTs are often sold for a set or auctioned price on online NFT marketplaces. An NFT marketplace is a web-based platform for the sale and exchange of NFTs, comparable to cryptocurrency exchanges. Some NFT marketplaces accept fiat cash, such as the US dollar, although the majority only take cryptocurrency. Owners can also sell or trade NFTs without the need for a third-party intermediary. Some NFT marketplace operators pay royalties to creators after each sale, allowing artists and other content providers to earn money even while NFTs of their work are moved and resold.

On May 3rd, 2014, the history of NFTs started. The original NFT artwork was produced by Kevin McCoy. For his non-fungible token, he came up with the moniker 'Quantum'. This was before the bitcoin art industry ever existed. Quantum is a pixelated image of an octagon filled with things such as circles, arcs, and other forms. Larger forms encircle smaller ones, hypnotically pulsing in brilliant colours (Choudhary, 2022).

NFT was first created on the Bitcoin blockchain network, which many people are interested in because of its secure data storage and simple method. This is in contrast to the present scenario, in which the Ethereum blockchain network is widely used. Cryptokitties, a blockchain-based virtual game, was launched to the cryptocurrency and blockchain community in 2017. Cryptokitties are digital cats that can adapt, breed, and be purchased directly from a cryptocurrency wallet. The introduction of Cryptopunk in 2017 demonstrates John Watkinson and Matt's work. Cryptopunk is a 10,000-character limited-edition NFT picture character. The most popular cryptocurrency punk is Cryptopunk, which is built on the Ethereum blockchain network and uses ERC-20¹ tokens for NFT launch and ERC-721 tokens for NFT character creation for the first time, making Cryptopunk the world's first hybrid NFT (Febriandika, Fadli, & Miraj, 2022). The ERC-1155 standard, which was ratified six months after ERC-721, enhances ERC-721 by batching many non-fungible tokens into a single contract, lowering transaction costs (SHARMA, 2023). Also The ERC-1155 standard includes protocol capabilities that enable you to add code to track and trace the ownership or transfer of ownership of digital archives on NFT (Febriandika, Fadli, & Miraj, 2022).

ERC-1155 not only lowers gas fees and speeds up transactions, but it also enhances the functions of both its predecessors, making it more efficient from all sides (Chamria, 2022). The example of a vending machine is a typical explanation for the distinction between ERC-721 tokens and ERC-1155 tokens. While ERC-1155 allows for an endless number of goods to be stored in a single vending machine (smart contract), ERC-721 needs one vending machine (smart contract) for each item generated (Moreau, 2021). The nicest part about ERC1155 is that it allows you to construct semifungible tokens (Chamria, 2022).

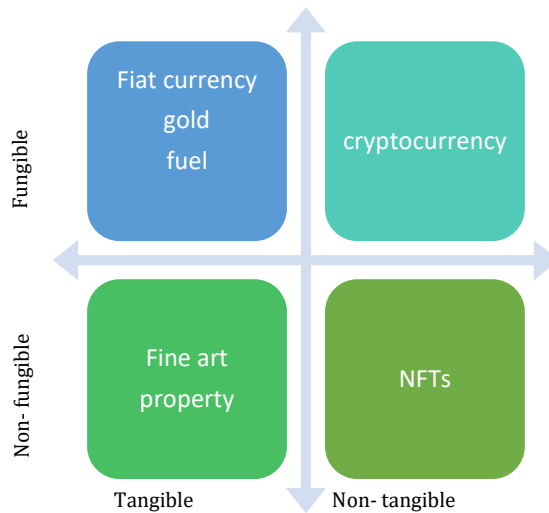


Figure 2: Non-fungible tokens (NFTs). Reprinted by author

Classification of Symbols and Legal Ruling

Sources of Islamic Shariah in general: The majority of jurists say that the four sources of Islamic law are as follows: (1) the Qur'an; (2) Sunnah (3) Ijma (agreement); (4) Qiyas (analogy). Legislative sources are referred to by jurists as the evidence from which rulings are generated. It is also agreed that the ruling indicated by one of these four pieces of evidence is binding.

Jurists arrange the facts and reasoning in the order we specified. The Qur'an is the first source of Shariah, the Sunnah is the second, ijma is the third, and Qiyas is the fourth. If the verdict on the incident is not contained in the Qur'an, Qiyas is used (ouda, 2013). Other sources were added by sect imams, but they disagreed on whether these should be accepted or relied on. They are as follows: istislah (mashlahah murlah), Istihsan, sad al-zari'ah, ibtal hyal (invalidating trickery), qawl sahabi (the Companion's statement), urf (customs), Shar' Man Qablanā (the law of those who came before us), and istishab (seeking friendship) (benachour, 2004).

NFT itself in the perspective of fiqh can be categorized as qimi² treasure, namely property that has no equivalent in the market, and has its own value which can only be determined by the owner or through special forming elements, in this case the value of NFT is recognized 'urf in modern society This is determined through uniqueness, history and useful value (Arif, Tanjung, & Ayuniyyah, 2023).

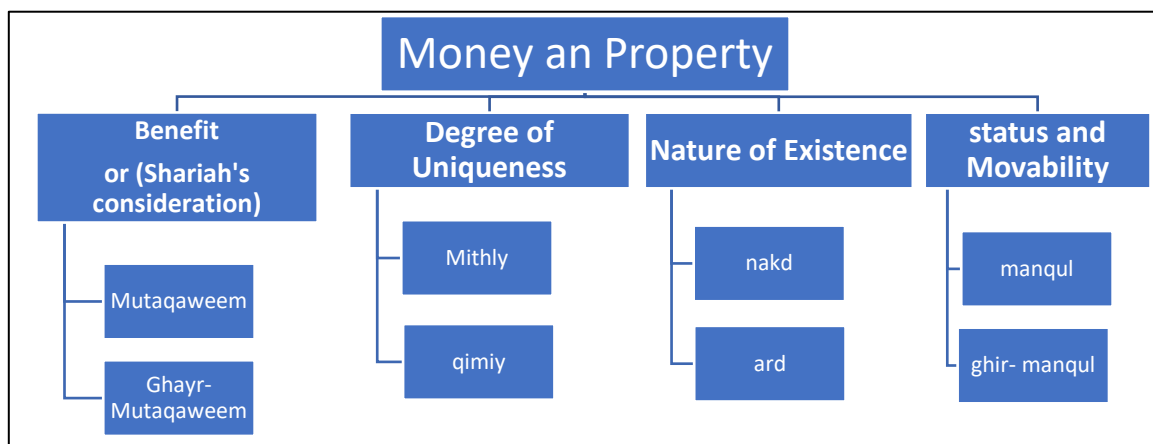


Figure 3 : Taxonomy of money an property, Reprinted by author

the issue that regulates the law of buying and selling NFT is not found in the Quran or Hadith specifically except through the description of the problem (Febriandika, Fadli, & Miraj, 2022).

Theoretically, an NFTs permissibility relies on whether the components are Shariah compliant (Zaman, 2022), so they must :

The basic conditions required by the sales contract must be met in order for it to be permissible to buy and sell it. If the NFT products do not contain content that is not subject to a Shariah sales contract, So it is important that it is compatible with the ethics of the Islamic economic and financial system, Technically, academics of Islamic economics agree on the core standards and ethics of the Islamic economic and financial system, which are as follows :

- 1) Does not include gaming acts/gambling;
- 2) Is devoid of gharar (uncertainty), Transactions must be fair, transparent, explicit, and advantageous to all parties, according to Shariah. As a result, transactions should be conducted in good faith to avoid the possibility of gharar (Khan, HAN, Choi, & Bae, 2019);
- 3) Lacks one of the three components of riba (usury or exorbitant interest) (Ibrahim, et al., Juni 2021);
- 4) Freedom from price control and manipulation; there is no aspect of price control and manipulation;
- 5) Entitlement to fair pricing; the right to fair pricing;
- 6) Entitlement to equal, adequate, and accurate information; information similarity and completeness,
- 7) Freedom from al-darar; does not contain harm, and
- 8) Unrestricted public interest; contains advantages.

When examining NFTs, there are additional Islamic financial ethics requirements that must be met in a shariah financial transaction. An NFT must take the form that is permissible under Shariah law. When monitoring and verifying NFTs, industry experts would often examine the following principles:

- 1) *Maliyyah* - something that rational people like and may be reclaimed when necessary.
- 2) *Taqawwum* - something of legal utility and benefit.
- 3) *Manfa'ah Maqsudah* - When discussing services, jurists prescribe that the utility of anything must be such that it is reasonable and widely desired by people. It should not be something that Shariah prohibits, since otherwise rational people would not seek such utility.
- 4) *Israf* (extravagance) and *Tabdhir* (wastefulness).
- 5) Any potential wider Shariah violations (Adam, 2021).

METHOD

The study employs a qualitative research approach to have an in-depth understanding of NFT while analysing the position in the Islamic law perspective and the fatwas and involves a thorough review of the relevant literature. The data for this research were collected from a literature review and further analyzed using qualitative methods. To facilitate this, the data

for this research were categorized and selected and then linked to the problem being studied to answer the research question. This qualitative study used inductive thinking, which involves drawing conclusions that begin with a symptom and progress to several facts, which can be used to generalize the conclusions of this research.

DISCUSSION

The pillars of sale according to the non-Hanafi majority are three or four : a contracting party « Aqid » (a seller and a buyer), a contracted person « thaman and muthman » (a price and commodity), and a shighat (consent and acceptance) (Al-Zuhaili, 2017). The following is an explanation of whether NFT digital assets fulfill the pillars and conditions of buying and selling according to Islamic shariah.

Aqid: There are bai' (seller) and mustari (buyer). In the NFT purchase and sale transaction, the seller and buyer are registered accounts on the NFT marketplace/market, so it can be concluded that two people who have a contract have been fulfilled (Maulana, 2023).

Shighat (ijab qabul): in NFT buying and selling transactions is not carried out directly/orally, because NFT buying and selling is included in online buying and selling, the offer in the contract is made in writing, where the goods to be traded are displayed on the NFT marketplace at a price determined by the seller, then the consumer and buyer want it. according to a certain price. Buying and selling transactions can be carried out verbally or in writing, both have the same legal force, so that NFT buying and selling can be said to be valid according to Islamic law and shariah.

(ma'qud alaih):

Muthman (musman or Marhun): Judging from the NFT objects or goods being bought and sold (ma'qud alaih) they have fulfilled several conditions for buying and selling objects, because: (1) In this NFT asset the goods are there, the goods or objects are for example photos (Preshila & Hidayat, 2022), Though, until now, no specific guidance or regulation exists that clarifies the application of Shariah finance principles for the metaverse virtual world. The concept of virtual Ijarah and virtual ownership is one of them. Importantly, Islamic finance principles require that transactions be based on real assets and that speculative transactions be avoided. However, multiple scholars have argued that intangible assets are allowed and can be treated like tangible assets if they represent real economic value and are used for productive purposes. (Saad, Rehan , Usman, & Salaudeen , 2023), Also, in this context according to the opinion of jumhur ulama, a benefit can also be categorized as property, with the argument that an item is not needed because of its physical form but based on the benefits contained in it and if the benefit is not considered an asset, in the sense that it must be replaced if it is damaged, then People can easily take away the benefits of an item without any consequences. (Yunus, 2005); (2) The goods are your own, not someone else's, such as the practice of buying and selling using a reseller system where the goods are not your own and are not yet in the hands of the seller; (3) The goods can be delivered when the sale and purchase contract is executed, after payment is completed, the buyer immediately gets the goods; (4) Can be used according to shariah, NFT assets can be used according to their wishes, for example NFT photos can be used as social media profile photos, uploaded to personal social media such as Instagram, or for personal collection; (5) There is no time limit because the goods are sold, not rented; (6) The goods are clearly known because the seller explains and provides a preview of the goods; (7) This last condition is that there are several NFTs that

are impure or contain haram elements, such as digital paintings that contain LGBT elements, where LGBT is clearly prohibited by Allah, but as long as the goods do not contain these elements then the conditions for the goods have been fulfilled (Preshila & Hidayat, 2022).

Thaman (saman, tsaman, Marhun bih) : In Islamic jurisprudence, the term money is often referred to as nuqud or tsaman. In general, money in Islam is a medium of exchange or transaction and measures the value of goods and services to facilitate economic transactions (Aprilia, 2023).

The Quran and the Sunnah of the Prophet Muhammad do not make a clear statement regarding property (mal³). Referring to Islam (1999), since there are many definition interpretations of mal among Shariah scholars, the definition due to the different ways of expression is closely examined. The following are some definitions :

- (1) Mal is a human tendency that is able to be stored over time.
- (2) Mal is something that has been created for the goodness of human being.
- (3) Mal is usually desirable and can be stored over time.

From the definition above, there are two keywords that describe mal, which is something that is desirable and something that can be stored over time. Furthermore, Islam argued that mal is something for which there is a lawful benefit. Hence, something that does not give benefit, for example, insects, and is unlawful in Islam, for example, alcohol drink, is not considered as mal (Yuneline, 2019).

What should be recalled is that the money or cryptocurrency must meet three requirements from an Islamic standpoint: (a) Tamawwul (تمول) consists of all things accepted as currency by people, Therefore, in Islam, currency made of living beings, like animals, is not acceptable; ; (b) Taqawwum (تقوم) restricts the term currency to Shariah-compliant (halal) elements; and (c) Thamaniyyah (الشمنية) : consists of the two critical functions of a currency as an independent standard of value and a unit of account (Djoufouet & Tonmo, 2022).

Mufti Faraz Adam, Mufti Faraz Adam explained that money must meet the three aforementioned conditions, and since Bitcoin can only fulfill two conditions, because it cannot fulfill its monetary function as money due to risks in volatility, transaction circulation and transparency. (Aprilia, 2023).

Also, Some religious authorities are also voicing their views on Bitcoin and considering it unacceptable for similar reasons. Egypt's highest imam, *Mufti Shawki Allam*, has declared bitcoin illegal. The Grand Mufti said that cryptocurrencies are susceptible to ignorance, fraud, fraud, and independence from a central authority, causing harm to individuals, groups, and organizations.

According to Magdy Ashour, advisor to the Grand Mufti of Egypt, bitcoin is banned because of the risks it poses. He added that it is used as a tool to finance terrorism and is unsecured as it does not have any monetary support from the Central Bank of Egypt (Naz & Nazir, 2018).

Prof. Dr. Monzer Kahf from the Qatar Faculty of Islamic Studies argued that bitcoin is not a currency but a speculative instrument due to its extreme volatility. He emphasized that only the government can declare something as money, making it legal tender and accepted by all citizens for transactions such as buying and selling goods, paying taxes, and settling debts. In accordance with Shariah, money must serve as a store of value and a medium of exchange, which bitcoin fails to fulfill.

The Directorate of Religious Affairs in Turkey has declared virtual currency as illegal due to its predominant use in illicit activities such as money laundering, and its lack of official regulation and accountability. This has led to widespread speculation and debate surrounding its legality. Assim al-Hakeem, a renowned preacher in Saudi Arabia, has stated that bitcoin is prohibited under Islamic law as it lacks clarity and facilitates money laundering. Similarly, the Federal Territory Islamic Legal Consultative Meeting in Malaysia has recently determined that the use of bitcoin as a form of currency is forbidden, as it does not comply with Islamic law. The MUI has issued a fatwa stating that cryptocurrencies, such as bitcoin and Ethereum, are not permissible currencies due to their inclusion of *gharar*, *dharar*, and *qimar*. This ruling was made during an *Ijtima Ulama* gathering held on November 11, 2021, at the Sultan Hotel. The MUI has also stated that these digital assets are considered commodities and cannot be legally exchanged.

Although this trend is dominant, another trend has emerged that acknowledges the permissibility of dealing in cryptocurrencies. So Oziev and Yandiev argue for the permissibility of cryptocurrency in accordance with *Shari'ah*, with a specific focus on its application. According to their analysis, the use of bitcoin as a means of payment for goods and services is deemed permissible, while its acquisition for the purpose of saving and investment is considered impermissible. Furthermore, the authors assert that mining bitcoin with the intention of immediate payment for goods and services is permissible, whereas mining it with the expectation of future price appreciation is deemed impermissible (Naz & Nazir, 2018). Similarly, According to Muhammad Farid Fad, the employment of NFTS is explained in the absence of verses from the Qur'an and hadith. The method of *istihsan* (الاستحسان) can be used to address this issue. Since NFT shares the same sickness (legal cause) as gold and silver, which may be utilized in the transaction process, *istihsan* can play a crucial role in legalizing NFTS in the transaction process. Using NFT presents transactional challenges that fall under the *istihsan bil qiyas khafy* (الاستحسان بالقياس الخفي) category. This is due to the fact that using NFTS as a form of payment is permitted by the many advantages and the growing demands of the modern day (Fad, 2023).

In this regard, Another sort of cryptocurrency worth considering is stablecoin. Stablecoin is a cryptocurrency that is tied to the value of another asset (Kamaruddin, Arif, & Markom, 2024). As such, stablecoins aim to alleviate the price volatility that plagues other cryptoassets, perhaps making them more appealing as a form of payment or a store of wealth. At a high level, the following four varieties of stablecoin may be distinguished by whether they claim to maintain a pool of reserve assets to support their value (i.e. if they are collateralized or not), and if so, the type of these reserve assets (Kosse, Glowka, Mattei, & Rice, 2023):

- Crypto-collateralized stablecoins or Cryptocurrency-backed stablecoin effectively employ the same concept, except crypto assets. Crypto-backed stablecoins are created via a smart contract and backed by crypto assets like Bitcoin, Ethereum, and other stablecoins. Complex algorithms keep their peg (Anadu, et al., 2024). Stablecoins backed by cryptocurrencies employ a mix of cryptocurrencies as reserves, and their worth is determined by the stablecoin's value. These stablecoins are created/printed and, in some cases, sponsored by a group of cryptocurrencies, and they often have more collateral than is required to deal with volatility (Tyfield & Turner, 2024). The most popular crypto-backed stablecoin is Dai (DAI); others include USD Coin (USDC), Tether (USDT), Binance USD (BUSD), TrueUSD (TUSD), Pax Dollar (USDP) and Liquity USD (LUSD).

- While no precise description covers all of their characteristics, algorithmic stablecoins are the most complex, as they do not claim to be backed by any reserves, but instead strive to maintain a stable value via the use of smart contracts and algorithms. Algorithmic stablecoins can be tied to any fiat currency, including the Euro and the US dollar, as well as a real asset like gold. If the price of the asset/fiat money to which it is linked rises, the algorithm eliminates tokens (burns coins) from the market, resulting in fewer tokens for the same item and a higher price. Similarly, the algorithm generates extra coins (mint coins) to prevent prices from exceeding the desired value of the asset to which the algorithmic coins are linked (Tyfield & Turner, 2024). As a result of the foregoing, "Algorithmicstablecoins" can be defined as cryptocurrencies that (i) are pegged to a fiat currency, (ii) are collateralized by digital assets such as crypto tokens, and (iii) are governed by algorithms designed to dynamically ensure adequate levels of collateral and reduce the price volatility of such stablecoin. The most popular algorithmic stablecoins Decentralized USD (USDD), Frax (FRAX) or Terra USD (UST), Tribe and TerraClassicUSD (USTC).
- Fiat-collateralized stablecoins or Financial asset-backed stablecoins (Fiat-backed stablecoin) are the largest form of stablecoin. These stablecoins are mostly backed by assets with low credit and liquidity risk, such as cash, Treasury securities, certificates of deposit, and commercial paper. A centralized entity mints and burns their tokens (redeems them). Customers can deposit dollars with the issuer and obtain stablecoin tokens that are issued to their public blockchain addresses. Customers may redeem their tokens by sending them back to the issuer's public blockchain address and obtaining a dollar credit in their bank account. Examples include Tether and USD Coin (USDC), Binance USD (BUSD), exists for a variety of fiat currencies (e.g., USD, EUR, MXN, or CNY) (Kamaruddin, Arif, & Markom, 2024).
- Finally, Commodity-collateralized stablecoins or Commodity-backed stablecoins work similarly to fiat-collateralised coins. However, this kind employs various types of replaceable assets as reserves, such as gold, platinum, palladium, diamonds, or silver, as well as precious commodities, to provide value and stability. Some of these commodity stablecoins include PAX Gold (PAXG), which is backed by one fine troy ounce of gold stored in Brink's vaults maintained by Paxos. and silver token (SLVT)Each token presently represents ounces of investment-grade silver. Tether Gold (XAUT) tokens each represent one troy fine ounce of actual gold kept in reserve (Tyfield & Turner, 2024). The Venezuelan Petro is a well-known example of an oil-backed stablecoin, with its value tied to the Venezuelan government's oil reserves (each Petro backed by one barrel of oil). Such assets are uncommon and have not gained market traction. This currency was abandoned on January 15, 2024 owing to suspicions of corruption.

Sometimes sometimes classified as collateralized stablecoins, with the last two referred to as "off-chain collateralised" and the latter "on-chain collateralised" stablecoins (Kosse, Glowka, Mattei , & Rice, 2023).

The question at hand here is if it is possible to make a deposit using precious metal-backed cryptocurrency backed by gold. The answer is affirmative, as stated in the AAOIFI Shari'ah standard No. 57 on Gold and its Trading. Furthermore, there is no Shariah restriction against doing so. HelloGold, established in Malaysia, is the first enterprise to get Shari'ah-compliant certification for gold-backed cryptocurrency who received it in February 2018 for their product GOLDX. Following this, Dubai-based OneGram listed Islamic cryptocurrency on its

own virtual exchange in September 2018, claiming that "its cryptocurrency adheres to shariah directives as each OneGram unit is backed by physical gold stored in a vault, a feature that aims to address speculation and price volatility" and that their tokens are now paired for trading against Bitcoin. GOLDX of HelloGold is different from other metal-backed cryptocurrencies in that it "involves the issuance of a token backed by physical gold stored in a Singapore vault, and transactions must be completed within a defined time period". HelloGold has been certified Shari'ah compliant by Amanie Advisers, which means that the company's operations are in accordance with the AAOIFI Shari'ah standard No. 57, the World Gold Council, and Amanie Advisors. It is stated that because gold is a Ribawi commodity, certain conditions must be met in order for riba to not be triggered in the transaction. These conditions are as follows : HelloGold PMBC must be backed by fully allocated physical gold, and the process of buying and selling physical gold must be completed within the time frame specified by standard. Paragraph 3/4 of AAOIFI Shari'ah standard No. 57 on Gold and its Trading addresses the sale of gold ingots for currencies. Similarly, the Bahrain-based Shariyah Review Bureau approved X8X, backed by eight fiat currencies and gold, as an Islamic cryptocurrency (Hassan, Muneeza, Abubakar, & Haruna, 2021). Similarly, the Shariyah Review Bureau in Bahrain has recognized X8X as an Islamic cryptocurrency, which is backed by eight fiat currencies plus gold (Nugroho, 2023).

In this regard, according to the study conducted by Chaker Aloui, Hela ben Hamida, Larisa Yarovaya, The Islamic cryptocurrencies have a positive correlation with gold, whereas conventional cryptocurrencies have a weak and negative correlation with this precious metal. As well as the Sharia compliance and pegging to the value of the yellow metal reduce the sensitivity of Islamic digital currencies to global geopolitical risk.

Furthermore, precious metal-backed cryptocurrency backed by gold is permissible per NU Fatwa, which stipulates that cryptocurrency backed by a real asset is acceptable and classed as tsaman (means of exchange) in value and mutsiman (commodity) in gold.

In conclusion, accepting both gold-backed Fungible Tokens and Islamic cryptocurrencies in transactions is beneficial rather than detrimental ; because gold-backed PMBCs have intrinsic value, it is more Shariah-compliant to recognize them as money rather than the current paper money used. It also aligns with Shariah objectives, resulting in the deployment of cryptocurrencies for the benefit of society. It's worth mentioning that there are presently at least 62 businesses advertising gold-backed cryptocurrency. Furthermore, Shariah does not specify what form of payment instrument should be utilized, other for the requirement that it be compatible with societal customs. Historically, gold was utilized as currency, namely the dinar. As such, we see it as beneficial to adopt a transparent system that discloses the mechanisms that ensure compliance with Shariah.

CONCLUSION

NFT technology, a recently emerging innovation, lacks a definitive legal framework within the context of Islam. The question that frequently arises pertains to the compliance of NFTs, also known as non-fungible tokens, with Shariah law. Providing a straightforward answer to this query is not a simple task due to various factors. Revisiting the established principles of jurisprudence, all transactions are inherently permissible unless there exists an impediment that prohibits them. According to this logic, non-fungible tokens are considered permissible in Islamic law. It is imperative not to impede the realm of permissibility without concrete

evidence that explicitly forbids such actions. Nevertheless, differing scholarly perspectives exist regarding the adherence of NFTs to Shariah principles.

Therefore, we can say that dealing with non-fungible tokens is in accordance with the explicit principles of Islamic finance. According to these principles, the basic conditions of a sales contract must be met, as there are certain pillars and conditions that must be adhered to when buying and selling in Islam. Failure to meet these conditions renders the sale and purchase invalid. The most crucial of these conditions is that the transactions must not contain any content that is not subject to a sales contract in accordance with Islamic law. Additionally, the transactions must be based on real assets to avoid speculative dealings, and only those items that are deemed acceptable by Islamic law can be traded, with some exceptions. Any items that violate these principles are considered to be in violation of the pillars and conditions of buying and selling in accordance with Islamic law, as determined by scholars.

Also, The NFT despite its legality in terms of sale and purchase transactions, may present compatibility issues with Islamic Shariah. These issues could arise from the inclusion of forbidden elements or other external factors that may result in non-compliance with Islamic principles. Specifically, concerns may arise regarding the price (thaman) (الثلْمَن) or the method of payment utilized in NFT transactions. It is important to note that cryptocurrencies, including Bitcoin, are still subject to uncertainty in terms of their legitimacy. While they possess certain Mal (مال) (money) attributes according to Islamic law, they lack the complete set of characteristics required especially Thamaniyyah (الثلْمَنِيَّة) to fulfill the role of money as defined by Shariah. Such that money must serve as a store of value and a means of exchange, which is what Bitcoin and many cryptocurrencies fail to achieve, as the Islamic authority in many countries believes that cryptocurrency does not rise to the level of money, an opinion similar to that of its central government, which prohibits its use as a means of payment. Otherwise, MUI allows the use of cryptocurrency which has real asset, So that money must be a store of value and a means of exchange.

Despite unanimous agreement among Shariah scholars in support of one proposal, it is important to consider an alternative proposal that permits the trading of non-fungible tokens (NFTs) and recognizes them as legitimate goods under legal jurisprudence, provided that the necessary conditions are met. This proposal allows for the buying and selling of NFTs, contrary to the opposing view that deems it impermissible due to the use of cryptocurrencies. However, proponents argue that this opposition is based on outdated arguments that can be addressed through proper government regulations. Additionally, there are references in the Qur'an and Hadith that support the use of NFTs, which can be further justified through the principle of istihsane (استِحْسَان).

To summarize, NFTs are a relatively new concept that is still in the developmental stage. It is important to use them judiciously, and transactions involving non-fungible tokens should be limited to private transactions that are compatible with Islamic Shariah and do not raise any suspicion of prohibition. Transactions must only be settled using either fiat currency or Islamic cryptocurrency covered by real assets. Non-fungible tokens such as copyrights for original and useful creations and works of art may be used in accordance with Shariah. Therefore, in our research, we may recommend the necessity of establishing Shariah-compliant cryptocurrencies governed by a central authority covered by real assets. Additionally, It is possible to use non fungible tokens that have absolute consensus and conform to the provisions of Islamic Shariah, such as copyright for creations and original and useful works of

art, intellectual property, and arts that do not violate Shariah such as calligraphy, inanimate objects, landscapes, and abstract phenomena.

Footnotes

- ERC (Ethereum Request for Comment) is technical documentation that dictates guidelines and rules for creating & deploying a smart contract on the Ethereum blockchain.
- Money has divisions with different considerations, and one of these divisions is: Dividing money into twofold: which is what its units are identical with whose values do not differ, and the like of it is found in the market.
- The Arabic Term Mal (مال) (money) refers to everything that may be acquired or possessed, whether material or intangible (usufruit). The Hanafite school of thought holds that everything desired by nature may be stored as currency at any time. As a result, the two criteria for a currency, according to the Hanafis, are desirability and storage capacity. It should be noted that the tangibility of money is still a point of contention among Hanafis. Mufti Taqi Uthmani confirms the existence of jurists who reference intangibility by using the term Mal. Concerning the Shafi'is, the usufruit has been included to the currency's denominator.

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