ORIGINAL ARTICLE

International Journal of **Consumer Studies** | WILEY

What's behind the jpg? Understanding consumer adoption of non-fungible tokens

Elías Vega 🆔 | Carmen Camarero

Facultad de Ciencias Económicas y Empresariales, University of Valladolid, Valladolid, Spain

Correspondence
Elías Vega, Facultad de Ciencias Económicas y Empresariales, University of Valladolid, Avda. del Valle Esgueva, 6, 47011 Valladolid, Spain.
Email: elias.vega@uva.es

Abstract

NFTs, or non-fungible tokens (NFTs), are a new form of ownership registration based on blockchain technology that allows digital assets to be exchanged with guarantees of ownership and originality of the artwork involved. This has boosted the trade of these assets and companies have been quick to incorporate NFTs into their marketing strategy, either with their own tokens or by collaborating with established companies in the metaverse. Building on the frameworks of the unified theory of acceptance and use of technology 2 (UTAUT2), this study contributes to the literature by analysing the determinants of individuals' adoption of NFTs through two studies. Study 1 relies on qualitative interviews with technology insiders to provide initial insights into these determinants. Study 2 tests the hypotheses developed and compares the results between non-buyers and buyers in order to analyse the intention to purchase and repurchase NFTs. This study contributes to the UTAUT2 with two new individual-specific variables of interest for the adoption of this type of product: social capital, and the fear of missing out. Finally, this study concludes with guidelines for companies on how they can use NFTs in their marketing campaigns.

KEYWORDS
fear of missing out (FoMO), non-fungible tokens (NFT), social capital, technology adoption, unified theory of acceptance and use of technology 2 (UTAUT2)

1 | INTRODUCTION

Non-fungible tokens—or NFTs—are cryptographic assets on a blockchain with unique identification codes and metadata that distinguish them from one another. Blockchain technology allows the ownership of intangible or tangible items (Wilson et al., 2022) to be recorded and links a digital file to its creator. As a result, the owner of the digital work can be identified, and digital authors are assured of the originality of their work, thus preventing counterfeiting. This guarantee of authenticity and ownership has led to a boom in the trade of digital assets, including digital artworks, images, GIFs, songs or videos, all of which are considered unique pieces that retain copyright (Hughes et al., 2019; New York Times, 2021c; Zhan et al., 2022). These digital assets can be bought and sold like any other asset, although they have no tangible form of their own (Wilson et al., 2022). This has led brands to incorporate NFTs into their campaigns. For example, Coca-Cola has launched a wearable jacket in the Descentraland metaverse, collectible art is sold in the form of NFTs, such as Disney's digital statues or the 'Pepsi Mic Drop' collection at OpenSea, and there are even collaborations with established NFT collections, such as Adidas and Prada with Bored Ape or PUNKS Comic.

Beyond the personal enjoyment that the artwork can provide, acquisition of these digital assets is seen as a financial investment. As in the world of art or collecting, digital pieces are like paintings, coins or stickers which buyers treasure as they believe that their market value will increase. This 'mania'—as the New York Times (2021b) called it—for acquiring these digital assets has gripped the financial world. Investment in NFTs might be related with several factors: the growth in the price of these assets compared to other less attractive traditional investments, the arrival of intermediaries who facilitate purchase, or the incentive to buy them through online communities. According to the Yearly NFT Market Report (NFT, 2022), total NFT sales in 2022 compared to 2021 increased from 1,415,638 to 27,414,477 transactions, with the average price increasing from $50 in 2020 to over $800 in 2021.

Although the risk for investors is high—with some analysts remaining sceptical and seeing it as a bubble (Cheah & Fry, 2015; New York Times, 2021a)—many firms are convinced of the value of authenticating tokens and of the potential these products might have. This is because there is more than just the .jpg file in the case of images or the .mp3 for sounds. These NFTs can be the key to certain technologies developed on the web3, the gateway to community membership and even a new source of crowdsourcing for brands (Hofstetter et al., 2022). For this reason, some authors point out that NFTs can change the way in which brands are marketed (Kaczynski & Kominers, 2021) and that they can significantly transform future marketing processes (Chohan & Paschen, 2021; Colicev, 2022; Gartner, 2021; Hofstetter et al., 2022). In fact, companies have found their niche for NFTs in the younger generations, who are used to living experiences in digital environments and in the metaverse.

Among other research opportunities, Malik et al. (2022) point out the need to analyse buyers' decisions about NFTs; that is, how buyers may pursue different—more or less speculative—strategies when they expect to obtain a profit from NFTs. In addition to the rational or economic strategy, potential buyers may also be willing to buy NFTs out of curiosity, as access to novelties, for collecting, as a hobby or for fun. Moreover, this decision is made in a context of high uncertainty. As noted by Chalmers et al. (2022), the future of the NFT market is unclear and NFTs may represent just another step in the genealogy of blockchain-enabled ownership mechanisms.

From an academic standpoint, the decision to purchase or invest in NFTs may not only be analysed as a financial decision-making problem (Fang et al., 2022) but also—given the novelty of the technology behind NFTs—as an innovation adoption problem. However, since these products are still in the introductory phase, to date there is little research and information available on the determinants driving investment in NFTs and the motivations for consumer adoption of this technology. Previous works have focused on the company and brand perspective, basically on the opportunities and risks of investing in NFTs (Chohan & Paschen, 2021; Colicev, 2022; Wilson et al., 2022). From the perspective of consumers, this article contributes to the literature on consumer collectibles behaviour (Lee et al., 2022) by

analysing the consumption of digital goods like Bitcoin and other Blockchain-based products (Arnould et al., 2021). Existing research on consumer behaviour related to NFTs has mainly focused on evaluating purchase intentions through the lens of risks and benefits (Vishnu et al., 2023) or on exploring hedonic and utilitarian aspects (Fortagne & Lis, 2023). However, there is a research gap that has neglected to look at NFT purchases as the adoption of a novel technology (Colicev, 2022), failing to consider the support of online communities in decision-making (Yilmaz et al., 2023), and overlooking the antecedents of subsequent purchases following initial trials.

In an effort to fill this gap, and in response to Malik et al. (2022) call to examine consumers' decisions about NFTs, and to Colicev's (2022) recommendation to consider the extent to which technology acceptance models may be useful in the field of NFT, the aim of this article is to understand and analyse the factors that determine the acquisition of this type of asset. Based on the unified theory of acceptance and use of technology (UTAUT2), social network theory (Granovetter, 1973) and the concept of FoMO, we propose that the economic performance and perceived risk, the effort required to understand the technology, the hedonic value of owning these digital assets, the support provided by online communities as well as individuals' urgency to seek market opportunities—that is, the fear of missing out (FoMO)—may predict both the intention to purchase and repurchase NFTs.

This article also contributes to the emerging literature on NFTs and their incorporation into marketing strategy. Previous studies on NFTs have focused on explaining the concept and on discussing the marketing implications (Chohan & Paschen, 2021; Colicev, 2022; Hofstetter et al., 2022; Kaczynski & Kominers, 2021). Based on the mixed-methods approach—and using qualitative and quantitative data—this study seeks to reveal the mechanisms behind the adoption process of this new technology and so provide guidelines on how companies can use NFTs in their marketing campaigns. Following on from this idea, the study compares the purchase intention—of those interested or informed about this type of goods but who have not yet bought—with the repurchase intention of those who have already purchased. This allows us to assess which factors influence the initial purchase of NFTs—and which might simply be buyers' testing the product or involve exploratory behaviour on their part—and the factors influencing adoption, that is, repeat purchase of these products.

The article is structured as follows: first, we review the concept of NFTs and the existing literature on NFTs in marketing, and we propose the UTAUT2 model as an adequate theoretical framework to study the adoption of NFTs. We then carry out two studies. In a first qualitative study, we conduct a series of interviews with participants who are familiar with this type of technology. In study 2, we test our model and evaluate the differences that may arise between current buyers and users who are acquiring information but who have not yet made their first purchase. Finally, we summarize our main findings and point out some of the theoretical and managerial implications, and also provide future lines of research.

2 | LITERATURE REVIEW

2.1 | Non-fungible tokens

Blockchain is a digital ledger built using encryption technology and a consensus algorithm. This technology makes it possible to track the history of transactions and prove who owns a cryptographic file. Cryptographic assets (the famous cryptocurrencies, such as bitcoin) are non-replicated data that are assigned a specific function generated and traded on the blockchain. Unlike these 'fungible' cryptographic files, that is, they are represented by a number of tokens of the same value (like a coin, you can exchange one bitcoin for another, as the value of the two is identical) (Dowling, 2022), NFTs are a cryptographic asset that has a unique identification and cannot be replaced by others (Chohan & Paschen, 2021).

NFTs represent an emerging trend with substantial potential for companies, offering the opportunity to integrate these assets into their marketing strategies by taking advantage of the distinctive characteristics of NFTs: they are scarce, unique, have proven authenticity, and are not fungible (Chohan & Paschen, 2021). NFTs facilitate the trading of original works, allowing creators to maintain ownership and receive royalties from both initial and subsequent sales. Moreover, they serve as a value enhancer for brands (Colicev, 2022; Peres et al., 2023).

However, implementation of this type of technology among companies is still at a very early stage (Dwivedi et al., 2023), and the future of NFTs is fraught with uncertainties. On the one hand, disproportionately high prices may indicate inflated expectations about the usefulness of the innovation (Gartner, 2021), creating a speculative bubble that may burst at some point (Cheah & Fry, 2015). There are also security issues. Although blockchain transactions are secure, there have been risks of hacking or theft from the wallets in which these cryptographic files are stored (Dowling, 2022; Grobys, 2021). Nor should we forget the environmental problems that arise from the blockchain mining process that is required for the verification procedures that NFTs demand (Wilson et al., 2022). This large energy expenditure can run counter to the values of companies, their social responsibility, and their commitment to the environment.

For these reasons, it is crucial for both companies and scholars to understand the adoption process of these products (Malik et al., 2022). It is important for companies to know which consumers are willing to buy or invest in these NFTs, whether their acquisition has a cultural relevance for them (such as music or sports products), whether it is the result of love of a brand or project, or whether it is merely a form of speculation. Preparing for a potential surge in consumer demand for NFTs becomes imperative in this context. To tackle this question, there is limited research on the adoption process of NFTs. Vishnu et al. (2023) investigate how marketplace trust, along with perceived benefits and risks, influences consumers' intentions to purchase NFTs. In contrast, Fortagne and Lis (2023) examine how specific features of NFTs—functionality, scarcity and aesthetics—affect an individual token's perceived value. They explain the intention to purchase NFTs as a stimulus-organism-response model, although their focus is on NFTs as collectibles, and they do not consider NFTs as an investment. Indeed, the adoption of NFTs has not been studied as the adoption of a new technology, applying technology acceptance models as suggested by Colicev (2022). Moreover, the adoption of a technology goes beyond the first purchase or initial adoption, and it is advisable to investigate the continuity of purchases in the future. Therefore, we consider NFTs as a technology and propose an analysis of the factors determining initial and subsequent purchases based on the UTAUT2 model.

2.2 | Unified theory of acceptance and use of technology

There are several theoretical models used in the literature to explain technology adoption. Prominent among these is the model proposed by Venkatesh et al. (2003, 2012): the UTAUT. This theory is presented as a revision of the most widely used models of innovation adoption, such as the technology acceptance model (Davis, 1989; Davis et al., 1989), the theory of reasoned action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), or the innovation diffusion theory (Rogers, 2003). The model posits that behavioural intention and facilitating conditions determine technology use. Additionally, behavioural intention depends on critical factors that predict behavioural intention to use a technology in any general context; that is, performance expectancy, effort expectancy and social influence. Although the first UTAUT proposal emphasized utilitarian value and extrinsic motivations as antecedents of technology adoption and use, UTAUT2 (Venkatesh et al., 2003) complemented this by including hedonic motivation, price value or the costs associated with purchasing the technology, and with habit as a determinant of technology use. Another key distinction between UTAUT and UTAUT2 is that the former was tailored to address the requirements of organisational contexts, whereas the latter is predominantly focused on understanding which factors determine consumers' technology adoption behaviours and usage intentions (Venkatesh et al., 2012).

The model has been applied to explain the acceptance and use of different information technologies, from generic technologies, such as mobile Internet or social networks, to more specific and advanced technologies, such as e-government, mobile payments, music platforms, wearable technology, online games, among others (Tamilmani et al., 2021). Furthermore, UTAUT2 has been extended by introducing new exogenous and endogenous mechanisms that influence behavioural intention and usage behaviour, new moderating effects, and new outcome mechanisms, such as the impact of technology use on individual performance (Venkatesh et al., 2016). The UTAUT2 model has also been extended to users' continuance decisions and consumers' repurchase decisions (Venkatesh et al., 2012). Venkatesh et al. (2012) proposed a multi-stage setting so that pre-usage beliefs about a technology may serve as anchors for post-usage beliefs, satisfaction and, eventually, post-usage attitude and continuance intention.

In this idea of extending the UTAUT2 model and applying it to different contexts of use and consumption of specific technological

applications as well as to different purchase stages (first or continuance decisions), we propose the UTAUT2 model, drawing on the insights to emerge from the qualitative interviews to develop hypotheses concerning the purchase of or investment in NFTs.

3 | METHODOLOGY

This study follows a sequential mixed-methods approach, specifically an exploration design; that is, qualitative followed by quantitative. This kind of design is adequate when the phenomenon is new and the researcher needs to explore it in depth (Vivek & Nanthagopan, 2021). The combination of qualitative and quantitative methods is adequate to understand the adoption and diffusion of NFTs, since there are few studies that have examined this phenomenon. Although UTAUT/ UTAUT2 model has been applied to study multiple technologies and in different settings (Venkatesh et al., 2016), a mixed-methods design allows us to explore the UTAUT2 variables that play a key role in the adoption and use of NFTs and to identify other specific antecedents that are relevant in this context.

In line with this, we first performed a qualitative analysis. This study aims to explore which factors determine adoption of NFTs and the UTAUT2 variables which are relevant in this context. To this end, we investigated this phenomenon through interviews with consumers of NFTs who regularly buy and sell these products. This qualitative study with product insiders thus allows us to gain insights into which factors are involved in adoption. By asking real consumers of the product, we identified variables and relationships of interest so as to then put forward and test further hypotheses. Second, a research model was proposed based on UTAUT2 and two exogenous variables identified in the qualitative study—social capital and FoMO. The proposed hypotheses are tested through a structural equation model. In addition, this quantitative study evaluates the differences between individuals who have not yet purchased NFTs and those who have.

4 | QUALITATIVE STUDY

A qualitative study was conducted to identify the key variables of the UTAUT2 model that are related with NFT adoption as well as additional factors that should be taken into account.

4.1 | Data collection

We conducted interviews with NFT insiders so as to gain initial insights into the factors involved in adoption. In order to find individuals to interview, we monitored different NFT communities over a period of 3 months through the Discord application. These communities have specific criteria for filtering their users into different categories such as regular users, holders (individuals who possess an NFT) and moderators (individuals who have shown dedication to the community and a willingness to assist others). The primary criterion for

inclusion was a proven familiarity with and engagement in these online communities. Specifically, study participants were randomly selected from among those who have written separate messages on different days or weeks. We prioritized users who have the profile of a holder or moderator. The recruitment process consisted of sending them a message through the platform, inviting them to participate in the study. No users explicitly declined to participate in the interviews, although a lack of response was observed from certain individuals. This might be due to users blocking messages from individuals who were not on their 'friends list', although it might also be attributed to the prevalence of scams and fraud in NFT communities. In all, we conducted interviews with eight individuals, from 26 users contacted. Information gathering was halted when we estimated that we had reached saturation point (Bowen, 2008), that is, additional interviews provided similar comments. We felt that adding new interviews would fail to provide any fresh insights. Despite being chosen randomly, all interviewees were male (maybe due to the distribution of participants in NFT communities) and were between 21 and 33 years old. Of the eight participants, six were active users of the forums to varying degrees, while the remaining two were moderators who had been promoted to their positions based on their expertise or contributions to the community itself.

We conducted a semi-structured interview, with the central focus being NFTs. The interviews focused on three primary topics. First, informants were asked to identify the characteristics they deemed important when considering buying NFTs. Second, their perceptions and opinions on the potential benefits and drawbacks of NFTs were elicited. Finally, interviewees were invited to share their perspectives on the future of this technology, as well as additional insights they had about the adoption of NFTs by the general public. The interviews—which lasted between 18 and 31 min—were conducted through the Discord application. The interviews were audio-recorded and transcribed verbatim.

4.2 | Data analysis and findings

We coded the sentences and paragraphs using a list of themes that we identified after reviewing the transcribed interviews. The themes represent motivations or factors that influence the purchase decision. The authors of this study carried out the whole coding process independently and then simultaneously in order to discuss discrepancies and so reach a consensus. We classified the themes into three main categories: factors related with NFTs as investments, factors related with NFTs as digital assets, and factors related with social and psychological aspects. Table 1 shows the most relevant quotations for each category and theme.

The first category of factors is related with investment. From an investment point of view, individuals are motivated to invest in NFTs because of their dramatic fluctuations, their virtual anonymity, and the fact that it is a continuously functioning market, among others, while at the same time they may be held back by the same unpredictable downward fluctuations or by cybersecurity issues (Fang

TABLE 1 Categories, themes, and quotations.

Categories	Themes (factors)	Quotations
NFT as investment	Return and performance expectancy	'There are many people who have entered into the world of NFTs because of the value they bring and the usefulness they have. But it is true that there are many other people who entered this world because of the speculation of the NFT system. (M, 29, community moderator)' 'I have collections that are mostly focused, so that one day those collections will have the value that, for example, the Bored Ape collection has. (M, 26, average user) You have to give it a very strong utility-strong enough to pass all the barriers to entry that exist right now to buy. (M, 21, community moderator)' 'We all come here for the money, don't we? And those who stay are here either to keep earning money or to make a profit …. Because there are things that are very useful. For example, Bookers has it. The other day I was looking at summaries and they are giving us access to things that are really useful and have much more value than what the NFT cost us. (M, 20, average user)'
	Perceived risk	'Nowadays if you're going to invest, it has to be money that, as everyone says, you're willing to lose. (M, 26, average user)' 'A project can be gone, or it can lose value. And then you lose your money. Because that's the risk at the end of the day. You have that risk in any investment, just like the stock market, stock exchange or whatever. (M, 21, community moderator) In general, I didn't know that this could be such a jungle and that so many scams could be hidden in it (M, 38, average user)' 'The risk is totally financial, and it is quite high because there are a lot of scams right now, because of the anonymity, because I have taken the money and I know that I have sent it to that wallet, but I don't know who is behind it. (M, 21, community moderator)'
NFT as digital asset	Effort expectancy	'It has taken me several months to get a good understanding of the subject. (M, 21, average user)' 'It is not easy. We do have the bias that it is easy because we know how everything works. (…) It is a market that is still in its infancy. It is quite new and step by step it will gradually become easier. But right now, it is very complicated. (M, 21, community moderator)' 'They must first have a virtual wallet. Maybe a lot of people, or the vast majority of people, don't have one. That would be the first obstacle. And then even if you do have the wallet, you have to pass money from an exchange or from other tools. (…). Even those who are half-way there in this world are finding it difficult and people are not yet used to dealing with it. (M, 36, average user)'
	Hedonic value	'I'm looking to get involved in the world of entertainment, which I feel has a lot of potential related to technologies such as the metaverse. (M, 21, average user)' 'I think that many of us in this world started out buying art for art's sake. (M, 26, average user)' 'The one I bought first from—"no sólo un jpg," I know that if I put it up for sale it's 400 €, but it's better for me to be in the community and enjoy it rather than to even think about selling this type of NFT (M, 36, average user)' 'It's a feeling of belonging to something. It's like having an Apple; it doesn't bring you any functionality, but it brings you a social status. (M, 29, community moderator)'
Social and personal factors	Social influence	'The trust in a youtuber, or a large community (…), or a friend who is there can influence whether you enter a project or not. (M, 38, average user)' 'I think collections are linked to important figures or people who move a lot of other people. Those are the easiest to make money from (…) It's easy, really. And I think that's why a lot of people get into it. (M, 20, average user)'
	Social capital	'I have been following a youtuber or entrepreneur—who is well known on the platform—for a long time. He has always been at the forefront with his methods and his lessons. When their collection came out, I didn't know anything about NFTs. Then I did a little bit of digging. So that's how I got started on the subject. (M, 28, average user)' 'Communities are important; the fact of teaching these topics, it is going to be necessary at some point for all of us to know about it. (M, 21, average user)' 'Among the weekly events that were held in the community that's also where I learnt a lot. I knew the basics and now I'm explaining it to other people. (M, 36, average user)'
	Fear of missing out	'I think there are people who get into the ecosystem because they say "hey, I'm not going to miss the opportunity to get rich, I'm going to put in 5000 and tomorrow I'm going to be a millionaire". There are many people who are like that, and the ecosystem takes advantage of that. (M, 20, average user)' 'If we position ourselves in time in this world, we can have long-term results (…). Last year, those who bought the Bored Ape …. it literally changed their lives. (M, 21, average user)' 'I got in without knowing where I was entering, because I saw that people were making money there and I said, "I'm going inside", because if you see it from the outside, you see monkeys selling for 200,000$, CryptoPunks in eight bits selling for 100,000 $. (M, 21, community moderator).'

et al., 2022). Short-term speculation, the expectation of long-term profit, together with other kinds of economic utility provided by NFTs are factors that stimulate the purchase of NFTs. Our interviewees mentioned the expectation of return—both financial and in terms of benefits—that NFTs can bring and highlighted it as one of their main motivations for purchasing. The moderator of one community noted, 'there are many people who entered this world because of the speculation of the NFT system, because it is very new, and everything new is based on that speculation'. However, there is more than just a financial return. There are other returns that come from the benefits associated with maintaining the NFT: 'they are giving us access to things that are really useful and are far more valuable than what the NFT cost us'.

Study participants highlighted the risk associated with any investment in NFTs, 'A project can be gone, or it can lose value. And then you lose your money'. These users relate specifically to the risk of losing money on the investment itself, because the price of the project or asset one decides to buy ends up being lower than what one paid for it. But on the other hand, there is the risk of being the victim of a scam or security breach (Grobys, 2021), in which both the investment and the associated NFTs can be stolen. Respondents attribute this risk mainly to fake shopping sites (where the transaction takes place without receiving anything in return and losing the money) and to the difficulty of tracing the user behind the scam, due to anonymity: 'Even if you are alert you can be a victim of a scam'. These findings are in line with the concepts of return expectancy and price value (or risk-related issues) of the UTAUT2 model.

The second category of factors are those related with NFTs as digital assets. NFTs are based on a disruptive technology that is not known to all consumers. Most of the participants commented on the difficulty of understanding the world surrounding this new technology and the effort required to get to know it: 'It is very complicated at the moment, yes, because it is a market that is still in its infancy. It is quite new and step by step it will gradually become easier. But right now, it is very complicated'. They admit the difficulty involved, even for those who have already entered this world: 'Even those who are halfway there in this world are finding it difficult and people are not yet used to dealing with it'. These findings are also in line with the UTAUT2 model (Blut et al., 2022; Jadil et al., 2021; Kim et al., 2022; Tai & Ku, 2013) and imply that users have invested time and effort in learning about this technology due to its innate difficulty and its recent creation. We note that, in this context it was difficult to distinguish between facilitating conditions (knowledge, resources) and effort expectancy (easiness, understanding and skills to buy and use NFTs), since knowledge about operating with NFTs is clearly related with perceived skillfulness. Therefore, we coded it as effort expectancy, involving both easiness and knowledge.

Another factor related with NFTs as a digital asset is the hedonic value. Some respondents indicated how NFTs can provide them with these levels of entertainment or enjoyment: '... I'm looking to get involved in the world of entertainment, which I feel has a lot of potential related to technologies such as the metaverse.' We also found in this study some users who referred to the enjoyment of belonging to

a group or community (Baumeister & Leary, 1995). These respondents highlight the hedonic value that belonging to one of these communities can bring, to which only holders of these assets can have access.

The third category of factors have to do with the individual's social and psychological aspects. In line with the UTAUT2 model, there is a social influence on the decision to enter. When asked about what made them decide to enter the world of NFTs, some respondents pointed to influencers as an important factor. These users highlight that trust in an influencer—or already being a fan—can lead to interest in the topic or investment in certain projects. On the other hand, one of our respondents also pointed out that he expected a higher return from NFT projects that were recommended by individuals because of the number of people they managed to get involved: 'I think collections are linked to important figures or people who move a lot of other people. Those are the easiest to make money from'. These results are fairly consistent with the literature. It has been shown that social influence can increase impulse purchase (Chuang et al., 2015; Leal et al., 2014), even more so when it is an informational influence (Xiayu Chen & Davison, 2019). This is when certain knowledge is accepted, as happens in this case with the recommendations that influencers can make about which projects to invest in.

In addition to social influence, membership of networks, online communities and forums related to NFTs were also mentioned as a means of accessing information about this technology. An individual explained it as follows: 'Communities are important, the fact of teaching these topics, it is going to be necessary at some point for all of us to know about it'. They also mentioned other people (youtubers, entrepreneurs) who provided them the need information to get the indispensable knowledge and information to access this market. In fact, the relationship with these groups and individuals constitutes the social capital required to access the NFT market, and it influences not only the final decision but also the perception and evaluation of these products. Nahapiet and Ghoshal (1998) explained that the central proposition of social capital theory is that networks of relationships constitute a valuable resource for conducting social affairs and for providing their members with 'collectivity-owned capital'. In the context of NFTs, social capital would comprise the assets (mainly knowledge and information about NFTs) that may be mobilized through their networks. At this point, it is worth distinguishing the concepts of social influence and social capital. Social influence is rooted in the concept of subjective norm (Venkatesh et al., 2003). It denotes that individuals' behaviour is not completely voluntary, but is driven by their social environment. Social capital, however, refers to the support, which individuals might find in their social environment when they need it.

Finally, most interviews mentioned that one motivation for buying was so as not to miss out on a good opportunity. Participants in the study highlighted the rapid growth of these collections and noted how the money that was beginning to move into this sector could be 'life-changing': 'There are people who get into the ecosystem because they say "hey, I'm not going to miss the opportunity to get rich"; "I saw that people were making money there and I said 'I'm going inside'"'. This type of behaviour is linked to the concept 'FoMO'.

Because of this FoMO on an opportunity to make money, individuals may focus on the returns of NFTs and may downplay the risks.

In sum, in the qualitative analysis, we identified five factors based on the UTAUT2: return expectancy, risk perception, effort expectancy, hedonic value, and social influence. Moreover, we observe two exogenous factors that determine how individuals perceive NFTs: social capital, that is, access to information through networks of relationships, and the FoMO that might spark the FoMO on a financial investment opportunity and, consequently, lead to impulsive behaviours.

5 | QUANTITATIVE STUDY

In the idea of extending the UTAUT2 model and applying it to different contexts of use and consumption of specific technological applications, we propose the UTAUT2 model, drawing on the insights to emerge from the qualitative interviews to develop hypotheses concerning the purchase of or investment in NFTs. Specifically, we propose that the intention to purchase and repurchase NFTs can be predicted by factors related to NFTs as investments (perceived economic performance and risk-related issues), factors related to NFTs as digital goods (the effort needed to understand the technology and the hedonic value of owning these digital assets), as well as by social and personal factors. As regards social factors, the UTAUT/UTAUT2 model introduces social influence (Venkatesh et al., 2012). In addition, Venkatesh (2022) highlights the importance of finding new individual characteristics that can influence the model. Here, we propose an extension of the model by introducing two exogenous factors: first, we include the effect of social capital, strong and weak ties (Granovetter, 1973), in an effort to explain the benefits that online communities can bring to NFTs (Colicev, 2022) and to explain the dissemination of information about this technology, and second, the concept of FoMO to explain the contagion effect that impacts the adoption of NFTs.

5.1 | Hypotheses development

5.1.1 | NFTs as investments

There are two UTAUT2 factors that emerge from the interviews and that explain individuals' adoption of NFTs from a financial point of view: return expectancy and perceived risk.

Return (performance) expectancy
In the UTAUT2, performance expectancy is defined as the degree to which an individual believes that using a technology will provide benefits in certain activities (Venkatesh et al., 2012). The performance expectations of NFTs are not based on whether they improve the performance of any process or activity. NFTs are themselves an investment that carries with it an expectation of return on acquisition. These returns can come from two sources. First, the return or benefits

associated with maintaining the NFT itself as a unique physical product or an actual service (Chohan & Paschen, 2021). Second, the future economic return expected from the re-sale of any type of NFT, because it is a unique, differentiable and non-replicable item whose value may increase, just as other cryptographic archives have done, as a result of increased demand (Chohan & Paschen, 2021; Wilson et al., 2022). In line with the UTAUT2 model, we thus argue that individuals who expect more returns from the purchase of NFTs will have a higher intention to purchase this technology. Similarly, individuals who have already bought NFTs, who are familiar with the process and who know the product, and who have overcome their initial fear or doubts before making an initial purchase, will display a greater intention to continue buying if they perceive it as a speculative investment and expect positive returns in the future. In this sense, Venkatesh et al. (2012) indicate that after a positive disconfirmation the perceived usefulness (performance expectancy) of a technological innovation impacts post-usage attitude and, subsequently, continuance intention. This brings us to the first hypothesis.

> **H1.** Return expectancy has a positive effect on the intention to purchase (a) and repurchase (b) NFTs.

Perceived risk
Perceived risk refers to an individual's subjective assessment of potential losses or negative outcomes associated with the use of a technology (Pavlou, 2003). This construct has been widely integrated into the UTAUT/UTAUT2 frameworks, as evidenced by its frequent inclusion in previous research (Senyo & Osabutey, 2020; Venkatesh et al., 2016). Previous studies have found that people's concern about risk-related issues is a key determinant in their adoption of financial services (Tai & Ku, 2013). In the case of NFTs, risk arises from the investment itself or from potential fraud. On the investment side, in many cases a project survives as long as users keep coming in, which is very similar to a Ponzi scheme—an investment in which investors' profits are subject to the emergence of new investors (Moore et al., 2012). In addition, this might also be a speculative bubble (Cheah & Fry, 2015) that may soon burst, thereby causing the investment to be lost.

The anonymity of this encrypted system and its operation by means of a consensus algorithm means that, although it is possible to trace all exchanges, it is not possible to prove the illegality of the transaction. Nor is there a mechanism or regulatory body to return the assets if a breach can be proved, and this, together with the large amounts of money that some wallets can hold (New York Times, 2021a), makes users vulnerable to possible theft, thereby increasing the risk in this industry and its associated perception.

Therefore, the greater the risk perceived by users—that is, the greater the awareness that the value of their NFT might decrease and their investment might be lost, or the possibility of fraud—the less willing the user will be to buy such products. For individuals who have already purchased, perceived risk may continue to be an obstacle to future purchases. In this sense, Wilson et al. (2022) recall that NFTs represent a radical type of innovation, that emerging demand is

volatile and that the outlook regarding future demand is uncertain. We therefore argue that:

> **H2.** Perceived risk has a negative effect on the intention to purchase (a) and repurchase (b) NFTs.

5.1.2 | NFTs as digital products

The NFT industry is a nascent industry built on blockchain technology that can affect the design, pricing, promotion, and sale of digital products (Hofstetter et al., 2022). Because of this characteristic of a neophyte field underpinned by a technology that is not currently known to all consumers, adopting these products entails difficulties for individuals related to the effort required to interact with them and the knowledge required to do so. At the same time, due to their non-fungible nature, NFTs have the capacity to significantly disrupt current collections of digital items, adding properties such as scarcity or elusiveness to this type of goods (Mardon & Belk, 2018). These aspects were mentioned in the interviews, such that we consider the effort expectancy and hedonic value factors of the UTAUT2 model to be appropriate for analysing the adoption of NFTs from a digital product point of view.

Effort expectancy

Effort expectancy in the consumer context is 'the degree of ease associated with using the technology or system' (Venkatesh et al., 2012). When consumers perceive a technology as being easy to use and when interaction with that technology is clear and understandable, they are more likely to express their intention to use it. Blockchain and digital wallets are modern concepts whose use is not yet clear; it is not as easy as merely taking an NFT to the shopping cart and selecting 'buy now'. Buyers need a wallet in which to store their product and they must own a digital currency or cryptocurrency with which to buy it. Understanding the system that underpins these NFTs and how blockchain technology works will thus be particularly important when using or adopting this technology. This difficulty in managing the technology required to purchase these products implies investing time and effort; hence the ease of use or effort expectancy, which will have a positive impact on purchase or investment intention (Venkatesh et al., 2012).

According to Venkatesh et al. (2012), the expectation of effort also positively influences purchase intention in continuity contexts because individuals tend to subconsciously pursue instrumental behaviours, regardless of the timing or stage at which they occur. Individuals who have already purchased NFTs are expected to be more skilful and to possess knowledge about the process of buying and using NFTs. In this case, the time and effort involved in learning about this technology has prepared them for their next purchases. In order to make a decision about future purchases of NFTs, their perception of effort will be more consistent with reality. Therefore, we propose:

> **H3.** Effort expectancy has a positive effect on the intention to purchase (a) and repurchase (b) NFTs.

Hedonic value

Hedonic value is defined as the pleasure or enjoyment that can be derived from using the technology (Venkatesh et al., 2012). It is a construct similar to perceived enjoyment (Davis et al., 1989) and has been shown to play an important role in consumers' adoption of a technology (van der Heijden, 2004). When extending the model to the consumption context, Venkatesh et al. (2012) argued that hedonic motivation may be a stronger component in explaining behavioural intention and may be even greater than performance expectancy in non-organisational contexts.

NFTs have an innate hedonic factor. This is because they are digital goods which—given their non-fungible nature—are ideal for collecting (Lee et al., 2022), as they fulfil the characteristics of collectible goods (scarcity, circulation among consumers, unique metadata for each good, etc.), which digital goods thus far lacked (Mardon & Belk, 2018). This boosts the artistic side of NFTs by allowing the purchase of unique and exclusive works of art, which fosters the hedonic value of owning a collector's item such as the first tweet or a work of art. (New York Times, 2021b). There are even games where individuals can play with their own NFT (NFT, 2022; Wang et al., 2021), which gamifies the experience itself, allowing for higher levels of entertainment. Hedonic motivation is therefore an important factor in explaining individuals' purchase and repurchase intention, and indeed the results of the qualitative study point to this being the case. Individuals who have not yet purchased wish to enter the world of entertainment that NFTs seem to provide, and which they perceive through online communities. In contrast, those who have previously bought have already accessed this universe (or metaverse) and have experienced the pleasure of belonging to it, such that it stimulates them to purchase more NFTs in the future and to continue enjoying this world. We therefore posit the following hypothesis:

> **H4.** Hedonic value has a positive effect on the intention to purchase (a) and repurchase (b) NFTs.

5.1.3 | Social and personal factors

The qualitative analysis also revealed the impact of social influence on adoption, in addition to individuals' personal characteristics, such as access to social capital and FoMO, which might be of interest vis-à-vis measuring the adoption of NFTs.

Social influence

Social influence, or subjective norms, indicate the degree to which consumers perceive that people who are important or influential to them believe they should use the technology or recommend its use. According to social influence theory, consumers are more likely to follow the opinions of others who are influencers (Deutsch &

Gerard, 1955). Social influence is a determinant of behavioural intentions for a product or technology (Venkatesh et al., 2003). In fact, the expansion of NFTs may have been driven by the diffusion of NFTs by artists, influencers and online communities (Kaczynski & Kominers, 2021), promoting their purchase and highlighting the benefits that can be obtained. The social influence that a friend or influencer can have on whether to invest or not, or on the way to do so, can thus boost purchase intention. In the case of buyers or users, Venkatesh et al. (2012) explain that during system use, individuals can adjust their pre-usage social influence perceptions because of the availability of new information and/or changes in friends' and peers' opinions. Post-usage social influence will have a positive influence on continuance intention. Given all of this, we state the following hypothesis:

> **H5.** Social influence has a positive effect on the intention to purchase (a) and repurchase (b) NFTs.

Social capital

Social capital is defined as the information and resources embedded within, available through, and derived from a network of relationships (Nahapiet & Ghoshal, 1998). Indeed, access to information and resources depends on the network's characteristics. According to the social network theory (Granovetter, 1973), the structure of social networks ranges from weak to strong ties. Strong ties are characterised by closeness and frequent interaction between individuals in a network and they facilitate communication and knowledge sharing. On the other hand, weak ties are characterised by distant and infrequent relationships. Granovetter (2005) highlights the 'strength of weak ties': individuals receive more novel information through weak ties than through strong ties.

In the context of NFTs, social communities could assume the role of weak ties. As noted above, the success of the NFT market is contingent on the emergence of new investors, which has led to the emergence of multiple communities of buyers and investors. Membership of these online communities and forums related to the NFT world—or being in contact with people who are knowledgeable about the technology—affords access to information about blockchain technology and NFTs. This makes people eventually become interested in buying such assets. These online communities can be categorised as weak ties due to remoteness between members and infrequent interaction (Chen, 2013; Liu et al., 2014), although they do make it easier for consumers to access this new technology. Yet individuals also can obtain information about NFTs from strong ties, such as close friends.

Given the novelty of NFTs, the difficulty in accessing them and the security risks involved (Grobys, 2021), social capital—from either strong or weak ties—is needed to facilitate information and decision-making. Enjoying support in their network of relationships helps individuals to make the purchase decision.

Indeed, social capital will impact the perception of the technology (returns, risk, hedonic value and effort) and intentions, both for those who have not bought NFTs and for those who have. Existing studies have demonstrated the influence of social capital on the perception of

benefits and risks. Chan and Saqib (2015) examined how online social networking increased the risks taken by users. Similarly, Church et al. (2017) found that social capital was associated with higher levels of hedonic benefits in exchanges. In our context, engaging with individuals and communities who are knowledgeable about NFTs can provide users with more information about this technology (Lee & Bell, 2013; Liu et al., 2014). This increased knowledge about NFTs reduces the perceived effort and risk involved in buying them. Moreover, it enhances the perception of economic returns and contributes to a greater sense of enjoyment and hedonic benefits in these transactions. The qualitative study also reflected the importance of communities vis-à-vis acquiring knowledge and perception about these products. This knowledge is essential in all phases (first purchase or subsequent purchases) as NFTs are a disruptive innovation that are still at a relatively early stage of adoption (Wilson et al., 2022). Therefore, we propose:

> **H6.** Social capital has a direct positive effect on the intention to purchase (a) and repurchase (b) NFTs.

> **H7.** Social capital has a positive indirect effect on the intention to purchase (a) and repurchase (b) NFTs through higher return expectancy, effort expectancy, hedonic value and lower perceived risk.

Fear of missing out

One emerging variable in consumer psychology, particularly in the context of social media, is the FoMO. FoMO refers to that social anxiety experienced due to the concern that others may be having rewarding experiences from which one is absent (Przybylski et al., 2013). From a marketing point of view, FoMO can be seen as a feeling similar to limited edition products (Balachander & Stock, 2009), as it is a feeling of 'buy now while I have the chance', leading to a feeling of scarcity among consumers (Dinh & Lee, 2022; Good & Hyman, 2020). In order to determine which factors typify the impulsive behaviour of individuals—and apply them to the UTAUT2 model (Blut et al., 2022)—we propose FoMO as a variable that increases consumer urgency to seek opportunities in the market, especially if they are scarce (Zhang et al., 2020). In this regard, some authors have already evidenced a positive relationship between FOMO and purchase intention (Dinh & Lee, 2022; Good & Hyman, 2020). A consumer who is more afraid of missing out on a new market opportunity will be more likely to adopt that new product or innovation.

As regards NFTs, they are currently growing rapidly, with sales having increased from 1.5 million in 2021 to more than 27 million in 2022 (NFT, 2022). The first collections that emerged—such as CryptoPunks or CryptoKitties—have increased their initial value by over 1000 times (Trevisi et al., 2022). FoMO itself can drive the speculative bubble (Bonabeau, 2004), which leads to consumer fear that other collections will repeat this growth and they might miss out on the opportunity. As happened with collections such as Bored Ape or
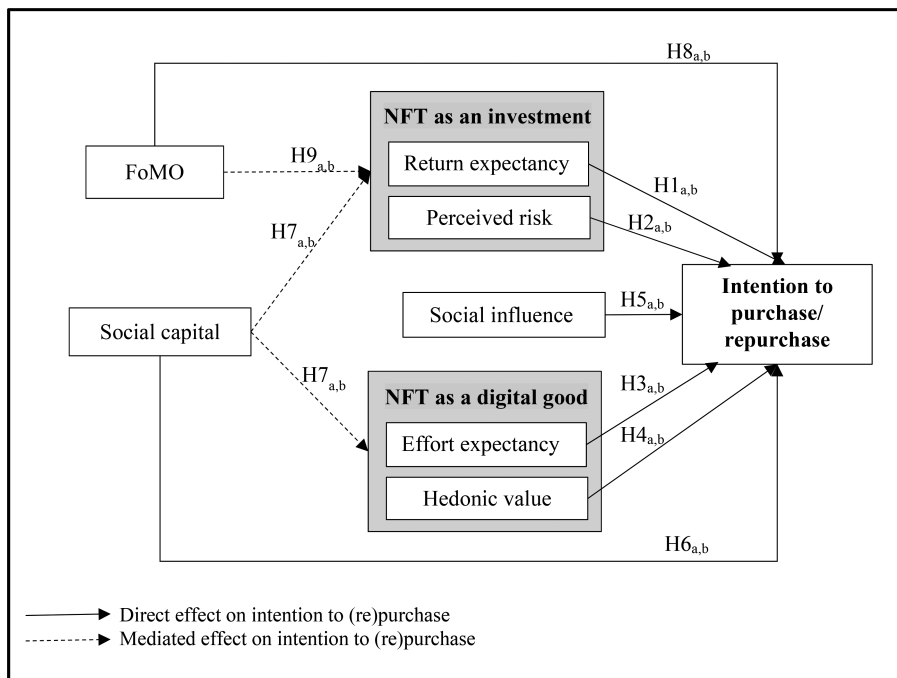
FIGURE 1 Model proposal. FoMO, fear of missing out; NFT, nonfungible tokens.

CryptoPunks, other collections that emerge now may be worth hundreds of thousands in a few years or even in a few months. This 'FoMO' leads consumers to have a greater intention to buy (for the first time or in future purchases) such products in order not to miss out on the opportunity for a large return on their investment. Simultaneously, the feeling of scarcity created by FOMO will cause consumers to view the future price of the product as higher (Lynn & Bogert, 1996). As a result, they will perceive the economic benefits more strongly while downplaying or ignoring potential risks. Hence:

> **H8.** The individual's personal FoMO has a positive effect on the intention to purchase (a) and repurchase (b) NFTs.

> **H9.** The individual's personal FoMO has a positive indirect effect on the intention to purchase (a) and repurchase (b) NFTs through higher return expectancy and lower perceived risk.

The model proposal is represented in Figure 1.

5.2 | Study design and procedure

5.2.1 | Data collection

A questionnaire was distributed through a variety of communities that are familiar with the technology, including Forobeta, NFThub, the NFT subreddit on Reddit and Discord communities, with the keyword NFT. In addition, in order to distribute the questionnaire throughout their community, we cooperated with a firm that was close to incorporating NFTs into its marketing strategy as a new form of lifetime payment for its products in place of certain annual subscriptions (Bookers. club). To encourage participation, respondents entered a prize draw for one of these NFTs from the Bookers community. Data were collected between March and May 2022. The sample consisted of 387 respondents ($M_{Age} = 27.07$, $SD_{Age} = 8.40$; 93.3% male; 46% earned <10,000€ annual income, 13.2% between 10,000€ and 20,000 €, 22.5% between 20,000€ and 40,000€ and 18.3%, more than 40,000€.), of whom 150 had not yet purchased NFTs, and with 237 having already bought at least one.

The questionnaire was accessible to anyone within the communities, although the high percentage of men who answered seems to indicate that these communities predominantly involve males.

5.2.2 | Measures

The intention to purchase or repurchase NFTs was measured by a single item, based on Venkatesh et al. (2012). The scales to measure return expectancy, effort expectancy, hedonic value and social influence were also based on Venkatesh et al. (2012), but adapted to the specific context of NFTs. Return (performance) expectancy was therefore reflected in two items based on the idea of usefulness and productivity, albeit in economic terms. Effort expectancy was measured by two items that indicate the perceived ease of use of the NFTs system and the knowledge required to use it. The hedonic value scale reflects the degree of entertainment and fun when interacting with NFTs. To measure social influence, we use a scale of two items that indicate the extent to which people who influence the individual think

NFTs are a good way to invest. Perceived risk was measured by means of a formative scale based on the idea of security and economic risk proposed by Tai and Ku (2013). These items indicate the risks associated to security in the transaction process, the possibility of losing money, the risk of scam or the risk of investing in a bubble. FoMO was measured by a reflective three-item scale based on the proposal of personal FoMO by Zhang et al. (2020). Finally, social capital was also measured by a formative two-item scale indicating individuals' access to acquaintances and online communities in order to obtain information about NFTs.

All the items were measured on seven-point Likert scales. The items are shown in Table 1 together with the descriptive statistics for the individuals who had still not bought NFTs (non-buyers) and those who had (buyers).

5.2.3 | Scales validation

The measurement and structural models were examined using a partial least square (PLS) structural equation model. Specifically, we used SmartPLS 3. This approach is suited to estimating models that include formative and reflective scales, variables that are not normally distributed, and it is robust for small sample sizes. To assess the level of parameter significance, we used a bootstrapping procedure with 1000 subsamples.

Table 2 shows the measurement indicators, the descriptive statistics (mean and standard deviation), and factor loadings (reflective scales) and weights (formative scales). Reliability indicators and correlations are shown in Table 3. Results are shown for each group: individuals who have bought an NFT (buyers) and individuals who have not (non-buyers). Composite reliability (CR) and average variance extracted (AVE) values are above the recommended thresholds (CR > 0.7, AVE > 0.6).

The loading factors of the reflective scales (performance expectancy, effort expectancy, hedonic value and FoMO) are above 0.7. Since all the loading factors are significant in the two groups, we confirm configural invariance, that is, the same factor structure. As regards metric invariance, we cannot ensure item loading invariance across the groups for hedonic value. In this case, we can ensure partial metric invariance since one of the two items of the latent variable has equal loadings (Steenkamp & Baumgartner, 1998).

As for the formative scales (perceived risk and social capital), following the measurement invariance of the composite models proposed by Henseler et al. (2016), we observed that configural invariance was not verified. In the case of buyers, only one item of the perceived risk scale (fear that NFTs might be a speculative bubble) and one item of social capital (access to online communities) were significant. Since multi-collinearity may cause instability in coefficients in formative scales (Diamantopoulos & Winklhofer, 2001), we used regression diagnostics to assess tolerance value and the variance inflation factor. Although multi-collinearity did not seem to be a problem for constructing the formative indexes, in order to achieve configural invariance and compositional invariance (the

same composite scores across the groups), rather than forming the latent variable scores using an automatic weighting procedure, we specified equal (unit) weights so that we could make a multi-group comparison.

Table 3 shows the correlation matrix for each group. The Fornell-Larker criterion confirms discriminant validity. In all cases, the square root of the AVE for each construct exceeds the correlations between the construct and other constructs (Table 3). Discriminant validity is thus supported.

We conducted Harman's single factor test to evaluate common method bias (Podsakoff et al., 2003). An exploratory factor analysis (principal component factor) across all variables showed the presence of four factors with an eigenvalue greater than one, and which accounted for 58.65% of variance. The largest variance explained by any single factor was 19.58%, which did not account for a majority of the variance. We also performed a common latent factor test. First, we performed a confirmatory factor analysis with the proposed scales ($\chi^2(52) = 89.26$, $p = .000$; GFI = 0.968; AGFI = 0.936, NFI = 0.961; CFI = 0.983; RMSEA = 0.043) and then added a direct latent common method factor ($\chi^2(51) = 85.54$). In these analyses, formative constructs were represented by a single item calculated as the mean of the indicators. The results of the chi-square test indicate that the difference (below 3.84) is not significant. Common method bias is not therefore a concern in this research.

5.3 | Results

5.3.1 | Hypotheses testing

As already pointed out, we used PLS multi-group analysis to test the proposed hypotheses. The model was estimated with 5000 bootstrap samples to assess group differences. The results to emerge are shown in Table 4 and Table 5. The PLS non-parametric significance test allows us to evaluate the coefficients which display significant differences between the two groups. Significant differences (p-value smaller than .05) for the effects of perceived risk, social capital and social influence were obtained.

We observe that, in line with hypothesis H1, return expectancy is one of the main factors that determine both the intention to purchase ($\beta = .351$, $p < .001$) and to repurchase NFTs ($\beta = .248$, $p < .001$). We also find support for H2—the negative effect of perceived risk. Moreover, there are significant differences between the coefficients measuring the influence of perceived risk: the negative impact of perceived risk is significantly higher in the case of individuals who have not yet bought NFTs ($\beta = -.338$, $p < .001$) than in those who have already bought them ($\beta = -.108$, $p < .05$). However, we find no support for the effect of effort expectancy on the intention to purchase or repurchase (we reject H3). The hedonic value perceived in the world of NFTs has a positive influence on the intention to buy NFTs ($\beta = .199$, $p < .05$) or to continue buying them ($\beta = .255$, $p < .001$), thereby supporting H4a,b. In the case of buyers, this factor is as important as return expectancy.

TABLE 2 Measurement of variables.

	Mean (SD)		Loadings/weights		Comparison of loadings and weights (*p*-value)
	Non-buyers	Buyers	Non-buyers	Buyers	
Return (performance) expectancy					
The NFT system will bring me economic returns	4.22 (1.907)	5.86 (1.314)	.947***	.920***	n.s.
Acquisition of an NFT is a profitable investment	4.10 (1.745)	5.29 (1.397)	.944***	.880***	n.s.
Perceived risk					
I would not feel secure buying or selling NFTs	3.40 (1.921)	2.74 (1.785)	.203*	.301[a]	n.s.
I think that I might lose money when purchasing NFTs	4.80 (1.875)	4.68 (1.897)	.214*	−.107	n.s.
I think that buying and selling NFTs could be a scam	3.70 (1.975)	3.17 (1.786)	.472***	−.118	*
I am worried that buying and selling NFTs might be a bubble that will burst soon.	3.91 (2.198)	3.13 (1.892)	.391**	.950***	**
Effort expectancy					
It is easy for me to become skilful at using an NFT system	4.21 (1.766)	5.48 (1.373)	.764***	.813***	n.s.
I have the necessary knowledge to operate when buying an NFT	4.54 (1.951)	5.92 (1.173)	.950***	.869***	n.s.
Hedonic value					
The world of NFTs is entertaining	5.07 (1.838)	6.21 (1.209)	.947***	.938***	n.s.
Interacting with NFTs is fun	4.47 (1.910)	5.47 (1.428)	.937***	.859***	*
Social influence					
People who influence my behaviour think NFTs are a good way to invest.	3.17 (1.903)	3.55 (1.923)	.889**	.845***	n.s.
The streamers/influencers I follow think NFTs are a good way to invest	4.36 (1.883)	4.41 (1.755)	.746**	.843***	n.s.
Social capital					
I have contact with friends and acquaintances who can inform me about NFTs	3.34 (2.029)	3.99 (2.177)	.494***	−.047	*
I have access to online communities that can inform me about NFTs	5.45 (1.786)	6.17 (1.262)	.768***	.985**	*
FoMO (Fear of missing out)					
I feel anxious when I do not experience events/opportunities	4.53 (1.888)	5.07 (1.707)	.864***	.756***	n.s.
I believe I am falling behind compared with others when I miss events/opportunities	4.27 (1.895)	4.43 (1.735)	.875***	.858***	n.s.
I feel regretful of missing events/opportunities	4.27 (1.888)	4.70 (1.820)	.871***	.902***	n.s.
Intention to purchase or repurchase					
I intend to purchase or repurchase NFTs in the future	5.11 (2.307)	6.70 (0.719)	1.000	1.000	

Abbreviations: NFT, Non-fungible tokens; n.s., non-significant difference.
[a]Significance level of 90%.
*$p < .05$; **$p < .01$; ***$p < .001$.

The direct effect of social capital on the intention to buy NFTs is only evident for individuals who have already bought ($\beta = .132$, $p < .01$), such that we only find support for H6b. We also find support for the indirect effect of social capital on the intention to (re)purchase (H7). We observe that individuals' social capital, that is, contact with acquaintances and communities who have information about NFTs, increases return expectancy, effort expectancy, and hedonic value, and reduces perceived risk. Therefore, social capital exerts a significant indirect effect on individuals' intention to purchase (H7 is

supported). This effect is significantly higher for first-time buyers (see Table 4).

Finally, the effect of the FoMO is only significant for non-buyers—which supports H8a ($\beta = .104$, $p < .05$)—although the difference between coefficients is not significant. As for the indirect effect of FoMO on the intention to (re)purchase (H9), FoMO increases return expectancy, although the impact on perceived risk is not significant. H9a is thus supported, since the FoMO has a significant indirect effect on individuals' intention to purchase for the first time ($\beta = .109$,

TABLE 3 Correlation matrix.

	CR	AVE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Nonbuyers										
(1) Return expectancy	0.944	0.894	_0.946_[a]							
(2) Effort expectancy	0.851	0.743	0.298	_0.862_						
(3) Hedonic value	0.940	0.887	0.642	0.380	_0.942_					
(4) Social influence	0.832	0.712	0.621	0.188	0.563	_0.844_				
(5) Perceived risk	–	–	−0.531	−0.274	−0.575	−0.454	n.a.			
(6) FoMO	0.903	0.757	0.337	0.134	0.323	0.350	−0.134	_0.870_		
(7) Social capital	–	–	0.430	0.391	0.442	0.460	−0.346	0.227	n.a.	
(8) Purchase intention	–	–	0.703	0.340	0.667	0.527	−0.661	0.338	0.367	n.a.
Buyers										
(1) Return expectancy	0.895	0.81	_0.900_							
(2) Effort expectancy	0.829	0.707	0.307	_0.841_						
(3) Hedonic value	0.894	0.809	0.299	0.272	_0.899_					
(4) Social influence	0.804	0.673	0.171	−0.049	0.169	_0.821_				
(5) Perceived risk	–	–	−0.150	−0.192	−0.245	−0.071	n.a.			
(6) FoMO	0.878	0.708	0.121	−0.040	0.114	0.250	0.020	_0.841_		
(7) Social capital	–	–	0.240	0.285	0.223	0.298	−0.085	0.003	n.a.	
(8) Repurchase intention	–	–	0.358	0.236	0.369	−0.049	−0.208	0.111	0.204	n.a.

Note: Diagonal (and italic) values indicate the square root of the AVE.

Abbreviations: AVE, average variance extracted; CR, composite reliability; FoMO, fear of missing out.

[a]Diagonal values indicate the square root of the AVE.

$p < .05$). However, the indirect effect on the intention to repurchase is not significant, such that H9b is rejected.

As for the impact of social influence, we reject H5. Curiously, we find a significant negative effect in the case of buyers even if the correlation between these two variables is low in the case of buyers and high and positive in the case of non-buyers. In these situations, performing communality analysis is recommended (Temprano-García et al., 2021). This analysis allows for differentiating the unique contribution of each variable from common explained variance, that is, shared between different combinations of predictors (Kraha et al., 2012). Table 6 shows the results for the two groups.

In the group of non-buyers, the unique contribution of social influence is almost zero and the explained variance is shared (common) with other variables. Indeed, considering common effects, social influence appears as a relevant predictor of the intention to buy NFTs (42.6% of explained variance). In the group of buyers, although the correlation between social influence and the intention to repurchase is low, it does explain 13.3% of dependent variable variance. In this case, social influence acts as a suppressor variable since its unique effect is greater than its total contribution to the regression. It suppresses the variance of other exogenous variables, which is irrelevant in terms of explaining the variance of the dependent variable (Kraha et al., 2012).

In Table 6, we also observe that in the group of non-buyers, the greatest single contributions for explaining the intention to buy come from perceived risk and return expectancy, whereas in the group of buyers, the exogenous variables with the greatest single contribution are return expectancy and hedonic value.

5.3.2 | Predictive power

We assessed the predictive power of the estimated model (Table 7). The adjusted R^2 values show that the amount of variance explained, that is, the predictive strength of the model, is higher in the context of non-buyers for all the exogenous constructs. We calculated the f^2 effect size (change in R^2) in order to evaluate to what extent the variables introduced (FOMO and social capital) improve the predictive power of UTAUT2. According to Hair et al. (2016), f^2 values below 0.02 indicate that there is no effect of the exogenous variables upon the endogenous constructs. We thus observe that the contribution of FOMO and social capital to explaining the intention to (re)purchase is not relevant. However, these variables do have a substantive (weak-medium) impact on the exogenous mechanisms of the UTAUT2, especially in the context of non-buyers. We also assessed predictive relevance using the Q^2 value. Values above 0 indicate that the exogenous constructs have predictive relevance for the endogenous construct under consideration (Hair et al., 2016). The scores suggest that the model has predictive relevance, except for perceived risk in the context of buyers.

5.3.3 | Robustness checks

Robustness tests evaluate the validity of the statistical conclusions by checking whether the results differ when analysis decisions are altered (Hair et al., 2016). We therefore first estimated the model

TABLE 4 Estimated models.

		Model 1 (non-buyers)	Model 2 (buyers)	Path coefficients comparison (*p*-value)
H1	Return expectancy → Intention to (re)purchase	.351***	.248***	.173
H2	Perceived risk → Intention to (re)purchase	−.338***	−.108*	.004**
H3	Effort expectancy → Intention to (re)purchase	.070	.025	.296
H4	Hedonic value → Intention to (re)purchase	.199*	.255***	.332
H5	Social influence → Intention to (re)purchase	.015	−.203**	.035*
H6	Social capital → Intention to (re)purchase	−.048	.132**	.021*
	Social capital → Return expectancy	.374***	.240***	.088
	Social capital → Perceived risk	−.332***	−.085	.006**
	Social capital → Effort expectancy	.388***	.286***	.155
	Social capital → Hedonic value	.442***	.222**	.021*
H8	FoMO → Intention to (re)purchase	.104*	.096	.473
	FoMO → Return expectancy	.255***	.137*	.138
	FoMO → Perceived risk	−.058	.016	.246

Abbreviation: FoMO, fear of missing out.
*p < .05; **p < .01; ***p < .001.

TABLE 5 Indirect and total effects of social capital and FoMO.

		Model 1 (non-buyers)	Model 2 (buyers)	Path coefficients comparison (*p*-value)
H7	Social capital → Intention to (re)purchase			
	Total indirect effect	.359***	.132***	.003**
	Specific indirect effects			
	Social capital → Return expectancy → Intention	.131***	.059*	
	Social capital → Effort expectancy → Intention	.027	.007	
	Social capital → Hedonic value → Intention	.088*	.057*	
	Social capital → Perceived risk → Intention	.112**	.009	
	Total effect	.310***	.264***	.327
H9	FoMO → Intention to (re)purchase			
	Total indirect effect	.109*	.032	.078
	Specific indirect effects			
	FoMO → Return expectancy → Intention	.090**	.034*	
	FoMO → Perceived risk → Intention	.020	−.002	
	Total effect	.214**	.128*	.210

Abbreviation: FoMO, fear of missing out.
*p < .05; **p < .01; ***p < .001.

considering level of income (0 = below 20,000€, and 1 = above 20,000€) as a control variable of the intention to (re)purchase. The effect was not significant.

Second, we tested whether results were sensitive to the use of a different estimation method. We performed a multi-group path analysis with AMOS 26 using the scores of the latent variables provided by PLS. We obtained an acceptable goodness of fit ($\chi^2(14) = 87.57$, $p = .000$; GFI = 0.95; NFI = 0.88; CFI = 0.89; RMSEA = 0.11) and the same significant coefficients (Table 8), thereby justifying the robustness of the findings.

Third, we examine whether FoMO might not be acting as an antecedent of purchase intention but rather as a moderating factor[i] that reinforces the effect of return expectancy on the intention to (re)purchase and attenuates the negative effect of perceived risk. We estimated an alternative model (Model 2) considering these moderating effects of FoMO. We obtained a significant negative interaction between FoMO and return expectancy for the sample of non-buyers ($\beta = -.145$, $p < .05$), which would indicate that the FoMO does not intensify the effect of return expectancy on the intention to purchase but reduces it. To compare this result with the original proposal

TABLE 6 Communality analysis.

	Non-buyers			Buyers		
	DV: Intention to purchase ($R^2 = 0.652$)			DV: Intention to repurchase ($R^2 = 0.260$)		
	Unique (% R^2)	Common (% R^2)	Total	Unique (% R^2)	Common (% R^2)	Total
Return expectancy	0.0559 (8.60%)	0.4381 (67.2%)	0.4940	0.0505 (19.40%)	0.0778 (29.9%)	0.1283
Perceived risk	0.0684 (10.50%)	0.3687 (56.5%)	0.4371	0.0108 (4.20%)	0.0324 (12.5%)	0.0432
Effort expectancy	0.0036 (0.60%)	0.1119 (17.2%)	0.1155	0.0005 (0.20%)	0.0552 (21.2%)	0.0557
Hedonic value	0.0178 (2.70%)	0.4265 (65.4%)	0.4443	0.0526 (20.20%)	0.0834 (32.1%)	0.1360
Social influence	0.0001 (0.00%)	0.2777 (42.6%)	0.2778	0.0346 (13.30%)	−0.0322 (−12.4%)	0.0024
Social capital	0.0014 (0.20%)	0.1331 (20.4%)	0.1345	0.0140 (5.40%)	0.0276 (10.6%)	0.0416
FoMO	0.0094 (1.40%)	0.1048 (16.1%)	0.1142	0.0103 (4.00%)	0.0020 (0.8%)	0.0123

Note: Unique: proportion of variance explained solely by the predictor. Common: proportion of variance explained by the predictor in combination with other predictors.
Abbreviation: FoMO, fear of missing out.

TABLE 7 Predictive power values.

		Model 1 (non-buyers)			Model 2 (buyers)		
Predictors	Outcomes	$R^2_{adjusted}$	f^2	Q^2	$R^2_{adjusted}$	f^2	Q^2
Return expectancy	Intention to (re)purchase	0.635	0.162	0.179	0.235	0.068	0.031
Perceived risk			0.199			0.015	
Effort expectancy			0.011			0.001	
Hedonic value			0.051			0.071	
Social influence			0.000			0.045	
FoMO			0.026			0.011	
Social capital			0.005			0.019	
FoMO	Return expectancy	0.238	0.082	0.227	0.069	0.020	0.052
Social capital			0.176			0.062	
FoMO	Perceived risk	0.111	0.004	0.101	0.000	0.000	−0.009
Social capital			0.119			0.007	
Social capital	Effort expectancy	0.145	0.178	0.136	0.078	0.089	0.070
Social capital	Hedonic value	0.190	0.243	0.185	0.045	0.052	0.035

Abbreviation: FoMO, fear of missing out.

(Model 1), Model 2 was estimated using a multi-group path analysis ($\chi^2(30) = 145.25$, $p = .000$). We compute a chi-square difference test between this model and a model fixing the moderating effects to zero ($\chi^2(34) = 154.35$, $p = .000$). The chi-square difference value was non-significant ($\chi^2(4) = 41.32$, $p = .058$). Since both models fit equally well statistically, we should keep the more parsimonious one (Model 1), that is, the moderation effects can be fixed to zero. Finally, we estimated another model (Model 3) considering the moderating effects of FoMO in the relationships between return expectancy and intention to (re)purchase and perceived risk and intention to (re)purchase, fixing the direct effect on return expectancy and perceived risk to zero. We compared the goodness of fit of this model ($\chi^2(34) = 156.59$, $p = .000$) with Model 2 and found the chi-square difference to be significant ($\chi^2(4) = 11.34$, $p = .023$). Thus, a model that only considers the moderating effects of FoMO would fit the data worse than a model that considers the direct effects.

6 | DISCUSSION

This article delves into the factors shaping individuals' intention to adopt NFTs, a novel product embodying innovative technology, alternative ownership models, distinct purchasing behaviours, and ultimately, new models of consumption. We first explore the impact of economic expectations on the intention to acquire or repurchase NFTs. Our findings reveal that the expected benefits, such as profitability and economic returns, are a key motivator driving investment in NFTs. The anticipation of achieving profitability, whether in the short or long term, clearly serves as the primary driver for individuals to acquire these assets or for them to be willing to continue investing in them. This aligns with previous UTAUT/UTAUT2 studies where performance expectancy emerged as a significant predictor of behavioural intentions (Jadil et al., 2021; Sharma et al., 2018).

TABLE 8 Estimated models (path analysis).

	Model 1 (non-buyers)	Model 2 (buyers)
Return expectancy → Intention to (re) purchase	.355***	.245***
Perceived risk → Intention to (re) purchase	−.354***	−.109*
Effort expectancy → Intention to (re) purchase	.072	.032
Hedonic value → Intention to (re) purchase	.202**	.244***
Social influence → Intention to (re) purchase	.015	−.202***
Social capital → Intention to (re) purchase	−.048	.122*
Social capital → Return expectancy	.402***	.223***
Social capital → Perceived risk	−.373***	−.072
Social capital → Effort expectancy	.407***	.267***
Social capital → Hedonic value	.449***	.208***
FoMO → Intention to (re)purchase	.106*	.098
FoMO → Return expectancy	.139*	.118*
FoMO → Perceived risk	.075	.038

Abbreviation: FoMO, fear of missing out.
*$p < .05$; **$p < .01$; ***$p < .001$.

Also consistent with prior research in UTAUT (Jain et al., 2022; Senyo & Osabutey, 2020), it can be observed that while return expectancy positively influences purchase intention, perceived risk acts as a limiting factor in the decision-making process. Factors such as the potential loss of money, security risks, and the threat of fraud act as significant limitations. This aligns with other studies demonstrating how perceptions of security under blockchain technology enhance individuals' intentions (Fortagne & Lis, 2023). This effect is particularly pronounced for those who have still not bought NFTs. Those who have already started buying NFTs are far less constrained by this factor, although they are also aware of the risks involved and of the possibility of investing in a speculative bubble.

Beyond economic motivations, a second factor that encourages purchase is hedonic value. Individuals perceive enjoyment and amusement in purchasing and owning NFTs, derived from the uniqueness and exclusivity of the goods and the engagement in a distinct 'trade world'. This effect could be compared to the fun investors perceive in the Stock Exchange, where merely assessing when to buy or sell, monitoring the market or evaluating investments, is a kind of game and offers fun for the investor. Our results reveal that hedonic value has a more pronounced effect on the intention to buy among those who have previously made purchases, indicating a stronger motivation for continued engagement in NFTs for entertainment. In accordance with previous research on UTAUT (Blut et al., 2022; Venkatesh et al., 2012), our study supports the general trend. However, the positive impact of hedonic motivation exhibits a distinct pattern among existing purchasers, which partly contradicts the findings of

Venkatesh et al. (2012). Contrary to their assertion that hedonic motivation is more prominent among users with limited technology experience, our findings in the context of NFTs indicate that the impact of hedonic value is more pronounced among individuals with extensive experience, specifically those who have already completed a purchase.

Other determining factors are related with the individual and the social environment. In the early stages, the FoMO affects those who have not yet purchased. driven by the desire to stay updated on trends and not miss potential opportunities. In addition, individuals' FoMO leads them to perceive higher returns in NFTs and, consequently, to intend to buy. Some authors had already highlighted the importance of this variable in this industry (Colicev, 2022; Fortagne & Lis, 2023), but quantitative analyses of its effectiveness were lacking until now. Once individuals start to buy NFTs, this factor becomes less relevant. These findings can be understood by considering the process of reconstructing users' expectations based on actual outcomes (Hodkinson, 2016). After purchasing the product, users reassess the benefits of owning an NFT, which leads to a more rational decision-making process. Consequently, the influence of FoMO on the purchase decision weakens prior to owning the product.

Regarding social phenomena, social influence, or the pressure exerted by others, is a factor, which is highly related to the intention to make an initial purchase of NFTs. Contact with communities or friends knowledgeable about NFTs enhances perceived economic returns, hedonic value and reduces perceived risks, thereby increasing the intention to purchase. This supports the findings of prior research that highlighted the favourable influence of social capital on intentions (Church et al., 2017; Kim et al., 2020).

In the case of individuals who have already bought, there is no social influence from the environment or from influencers. One of the interviewees acknowledged that although at first he trusted what others told him, little by little he began to do his own research and to not trust so much in what influencers say. Another indicated that he distrusted influencers who talked about a specific collection, because it was very likely to be advertising and geared towards a promotional purpose. For individuals who have already begun to trade in NFTs, the significant social factor is not social influence but social capital. These findings align with the results observed in the UTAUT model, which states that social influence plays a significant role—primarily during initial purchases (Venkatesh et al., 2003). However, its impact weakens once individuals have made their first purchase and have developed their own set of expectations for the product. For those who have already purchased at least once in the past, what drives them to continue investing is not therefore the social pressure but rather the access to new information through specialized communities who are experts in the field.

Finally, effort expectancy is not relevant in the context of investing in NFTs. The skills and knowledge needed to use NFT systems and to buy these assets cannot be considered either as a motivational factor or as a barrier. Although interviewees in the qualitative study recognized the difficulty involved in learning about trading in NFTs, it is not a predictive factor of the intention to buy. This result may be

attributed to the fact that the sample comprises individuals who already have a certain knowledge of these assets. In this sense, some studies have shown that effort expectancy is significant only during the initial period and becomes non-significant after periods of sustained use (Venkatesh et al., 2003). Jain et al. (2022) also found that effort expectancy has no influence on behavioural intention to use a blockchain-based technology (blockchain-enabled e-commerce platforms).

6.1 | Theoretical contributions

This study offers significant theoretical implications, given that the research topic—which concerns the determinants of individuals' adoption of NFTs—has received scant attention in prior research (Chohan & Paschen, 2021; Fortagne & Lis, 2023; Hofstetter et al., 2022). The present study addresses this gap by examining the factors that drive adoption, not only among individuals who have already made a purchase, but also among those who have never purchased NFTs.

This study also extends the applicability of the UTAUT2 model to research on the adoption of NFTs. This once again validates the model's adaptability in an underexplored domain. Additionally, this study helps to extend the UTAUT2 model. Venkatesh (2022) emphasizes the importance of identifying new individual characteristics that can enrich the model to better explain the adoption of specific technologies. Based on the qualitative study, we therefore propose an extension of the model by introducing two exogenous mechanisms of interest for adopting this kind of product: social capital, and FoMO. Although the direct contribution of FOMO and social capital in terms of explaining adoption is not relevant, these variables do impact the exogenous mechanisms of adoption in UTAUT, which include performance expectancy, risk, effort expectancy and hedonic value. These variables are especially relevant in the context of first purchases. Our research thus makes a significant contribution towards developing and refining the UTAUT2 model as suggested by Venkatesh (2022), since it clearly demonstrates the effect of these new exogenous variables on the model's traditional variables.

In sum, our findings reveal that return expectancy, perceived risk, and hedonic value, positively affect the purchase intention of both new and existing buyers of NFTs. At the same time, we find that variables such as social capital and FoMO have a strong impact on these variables. This study therefore provides an initial perspective on the adoption of NFTs, and marks the beginning of further research in this area.

6.2 | Managerial implications

From a practical standpoint, the current work provides some important implications for managers who seek to incorporate NFTs into their marketing strategy, both when attempting to reach an audience who have experience in buying this type of product and when seeking out new buyers. First, considering the strong influence of performance expectation on intention both for buyers and for those who have not yet done so, managers should pay special attention to the usefulness of these assets for the owning users (sweepstakes, special offers or exclusive events) and not be reduced to considering only an artistic picture. In line with Colicev (2022), users need to appreciate the value offered by the NFT itself in order to purchase it and be satisfied with the purchase. This would thus ensure a return on ownership as well as long-term sustainability by allowing speculation on the NFTs themselves. Second, companies should reduce the risk that buyers perceive when making transactions to purchase their collection of NFTs, and seeking mechanisms to curb the risk of scams or fraud can be very useful to motivate their users, especially in the case of first-time buyers. Examples of such mechanisms may include: educating customers through illustrative videos of the purchase process, clarifying official pathways (or links) for purchasing these assets, or controlling any fraudulent pathways that may arise associated with the company's collection. Third, we have seen in the analysis how the hedonic value associated with the enjoyment of owning these assets can also be a determining factor in adoption. Companies can encourage this enjoyment by designing each token in a differentiable way, thus providing them with personality and the appropriate exclusivity to achieve the enjoyment of owning one of the tokens.

The results also demonstrate the positive effects that individuals' FoMO and the social phenomenon can have on adoption. We observe how FOMO is an important factor in stimulating purchase in the case of non-buyers. When the company's target audience is not a regular buyer of this type of product, companies can stimulate this feeling of missed opportunities, for example, by segmenting the launch into different phases (premint, mint and public launch) with a lower price at the beginning that increases with each phase. Social capital, on the other hand, can be stimulated by encouraging the emergence of communities around the project, which can help users by providing them with information and by making them feel part of the project. This is especially interesting when the public are actual buyers of NFTs, as they pay more attention to what the communities have to say. By actively engaging with and leveraging the power of these communities, organisations can effectively enhance user participation and influence, ultimately leading to more successful outcomes.

6.3 | Limitations and future research

While we acknowledge the limitations of our work, we consider them to be opportunities for future research. Firstly, the studies have been carried out with individuals who already have a certain knowledge of NFTs since, given the novelty of this type of asset, most people are not familiar with it. The specificity of the study sample, which consists of first-time buyers who display certain traits such as a search for novelty, interest in new technologies, and a knowledge of blockchain, may limit the generalisability of the findings. The specificity of the sample may also explain the low predictive role of effort expectancy. Conducting additional research and broadening the sample to

individuals who are at the cutting edge of technological knowledge might bring weight to this variable.

As awareness of NFTs grows, further research could be performed with other potential consumers and might capture other factors that could determine their response to NFTs.

Furthermore, the present study has used an adapted version of the UTAUT2 model, wherein the price value construct has been deliberately excluded. This exclusion is grounded on the wide-ranging valuations associated with blockchain assets of this nature, which can span from nominal amounts to substantial sums (Wilson et al., 2022). We consider that the pricing of such assets is contingent upon their specific features and on the offerings inside the collection itself, thereby warranting their exclusion from the present analysis. Notwithstanding, future research may benefit from exploring the influence of the price value construct on specific comparable collections or by investigating the blockchain conversion rates of these assets (Senyo & Osabutey, 2020). In this adapted model, we have integrated two additional exogenous variables: social capital and FOMO, which are considered relevant within the conceptual framework of the UTAUT2 model. These additions are proposed as a substantial expansion for future studies, providing an opportunity to test these new variables in diverse contexts. This approach will not only enrich the understanding of UTAUT's application but also help explore its utility in broader and varied situations.

Having analysed the factors that determine the intention to purchase and repurchase NFTs, further research could focus on the use and sales of these assets. In addition to the purchase, it is interesting to evaluate how individuals use and enjoy these assets—both utilitarian and hedonic aspects—as well as speculative buying and selling behaviours. Building on this idea, another limitation in our model is the absence of actual consumer behaviour, since we focus on purchase and repurchase intentions.

Finally, although we have assigned equal weights to the formative indicators to create a composite construct, we have found evidence of different configural structuring when using automatic weighting procedures. Some composite constructs, such as perceived risk or social capital, may have a different meaning depending on the adoption phase, such that different measures could therefore be used.

7 | CONCLUSION

This research investigates the factors influencing individuals' intention to adopt NFTs—a novel form of cryptographic assets revolutionizing digital ownership and consumption. The study integrates the UTAUT2, social network theory, and the concept of FoMO to unveil the complexities underlying the acquisition and repurchase of NFTs.

The results show how economic expectations play a significant role, while perceived risks act as limiting factors, especially for those new to the NFT market. Hedonic value, which represents the enjoyment derived from owning NFTs, proves influential, particularly among repeat purchasers. As for the social aspects, the FoMO and social influence drive initial purchases, while social capital from expert networks becomes crucial for ongoing engagement. Effort expectancy, although recognized as a potential barrier, does not significantly affect purchasing intentions.

In summary, this article contributes to the emerging literature on NFTs by delving into the determinants of individuals' intention to adopt this novel technology. By integrating various theoretical frameworks, the study provides nuanced insights into the complex interplay of economic expectations, hedonic value, FoMO, social influence, and effort expectancy in shaping consumers' decisions regarding NFTs. These findings offer valuable guidance for marketers and companies who are seeking to leverage NFTs in their campaigns and can pave the way for future research exploring the dynamic landscape of digital asset adoption.

CONFLICT OF INTEREST STATEMENT

The authors declare that there is no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ORCID

Elías Vega https://orcid.org/0000-0001-7483-8680

ENDNOTE

[i] We thank an anonymous reviewer for this suggestion.

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