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## Article

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## A nascent market for digital assets: Exploration of consumer value of NFTs

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### ABSTRACT

Despite widespread academic and practitioner interest in non-fungible tokens (NFTs) as a form of digital assets, little is known about how consumers perceive NFT value. This exploratory research investigates why people create, trade or collect NFTs, what value they derive from them, and how online communities contribute to value co-creation. Over the course of two rounds, we interview 38 participants, most of whom are digital natives. We find that engaging with NFTs is the new form of day trading, reflecting financialization of everyday life. The value of NFTs is mainly speculative and utilitarian, and NFTs themselves are best thought of as derivatives. Value co-creation in NFT project communities is largely focused on gaining superior information about the project. We contribute to the crypto-marketing and web3 literature by advancing a novel model of NFT consumer value that extends Holbrook's (1999) typology and distinguishes both positive and negative aspects of consumer value that have been overlooked in mainstream literature. We shed light on the role of communities in an unusual setting: a nascent, illiquid, speculative, informationally opaque market for digital assets. Our study helps creators and brand managers to develop effective NFT strategies.

### 1. Introduction

When in November 2017 CryptoKitties, a blockchain-based collection game where users could buy, breed and exchange digital cats with unique traits clogged the Ethereum network, many crypto market participants dismissed this phenomenon as a joke. With the benefit of hindsight, the NFT (non-fungible token) standard that underpinned the cute kitties turned to be a breakthrough innovation and one of the first, if not *the* first, big consumer use cases for blockchain technologies (Evans, 2019).

An NFT is a tradeable right to digital assets where ownership is recorded in smart contracts on a blockchain, allowing to establish the provenance of the digital object offering information about who owns it, previously owned it, and which of the many copies is the original (Dowling, 2022). NFTs can be used to digitize objects in different environments, such as tweets, virtual trading cards, GIFs, physical images, code, art, game items, sports collectibles, fashion accessories, and virtual real estate (Buchholz, 2022; Dixon, 2024). Tokens, both fungible (such as Bitcoin and Ether) and non-fungible, are the foundation of a new, third generation of the internet, web3, characterized by a novel "ownership" component (i.e., digital property rights). Unlike the centralized, value-extractive web2, the emerging web3 model presents

an alternative vision of the internet, underpinned by decentralization, transparency, openness, user ownership of unique digital assets via NFTs, and control over transactions, content and data (Dixon, 2024).

The current NFT market capitalization is around \$7.5–10 billion, with two thirds of it coming from profile picture (PFP) collections like Crypto Punks and Bored Apes Yacht Club (BAYC) (NFTvaluations, 2023). Luxury brands (e.g., Gucci, Dolce & Gabbana), professional sports leagues (e.g., NBA Top Shots) and retail companies (e.g., Starbucks) all participated in the NFT hype. The market has seen strong moves from legacy brands and non-crypto tech companies (e.g., Reddit launched a collectible avatar program) looking to integrate NFTs into their platforms. The market is expected to grow to around tens of trillions of dollars' worth of assets in the coming years (Messari, 2023). Grail Capital (2023) claims that digital art alone is the next \$1 trillion asset class.

The market interest notwithstanding, little is known about how consumers are actively shaping the NFT markets, even though consumers' perceptions, feedback and actions play a central role in how value is created and perceived (Breibach & Tana, 2021). While many NFT project leaders seem to believe that NFTs deliver value to their users, this hypothesis has not yet been thoroughly investigated from the end-user perspective (for an exception, see DappRadar/Alsomine,

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2023). Studies investigating the value of NFTs focused mainly on the financial valuation (e.g., pricing determinants of NFTs – (see Kraeussl & Tugnetti, 2022) and did not integrate other types of value, lacking a crucial viewpoint. Pirnay, Deventer, and de Sousa (2023) analyze 46 NFT organizational initiatives and identify several categories of NFTs potential value. Despite offering unique insights, they do not consider the users' perceptions, yet it is the final users, not producers, who are the ultimate arbiters of value (Leroi-Werelds, 2019).

Hofstetter et al. (2022) invite researchers to investigate what will drive the perceived value of and willingness to pay for NFTs over time, contexts, and consumers, while Yilmaz, Sagfossen, and Velasco (2023) argue that “there is both a theoretical and empirical gap in knowledge about what makes NFTs valuable to consumers” and confirm the emotional, monetary, functional and social aspects of NFT value. Sung, Kwon, and Sohn (2023) provide robust empirical evidence of how global consumers evaluate the economic and social value of NFT assets when making purchase decisions in the metaverse. In another empirical study which uses stimulus-organism-response (SOR) model, Lee, Ho, and Xie (2023) find that branded NFT (BNFT) attributes (i.e., scarcity, financial value, prestige, uniqueness, originality, and communication consistency) promote a favorable brand attitude, which enhances brand commitment, BNFT purchase intention, and active engagement with BNFTs. Focusing on Gen Z and Gen Y and using the technology acceptance model and theory of reasoned action, Xie, Muralidharan, Edwards, and La Ferle (2023) show that the perceived usefulness, playfulness and scarcity of NFTs, as well as a low-risk perception strengthen brand purchase intentions.

The value of NFTs may be more of a social phenomenon influenced by marketing strategies and the NFTs' acceptance (Kapoor et al., 2022). Indeed, Oh, Rosen, and Zhang (2023) show that NFT collections have a large social aspect to their value and can be considered “digital Veblen goods”: consumers demand them partly because other consumers do. Similarly, Hofstetter, Fritze, and Lambertson (2023) find that social value outweigh intrinsic value as a determinant of the willingness to pay for an NFT. Our study is related to the rather small body of work that investigates consumer perceptions of NFT value empirically (vs. conceptually).

First, we investigate NFT value perceptions of market participants: Why do people collect, trade or create NFTs? And what value do they derive from NFTs? Second, what is the role of online communities in co-creating the value of NFTs? Our analysis is grounded in a combination of theoretical perspectives, including consumer value, social capital theory and behavioral/social finance. Consumer value is the focus of our research, while social capital theory is useful to understand the value co-creation aspect in web3 communities. Behavioral/social finance literature elucidates how social forces and cognitive biases affect investors' decisions in financial markets. We use an exploratory approach and conduct semi-structured interviews with thirty-eight collectors and creators of NFTs in two rounds, during the bull and bear periods for cryptocurrencies and NFTs markets in 2022.

Our research provides novel insights into how NFT collectors perceive the value of NFTs, including their participation in NFT communities. We argue, based on our empirical results, that engaging with NFTs is the new form of day trading for the digital natives, reflecting financialization of everyday life, where individuals more readily think about their lives, interactions and consumptive behaviors through the lens of an investor (Zaucha & Agur, 2022). We show that the value of NFTs, as a new asset class, is mainly speculative and utilitarian, and NFTs themselves are best thought of as derivatives. Value co-creation in NFT project communities is largely centered on gaining superior information about the project, be it through sharing knowledge and ideas, helping others to learn about the technology, socializing to conduct due diligence and discussing collections.

This study contributes to the crypto-marketing and web3 literature by advancing a novel model of NFT consumer value which extends Holbrook (1999) typology of value. We identify the risks associated with

NFTs from the consumer's perspective because most of the marketing literature ignores the negative side of the value and the risks associated with blockchain and its applications (Alkhudary, Belvaux, & Guibert, 2022). We also enrich existing literature by offering fresh insights into the roles communities play in a very different context – a nascent, illiquid, speculative, informationally opaque market for digital assets. From a managerial perspective, our paper helps creators and brand managers to design effective NFT strategies, based on a deeper understanding of both sides of consumer value perception of NFTs.

Following the introduction, the next section provides the theoretical background. Section 3 describes the research design, and Section 4 presents the findings. Section 5 discusses the findings and outlines the contributions. Section 6 presents limitations and implications for further research and practice.

## 2. Theoretical background

### 2.1. Consumer value

“Value” and “consumer value” have become some of the most misapplied concepts in social sciences (Leroi-Werelds, 2019), perhaps due to the variety of contexts (Lin & Ding, 2005; Woodruff, 1997). A widely accepted definition of value is “the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given” (Zeithaml, 1988). This conceptualization of value is unidimensional, reflecting a cognitive perspective based on the premises of the economic theory of rational choice and conceptualized as a trade-off between benefits and sacrifices. A multidimensional approach to consumer value consists of several interrelated components which work simultaneously and separately (Sheth, Newman, & Gross, 1991). Among the various multidimensional proposals, we favor Holbrook's typology (Holbrook, 1994; Holbrook, 1999) for three reasons. First, it is well established. Second, it captures diverse aspects of the consumption experience, both cognitive and affective in nature – that is, the economic, social, hedonic and altruistic categories of consumer value. Third, it informed the empirical study of consumer value perceptions of NFTs, by Pirnay et al. (2023), thus enabling a comparison.

Holbrook (1994)'s framework delineates three key dimensions of consumer value: (1) Extrinsic versus intrinsic value; (2) Self-oriented versus other-oriented value; and (3) Active versus reactive value resulting in eight types of value: efficiency, excellence, status, esteem, play, aesthetics, ethics and spirituality, emphasizing the different aspects of consumption. Holbrook's typology has been criticized for focusing merely on the positive side of value (the benefits) while neglecting the traditional consideration of value as a trade-off (Gallarza, Arteaga, Del Chiappa, Gil-Saura, & Holbrook, 2017). Given the rapidly changing technological environment (e.g., Artificial intelligence, Robotics) and the evolution of the marketing discipline (e.g., service dominant logic, transformative service research) and practice (e.g., collaborative consumption), Leroi-Werelds (2019) updates Holbrook's typology with additional value types, categorized as positive and negative value and related to technology (e.g., relational benefits vs effort), human contact (e.g., excellence), collaborative consumption (e.g., status vs performance risk) and value related to transformative service research (e.g., ecological benefits vs societal costs).

### 2.2. Online communities and social capital in the NFT space

We conceptualize NFT communities based on Breidbach and Tana (2021, p.312) as “social collectives or assemblages of actors that affect and are affected by others or by a specific object or situation”. Social media and online brand communities (OBC) offer innovative channels for consumers to use their personal resources to interact with others, help co-create value and influence their peers' purchasing decisions (Wu, Nambisan, Xiao, & Xie, 2022). Consumers co-create value by means of resource integration devoting their time, skills and knowledge (Belk &

Costa, 1998; Lusch & Vargo, 2018. These resources include: 1) network assets (customers' extent of interpersonal ties within their social networks); 2) persuasion capital (degree of trust, goodwill, and influence vis-à-vis people in the community, 3) knowledge about other customers, products, brand, and firm, and 4) creativity (capability to deploy their knowledge and conceptualize or develop novel, useful ideas or solutions to problems) (Harmeling, Moffett, Arnold, & Carlson, 2017). Even though not all consumers are equal in unlocking value from their resource integration activities (Hibbert, Winklhofer, & Temerak, 2012), these activities in OBCs create social capital.

Social capital (Adler & Kwon, 2002) is frequently used to describe the aspects of a society or community that promote collaboration among group members to achieve a shared objective, such as greater production or effective information exchange. Social capital facilitates the flow of communication between members in the community and plays a significant role in cultivating users' sense of belonging (Meek, Ogilvie, Lambert, & Ryan, 2019). Social capital embodies three conceptually distinct dimensions: *structural* (i.e., the entire network of ties among the members), *relational* (concerned with the specific bonds that people have with one another, including trust, friendship and respect), and *cognitive* (i.e., shared narratives, meanings, codes and languages among network participants) (Nahapiet & Ghoshal, 1998). Members in OBCs create value by circulating brand relevant knowledge and providing services to community members (Arnould, Arvidsson, & Eckhardt, 2021; Muniz & O'Guinn, 2001), making use of the brand provided resources to which they add their own skills, knowledge and creative abilities, while benefiting the community and its individual members (Schau, Muñiz, & Arnould, 2009).

### 2.3. Behavioral and social finance

NFTs are often seen as digital financial assets, hence two different bodies of literature add to our understanding of NFT value: behavioral finance and social finance, as they specifically focus on biases in decision-making related to investments and trading, and social interactions. There is ample evidence that cryptocurrency investors suffer from a full spectrum of cognitive biases equally typical of investors in stock markets - representativeness, overconfidence bias, the disposition effect, regret aversion and the fear of missing out, overreaction, herd behavior, and peer influence (see Liu, 2019). Zetzsche, Buckley, Arner, and Fohr (2019) conclude that investors participate in cryptocurrency markets on the basis of "utterly inadequate disclosure of information" (p. 267), as more than two thirds of the projects are silent on the issuing entity, the initiators, backers or the applicable law. Given these severe information asymmetries, the decision to invest cannot be based on a rational calculus. Cryptocurrency investors are especially prone to herd behavior, suppressing their own beliefs and basing their decisions on the collective actions of the market, even when they disagree with its prediction (e.g., Bouri, Gupta, & Roubaud, 2019). The NFT market, similar to cryptocurrency markets, is speculative, with prices determined by investors' opinions about the present and future of the perceived value (Zaucha & Agur, 2022).

Shiller (2000, p. 7), from a social finance perspective, points out that "[i]nvesting in speculative assets is a social activity. Investors spend a substantial part of their leisure time discussing investments, reading about investments, or gossiping about others' successes or failures in investing. It is thus plausible that investors' behavior (and hence prices of speculative assets) would be influenced by social movements." Social finance theory emphasizes how social interactions of market participants, especially how they transmit financial ideas, feelings and behaviors through conversation, mass media, social networks and personal observation, affect trading behavior and price outcomes (Akçay & Hirshleifer, 2021).

## 3. Research design

### 3.1. Method and sampling

Given a paucity of research on consumer value perceptions of NFTs, we chose an exploratory study which consisted of two series of semi-structured interviews. The first round of ten interviews was conducted in March–April 2022 (the NFT boom market), and the second round (twenty-eight interviews) in September–November 2022 (the downturn). Gathering data under two different types of market conditions enhanced the validity of the findings, because customer value is time-specific (Leroi-Werelds, 2019). The interview guide was composed of two main sections to acquire the necessary information in relation to motivations, experiences and value perceptions of NFTs, as well as the community practices in shaping the NFT value, and the role and actions of participants in NFT communities.

Following Miles and Huberman (1994), a snowball, purposeful sampling technique to identify the interviewees in the NFT space was used. Interviews with stakeholders of diverse profiles, nationalities, and identities ( $n = 38$ ) were conducted in English, each lasting between 37 and 50 min, and were tape-recorded and transcribed. The respondents identified themselves as (1) collectors/traders/investors of NFTs ( $n = 18$ ); (2) creators only ( $n = 4$ ) (3) traders only ( $n = 5$ ), (4) creators plus other identities (as collectors/traders/investors) ( $n = 6$ ), and (5) other identities (e.g., learner, observer) ( $n = 5$ ). Respondents held anything from 0 (because they sold them) to over 60 NFTs. Our sole criterion when we approached the participants was whether they owned / had experience with NFTs. Other considerations, such as the participants' choice of the marketplace to trade, blockchain or project / NFT type (e.g., artistic NFT vs utilities NFT, or branded vs non-branded NFT) was not our concern.

Most of the respondents in the sample are male (84%), 25 years old on average and their experience with blockchain, cryptocurrency or NFT varies from six months to eight years. Because nearly all respondents are young people from Gen Y and Gen Z, our findings reflect the perceptions of NFT value of the digitally natives. The sample's skewedness toward males and younger individuals reflects the demographics of crypto ownership (see Statista, 2022; Triple, 2022; Yilmaz et al., 2023).

### 3.2. Analysis

We adopted a theory-driven analysis of qualitative data, starting with the research question definition followed by the determination of a priori constructs (e.g., functional value, shared vision in communities), which were transformed into questions for the interview protocol and formed the basis of the preliminary coding scheme. During the analysis, however, we maintained an "intimate connection with the empirical reality" (Eisenhardt, 1989) to allow new relevant concepts to emerge from the data collected. We followed an abductive reasoning in the analysis, cycling back and forth between the data and the literature (Langley, 1999). In the first phase of the study, the initial coding scheme was based on the objectives of the research (Langley, 1999). This phase resulted in an open coding (Strauss & Corbin, 1998). In the second phase, we grouped the codes and linked them to categories. This step was the starting point for building the typology of consumer value perceptions of NFTs.

Finally, we arrived at plausible explanations of the findings supported with examples of the most relevant quotes extracted for each code (Langley, 1999). Validation was performed throughout the research process and, given our methodological approach, used criteria suggested by Strauss and Corbin (1998), such as generation of key concepts (from theory and empirical data) and their linkages (e.g., in tables), and variation (e.g., of NFT holders' identities and nationalities). The outcomes of the analysis were interpreted with reference to several bodies of literature.

## 4. Results

### 4.1. Initial interest in NFTs, user motivations and investment criteria

Several of the respondents were initially exposed to NFTs either because they traded cryptocurrencies before or by accident (e.g., a podcast), and then followed their curiosity. The overwhelming majority of the interviewees, however, became attracted to the NFT market either because of family, friends or peers, social media (e.g., Instagram and YouTube) or hype from influencers and celebrities. These findings emphasize the social component of how NFT market participants are attracted to this space, consistent with ideas in social finance (Shiller, 2000). Specifically, buzz around high-profile projects such as BAYC, CryptoPunks and Axies, was mentioned several times:

*[I came across] Bored Apes two years ago. It was just a hype around the coin, about the NFT really. Then I started to look into it and I'm in the financial group, so we exchange ideas. Because I've been in crypto for years, NFT is not really something new to me, but I only looked into it because of the Bored Apes (R27).*

The majority of the participants were motivated to buy, collect or trade NFTs for financial gain only or in combination with other motive (e.g., utility, joining a community, gaining familiarity with technology, aesthetics or status):

*I've bought and sold plenty of NFTs with a positive portfolio value. Various reasons to either sell moments later for a profit or hold for possible news and utility. Most recent NFT I bought was KPR and I'm holding in hopes of some good news (R22).*

The motives of NFT creators were more varied, including experimentation, launching own project, curiosity, giving back to society and financial gains:

*I created an NFT from a photo of mine in Brooklyn, New York. It was a fairly simple process done on OpenSea. I wanted to have the experience of creating my own without coding; so OpenSea made that possible (R16).*

Most of the interviewees in our study tended to approach their NFTs as an investment or trading opportunity, typically using multiple criteria in their due diligence process, including utility, trying to predict trends, hype from social media and influencers, a flipping opportunity or NFT scarcity, combined with team reputation and transaction fees:

*When deciding to buy an NFT, I look at social media. And personalities like Gary Vee, Logan Paul and many Youtubers who basically give weekly analysis about which crypto market or which NFT markets are doing well and hold value for potential and which market to enter... Also, another way for me to decide how to buy an NFT or which NFT to buy, I just look at which NFT or which artwork is appealing to me (R12).*

### 4.2. Perceived value

We use the Holbrook (1994) and Pirnay et al. (2023) value framework (contextualized and adapted for NFTs) (further, the H/P typology) to classify the responses, with a representative quote for each category (Table 1). Most of the participants derive multiple benefits from NFT ownership. The most frequently represented values are “speculations” and “utility”, both values extrinsic and self-oriented, suggesting that NFTs are seen as financial instruments – with or without some utilities, such as access to events, communities, educational resources, whitelists and free drops. This finding is partially consistent with Pirnay et al. (2023), where “speculations”, “art and memories” and “possession of rarity” were the most represented values. Yilmaz et al. (2023), who use the PERVAL framework, also confirm multiple aspects of NFT value (emotional, monetary, functional and social), with monetary value being the main driving force. Likewise, Sung et al. (2023) highlight the economic and social value of NFT assets; while Lee et al. (2023) show

**Table 1**  
– NFT perceived value.

Extrinsic	
Utility NFTs (efficiency)*	<i>I received Ape coins just because I bought the MAYC NFT. I benefited from educational classes because I joined the metapreneurs community (R21)</i>
Speculations (excellence)	<i>Yes, I have been buying NFTs, and the first reason was the greed and potential gains from reselling. (R6)</i>
Status	<i>There's a certain level of exclusivity that comes with owning certain NFTs; in my personal experience getting access to certain events and certain meetings boost the value in my opinion (R29)</i>
Possession of rarity (esteem)	<i>Ideally, it's as I mentioned profits and rarity, full stop, so for the Bored Ape one that I'm holding, although it's not very rare, it's part of a subcollection...but it holds value to me in terms of money (R11)</i>
Intrinsic	
Play	<i>Money, connections and enjoyment. I am looking to make money by being early to projects that innovate in the NFT space and adapt to the changing landscape... And I personally have enjoyed my time in NFTs, it's been a good hobby. (R1)</i>
Art / Memories (Aesthetics)	<i>I bought an NFT... the Axie Infinity. I purchased it because personally it was nice, and I believed that its price will rise up in recent years (R28)</i>
Charity (Ethics)	<i>... I have some which are valued very highly in the future, and Women Unite is just a female project, which gives charity to women cause women's movement (R27)</i>
Community belonging (spirituality)	<i>NFT means community to me. I very much enjoy spending time in the NFT's discord community and to chat with other people passionate about the scene (R5).</i>

\* Note: The concepts in brackets are Holbrook's categories, while the rest are adapted by Pirnay et al. (2023) to NFTs.

that BNFT attributes (i.e., scarcity, financial value, prestige, uniqueness, originality, and communication consistency) promote purchase intentions. Clearly, there is an overlap with some of our findings. It should be noted, though, that these two latter studies focus on branded NFTs, where consumer value perceptions may be different.

The other two extrinsic (other-oriented) elements of value – “status” and “rarity” – were poorly represented (and were combined with other types of value), even though some of the participants owned the coveted Bored Apes and CryptoPunks. This was a somewhat surprising result, and one interpretation could be that our participants see NFTs as a passing fad which they want to capitalize on here and now. By contrast, Oh et al. (2023) find that NFT collections on OpenSea (a marketplace) are Veblen goods: while they do not provide any cash flow to their owners, they provide value as status signals and tokens to access exclusive spaces (e.g., real-world events or closed chat groups).

Further, unlike NFT creators (who do value “art/memories”), the collectors attach little value to the three intrinsic components of value (“play”, “art/memories”, “charity”), reinforcing the idea that NFTs are perceived primarily as financial assets. This is in contrast to Xie et al. (2023), who show how “playfulness” strengthen brand loyalty and purchase intentions of Gen Z and X consumers. “Community belonging” was seen as more valuable (it was mentioned by more respondents), but even then it was rarely the sole benefit, with investment opportunities, flipping and utilities given priority.

We find that the H/P typology does not easily accommodate other types of value that were mentioned by our interviewees, perhaps because it takes the supplier perspective and because NFTs, by definition, are unique, and hence come in many different types. Overall, we identified five additional categories of value in the NFT context (Table 2):

Value of a higher purpose/ meaning is distinct from charity/ethics and, therefore, deserves a special category. Epistemic value of knowledge as well as being early to learn about the market are to be expected due to the novelty of the NFT phenomenon and the excitement around it. Our interviewees are likely to enjoy greater happiness and social

**Table 2**  
Additional components of positive value.

Value	Representative quotes	Categorization
Purpose	<i>I believe in the purpose of the project, and I can contribute to this purpose, and the world can be better if the purpose of the NFT is achieved.</i> (R26)	Intrinsic/other-oriented
Epistemic value (knowledge)	<i>...NFT, I truly believe are ways to either identify yourself, grow your investment, be a part of a great community, and give you the ability to learn about new technology</i> (R2)	Intrinsic/self-oriented
Novelty-seeking / being early adopter	<i>I truly believe that this type of technology is the future, so I felt I needed to get my foot in the door as soon as possible</i> (R4)	Intrinsic/self-oriented
Enjoyment from joint decision-making (e.g., in due diligence)	<i>Generally, someone sends a project name to the community and asks what other people think. Everyone explains why you should invest in it and why you shouldn't. Sometimes you talk about the whitelist of the upcoming projects.</i> (R23)	Intrinsic/self-oriented
Mimetic investment	<i>...it was a very big topic among many people abroad and it slowly started becoming a bigger thing in the Middle East, and that's why I really got into it</i> (R29)	Extrinsic/ other-oriented

connectedness from joint decision-making and shared goals, and benefit from information-sharing, pooling resources and even achieving greater efficiency (in, for example, collectively identifying promising NFTs). Individuals with similar backgrounds, tastes, and interests, according to the homophily principle, tend to consume similar content or products (Liu-Thompkins, 2012), explaining mimetic behaviors (in our case, related to investment/trading decisions).

The H/P typology focuses on the positive side of value, where the trade-offs between benefits and costs are implicitly included in the efficiency category (Leroi-Werelds, 2019). Negative value types, however, are distinct categories, and not just the opposites of the positive value types (Leroi-Werelds, 2019). Consequently, it was important to explore the participants' risk perceptions. Without exception our interviewees were aware of the risks associated with NFT trading and investment, which we categorize into three groups: external (market-related), NFT project-related and NFT technology-related (Table 3).

These findings are not surprising, given that an innovation such as NFTs is associated with technological and market uncertainty. Some risks are consistent with the "security risk", "financial risk" and "price" in Leroi-Werelds (2019). Additional negative value components not mentioned in Leroi-Werelds (2019)'s model are specific to NFTs (e.g., lack of community, lack of regulatory protection from scams, and hype).

Clearly, NFTs are seen as a highly speculative investment which needs extreme due diligence in a volatile, illiquid and largely unregulated market. Nevertheless, the participants continued to trade and invest in NFTs despite the many risks, scams and significant information asymmetries (i.e., a lack of sound financial information about NFT projects), possibly suggesting that the value of the project (returns, utilities or other benefits discussed above) exceeded the costs. More likely, however, these results can be explained by the well-established behavioral biases of financial market participants (such as herd / mimetic behavior, FOMO, Machiavellianism, peer influence and overconfidence) (Martin, Chrysochou, Strong, Wang, & Yao, 2022) downplaying the risks, eventually leading to irrational decisions. The very adage "invest as much as you are willing to lose" (R33) equates investing in digital assets to gambling (Zetsche et al., 2019).

**Table 3**  
Negative components of value.

Category/type of negative value	Representative quotes
External (market related) Market volatility/ unpredictability	<i>The NFT market is unpredictable. The market has too many creators, and NFTs are constantly becoming overpriced</i> (R36).
Illiquidity	<i>The main risk is that we're operating in an illiquid market, so the risk is that you can buy an NFT that nobody will be interested to buy in the future. I always suggest to invest just the money you can afford to lose in this market and not take it as the main business of your assets.</i> (R33)
Overhyped, passing fad	<i>I think it's just a hype and it's only temporary where NFTs would be very trendy and popular. But soon, people will realize they are paying a lot of money for something that isn't worth it</i> (R35)
Lack of regulation	<i>Different jurisdictions have varying policies or lack of policies to govern NFTs. Furthermore, the likelihood of being scammed and pricing variations are the perceived risks and challenges associated with NFTs</i> (R18)
NFT Project related Fraud/Scams/ Rug Pulls/ Ponzi Schemes	<i>Decentralization and anonymity are great, but they come with problems. Rug pulls (aka scams) have become commonplace, and there's not really a way to hold anonymous founders accountable. Over time these should decrease as projects become more established and less new projects launch – but it is a major issue</i> (R1)
Founder anonymity	<i>There is a lot of safety and security concerns and there is a lot of uncertainty at the same time because a lot of these projects are anonymous and you do not know their founders</i> (R7)
Lack of sizeable communities	<i>My first concern was building a community. As for every creator, it is difficult to have audience or a community that could help you make the project known in the marketplace</i> (R9).
Fluctuations in value/ prices	<i>The challenges that people would get from NFT is that its value may go down which would lead to a loss... These challenges people can't change, because it is about people emotions mostly, if they see something go down, they will immediately sell</i> (R28)
NFT technology related Thefts, fakes and replicas	<i>Many NFT projects are mere replicas of others or scams that can make people invest in the wrong version of a certain project</i> (R36)
Safety/security issues (e.g., wallet hacks)	<i>...Another risk of holding NFTs may be security, and risks from cyber-attacks and asset deaths. NFT security is a real issue because NFT marketplaces are centralized and hosted on the servers of third-party websites</i> (R12)
Minting costs	<i>I would personally buy through MATIC and not ETH to save on gas fees. Any project launched on ETH will be very expensive in terms of gas fees- this a serious challenge</i> (R15)

### 4.3. Communities and social capital

#### 4.3.1. Motivations to join communities

In the NFT space, communities are the "customers, supporters and funders, with some becoming good "frens"" (Vick, 2022). Our interviewees preferred to engage with the project communities (especially Discord) on online social networks (Twitter, Telegram and WhatsApp), sometimes complemented by offline meetings and events, spending anything from 15 min to 4 h a day on these channels. Consistent with the literature (e.g., Kohler, Fueller, Matzler, Stieger, and Füller (2011), they participated in online communities because they wanted to (a) gain and share knowledge / new information (through discussions and research about prices, the market and NFT projects to gain investment tips and insights into opportunities); (b) make money, get rewards or other benefits/utilities, (c) access new projects and whitelists, thus becoming early adopters and supporters; (d) socialize (meet new people, get help

and advice, have fun) and (e) learn:

*“It feels great to meet people in the field if this is what you want your career to be. You are able to just connect and have so many communities to jump into to learn, create and do so much more. One of the best things I’ve done.” (R3).*

“Fun” was mentioned multiple times. Fun has consistently been found to be one of the strongest motivators in studies in online contributions such as product development (e.g., [Füller, 2010](#)). Fun and enjoyment grouped with other intrinsic motivations are also reasons people join online NFTs communities: *“A really educational and fun experience as it allows you to connect with all types of people and develop your understanding about the blockchain and NFTs too” (R4).*

Inclusive governance is deemed to be one of the key principles of web3 communities ([Brainsy, 2022](#)). While it is generally believed that web3 companies will be community-led and community-owned ([Jin & Parrott, 2022](#)), this expectation has not yet materialized in practice, and there is little evidence that our interviewees took advantage of the supposedly decentralized nature of the projects. When asked whether they were actively engaged in the community, having a role in decision-making (e.g., in new NFT project development) and governance, most of the respondents ( $n = 32$ ) described their roles as that of a learner, observer, reader or knowledge-seeker, suggesting a rather passive role:

*I keep quiet because I’m very busy. So just observe for the most part (R27) and ... since I prefer to only observe and spectate the group discussions, I am not involved in the direction or developments of products (R10).*

Monetary and non-monetary incentives in NFT communities such as airdrop of tokens, drawing prizes and giveaways, access to events and webinars, and even sharing NFT success increase market interest to the NFTs and their communities ([Toufaily, Polyzos, & Mazur, 2023](#)). The majority of the interviewees indeed mentioned such project incentives (i.e., utilities):

*Yes, there are many incentives, most of them are non-monetary and they do promise you monetary gain...Non-monetary incentives include joining a community, getting early access and beta access, you get to attend their programs and community meetings, any of their online forums and webinars. But most of the time it is just ...to expand your own knowledge to get early access to future projects (R25).*

The blending of fun, knowledge, seeking investment advice, and financial rewards are the central motivations of consumers to join NFT projects’ communities, confirming [Zaucha and Agur \(2022\)](#)’s results. The value co-creation is taking place within the participation process, which is accompanied by mutual effects and interactions between peer consumers: *“Members are creating value by spreading the popularity of NFT and adding more content recommending new ideas to creators” (R6).*

#### 4.3.2. Social capital

Our findings support the idea that relationships among individuals can be productive resources and can be applied to understanding NFT project communities. The cognitive dimension suggests that shared language, narratives, visions and goals can enhance understanding among individuals in a community.

*Shared language* gives members a sense of belonging and sets them apart from outsiders ([Meek et al., 2019](#); [Nahapiet & Ghoshal, 1998](#)). Because of our research design, we could not directly observe any shared language that the participants used; however, several participants pointed out the warm, ritualistic way of welcoming new members (e.g., “gm”, “welcome to the future” R25). The participants described their experiences with NFTs using words like “portfolio”, “floor price”, “price movements”, “hype”, “bubble”, “volatility/volatile”, “fraud / scam”, “drop” and “flip”, reflecting the language and culture of markets, investments and financial interests, as noted by [Zaucha and Agur \(2022\)](#) in their study of NBA Top Shot online communities.

*Common topics in NFT Discord server is usually to grow up the minimum prices on marketplaces to have gains from the mint. (R6).*

Shared vision are beliefs and norms members share with regard to the purpose of the community, bringing members together and encouraging ongoing participation ([Meek et al., 2019](#)). For creators, shared vision is cohesion, unity, the love of art and support for each other; for collectors, the growth of financial gains for each member of the NFT project community:

*“I did realize that the most common norms and values revolve around the love of art or the love of business and trading” (R5).*

The relational dimension refers to the type of relationships cultivated through interpersonal contact, such as trust, obligations, the norm of reciprocity, and identification ([Nahapiet & Ghoshal, 1998](#)). The relational aspect of social trust and reciprocity influence participants’ behavior by lowering communication barriers, increasing the intention to share knowledge, and assisting consumers in viewing others’ accomplishments as their own ([Muniz & O’Guinn, 2001](#); [Nahapiet & Ghoshal, 1998](#)). Our findings show that only five of our respondents trust their peers, project leaders and community managers, seven do not trust them at all, and the remaining participants trust with caution, while evaluating risks:

*I don’t trust them at all. It’s just weird in my own opinion. I feel like it’s weird that you’re getting a lot of money for something such as NFT. It’s not even stable income. So, when someone comes to you and tells you “You are going be rich if you work with my NFT project”, it’s weird and sketchy. It feels illegal. It feels really illegal (R17).*

Reciprocity is a key factor for enhancing the sociability of online communities and fundamental to their ongoing sustainability. When members of communities are aware that others are willing to offer advice, they are more likely to participate ([Liao & Chou, 2012](#); [Mathwick, Wiertz, & De Ruyter, 2008](#)). We find support for this argument, as many interviewees mentioned “help” and “advice” when describing their motivations to join NFT communities and their most common activities, most often in relation to investment, due diligence of NFT projects and general understanding of the cryptocurrency markets:

*These communities helped me learn more about NFTs and help me decide which to buy, getting an initial offering for the NFTs has also been made possible because of joining these communities and following the advice of those who are experienced (R34).*

The ties that bind the relationships in the community, the strength of the ties and the frequency of their interactions define the structural dimension of social capital. Our results paint a rather nuanced picture of the strength and frequency of the ties between members in the NFT communities. Even when they made trustworthy friends in their communities, participants were focussed on business / investment opportunities.

*I’ve been with a certain group for almost a year now. We all started off small and have grown so well with each other in this space in a positive way with portfolio value and personal connections. I’ve met a handful of members at certain NFT events held throughout the year. These members have really become family to me and I am truly grateful to have met them (R22).*

## 5. Discussion and contributions

This exploratory study aimed to investigate (1) value perceptions of NFT market participants (i.e., why people collect, trade or create NFTs) and what value they derive from NFTs; and (2) the role of online communities in shaping value creation for NFT holders. Our findings are discussed below.

5.1. Extension of the H/P typology and consumer value perceptions

NFTs are widely believed to be a new asset class, a breakthrough innovation, and even “The New Renaissance” (Sharma, Zhou, Huang, & Wang, 2022), hence the question of consumer value perceptions is consequential. Our paper extends the H/P’s typology into the NFT space by adding the novelty value, the epistemic value, the purpose/meaning value, the joint decision-making value as well as the mimetic (conformity) value as positive value types derived from collecting and trading NFTs. NFTs are also associated with negative value components (risks) which are not included in the H/P framework that we categorize as *external/market oriented*, *NFT project related*, and *technology related*. “Time” and “effort” as negative values (Leroi-Werelds, 2019) were also implicitly present in the interviewees’ responses, as they needed both to understand the technology and opportunities in the NFT market. These findings confirm the idea that consumer value is context- and time-specific. Based on the findings, we propose a conceptual framework (Fig. 1), grounded in data, that captures the dimensions of value that consumers perceive from NFT collections. We argue that the trade-off between the positive and negative types of value will determine the level and intensity of consumer value perception, which in turn will determine the intention to collect/invest NFTs. NFT project communities may influence the relationship between the type of value perceived and the general construct, by reducing the perceptions of risks and increasing dimensions of positive value (e.g., community belonging, fun/play). Although we found that respondents give more salience to the financial, utilitarian and speculative value of NFTs, this holistic model needs to be tested to quantify the weight of each value on the general construct of consumer perceived value.

Our most significant finding, however, is a realization that our

participants attach value to NFTs largely as financial instruments. According to Zaucha and Augur (Zaucha & Agur, 2022, p. 2), “NFTs exist today as a component of a broader, ever-evolving financial environment in which questions of value, ownership, and intention are characterized by their ambiguity”. The market for NFTs, much like cryptocurrencies, is “lottery-like” where prices are determined by investors’ opinions on the present and future of their perceived value and where the behavioral mechanisms of underlying investor activities in the new virtual currency markets are similar to those in stock markets (Groby & Junttila, 2021; Zaucha & Agur, 2022). While NFTs are indivisible and non-fungible, they are tradeable. Historically, according to Martin (2002), activities on financial markets, such as the buying and selling of stocks, bonds and other financial instruments – and in the digital age, of cryptocurrencies and NFTs – have been regarded as far removed from the day-to-day endeavors in the real world.

Following Martin (2002, p. 46), who describes day trading as “the poster child of financialization of daily life” and Komporozos-Athanasίου (2022), for whom speculation has moved beyond financial markets to shape fundamental aspects of our social lives, and based on our analysis of the motives and value perceptions of NFT markets participants, we argue that trading and collecting NFTs is one aspect of such financialization. The very language that our interviewees used (“portfolio”, “floor price”, “hype”, “flip”) is quite telling, which, as mentioned earlier, is the language of financial markets. Tokenization, of itself, is a form of an accelerated transactionalization and a means to extend the current financial logic into the digital realm (Lotti, 2019). This logic is encapsulated in claims such as taking internet assets that were previously infinitely copyable (e.g., songs, memes, digital art) and turning them into scarce, tradeable blockchain assets. A key difference between investing / trading NFTs and daily trading of public stocks is the

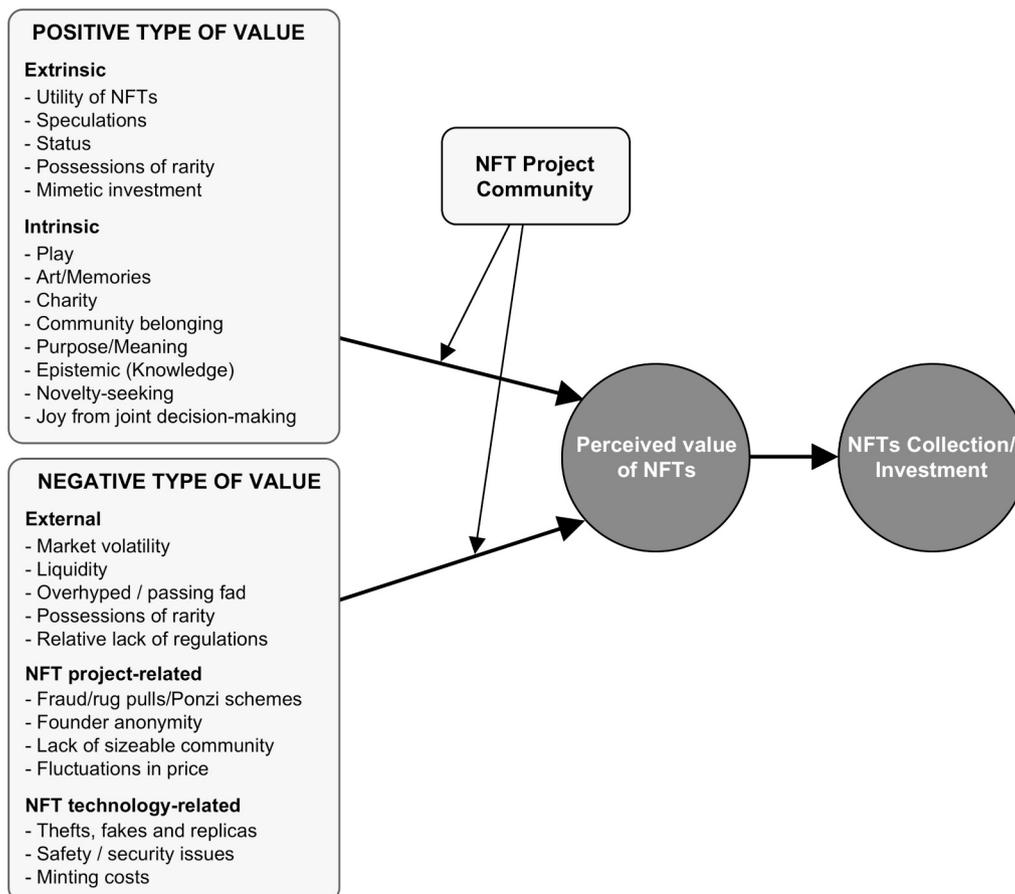


Fig. 1. Framework of NFT Consumer Value Perception.

immeasurably higher degree of risk due to illiquidity and near absence of reliable financial information on the former. Moreover, our participants were oblivious to the risks associated with copyrights or ownership of NFTs (not once were these mentioned by the interviewees).

Our analysis shows (Section 4) that “speculations” (as standalone or combined with “utility”) and “utility” were the most represented (extrinsic and self-oriented) values. At the same time, “aesthetic value”, “status” and “rarity” (despite the usual claims of “rarity” being a major NFT benefit), were under-represented. This finding is consistent with the psychology of investors in what Deloitte (2017) calls “passion assets” (e.g., cars, fine wine and fine art) where the future market value of an asset is entirely divorced from any pleasure or utility other than investment per se. To illustrate with an example of CryptoKitties (O’Dwyer, 2018):

*The cryptokitty has value as a set of rights to a financial asset. The buyer doesn’t purchase an image or an idea so much as a cryptographic certificate of authenticity that can be used to speculate on the future performance of the token. This is one situation where content isn’t king...the aesthetic significance of a cartoon cat or a water color of an Ethereum logo (another piece for sale) is basically beside the point. Buyers not only have no rights over the future uses of the image, they don’t even have any rights to possess a lasting reproduction.*

We suggest that our interviewees value NFTs predominantly as a derivative – essentially, a measurement of risk associated with the performance of a financial instrument (i.e., NFT) (see Taylor, 2011), much like the derivative called a credit default swap was a bet on the likelihood of default in the underlying bond during the 2008 crisis (Taylor, 2011). It is useful to emphasize that most NFT projects (which mushroomed in 2021–2022) remain early-stage investments whose value is essentially an expectation of future returns based on founders’ promises to deliver on the roadmap in the near absence of mechanisms to enforce founders’ accountability. The real value of the underlying asset (e.g., aesthetics, the utility value of a membership or access to exclusive groups) represented by the NFT becomes less important than the statistical probability of the asset price performance within a specified timeframe in uncertain markets (Lotti, 2019; O’Dwyer, 2018; Taylor, 2011), such as NFT markets. In short, NFTs “are new kinds of derivative contracts with no underlying asset (or, more precisely, contracts in which the underlying asset is constituted as a claim regarding the uncertain value creation by the platform of which the token is a part)” (Lotti, 2019).

## 5.2. Role of communities

According to the received literature, an NFT’s worth comes from users’ shared agreement. A community around NFT is, arguably, even more important than for other innovations because it “literally imbues those NFTs with their meaning and establishes their initial value” (Hofstetter et al., 2023; Kaczynski & Kominers, 2021; Sharma et al., 2022). We find that, with few exceptions, our interviewees did not actively participate in project governance, being motivated to join online communities primarily for knowledge sharing, information-seeking, getting help and advice, research and discussion of projects, and socializing.

NFTs represent digital assets that are characterized by informational opaqueness and information asymmetry under conditions of extreme uncertainty (i.e., the founders / sellers of the NFT project know more about the project than the buyers) in a low trust environment. Our results are consistent with the DappRadar/Alsomine (2023) recent study which states that, to close the information gap, users need to understand, validate and trust the offerings behind each NFT. Researching, trading, collecting and creating informationally opaque assets requires effort and highly complex knowledge (e.g., of an angel investor). This is why the participants in our study rely on the help of community members and the hype from influencers and other project “insiders”. As asymmetric information results in moral hazards and adverse selection, access to superior signals based on insider information could minimize risks (i.e., negative value components), especially when the transmitter is a celebrity or a high-profile individual active on social media (Ullah, Attah-

Boakye, Adams, & Zaefarian, 2022).

The perceived value of NFTs is co-created by the “integration of resources from a range of sources by multiple actors, always involving the customer” (Lusch & Vargo, 2018, p. 13). Our results show that communities participate in NFTs project value co-creation through the integration of informational resources from members about NFT trends and collections, increasing the hype and financial interest. The value is speculative, utilitarian and focused on the short-term and direct benefits, with influencers (e.g., Gary Vee) playing a key role in creating the hype around NFT projects. This “informational view” of NFT communities which emerged from our data is consistent with the value perception of NFTs as derivatives whose value is determined by the information around the good. O’Dwyer (2018) explains the value of such information in the context of NFT artworks, and we believe the same applies to NFTs in general:

*What’s valuable is the information circulating around the good. Information is trust, confidence, reputation, a single moment created by hubris and purchasing power. The transaction takes place on a purely informational basis. The art in question isn’t a commodity with a use or exchange value but a financial instrument whose performance relies on the hype and information that circulates around the good.*

Some NFT creator communities in our study (who were in the minority) are also oriented toward learning and longer-term value creation. In prior research (Sharma et al., 2022), creators of NFTs highlight the collaborative and supportive nature of NFT communities. Lacking clear metrics to assess new projects and distinguish them from scams, creators rely on online groups as useful resources for help to learn about new and complex concepts and technologies. In our study, creators exchange knowledge and information not just for short-term financial return but for the sustainability of the project and moving the space forward. Members of these creator communities provide mutual support and collaborate with project founders, thus enhancing the project’s sustainability, because it is designed as a social learning system built on people’s individual experiences and a sense of belonging through engagement and alignment (Wenger, 2010). Here again, we see the theme of information asymmetries and integrating individual knowledge resources coming up in these creator communities. While collectors, traders and creators may join NFT project communities for multiple reasons, adding value by participating in governance is generally not one of them, contrary to how web3 communities are expected to be designed (see Brainsy, 2022). We find that value co-creation in NFT project communities is largely centered on gaining superior information about the project.

Our findings support the existence of social capital dimensions in the form of shared vision, shared language and reciprocity in a low-trust context. Social ties and bonding are driven by the need for knowledge support, reduction of information asymmetries, access to resources in relation to NFT projects, and higher financial returns. This is consistent with the main premise of social finance literature (e.g., Akçay & Hirschleifer, 2021; Shiller, 2000) - investment in speculative assets is a social activity, which provides opportunities to talk about the investment with others and, therefore, to create a joyful shared experience.

To conclude, we distill five roles of NFT communities in value-creation from our data: reducing information asymmetry related to projects, minimizing the negative components of perceived NFT value (e.g., scams and lack of regulation), increasing the positive value components (e.g., speculative, utility and community belonging), learning and bonding.

## 5.3. Contributions

We make three theoretical contributions. First, we extend the H/P typology with additional components of consumer value in the NFT context, positive and, most importantly, negative, usually dismissed in both academic research and the real world. Second, we suggest that it is useful to view NFTs as financial instruments, closely resembling

derivatives. The implication is that future studies of NFT communities and consumer value perceptions, often framed within the consumer value and social capital perspectives, should also be informed by theories from behavioral and social finance, and sociology, particularly the financialization stream of research. Third, even though extant literature on OBCs and social capital is generally helpful in understanding value-co-creation in NFT project, it typically focuses on the positive value components (e.g., Sharma et al., 2022), mature product markets and established brand communities, where trust underpinning economic and social relationships of consumers with brands is high (see Meek et al., 2019). We enrich this literature by offering fresh insights into the roles communities play in a very different context – a nascent, illiquid, speculative, informationally opaque market for digital assets where uncertainty is high, but trust is low. This puts into question the legitimacy of the NFT market, and hence prospects for long-term value creation for both consumers and project founders.

## 6. Conclusion

In this paper, we investigate the NFT value perception from the consumers' perspective and the role of NFT projects communities in creating this value. Based on qualitative data, we show that the primary value perceived is utilitarian, speculative and financial and NFTs are valued mainly as derivatives - essentially gambling or lottery-style products. NFT project communities play a role in reducing information asymmetry and uncertainty by integrating dimensions of social capital theory. Although exploratory, our paper investigated an emerging phenomenon that is topical and novel. In the analysis, we use the H/P typology for consistency, yet we question whether this is the right framework to assess NFTs. Olson (2022) argues that “*the primary product [of NFT projects] is ultimately hype...[users] have meaningful stakes in an intangible volatile thing that exists entirely as a ...story about a potential future outcome, whose value is based entirely on public perception*”. We have ample support for this “hype” argument on our study. As we are dealing with speculative financial instruments, we may need a new value framework capturing cognitive biases and irrational decisions of NFT users in a highly financialized environment. Alternatively, future studies can specifically address the digital nature and technological aspects of NFTs, drawing on the fields of digital economics or technology adoption. This may be one area where further empirical studies may be a way forward.

We have proposed a preliminary framework based on data from the point of view of the digitally natives. This framework, though, should be tested, for internal and external validities beyond the Gen Z generation and the amateur collector/trader profile. For example, a technology startup owner may value technological complexity in an NFT and aesthetics rather than see it as a financial asset. Quantifying and segmenting collectors of NFTs by type of value perceived, whether positive or negative, would be an interesting research area. Likewise, because we did not differentiate between types / categories of NFTs, a further avenue for research would be to investigate whether value perceptions would vary depending on the NFT type (such as artistic NFTs vs utilities NFT or branded vs non-branded NFTs).

An NFT, according to the famous anonymous expert Punk6529 (2022) is a “*meme-transport, ownership and financialization technology. It is the most fascinating development in technology and culture right now by a wide margin*”. We wholeheartedly agree with the “fascinating” characterization of NFTs. We suggest that both qualitative and quantitative studies of consumer value and psychology at the intersection of financialization, technology and culture would be highly desirable. We study a nascent market, and, because consumer value is time-specific (Leroi-Werelds, 2019), it is likely that consumer perceptions will change as the market matures.

Academics and practitioners tend to focus on the bright side of NFT user communities and their role in co-creating value. But there is also a dark side (Olson, 2022; Martin et al., 2022). First, because scams, frauds

and Ponzi schemes were mentioned on multiple occasions, it is unclear what makes NFT users psychologically primed to gambling and being scammed. Second (a point made by one of the few female respondents), some communities can be toxic. As the authors have personally observed in the context of crypto communities, an environment of toxic positivity is created, where any dissent is aggressively policed by both project leaders and community members themselves, in effect creating closed “echo chambers”. This goes against the very spirit of web3. Further experimental studies, action research and netnography could be useful approaches to investigate both issues.

Our study presents valuable insights into the field of NFTs and blockchain marketing. For marketers to have an edge, creating value and offering utilities around NFTs must be an essential part of any marketing strategy that targets consumers in the web3 or metaverse context. Marketers can cultivate communities in ways that improve interactions, transparency and sharing of ideas. We believe NFTs will continue to be a driver of growth for the web3 industry in the years to come. Following Messari (2023), we genuinely hope that the NFT mini-era as speculative “investments” is largely over, and their future as digital “consumables” created by brands and artists is just getting started.

## CRedit authorship contribution statement

**Tatiana Zalan:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **Elissar Toufaily:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Data availability

Data will be made available on request.

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