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UNDERSTANDING NFT PURCHASE INTENTION THROUGH SOCIOECONOMIC VALUE

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ABSTRACT

Introduction: The aim of this research is to examine the antecedents of perceived socioeconomic value in NFTs (non-fungible tokens) and the relationship between socioeconomic value and intention to purchase NFTs. Drawing on the Theory of Consumption Value (TCV), we propose that perceived scarcity, perceived uniqueness, and perceived affordability are associated with individuals' perceptions of socio-

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economic value, which in turn is related to their intention to purchase NFTs.

Methodology: The research is based on a survey design. Data collected from university students were analyzed using structural equation modeling. Participants were selected through convenience sampling from individuals with prior knowledge of NFTs.

Results: The findings suggest that perceived scarcity has the strongest association with socio-economic value, while perceived affordability shows a weaker positive relationship. Perceived uniqueness, however, is not significantly related to socio-economic value, contrary to expectations. Moreover, socio-economic value is positively associated with NFT purchase intention. **Discussion:** These results indicate that NFT value is more strongly linked to supply-constrained signals than to subjective perceptions of exclusivity. In particular, scarcity-related cues appear to play a more prominent role in shaping socio-economic value perceptions. **Conclusion:** The study extends the TCV framework to digital assets by highlighting how price-related signals and supply limitations are associated with value perceptions in blockchain-based environments. The findings also provide evidence for a relationship between perceived socio-economic value and purchase intention under conditions of uncertainty and symbolic consumption.

Keywords: NFT, Theory of Consumption Values, Digital assets, Scarcity, Blockchain, Perceived value.

1. INTRODUCTION

NFTs are digital assets on the blockchain that represent the digital ownership of unique digital goods (artwork, games, collectibles...). This allows for verified scarcity and the ability to trade within a virtual world (Dowling, 2022; Wang et al., 2021). As signifiers that have tangible and intangible value to the consumer, NFTs can also function as symbolic consumption objects. Therefore, the meaning of an NFT goes beyond the product itself and includes identity as well as social status (Belk, 1988). Research on symbolic consumption has shown that many consumers appreciate their possessions what they represent socially and personally, not just as a tool to perform a function (Belk 1988). Publicly available record-keeping and visibility within NFT marketplaces encourages this symbolic consumption behavior as both the acquisition and display of an NFT become visible to various audiences (Alqarni, 2025; Belk, 2013). However, while NFT buyers may be drawn into purchasing behaviors due to the social and symbolic aspects of NFTs, many are also affected by the vast uncertainty of NFT valuation compared with traditional forms of ownership. Before purchasing NFTs, their benefits are often ambiguous, prices often fluctuate wildly, and market results may hinge on stories, governance of the platform, or variable community participation (Dowling, 2022; Howell, Niessner & Yermack, 2022). Value is determined by users subjectively evaluating the value they will receive relative to the price; the value received and the price they pay depends on context (Zeithaml, 1988). When there is uncertainty about the outcome of an event, consumer risk is an important factor influencing consumer evaluations as they are influenced by potential negative outcomes and regret when making decisions and developing intentions (Dowling, 2002; Mitchell, 1999). This behavior is indicative of speculative behavior as assets are

being acquired based in part on future resale potential rather than their intrinsic utility (Cheah & Fry, 2015).

The uniqueness of NFTs provides an opportunity to investigate how consumers use the Theory of Consumption Values (TCV) as a framework for modeling their intentions to buy and sell (Sheth, Newman & Gross, 1991). According to TCV, consumer choice is based on five different dimensions of consumption value (functional, social, emotional, epistemic, and conditional) that affect preference and purchasing behavior (Sheth, Newman & Gross, 1991). TCV is used to analyze the consumption of symbolic goods because it incorporates social and emotional sources of value in addition to functional sources of value (Sheth, Newman & Gross, 1991). Because NFTs can provide functional/financial benefits, social benefits (like community membership or social status) and benefits from curiosity or novelty, they can be thought of as a combination of multiple values when making purchasing decisions (Belk, 2013; Xie & Muralidharan, 2024).

The theoretical contribution of this study lies not in a simple application of the TCV to a new product category, but in a theoretically justified reconstruction of the dimensions of value appropriate to the unique characteristics of NFT consumption: high valuation uncertainty, speculative motivation, blockchain-verified scarcity, and the social visibility of ownership. Specifically, we argue that under these conditions, a subset of TCV's value dimensions (those most consistent with scarcity-driven, symbolic, and speculative consumption) converges into a socio-economic value structure that integrates social signaling and economic valuation. This reconstruction constitutes a contribution to theories of value in the context of digital, uncertain and speculative consumption.

The scope of the value dimensions examined in this study was defined a priori rather than derived ex post from the data. Following Chae, Kim, Lee, and Park (2020) with their scarcity-based value framework originally developed for limited-edition physical products, we adapted a value operationalization focused on economic, social and emotional dimensions to the NFT context, given the structural parallels between limited-edition physical products and NFTs as artificially scarce, status-signaling assets. The remaining two dimensions of Sheth, Newman and Gross's (1991) original TCV typology, functional, epistemic, and conditional value, were not included in the initial measurement model. This is a theoretical scoping decision, not an empirical exclusion: it is difficult to separate functional value from economic valuation in the NFT context, because for most buyers the primary function of an NFT depends on expected resale value rather than any obvious utilitarian benefit; Epistemic value (novelty, curiosity) and contingent value (situational randomness) are more central to first-time or exploratory consumption than the status- and resale-focused motivations that characterize NFT purchasing highlighted above. In contrast, emotional value was retained in the initial model and is discussed separately below; its subsequent exclusion is based on empirical grounds (weak and cross-loading items) rather than the theoretical scope applied here.

In line with this understanding, the present study aims to develop and support with theory a simple model of the intention to purchase NFTs based on the construct (perceived socio-economic value) established jointly from perceived scarcity, perceived uniqueness and perceived affordability. The belief that a product is scarce is believed to create desire and create social differentiation, including contexts in which limited availability or exclusivity acts as a status indicator (Cialdini, 2009; Lynn, 1991; Snyder & Fromkin, 1977). At the same time, perceived affordability is also considered a major element in the consumer's evaluation of NFTs, reflecting the degree to which the price of an NFT is judged as acceptable and within reach rather than prohibitive, thereby shaping the overall favorability of the purchase decision (Monroe, 1990; Zeithaml, 1988). By connecting the evaluation of the three constructs used to create the perceived value of NFTs to the intention to purchase an NFT, this study supports the view that the intention to purchase is a precursor to the actual behavior of purchasing an NFT and is influenced by the evaluation of the consequences of purchase (Ajzen, 1991; Dodds et al., 1991).

The goals of the research are twofold: one is to develop a theoretical model explaining how scarcity, uniqueness and affordability affect one another to create an overall socio-economic value for NFTs (Sheth, Newman & Gross, 1991; Zeithaml, 1988) and, two, explain why socio-economic value will affect NFT purchase intention because value is an important factor influencing consumers' decisions when making purchases, especially when they are uncertain or feel they are at risk (Dodds et al., 1991; Dowling, 2002). Theoretical contributions are: (a) extending TCV reasoning for NFT acquisitions as symbolic and monetary digital consumption (Sheth, Newman & Gross, 1991), (b) providing an understanding of how scarcity-related beliefs converge with perceptions of affordability into an overall socio-economic valuation judgment (Lynn, 1991; Zeithaml, 1988), and (c) grounding NFT purchase intention in existing linkages between value and intention (Ajzen, 1991; Dodds et al., 1991).

2. THEORETICAL FRAMEWORK and HYPOTHESIS DEVELOPMENT

2.1. Theory of Consumption Values and applicability to digital and virtual goods

Multiple independent types of values are used to explain consumption decisions instead of a single combination of utilities (Sheth, Newman & Gross, 1991). The importance of the value types depends on the situation the consumer finds themselves in, i.e., the context of the consumption (Sheth, Newman & Gross, 1991). Functional value - perceived utility based on performance and quality (Sheth, Newman & Gross, 1991), Social value - utility based on association with social groups, Emotional value - feelings and emotions, Epistemic value - novelty and curiosity, Conditional value - situation-specific contingencies (Sheth, Newman & Gross, 1991). This multi-value view of value supports other research on digital and virtual products, which shows that utilitarian benefits, social signaling and experiential meaning can all exist at the same time for an item, and that the ownership of an item may be mainly symbolic rather than purely utilitarian (Hamari, 2015; Turel, Serenko & Bontis, 2010).

Even if they do not have much actual utility, digital assets can be part of an identity-building process and a way for people to show their status. This is because digital assets have a socially constructed meaning, the community recognizes their ownership, and they are visible (Schau & Gilly, 2003; Serada, 2024). In addition, as a result of the perceived value framework, the consumer's assessment of a product will be based on perceived benefits vs. costs; thus, perceived value is subjective and context dependent (Ko et al., 2022; Zeithaml, 1988). In addition to being a conceptual construct, perceived value is an empirical antecedent of purchase-related outcomes and/or willingness to purchase and purchase intention (Dam, 2020; Wang et al., 2023). In uncertain markets, perceived risk affects value assessments; individual consumers will incorporate the likelihood and severity of a negative outcome into their overall assessment (Agarwal & Teas, 2001). The uncertain benefits and significant decision costs associated with purchasing NFTs make an approach that utilizes consumers' multidimensional perceptions of value and affordability highly suitable for theorizing consumer purchase intentions toward NFTs (Eastman, Yazdanparast & Ketron, 2024; Zeithaml, 1988).

2.2. Perceived scarcity and perceived uniqueness in digital consumption

Previous research suggests that consumers process scarcity in a differentiated manner and that the types of cues (supply-based vs. demand-based) used to signal scarcity can influence how unique something appears to the consumer and subsequently their intentions to purchase it (Chen & Sun, 2014; Wang et al., 2022). This supports the hypothesis that scarcity perceptions are likely comprised of multiple dimensions instead of a single construct and that scarcity perceptions may reflect these dimensions differently in a variety of consumption contexts, particularly in the case of digital products. For example, perceived scarcity is defined as a consumer's perception of limited availability (e.g., limited quantity or access) and has been shown to increase desirability by providing privilege cues and increasing competition for acquisition based on perceived scarcity (Cialdini, 2009; Lynn, 1991). Consumers perceive items as being unique or distinctive relative to alternatives in terms of their perceived uniqueness. This helps consumers to fulfill their desire for differentiation (for example, an individual may desire to wear a piece of clothing that has a certain level of perceived uniqueness). Furthermore, it assists the consumer in sending signals of status through their purchases (Alexander & Bellandi, 2022; Balachander & Stock, 2009). As such, consumers in symbolic markets look for a degree of difference between themselves and others, as supported by theories of conspicuous consumption and displaying status (Kumar et al., 2025).

The terms limited and unique are widely perceived by consumers as signals of scarcity and exclusivity, which can enhance the perceived value of an item. As a consequence, the market for limited edition items (such as NFTs) can convey signals about the social and economic value of these limited items. Scarcity and uniqueness are conveyed through signals such as restricted supply and distinctive, exclusive characteristics. These signals become particularly salient when ownership of the NFT is observable by others or when individuals use the NFT to associate themselves with particular

consumers or social groups. This enhances the social value of the limited-edition item, as ownership of a limited-edition item can provide consumers with either access to or identification as members of a particular social community or economic class. Because these limited edition NFT items have social value within a socio-economic framework (where there are social or investment motives) it is reasonable to expect that scarcity and uniqueness will be central drivers of value for NFT in their respective markets.

2.3. Perceived price affordability

Unlike traditional products, where price is frequently interpreted as a monetary sacrifice, purchase decisions in NFT markets are more appropriately understood through the lens of perceived price affordability, since buyers simultaneously weigh symbolic ownership and expected resale value alongside the price itself (Dodds et al., 1991; Nadini et al., 2021; Zeithaml, 1988). Perceived price affordability reflects the degree to which consumers perceive NFT prices as acceptable and within reach, rather than as a financial burden. It is best understood as a reflection of how psychologically competent consumers feel to spend on a given purchase (Tobin, 1972, as cited in Notani, 1997), functioning as a decisive constraint on purchasing decisions independent of consumers' objective income alone (Monroe & Krishnan, 1985, as cited in Dodds et al., 1991; Notani, 1997).

This concept is particularly well suited to consumer price evaluations because, before completing a purchase, the price offered is compared against the "acceptable price range" stored in consumers' memory, and a corresponding perception of value is formed on the basis of this mental calculation (Monroe, 1990; Monroe & Petroshius, 1981, as cited in Dodds et al., 1991; Lichtenstein et al., 1988). The concept is especially relevant to NFTs, since acquiring an NFT requires not only an upfront payment but also additional transaction costs arising from blockchain-related fees, both of which factor into consumers' overall affordability calculus when deciding whether to proceed with a purchase (Roughgarden, 2020). For example, in digital markets such as NFTs, consumers assess status-related expectations against more affordable alternatives relative to the initial retail price of traditional physical luxury goods, illustrating how affordability perceptions shape purchasing behavior in this context (AbedRabbo et al., 2025). Taken together, the literature indicates that perceived price affordability is a key determinant of how consumers evaluate the acceptability of the payment required to obtain ownership of an NFT, capturing price acceptability, economic affordability, and the relative inexpensiveness of NFTs as core dimensions of this evaluation (Lichtenstein et al., 1988; Notani, 1997).

2.4. Convergence into perceived socio-economic value

Perceived price affordability, perceived uniqueness, and perceived scarcity are all factors that influence consumers' overall socio-economic value of NFTs, namely the social and economic implications of NFT ownership. Scarcity and uniqueness help create social status and provide perceptions of resale value, since rare items tend to command higher prices, consistent with status-market theory (Gierl & Huettl, 2010; Han, Nunes & Drèze, 2010). Perceived price affordability reflects the extent to which

the price required to acquire an NFT is judged as acceptable and manageable by the consumer, rather than the raw monetary amount involved. Consumers consider not only how much they will pay to obtain an NFT, but also the value they expect to receive relative to that price (Wang & Chen, 2016). Although the TCV framework treats social and economic value as conceptually separate dimensions (Sheth, Newman & Gross, 1991), we argue that, in the specific context of NFT consumption, these two dimensions converge into a single evaluative judgment rather than operating as independent value sources. This convergence follows from the nature of NFTs as assets whose social value is largely constituted by their economic characteristics. Unlike symbolic goods, where social distinction can be achieved independently of resale expectations, the status conferred by NFT ownership is difficult to separate from the asset's perceived market value because status signaling within NFT communities is frequently expressed and validated through price, including floor price, purchase price, and rarity-driven valuation, rather than through purely symbolic or aesthetic markers (Han, Nunes & Drèze, 2010; Hofstetter, Fritze & Lamberton, 2024). An NFT that confers status but is not also recognized as economically valuable is unlikely to sustain that status within NFT-owning communities, while an NFT recognized as economically valuable typically also confers status by virtue of that value being publicly verifiable on the blockchain.

This distinguishes perceived socio-economic value, as conceptualized here, from a general perceived value judgment (Zeithaml, 1988), which is broadly defined as the trade-off between any combination of benefits and costs, as well as from a simple additive combination of separately operating social and economic value dimensions. Rather than treating social and economic evaluations as two constructs whose effects are summed, we conceptualize socio-economic value as a single latent judgment in which social and economic considerations are mutually reinforcing and, in this context, empirically difficult to separate. It should be noted that the present study operationalizes socio-economic value through a unidimensional scale rather than through separate social and economic sub-factors (Chae et al., 2020). Therefore, the claim of convergence is a theoretical proposition motivated by the characteristics of NFT markets rather than a finding independently established through comparison of alternative factor structures. Future research could evaluate this proposition more directly by comparing the fit of a one-factor specification against a two-factor (social vs. economic) alternative. Thus, the socio-economic value of NFTs can be conceptualized as a unified evaluative judgment arising from consumers' perceptions of scarcity, uniqueness, and affordability, reflecting the intertwined social and economic implications of NFT ownership.

2.5. Hypothesis development

The ability to see something as unique leads to greater appeal, since having something that is unique can also hold both an ascribed sense of value (symbolic) as well as an underlying market value (economic) which relates to differentiation motivations as well as providing a way to signal or communicate status (Snyder & Fromkin, 1977; Telli & Aydin, 2026; Xie, Muralidharan & Edwards, 2024). In turn, increasing the

perceived uniqueness of an NFT will increase that NFT's perceived socio-economic value because socio-economic value reflects a unified evaluation in which social and economic considerations are jointly expressed (Kim et al., 2022).

H1: Perceived uniqueness positively affects perceived socio-economic value.

According to Cialdini (2009) and Lynn (1991), when there is a perception of limited availability and increased competition, then the perceived value of an item increases through perceived scarcity. Also, perceived scarcity signals can help produce heuristics and, therefore, serve as a source of information regarding the intrinsic value of a product when it is hard to assess the actual quality of the product (Xie et al., 2023). With ambiguous valuations of NFTs, and given how prevalent the available quantity or supply narratives are within NFT markets, there is a reasonable basis and indication that perceived scarcity will increase the perceived socio-economic value of an NFT (Alexander & Bellandi, 2022; Dowling, 2022; Howell et al., 2022).

H2: Perceived scarcity positively affects perceived socio-economic value.

NFT evaluations greatly depend on the monetary value achieved from evaluating an NFT through an upfront price and/or various fees that may be paid as part of the transaction process. Accordingly, it is essential for consumers to understand the degree to which perceived price affordability reflects an acceptable and manageable price for owning an NFT, rather than a prohibitive financial burden (Notani, 1997; Zeithaml, 1988). Because perceived socio-economic value integrates both social and economic considerations into a single evaluative judgment (Section 2.4), a price perceived as affordable removes a barrier to this favorable evaluation and may additionally function as a signal that the asset is accessible without undermining its social or symbolic standing (Han, Nunes & Drèze, 2010). Accordingly, higher perceived price affordability should contribute positively to perceived socio-economic value.

H3: Perceived price affordability positively affects perceived socio-economic value.

Intention is defined as a readiness to do something, and is the immediate precursor to behavior (Ajzen, 1991). The concept of perceived value has been shown to be correlated with purchase intention, as a positive overall assessment of relative benefits to costs will increase the likelihood that consumers will purchase something (Dodds et al., 1991; Zeithaml, 1988). Under conditions of uncertainty, consumers rely on an overall value judgment that integrates beliefs about symbolic benefits, expected economic outcomes, and perceived price affordability when forming purchase evaluations (Dowling, 2002; Sheth et al., 1991). Therefore, the higher the perceived socio-economic value, the greater will be the purchase intention.

H4: Perceived socio-economic value positively affects NFT purchase intention.

3. METHODOLOGY

3.1. Research design and research approach

In order to examine the theory-based links between scarcity perceptions, uniqueness perceptions, affordability perceptions, socio-economic value perceptions, and NFT purchase intention, this research employs a quantitative cross-sectional survey methodology. Survey-based research is well suited for measuring consumer perceptions and intentions, two of the essential variables when exploring and verifying the concepts of value and intention in theory (Ajzen, 1991; Zeithaml, 1988). The research model was created prior to the collection of data based on sound theoretical arguments and follows a theory-testing approach to consumer research (Bagozzi, 1984; MacKenzie, 2001).

A quantitative survey study is employed using a cross-sectional design that enables investigation into individual perceptions and attitudes towards NFTs. The sample was selected using a convenience sampling method, with college/university students being the target population due to their generally possessing at least a basic understanding of digital technology and online platforms. Prior to conducting the survey, potential respondents were screened for awareness of NFTs to ensure that the data collected is relevant to the intended purpose of the study.

Because exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were conducted on the same dataset (a limitation discussed further) we additionally examined the stability of the factor structure using a bootstrapping procedure with 2,000 resamples. Bootstrapped bias-corrected confidence intervals confirmed that all factor loadings were statistically significant, providing supplementary evidence of estimation stability, though this does not substitute for validation on an independent sample.

3.2. Sampling and data collection procedures

The sampling consists of adults who know about NFTs and either have bought NFTs before or have seriously thought of buying one. Collection of data was accomplished through in-person surveys given to college aged students because they tend to be well-exposed to the latest technology, digital platforms and online asset ecosystems (Tarhini et al. 2017; Venkatesh et al. 2003). The convenience sampling method was employed to get potential subjects for this study from within a university context and was done on a voluntary basis. Prior to administering the questionnaire, potential respondents were asked a brief screening question to determine their awareness of NFTs. Only individuals who confirmed awareness of NFTs and had either purchased or seriously considered purchasing one were invited to complete the survey; individuals without such awareness were not administered the questionnaire. Because screening occurred at the point of initial contact rather than through post-hoc exclusion of completed responses, the number of individuals who declined participation at this stage was not systematically recorded, and a response rate could therefore not be calculated.

An ethical approval was received from Anadolu University's Ethics Committee (Approval Date 27.03.2025; Protocol Number 862822). Data collection occurred through administration of face-to-face surveys conducted with university students at Anadolu University during Fall semester 2025 (September–October). Participation in this study was voluntary and completely anonymous. Before completing the questionnaire, participants received a written information sheet explaining the study purpose, the voluntary nature of participation, the anonymity of responses, and their right to withdraw at any time without consequence. No material incentive was offered. Completion of the survey took approximately 8–12 minutes.

The Mahalanobis distance method identified and excluded the so-called outlier data points from the total collected sample for normality purposes and maintaining the quality of the dataset. Upon completion of this outlier data point cleaning process (12 participants dropped, cutoff=>0.001), analysis was performed on a final sample of 383 respondents using the data cleaning methods described above. Of the participants, 248 were male (64.8%) and 135 were female (35.2%). The study sample consisted of 64.8% male participants. While this distribution could be considered a limitation, the existing literature consistently shows that interest in and investment intentions for speculative digital assets such as NFTs and cryptocurrencies are significantly higher among men (Auer & Tercero-Lucas, 2022; Sudzina et al., 2023). The mean age of the sample was 23.2 years. The average monthly income of participants was 31,062 Turkish Lira.

3.3. Measurement model development

The measures developed from known scales have been applied in a manner consistent with NFT purchases according to measurement development principles. The measures were subject to theoretical alignment and relied on content validity (Churchill 1979; MacKenzie et al., 2011). In this research perceived scarcity will be measured through multiple indicators adapted from Wu, Lu, Wu & Fu (2012) representing scarcity of the product (NFT) and the difficulty experienced in acquiring the product. The uniqueness of the product will be assessed through measurement developed from Chae, Kim, Lee & Park (2020) measuring perceptions of uniqueness and scarcity.

The social, economic, and emotional dimensions associated with NFT acquisition have been conceptualized within value-based consumption theory as components of a multidimensional value structure (Sheth, Newman & Gross, 1991; Zeithaml, 1988). Chae et al. (2020) incorporated three major values: economic value, social value and emotional value. The economic value represents a consumer's assessment of NFTs based on their monetary value along with their price fairness and how much value they receive from purchasing or holding each NFT (cost-benefit). Social value describes a consumer's assessment of how their purchase of an NFT has improved their social image, level of status and recognition within the community. The emotional value represents the emotional benefits to a consumer from making a purchase, such as happiness, anticipation and enjoyment.

Perceived price affordability is a construct that reflects consumers' evaluation of NFT prices as acceptable and economically manageable. Accordingly, it captures the extent

to which consumers perceive NFT prices as within reach and reasonable, rather than as a financial burden. This construct is operationalized using measurement items adapted from Wu, Lu, Wu, and Fu (2012), adapted to reflect affordability and price acceptability rather than cost burden.

The assumption of the proposed model is that the antecedent perceptions related to consumers' value evaluations are the result of their perceived scarcity, uniqueness, and affordability. Key mechanisms that influence consumers' intention to purchase NFTs will be based on their value perceptions of NFTs. The specification of the modeled phenomenon is consistent with previous research that perceived scarcity and uniqueness create a base perception for consumers to evaluate their values, which subsequently affects their behavioral intentions in both digital and experiential consumption (Chae et al., 2020; Wu et al., 2012).

The measurement model was developed based on previously validated instruments and adapted to suit the context of NFT assessment. Initially, a 7-factor, 25-item structure was identified and subjected to EFA. Following this analysis, seven items were removed due to low factor loadings, cross-loading between multiple factors, or lack of theoretical justification. Specifically, one item from the perceived scarcity construct (Scar2) and one item from the purchase intention construct (Int2) were removed due to low or cross-loading patterns inconsistent with their intended factor assignment. Two items from the initial economic value sub-scale (Eco1, Eco2) were removed during the restructuring of the economic and social value items into the unified socio-economic value construct (Section 2.4), as they showed conceptual redundancy with retained items once the two sub-scales were combined. The remaining three removed items (Emo1, Emo2, Emo3) belonged to the emotional value construct, which was excluded in its entirety due to high cross-loadings and low factor loadings across its items, as discussed further in Section 4.1.1. EFA was conducted using principal component analysis (PCA) as the extraction method with Direct Oblimin rotation, given the theoretically expected correlation among the underlying factors (e.g., scarcity and uniqueness). We acknowledge that PCA extracts components based on total variance rather than shared variance among items, which technically differs from common factor extraction methods (e.g., principal axis factoring) more commonly recommended for latent construct development. PCA was retained here consistent with its widespread use in applied consumer research for exploratory item reduction; nonetheless, the subsequent confirmatory factor analysis, which explicitly models measurement error, provides additional support for the retained factor structure beyond what the initial PCA-based extraction alone would establish.

The final factor structure consisted of five factors explaining 66% of the total variance.

Confirmatory factor analysis (CFA) and structural equation modeling (SEM) were performed using Maximum Likelihood Estimation (MLE). Model fit was assessed using multiple fit indices, including χ^2/df , CFI, TLI, RMSEA, SRMR, showing acceptable to excellent model fit. Discriminant validity was assessed using inter-structural correlations and the Heterotrait-Monotrait (HTMT) ratio. All inter-structural

correlations were below the 0.90 threshold, and HTMT values were within acceptable limits, indicating sufficient discriminant validity. All analyses were performed using IBM SPSS Statistics and IBM SPSS AMOS.

Table 1 *HTMT Analysis*

	Socio-economic value	Perceived price affordability	P. Scarcity	P. Uniqueness	P. Intention
Socio-economic value					
Perceived price affordability	0,116				
P. Scarcity	0,765	0,027			
P. Uniqueness	0,706	0,036	0,870		
P. Intention	0,757	0,005	0,795	0,759	

Source: Generated by authors.

3.4. Measures

NFT consumption contextualized measures were collected by measuring constructs using multiple-item scales developed from prior studies. Unless specifically noted, each measure used a Likert scale ranging from strongly disagree to strongly agree.

Perceived Scarcity: The concept of perceived scarcity was assessed using questions developed by Wu, Lu, Wu, and Fu (2012) to assess what consumers believe about the availability of and the difficulty in obtaining NFTs. The scale provides an indication of how much consumers see NFTs as being limited in supply and not easily available to all consumers (e.g., I think that the supply of NFTs is limited).

Perceived Uniqueness: Perceived uniqueness was measured using items adapted from Chae et al. (2020), which capture the extent to which NFTs are perceived as distinct from other digital products. The scale was designed to reflect both design-based and technology-based dimensions of uniqueness. A sample item includes: "NFTs are unique assets recorded on the blockchain."

Perceived Price Affordability: Perceived price affordability was measured using items adapted from Wu, Lu, Wu, and Fu (2012) adapted to capture the extent to which NFT prices are perceived as acceptable and economically manageable, rather than as a financial burden (e.g., 'The prices required to purchase NFTs are economically affordable').

Socio-economic Value: Socio-economic value refers to the wider, comprehensive assessment that users have of the social and economic impacts associated with purchasing NFT and is measured via adapted items taken from Chae et al. (2020). The scale measures how users perceive owning NFT as socially distinguished, having some

kind of symbolic meaning and providing potentially positive economic outcomes (e.g., "Owning NFTs distinguishes me from others around me").

NFT Purchase Intention: The authors used items from Wu et al. (2012) to develop measures to capture consumers' future intention to buy NFTs and the probability of doing so, based on their financial capability (e.g., "If I can afford it financially, I plan to purchase NFTs in the future".)

4. RESULTS

4.1. Measurement model

Two-step methods using Factor Analysis (Exploratory and Confirmatory) were performed to assess the measurement model by analyzing each construct's dimensionality, integrity, and trustworthiness (Anderson & Gerbing, 1988; Hair et al., 2019). While the ideal approach is to run EFA and CFA on independent samples (Anderson & Gerbing, 1988; Worthington & Whittaker, 2006), many methodological studies indicate that, where independent sample collection is impractical, it is acceptable to run both analyses on the same dataset, provided the limitation is explicitly stated and the findings are interpreted cautiously.

4.1.1. Exploratory factor analysis

The underlying factor structure of the measurement items underwent exploratory factor analysis to identify the resultant factor structures (Fabrigar et al., 1999). The initial measurement model used in this study consisted of seven constructs and 25 items; EFA results revealed that some items had low factor loadings or cross-loaded factors, and therefore, seven items were removed from further analysis to provide a clearer and better-defined factor structure (Hair et al., 2019). Ultimately, five distinct factors emerged from the EFA solution conveying the variance (%66).

EFA results showed a two-factor solution corresponding to Perceived Scarcity and Perceived Uniqueness; however, several items did not load onto the theoretically expected factors. Based on these results, the factor structure was re-evaluated by considering both empirical loadings and the intrinsic meaning of the items, rather than strictly adhering to the initial theoretical assignment. Specifically, Uniq2 and Uniq4, initially assigned to Perceived Uniqueness, loaded onto the Perceived Scarcity factor, while Scar3, initially assigned to Perceived Scarcity, loaded onto the Perceived Uniqueness factor.

Although emotional value was initially included as a construct, it was subsequently removed following EFA results due to high cross-loadings and low factor loadings, indicating that the items did not form a reliable and separate factor in the NFT context (Worthington & Whittaker, 2006).

4.1.2. Confirmatory factor analysis

After performing the exploratory factor analysis (EFA), a confirmatory factor analysis

(CFA) was performed to test whether a five-factor measurement model would adequately describe the data (Kline, 2016). Based on the fit indices, the CFA model demonstrated an overall good fit ($\chi^2/df = 1.71$; CFI = 0.969; TLI = 0.962; RMR = 0.057; RMSEA = 0.043; SRMR = 0.061). These fit indices indicate that the proposed measurement model fits the collected data (Hair et al., 2019; Hu & Bentler, 1999). The standardized factor loadings for the CFA ranged from 0.660 to 0.791 and were all above the recommended minimum of 0.50.

4.1.3. Reliability and convergent validity

To assess internal consistency reliability, we used Cronbach's alpha and composite reliability (CR). As shown in Table 2, the values of Cronbach's alpha ranged from 0.674 to 0.861, indicating an acceptable level of reliability. All CR values of constructs were greater than or equal to the acceptable threshold of 0.70, which reflects a good level of reliability (Hair et al., 2019; Nunnally & Bernstein, 1994). Convergent validity was assessed using the average variance extracted (AVE). For most constructs, their AVE was greater than or equal to the recommended threshold of 0.50, which indicates that a significant proportion of the variance was explained by the latent variables. Although the AVE value for perceived scarcity (0.471) was slightly below the recommended threshold of 0.50, its composite reliability (CR) exceeded the recommended level of 0.70. In line with Fornell and Larcker (1981), convergent validity may still be considered acceptable when CR is sufficiently high despite an AVE below 0.50, as the construct can still explain an adequate proportion of variance in its indicators. Thus, the results confirm that there is strong evidence for the reliability and validity of the measurement model and support use of five factors for subsequent analyses using structural modeling approaches (Hair et al., 2019).

The measurement model, consistent with the exploratory nature of EFA (Fabrigar et al., 1999; Worthington & Whittaker, 2006), underwent several data-driven refinements following EFA. In particular, the cross-loading of some scarcity and uniqueness items suggests that consumers in the NFT context may not draw as sharp a distinction between these two constructs as theoretical frameworks developed in physical product markets might suggest (Hamari, 2015; Serada, 2024), a pattern discussed further in Section 5.1. Similarly, the exclusion of the emotional value structure may reflect item wording, sample-specific characteristics (e.g., a student sample with heterogeneous levels of NFT engagement), or measurement limitations, rather than providing direct evidence that emotional value is unimportant in NFT consumption more broadly. These adjustments were guided by both empirical loadings and item content rather than theoretical assignment alone. The subsequent CFA, conducted on the same sample, showed acceptable to good fit across all reported indices (Hair et al., 2019; Hu & Bentler, 1999), and the bootstrapping procedure reported in Section 3.1 provided additional evidence of loading stability. However, because EFA and CFA were performed on the same dataset, the CFA results should be interpreted as evidence of internal consistency rather than as independent confirmation of the factor structure. Replication using an independent sample is therefore needed before the reinterpreted structure can be considered fully validated.

To assess the potential for common method bias, we conducted Harman's single-factor test by entering all items into an exploratory factor analysis with a single forced factor. This unrotated solution accounted for substantially less than 50% of the total variance, suggesting that a single underlying factor does not account for the majority of covariance among the items (Podsakoff et al., 2003). However, Harman's single-factor test is a relatively conservative and limited diagnostic, and a favorable result does not rule out common method bias. Given the cross-sectional, self-reported design of this study, in which all constructs were measured at the same point in time using the same instrument, the possibility of common method bias cannot be fully excluded

Table 2 EFA-CFA results

Factor		Items	CR&AVE	Item	EFA Loadings	CFA Loadings
Perceived scarcity $\alpha: 0,779$	Adapted from (Chae, Kim, Lee & Park, 2020; Wu, Lu, Wu & Fu, 2012).	NFTs possess unique digital characteristics	CR: 0,780	Uniq2	0,823	0,660
		NFTs are different from ordinary images found on the internet	AVE: 0,471	Uniq4	0,759	0,713
		I think that the supply of NFTs is limited		Scar1	0,608	0,674
		I think that the limited supply of NFTs makes it difficult for everyone to own these products		Scar4	0,446	0,696
Perceived uniqueness $\alpha: 0,770$	Adapted from (Chae, Kim, Lee & Park, 2020; Wu, Lu, Wu & Fu, 2012).	NFTs are unique assets recorded on the blockchain	CR: 0,770	Uniq1	-0,713	0,699
		NFTs have unique designs	AVE: 0,528	Uniq3	-0,711	0,745
		Because the supply of NFTs is limited, people will be more inclined to purchase these products		Scar3	-0,685	0,735
Perceived price affordability $\alpha: 0,823$	Adapted from (Wu, Lu, Wu & Fu, 2012).	The prices required to purchase NFTs are acceptable	CR: 0,823	Aff1	0,864	0,776
		The prices required to purchase NFTs are economically affordable	AVE: 0,608	Aff2	0,864	0,773
		NFTs are relatively inexpensive under current conditions		Aff3	0,849	0,791
Socio-economic value $\alpha: 0,861$	Adapted from (Chae, Kim, Lee & Park, 2020).	Owning NFTs makes me appear different within my social environment	CR: 0,862	Soc1	0,807	0,725
		Owning NFTs distinguishes me from others around me	AVE: 0,510	Soc2	0,765	0,741
		Owning NFTs improves how I am perceived by people around me		Soc3	0,855	0,761

			Owning NFTs can be seen as a sign of social vision	Soc4	0,756	0,688
			I believe that NFTs should be regarded as assets of the future, even if not of today	Eco3	0,520	0,666
			I value the economic benefits that NFTs may generate	Eco4	0,623	0,698
NFT purchase intention	Adapted from (Wu, Lu, Wu & Fu, 2012).	If I can afford it financially, I plan to purchase NFTs in the future	CR: 0,675	Intent 1	0,794	0,699
		If I can afford it financially, I expect that I will purchase NFTs in the future	AVE: 0,509	Intent 3	0,749	0,728
α : 0,674						
CFA fit indices: cmin/df 1.71; CFI 0.969; TLI 0.962; RMR 0.057; RMSEA 0.043; SRMR 0.061						

Source: Generated by authors.

4.2. Structural model

The maximum likelihood estimation approach was used to evaluate a proposed structural model examining the relationships between perceived scarcity, perceived uniqueness, perceived price affordability, socio-economic value, and the intention to purchase an NFT. Overall, the data analysis indicated that the model had an adequate fit. Given that the chi-square statistic ($\chi^2 = 249.842$, $df = 128$, $p < 0.001$) uses complexity as a parameter, it is not surprising that it provided a significant result. However, the relative chi-square value ($\chi^2/df = 1.95$) indicated a reasonable model fit. In addition, the goodness-of-fit indices confirmed that the model was adequate (CFI = 0.957, IFI = 0.957, TLI = 0.949), each of which exceeded the normally accepted cutoffs. The RMSEA was .050 with a 90% confidence interval of [0.041, 0.059], and the non-significant PCLOSE value (0.493) suggested that the model was well-suited to the data.

Pursuing each of their inherent structural pathways, perceived scarcity had a significant positive influence on perceived socio-economic value ($\beta = 0.616$, $p < 0.001$), supporting H2. Perceived uniqueness had a positive but nonsignificant influence on perceived socio-economic value ($\beta = 0.200$, $p > 0.05$); H1 was therefore not supported. Perceived price affordability had a significant positive influence on perceived socio-economic value ($\beta = 0.130$, $p < 0.01$), supporting H3, although the effect size was relatively small (Lee et al., 2024; Ng et al., 2025). Based on these findings, perceived scarcity emerged as the strongest and most consistent driver of the asset's socio-economic value, whereas the effect of perceived uniqueness could not be statistically confirmed (Chang et al., 2024; Wu et al., 2012); this pattern is discussed further in Section 5.1, alongside its potential connection to the measurement overlap observed between the two constructs (Section 4.1.1). Finally, perceived socio-economic value had a significant positive effect on consumers' intention to purchase NFTs ($\beta = 0.798$, $p < 0.001$), supporting H4 and indicating that evaluations of both social distinction and

economic expectations are major determinants of purchase intention (Lee et al., 2024; Zavichi & Aparicio, 2025). The model explained 64.5% of the variance in perceived socio-economic value ($R^2 = 0.645$) and 63.6% of the variance in NFT purchase intention ($R^2 = 0.636$). These findings are consistent with value-driven consumption frameworks, which suggest that perceived value serves as an immediate antecedent of consumers' behavioral intentions, particularly their intention to purchase products and engage in consumption-related activities (Sheth, Newman & Gross, 1991; Wu et al., 2012).

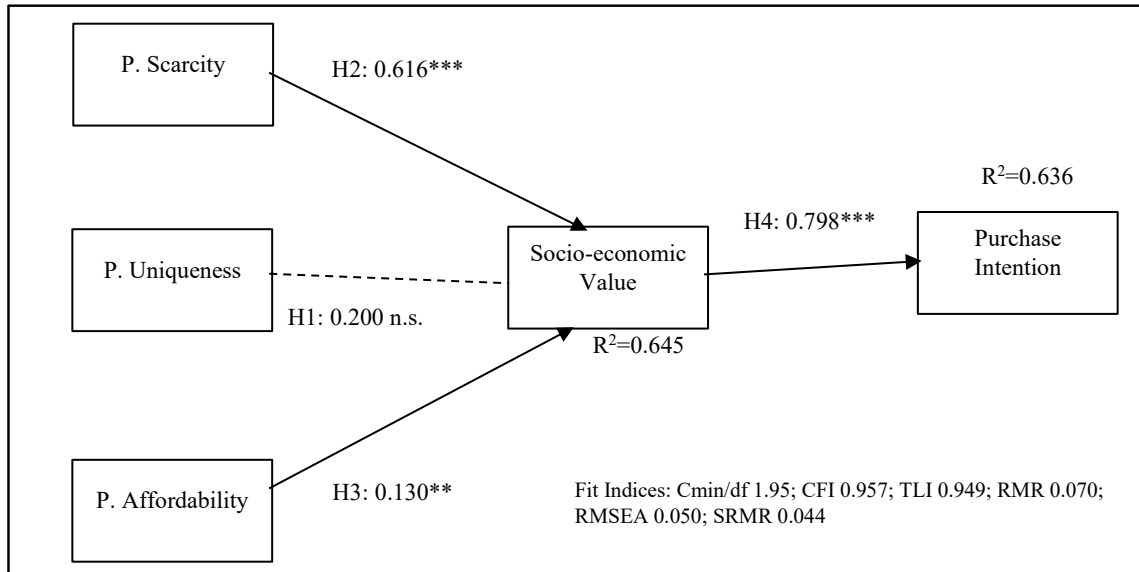


Figure 1 Path coefficients

Source: Generated by authors.

5. DISCUSSION

This research explored how perceived affordability, scarcity, and uniqueness influence the perceived socio-economic value of NFTs and, in turn, how socio-economic value leads to NFT purchasing intent. The overall findings indicate that perceived value in NFT consumption is more closely related to supply-restraining and market condition signals than it is to purely subjective views of exclusivity. This finding is consistent with earlier findings that have found that scarcity-based signals act as strong value drivers in consumption contexts that are symbolic and/or status related (Wu et al., 2012), including new markets for digital assets that manufacture and clearly communicate perceived scarcity through platform feature sets and collection designs (Chang et al., 2024).

The obtained results are consistent with values that are created based solely on the idea of scarcity. Commodity theory (Brock, 1968) states that having limited access to an item makes the person believe that it is more valuable than another item, as it makes them feel they possess something worth having. Scarcity and its relationship to perceived value has been shown to be statistically reliable across a number of studies through

meta-analyses (Lynn, 1991). Additionally, research on the concept of persuasion indicates that scarcity signals act as heuristics that help create urgency and persuasive value in the eyes of consumers due to the implication of limited access to an item (Cialdini, 2009). Furthermore, from an economic-sociological standpoint, NFTs can be viewed as symbolic goods that possess some of their value from the status associated with possession and social representation purposes (Sung, Kwon & Sohn, 2023; Xie & Muralidharan, 2024); therefore, scarcity signals have a strong meaning and importance for those items when they signify that they are exclusive (Aguirre-Rodriguez, 2013).

Table 3 *Hypothesis Testing Summary*

H	Hypothesis	β	p	Result
H1	Perceived Uniqueness → Socio-Economic Value	0.200	> .05	Not Supported
H2	Perceived Scarcity → Socio-Economic Value	0.616	< .001	Supported
H3	Perceived Price Affordability → Socio-Economic Value	0.130	< .01	Supported
H4	Socio-Economic Value → NFT Purchase Intention	0.798	< .001	Supported

Source: Generated by authors.

5.1. Perceived scarcity and perceived uniqueness as driver of socio-economic value

Scarcity as primary value signal: The strongest predictor of socio-economic value is perceived scarcity and is indicative of the fact that participants relied upon scarcity as a key heuristic when combining social distinction with economic expectations to create a total value assessment (Hamilton et al., 2019; Kapferer, 2012). This finding supports the position that perceived scarcity creates desirability and perceived value through increased competition and limited supply, creating further opportunity for consumers to signal status (Aggarwal et al., 2011; Wu et al., 2012). In terms of NFT, scarcity cues can be particularly salient because they are transparent and easily conveyed to consumers, allowing them to reason about resell opportunities and signal status (Chang et al., 2024; Zavichi & Aparicio, 2025).

The insignificant relationship between perceived uniqueness and socio-economic value warrants further discussion. This finding is consistent with several recent studies in the NFT literature. Zavichi and Aparicio (2025) similarly found that perceived uniqueness did not show a statistically significant relationship with perceived value in the context of NFTs, suggesting that this may reflect something specific to how NFT consumers process uniqueness cues. This substantive interpretation should be considered alongside a measurement-level observation: as reported in Section 4.1.1,

several uniqueness items cross-loaded onto the scarcity factor, and the HTMT ratio between the two constructs was relatively high, although below the conventional threshold. This suggests that the null effect of uniqueness may partly reflect the empirical proximity of these two constructs in the NFT context, rather than reflecting solely a substantive absence of consumer sensitivity to uniqueness. This pattern is also consistent with broader observations in NFT collectible markets, where uniqueness is often treated as a baseline expectation rather than a differentiating attribute. A possible explanation is that uniqueness in NFT markets is an almost universal feature of the asset class and therefore cannot serve as a meaningful distinguishing signal like scarcity. In other words, when uniqueness is the norm rather than the exception, consumers may not find it informative and instead rely on supply-related scarcity signals to assess socio-economic value; this finding aligns with the significantly stronger path coefficient observed for perceived scarcity in the present study. This is consistent with research showing that perceived scarcity is a strong positive driver of NFT purchase intentions, while uniqueness operates at a different, perhaps more categorical, level of consumer evaluation.

5.2. Perceived affordability and value formation

Consistent with H3, perceived affordability had a positive and significant effect on socio-economic value. This finding aligns with the theoretical reasoning developed in Section 2.5: rather than functioning purely as a monetary constraint, perceived affordability appears to operate as a favorable evaluative judgment that removes a barrier to purchase without undermining the asset's social or symbolic standing. The literature on luxury goods reveals that high price functions as a signal of quality and status for consumers; a positive correlation between price and utility is observed within this "prestige effect" (Han et al., 2010). A similar mechanism may be at work in the context of NFTs: consumers may interpret high cost not as a sacrifice, but as an indicator that validates the market position and social weight of that asset. Supporting this view, studies conceptualizing NFTs as Veblen goods suggest that the value of these assets is largely fueled by social demand dynamics, and that the high prices of popular collectibles function as a signal reinforcing this social value (Oh et al., 2023). Indeed, empirical studies on NFT pricing show that a high floor price is associated with a higher average transaction price, indicating a higher perceived value of the asset (Fridgen et al., 2025). Therefore, the findings of this research provide empirical support for the view that perceived affordability in NFT valuations contributes to, rather than restricts, socio-economic value. Future studies could focus on examining under what conditions this relationship might turn negative; for example, through variables such as consumer financial risk tolerance or the transparency of transaction fees.

5.3. Socio-economic value as the proximal driver of purchase intention

The strong and significant influence of socioeconomic value on NFT purchase intention supports H4. This finding aligns with the value-based consumption approach, which posits that perceived value is the closest predictor of behavioral intention in both symbolic and experiential consumption contexts (Sheth et al., 1991;

Zeithaml, 1988). Empirical studies in the context of NFTs also reveal that perceived value, along with factors such as facilitating conditions and social influence, is one of the key determinants shaping individuals' NFT purchase intentions (Zavichi & Aparicio, 2025). The strong influence coefficient of socioeconomic value suggests that consumers view NFT acquisition not merely as an instantaneous purchase decision, but as an integrated judgment process in which they consider components such as social positioning, status signals, and economic expectations. Indeed, studies investigating what NFTs mean to consumers show that financial and emotional motivations can coexist and are transformed into purchase intention through value perception (Yilmaz et al., 2023). Research examining NFT purchase intention in the context of the metaverse reveals that symbolic value, along with emotional value, directly and significantly influences purchase intention; this relationship is strengthened through consumer inspiration (Yilmaz et al., 2023). When all these findings are considered together, it can be said that socio-economic value functions not only as an evaluation criterion in the NFT purchasing process, but also as an integrated judgment mechanism at the heart of intention formation.

6. CONCLUSION

This research empirically examines the impact of perceived scarcity, uniqueness and affordability on the socio-economic value of NFTs and the process by which socio-economic value translates into purchase intention. The findings reveal that value perception in NFT consumption is shaped more by supply-constraint and market-related signals than by subjective perceptions of exclusivity. Perceived scarcity emerged as the strongest determinant of socio-economic value; this finding aligns with meta-analytic and theoretical literature arguing that scarcity functions as a value-creating heuristic in symbolic and status-oriented consumption contexts (Cialdini, 2009; Lynn, 1991). In contrast, the lack of a significant impact of perceived uniqueness on socio-economic value suggests that uniqueness, being an almost universal feature in NFT markets, fails to function as a distinctive signal (Fortagne & Lis, 2024; Zavichi & Aparicio, 2025). Consistent with H3, perceived affordability exhibits a positive effect on socio-economic value, which can be explained by the Veblen good nature of NFTs: the high price may be interpreted by consumers not as a sacrifice, but as a prestige signal that reinforces the social and economic position of the asset (Han, Nunes & Drèze, 2010; Oh, Rosen & Zhang, 2023). Finally, the strong influence of socio-economic value on purchase intention confirms the applicability of the value-based consumption approach to digital asset markets (Sheth, Newman & Gross, 1991; Zeithaml, 1988).

6.1. Implications

This research extends the applicability of Consumer Value Theory (CV) to digital and speculative asset markets by applying it to the context of NFTs (Sheth, Newman & Gross, 1991). Modeling perceptions of scarcity, uniqueness and affordability within an integrated socio-economic value structure provides a theoretical contribution to the multidimensional value formation issue, which is still addressed by only a few studies in the NFT literature. The findings of this research align with studies showing that

perceived scarcity is one of the key factors driving consumers to purchase NFTs, and that the sense of exclusivity and urgency surrounding a limited number of digital assets enhances value perception. On the other hand, the failure of perceived uniqueness to have the expected effect serves as an important theoretical caveat regarding the potential divergence of consumer cognitive processes specific to NFT markets from traditional physical product models. Given that NFT pricing can deviate from conventional patterns in situations where the scarcity of social value can override these constraints, future studies must thoroughly examine the contextual conditions under which this divergence occurs (Hofstetter, Fritze & Lamberton, 2024).

For NFT creators and platform designers, the most critical finding of this research is that communicating scarcity signals transparently and credibly directly fuels the perception of value. Given that NFTs allow luxury brands to protect their intellectual property rights and offer verifiable, externalized digital experiences by creating scarcity and increasing perceived value, clearly defining the supply quantity and access conditions in collection design should be considered a priority decision variable in terms of marketing strategy. On the other hand, the ineffectiveness of perceived uniqueness indicates that communication strategies based solely on the emphasis that "each token is unique" will have a limited impact on consumer value judgment; therefore, presenting uniqueness in conjunction with a scarcity narrative may be a more functional approach for designers. In terms of affordability, the fact that a high price functions as a signal that increases socio-economic value suggests that pricing strategies should be structured not only around accessibility but also around the status value of the collection. Finally, the strong effect of socio-economic value on purchase intention suggests that designing platform interfaces, community structures, and communication language in a way that highlights both social distinction and expectations of economic gain can contribute to increasing user intent (Hofstetter et al., 2024; Yilmaz et al., 2023).

Importantly, these recommendations should be considered in light of consumer protection concerns. NFT markets are highly volatile and often characterized by opaque pricing mechanisms and significant information asymmetry between platforms and buyers. Artificially created scarcity, such as arbitrary supply limits without clear artistic or functional justification, may mislead inexperienced consumers and encourage speculative behaviour that can lead to negative financial outcomes.

6.2. Limitations

This study has several important limitations. First, the limited demographic and geographic profile of the sample restricts the generalizability of the findings. Second, the fact that the relationship between perceived uniqueness and socio-economic value did not produce a direct effect in this study necessitates investigation into whether this relationship operates indirectly through perceived scarcity. Future studies could focus on testing this mediating mechanism, as well as comparatively examining the differences in value formation between NFT types (digital art, game assets, collectibles) and consumer profiles. Third, exploratory and confirmatory factor

analyses were performed on the same dataset in this study. While independent samples are the ideal approach for both analyses, the methodology literature indicates that this approach is acceptable when independent sampling is not possible. Given this limitation, the findings should be interpreted with caution; future research is recommended to validate the measurement model with independent samples. Fourth, the fact that the sample consisted of university students and that the participant's reported average income level was below the typical investor profile in the NFT market limits the generalization of the findings to high-income or experienced investor segments. Fifth, Although Harman's single-factor test did not indicate a dominant common factor, this test provides only limited protection against common method bias; because all variables were collected via a single self-reported survey at one point in time, the possibility of common method variance influencing the observed relationships cannot be fully ruled out. Sixth, because screening for NFT awareness occurred prior to survey administration rather than through post-hoc exclusion, the number of individuals who were approached but did not meet the screening criteria was not systematically recorded; consequently, a response rate could not be calculated. This limits the ability to assess potential selection effects in the sampling process. Finally, the cross-sectional design of this study does not permit causal inference; the reported relationships should be interpreted as associations observed within this sample rather than as evidence of causal mechanisms or generalizable market dynamics.

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