Consumer Values in Consumption of Sport Non-Fungible Token Collectibles

by

Jiajia Fan

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Doctoral Committee:

Professor Dae Hee Kwak, Chair
Clinical Assistant Professor Zachary Binkley
Assistant Professor Jan Boehmer
Assistant Professor Jessica Fong

Jiajia Fan

fanjj@umich.edu

ORCID iD: 0000-0001-8080-580X

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Abstract

Sport non-fungible token (NFT) collectibles initially gained popularity for their investment potential. After the decline of the sport NFT market (CryptoSlam, n.d.-a), sport NFT providers shifted their focus from speculative investment to fan engagement, offering spaces that facilitate community interaction and status signaling through scarcity. Sport NFT platforms uniquely position social interaction and social status as complementary features, despite the Optimal Distinctiveness Theory suggesting the psychological needs for assimilation and differentiation are opposing forces (Brewer, 1991). Understanding how these opposing drivers influence consumption is critical for engaging both existing and prospective users. Furthermore, to better understand consumers' decision-making, it is necessary to look beyond social drivers. The Theory of Consumption Values (Sheth et al., 1991a) provides a framework to explore broader value dimensions. Consequently, this dissertation employs three studies using a survey and experiments to investigate these dynamics. Study 1 examines how the opposing social value dimensions impact sport NFT consumption in a context where social interaction and social status were provided in a complementary way. Study 1 further proposes a sense of belonging as a mediator between social interaction and purchase intention and a sense of distinctiveness as a mediator between social status and purchase intention. Study 2 extends study 1 by examining whether transaction experience (buyers vs. non-buyers) moderates the impacts of belonging and distinctiveness on purchase intention. Study 3 proposes a structural model to incorporate wider consumption values, moderated by transaction experience. Results of this dissertation show that fun, expressive value, and monetary value drive purchase intention. Closely looking at the social

value dimensions, results reveal dual mechanisms of social interaction and social status through mediators, belonging and distinctiveness, instead of direct effects. Moreover, results of these studies show the non-difference in the underlying mechanisms of social values (distinctiveness and belonging) and consumption values between existing and prospective consumers. Through these studies, this dissertation contributes to the sport NFT literature by (1) empirically demonstrating how social interaction and social status influence sport NFT consumption through distinct mechanisms, (2) advancing our understanding of transaction experience in the impacts of consumer values on purchase intention, and (3) offering and validating a conceptual model that addresses current trends in expanding fan experience on sport NFT platforms. Additionally, this dissertation offers implications to sport NFT providers on designing and marketing sport NFT collectibles through consumption values, especially the underlying mechanisms of social values, for existing and prospective consumers.

Chapter 1 Introduction

Sport non-fungible token (NFT) collectibles are digital collectibles featuring sport content, using NFTs to represent ownership. Unlike fungible tokens, such as cryptocurrencies, NFTs are unique digital identifiers which store their data on blockchain (Wilson et al., 2022). Blockchain is a distributed ledger (Tripathi et al., 2023; Wilson et al., 2022), which includes consensus mechanisms to increase security and decrease data modification. Data are verified by distributed individuals on blockchain instead of one entity (Wilson et al., 2022). The distributed characteristic also decreases the likelihood of data modification unless an entity has the majority power of blockchain (Politou et al., 2021).

The advantages of NFTs and blockchain enable sport NFT providers to offer digital collectibles that can verify ownership. For example, Panini America NFTs feature athletes' photos on their blockchain, using Hyperledger Sawtooth (Panini America NFT, n.d.), which is a blockchain framework (GeeksforGeeks, 2025). Besides, NBA Top Shot Moments feature game highlights from the National Basketball Association (NBA), using Flow blockchain (NBA Top Shot, n.d.). In February 2021, the market experienced a speculative bubble, with the NBA Top Shot's sales reached $226 million in a month (CryptoSlam, n.d.-a). A Moment featuring a dunk of LeBron James was sold at $208,000, which was obtained from a pack that cost $230 (a mix of Moments) (Beer, 2021). However, the bubble burst shortly, leading consumers to leave the NBA Top Shot since March 2021. Until July 2021, 240,000 consumers left the platform, representing about 60% of its total consumers (Sepkowitz, 2025). The volatility forced sport NFT providers to

pivot their focus from selling speculative assets to building sustainable fan engagement. For example, the NBA Top Shot offers fantasy sports, where consumers create lineups by using their purchased Moments. It also provides historical collectibles, such as game highlights in the 1980s.

The market downturn did not deter sport leagues away from the sport NFT market but allowed them to emphasize fan experiences beyond financial investment. U.S. major sport leagues, such as the National Hockey League (NHL), National Football League (NFL), Major League Baseball (MLB), and Major League Soccer (MLS) have been adding fan experiences through their NFT collectibles. For example, the NHL provides a Breakaway community, creating a space for global consumers to discuss hockey games and get rewards, such as free Breakaway collectibles (Bresaola, 2024). Likewise, the MLS Quest rewards consumers who collect four specific Quests, giving a chance to win team jerseys, game tickets, free Quests, and travel vouchers to MLS games (MLS Quest, 2025a).

Among these engagement experiences, sport NFT offers a unique opportunity to fit in while standing out, which are social interaction and social status experiences. For instance, sport NFT users can interact with others through communities and one-on-one chats. Besides the NBA Top Shot community, where all consumers discuss, team communities facilitate team-specific discussions and rewards. Social interaction opportunities go beyond digital platforms. For example, the Boston Celtics' community offers tickets to Celtics' games as rewards. The NBA Top Shot also organizes community events like watch parties, enabling on and offline interactions.

Along with social interaction experiences, sport NFT collectibles allow users to experience social status. For instance, the NBA Top Shot provides a scarcity signal by using a clear tier system, which is determined by the number of supply (e.g., a Legendary tier with 75

supplied vs. a Common tier with 3,305 supplied). The purchase of Moments can be recognized by others through Activity Feed, which is similar to feeds on social media. Furthermore, consumers can compete on team leaderboards, where consumers' positions, usernames, and the total number of consumers are listed. For example, high positions (e.g., top 10) on the Washington Wizards' leaderboard can be seen as high status levels.

Recent literature identifies a tension between social interaction and scarcity, suggesting that pursuing distinctiveness (via scarcity) inherently sacrifices social belonging (via interaction) in the profile picture NFT context (Hofstetter et al., 2024). Contrary to this view, I argue that consumers can enjoy robust community engagement while simultaneously pursuing scarce collectibles in the sport NFT context. For instance, consumers with high scarcity Moments can interact with others who have low scarcity Moments in the NBA Top Shot community. The Optimal Distinctiveness Theory (ODT, Brewer, 1991) further suggests that individuals strive for an optimal balance between the desire to be part of a group and the desire to be different from others.

Considering that sport NFT provides both social interaction and social status experiences, investigating whether belonging and distinctiveness differ between existing and prospective consumers would contribute to the sport NFT literature by addressing inconsistent results in the literature (Park & Lee, 2025; Yilmaz et al., 2023) and offer practical insights into segmenting consumers as the marketing literature (Kim & Gupta, 2009) that extends the Mental Accounting Theory (MAT; Thaler, 1985), found that potential consumers emphasize on perceived risk whereas repeated consumer focus on perceived price in the online purchase context. Moreover, sport NFT providers have been facing the challenges of consumer retention and acquisition since the market decline. For example, Dapper Labs, which is the provider of the NBA Top Shot, lost

about 60% of Top Shot total consumers (about 400,000) from March to July, 2021 (Sepkowitz, 2025). Also, as the provider of the NFL All Day, Dapper Labs found challenging to attract new consumers as 84% of All Day users in the first month of their beta testing (December 2021) are Top Shot users (Sepkowitz, 2025). Similarly, Sweet, which is the provider of the NHL Breakaway, has also been noticing the difficulty to turn the current hockey fans into Breakaway consumers (Bresaola, 2024).

Besides testing belonging and distinctiveness between two consumer segments, I argue that examining various fan experiences between existing and potential consumers may contribute to the NFT and the sport NFT literature by extending the understanding of transaction experience in consumption values (e.g., expressive value and nostalgia). The investigation may offer further implications of segmenting two consumer groups, which may address the challenges of consumer retention and acquisition. To achieve this aim, sport NFT providers kept introducing new experiences, such as real-time activities, fantasy sports, and historical collectibles. Among them, the providers are increasingly leveraging nostalgia to engage fans. For example, the NBA Top Shot provides Moments that capture iconic players in historical games, such as Larry Bird in the 1983-1984 championship series. They further provide historic Fast Break, which is a fantasy sports experience that uses Moments featuring former players to build lineups.

Therefore, this dissertation uses three studies to provide empirical insights on how various fan experiences, especially social interaction and social status experiences, impact purchase intention of sport NFT collectibles and how they are different between existing and potential consumers. This dissertation (1) investigates the effects of social interaction and social status on purchase intention in a context where they are complementary and identifies a sense of belonging and a sense of distinctiveness as the underlying mechanisms, (2) explores the potential

moderating role of transaction experience (buyers vs. non-buyers of sport NFT collectibles), and (3) provides a conceptual model of consumer values by incorporating nostalgia (a newly proposed value in this dissertation). This dissertation will provide insights into designing and marketing features and experiences of sport NFT collectibles. Furthermore, this dissertation will help sport NFT providers segment their consumers, offering insights into engaging existing consumers and attracting prospective consumers.

1.1 Opposing Dimensions of Social Value

I posit that social interaction and social status are opposing dimensions of social value. I define social interaction as opportunities to interact with others in a social group. I define social interaction as opportunities instead of actual social experiences to reflect the marketing practices on sport NFT collectibles. For instance, the NBA Top Shot allows consumers to unlock team-specific communities by purchasing Moments. I operationalized social interaction as an opportunity to unlock a team community on the NBA Top Shot to differentiate perceived belonging. A sense of belonging to a social group refers to a feeling of deep connection with the group (Allen et al., 2021). I define social status as the value of purchasing scarce sport NFT collectibles. I operationalized social status as purchasing a Moment with limited supply to distinguish perceived distinctiveness. A sense of distinctiveness is defined as a feeling that the self is distinct from others. ODT suggests individuals navigate in a social group to balance their needs for differentiation and affiliation (Brewer, 1991). Besides, ODT suggests that the need for belonging and the need for distinctiveness are opposing forces (Brewer, 1991). The sport NFT context where it uniquely activates both forces; consumers experience belonging and interaction in NFT communities (e.g., Discord communities, one-on-one chats), while simultaneously pursuing distinctiveness and social status by collecting scarce NFT assets. Similar to other sport

contexts, such as game attendance when fans wear team jerseys but painting their faces to distinct from other fans, sport NFT consumers chase scarcity to differentiate themselves from others and seek community interaction to obtain belonging. Unlike other sport contexts where consumers have either high differentiation or high affiliation with their group (or in between), the sport NFT context provides an opportunity to experience high social status and high social interaction through purchasing scarce collectibles while interacting with others in communities. The NBA Top Shot facilitates this distinctiveness through a five-level scarcity hierarchy, ranging from 'Common' to 'Ultimate'. Most Moments with an Ultimate tier is the only one on the NBA Top Shot (besides, some Ultimate Moments have 10 supplied), whereas Common tier Moments have edition sizes ranging from 4,000 to 40,000. Beyond tiers, platforms utilize gamification to signal status, such as team leaderboards where a user's collection ranking is publicly visible to all users.

The social interaction and social status experiences drew researchers' attention as researchers found that social interaction and social status (including scarcity) are motives for NFT consumption (Yilmaz et al., 2023; Zalan & Toufaily, 2024) and sport NFT consumption (Haried & Murray, 2023; Kang et al., 2025; Park & Lee, 2025). Also investigating social interaction and scarcity, Hofstetter et al. (2024) examined a context where pursuing scarcity sacrifices social interaction opportunities. Specifically, consumers need to make a trade-off between interacting in a large community (purchasing a low scarcity collectible) and a small community (purchasing a highly scarce collectible). I argue that sport NFTs operate differently. In this context, community spaces are often integrated rather than gated that users holding Common Moments interacts in the same digital space as users holding Legendary Moments. Therefore, consumers can pursue high distinctiveness (scarcity) without sacrificing belonging.

Investigating the sport NFT context is important as it provides an opportunity to examine scarcity and social interaction in a co-exist context beyond the tradeoff context.

Furthermore, the underlying mechanisms of social interaction and social status need further exploration. I propose that social interaction influences purchase intention via a sense of belonging (Hirsch & Clark, 2019). In contrast, social status may drive consumption through a sense of distinctiveness, as a relative position fosters distinctiveness (Vignoles et al., 2000). Identifying these mediators will clarify how providers can design mechanisms that satisfy both the needs to belong and to stand out.

1.2 Transaction Experience

Beyond identifying mediators, examining the moderating effect of transaction experience is theoretically essential to determine the boundary conditions of social value effects. Transaction experience in my dissertation refers to sport NFT purchase experience, specific to the NBA Top Shot context. Buyers are those who have purchased Moments before. Non-buyers are those who did not purchase Moments before but understand or are interested in Moments (or both). Direct product experience may alter how individuals process information and perceive values. Some features that signal status to insiders may be meaningless to outsiders. Consequently, distinguishing between these groups contributes to the literature by clarifying whether the psychological needs for belonging and distinctiveness are universal or if they are contingent upon purchase experience.

Buyers of sport NFT collectibles may have experienced community and scarcity of NFTs. For instance, NBA Top Shot buyers may experience the NBA Top Shot community, team communities, and the tier system. Non-buyers of sport NFT collectibles may experience social interaction by joining a general community without a purchase requirement. However, non-

buyers may not experience social status through tiers. In the sport NFT context, Moments are ranked on tiers and consumers are ranked on leaderboards, where high positions and scarcity are salient.

Resolving this distinction is particularly urgent given the contradictory findings in recent scholarship. Researchers have investigated the differences in social interaction and scarcity between buyers and non-buyers in NFT with inconsistent results (Park & Lee, 2025; Yilmaz et al., 2023). Yilmaz et al. (2023) found that buyers and non-buyers are similar in social interaction and scarcity motives because they report similar words (community and uniqueness) for the two motives. Whereas Park and Lee (2025) noticed that buyers instead of non-buyers are motivated by social interaction and scarcity. The different results may be due to the differences of participants. Non-buyers in Yilmaz et al. (2023) are those who are familiar with NFTs. In Park and Lee (2025), most non-buyers were either not interested in NFTs in general or did not understand their sport NFT context. The limited understanding on social value effects between buyers and non-buyers motivates researchers to examine the differences between them, which helps sport NFT providers customize social value experiences to buyers and non-buyers.

1.3 Consumer Values in Sport NFT Consumption

Besides the differences in belonging and distinctiveness, testing various consumer values between existing and prospective consumers may provide further implications. The Theory of Consumption Values (TCV; Sheth et al., 1991a) suggests that consumption decision is influenced by multiple consumption values, such as social and emotional values. In the sport NFT context, besides the above-mentioned social values, another key value is the emotional value through collection. Taking the NBA Top Shot as an example, with about 20 seconds length, each Moment features a game highlight of a play, such as a dunk, a jump shot, or a steal. The Moment also

includes replays from different angles, such as from the top, side, or under the basketball hoop. Besides visualization, auditory experiences are provided through a piece of music or live sounds during the games. For instance, a slam dunk Moment features LeBron James was replayed from the back and front angles with sounds from the spectators and players. Visualization and auditory experiences may bring atmosphere of NBA games, such as excitement and passion of a slam dunk, which provides consumers with emotional value.

Moreover, NBA Top Shot historical Moments include game highlights from iconic players, such as Moments featuring Larry Bird, who won the most valuable player of the 1983-1984 NBA Finals. Moreover, consumers can use their historical Moments to form lineups for simulated NBA games. During the NBA off season, for each simulated game day, all 30 teams play for 36 minutes through computer simulations to get rewards, such as free Moments. Historical Moments and historic Fast Break may remind consumers of their watching or game attendance experience. For instance, Larry Bird's Moments featuring NBA finals may provide nostalgic feelings to those who spent time with their family and friends during the games.

Expressive value is also a key value as sport NFT collectibles create various opportunities to help consumers demonstrate team identification, such as Activity Feed, Showcase, and consumers' profile pages on the NBA Top Shot. Activity Feed displays real-time purchase activities from all consumers. Showcase allows consumers to create an album of their Moments (10 maximum in the community showcase and five maximum in their profile page showcase) with music. Similar to Showcase, consumers can put Moments (three maximum) at the top of their profile pages (called pinned Moments), which can be recognized by all visitors. Since Activity Feed, Showcase, and pinned Moments are visible by other consumers on the NBA Top

Shot, these experiences provide opportunities to express consumers' identification to their favorite teams.

Various consumer values in practices motivated researchers to investigate values in NFT consumption (e.g., Yang et al., 2024; Yilmaz et al., 2023; Zalan & Toufaily, 2024) and sport NFT consumption (e.g., Jiang & Byon, 2026; Kang et al., 2025). For example, social, emotional, functional (Yilmaz et al., 2023), and expressive values (Yang et al., 2024) have been identified as consumer values for NFT consumption. Similarly, social and emotional values have been found as motives for sport NFT consumption (e.g., Haried & Murray, 2023; Kang et al., 2025). However, as an evolving product, sport NFT providers kept introducing new experiences, such as historical collectibles, motivating scholars to develop a consumer value model by incorporating nostalgia. Jiang and Byon (2026) mentioned that sport NFTs may introduce new features and change the existing features, which may change consumption behaviors. Thus, this dissertation proposes a consumer value model to capture current fan experiences in the sport NFT context. By using TCV, this dissertation conceptualizes a reflective second-order consumer value model, including social, emotional, and functional values. Specifically, social value reflects on social interaction, social status, and expressive value, emotional value reflects on fun and nostalgia, and functional value reflects on ownership and monetary value. This dissertation further tests them empirically in the sport NFT context and reveals the moderating effect of transaction experience. By testing the proposed consumer value model and the moderator, this dissertation contributes to the sport NFT literature by advancing the understandings of nostalgia and transaction experience in sport NFT consumption. Insights can help sport NFT providers design and market fan engagement experiences that provide consumer values based on transaction experience.

1.4 Summary of the Dissertation

In summary, this dissertation aims to investigate multiple consumer values with a focus on social values (study 1 and 2) and examine the differences between buyers and non-buyers (study 2 and 3). The University of Michigan Institutional Review Board Health Sciences and Behavioral Sciences (IRB-HSBS) reviewed study 1 and determined to exempt it from ongoing review (HUM00272052). Since study 2 uses similar procedures as study 1, which does not change the status of exemption, an IRB amendment is not necessary. The IRB-HSBS reviewed study 3 and determined to exempt it from ongoing review (HUM00289137). Study 1 uses ODT (Brewer, 1991) and a 2 x 2 between-subjects design to examine the effects of social interaction and social status on purchase intention and the underlying mechanisms. Study 2 extends study 1 by testing whether the effects of belonging and distinctiveness on purchase intention differ between buyers and non-buyers. With a survey, study 3 uses TCV (Sheth et al., 1991a) and a second-order model to investigate social, emotional, and functional values on purchase intention and uses MAT (Thaler, 1985) to examine the moderating effect of transaction experience. Figure 1.1-1.3 below display the conceptual models of three studies (Overview of Dissertation is summarized in Table 1.1 and Study Summary is presented in Appendix A).

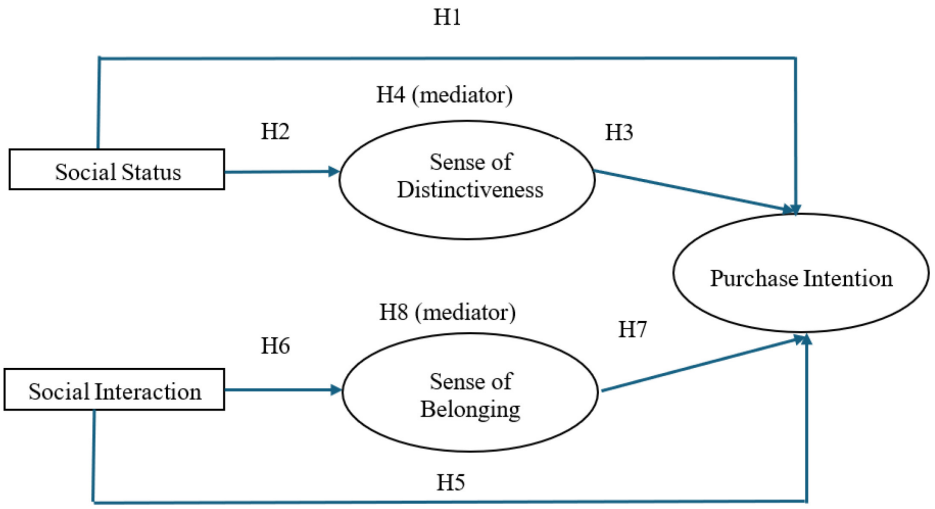
1.4.1 Study 1 - Dual Mechanisms of Social Value in Consumption of Sport Non-Fungible Token Collectibles: Distinctiveness and Belonging as Mediators

Using ODT (Brewer, 1991) to separate the opposing social value dimensions, social interaction and social status, study 1 investigates them in the sport NFT context, where they are complementary. Study 1 further demonstrates distinctiveness and belonging as the underlying mechanisms. Study 1 uses a 2 (social status: high vs. low) x 2 (social interaction: high vs. low) between-subjects design to examine the effects of social status and social interaction on purchase intention; the mediating effect of a sense of distinctiveness between social status and purchase

intention and the mediating effect of a sense of belonging between social interaction and purchase intention. Study 1 aims to provide an understanding of the opposing social value dimensions in the sport NFT context and identify belonging and distinctiveness as underlying mechanisms.

Figure 1.1

Conceptual model of study 1

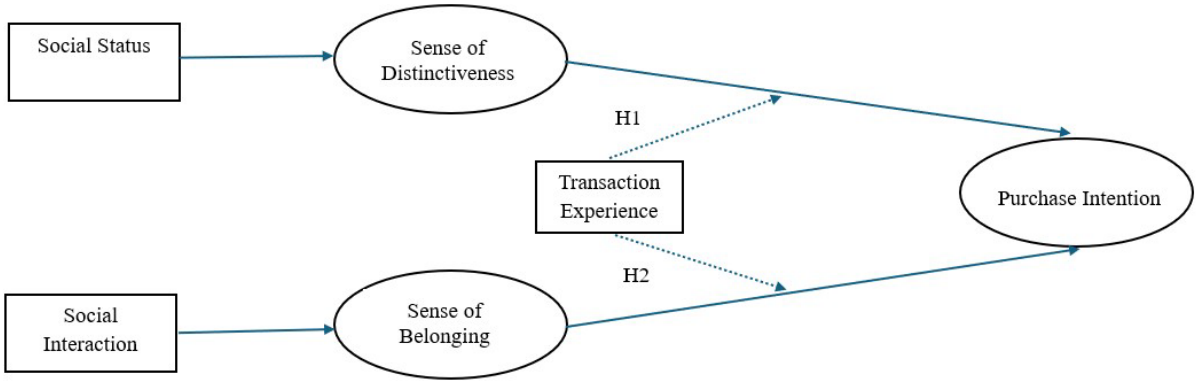


1.4.2 Study 2 - The Moderating Effect of Transaction Experience in the Social Value Effects of Sport Non-Fungible Token Consumption

Study 2 extends study 1, aiming to reveal transaction experience as a moderator in the social value effects, including the positive effects of belonging and distinctiveness. By using a 2 (social interaction: high vs. low) x 2 (social status: high vs. low) between-subjects design, study 2 examines whether the positive impacts of sense of belonging and distinctiveness on purchase intention differs between buyers and non-buyers. Study 2 also aims to offer practical implications on designing and marketing features and experiences that foster belonging and distinctiveness based on transaction experience.

Figure 1.2

Conceptual model of study 2



Note. Dash lines represent moderating effects.

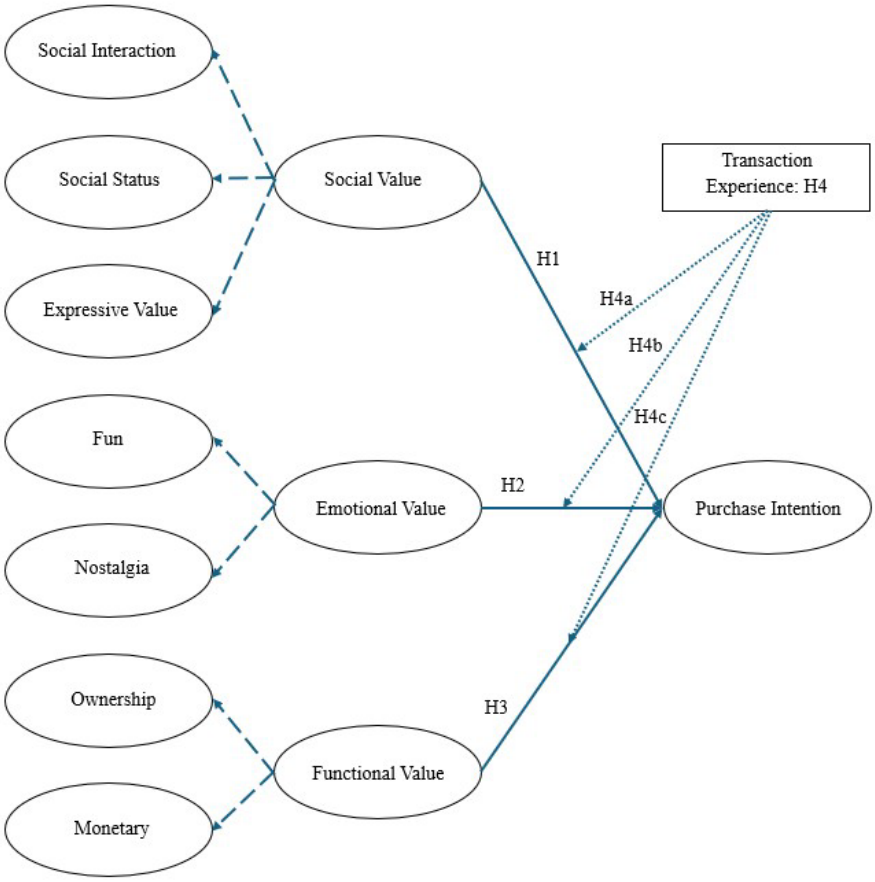
1.4.3 Study 3 - A New Lens of Consumer Values in Sport Non-Fungible Token Consumption and the Moderating Effect of Transaction Experience

Study 3 aims to extend the sport NFT literature by proposing a structural model that incorporates various consumption values. Utilizing TCV (Sheth et al., 1991a) as the theoretical model, study 3 conceptualizes seven first-order reflective consumer value constructs into three second-order reflective constructs—social (social interaction, social status, and expressive value), emotional (fun and nostalgia), and functional (ownership and monetary value) values, as they are hypothesized to predict purchase intention (first-order reflective construct) of sport NFT collectibles. Study 3 further tests whether the second-order factor model performs better than the first-order factor model, and the moderating effect of transaction experience between the relationships of consumer values and purchase intention by using MAT (Thaler, 1985). Additionally, considering digital sport NFT collectibles can bring back highlights from the past, nostalgia is incorporated into the proposed model under the emotional value. Study 3 also aims

to provide practical implications to sport NFT providers on designing and marketing sport NFT collectibles based on transaction experience.

Figure 1.3

Conceptual model of study 3



Note. Dash lines represent the moderating effect and broken lines represent the reflective relationships between the first- and second-order constructs.

Table 1.1

Overview of dissertation

Chapter	Title	Aim	Methodology
1	Introduction	Provide the research context, motivations, summaries of three studies, and contributions of the dissertation.	None
2	Study 1: Dual Mechanisms of Social Value in Consumption of Sport Non-Fungible Token Collectibles: Distinctiveness and Belonging as Mediators	Investigate the effects of social interaction and social status on purchase intention of sport NFT collectibles and reveal belonging and distinctiveness as mediators.	2 x 2 between-subjects design
3	Study 2: The Moderating Effect of Transaction Experience in the Social Value Effects of Sport Non-Fungible Token Consumption	Extend study 1 by testing the moderating effect of transaction experience.	2 x 2 between-subjects design
4	Study 3: A New Lens of Consumer Values in Sport Non-Fungible Token Consumption and the Moderating Effect of Transaction Experience	Examine the effects of consumer values on purchase intention and test the moderating effect of transaction experience.	Survey
5	Conclusion	Discuss major findings, contributions, limitations, and future directions.	None

1.5 Contribution of the Dissertation

This dissertation contributes to the sport NFT literature by proposing and empirically testing a consumption value model, with a close investigation on social value dimensions, and examining the moderating effect of transaction experience. By using a survey and experiments, this dissertation advances the understanding of consumption values to a specific sport NFT context. When taking a close look into social value dimensions, this dissertation contributes to

the sport NFT literature by identifying the dual mechanisms (social interaction and social status) of social values and their underlying mechanisms. Furthermore, this dissertation extends current understanding on the moderating effect of transaction experience to additional consumption values (expressive value and nostalgia) and solves the inconsistent results in social interaction and social status between two segments.

Besides theoretical contributions, this dissertation provides practical insights to sport NFT providers. First, this dissertation provides implications on designing and marketing sport NFT collectibles that facilitate consumption values and foster belonging and distinctiveness for social values. Second, this dissertation offers implications to sport NFT providers for designing and marketing their products to existing and prospective consumers.

1.6 Research Funding for Data Collection

This dissertation is supported by the Rackham Graduate Student Research Grant. The Grant was used to compensate research participants from Prolific.

Chapter 2 Dual Mechanisms of Social Value in Consumption of Sport Non-Fungible Token Collectibles: Distinctiveness and Belonging as Mediators (Study 1)

2.1 Introduction

Study 1 investigates the impact of opposing social value dimensions—social interaction and social status on sport NFT consumption. Sport NFT providers offer various social interaction and social status experiences. For example, the NBA Top Shot offers team communities, which can be accessed by completing at least a set of collection on a team's checklist. Specifically, the Unique S1, as one of the nine sets on the Boston Celtics' checklist, consists of six NBA Players (Jaylen Brown, Jayson Tatum, Enes Kanter, Daniel Theis, Kemba Walker, and Marcus Smart), requiring consumers to collect one Moment for each player to join its community. As such, consumption of specific team Moments is tied to unlocking social interaction opportunities with other team followers. Beyond social interaction, it is common that sport NFT providers offer salient social status experiences. For instance, leaderboards and ranking directly signal consumer's (collection) status among other users and each consumer can display their purchase activities in the Activity Feed. Therefore, sport NFT platforms offer consumers the opportunity to fit in by joining a community and stand out by climbing the leaderboard or displaying their rare purchase to others.

The experiences of social interaction and social status drew researchers' attention in NFT consumption (Hofstetter et al., 2024; Yang et al., 2024; Yilmaz et al., 2023; Zalan & Toufaily, 2024) and sport NFT consumption (Haried & Murray, 2023; Kang et al., 2025; Park & Lee,

2025). The NFT and sport NFT literature identifies social interaction (e.g., Yilmaz et al., 2023; Kang et al., 2025) and social status (including scarcity) (e.g., Park & Lee, 2025; Zalan & Toufaily, 2024) as consumer values. In the NFT literature, Hofstetter et al. (2024) and Yang et al. (2024) further tested the effects of social interaction and scarcity on NFT consumption. Conceptualized social value as social interaction opportunities (e.g., communities with many consumers) and social approval (e.g., likes from others), Hofstetter et al. (2024) investigated a context where consumers need to make a trade-off between social value and scarcity. However, in the sport NFT context, consumers can interact with others without sacrificing scarcity. Instead of the sport context, Yang et al. (2024) examined art NFTs in general, such as profile pictures, music, and photographs. Some of these products provide scarcity information (e.g., rarity metrics or number of supply) while others do not. The sport NFT context, which has a clear scarcity signal by using a tier system, needs to be further tested. Moreover, the underlying mechanisms of social interaction and social status remain unknown and may be different between social interaction and social status. Social interaction may motivate consumption through a sense of belonging, whereas social status may be through a sense of distinctiveness.

Study 1 contributes to ODT by identifying the source of belonging and distinctiveness besides product design. Study 1 further explains how social interaction and social status drive purchase intention of sport NFT collectibles, extending the understanding of social value effects on purchase intention. Study 1 challenges Hofstetter et al.'s (2024) assumption of a tradeoff between social interaction and status-seeking, demonstrating that consumers can simultaneously pursue 'fitting in' and 'standing out' on sport NFT platforms. Beyond theoretical contributions, results of study 1 offer practical implications for sport NFT providers on designing and

marketing their collectibles. They are expected to be aware of dual mechanisms of social values and offer experiences that foster belonging and distinctiveness.

2.2 Social Value and Theoretical Model

Most NFT studies conceptualized social value as social interaction (e.g., Brahmstaedt, 2025; Kang et al., 2025; Yilmaz et al., 2023). For example, social value comes from having access to and joining NFT communities (Yilmaz et al., 2023). Other studies specified social interaction as a sense of belonging (Park & Lee, 2025; Zalan & Toufaily, 2024). For instance, Zalan and Toufaily (2024) identified community belonging as a motive for NFT consumption. Similarly, Park and Lee (2025) revealed a sense of belonging (including social interaction) as a motive for sport NFT consumption. Unlike most NFT studies, Xie et al. (2024) termed social value as expressive value, and defined it as value to express social status, personality and brand identification in the brand NFT context.

Among the definitions of social value, some studies conceptualize it as social interaction and social group influence (Hofstetter et al., 2024; Yang et al., 2024). Specifically, Hofstetter et al. (2024) conceptualized it as social interaction opportunity and social approval. Similarly, Yang et al. (2024) conceptualized it as a sense of community and subjective norms. These studies focused on fitting in, where consumers seek interactions and alignment with their social groups. Besides fitting in, I argue that social status (standing out) is another dimension of social value in the sport NFT context. Social status, coming from owning scarce collectibles, may provide social recognition to the owners because scarcity signals are salient to others (e.g., a tier system and leaderboards). Sheth et al. (1991b) mentioned that parts of social value in TCV come from individuals' needs for love and belonging (Maslow, 1943), acceptance, recognition, and influence (Hanna, 1978), and value expression (Katz, 1960). I focus on social interaction and social status

to investigate the seemly opposing forces that were revealed in the NFT literature. Hofstetter et al. (2024) found that scarcity threatens social value because scarcity and social value have a negative interaction effect on NFT prices and willingness to pay. I argue that social status complements social interaction as a social driver in sport NFT consumption. In the sport context, social opportunities depends on numbers of collections (e.g., more purchase unlock more team communities) instead of numbers of supply of collectibles.

To investigate the underlying mechanisms of social values, I used ODT (Brewer, 1991) as the theoretical model to propose a sense of distinctiveness and a sense of belonging as mediators of social status and social interaction, respectively. The main concept of ODT is that individuals use group inclusion to balance their needs for affiliation and differentiation to achieve the optimal level of distinctiveness (Brewer 1991; Brewer & Roccas, 2001). Besides, ODT suggests that affiliation and differentiation are opposing forces. I used the concept of opposing forces from ODT as a theoretical model to propose a model that demonstrates these underlying mechanisms, belonging (similar to affiliation) and distinctiveness (similar to differentiation). I proposed that belonging and distinctiveness do not inherently conflict within sport NFT ecosystem but rather concurrently influence consumer purchase through parallel psychological pathways. Therefore, this study adopts ODT to position the needs for belonging and distinctiveness as distinct explanatory mechanisms that clarify how social interaction and status-signaling drive purchase intentions.

2.3 Hypotheses Development

The NFT literature reveals that social status motivates NFT consumption (e.g., Kang et al., 2025; Zalan & Toufaily, 2024). For instance, Zalan and Toufaily (2024) identified social status as a consumer value that drives NFT consumption. Similarly, Kang et al. (2025) found that

symbolic value comes from scarce sport NFT collectibles motivates sport NFT consumption. However, Yang et al. (2024) found that uniqueness (similar to scarcity) does not impact purchase intention, which may be attributed to investigating art NFTs in general. Furthermore, Park and Lee (2025) identified transaction experience as a boundary condition as they found that scarcity motivates buyers instead of non-buyers. In the sport NFT context, high social status from purchasing scarce sport NFT collectibles (e.g., 75 supplied compared to 3,305) may help consumers distinct from others because high scarcity and exclusive tiers are status signals, indicating that the owners are one of few possessing the collectibles. Based on the NFT literature and the sport NFT context, I hypothesize that:

Hypothesis 1: Social status will be positively associated with purchase intention of sport NFT collectibles.

I postulate that social status will increase a sense of distinctiveness. The Distinctiveness Principle, which extends ODT (Brewer, 1991), identifies position as one of sources of distinctiveness (Vignoles et al., 2000, 2002). Position refers to an individual's place in social relationships, such as social status, roles, and friendships (Vignoles et al., 2000). Empirical research has shown that position leads to distinctiveness (e.g., Becker et al., 2012; Vignoles et al., 2002). Thus, NFT collectibles with high social status potential would serve as a marker of high positions among others. For example, different tiers that are based on the number of supply (NBA Top Shot, n.d.) can serve as direct cues that signal different social status levels. The social status that comes from owning more exclusive sport NFT collectibles with limited supply may enhance a sense of distinctiveness. Therefore, I hypothesize that:

Hypothesis 2: Social status will be positively associated with a sense of distinctiveness.

Empirical evidence generally suggests a positive effect of distinctiveness on purchase intention (e.g., Wu & Lee, 2016; Wu et al., 2012). For example, Wu and Lee (2016) found that perceived uniqueness enhances consumers' perceived product value, which further stimulates purchase intention. The sport literature also shows that fan distinctiveness enhances the intended frequency of sport apparel consumption (Lee, 2018). However, studies on scarcity found that individuals' need for uniqueness serves as a boundary condition (e.g., Lynn & Harris, 1997; Roy & Sharma, 2015) that those with high need for uniqueness prefer scarce products due to limited supply. In the NFT literature, studies found that scarcity motivates sport NFT consumption (e.g., Haried & Murray, 2023) and NFT consumption (e.g., Yilmaz et al., 2023; Zalan & Toufaily, 2024). The motivation is due to the scarcity of NFT collectibles that make consumers become one of the few to own these NFT collectibles. For example, the one-of-one Moment featuring LeBron James with an Ultimate tier makes the owner as the only one on the NBA Top Shot. Building on the literature and the sport NFT context, I propose that a sense of distinctiveness will likely enhance purchase intention of sport NFT collectibles.

Hypothesis 3: A sense of distinctiveness will be positively associated with purchase intention of sport NFT collectibles.

Based on the above discussion, status-signaling features such as limited supply and tier levels should be psychologically processed by consumers to foster a sense of distinctiveness before influencing their behavioral intentions. A consumer's high positioning within a platform or their ownership of scarce digital assets serves as a direct source of individual differentiation, which subsequently drives consumption motivation. Therefore, I hypothesize that a sense of distinctiveness explains how social status motivates purchase intentions of sport NFT collectibles:

Hypothesis 4: A sense of distinctiveness will mediate the relationship between social status and purchase intention of sport NFT collectibles.

Most NFT studies found that social interaction motivates NFT consumption (e.g., Haried & Murray, 2023; Jiang & Byon, 2026; Kang et al., 2025; Yang et al., 2024; Yilmaz et al., 2023; Zalan & Toufaily, 2024). For example, Yilmaz et al. (2023) identified that interacting in NFT communities motivates consumers to purchase NFT collectibles. Kang et al. (2025) also found that social interaction motivates sport NFT consumption. However, when considering consumer segmentation, Park and Lee (2025) found that social interaction motivates sport NFT buyers instead of non-buyers. In the sport NFT context, interacting with like-minded others may motivate consumption because consumers can discuss their favorite players and games with others who support the same teams and players. To obtain more interaction opportunities, consumers are more likely to purchase sport NFT collectibles to unlock team communities or create more topics. Therefore, I hypothesize that:

Hypothesis 5: Social interaction will be positively associated with purchase intention of sport NFT collectibles.

Being group members is one of the paths that leads to a sense of belonging because individuals interact with each other in a group through shared activities (Hirsch & Clark, 2019). In the sport NFT context, providers are offering digital sub-communities (e.g., NBA Top Shot team communities) where consumers can interact with other team fans. The literature suggests that sub-communities focus on specific topics, filtering out irrelevant discussions, and provide better responses than parenting communities (where sub-communities come from) (Hwang & Foote, 2021). In sport NFT collectibles, the opportunity to connect with others in a sub-community with focused topics and discussions may bring a higher sense of belonging. For

example, a consumer who follows the Boston Celtics might experience a heightened sense of belonging if they can join a sub-community and discuss digital moments featuring their favorite players. On platforms like the NBA Top Shot, acquiring specific collections of Moments serves to unlock a user's access to these exclusive team communities, directly tying asset consumption to social interaction opportunities. Consequently, the social interaction utility embedded within these digital collectibles significantly enhances consumers' overall sense of community belonging. Therefore, I hypothesize that:

Hypothesis 6: Social interaction will be positively associated with a sense of belonging.

The NFT literature reveals that a sense of belonging motivates NFT consumption (e.g., Yang et al., 2024; Zalan & Toufaily, 2024). Yang et al. (2024) found a positive impact of sense of community on consumption of art NFT collectibles. Zalan and Toufaily (2024) also identified community belonging as a consumer value that motivates NFT purchase. Consumers who experience a sense of belonging from sport NFT communities may reinforce their feeling through purchasing sport NFT collectibles. As discussed above, in the NBA Top Shot context, consumers can join team communities by completing a specific set of team collections. The additional purchase may help consumers obtain further social interaction opportunities and a sense of belonging in their favorite teams. Based on the NFT literature and the sport NFT context, a sense of belonging may enhance purchase intention of sport NFT collectibles. Therefore, I hypothesize that:

Hypothesis 7: A sense of belonging will be positively associated with purchase intention of sport NFT collectibles.

Consistent with abovementioned discussion, I propose that a sense of belonging act as an underlying mechanism that explains how social interaction increases purchase intention of sport

NFT collectibles. Sport NFT platforms allow consumers to access team-specific communities through asset ownership, directly linking consumption to interaction utility. I propose that these unlocked opportunities enhance a consumer's sense of belonging, which in turn acts as the primary driver for purchasing behavior. In other words, interaction opportunities stimulate purchase intent precisely because they fulfill the underlying consumer need for community belonging. This leads to my mediation hypothesis:

Hypothesis 8: A sense of belonging will mediate the relationship between social interaction and purchase intention of sport NFT collectibles.

2.4 Methodology

2.4.1 Design and Sample

I conducted a 2 (social status: high vs. low) x 2 (social interaction: high vs. low) between-subjects design on Qualtrics from April 17 to May 10, 2025 (pilot and main studies) in the series 2024-25 NBA Top Shot context. I chose the NBA Top Shot because it has the highest sales volume among sport NFT collectibles of all time (CryptoSlam, n.d.-b) and had positive market performance in the past season with total sales reaching about $20.14 million from October 2025 to June 2026 (CryptoSlam, n.d.-a). I recruited Prolific participants who are at least 18 years old and either have purchased NBA Top Shot Moments before or have knowledge of NFTs. I recruited these participants to obtain understanding among existing and potential consumers. I chose Prolific because it has participants who have purchased NFT collectibles before. To recruit them, I used the pre-screen question (do you own or create NFTs?). Those who responded *"I own one or more NFTs", "I have created one or more NFTs"*, or *"I have considered buying an NFT, but haven't done so"* were able to continue my study. Then I asked participants whether they have purchased NBA Top Shot Moments before. For those who did not purchase, I asked

"do you know what NFT collectibles are (yes/no)". Those who answered "yes" to the NFT knowledge are included in data analyses. In the main study, I received 190 eligible responses with 158 useful responses, after removing five duplicated, three failed an attention check, 19 failed a manipulation check (recall the number of supply and tier of the Moment in the stimuli), and five too fast responses (less than 300 s). Descriptive statistics of samples are summarized in Table 2.1.

Table 2.1

Main study descriptive statistics of samples and latent variables

	n	*%*		*M (SD)*
Gender			Age	32.53 (10.87)
Man	78	49.37	Distinctiveness	4.96 (1.58)
Woman	79	50.00	Belonging	5.45 (1.43)
Non-binary / third gender	1	0.63	PI	4.77 (1.97)
Prefer not to say	0	0.00	Team id	4.46 (1.77)
Race				
White	51	32.28		
Black	61	38.61		
Asian	9	5.70		
Hispanic or Latino	7	4.43		
American Indian or Alaska Native	0	0.00		
Native Hawaiian or Pacific Islander	0	0.00		
Other	30	18.99		
Education				
Below high school	0	0.00		
High school	11	6.96		
Undergraduate	53	33.54		
Graduate	94	59.49		
Income				
Less than $50,000	41	25.95		
$50,000-$74,999	46	29.11		
$75,000-$99,999	35	22.15		
$100,000-$124,999	11	6.96		
$125,000-$149,999	10	6.33		
$150,000-$174,999	9	5.70		
Over $175,000	6	3.80		
Employment				

	n	*%*	*M (SD)*
Full-time	111	70.25	
Part-time	33	20.89	
Retired	3	1.90	
Student	8	5.06	
Unemployed	3	1.90	
Marital status (1 missing value)			
Married	72	45.86	
Single	77	49.04	
Divorced	3	1.91	
Separated	2	1.27	
Widowed	3	1.91	
Purchased NBA Top Shot Moments before			
Yes	96	60.76	
No	62	39.24	
N	158	100.00	

2.4.2 Stimuli Development, Procedure, and Pilot Study

My stimuli include an image with graphics interchange format (GIF), an image of a product page from the Marketplace, which is the secondary market of the NBA Top Shot, and a description of social interaction opportunities. The GIF simulates a video of an NBA Top Shot Moment, featuring a dunk Moment of Alexandre Sarr, who is a player of the Washington Wizards. I chose this player because he is relatively less well-known than other high-profile players to avoid the effect of player popularity (stimuli in Appendix E). I also included identification to the Wizards as a covariate.

I used supply quantity commonly shown in each NBA Top Shot Moment to manipulate social status. Lower numbers indicate higher levels of scarcity. I used 75 for high status and 3,305 for low status. Besides the number of supply, I used Moment tier to manipulate social status because tiers are based on and accompany with the number of supply. Moment tier and the number of supply aim to simulate Moments in reality. I utilized a Legendary tier (the second

highest tier) for a high social status condition and a Common tier (the lowest tier) for a low social status condition. A higher Moment tier indicates a higher scarcity of a Moment. I did not use an Ultimate tier, which is the highest tier, to create more realistic condition with the chosen player. I used perceived scarcity (the displayed NBA Top Shot Moment is scarce) to check manipulation of social status because it comes from scarcity.

To manipulate social interaction, I used potential social interaction opportunities in the Washington Wizards' community on Discord. To join a team community, consumers need to buy collectibles from a team set. In the high social interaction condition, the NBA Top Shot Moment is a part of the team set, indicating potential social interaction opportunities in the Wizards' community. I listed seven interaction opportunities (e.g., participate in team-specific discussions, predictions, and trade talks) in the high social interaction condition. In the low social interaction condition, the NBA Top Shot Moment is not a part of the team set, and no interaction opportunities will be shown.

To validate manipulation of social interaction, I asked the perceived number of social interaction opportunities because it comes from interaction opportunities. I asked participants how many social interaction opportunities in the Washington Wizards' community they think can unlock by owning the displayed NBA Top Shot Moment. I used a 9-point scale by adding "cannot unlock social opportunities" and zero to seven interaction opportunities. I expected participants in the low social interaction conditions to answer either "cannot unlock" or zero social opportunities. I controlled player performance across conditions with 17 points, seven assists, and two steals, which were described on the NBA Top Shot. The chosen performance is similar to the actual performance of the player, who had 13 points, 2.4 assists, and 0.7 steals on average during the 2024-2025 regular season (ESPN, n.d.).

I used a pilot study to test the stimuli and recruited participants from Prolific. I received 157 eligible responses with 125 useful responses (13 duplicated, five failed an attention check, 10 failed a manipulation check, and four too fast responses). Descriptive statistics of the samples and constructs in the pilot study are summarized in Table 2.2.

Table 2.2

Pilot study descriptive statistics of samples and latent variables

	n	*%*		*M (SD)*
Gender			Age	35.90 (12.27)
Man	76	60.80	Distinctiveness	5.02 (1.65)
Woman	48	38.40	Belonging	5.66 (1.40)
Non-binary / third gender	1	0.80	PI	4.94 (1.96)
Prefer not to say	0	0.00	Team id	4.60 (1.77)
Race				
White	42	33.60		
Black	51	40.80		
Asian	2	1.60		
Hispanic or Latino	2	1.60		
American Indian or Alaska Native	0	0.00		
Native Hawaiian or Pacific Islander	0	0.00		
Other	28	22.40		
Education				
Below high school	2	1.60		
High school	8	6.40		
Undergraduate	42	33.60		
Graduate	73	58.40		
Income				
Less than $50,000	30	24.00		
$50,000-$74,999	28	22.40		
$75,000-$99,999	27	21.60		
$100,000-$124,999	14	11.20		
$125,000-$149,999	11	8.80		
$150,000-$174,999	10	8.00		
Over $175,000	5	4.00		
Employment				
Full-time	95	76.00		
Part-time	19	15.20		
Retired	2	1.60		
Student	5	4.00		

	n	*%*	*M (SD)*
Unemployed	4	3.20	
Marital status			
Married	66	52.80	
Single	53	42.40	
Divorced	2	1.60	
Separated	3	2.40	
Widowed	1	0.80	
Purchased NBA Top Shot Moments before			
Yes	84	67.20	
No	41	32.80	
N	125	100	

In the pilot study, I checked the manipulation of social status and social interaction by using the Wilcoxon Rank Sum test due to non-normality data (Wilcoxon, 1945). The results showed that social status and social interaction manipulated as intended. Manipulation check results are summarized in Table 2.3. Since constructs are not normally distributed, I used the maximum likelihood estimation with robust standard errors (MLR) in the confirmatory factor analysis model (CFA). The CFA measurement model indices show an acceptable model fit with $\chi^2 = 160.669$, $df = 98$, $p < .001$, $\chi^2/df = 1.64$, comparative fit index (CFI) = .970, normed fit index (NFI) = .927, root mean squared error of approximation (RMSEA) = .072, and standardized root mean square residual (SRMR) = .036 (Hu & Bentler, 1999). I used the Sport Spectator Identification Scale (Wann & Branscombe, 1993) to measure team identification. The factor loadings range from .10 to .99. Except for teamid6 (the 6th item in team identification), which has a non-significant factor loading ($p = .185$), all items have significant factor loadings. Since teamid6 has a low (.10) and non-significant factor loading, I removed teamid6 in the measurement. After removing teamid6, the CFA measurement model indices show an acceptable model fit with $\chi^2 = 142.958$, $df = 84$, $p < .001$, $\chi^2/df = 1.70$, CFI = .971, NFI = .932, RMSEA = .075, SRMR= .036. (Hu & Bentler, 1999). I further tested constructs' convergent and

discriminant validity. The composite reliability (CR) for all constructs are higher than .70, indicating convergent validity (Hair et al., 2019). Values of average variance extracted (AVE) for all constructs are higher than .50, further showing convergent validity (Fornell & Larcker, 1981). Squared correlations between constructs are smaller than AVE, indicating discriminant validity (Hair et al., 2019). Cronbach's alpha, CR, and factor loading results are summarized in Table 2.4. Correlations, squared correlations, and AVE are summarized in Table 2.5.

Table 2.3

Pilot study manipulation check results

		M	*Mdn*	*SD*
Status:	High	4.82	5.00	1.72
$w = 2930.50$, $p < .001$.	Low	2.96	2.50	1.86
$t = 5.76$, $p < .001$				
Interact:	High	7.25	8.00	2.41
$w = 3347.50$, $p < .001$	Low	3.20	1.00	2.66
$t = 8.88$, $p < .001$				

Note. Equal variance t-test.

Table 2.4

Pilot study factor loadings, Cronbach's alpha and CR

Items	*β*	*α*	CR
Sense of distinctiveness (adopted from White & Argo, 2011)		.906	.889
To what degree would you feel like a unique individual if you owned the NBA Top Shot Moment of Alexandre Sarr that was displayed?	.91		
To what extent would owning the displayed NBA Top Shot Moment of Alexandre Sarr make you feel distinct from others?	.85		
To what extent would owning the displayed NBA Top Shot Moment of Alexandre Sarr make you feel different from others?	.83		
Sense of belonging (adapted from Bollen & Hoyle, 1990)		.942	.946

Items	β	α	CR
If I own the displayed NBA Top Shot Moment of Alexandre Sarr that helps me join the Washington Wizards' community, I feel that I belong to the Wizards' community.	.89		
If I own the displayed NBA Top Shot Moment of Alexandre Sarr that helps me join the Washington Wizards' community, I see myself as part of the Wizards' community.	.96		
If I own the displayed NBA Top Shot Moment of Alexandre Sarr that helps me join the Washington Wizards' community, I feel that I am a member of the Wizards' community.	.92		
Purchase intention (developed by Putrevu & Lord, 1994; adopted from Schlimm et al., 2024)		.975	.975
It is very likely that I will buy the displayed NBA Top Shot Moment of Alexandre Sarr.	.94		
I will purchase the displayed NBA Top Shot Moment of Alexandre Sarr the next time I have the chance to.	.99		
I will definitely buy the displayed NBA Top Shot Moment of Alexandre Sarr.	.96		
Team identification (adopted from Wann & Branscombe, 1993)		.965	.965
How important to you is it that the Washington Wizards win?	.89		
How strongly do you see yourself as a fan of the Washington Wizards?	.94		
How strongly do your friends see you as a fan of the Washington Wizards?	.94		
During the season, how closely do you follow the Washington Wizards via ANY of the following: in person, on television, on the radio, online websites, or social media?	.88		

Items	β	α	CR
How important is being a fan of the Washington Wizards to you?	.97		
How often do you display the Washington Wizards' name or insignia (for example, badges) at your place of work, where you live, in your car, or on your clothing?	.83		

Note. β: standardized factor loading; α: Cronbach's alpha; all measures used a 7-point Likert scale.

Table 2.5

Pilot study correlations, squared correlations, and AVE

	Distinctiveness	Belonging	PI	Team id
Distinctiveness	.749			
Belonging	.59 (.35)	.850		
PI	.84 (.71)	.67 (.45)	.928	
Team id	.73 (.54)	.58 (.34)	.87 (.76)	.830

Note. Squared correlations in parentheses; AVE on diagonal.

With valid stimuli and construct validity in the pilot study, I conducted a main study and excluded those who have joined the pilot study. Participants first indicated whether they consent to join the study. Those who agreed to join continued the study and answered the pre-screen question about the NFT experience. Then, they reported their identification to the Washington Wizards and whether have purchased NBA Top Shot Moments before. For those who did not purchase Moments before, I asked about their NFT knowledge. Those who neither had purchase experience nor have knowledge were excluded from analyses of the main study. After that, participants viewed a 10-second GIF rendering of Alexandre Sarr, presented in a format similar to an NBA Top Shot Moment. They could not skip this segment. Afterward, they were randomly assigned into one of four experimental conditions and saw the stimuli with 30-second forced attention time and answer manipulation checks for social status and social interaction. Participants were asked to imagine a purchase of an NBA Top Shot Moment. Imagining purchase

has been used to investigate digital product purchases in the marketing literature (Yang, 2024). Then they reported their sense of belonging, sense of distinctiveness, purchase intention, and demographics. Finally, they were debriefed and paid.

2.4.3 Measures

Study 1 has four measured constructs, including a sense of distinctiveness, a sense of belonging, purchase intention, and team identification. I measured a sense of distinctiveness by using three items adopted from White and Argo (2011). For a sense of belonging, I modified the three-item sense of belonging scale within the Perceived Cohesion Scale (Bollen & Hoyle, 1990). Each item was modified to suit the research context (e.g., "If I own the displayed NBA Top Shot Moment of Alexandre Sarr that helps me join the Washington Wizards' community, I feel that I belong to the Wizards' community"). I measured purchase intention using three items adopted from Schlimm et al. (2024), which were reliable in their sport NFT study. The measurement of purchase intention was developed by Putrevu and Lord (1994). I included team identification as a covariate because consumers with a higher level of team identification show a higher positive social interaction effect in sport NFT consumption (Jiang & Byon, 2026). Seven items (dropped teamid6 in data analyses) of team identification measure were adopted from the Sport Spectator Identification Scale (Wann & Branscombe, 1993). All items, except for the manipulation check for the social interaction opportunities, were measured on a 7-point Likert scale (see measurement in Appendix B).

2.4.4 Data Analysis

I first checked the validity of manipulation, I examined whether participants in the high social status condition have a higher perceived scarcity than those in the low social status condition and those in the high social interaction condition have a higher perceived number of

social interaction opportunities than those in the low social interaction condition. To choose methods on testing the validity of manipulation, I used the Shapiro-Wilk test (Shapiro & Wilk, 1965) to examine the normality of data regarding perceived scarcity and perceived number of social interaction opportunities. Since the data were not normally distributed, I used the Wilcoxon Rank Sum test to analyze manipulation check questions (Wilcoxon, 1945).

I used structural equation modeling (SEM) to analyze data in R by using "lavaan", "semTools", and "psych" packages. SEM allows me to test social interaction and social status simultaneously. In SEM, I first used CFA to check the fit of measurement model and then used a structural model to test hypotheses. Since data were not normally distributed, I utilized MLR to estimate the data. The model indices show an acceptable model fit with $\chi^2 = 167.877$, $df = 84$, $p < .001$, $\chi^2/df = 2.00$, CFI = .964, NFI = .931, RMSEA = .079, SRMR= .035. All items have significant factor loadings. To test the convergent validity of indicators, I used CR and AVE. The value of CR for all constructs are higher than .70 (Hair et al., 2019), showing convergent validity. All values of AVE are above .50 (Fornell & Larcker, 1981), providing further evidence of convergent validity. To test the discriminant validity, I compared the squared correlation between constructs to its AVE. All constructs' squared correlations between other constructs are smaller than their AVE, indicating the discriminant validity (Hair et al., 2019). Factor loadings, Cronbach's alpha, and CR are included in Table 2.6. Correlations, squared correlations, and AVE are included in Table 2.7.

Table 2.6

Main study factor loadings, Cronbach's alpha and CR

Items	β	α	CR
Sense of distinctiveness (adopted from White & Argo, 2011)		.889	.897

Items	β	α	CR
To what degree would you feel like a unique individual if you owned the NBA Top Shot Moment of Alexandre Sarr that was displayed?	.83		
To what extent would owning the displayed NBA Top Shot Moment of Alexandre Sarr make you feel distinct from others?	.91		
To what extent would owning the displayed NBA Top Shot Moment of Alexandre Sarr make you feel different from others?	.83		
Sense of belonging (adapted from Bollen & Hoyle, 1990)		.939	.941
If I own the displayed NBA Top Shot Moment of Alexandre Sarr that helps me join the Washington Wizards' community, I feel that I belong to the Wizards' community.	.90		
If I own the displayed NBA Top Shot Moment of Alexandre Sarr that helps me join the Washington Wizards' community, I see myself as part of the Wizards' community.	.93		
If I own the displayed NBA Top Shot Moment of Alexandre Sarr that helps me join the Washington Wizards' community, I feel that I am a member of the Wizards' community.	.91		
Purchase intention (developed by Putrevu & Lord, 1994; adopted from Schlimm et al., 2024)		.970	.971
It is very likely that I will buy the displayed NBA Top Shot Moment of Alexandre Sarr.	.94		
I will purchase the displayed NBA Top Shot Moment of Alexandre Sarr the next time I have the chance to.	.97		
I will definitely buy the displayed NBA Top Shot Moment of Alexandre Sarr.	.96		
Team identification (adopted from Wann & Branscombe, 1993)		.958	.959
How important to you is it that the Washington Wizards win?	.81		

Items	β	α	CR
How strongly do you see yourself as a fan of the Washington Wizards?	.96		
How strongly do your friends see you as a fan of the Washington Wizards?	.94		
During the season, how closely do you follow the Washington Wizards via ANY of the following: in person, on television, on the radio, online websites, or social media?	.82		
How important is being a fan of the Washington Wizards to you?	.97		
How often do you display the Washington Wizards' name or insignia (for example, badges) at your place of work, where you live, in your car, or on your clothing?	.84		

Note. β: standardized factor loading; α: Cronbach's alpha; all measures used a 7-point Likert scale.

Table 2.7

Main study correlations, squared correlations, and AVE

	Distinctiveness	Belonging	PI	Team id
Distinctiveness	.737			
Belonging	.54 (.29)	.840		
PI	.64 (.40)	.69 (.48)	.917	
Team id	.50 (.25)	.48 (.23)	.83 (.69)	.798

Note. Squared correlations in parentheses; AVE on diagonal.

With a valid and reliable measurement, I used a structural model to test hypotheses. I first tested the variable relationships individually to identify covariates. I tested the following relationships:

(1) regressed a sense of distinctiveness on: social status, team identification, NBA Top Shot purchase experience, and demographics, respectively.

(2) regressed a sense of belonging on: social interaction, team identification, NBA Top Shot purchase experience, and demographics, respectively.

(3) regressed purchase intention on: social status, a sense of distinctiveness, social interaction, a sense of belonging, team identification, NBA Top Shot purchase experience, and demographics, respectively.

Social status and social interaction are dummy variables. Since demographics are categorical variables, I converted them as dummy variables by changing the category that has the highest proportion as one and others as zero. Gender (man = 1), race (Black = 1), education (graduate degree = 1), annual income (under $100,000 = 1), employment (full-time employed =1), marital status (single = 1), and NBA Top Shot purchase experience (buyer = 1). By testing relationships individually, social status ($p < .001$), team identification ($p < .001$), NBA Top Shot purchase experience ($p < .001$), Black ($p = .001$), graduate degree ($p = .004$), and under $100,000 ($p = .045$) impact a sense of distinctiveness independently. For a sense of belonging, social interaction ($p = .012$), team identification ($p < .001$), NBA Top Shot purchase experience ($p < .001$), man ($p = .009$), Black ($p = .007$), and graduate degree ($p = .004$) impact belonging independently. A sense of distinctiveness ($p < .001$), a sense of belonging ($p < .001$), team identification ($p < .001$), NBA Top Shot purchase experience ($p < .001$), man ($p < .001$), Black ($p < .001$), graduate degree ($p < .001$), under $100,000 ($p = .042$), and single ($p = .005$) impact purchase intention, independently. Then, I tested them simultaneously in the structural model to check whether the effects of these covariates exist. The testing results show that team identification impacts a sense of distinctiveness, a sense of belonging, and purchase intention (results are summarized in 2.5.2 Structural model and hypotheses testing). Moreover, man and NBA Top Shot purchase experience impact purchase intention. Therefore, I included team

identification in a sense of distinctiveness, a sense of belonging, and purchase intention as a covariate. I also included man and NBA Top Shot purchase experience in purchase intention.

I used three regressions to test my hypotheses because they help me examine the direct and indirect effects. Beyond the covariates in a sense of distinctiveness, I used social status (dummy variable) as an independent variable to test the direct effect of social status on distinctiveness. Similarly, I used social interaction (dummy variable) as an independent variable in a sense of belonging to test the direct effect of social interaction on belonging. For purchase intention, I included social status and social interaction to test their direct effects on purchase intention. I also included a sense of distinctiveness and a sense of belonging to test their direct effects on purchase intention. The mediating effect of distinctiveness (indirect effect of social status) is the product of the direct effect of social status and the direct effect of distinctiveness on purchase intention. The total effect of social status is the sum of the direct effect and the indirect effect of social status (mediating effect of distinctiveness) on purchase intention. Same for the mediating effect of belonging and a total effect of social interaction. The regressions[1] are:

$$Distinct_i = \alpha_1 Status_i + \alpha_2 Teamid_i + \varepsilon_i \quad (1)$$

$$Belong_i = \beta_1 Interact_i + \beta_2 Teamid_i + \varepsilon_i \quad (2)$$

$$Purchase\ intention_i = \gamma_1 Status_i + \gamma_2 Distinct_i + \gamma_3 Interact_i + \gamma_4 Belong_i + \gamma_5 Teamid_i + \gamma_6 Man_i + \gamma_7 NBA\ Top\ Shot_i + \varepsilon_i \quad (3)$$

Mediating effect of distinctiveness (indirect effect of social status) = $\alpha_1 \times \gamma_2$

Total effect of social status = $\gamma_1 + \alpha_1 \times \gamma_2$

Mediating effect of belonging (indirect effect of social interaction) = $\beta_1 \times \gamma_4$

[1] Distinct: a sense of distinctiveness; Status: social status; Teamid: team identification; Interact: social interaction; Belong: a sense of belonging; NBA Top Shot: NBA Top Shot purchase experience.

Total effect of social interaction = $\gamma_3 + \beta_1 \times \gamma_4$

2.5 Results

2.5.1 Manipulation Check

The results of the Wilcoxon Rank Sum test (Wilcoxon, 1945) show that the perceived scarcity in the high social status group is higher than those who are in the low social status group ($w = 4874.00$, $p < .001$). Similar to the social status, high social interaction group shows a higher perceived social interaction opportunities than the low social interaction group ($w = 5358.00$, $p < .001$). Therefore, the stimuli work as intended. Manipulation check results are presented in Table 2.8.

Table 2.8

Main study manipulation check results

		M	*Mdn*	*SD*
Status:	High	4.95	5.00	1.59
$w = 4874.00$, $p < .001$.	Low	2.97	2.00	1.89
$t = 7.14$, $p < .001$				
Interact:	High	7.04	9.00	2.61
$w = 5358.00$, $p < .001$.	Low	2.74	1.00	2.55
$t = 10.47$, $p < .001$				

Note. Equal variance t-test.

2.5.2 Structural Model and Hypotheses Testing

By testing covariates simultaneously, the structural model shows the following indices: $\chi^2 = 420.703$, $df = 187$, $p < .001$, $\chi^2/df = 2.25$, CFI = .914, NFI = .857, RMSEA = .089, SRMR= .165. Except for team identification, none of the covariates impact a sense of distinctiveness and a sense of belonging. Beyond team identification, man and NBA Top Shot purchase experience

impact purchase intention (see structural model results in Table 2.9). Thus, I kept those covariates that impact dependent variables.

Table 2.9

Structural model results with all covariates

		b	*SE*	*p*	95% CI
y = distinct					
	status	0.94***	0.20	<.001	[0.56, 1.32]
	teamid	0.39***	0.11	<.001	[0.17, 0.61]
	Black	0.04	0.22	.856	[-0.39, 0.47]
	graduate	0.35	0.23	.125	[-0.10, 0.79]
	under100k	-0.18	0.25	.478	[-0.67, 0.31]
	nba_purchase	0.09	0.27	.734	[-0.44, 0.63]
y = belong					
	interact	0.53*	0.20	.010	[0.13, 0.92]
	teamid	0.37**	0.11	.001	[0.16, 0.58]
	man	-0.21	0.19	.271	[-0.60, 0.17]
	Black	0.00	0.25	1.000	[-0.49, 0.49]
	graduate	0.35	0.24	.142	[-0.12, 0.81]
	nba_purchase	0.03	0.32	.923	[-0.60, 0.66]
y = pi					
	status	-0.08	0.16	.645	[-0.40, 0.25]
	distinct	0.23*	0.10	.022	[0.03, 0.43]
	interact	0.00	0.14	.972	[-0.27, 0.28]
	belong	0.42***	0.08	<.001	[0.26, 0.58]
	teamid	0.58***	0.10	<.001	[0.40, 0.77]
	man	-0.36*	0.15	.017	[-0.66, -0.06]
	Black	0.04	0.17	.820	[-0.30, 0.38]
	graduate	0.04	0.18	.807	[-0.31, 0.40]
	under100k	-0.03	0.15	.851	[-0.33, 0.27]
	single	-0.11	0.15	.457	[-0.40, 0.18]
	nba_purchase	0.50*	0.19	.010	[0.12, 0.87]
	distinct_ind	0.22*	0.10	.036	[0.01, 0.42]
	status_total	0.14	0.16	.360	[-0.16, 0.45]
	belong_ind	0.22*	0.09	.016	[0.04, 0.40]
	interact_total	0.23	0.17	.174	[-0.10, 0.55]

Note. status: social status; distinct: a sense of distinctiveness; interact: social interaction; belong: a sense of belonging; teamid: team identification; pi: purchase intention; nba_purchase: NBA Top Shot purchase; graduate: graduate degree; under100k: under $100k annual income; single: marital status as single; distinct_ind: mediating effect of distinctiveness; status_total: total effect

of social status; belong_ind: mediating effect of a sense of belonging; interact_total: total effect of social interaction; *b*: unstandardized estimates; *SE*: standard error; CI: confidence interval; *p < .05, **p < .01, ***p < .001.

Keeping the covariates that impact distinctiveness, belonging, and purchase intention, the structural model show an acceptable model fit with χ^2 = 334.219, *df* = 139, p < .001, $\chi 2/df$ = 2.40, CFI = .925, NFI = .879, RMSEA = .094, SRMR= .164. Low NFI, high RMSEA and SRMR may be due to the small sample size. The regression results show that social status does not increase purchase intention (*b* = -0.09, p = .562), therefore, H1 is rejected. Social status increases a sense of distinctiveness (*b* = 0.99, p < .001), supporting H2. A sense of distinctiveness increases purchase intention (*b* = 0.25, p = .013), supporting H3. A sense of distinctiveness further mediates the relationship between social status and purchase intention (*b* = 0.25, p = .025). Thus, H4 is supported. Regarding social interaction, it does not increase purchase intention directly (*b* = 0.02, p = .884), rejecting H5. Social interaction increases a sense of belonging (*b* = 0.53, p = .010). A sense of belonging increases purchase intention (*b* = 0.42, p < .001). Therefore, H6 and H7 are supported. A sense of belonging mediates the relationship between social interaction and purchase intention (*b* = 0.22, p = .020), supporting H8. Structural model and hypotheses testing results are presented in Table 2.10.

Table 2.10

Structural model results with significant covariates

		b	*SE*	*p*	95% CI	Hypothesis
y = distinct						
	status	0.99***	0.20	<.001	[0.60, 1.38]	H2 support
	teamid	0.45***	0.09	<.001	[0.27, 0.63]	/
y = belong						
	interact	0.53*	0.20	.010	[0.13, 0.93]	H6 support
	teamid	0.43***	0.08	<.001	[0.27, 0.58]	/

		b	*SE*	*p*	95% CI	Hypothesis
y = pi						
	status	-0.09	0.16	.562	[-0.41, 0.22]	H1 reject
	distinct	0.25*	0.10	.013	[0.05, 0.44]	H3 support
	interact	0.02	0.14	.884	[-0.26, 0.30]	H5 reject
	belong	0.42***	0.09	<.001	[0.25, 0.58]	H7 support
	teamid	0.59***	0.09	<.001	[0.42, 0.77]	/
	man	-0.38*	0.15	.015	[-0.68, -0.07]	/
	nba_purchase	0.48*	0.19	.010	[0.12, 0.85]	/
	distinct_ind	0.25*	0.11	.025	[0.03, 0.46]	H4 support
	status_total	0.15	0.16	.334	[-0.16, 0.46]	/
	belong_ind	0.22*	0.09	.020	[0.03, 0.40]	H8 support
	interact_total	0.24	0.17	.165	[-0.10, 0.58]	/

Note. status: social status; distinct: a sense of distinctiveness; interact: social interaction; belong: a sense of belonging; teamid: team identification; pi: purchase intention; nba_purchase: NBA Top Shot purchase; distinct_ind: mediating effect of distinctiveness; status_total: total effect of social status; belong_ind: mediating effect of a sense of belonging; interact_total: total effect of social interaction; *b*: unstandardized estimates; *SE*: standard error; CI: confidence interval; *p < .05, **p < .01, ***p < .001.

2.6 Discussion

As sport NFT providers offer social interaction and social status experiences in a complementary way, study 1 conceptualized them as two dimensions of social value in the sport NFT context and examined their impacts on purchase intention. By using the two dimensions of ODT, belonging and distinctiveness, study 1 explained the underlying mechanisms of social values. As expected, study 1 revealed that social interaction and social status motivate purchase intention in a distinct way as social interaction through a sense of belonging and social status through a sense of distinctiveness. The finding indicated that social interaction and social status can be designed as dual drivers of consumption instead of as competing motives. Surprisingly, results showed that neither social interaction nor social status impact purchase intention directly. Providing online communities and scarce collectibles may be insufficient to drive consumption if these features cannot increase consumers' perceived belonging and distinctiveness.

2.6.1 Theoretical Contributions

Study 1 provides theoretical contributions to ODT and the sport NFT literature. First, study 1 contributes to ODT by identifying additional source of belonging and distinctiveness in NFT consumption. Hofstetter et al. (2024) argued that product design of NFTs can be a source of distinctiveness and belonging. NFT design as a complementary set can provide affiliation through similar content and differentiation through distinct traits, such as Bored Ape Yachet Club with different facial expressions, clothing, and fur types (Hofstetter et al., 2024). Study 1 reveals that social interaction opportunities and scarcity that are designed experiences for collectibles can trigger a sense of belonging and a sense of distinctiveness, respectively. Thus, study 1 offers another opportunity for providers to foster these perceptions in NFT consumption beyond product design. Furthermore, study 1 reveals belonging and distinctiveness as mediators, which advances our understanding of how social interaction (e.g., Yilmaz et al., 2023) and social status (e.g., Zalan & Toufaily, 2024) drive consumption. The identified mediators open a path to test individual differences as ODT suggests that needs for belonging and distinctiveness may be varied across individuals (Brewer & Rocass, 2001) and changed overtime (Leonardeli et al., 2010).

Second, study 1 provides empirical evidence to social interaction and social status effects. Although previous studies found the positive social interaction effect (e.g., Jiang & Byon, 2026; Yang et al., 2024), study 1 shows that social interaction drives purchase intention indirectly instead of directly when introducing a sense of belonging as a mediator. This may be due to the similarity of social interaction experiences across sport NFT products. For example, FIFA and U.S. major leagues (e.g., the NBA, NHL, and MLS) offer communities on Discord. These communities must successfully cultivate a subjective sense of belonging within consumers to

effectively facilitate purchasing behavior. Unlike social interaction, the literature reveals non-significant impact of social status on purchase intention (Yang et al., 2024). Study 1 extends the literature by showing an indirect effect of social status beyond a direct effect. Similar to community, since scarcity is widely used by sport NFT providers, scarce collectibles must heighten consumers' perceived distinctiveness to motivate consumption. Study 1 highlights the importance of underlying mechanisms beyond community and scarcity experiences at a surface level.

Third, study 1 advances the understanding of the relationship between social interaction and social status in NFT consumption. Contrasting with Hofstetter et al. (2024), findings show that social interaction and status do not necessarily conflict, but they influence purchase intentions through distinctive mediating pathways. The dual mechanisms may be due to the unique platform architecture of the sport NFT ecosystem, where asset consumption is structurally tied to unlock socializing opportunities and signal status differentiation. Specifically, purchasing these digital collectibles unlocks exclusive social communities, allowing consumers to transit from a general NFT community into exclusive team sub-communities. Meanwhile, purchasing high-scarcity (usually with high prices) digital assets enables consumers to climb up on the leaderboards in the eye of others. It should be noted that Hofstetter et al. (2024) examined a non-sport NFT environment where a zero-sum trade-off between social interaction and scarcity exists. In their framework, high-scarcity NFTs restrict the pool of potential consumers, thereby limiting social interaction opportunities. Within the sport NFT ecosystem, however, this traditional conflict does not apply. Because platform architecture allows scarcity to gain heightened social recognition rather than resulting in isolation, consumers can concurrently pursue community integration, status differentiation, or both to satisfy their underlying needs.

2.6.2 Practical Implications

Findings of study 1 offer several practical implications on consumer engagement to sport NFT providers. First, sport NFT providers are expected to be aware of the distinct roles of social interaction and social status and use them to improve consumer engagement and consumption. Sport NFT providers, such as Dapper Labs and Sweet, could use different marketing messages for social interaction and social status experiences. For instance, when marketing their team communities, they can highlight belonging by using "collect to fit in your favorite team". When marketing scarce collectibles, they can use "collect to stand out from the crowd" to highlight distinctiveness. The distinct messages may attract consumers who seek a sense of belonging, a sense of distinctiveness, or both.

Second, sport NFT providers could offer experiences to foster belonging as study 1 suggests a sense of belonging beyond social interaction experiences. They can provide team-based activities, such as challenges, fantasy sports, and prediction games. For instance, the NBA Top Shot could provide team-based challenges. The team community that has the highest numbers of consumers who completed a challenge (e.g., lock 20 required Moments in the 2025-2026 season) will win a prize (e.g., a free Legendary Moment). Similar to challenges, Fast Break can be team-based as the team community that has the highest number of consumers who win the Fast Break (e.g., form a lineup that can get at least 50 points) in a gameday will win a prize (e.g., Dapper Lab credits that can be used to purchase Moments). Besides, the prediction game can also be designed as team-based along with individual competition. The NBA Top Shot provides prediction games in "Road to the Ring" during the 2025-2026 NBA playoffs. Consumers predict game outcomes, such as the winner, points of a team (e.g., whether a team will get more than 106 points), and numbers of rebounds of a player, to get playoff points, which can be used to win

physical and digital rewards, such as jerseys and Moments. Beyond individual competitions, they can offer a team channel. For instance, a team community that has the highest number of wins (e.g., a correct prediction counts one win) will get extra points.

Third, study 1 suggests sport NFT providers to foster distinctiveness beyond social status. For example, the NBA Top Shot provides all-time and seasonal leaderboards, where consumers are ranked based on their leaderboards' points. Sport NFT providers can further provide daily, weekly and monthly leaderboards or region-based leaderboards to offer various ways to highlight consumers' status and motivate distinctive needs. Providing short-term or other recognition mechanisms may further motivate consumers who prefer status over interacting with others. In addition, providers could offer exclusive events related to scarce collectible purchases. They could use a scarcity leaderboard that is based on consumers' scarce collectibles purchases in a month and provide related events to those leaders. Each purchase of a scarce collectible, at least the Rare tier, will give consumers points to climb up on the leaderboard (higher tier, higher points). Exclusive activities, such as virtual hangouts with current or former NBA players, will be opened to top 10 consumers on the scarcity leaderboard.

2.6.3 Limitations and Future Research

Although study 1 provides theoretical contributions and practical insights, it has limitations. First, social interaction was operationalized through access to team-specific communities, while social status was operationalized via asset supply and tier levels. Because both constructs were captured using these specific platform attributes within the same stimulus, the findings may not capture how consumers respond to alternative social or status cues. For instance, on the NBA Top Shot, personalized one-on-one chats may provide different sense of belonging compared to broader team-based group discussions. Similarly, other social status cues,

such as leaderboards and prices, may offer different distinctiveness compared to asset scarcity information. Usernames and rankings on leaderboards may be more intuitive and straightforward than scarcity information, whereas asset prices may also indicate high scarcity. Study 2 includes a price to solve this limitation. Therefore, future studies are needed to explore whether these varying platform cues alter the underlying mediation paths identified in this study. Moreover, the stimuli may be revisited to test the validity of results. Even though I used a Legendary tier instead of an Ultimate tier to provide a more realistic condition, Legendary Moments of Alexandre Sarr is different from his Common Moments in content and visualization. The Legendary Moments feature one-handed dunk, whereas the Common Moments feature two-handed dunk. Regarding visualization, the Legendary Moments have an extra layer outside the cubicle (Moments are shown as cubicles), compared with Common Moments. Participants who are familiar with the platform or Alexandre Sarr may be aware of the differences. Thus, future studies may use the product design of Legendary and Common Moments to provide more realistic stimuli. Studies can test whether content and visualization bring differences in perception and purchase intention to eliminate confounding effects.

Second, since the NBA Top Shot is an evolving beta product with updated social value features, the new features limit the generalizability of findings in study 1. Regarding social status experiences, the NBA Top Shot introduced autographed Moments featuring rookie players in November 2025 beyond iconic players, including Magic Johnson and Larry Bird (NBA Top Shot, 2025b), which may influence perceived distinctiveness because autographs are limited supplied. For example, Rare Moments featuring Cooper Flagg with autographs may provide higher perceived distinctiveness than his Rare Moments without autographs. Besides, the NBA Top Shot integrated physical and digital social interaction experiences. For instance, collectors

can apply for fundings from the Community Grants Program for online and offline initiatives (NBA Top Shot, 2025a). While digital environments offer convenience, offline social interactions such as platform-sponsored watch parties, player meet-and-greets, or live game attendance can yield deeper interpersonal connections and greater experiential utility. Thus, future studies should compare physical and digital integrated experiences to purely digital spaces (e.g., Discord channels) in cultivating a sense of belonging, as fans may view physical access as a premium reward that carries superior interactions.

Third, study 1 did not account for individual differences in the needs for belonging and uniqueness as covariates. The literature suggests that these dispositional traits also impact what consumers prefer, such as scarce product preference vary depending on consumers' need for uniqueness (Lynn & Harris, 1997). Individuals with high need for uniqueness (or belonging) may have higher purchase intention toward scarce collectibles (or assets providing more interaction opportunities). Therefore, interpretation of study 1 needs caution. Additionally, study 1 did not investigate the potentially moderating role of prior consumption experience, such as whether a participant had purchased NBA Top Shot Moments before. Purchase experience may impact perceived distinctiveness and belonging as buyers may experience scarcity and social interaction whereas non-buyers may not. Further investigation between existing and prospective consumers may add more nuanced theoretical and practical insights. To address these critical limitations, study 2 includes needs for uniqueness and belonging as covariates, while introducing purchase experience as a moderator.

Fourth, samples in study 1 may not represent the sport NFT market, which is dominated by men and White population. Study 1 was designed to target global population as the NBA has their global market. Although study 1 did not provide sample representativeness, it offered an

opportunity to understand consumers of different population. To address the issue of sample representativeness, I focused on the U.S. market in study 2 and 3 to provide samples that better represent the sport NFT market.

Moreover, future studies could examine the moderate effect of tenure in the community as ODT suggests that optimal distinctiveness is a dynamic equilibrium that evolves over time (Leonardeli et al., 2010). ODT asserts that this equilibrium is unique to each individual, which can change over time. When initially joining a sport NFT community, a consumer may heavily prioritize satisfying their need for belonging. Over time, however, as that sense of group assimilation becomes saturated, the consumer's personal equilibrium may shift, prompting them to actively seek out status-signaling or scarcity-driven features to fulfill their need for distinctiveness. Investigating how a consumer's duration within the ecosystem alters these shifting psychological priorities would provide a much more nuanced understanding of how social values dynamically influence long-term sport NFT consumption.

Last but not the least, future studies may investigate the interaction effect of social status (including scarcity) and social interaction, which may directly contribute to Hofstetter et al. (2024). In their studies, participants have lower willingness to pay and prices because high scarcity threatens their social interaction opportunities (Hofstetter et al., 2024). Future studies could test whether the high status and high interaction condition has the highest purchase intention or willingness to pay compared to other conditions.

Chapter 3 The Moderating Effect of Transaction Experience in the Social Value Effects of Sport Non-Fungible Token Consumption (Study 2)

3.1 Introduction

Study 2 extends study 1 by testing the moderating effect of transaction experience in the relationships between a sense of distinctiveness and purchase intention and between a sense of belonging and purchase intention. The bubble of the sport NFT market burst led consumers to leave the market (Sepkowitz, 2025). With the rapid loss of consumers, sport NFT providers struggled with consumer retention. Due to the market decline, the sport NFT market also faced a challenge of consumer acquisition, such as the NHL Breakaway found difficult to attract current hockey fans (Bresaola, 2024), which motivated sport NFT providers to offer various experiences to engage existing consumers and attract new consumers. For example, the Breakaway aims to provide an online place where global NHL consumers can talk and connect (Bresaola, 2024). The MLS Quest offered scarce collectibles with a tier system (e.g., Core, Limited, Rare, and Epic) (MLS Quest, n.d.). Since purchases provide additional features, such as unlocking team communities and climbing up leaderboards, those who have experienced the features may perceive differently from those who understand or are interested in but have not purchased yet. Thus, understanding the nuances between existing and prospective consumers may help sport NFT providers respond to the challenges.

Results on the differences in social interaction and scarcity (related to social status) between buyers and non-buyers have been inconsistent (Park & Lee, 2025; Yilmaz et al., 2023).

Yilmaz et al. (2023) compared buyers and non-buyers who were familiar with NFTs and enabled participants to report key words of NFT purchase reasons. They revealed that the word usages of social interaction and emotional value (including scarcity) are similar between buyers and non-buyers (Yilmaz et al., 2023). Using interviews, Park and Lee (2025) found that social interaction and exclusivity (conceptualized similarly to scarcity) motivate buyers instead of non-buyers to purchase sport NFT collectibles. However, the sample comparison in Park and Lee's (2025) study provides limited relevance to the current context due to its underlying sample composition. Most non-buyers in their sample either lacked baseline interest in NFT collectibles or knowledge of the sport NFT context. By failing to filter for qualified prospective consumers, their non-buyer cohort likely disregarded social value cues.

Building on the buyer/non-buyer distinction, Vega and Camarero (2024) explored how consumption values vary across user segments, noting that emotional value drivers often fluctuate between segment profiles. Although their direct comparisons did not yield statistically significant coefficient differences, these subtle variations may imply that affective consumer states are sensitive to segment characteristics. Because social interaction and social status are embedded within the sport NFT ecosystem, exploring how these specific social values diverge between buyers and non-buyers represents a logical and necessary extension of Vega and Camarero’s (2024) study.

Study 2 contributes to the sport NFT literature by empirically examining the moderating effect of transaction experience in the positive effects of belonging and distinctiveness, which address the inconsistent results in the NFT (Yilmaz et al., 2023) and the sport NFT literature (Park & Lee, 2025). Study 2 also offers a methodology to qualify market-relevant non-buyers, which provides cleaner results on the moderating effect of transaction experience. Practically,

study 2 offers implications to sport NFT providers on designing and marketing experiences that foster belonging and distinctiveness for existing and potential consumers.

3.2 Hypotheses Development

The marketing literature reveals the differences between buyers and non-buyers regarding online purchases (Kim & Gupta, 2009). Specifically, the literature shows that when evaluating perceived values, potential consumers emphasize perceived risk, whereas repeated consumers focus on perceived price (Kim & Gupta, 2009). In study 2, buyers are those who have purchased sport NFT collectibles before and non-buyers are those without purchase experience. Although Yilmaz et al. (2023) found similar word usages regarding purchasing reasons between two groups, buyers may have a different emphasis compared with non-buyers in the sport NFT context. In this context, positions and distinctions are highlighted throughout the platforms by using the number of supply and a clear tier system. For instance, they are shown in the Marketplace, Challenges, Fast Break, and Activity Feed, making distinctiveness as a key attribute on the platform. Purchasing a sport NFT collectible can be considered as joining a group, where scarcity of collectibles is compared with others. For instance, purchasing a high-scarcity Moments, such as Legendary Moments, can be listed on Featured Activity Feed instead of the regular one. However, distinctiveness may be less meaningful for non-buyers as they were not being a part of the group. Without purchases, they cannot join Fast Break or Challenges. Thus, a sense of distinctiveness that derives from scarcity of collectibles may be meaningful for buyers instead of non-buyers in sport NFT consumption, leading to my hypotheses:

H1: Transaction experience will moderate the positive relationship between a sense of distinctiveness and purchase intention of sport NFT collectibles.

H1a: A sense of distinctiveness will be positively associated with purchase intention of sport NFT collectibles for buyers.

H1b: A sense of distinctiveness will not be positively associated with purchase intention of sport NFT collectibles for non-buyers.

Unlike a sense of distinctiveness, buyers and non-buyers may find a sense of belonging meaningful to them. Community experiences (as a source of belonging) have been emphasized by sport NFT providers after the market hype. For instance, they offer general communities, team communities, and individual chats. The general community of the NBA Top Shot on Discord can be joined even without purchases. These features enable buyers and non-buyers to discuss Moments with others and experience a sense of belonging. Although Park and Lee (2025) found buyers instead of non-buyers are motivated by a sense of belonging, the difference may be due to the lack of product literacy and interest of non-buyers in their studies. In the sport NFT context, the experienced belonging can motivate buyers and non-buyers through various features. Therefore, I hypothesize that:

H2: Transaction experience will not moderate the positive relationship between a sense of belonging and purchase intention of sport NFT collectibles.

H2a: A sense of belonging will be positively associated with purchase intention of sport NFT collectibles for buyers.

H2b: A sense of belonging will be positively associated with purchase intention of sport NFT collectibles for non-buyers.

3.3 Methodology

3.3.1 Design and Sample

Study 2 used a 2 (social interaction: high vs. low) x 2 (social status: high vs. low) between-subjects design on Qualtrics from February 27 to March 21, 2026 (pilot and main studies) in the series 2025-26 NBA Top Shot context. Participants who are at least 18 years old, living in the U.S., with knowledge or interested in NBA Top Shot Moments (or both) were recruited from Prolific. I used two rounds of data collection to achieve a balanced sample size for buyers and non-buyers of sport NFT collectibles. Buyers are those who have purchased NBA Top Shot Moments before. To address the sampling limitations identified in Park and Lee's (2025) study, this research recruited a qualified sample of non-buyers who possessed baseline knowledge of, an interest in, or both towards the NBA Top Shot context, but had never purchased a Moment before. To recruit participants, I selected an embedded screener on Prolific, which asked participants, "do you own/hold any cryptocurrencies?". Only those who responded to "yes" to the screener are eligible to participant in my study (along with the age and the U.S. residency). Additionally, I used further pre-screening questions. I asked participants to choose one option that best describes their NBA Top Shot Moment experience: *I have purchased NBA Top Shot Moments before* (identified as a buyer); *I did not purchase NBA Top Shot Moments before, but I am interested in NBA Top Shot Moments* (identified as a non-buyer); *I did not purchase NBA Top Shot Moments before, but I understand what NBA Top Shot Moments are* (non-buyer); *I did not purchase NBA Top Shot Moments before, but I understand what NBA Top Shot Moments are and am interested in NBA Top Shot Moments* (non-buyer); *I did not purchase NBA Top Shot Moments before, and I neither understand what NBA Top Shot Moments are nor interested in NBA Top Shot Moments* (excluded from the study). In the first round of data collection, I recruited buyers and non-buyers and received 166 useful responses (46 buyers and 120 non-buyers). Since the number of buyers was far less than non-buyers, I recruited buyers

only in the second round of data collection. Only those who selected *"I have purchased NBA Top Shot Moments before"* were able to continue and complete the study. In both rounds, in the middle of study, I asked whether they have purchased NBA Top Shot Moments before (Have you purchased NBA Top Shot Moments before? Yes/No) to identify inconsistent responses in data analyses. Either reported "I have purchased NBA Top Shot Moments" in the pre-screen but answered "No" to "Whether you have purchased NBA Top Shot Moments before" or did not chose "I have purchased NBA Top Shot Moments" in the pre-screen but answered "Yes" to the NBA Top Shot purchasing question were removed as inconsistent responses.

A total of 200 eligible responses were received in the first round with 166 useful responses remaining after removing 16 inconsistent responses, two failed attention checks, 12 failed manipulation check, and four completed too fast (under 200 s). Additional 98 eligible responses were received in the second round. Among them, 72 cases were retained after removing one duplicated, 11 inconsistent, one failed attention check, 12 failed manipulation check, and one completed too fast responses. Taken together, a total of 238 useful responses were used for data analysis, which met the minimum requirement of 210 sample size based on G-power analysis. Main study descriptive statistics of samples and constructs are summarized in Table 3.1

Table 3.1

Main study descriptive statistics of samples and latent variables

	n	*%*		*M (SD)*
Gender			Age	38.50 (10.36)
Man	176	73.95	Distinctiveness	3.88 (1.78)
Woman	61	25.63	Belonging	4.52 (1.76)
Non-binary / third gender	1	0.42	PI	3.39 (2.01)
Race			Team id	3.44 (1.91)
White	147	61.76	Unique need	3.72 (1.55)

	n	*%*		*M (SD)*
Black	43	18.07	Belong need	4.20 (1.54)
Asian	25	10.50		
Hispanic or Latino	17	7.14		
American Indian or Alaska Native	1	0.42		
Native Hawaiian or Pacific Islander	1	0.42		
Other	4	1.68		
Education				
Below high school	0	0.00		
High school	49	20.59		
Undergraduate	105	44.12		
Graduate	84	35.29		
Income				
Less than $50,000	46	19.33		
$50,000-$74,999	44	18.49		
$75,000-$99,999	56	23.53		
$100,000-$124,999	31	13.03		
$125,000-$149,999	23	9.66		
$150,000-$174,999	18	7.56		
Over $175,000	20	8.40		
Employment				
Full-time	183	76.89		
Part-time	32	13.45		
Retired	5	2.10		
Student	4	1.68		
Unemployed	14	5.88		
Marital status				
Married	121	50.84		
Single	101	42.44		
Divorced	12	5.04		
Separated	1	0.42		
Widowed	3	1.26		
Purchased NBA Top Shot Moments before				
Yes	118	49.58		
No	120	50.42		
N	238	100.00		

3.3.2 Stimuli Development, Procedure, and Pilot study

Study 2 used similar stimuli as study 1. I replaced Alexandre Sarr with Brook Lopez because Lopez has a Rare Moment, which has the similar price as his Common Moment,

allowing me to control the price effect (Rare: $8 vs. Common: $4 by the time of developing stimuli). The GIF simulated a video of an NBA Top Shot Moment. The GIF displayed an assist Moment of Brook Lopez, who played for the Milwaukee Bucks. Although he joined the Los Angeles Clippers in the 2025-2026 season during my data collection, purchasing his Moments featuring Bucks allows consumers to join the Bucks' community. I used the average price $6 ($4~$8) to control the price effect. I used supply quantity commonly shown in each NBA Top Shot Moment to manipulate social status. I used 299 for high status and 2,983 for low status. Besides the number of supply, I used Moment tier to manipulate social status. I utilized a Rare tier (the third highest tier) for a high social status condition and a Common tier (the lowest tier) for a low social status condition. I did not use an Ultimate or a Legendary tier because the prices of these Moments are much higher than Common tier Moments. I used perceived scarcity (as study 1) to check manipulation of social status.

To manipulate social interaction, similar to study 1, I used potential social interaction opportunities in the Milwaukee Bucks' community on Discord. To join a team community, consumers need to buy collectibles from specific sets from a team. In the high social interaction condition, the NBA Top Shot Moment is a part of the team set, indicating potential social interaction opportunities in the Bucks' community. I listed seven interaction opportunities (e.g., participate in team-specific discussions, predictions, and trade talks) in the high social interaction condition. In the low social interaction condition, the Moment is not a part of the team set, and no interaction opportunities were shown. The manipulation check for social interaction is the same as study 1 (see stimuli in Appendix F).

I first tested stimuli validity by using a pilot study. The pilot study received 80 eligible responses with 65 useful responses (seven inconsistent responses between the pre-screen and the

NBA Top Shot purchase question, one failed attention check and seven failed manipulation check). Sample description is summarized in Table 3.2. I checked the manipulation of social status and social interaction. Since data were not normally distributed, I used the Wilcoxon Rank Sum test (Wilcoxon, 1945) to examine the differences between the high and low groups. The manipulation check results showed that the manipulation were successful as intended. The high social status group perceived a higher scarcity than the low social status group ($w = 958.50$, $p < .001$). The high social interaction group perceived a higher social interaction opportunity compared to the low group ($w = 809.50$, $p < .001$). Manipulation check results are presented in Table 3.3.

Table 3.2

Pilot study descriptive statistics of samples and latent variables

	n	*%*		*M (SD)*
Gender			Age	37.62 (12.26)
Man	45	69.23	Distinctiveness	3.87 (1.92)
Woman	19	29.23	Belonging	4.41 (1.95)
Non-binary / third gender	1	1.54	PI	3.07 (2.07)
Race			Team id	3.45 (1.91)
White	37	56.92	Unique need	3.60 (1.71)
Black	9	13.85	Belong need	4.32 (1.60)
Asian	11	16.92		
Hispanic or Latino	5	7.69		
American Indian or Alaska Native	1	1.54		
Native Hawaiian or Pacific Islander	1	1.54		
Other	1	1.54		
Education				
Below high school	0	0.00		
High school	14	21.54		
Undergraduate	33	50.77		
Graduate	18	27.69		
Income				
Less than $50,000	11	16.92		
$50,000-$74,999	11	16.92		

	n	*%*	*M (SD)*
$75,000-$99,999	13	20.00	
$100,000-$124,999	8	12.31	
$125,000-$149,999	8	12.31	
$150,000-$174,999	1	1.54	
Over $175,000	13	20.00	
Employment			
Full-time	47	72.31	
Part-time	11	16.92	
Retired	1	1.54	
Student	2	3.08	
Unemployed	4	6.15	
Marital status			
Married	32	49.23	
Single	29	44.62	
Divorced	3	4.62	
Separated	0	0.00	
Widowed	1	1.54	
Purchased NBA Top Shot Moments before			
Yes	13	20.00	
No	52	80.00	
N	65	100.00	

Table 3.3

Pilot study manipulation check results

		M	*Mdn*	*SD*
Status:	High	5.61	6.00	1.30
$w = 958.50$, $p < .001$.	Low	2.28	1.50	1.78
$t = 8.62$, $p < .001$				
Interact:	High	5.41	6.00	2.86
$w = 809.50$, $p < .001$.	Low	2.50	1.00	2.52
$t = 4.36$, $p < .001$				

Note. Equal variance t-test.

In the pilot study, I checked the measurement model and constructs' convergent and discriminant validity. The measurement model in the pilot study shows an acceptable model fit with $\chi^2 = 219.051$, $df = 137$, $p < .001$, $\chi^2/df = 1.60$, CFI = .938, NFI = .854, RMSEA = .096,

SRMR = .074. Even though the NFI is below .90, other model indices are within the threshold. All items have significant factor loadings ranging from .70 to .99. Further investigating the convergent validity, CR of all constructs are all above .70, supporting convergent validity (Hair et al., 2019). The values of AVE for all constructs are above .50, showing further evidence of convergent validity (Fornell & Larcker, 1981). The squared correlations of constructs are smaller than their AVE, indicating discriminant validity (Hair et al., 2019). Factor loadings, Cronbach's alpha, and CR are included in Table 3.4. Correlations, squared correlations, and AVE are presented in Table 3.5.

Table 3.4

Pilot study factor loadings, Cronbach's alpha, and CR

Item	β	α	CR
Sense of distinctiveness (adopted from White & Argo, 2011)		.962	.965
To what degree would you feel like a unique individual if you owned the NBA Top Shot Moment of Brook Lopez that was displayed?	.96		
To what extent would owning the displayed NBA Top Shot Moment of Brook Lopez make you feel distinct from others?	.99		
To what extent would owning the displayed NBA Top Shot Moment of Brook Lopez make you feel different from others?	.89		
Sense of belonging (adapted from Bollen & Hoyle, 1990)		.974	.974
If I own the displayed NBA Top Shot Moment of Brook Lopez that helps me join the Milwaukee Buck' community, I feel that I belong to the Bucks' community.	.95		
If I own the displayed NBA Top Shot Moment of Brook Lopez that helps me join the Milwaukee Buck' community, I see myself as part of the Bucks' community.	.98		
If I own the displayed NBA Top Shot Moment of Brook Lopez that helps me join the Milwaukee Buck' community, I feel that I am a member of the Bucks' community.	.95		
Purchase intention (developed by Putrevu & Lord, 1994; adopted from Schlimm et al., 2024)		.971	.970

Item	β	α	CR
It is very likely that I will buy the displayed NBA Top Shot Moment of Brook Lopez.	.93		
I will purchase the displayed NBA Top Shot Moment of Brook Lopez the next time I have the chance to.	.98		
I will definitely buy the displayed NBA Top Shot Moment of Brook Lopez.	.96		
Team identification (adopted from Trail et al., 2003; developed by Trail & James, 2001)		.953	.954
I consider myself to be a "real" fan of the Milwaukee Bucks.	.90		
I would experience a loss if I had to stop being a fan of the Milwaukee Bucks.	.96		
Being a fan of the Milwaukee Bucks is very important to me.	.94		
Need for uniqueness (adopted from Ruvio et al., 2008).		.928	.928
When a product I own becomes popular among the general population, I begin to use it less.	.70		
I often try to avoid products or brands that I know are bought by the general population.	.87		
As a rule, I dislike products or brands that are customarily bought by everyone.	.97		
The more commonplace a product or brand is among the general population, the less interested I am in buying it.	.96		
Need for belonging (adopted from Pardede et al., 2021)		.935	.940
I feel the need to belong with others.	.93		
I have a need to belong.	.96		
It is important for me to feel part of others.	.84		

Note. β: standardized factor loading; α: Cronbach's alpha; all items are measured on a 7-point Liket scale.

Table 3.5

Pilot study correlations, squared correlations, and AVE

	Distinct	Belong	PI	Teamid	Uniqneed	Belneed
Distinct	.902					
Belong	.52 (.27)	.927				
PI	.62 (.38)	.56 (.31)	.917			
Teamid	.19 (.04)	.43 (.18)	.65 (.43)	.873		
Uniqneed	.00 (.00)	-.11 (.01)	.08 (.01)	.08 (.01)	.780	
Belneed	.15 (.02)	.22 (.05)	.25 (.06)	.25 (.06)	-.11 (.01)	.839

Note. Distinct: a sense of distinctiveness; belong: a sense of belonging; PI: purchase intention; Teamid: team identification; Uniqneed: need for uniqueness; Belneed: need for belonging; squared correlation in parentheses; AVE on the diagonal.

With valid stimuli and constructs' convergent and discriminant validity, the main study was conducted. Using Prolific as a platform, any users who had opted in prior data collection phases (including those screened-out) were automatically filtered from entering the main study. Participants first indicated whether they consent to join the study. Those who agreed to join continued the study and saw a customized pre-screening question about their NBA Top Shot experience. Those without purchase experience of NBA Top Shot Moments and neither have knowledge nor are interested in NBA Top Shot Moments were excluded from the study. Then, participants reported identification toward the Milwaukee Bucks. After that, they viewed a 15-second GIF featuring Brook Lopez, presented in a format similar to an NBA Top Shot Moment. They could not skip this segment. Afterward, they were randomly assigned into one of four experimental conditions and see the stimuli with 30-second forced attention time, and answered manipulation checks for social status and social interaction. Participants were asked to imagine a purchase of an NBA Top Shot Moment. Then, they reported their sense of belonging, sense of

distinctiveness, purchase intention, needs for uniqueness and belonging, and demographics. Finally, they were debriefed and paid $1.0 (first round of data collection) and $1.21 (second round). Participants were paid more in the second round due to longer time usage (the median time reported on Prolific: seven min and 34 s vs. nine min and four s). The second round recruited buyers only and asked them to report their NBA Top Shot scores, which are accumulated through Moment purchased. It may take extra time if buyers need to check their scores on the Top Shot platform.

3.3.3 Measures

Measures of sense of belonging, sense of distinctiveness, and purchase intention are same as study 1. To control participants' need for uniqueness and need for belonging, I adopted four items of avoidance of similarity, which is one of dimensions in a short form of Consumers' Need for Uniqueness Scale (CNFU-S) (Ruvio et al., 2008) because it relevant to distinctiveness in study 2. Besides avoidance of similarity, CNFU-S includes creative choice and unpopular choice dimensions. I adopted three items to measure need for belonging from Pardede et al. (2021). I did not use the Need to Belong Scale (10 items) (Leary et al., 2013) to avoid a lengthy survey. Same rationale, I adopted three items from Trail et al. (2003), which were developed by Trail and James (2001), to measure team identification (see Measurement in Appendix C). Measurement model shows an acceptable model fit (indices in the row of "Whole" in Table 3.8). All items have significant factor loadings ranging from .81 to .98. The values of CR for all constructs are higher than .70, indicating convergent validity (Hair et al., 2019). The values of AVE of all constructs are higher than .50, also supporting convergent validity (Fornell & Larcker, 1981). Squared correlations of constructs are smaller than their AVE, showing discriminant validity (Hair et al.,

2019). Factor loadings, Cronbach's alpha, and CR are summarized in Table 3.6. Correlations, squared correlations, and AVE are presented in Table 3.7.

Table 3.6

Main study factor loadings, Cronbach's alpha, and CR

Item	β	α	CR
Sense of distinctiveness (adopted from White & Argo, 2011)		.946	.946
To what degree would you feel like a unique individual if you owned the NBA Top Shot Moment of Brook Lopez that was displayed?	.93		
To what extent would owning the displayed NBA Top Shot Moment of Brook Lopez make you feel distinct from others?	.93		
To what extent would owning the displayed NBA Top Shot Moment of Brook Lopez make you feel different from others?	.91		
Sense of belonging (adapted from Bollen & Hoyle, 1990)		.953	.955
If I own the displayed NBA Top Shot Moment of Brook Lopez that helps me join the Milwaukee Buck' community, I feel that I belong to the Bucks' community.	.91		
If I own the displayed NBA Top Shot Moment of Brook Lopez that helps me join the Milwaukee Buck' community, I see myself as part of the Bucks' community.	.95		
If I own the displayed NBA Top Shot Moment of Brook Lopez that helps me join the Milwaukee Buck' community, I feel that I am a member of the Bucks' community.	.94		
Purchase intention (developed by Putrevu & Lord, 1994; adopted from Schlimm et al., 2024)		.978	.979
It is very likely that I will buy the displayed NBA Top Shot Moment of Brook Lopez.	.95		
I will purchase the displayed NBA Top Shot Moment of Brook Lopez the next time I have the chance to.	.98		
I will definitely buy the displayed NBA Top Shot Moment of Brook Lopez.	.97		
Team identification (adopted from Trail et al., 2003; developed by Trail & James, 2001)		.957	.959

Item	β	α	CR
I consider myself to be a "real" fan of the Milwaukee Bucks.	.93		
I would experience a loss if I had to stop being a fan of the Milwaukee Bucks.	.92		
Being a fan of the Milwaukee Bucks is very important to me.	.97		
Need for uniqueness (adopted from Ruvio et al., 2008).		.921	.922
When a product I own becomes popular among the general population, I begin to use it less.	.81		
I often try to avoid products or brands that I know are bought by the general population.	.90		
As a rule, I dislike products or brands that are customarily bought by everyone.	.85		
The more commonplace a product or brand is among the general population, the less interested I am in buying it.	.89		
Need for belonging (adopted from Pardede et al., 2021)		.918	.918
I feel the need to belong with others.	.90		
I have a need to belong.	.89		
It is important for me to feel part of others.	.87		

Note. β: standardized factor loading; α: Cronbach's alpha; all items are measured on a 7-point Likert scale.

Table 3.7

Main study correlations, squared correlations, and AVE

	Distinct	Belong	PI	Teamid	Uniqneed	Belneed
Distinct	.854					
Belong	.63 (.39)	.875				
PI	.66 (.44)	.63 (.40)	.939			
Teamid	.52 (.27)	.51 (.26)	.78 (.60)	.888		
Uniqneed	.31 (.09)	.24 (.06)	.40 (.16)	.49 (.24)	.747	
Belneed	.14 (.02)	.17 (.03)	.23 (.05)	.24 (.06)	.10 (.01)	.789

Note. Distinct: a sense of distinctiveness; belong: a sense of belonging; PI: purchase intention; Teamid: team identification; Uniqneed: need for uniqueness; Belneed: need for belonging; squared correlation in parentheses; AVE on the diagonal.

3.3.4 Data Analysis

I first used measurement invariance to test the invariance between the first and second rounds of data collection. I followed measurement invariance steps in Brown (2015), including (1) CFA for separate data sets; (2) configural invariance for the combined data set; (3) metric invariance for the combined data set with factor loadings constrained; (4) scalar invariance for the combined data set with factor loadings and intercepts constrained. With an acceptable fit of the measurement model for round 1 and 2, separately, I included them in the configural model. The configural model shows a model misspecification issue with the smallest eigenvalue is negative. This may not indicate measurement invariance between round 1 and 2. Since two rounds of data collection use the same experimental design and measurement, and within a close proximity (1 day in between), round 1 and 2 are expected to be invariant in their measurement. Furthermore, I conducted metric invariance and compared the metric model with the configural model. The chi-square test showed a non-significant difference between two models (p = .461), indicating metric invariance. After that, I built a scalar invariance model and compared it with the metric model. The chi-square test showed a significant difference between two models (p = .010). However, the change of model indices were used when sample size is unbalanced and small (N < 300; round 1 vs. round 2: 166 vs. 72): The change of CFI (ΔCFI) is less and equal to .005, ΔRMSEA is less and equal to .010, ΔSRMR is less and equal to .005 indicate model invariances (Chen, 2007). Model indices change between the scalar and the metric models: ΔCFI = .004, ΔRMSEA = .002, ΔSRMR = .001. Therefore, I confirmed scalar invariance. Model indices were included in Table 3.8.

Table 3.8

Measurement invariance model indices (round)

	χ^2	*df*	*p*	χ^2/df	CFI	NFI	RMSEA	SRMR
Whole	183.886	137	.005	1.34	.987	.951	.038	.031
Round 1	170.865	137	.026	1.25	.988	.944	.039	.033
Round 2	218.242	137	<.001	1.59	.928	.832	.091	.049
Configural[1]	388.884	274	<.001	1.42	.972	.912	.059	.036
Metric	402.863	287	<.001	1.40	.972	.909	.058	.039
Scalar	429.762	300	<.001	1.43	.968	.903	.060	.040

Note. Whole represents the combined data ($N = 238$); [1]: the smallest eigenvalue is negative.

With invariant measurement, I combined two rounds of data and checked the manipulation (see manipulation check results in 3.4 Results). With intended manipulations and confirmed validity, I checked measurement invariance for buyers ($n = 118$) and non-buyers ($n = 120$), which followed the steps of measurement invariance (Brown, 2015). Since measurement are invariant between buyers and non-buyers (model indices and chi-square tests results are included in 3.4 Results). To build a structural model and test hypothesis, I first checked the relationships between variables and their relationships with demographics, helping me identify covariates. Same as study 1, I tested each relationship independently. Except age, all demographics are categorized as dummy variables based on the category that has the highest percentage, including gender (men = 1), race (White = 1), education (undergraduate degree = 1), employment (full-time employment = 1), annual income (under $100,000 = 1), marital status (married = 1), and NBA Top Shot purchase experience (buyer = 1). I first regressed a sense of distinctiveness on constructs and demographics. Social status ($p < .001$), need for uniqueness ($p < .001$), team identification ($p < .001$), undergraduate degree ($p = .004$), and NBA Top Shot purchase experience ($p = .001$) impact a sense of distinctiveness. Social interaction ($p < .001$), need for belonging ($p = .022$), team identification ($p < .001$), man ($p = .012$), undergraduate

degree (p = .050), and NBA Top Shot purchase experience (p = .011) impact a sense of belonging. A sense of distinctiveness (p < .001), need for uniqueness (p < .001), a sense of belonging (p < .001), need for belonging (p = .002), team identification (p < .001), man (p = .004), and NBA Top Shot purchase experience (p < .001) impact purchase intention. Therefore, I included these covariates in each regression in the structural model, except for the NBA Top Shot purchase experience. I did not include it in the model because I used multigroup analysis to test the differences between buyers and non-buyers. After including covariates in the model, undergraduate degree remains an impact on a sense of distinctiveness (results are summarized in Table 3.11). Team identification impacts a sense of distinctiveness, a sense of belonging, and purchase intention. Therefore, I built a structural model with three regressions and included undergraduate degree in the distinctiveness regression model and team identification in all regressions. I built three regressions because social status stimulates a sense of distinctiveness and social interaction stimulates a sense of belonging. In the regression model, I kept a sense of distinctiveness and a sense of belonging in the purchase intention regression to test hypotheses. Even though the need for uniqueness does not impact a sense of distinctiveness and purchase intention and the need for belonging does not impact a sense of belonging and purchase intention, I included them in the regressions because ODT suggests that a need for uniqueness impacts a sense of distinctiveness and a need for belonging impacts a sense of belonging. Therefore, three regressions are:

$$Distinct_i = \alpha_1 Status_i + \alpha_2 Unique\ need_i + \alpha_3 Teamid_i + \alpha_4 Undergaduate_i + \varepsilon_i \quad (1)$$

$$Belong_i = \beta_1 Interact_i + \beta_2 Belong\ need_i + \beta_3 Teamid_i + \varepsilon_i \quad (2)$$

$$Purchase\ intention_i$$

$$= \gamma_1 Distinct_i + \gamma_2 Belong_i + \gamma_3 Unique\ need_i + \gamma_4 Belong\ need_i$$

$$+ \gamma_5 Teamid_i + \varepsilon_i \quad (3)$$

I conducted multigroup analyses to test hypotheses. I followed the steps of multigroup analyses (Byrne, 2016): (1) check the fit of a structural model for the combined data set; (2) check the fit of a free model without any constraints between buyers and non-buyers; (3) build a constrained model to constraint coefficients of all paths; (4) compare the constrained and the free model by using a chi-square test; (5) if find significant differences, further constraint a coefficient of a path each time (between purchase intention and sense of distinctiveness and between purchase intention and sense of belonging) and compare it with the free model to identify the difference. All data analyses were conducted in R by using "lavaan", "semTools", and "psych" packages.

3.4 Results

3.4.1 Manipulation Check

Manipulation checks were used the same questions and method as the pilot study. Since data were not normally distributed, I used Wilcoxon Rank Sum Test (Wilcoxon, 1945) to test the differences in scarcity and social interaction between groups. The results showed that high social status has a higher perceived scarcity than the low social status group ($w = 12376.00$, $p < .001$). The high and low social interaction groups also show differences in the perceived social interaction opportunities ($w = 12425.00$, $p < .001$). Therefore, social status and social interaction were manipulated as intended. Manipulation check results see Table 3.9.

Table 3.9

Main study manipulation check results

		M	*Mdn*	*SD*
Status:	High	5.48	6.00	1.27
$w = 12376.00$, $p < .001$.	Low	2.65	2.00	1.75
$t = 14.16$, $p < .001$				
Interact:	High	6.52	7.00	2.47
$w = 12425.00$, $p < .001$.	Low	2.30	1.00	2.16
$t = 14.02$, $p < .001$.				

Note. Unequal variance t-test.

3.4.2 Measurement Invariance

Measurement invariance between buyers and non-buyers were tested. Followed the procedure of measurement invariance in Brown (2015). The configural model showed acceptable model fit. Therefore, I moved on to the metric model. When comparing the metric and configural models, the chi-square test showed metric invariance ($p = .064$). Thus, a scalar model was tested and compared with the metric model. The chi-square test showed significant difference between the metric and scalar models ($p = .002$). However, when sample is small and unbalanced, the change of model indices are suggested to determine the measurement invariance (Chen, 2007). The change of model indices between the scalar and the metric models are: ΔCFI = .005, ΔRMSEA = .004, ΔSRMR = .002. Therefore, measurement invariance between buyers and non-buyers was confirmed at the scalar level. Indices of configural, metric, and scalar models were summarized in Table 3.10.

Table 3.10

Measurement invariance model indices (transaction experience)

	χ^2	*df*	*p*	χ^2/df	CFI	NFI	RMSEA	SRMR
Whole	183.886	137	.005	1.34	.987	.951	.038	.031
Buyers	198.067	137	.001	1.45	.966	.900	.061	.040

	χ^2	*df*	*p*	χ^2/df	CFI	NFI	RMSEA	SRMR
Non-buyers	152.617	137	.171	1.11	.992	.932	.031	.037
Configural	352.587	274	.001	1.29	.980	.916	.049	.037
Metric	373.164	287	<.001	1.30	.978	.911	.050	.042
Scalar	404.118	300	<.001	1.35	.973	.904	.054	.044

Note. Whole represents the combined data set ($N = 238$).

3.4.3 Hypotheses Testing

With invariant measurement, I tested the hypotheses by using the structural model. I first tested covariates simultaneously to check whether they still impact dependent variables. The model indices of the structural model are: $\chi^2 = 306.450$, $df = 210$, $p < .001$, $\chi^2/df = 1.46$, CFI = .976, NFI = .929, RMSEA = .044, SRMR = .070.

Table 3.11

Structural model results with all covariates

	b	*SE*	*p*	95% CI
y = Distinct				
Status	1.50***	0.18	<.001	[1.15, 1.85]
Teamid	0.46***	0.07	<.001	[0.33, 0.59]
Uniqneed	0.12	0.08	.148	[-0.04, 0.27]
Undergraduate	-0.43*	0.18	.014	[-0.78, -0.09]
y = Belong				
Interact	1.00***	0.18	<.001	[0.65, 1.35]
Teamid	0.47***	0.05	<.001	[0.36, 0.58]
Belneed	0.06	0.07	.388	[-0.08, 0.20]
Man	-0.21	0.20	.307	[-0.61, 0.19]
Undergraduate	-0.31	0.18	.082	[-0.66, 0.04]
y = PI				
Distinct	0.28***	0.06	<.001	[0.16, 0.40]
Belong	0.22**	0.07	.002	[0.08, 0.35]
Teamid	0.56***	0.07	<.001	[0.42, 0.70]
Uniqneed	0.02	0.06	.677	[-0.09, 0.14]
Belneed	0.04	0.05	.362	[-0.05, 0.14]
Man	-0.26	0.18	.151	[-0.61, 0.09]

Note. Status: social status; Distinct: a sense of distinctiveness; Interact: social interaction; Belong: a sense of belonging; PI: purchase intention; Teamid: team identification; Uniqneed: need for uniqueness; Belneed: need for belonging; Undergraduate: undergraduate degree; *b*:

unstandardized estimates; *SE*: standard error; CI: confidence interval; *$p < .05$, **$p < .01$, ***$p < .001$.

Keeping undergraduate degree as a covariate in the distinctiveness regression and team identification in all three regressions, I tested the structural model without group differences to check whether distinctiveness and belonging impact purchase intention. The structural model has an acceptable model fit (indices in the row of "Structural" in Table. 3.13). The structural model results revealed that distinctiveness ($p < .001$) and belonging ($p = .002$) increases purchase intention (see Table 3.12). Therefore, I further tested the differences between buyers and non-buyers.

Table 3.12

Structural model results with significant covariates

	b	*SE*	*p*	95% CI
y = Distinct				
Status	1.50***	0.18	<.001	[1.15, 1.85]
Teamid	0.46***	0.07	<.001	[0.33, 0.59]
Uniqneed	0.12	0.08	.148	[-0.04, 0.27]
Undergraduate	-0.43*	0.17	.014	[-0.77, -0.09]
y = Belong				
Interact	1.01***	0.18	<.001	[0.66, 1.36]
Teamid	0.48***	0.06	<.001	[0.37, 0.59]
Belneed	0.06	0.07	.429	[-0.08, 0.19]
y = PI				
Distinct	0.28***	0.06	<.001	[0.16, 0.40]
Belong	0.23**	0.07	.002	[0.09, 0.37]
Teamid	0.57***	0.07	<.001	[0.43, 0.71]
Uniqneed	0.02	0.06	.698	[-0.09, 0.14]
Belneed	0.04	0.05	.422	[-0.06, 0.14]

Note. Status: social status; Distinct: a sense of distinctiveness; Interact: social interaction; Belong: a sense of belonging; PI: purchase intention; Teamid: team identification; Uniqneed: need for uniqueness; Belneed: need for belonging; Undergraduate: undergraduate degree; *b*: unstandardized estimates; *SE*: standard error; CI: confidence interval; *$p < .05$, **$p < .01$, ***$p < .001$.

To test group difference, I built a free model between two groups by freely estimating coefficients of all paths. The free model showed acceptable model fit. Even though the NFI is below .90, other model indices are within threshold. After that, I constrained coefficients of all paths to create a constrained model. By comparing the free and constrained models using the chi-square test, the results showed that the constrained model is not different from the free model (p = .068). The result indicates no difference between buyers and non-buyers regarding the path coefficients. I also constrained one path each time. I first constrained the relationship between a sense of distinctiveness and purchase intention. Then, I compared the constrained model with the free model. The non-significant result indicates that there is no difference between buyers and non-buyers in the positive relationship between a sense of distinctiveness and purchase intention (p = .558), rejecting H1. Looking at the structural model without a group comparison (see Table 3.12), a sense of distinctiveness increases purchase intention (b = 0.28, p < .001), supporting H1a and rejecting H1b. After that, I constrained the relationship between a sense of belonging and purchase intention and compared it with the free model. The result of the positive relationship between belonging and purchase intention between buyers and non-buyers is significant (p = .047). Even though the result is significant, the non-significant result of comparing the free and the constrained model indicates invariances between buyers and non-buyers. Thus, H2 is supported. In the structural model, a sense of belonging increases purchase intention (b = 0.23, p = .002), supporting H2a and H2b. Indices of the constrained and the free models were summarized in Table 3.13 and structural model results of the free model is presented in Table 3.14.

Table 3.13

Multigroup analyses model indices

	χ^2	*df*	*p*	χ^2/df	CFI	NFI	RMSEA	SRMR	p (Free)
Structural	289.285	194	<.001	1.49	.976	.931	.045	.071	
Free	555.688	388	<.001	1.43	.961	.882	.060	.084	
Constrained	575.800	400	<.001	1.44	.959	.878	.061	.089	.068
Distinct	555.940	389	<.001	1.43	.961	.882	.060	.084	.558
Belong	560.351	389	<.001	1.44	.960	.881	.061	.085	.047*

Note. Structural: without group differences; Free: free all paths; Constrained: constraint all paths; Distinct: constraint the path of pi and distinct; Belong: constraint the path of pi and belong; *p* (Free): *p*-value comparing with the Free model; *$p < .05$, **$p < .01$, ***$p < .001$.

Table 3.14

Free model results

	Buyer				Non-buyer			
	b	*SE*	*p*	95% CI	*b*	*SE*	*p*	95% CI
y = Distinct								
Status	1.37***	0.23	<.001	[0.92, 1.82]	1.62***	0.26	<.001	[1.10, 2.13]
Teamid	0.49***	0.09	<.001	[0.31, 0.67]	0.34**	0.11	.003	[0.12, 0.57]
Uniqneed	0.11	0.14	.439	[-0.16, 0.37]	0.13	0.11	.224	[-0.08, 0.34]
Undergra	-0.45	0.23	.053	[-0.91, 0.01]	-0.38	0.26	.151	[-0.90, 0.14]
y = Belong								
Interact	1.18***	0.22	<.001	[0.74, 1.62]	0.83**	0.27	.003	[0.29, 1.36]
Teamid	0.56***	0.08	<.001	[0.40, 0.72]	0.42***	0.09	<.001	[0.23, 0.60]
Belneed	0.13	0.11	.222	[-0.08, 0.34]	-0.01	0.10	.879	[-0.21, 0.18]
y = PI								
Distinct	0.32***	0.08	<.001	[0.18, 0.47]	0.26**	0.09	.003	[0.09, 0.43]
Belong	0.37***	0.11	<.001	[0.17, 0.58]	0.11	0.10	.282	[-0.09, 0.30]
Teamid	0.40***	0.10	<.001	[0.20, 0.60]	0.66***	0.11	<.001	[0.45, 0.87]
Uniqneed	-0.06	0.09	.519	[-0.24, 0.12]	0.09	0.08	.259	[-0.06, 0.24]
Belneed	0.11	0.08	.199	[-0.06, 0.28]	-0.06	0.07	.366	[-0.19, 0.07]

Note. Status: social status; Distinct: a sense of distinctiveness; Interact: social interaction; Belong: a sense of belonging; PI: purchase intention; Teamid: team identification; Uniqneed: need for uniqueness; Belneed: need for belonging; Undergra: undergraduate degree; *b*: unstandardized estimates; *SE*: standard error; CI: confidence interval; *$p < .05$, **$p < .01$, ***$p < .001$.

3.5 Discussion

Study 2 aimed to extend study 1 by testing transaction experience as a moderator in the positive relationships between a sense of distinctiveness and purchase intention and between a sense of belonging and purchase intention. As expected, transaction experience does not moderate the positive effect of a sense of belonging on purchase intention, indicating that buyers and non-buyers are not significantly different in the belonging driver. Surprisingly, study 2 did not find a moderating effect of transaction experience in the positive effect of distinctiveness on purchase intention. The null moderating effect was found among buyers and non-buyers who understand, are interested in, or both. Similarly, non-buyers who are familiar with NFTs report similar reasons of social (interaction) and uniqueness motives (Yilmaz et al., 2023). However, when non-buyers are either not understanding or interested in NFTs, buyers and non-buyers are different in the social interaction and exclusivity motives (Park & Lee, 2025). The results in the literature and study 2 may indicate that knowledge and interest of the sport NFT context may explain the null moderating effect of transaction experience. In practice, interaction opportunities in Discord communities and tier systems may be meaningful and straightforward to those market relevant non-buyers (understand and interest). However, for market irrelevant non-buyers, social interaction and social status experiences may be meaningless. Study 2 results indicate that belonging and distinctiveness may be universal to consumers with understanding or interest regardless of transaction experience.

3.5.1 Theoretical Contributions

Study 2 contributes to the NFT and sport NFT literature by addressing the inconsistent results between Yilmaz et al. (2023) and Park and Lee (2025). Study 2 provides empirical

quantitative evidence to support Yilmaz et al. (2023)'s exploratory study, which found that buyers and non-buyers have similar reasons of purchasing NFTs. The results show that these two groups not only use similar words regarding social interaction and social status (buyers reported community and unique; non-buyers reported community and art; their sequential study found that buyers use unique as one of words to define art) (Yilmaz et al., 2023), but also not significantly different to the extent of the positive belonging and distinctiveness effects. Besides, study 2 expands the non-buyer group to individuals beyond NFT familiarity. Study 2 shows that not only those who are familiar with (Yilmaz et al., 2023), but also those who understand or are interested in (or both) a sport NFT context are motivated by belonging and distinctiveness as buyers.

Additionally, study 2 provides an approach to recruit non-buyers, which teases out the noise in the comparison between buyers and non-buyers in the sport NFT literature (Park & Lee, 2025). Due to the early stage of product adoption, Park and Lee (2025) failed to recruit market-relevant participants with basic product knowledge and interest. Most non-buyer participants in their study either lack interest in NFTs in general or sport NFT product literacy (Park & Lee, 2025). The recruitment approach in study 2 is critical because the discrepancies in a sense of belonging and exclusivity between buyers and non-buyers (Park & Lee, 2025) may be attributed to product confusion or lack of baseline interest instead of variations in perceived social values. Therefore, study 2 offers a cleaner and more accurate understanding of perceived inner social drivers between buyers and non-buyers. Study 2 indicates that belonging and distinctiveness are universal drivers regardless of consumers' purchase experience in sport NFT consumption.

3.5.2 Practical Implications

Study 2 also offers practical implications for sport NFT providers. First and foremost, because our empirical findings demonstrate that qualified non-buyers (those with baseline product interest or literacy) share identical psychological drivers with existing buyers, platform providers should avoid fragmented marketing approaches in favor of a unified positioning strategy. Rather than separating campaigns based on transaction history, marketers can employ identical psychological hooks centered on distinctiveness and belonging to simultaneously retain existing collectors and convert high-potential prospective users. For instance, NBA Top Shot currently employs a segmented homepage architecture: registered users are immediately funneled into high-utility, action-oriented loops (e.g., Fast Break, Challenges, and active pack drops), and an option to display market information (e.g., aggregate sales volumes in 90 days) at the bottom of the page, whereas non-registered visitors are relegated to generic marketplace metrics (same as users), textual and video explainers, with limited marketing messages on gamification (Road to the Ring).

While this separation is designed to prevent information overload for complete novices, it inadvertently creates a psychological barrier for qualified, market-ready non-buyers by withholding the very community and status-signaling features that drive conversion. To optimize this pipeline, platform providers should implement a progressive, education-to-engagement onboarding framework on their public-facing homepages. Operators should utilize a layout dedicated to rapid product onboarding to instantly bridge any lingering literacy gaps for prospective users. For example, they could use intuitive video highlights from the platform with well-organized and concise product utility and experience explainers instead of overloaded information with filming a social media influencer in the current video instruction. Once this baseline is established, the interface should immediately expose these prospects to high-status

and high-affiliation platform features such as live leaderboard rankings, premium scarcity tiers (e.g., Legendary or Ultimate Moments), and direct gateways to team-specific communities.

3.5.3 Limitations and Future Research

Although study 2 provides theoretical contributions and practical implications, it has the following limitations. First, even though study 2 provides cleaner and more accurate results by qualifying market-relevant non-buyers, self-reported NBA Top Shot experience may threaten the validity of study 2. Study 2 identified inconsistent responses regarding participants' purchase experience, which indicates that self-reported data may cause recall bias or careless responses. Therefore, future studies are expected to verify participants' purchase experience, such as asking buyers to upload a screenshot of their purchased Moments and test knowledge and interest of non-buyers. For instance, future studies could ask about the ownership verification and the definition of blockchains. They can further ask about engagement experiences that participants have in the sport NFT context, such as whether joined or discussed in team communities, how to join team communities and the differences among Moment tiers. To verify whether consumers are interested in the sport NFT context, future studies could ask participants to specify interested parts (e.g., features and experiences) of the sport NFT context.

Second, sport NFT providers may be cautious to apply the findings of study 2 to non-buyers who neither understand nor are interested in the sport NFT context. Although study 2 provides implications to non-buyers, the qualified non-buyers have either baseline product literacy or interest of the sport NFT context (or both), which are distinct to those who neither understand or are interested in sport NFT collectibles. The former may be more care about a sense of belonging and a sense of distinctiveness than the latter. Since sport NFT providers face a challenge to attract regular fans to the sport NFT context, investigating this consumer

segmentation may provide additional implications to mass adoption. Future studies can first introduce sport NFT collectibles and related experiences in a short video and test their baseline product literacy. Then they could ask non-buyers to imagine purchasing a sport NFT collectible that provides scarcity and social opportunities and examine whether the findings of study 2 are robust to this consumer segmentation.

Third, the NBA Top Shot was a beta product, similar to study 1, the constant changes limit the generalizability of findings in study 2. Besides introducing new social features, the NBA Top Shot updated their product page layout after completing their beta testing in July 2026. Currently, the number of listed for sale is placed next to the lowest ask price instead of in the details of Moments (can be seen when scrolled down on the product page). The highlighted numbers of listed for sale may change perceived distinctiveness. The chosen Moment featuring Brook Lopez has a Common tier with 2,983 supplied but only 5% are listed for sale (148 listed in July 2026). The Common Moment may provide distinctiveness as it creates scarcity through limited number of supply. Thus, future studies may revisit the social value effects by using updated product page layout.

Chapter 4 A New Lens of Consumer Values in Sport Non-Fungible Token Consumption and the Moderating Effect of Transaction Experience (Study 3)

4.1 Introduction

Study 3 uses TCV to extend study 1 and 2 by incorporating current consumer values beyond social interaction and social status to provide an understanding of consumer values in sport NFT consumption and reveal the moderating effect of transaction experience. In the sport NFT context, providers kept introducing new experiences, such as one-on-one chat, fantasy sports, and historical collectibles. For example, Fast Break uses a fatigue system, preventing multiple usage of the same collectibles in a run (e.g., four-time maximum usage over certain numbers of game days). Furthermore, the pro version adds additional requirements to Moments, such as certain sets or specific badges (e.g., Top Shot debut), and offer extra rewards (e.g., extra credits). Therefore, consumers who are engaged in these activities are expected to keep building up their collections.

Among the new experiences, historical sport NFT collectibles may bring nostalgia to consumers. After the market decline, the NBA Top Shot provided collectibles featuring iconic players in their historical games. For example, the NBA Top Shot released eight Moments of Larry Bird, who is one of the iconic players of the Boston Celtics, capturing his game highlights between 1981-1991. Besides, the NBA Top Shot offered blind packs, named as “Run It Back 1986-87” with a mix of outstanding players, such as Magic Johnson, Brad Daugherty, and Alex

English. Consumers have chances to pull Moments from these iconic players through blind packs.

These various fan experiences have increasingly captured scholarly attention, prompting researchers to investigate consumer values that drive consumption (e.g., Yang et al., 2024; Yilmaz et al., 2023; Zalan & Toufaily, 2024). For example, scholars found social, emotional, functional, and monetary values that motivate NFT consumption (Yilmaz et al., 2023). Later, self-expressive (Yang et al., 2024) and social status (e.g., Zalan & Toufaily, 2024) were identified as motives. While researchers revisited consumer values to follow the evolving NFT context, sport NFT collectibles kept introducing new experiences, such as historical collectibles, motivating researchers to examine the influence of nostalgia as a unique value driving consumption.

Furthermore, current understanding of consumer values in sport NFT practices came from findings of other types of NFTs, such as profile picture (e.g., Hofstetter et al., 2024), art (Yang et al., 2024), advertising NFTs (e.g., Xie et al., 2023), and NFTs in general (e.g., Yilmaz et al., 2023; Zalan & Toufaily, 2024), where same values may be designed differently compared to sport NFTs. For example, social status in the sport NFT context is based on numbers of supply of collectibles and a tier system. Whereas in the profile picture context, it uses rarity metrics that are based on numbers of supply of traits, such as background colors, fur colors, and clothing in Bored Ape. Expressive value in the sport NFT context is to express team identification instead of self-identity and personality through art NFTs (Yang et al., 2024). Moreover, certain fan experiences, such as historical collectibles, that can motivate consumption by providing emotional value may need further investigation. Besides, the challenges of consumer retention and acquisition motivate researchers to investigate the differences between buyers and non-

buyers (Park & Lee, 2025; Vega & Camarero, 2024; Yilmaz et al., 2023). Among them, Vega and Camarero (2024) tested emotional and monetary values. However, understanding of various consumer values, such as nostalgia and expressive values, between buyers and non-buyers are limited.

Study 3 contributes to TCV by extending it to product transaction beyond product possession. Besides, study 3 advances the understanding of consumption values in a specific sport NFT context and contributes to the NFT literature by expanding the understanding of non-buyers to those with understanding and interest beyond familiarity. Practically, study 3 offers insights to sport NFT providers on designing and marketing their products that offer consumption values to the existing and prospective consumers.

4.2 Theory of Consumption Values and Hypotheses Development

TCV identified that social, emotional, functional, epistemic, and conditional values influence consumption choices (Sheth et al., 1991a). Social value refers to the value of providing association with specific social groups (Sheth et al., 1991a). Emotional value refers to the value of generating feelings (Sheth et al., 1991a). Functional value refers to the value of providing functional performance and are measured on product attributes (Sheth et al., 1991a). TCV is a consumption value model, where their values can be expanded based on research contexts. For example, Baek and Oh (2021) incorporated green value in the fashion rental service context by using TCV. I expanded TCV to nostalgia, expressive value, and monetary value in the sport NFT context. Furthermore, the social value in TCV can be designed to incorporate social interaction, social status, and expressive value due to their sources (Sheth et al., 1991b).

I propose a consumption value model that social, emotional, and functional values are conceptualized as second-order reflective constructs. Social value reflects on social interaction,

social status, and expressive value, emotional value reflects on fun and nostalgia, and functional value reflects on ownership and monetary value. The TCV suggests that social value is relevant to needs for belonging (Maslow, 1943), acceptance, recognition, and influence (Hanna, 1978), and value expression (Katz, 1960) (Sheth et al., 1991b). Belonging is related to social interaction in groups. Acceptance and recognition are related to demonstrating social status through conspicuous consumption. Expressive value is related to image and value expression through consumption.

Emotional value refers to affections from consumption (Sheth et al., 1991a). Excitement and nostalgia that bring positive emotions to individuals may offer emotional value to them. Functional value refers to the intrinsic values that come from salient attributes of products or services (Sheth et al., 1991a). I propose ownership as functional value because verifying ownership of sport NFT collectibles is a key attribute that differentiates them from other fungible digital products (Sharma et al., 2022). The NFT literature conceptualizes ownership as functional value (Yilmaz et al., 2023). I also conceptualize the monetary value as functional value because trading sport NFT collectibles brings a functional of investment. The extended study (Sweeney & Soutar, 2001) conceptualized the utility of a product to save money as functional value. The similar concept of making money in the sport NFT context can be considered as the functional value. Besides the theoretical perspective, a second-order model can explain relationships between first-order constructs and provide a better model fit than the first-order model.

4.2.1 Social Value: Social Interaction

In the NFT literature, social interaction was consistently defined as a value from NFT community, but was termed differently. Most NFT studies defined social interaction as the value from online NFT communities (e.g., Brahmstaedt, 2025; Haried & Murray, 2023; Hofstetter et

al., 2024; Kang et al., 2025; Yilmaz et al., 2023), such as community access and being parts of the communities. Other NFT studies termed it as community belonging (Park & Lee, 2025; Yang et al., 2024; Zalan & Toufaily, 2024). I follow the NFT literature and define social interaction as the value to interact with others in a social group in NFT communities.

I hypothesize that social interaction increases purchase intention. NFT studies found that social interaction motivates NFT consumption (e.g., Haried & Murray, 2023; Jiang & Byon, 2026; Kang et al., 2025; Yang et al., 2024; Yilmaz et al., 2023; Zalan & Toufaily, 2024). For example, Yilmaz et al. (2023) found that community is one of the reasons that motivate NFT consumption. Similarly, Jiang and Byon (2026) identified socialization as a factor motivating purchases. In the sport context, interacting in NFT communities by discussing collectibles with like-mined others may bring a sense of belonging, motivating consumption of sport NFT collectibles. In the sport NFT context, consumers can not only discuss Moments they purchased but also real-time games. For instance, the NBA Top Shot provides Fast Break for real-time fan engagement. Consumers can discuss their line-up strategies, prediction of games, win and loss of the Fast Break, and their rewards from Fast Break. The real-time interaction may motivate consumers to purchase more sport NFT collectibles to join Fast Break (because it requires consumers to use their collections to play games).

4.2.2 Social Value: Social Status

Among NFT studies, Xie et al. (2024) conceptualized social status as an expressive value allows consumers to demonstrate their social status, personality, and brand identification. An exploratory study identified social status as a motive for NFT consumption (Zalan & Toufaily, 2024). Even though Zalan and Toufaily (2024) did not define social status, they used interviews to find that social status comes from certain levels of exclusivity, such as exclusive access to

events. Since social status in my study also comes from exclusivity and scarcity due to limited number of supply, I define social status as the value to being standing out by purchasing scarce sport NFT collectibles.

I propose that social status motivates sport NFT consumption. Most studies identified social status (including scarcity) as a motive in NFT consumption (e.g., Zalan & Toufaily, 2024). For example, the NFT literature reveals that uniqueness is a reason to purchase NFTs (Yilmaz et al., 2023). Similarly, exclusivity of sport NFTs has been found as a perceived value of consumption (Kang et al., 2025). However, Yang et al. (2024) found that uniqueness does not impact purchase intention of art NFTs in general, such as profile pictures, digital paintings, and music. Since some paintings are not limited supplied, uniqueness may not impact purchase intention when NFT products are not specified. In the sport NFT context, owning collectibles with high scarcity and high tiers can be recognized by others who did not have highly scarce collectibles. Furthermore, purchasing scarce collectibles that are usually with high prices help consumers climb the leaderboards (with usernames and position), which can be seen by all users on platforms.

4.2.3 Social Value: Expressive Value

In the NFT literature, expressive value was defined based on NFT categories. Yang et al. (2024) investigated art NFTs and defined the expressive value as the value to express personality and identity. Similarly, Xie et al. (2024) examined brand NFTs and defined expressive value as expressing status, personality, and brand identification. For sport NFT collectibles, consumers can express their team identification by purchasing collectibles. For instance, a Los Angeles Lakers fan may collect Moments of LeBron James or Magic Johnson to express their

identification to the team. Therefore, I define identity expression as the value to express one's team identification in the sport NFT context.

I hypothesize that identity expression motivates sport NFT consumption. The literature reveals that desire for online self-presentation motivates consumption (Kim et al., 2012). The literature finds that self-expression increases intention to purchase sport teams' apparel (Sierra et al., 2012). The NFT literature suggests that self-expressiveness through art NFT products motivates NFT consumption (Yang et al., 2024). In the sport NFT context, the opportunities to express team identification through purchasing sport NFT collectibles featuring players may motivate consumption. Like wearing players jerseys and team merchandise to support players and teams and express identification, sport NFT consumers use their collectibles to demonstrate their team identification, which can be seen by the league, teams, players, and others. As such, Sports NFT collectibles offer fans unique ways to connect with communities, gain recognition through leaderboards, and show team support. These distinct social incentives lead to my hypothesis:

H1: Social value, which reflects on social interaction, social status, and expressive value, will be positively associated with purchase intention of sport NFT collectibles.

4.2.4 Emotional Value: Fun

Fun was defined as emotion from NFT collections and their related activities in NFT studies (Kang et al., 2025; Xie et al., 2023; Xie et al., 2024; Yilmaz et al., 2023). For example, emotional value was defined as fun and curiosity after viewing or purchasing (Xie et al., 2023) and fun, exciting, and relax feeling when using art NFT collectibles (Xie et al., 2024). In the sport NFT context, collectibles can offer positive feelings through the excitement of video clips (e.g., dunk or jump shot), audio and visual stimuli (e.g., sounds of live games and colorful design

of collectibles), and completion of a set of collection. Thus, I define fun as the value to provide enjoyment from collecting sport NFT collectibles.

The NFT literature consistently finds that fun increases NFT consumption (Griffiths et al., 2024; V et al., 2024; Vega & Camarero, 2024; Xie et al., 2023; Yang et al., 2024; Yilmaz et al., 2023; Zalan & Toufaily, 2024). The sport NFT literature also points out fun as a motive of consumption (Haried & Murray, 2023; Jiang & Byon, 2026; Kang et al., 2025). In the sport NFT context, NFT collectibles that feature game highlights with visual and sound effects may bring fun to consumers, which may motivate purchase. For example, a Moment provides the last minute three-point shot with an energetic musical background at the beginning of the video clip and live game sounds from players and audience during the clip.

4.2.5 Emotional Value: Nostalgia

In the sport NFT context, nostalgia may become a consumer value which provides positive emotion to consumers. Nostalgia comes from historical collectibles that are offered by sport NFT providers. For example, the NBA Top Shot Moments with historical games in 1980s may bring consumers' positive emotion of watching or attending the games. I define nostalgia as enjoyment from collecting historical sport NFT collectibles. Although nostalgia also brings enjoyment, it is different from fun. Nostalgia is a preference for objects that were common in the past (Holbrook & Schindler, 1991), suggesting memory to evoke nostalgia.

Results of the effect of nostalgia on consumption were mixed. In the sport trading card context, a study on physical baseball cards found that nostalgia motivates consumption for certain teams (Thompson & Sen, 2011). In the sport tourism context, literature suggests that nostalgia increases revisit intention through brand, relationship, or value equity instead of increasing it directly (Cho & Chiu, 2021). Besides, a study found that nostalgia increases

conspicuous consumption tendency of sport products (Cho et al., 2025). In the sport NFT context, nostalgia through historical collectibles may motivate consumption by providing positive emotions relating to consumer's memory. Historical collectibles featuring iconic players and their historic games may bring positive emotion of consumers during the games. For example, NBA consumers may experience nostalgic feelings when seeing Moments featuring Larry Bird or Magic Johnson, who were iconic NBA players. Nostalgia may also evoke consumers' positive feeling of watching or attending Bird and Johnson's games, motivating consumers to purchase more collectibles. Therefore, I hypothesize that:

H2: Emotional value, which reflects on fun and nostalgia, will be positively associated with purchase intention of sport NFT collectibles.

4.2.6 Functional Value: Ownership

In the NFT literature, functional value was conceptualized differently based on the theoretical frameworks. From a technology perspective, NFT studies defined functional value as perceived usefulness (Fortagne & Lis, 2024; Lee & Cha, 2024; Ramly & Zabri, 2024; Xie et al., 2023). From a consumer value perspective, NFT studies defined it as utility and benefits from NFTs (Yilmaz et al., 2023; Zalan & Toufaily, 2024). Specifically, Yilmaz et al. (2023) used the Perceived Value Scale (Sweeney & Soutar, 2001) and Zalan and Toufaily (2024) used Holbrook Typology (Holbrook, 1999). In the sport NFT literature, Haried and Murray (2023) classified ownership, financial, scarcity, ease of use, skeptical, privacy as utilitarian factors without using theoretical frameworks. Similarly, Jiang and Byon (2026) identified ownership as a motive for sport NFT consumption without a theory to explain motives. Since I use TCV, which is also from a consumer value perspective, I define ownership as the value of verifying ownership, aiming to capture the key attribute of NFT collectibles. Verifying ownership differentiates NFT collectibles

from digital products (Sharma et al., 2022). Unlike other digital assets, each NFT collectible has a unique identifier that transparently records transaction history and ownership, which acts as a function to solve the unclear ownership concern in digital environments. Besides, NFTs use distributed ledger technology of blockchain, which enables consumers to verify authenticity of ownership of digital collectibles, preventing counterfeits that similar to physical trading card collection.

Ownership was found to motivate consumption in the NFT (e.g., Yilmaz et al., 2023) and sport NFT literature (Haried & Murray; Jiang & Byon, 2026). For example, Yilmaz et al. (2023) found that ownership is a reason to purchase NFTs and conceptualized it as functional value (along with technology and utility). Verifying ownership of sport NFT collectibles can help a consumer confirm the ownership of collectibles, which is important especially in the digital context, where images and video clips can be easily copied and pasted. For example, NBA Top Shot consumers can verify their ownership of their Moments by checking the Moment identification numbers (ID) (which is the unique identification) on Flow blockchain, the blockchain that the NBA Top Shot uses. By searching for the Moment ID, consumers can see the current owner of the Moment and the transaction history of the Moment. Since data that have recorded on blockchains cannot be modified (blockchain allows new data recording instead of revising previous data), the recorded data are trustworthy to proof ownership.

4.2.7 Functional Value: Monetary Value

I propose monetary value as another dimension of functional value. Monetary value is defined as financial gains consistently in the NFT literature (AbedRabbo et al., 2025; Brahmstaedt, 2025; Cho et al., 2024; Fortagne & Lis, 2024; Lee & Cha, 2024; Ng et al., 2025; Ramly & Zabri, 2024; Schwiderowski et al., 2023; Xie & Muralidharan, 2024; Yang et al, 2024;

Yilmaz et al., 2023; Zalan & Toufaily, 2024) and the sport NFT literature (Haried & Murray, 2023; Jiang & Byon, 2026; Kang et al., 2025). Sport NFT collectibles provide monetary value by enabling online transaction on the secondary market. For example, the Marketplace offers a platform for NBA Top Shot consumers to trade their Moments. Based on the literature, monetary value is defined as the value to provide financial gains.

The NFT literature has consistently documented that monetary value increases NFT consumption (e.g., Yang et al., 2024; Yilmaz et al., 2023). For example, Brahmstaedt (2025) found that monetary value as an initial motive to purchase NFT collectibles. Yilmaz et al. (2023) also found that monetary value motivates NFT consumption. The sport NFT literature also finds that monetary value drives sport NFT consumption (Haried & Murray, 2023; Jiang & Byon, 2026; Kang et al., 2025). Even after the decline of the sport NFT market, the monetary value has been found as a motive for sport NFT consumption (Kang et al., 2025). In the sport NFT context, consumers can resell their NFT collectibles on secondary markets, where they have opportunities to get financial gain through transaction. Therefore, I hypothesize that:

H3: Functional value, which reflects on ownership and monetary value, will be positively associated with purchase intention of sport NFT collectibles.

4.2.8 Mental Accounting Theory and Moderating Effect of Transaction Experience

MAT is a consumer behavior model, based on psychology and microeconomics, that explains how consumers interpret their gains and loss, evaluation of purchase, and making purchase decisions (Thaler, 1985). Later, the marketing literature on online purchase uses MAT to explain the differences between potential and repeat (same as existing consumers in my dissertation) consumers, as it reveals that two groups have different emphasis between perceived risk and perceived prices (Kim & Gupta, 2009).

I use the marketing literature (Kim & Gupta, 2009) that extends MAT to suggest the differences between existing and prospective sport NFT consumers. I hypothesize that transaction experience moderates the positive relationship between consumer values and purchase intention of sport NFT collectibles. Specifically, the positive relationships of social and emotional value are higher for buyers than non-buyers. Since purchasing process is online and products are digital, non-buyers may be concerned with potential risks, such as losing money or failing to receive collectibles. Whereas buyers with purchase experience understand that the process. Vega and Camarero (2024) found that the negative effect of perceived risk on purchase intention is higher for non-buyers than buyers. With higher perceived risk effect, providing intangible values may be insufficient to drive consumption of non-buyers. Although the NFT literature found buyers and non-buyers are not different in fun (Vega & Camarero, 2024; Yilmaz et al., 2023), social interaction, and social status (including scarcity) (Yilmaz et al., 2023), it may be due to the types of NFT products. Unlike NFTs in general, the NBA Top Shot context has experienced a market bubble, which may lead to hesitation for non-buyers when making purchase decisions. Non-buyers may value various social and emotional experiences on the platform but these values may not be sufficient with risk concerns. Therefore, I propose the following hypotheses:

H4: Transaction experience will moderate the positive relationship between social, emotional, functional values with purchase intention of sport NFT collectibles.

H4a: The positive impact of social value on purchase intention is higher for buyers than non-buyers.

H4b: The positive impact of emotional value on purchase intention is higher for buyers than non-buyers.

Unlike social and emotional values, I hypothesize that the relationship between functional value and purchase intention is higher for non-buyers than buyers. Even without purchase experience, verifying ownership would offer more security to non-buyers than buyers. In the sport NFT context, ownership can be verified by checking NFT ID on blockchains. Through verification, non-buyers can see the transaction history and the current owner. Similar to ownership, the monetary value may have a higher impact on non-buyers. Since some sport NFT collectibles have financial potentials, purchasing them can earn profits instead of losing money. Even though the NFT literature finds non-differences in ownership (Yilmaz et al., 2023) and monetary value (Vega & Camarero, 2024; Yilmaz et al., 2023), these values may differ when investigating a specific context. In the NBA Top Shot context, ownership is clearly shown with Moment ID, enabling non-buyers to verify. Even after the market hype, the high scarcity of Moments and the related utility, such as access to NBA All Star games, offer financial potentials to transact Moments. Therefore, I hypothesize that:

H4c: The positive impact of functional value on purchase intention is higher for non-buyers than buyers.

4.3 Methodology

4.3.1 Survey and Sample

I conducted a survey on Qualtrics from March 1 to March 28, 2026 (pilot and main studies) in the series 2025-26 NBA Top Shot context. Participants who are at least 18 years old, living in the U.S. and have NBA Top Shot knowledge or interest were recruited from Prolific. I used the same Prolific embedded pre-screener and the customized pre-screening question as study 2 to recruit buyers and non-buyers of NBA Top Shot Moments. Same as study 2, I collected two rounds of data to achieve a balanced sample size between buyers and non-buyers.

In the first round (buyers and non-buyers), 199 eligible responses were received with 175 useful responses (59 from buyers and 116 from non-buyers), after removing six duplicated, 12 inconsistent, one failed attention check, and five too fast (less than 300 s) responses. In the second round (buyers only), 145 eligible responses were collected with 110 useful responses after removing 18 duplicated, 11 inconsistent, two failed attention checks, and four too fast (less than 300 s) responses. After cleaning data, a total of 285 responses were included in the analysis, which met the minimum sample size 210 based on the G-power analysis. Sample demographics were summarized in Table 4.1

Table 4.1

Main study descriptive statistics of samples and latent variables

	n	*%*		*M (SD)*
Gender			Age	38.15 (11.26)
Man	194	68.07	Interact	5.43 (1.20)
Woman	88	30.88	Status	4.76 (1.49)
Non-binary / third gender	2	0.70	Fun	5.29 (1.36)
Prefer not to say	1	0.35	Nostalgia	5.26 (1.38)
Race			Express	4.47 (1.90)
White	166	58.25	Ownership	5.81 (0.86)
Black	69	24.21	Money	4.56 (1.50)
Asian	20	7.02	PI	4.01 (1.98)
Hispanic or Latino	25	8.77	Teamid	3.76 (1.90)
American Indian or Alaska Native	0	0.00		
Native Hawaiian or Pacific Islander	1	0.35		
Other	4	1.40		
Education				
Below high school	3	1.05		
High school	50	17.54		
Undergraduate	138	48.42		
Graduate	94	32.98		
Income				
Less than $50,000	45	15.79		
$50,000-$74,999	74	25.96		
$75,000-$99,999	60	21.05		
$100,000-$124,999	45	15.79		

	n	*%*	*M (SD)*
$125,000-$149,999	28	9.82	
$150,000-$174,999	13	4.56	
Over $175,000	20	7.02	
Employment			
Full-time	219	76.84	
Part-time	48	16.84	
Retired	3	1.05	
Student	5	1.75	
Unemployed	10	3.51	
Marital status			
Married	146	51.23	
Single	124	43.51	
Divorced	10	3.51	
Separated	3	1.05	
Widowed	2	0.70	
Purchased NBA Top Shot Moments before			
Yes	169	59.30	
No	116	40.70	
Direct experience with Brandon Roy			
Yes	196	68.77	
No	89	31.23	
Indirect experience with Brandon Roy			
Yes	136	47.72	
No	149	52.28	
N	285	100.00	

4.3.2 Stimuli Development, Procedure, and Pilot Study

I used images and text description as stimuli. The images include a GIF of the NBA Top Shot Moment Featuring Brandon Roy. I chose Brandon Roy because he is a historical player of the Portland Trail Blazers and with a Moment that has a rare tier and 399 supplied. Besides, an image with combined screenshots of the product page, the NBA Top Shot Discord community, crypto information, and a homepage, was used as a stimulus. The product page indicates fun experience, the number of supply and Moment tier indicates social status, the date of game (November 1, 2006) indicates nostalgia, and the price indicates monetary value. A screenshot of

the community with conversations among users aims to indicate social interaction. Crypto information with Flow blockchain indicates ownership. Profile page pin aims to indicate expressive value. Moreover, a text description was used to explain consumer experiences on the NBA Top Shot in the combined screenshot. Seven features were explained to simulate seven consumer experiences (e.g., discuss the Moment in the NBA Top Shot Community; recall Brandon Roy's debut for the Trail Blazers on November 1, 2006; pin the Moment on your homepage, where every visitor can see it.). Images and the text description were included in Appendix G.

After consenting to join the study, participants answered a customized pre-screen question (same as study 2). For those without purchase experience and neither understand nor are interested in NBA Top Shot Moments were excluded. Then, they reported their identification to the Portland Trail Blazers. Afterwards, participants saw the stimuli with 20-seconds in the GIF, 20-seconds in the experience image, and 15-seconds in the text description. They cannot skip the stimuli. After that, they responded to questions about perceived consumer values and purchase intention. Seven consumer values were randomized to control common method bias. Then, they answered questions about their direct and indirect experiences with Brandon Roy, NBA Top Shot experience (those without Top Shot experience reported NFT experience), knowledge about NBA Top Shot experience and features, and demographics. Finally, they were debriefed and paid with $1.20 and $1.84 for round 1 (nine min and 41 s median time reported by Prolific), and round 2 (13 min and 47 s median time reported by Prolific), respectively.

A pilot study was conducted to test convergent and discriminant validity of constructs. The pilot study received 50 eligible responses with 42 useful responses after eliminating one duplicated, three inconsistent, and four too fast responses. Demographics were summarized in

Table 4.2. The convergent and discriminant validity of constructs were using the same methods as study 1 and 2. The CFA model did not show an acceptable model fit with $\chi^2 = 779.043$, $df = 369$, $p < .001$, $\chi^2/df = 2.11$, CFI = .762, NFI = .639, RMSEA = .163, SRMR = .123. Furthermore, the model misspecification issue may exist because the smallest eigenvalue is negative. The model fit and misspecification issues may be due to the small sample size.

Standardized factor loadings were significant and ranging from .56 to 1.00 (.998 round 2 decimal places to 1.00). The factor loading of the second item of fun (.998) may also indicate a model fit issue, which may be due to the small sample size. The CR showed convergent validity (> .70) (Hair et al., 2019). Furthermore, the values of AVE were above .50 also indicate convergent validity (Fornell & Larcker, 1981). The squared correlations between constructs were smaller than the values of AVE show discriminant validity (Hair et al., 2019). Factor loading, Cronbach's alpha, and CR were summarized in Table 4.3. Correlations, squared correlations, and AVE are presented in Table 4.4.

Table 4.2

Pilot study descriptive statistics of samples and latent variables

	n	*%*		*M (SD)*
Gender			Age	37.79 (9.58)
Man	33	78.57	Interact	5.38 (1.33)
Woman	8	19.05	Status	4.42 (1.47)
Non-binary / third gender	0	0.00	Fun	5.02 (1.54)
Prefer not to say	1	2.38	Nostalgia	5.09 (1.34)
Race			Express	4.09 (1.99)
White	27	64.29	Ownership	5.63 (0.96)
Black	9	21.43	Money	4.09 (1.50)
Asian	5	11.90	PI	3.52 (2.06)
Hispanic or Latino	1	2.38	Teamid	3.20 (1.92)
American Indian or Alaska Native	0	0.00		
Native Hawaiian or Pacific Islander	0	0.00		

	n	*%*	*M (SD)*
Other	0	0.00	
Education			
Below high school	0	0.00	
High school	9	21.43	
Undergraduate	14	33.33	
Graduate	19	45.24	
Income			
Less than $50,000	6	14.29	
$50,000-$74,999	8	19.05	
$75,000-$99,999	9	21.43	
$100,000-$124,999	10	23.81	
$125,000-$149,999	2	4.76	
$150,000-$174,999	2	4.76	
Over $175,000	5	11.90	
Employment			
Full-time	32	76.19	
Part-time	5	11.90	
Retired	2	4.76	
Student	0	0.00	
Unemployed	3	7.14	
Marital status			
Married	26	61.90	
Single	14	33.33	
Divorced	2	4.76	
Separated	0	0.00	
Widowed	0	0.00	
Purchased NBA Top Shot Moments before			
Yes	18	42.86	
No	24	57.14	
Direct experience with Brandon Roy			
Yes	25	59.52	
No	17	40.48	
Indirect experience with Brandon Roy			
Yes	17	40.48	
No	25	59.52	
N	42	100.00	

Table 4.3

Pilot study factor loadings, Cronbach's alpha, and CR

Item	β	α	CR
Social interaction (adapted from Yang et al., 2024; developed by Peterson et al., 2008)		.949	.936
Having the displayed NBA Top Shot Moment featuring Brandon Roy helps me feel like part of the NBA Top Shot community.	.83		
Having the displayed NBA Top Shot Moment featuring Brandon Roy enables me to feel that I belong to the NBA Top Shot community.	.84		
Having the displayed NBA Top Shot Moment featuring Brandon Roy helps me connect with other collectors in the NBA Top Shot community.	.98		
Having the displayed NBA Top Shot Moment featuring Brandon Roy allows me to build relationships with others in the NBA Top Shot community.	.96		
Social status (adapted from Meshram & O'Cass, 2018)		.848	.885
Owning the displayed NBA Top Shot Moment featuring Brandon Roy makes me feel like I have a high social standing among other collectors.	.84		
Owning the displayed NBA Top Shot Moment featuring Brandon Roy earns me respect from other collectors.	.90		
The displayed NBA Top Shot Moment featuring Brandon Roy helps me project a positive image in the NBA Top Shot community.	.72		
Fun (adapted from Ducoffe, 1995)		.958	.963
Purchasing the displayed NBA Top Shot Moment featuring Brandon Roy is a fun experience.	.90		
Owning the displayed NBA Top Shot Moment featuring Brandon Roy is enjoyable.[1]	1.00		

Item	β	α	CR
I am very pleased with owning the displayed NBA Top Shot Moment featuring Brandon Roy.	.93		
Nostalgia (adapted from Cho et al., 2019)		.834	.823
The displayed NBA Top Shot Moment featuring Brandon Roy is a nostalgic reminder of my past experiences watching the NBA.	.82		
The displayed NBA Top Shot Moment featuring Brandon Roy makes me feel a sense of fondness for my experiences as an NBA fan.	.99		
The displayed NBA Top Shot Moment featuring Brandon Roy reminds me of my cherished memory related to the NBA.	.56		
Expressive value (adapted from Wallace et al., 2021; developed by Carroll & Ahuvia, 2006)		.975	.975
The displayed NBA Top Shot Moment featuring Brandon Roy reflects my team identification.	.97		
The displayed NBA Top Shot Moment featuring Brandon Roy is an expression of my team identification.	.97		
The displayed NBA Top Shot Moment featuring Brandon Roy mirrors my team identification.	.96		
Ownership (adapted from Homburg et al., 2015)		.824	.821
The ownership of the displayed NBA Top Shot Moment featuring Brandon Roy can be verified.	.87		
The ownership of the displayed NBA Top Shot Moment featuring Brandon Roy is capable to be verified.	.95		
The ownership verification of the displayed NBA Top Shot Moment featuring Brandon Roy is functional.	.58		
Monetary value (adapted from Ali, 2011)		.926	.934

Item	β	α	CR
The displayed NBA Top Shot Moment featuring Brandon Roy is financially rewarded.	.79		
Investing in the displayed NBA Top Shot Moment featuring Brandon Roy seems to generate high returns.	.85		
I believe that the financial returns of the displayed NBA Top Shot Moment featuring Brandon Roy will be high in the future.	.95		
The displayed NBA Top Shot Moment featuring Brandon Roy has sufficient potential to grow in the future.	.80		
I think investing the displayed NBA Top Shot Moment featuring Brandon Roy is highly rewarding.	.85		
Purchase intention (adopted from Schlimm et al., 2024; developed by Putrevu & Lord, 1994)		.976	.977
It is very likely that I will buy the displayed NBA Top Shot Moment featuring Brandon Roy.	.97		
I will purchase the displayed NBA Top Shot Moment featuring Brandon Roy the next time I have the chance to.	.95		
I will definitely buy the displayed NBA Top Shot Moment featuring Brandon Roy.	.98		
Team identification (adopted from Trail et al., 2003; developed by Trail & James, 2001)		.943	.943
I consider myself to be a "real" fan of the Portland Trail Blazers.	.92		
I would experience a loss if I had to stop being a fan of the Portland Trail Blazers.	.90		

Item	β	α	CR
Being a fan of the Portland Trail Blazers is very important to me.	.94		

Note. β: standardized factor loading. [1]: the standardized factor loading of the second item of fun is .998, keeping 2 decimal places to 1.00.

Table 4.4

Pilot study correlations, squared correlations, and AVE

	Interact	Status	Fun	Nostalgia	Express	Ownership	Money	Teamid	PI
Interact	.819								
Status	.58	.693							
	(.34)								
Fun	.55	.72	.892						
	(.30)	(.52)							
Nostalgia	.20	.30	.55	.643					
	(.04)	(.09)	(.30)						
Express	.32	.68	.64	.22	.929				
	(.10)	(.47)	(.41)	(.05)					
Ownership	.50	.07	.31	.13	.14	.618			
	(.25)	(.00)	(.09)	(.02)	(.02)				
Money	.24	.69	.65	.17	.69	.10	.727		
	(.06)	(.47)	(.42)	(.03)	(.47)	(.01)			
Teamid	.25	.60	.51	.15	.80	.05	.66	.848	
	(.06)	(.36)	(.26)	(.02)	(.64)	(.00)	(.43)		
PI	.27	.68	.61	.22	.73	.08	.84	.84	.933
	(.07)	(.46)	(.38)	(.05)	(.53)	(.01)	(.70)	(.71)	

Note. Interact: social interaction; Status: social status; Express: expressive value; Money: monetary value; Teamid: team identification; PI: purchase intention; squared correlations in paratheses; AVE on diagonal.

4.3.3 Measures

Study 3 includes constructs of social interaction, social status, fun, nostalgia, expressive value, ownership, monetary value, purchase intention, and team identification. I measured social interaction by adapting four items from Yang et al. (2024). Yang et al. (2024) adapted four items from eight items in the Brief Sense of Community Scale (Peterson et al., 2008). I modified the

first item “NFT art enables me to feel like a member of NFT community” (Yang et al., 2024) to “Having the displayed NBA Top Shot Moment helps me feel like part of the NBA Top Shot community” to focus on social interaction. I measured social status by adapting three items from Meshram and O’Cass (2018). I selected three out of four items from Meshram and O’Cass (2018) because they are relevant to social status in my study (e.g., “have a high social standing”). I adapted three items from Ducoffe (1995) to measure fun by modifying “Advertisements are entertaining” to “Purchasing this displayed NBA Top Shot Moment is a fun experience” to focus on fun of collecting sport NFT collectibles. To measure nostalgia, I adapted three items from five items of leisure nostalgia in Cho et al. (2019). I adapted three items by changing leisure nostalgia to nostalgia of participants’ NBA experiences (e.g., This displayed NBA Top Shot Moment is a nostalgic reminder of my past experiences watching the NBA). Expressive value were measured by adapting three items from Wallace et al. (2021), which is developed by Carroll and Ahuvia (2006). Wallace et al. (2021) adapted three items of inner self-expression from Carroll and Ahuvia (2006) by excluding “This brand symbolizes the kind of person I really am inside”. I adapted Wallace et al. (2021) to focus on express team identification (e.g., The displayed NBA Top Shot Moment reflects my team identification).

I adapted three items from Homburg et al. (2015) to measure ownership by modifying the first and second items to focus on NFT ownership verification (e.g., The ownership of the displayed NBA Top Shot Moment of Brandon Roy can be verified). I adapted five items from Ali (2011) to measure monetary values by changing the first, third, and the fourth items in their study to focus on financial rewards of sport NFT collectibles (e.g., The displayed NBA Top Shot Moment of Brandon Roy is financially rewarded). Purchase intention were adopted from Schlimm et al. (2024), which is developed by Putrevu and Lord (1994). To control the length of

my survey, I adopted three items from Trail et al. (2003), which were developed by Trail and James (2001), to measure team identification. Since study 3 survey includes nine constructs with 30 items, I used this team identification scale with three items instead of the Sport Spectator Identification Scale (Wann & Branscombe, 1993). Measurement scales are summarized in Appendix D.

Team identification, direct experience with Brandon Roy, indirect experience with Brandon Roy, and demographics were included as covariates to test them independently with purchase intention. Direct experience asked participants whether they have any experience during Brandon Roy's NBA career (e.g., watched games, attended games, or followed news via media during his NBA career 2006-2013). Indirect experience asked participants whether they have any experience after he retired (followed news via media after 2013). Because those who have experience may see a higher positive relationship between nostalgia and purchase intention than those without experience. I did not include NBA Top Shot score and rare Moment experience as covariates as I proposed because non-buyers do not have score and rare Moment experience. Using zero for non-buyers may influence the results because some buyers also reported zero scores or without rare Moment purchase experience. Age were not included as a covariate as proposed because it neither impact purchase intention nor impact nostalgia.

4.3.4 Data Analysis

I applied SEM to analyze data, using "lavaan", "semTools", and "psych" packages in R. because SEM enables me to test all consumer values simultaneously and the differences between buyers and non-buyers by using multigroup SEM. After data clean, I tested measurement invariance between first round and the second round of data to check whether I can combine them together. After that, I used CFA to test measurement model with first and second-order

constructs because I proposed second-order constructs relationships on purchase intention. Then, I tested measurement invariance between buyers and non-buyers for the first- and second-order constructs. Before testing hypotheses, I examined constructs and covariates that impact purchase intention for the first- and second-order constructs, aiming to figure out variables to include in a structural model. With variable relationship results, I used a structural model that includes second-order constructs: social value, emotional value, and functional value as independent variables and purchase intention as a dependent variable. With structural model results, I used multigroup SEM to test whether any differences in the relationships between consumer values and purchase intention between buyers and non-buyers. Since second-order measurement and structural models did not show an acceptable model fit, I used a data-driven approach to test first-order consumer values on purchase intention and multigroup SEM between two groups. Same as study 2, I followed procedures in Brown (2015) to test measurement invariance and Byrne (2016) to test multigroup SEM.

Common method bias may be a concern in survey, which may influence results because relationships may be due to common method bias instead of constructs (Podsakoff et al., 2003). Statistical tests after data collection are necessary although procedure remedies were used in the survey design, including randomized consumer values, adding a text page break to avoid constantly seeing 7-point Likert scale questions, and collecting data anonymously. I used the Harman's single-factor test, which loaded all items to a principal component analysis (an analysis in the exploratory factor analysis). It aims to test whether a factor can explain a majority variance of measures (> 50%). Since principal component analysis does not include MLR estimation, I used maximum likelihood estimation (ML) in the principal component analysis.

Because MLR corrects standard errors in ML results instead of changing variances of factor loadings, using ML should have the same results as using MLR.

Even though Harman's single-factor test is widely used in marketing and psychology studies, it has been criticized because of less sensitive to common method bias (Podsakoff et al., 2003). Therefore, I also used a single-factor CFA with MLR estimation to test common method bias. I compared my first-order measurement model with a model that loaded all items to a single factor. I used chi-square test to compare the single-factor and my model. A common method bias is a concern if a single-factor CFA model fit better than my model.

4.4 Results

4.4.1 Measurement Invariance (Round) and Construct Validity

The measurement invariance results showed that the measurement model of the whole data set, the first round, and the second round of data have an acceptable model fit. However, when testing the configural model, the model misspecification issue may exist because the smallest eigenvalue is negative. Even though the metric model did not show significant difference from the configural model (p = .703, ΔCFI < .001, ΔRMSEA = .001, ΔSRMR = .005) and the scalar model did not different significantly from the metric model (p = .225, ΔCFI = .001, ΔRMSEA= .001, ΔSRMR = .001), the measurement invariance may not be confirmed due to the potential model misspecification in the configural model. However, since round 1 and 2 did not change the design and nature of the survey, two rounds of data are able to be combined. Model indices were summarized in Table 4.5.

Table 4.5

Measurement invariance model indices (round)

	χ^2	*df*	*p*	χ^2/df	CFI	NFI	RMSEA	SRMR
Whole	513.946	369	<.001	1.39	.981	.935	.037	.045
Round 1	561.866	369	<.001	1.52	.962	.897	.055	.051
Round 2	470.765	369	<.001	1.28	.966	.864	.050	.046
Configural[1]	1029.772	738	<.001	1.40	.964	.884	.053	.047
Metric	1047.477	759	<.001	1.38	.964	.882	.052	.052
Scalar	1073.268	780	<.001	1.38	.963	.879	.051	.053

Note. Whole: the whole data set ($N = 285$); [1]: the smallest eigenvalue is negative indicates model misspecification.

With combined data, I tested first-order measurement model using CFA. The model indices showed an acceptable model fit (see results in the row "Whole" in Table 4.5). Standardized factor loadings are all significant ranging from .60 to .98. The values of CR for all constructs are higher than .70, showing convergent validity (Hair et al., 2019). The AVE (> .50) provides further evidence of convergent validity (Fornell & Larcker, 1981). The squared correlations between constructs were smaller than AVE indicates discriminant validity (Hair et al., 2019). Factor loading, Cronbach's alpha, and CR are summarized in Table 4.6. Correlation, squared correlation, and AVE are presented in Table 4.7.

Table 4.6

Main study factor loadings, Cronbach's alpha, and CR

Item	*β*	*α*	CR
Social interaction (adapted from Yang et al., 2024; developed by Peterson et al., 2008)		.929	.931
Having the displayed NBA Top Shot Moment featuring Brandon Roy helps me feel like part of the NBA Top Shot community.	.90		

Item	β	α	CR
Having the displayed NBA Top Shot Moment featuring Brandon Roy enables me to feel that I belong to the NBA Top Shot community.	.92		
Having the displayed NBA Top Shot Moment featuring Brandon Roy helps me connect with other collectors in the NBA Top Shot community.	.90		
Having the displayed NBA Top Shot Moment featuring Brandon Roy allows me to build relationships with others in the NBA Top Shot community.	.79		
Social status (adapted from Meshram & O'Cass, 2018)		.914	.919
Owning the displayed NBA Top Shot Moment featuring Brandon Roy makes me feel like I have a high social standing among other collectors.	.89		
Owning the displayed NBA Top Shot Moment featuring Brandon Roy earns me respect from other collectors.	.91		
The displayed NBA Top Shot Moment featuring Brandon Roy helps me project a positive image in the NBA Top Shot community.	.87		
Fun (adapted from Ducoffe, 1995)		.925	.929
Purchasing the displayed NBA Top Shot Moment featuring Brandon Roy is a fun experience.	.89		
Owning the displayed NBA Top Shot Moment featuring Brandon Roy is enjoyable.	.91		
I am very pleased with owning the displayed NBA Top Shot Moment featuring Brandon Roy.	.90		
Nostalgia (adapted from Cho et al., 2019)		.895	.896
The displayed NBA Top Shot Moment featuring Brandon Roy is a nostalgic reminder of my past experiences watching the NBA.	.81		

Item	β	α	CR
The displayed NBA Top Shot Moment featuring Brandon Roy makes me feel a sense of fondness for my experiences as an NBA fan.	.90		
The displayed NBA Top Shot Moment featuring Brandon Roy reminds me of my cherished memory related to the NBA.	.88		
Expressive value (adapted from Wallace et al., 2021; developed by Carroll & Ahuvia, 2006)		.963	.964
The displayed NBA Top Shot Moment featuring Brandon Roy reflects my team identification.	.95		
The displayed NBA Top Shot Moment featuring Brandon Roy is an expression of my team identification.	.96		
The displayed NBA Top Shot Moment featuring Brandon Roy mirrors my team identification.	.93		
Ownership (adapted from Homburg et al., 2015)		.775	.781
The ownership of the displayed NBA Top Shot Moment featuring Brandon Roy can be verified.	.79		
The ownership of the displayed NBA Top Shot Moment featuring Brandon Roy is capable to be verified.	.82		
The ownership verification of the displayed NBA Top Shot Moment featuring Brandon Roy is functional.	.60		
Monetary value (adapted from Ali, 2011)		.943	.945
The displayed NBA Top Shot Moment featuring Brandon Roy is financially rewarded.	.78		
Investing in the displayed NBA Top Shot Moment featuring Brandon Roy seems to generate high returns.	.89		

Item	β	α	CR
I believe that the financial returns of the displayed NBA Top Shot Moment featuring Brandon Roy will be high in the future.	.91		
The displayed NBA Top Shot Moment featuring Brandon Roy has sufficient potential to grow in the future.	.89		
I think investing the displayed NBA Top Shot Moment featuring Brandon Roy is highly rewarding.	.90		
Purchase intention (adopted from Schlimm et al., 2024; developed by Putrevu & Lord, 1994)		.977	.977
It is very likely that I will buy the displayed NBA Top Shot Moment featuring Brandon Roy.	.96		
I will purchase the displayed NBA Top Shot Moment featuring Brandon Roy the next time I have the chance to.	.97		
I will definitely buy the displayed NBA Top Shot Moment featuring Brandon Roy.	.97		
Team identification (adopted from Trail et al., 2003; developed by Trail & James, 2001)		.948	.951
I consider myself to be a "real" fan of the Portland Trail Blazers.	.89		
I would experience a loss if I had to stop being a fan of the Portland Trail Blazers.	.92		
Being a fan of the Portland Trail Blazers is very important to me.	.98		

Note. β: standardized estimates; α: Cronbach's alpha; all measured on a 7-point Likert scale.

Table 4.7

Main study correlations, squared correlations, and AVE

	Interact	Status	Fun	Nostal	Express	Owner	Money	Teamid	PI
Interact	.772								
Status	.72 (.51)	.790							
Fun	.70 (.49)	.82 (.67)	.811						
Nostal	.73 (.53)	.70 (.49)	.78 (.61)	.744					
Express	.47 (.22)	.63 (.40)	.59 (.35)	.60 (.37)	.899				
Owner	.54 (.29)	.39 (.15)	.40 (.16)	.42 (.18)	.15 (.02)	.543			
Money	.53 (.28)	.83 (.68)	.75 (.56)	.62 (.39)	.60 (.36)	.27 (.07)	.775		
Teamid	.34 (.11)	.58 (.34)	.55 (.30)	.51 (.26)	.78 (.61)	.04 (.00)	.61 (.37)	.865	
PI	.49 (.24)	.74 (.54)	.72 (.52)	.57 (.33)	.69 (.47)	.21 (.04)	.82 (.67)	.74 (.55)	.934

Note. Interact: social interaction; Status: social status; Nostal: nostalgia; Express: expressive value; Owner: ownership; Money: monetary value; Teamid: team identification; PI: purchase intention; squared correlations in parentheses; AVE on diagonal.

Since I hypothesized second-order relationships between consumer values and purchase intention, I also tested second-order measurement model. The model indices show an acceptable model fit with $\chi^2 = 724.279$, $df = 388$, $p < .001$, $\chi^2/df = 1.87$, CFI = .955, NFI = .909, RMSEA = .055, SRMR= .081. All standardized factor loadings are significant, ranging from .34 to .98. The factor loading of ownership in functional value is low (.34). Factor loadings were summarized in Table 4.8. Furthermore, the standardized covariances between second-order constructs are larger than 1 indicating model misspecification issue. Specifically, the standardized covariances between purchase intention and functional value is 1.010, between social value and functional value is 1.097, and between emotional value and functional value is 1.019. Correlations and squared correlations were summarized in Table 4.9.

Table 4.8

Second-order constructs factor loadings

Item	β
Social interaction (adapted from Yang et al., 2024; developed by Peterson et al., 2008)	
Having the displayed NBA Top Shot Moment featuring Brandon Roy helps me feel like part of the NBA Top Shot community.	.90
Having the displayed NBA Top Shot Moment featuring Brandon Roy enables me to feel that I belong to the NBA Top Shot community.	.92
Having the displayed NBA Top Shot Moment featuring Brandon Roy helps me connect with other collectors in the NBA Top Shot community.	.90
Having the displayed NBA Top Shot Moment featuring Brandon Roy allows me to build relationships with others in the NBA Top Shot community.	.79
Social status (adapted from Meshram & O'Cass, 2018)	
Owning the displayed NBA Top Shot Moment featuring Brandon Roy makes me feel like I have a high social standing among other collectors.	.90
Owning the displayed NBA Top Shot Moment featuring Brandon Roy earns me respect from other collectors.	.90
The displayed NBA Top Shot Moment featuring Brandon Roy helps me project a positive image in the NBA Top Shot community.	.86
Fun (adapted from Ducoffe, 1995)	
Purchasing the displayed NBA Top Shot Moment featuring Brandon Roy is a fun experience.	.89
Owning the displayed NBA Top Shot Moment featuring Brandon Roy is enjoyable.	.91

Item	β
I am very pleased with owning the displayed NBA Top Shot Moment featuring Brandon Roy.	.90
Nostalgia (adapted from Cho et al., 2019)	
The displayed NBA Top Shot Moment featuring Brandon Roy is a nostalgic reminder of my past experiences watching the NBA.	.81
The displayed NBA Top Shot Moment featuring Brandon Roy makes me feel a sense of fondness for my experiences as an NBA fan.	.89
The displayed NBA Top Shot Moment featuring Brandon Roy reminds me of my cherished memory related to the NBA.	.88
Expressive value (adapted from Wallace et al., 2021; developed by Carroll & Ahuvia, 2006)	
The displayed NBA Top Shot Moment featuring Brandon Roy reflects my team identification.	.95
The displayed NBA Top Shot Moment featuring Brandon Roy is an expression of my team identification.	.97
The displayed NBA Top Shot Moment featuring Brandon Roy mirrors my team identification.	.93
Ownership (adapted from Homburg et al., 2015)	
The ownership of the displayed NBA Top Shot Moment featuring Brandon Roy can be verified.	.81
The ownership of the displayed NBA Top Shot Moment featuring Brandon Roy is capable to be verified.	.80
The ownership verification of the displayed NBA Top Shot Moment featuring Brandon Roy is functional.	.61
Monetary value (adapted from Ali, 2011)	

Item	β
The displayed NBA Top Shot Moment featuring Brandon Roy is financially rewarded.	.78
Investing in the displayed NBA Top Shot Moment featuring Brandon Roy seems to generate high returns.	.89
I believe that the financial returns of the displayed NBA Top Shot Moment featuring Brandon Roy will be high in the future.	.91
The displayed NBA Top Shot Moment featuring Brandon Roy has sufficient potential to grow in the future.	.89
I think investing the displayed NBA Top Shot Moment featuring Brandon Roy is highly rewarding.	.90
Purchase intention (adopted from Schlimm et al., 2024; developed by Putrevu & Lord, 1994)	
It is very likely that I will buy the displayed NBA Top Shot Moment featuring Brandon Roy.	.96
I will purchase the displayed NBA Top Shot Moment featuring Brandon Roy the next time I have the chance to.	.97
I will definitely buy the displayed NBA Top Shot Moment featuring Brandon Roy.	.97
Team identification (adopted from Trail et al., 2003; developed by Trail & James, 2001)	
I consider myself to be a "real" fan of the Portland Trail Blazers.	.88
I would experience a loss if I had to stop being a fan of the Portland Trail Blazers.	.92
Being a fan of the Portland Trail Blazers is very important to me.	.98
Social value (second-order)	

Item	*β*
Social interaction	.72
Social status	.91
Expressive value	.73
Emotional value (second-order)	
Fun	.94
Nostalgia	.84
Functional value (second-order)	
Ownership	.34
Money	.79

Note. β: standardized factor loading; except for second-order constructs, all measured on a 7-point Likert scale.

Table 4.9

Second-order construct correlations and squared correlations

	1	2	3	4	5	6	7	8	9	10	11
1											
2	.66 (.44)										
3	.65 (.42)	.82 (.68)									
4	.58 (.34)	.74 (.54)	.78 (.61)								
5	.52 (.28)	.66 (.44)	.65 (.43)	.58 (.34)							
6	.27 (.07)	.34 (.12)	.32 (.11)	.29 (.08)	.27 (.07)						
7	.63 (.39)	.79 (.63)	.75 (.57)	.67 (.45)	.63 (.40)	.27 (.07)					
8	.50 (.25)	.63 (.40)	.55 (.31)	.50 (.25)	.50 (.25)	.25 (.06)	.58 (.33)				

	1	2	3	4	5	6	7	8	9	10	11
9	.59	.74	.70	.62	.59	.34	.80	.74			
	(.34)	(.55)	(.49)	(.39)	(.35)	(.12)	(.64)	(.55)			
10	.72	.91	.90	.80	.73	.37	.87	.69	.81		
	(.52)	(.84)	(.81)	(.65)	(.53)	(.14)	(.75)	(.48)	(.66)		
11	.69	.88	.94	.84	.70	.35	.81	.59	.75	.96	
	(.48)	(.77)	(.88)	(.70)	(.49)	(.12)	(.65)	(.35)	(.56)	(.93)	
12	.79	1.00	.95	.85	.80	.34	.79	.73	1.01	1.10	1.02
	(.63)	(1.01)	(.91)	(.72)	(.63)	(.12)	(.63)	(.53)	(1.02)	(1.20)	(1.04)

Note. (1) Social interaction; (2) Social status; (3) Fun; (4) Nostalgia; (5) Expressive value; (6) Ownership; (7) Monetary value; (8) Team identification; (9) Purchase intention; (10) Social value; (11) Emotional value; (12) Functional value; squared correlations in paratheses.

4.4.2 Measurement Invariance (Transaction Experience)

To test measurement invariance between buyers and non-buyers, I first checked it on the first-order constructs. The model indices show an acceptable model fit for buyer and non-buyer data sets separately. Even though the NFI for the non-buyer model is below .90 (NFI = .846), other indices met the criteria (CFI > .90, RMSEA < .08, SRMR < .08). After combining them together in a configural model, the model have a misspecification issue because the smallest eigenvalue is negative. Since the configural model has a misspecification issue, the measurement invariance between buyers and non-buyers cannot be confirmed, even though the metric model is not significantly different from the configural model (p = .170), and the scalar model is not significantly different from the metric model (p = .286). Model indices are summarized in Table. 4.10

Table 4.10

First-order measurement invariance model indices (transaction experience)

	χ^2	*df*	*p*	χ^2/df	CFI	NFI	RMSEA	SRMR
Buyer	483.675	369	<.001	1.31	.976	.906	.043	.044
Non-buyer	583.839	369	<.001	1.58	.936	.846	.071	.060
Configural[1]	1062.412	738	<.001	1.44	.960	.881	.056	.049
Metric	1089.668	759	<.001	1.44	.959	.878	.055	.053
Scalar	1114.197	780	<.001	1.43	.959	.875	.055	.053

Note. [1]: the smallest eigenvalue is negative indicates model misspecification.

I further test measurement invariance between buyers and non-buyers on the second-order constructs to see whether it has similar results as the first-order constructs. Similar to the first-order constructs, second-order models show model misspecification issue. Some standardized covariances between constructs are larger than 1 in the second-order models, including the buyer, non-buyer, configural, metric, and scalar models. Even though the chi-square results between the metric and configural model (p = .159), and between the scalar and metric model (p = .274) are non-significant, the measurement invariance between buyers and non-buyers in the second-order constructs cannot be confirmed due to model misspecification issue. Results are summarized in Table 4.11.

Table 4.11

Second-order measurement invariance model indices (transaction experience)

	χ^2	*df*	*p*	χ^2/df	CFI	NFI	RMSEA	SRMR
Buyer[1]	604.081	388	<.001	1.56	.954	.882	.057	.079
Non-buyer[2]	700. 658	388	<.001	1.81	.907	.815	.083	.103
Configural[3]	1299.297	776	<.001	1.67	.935	.855	.069	.086
Metric[4]	1330.887	801	<.001	1.66	.934	.851	.068	.092
Scalar[5]	1351.283	819	<.001	1.65	.934	.849	.068	.092

Note. [1]: the standardized covariance between constructs is larger than 1 (social value and functional value is 1.110). [2]: the standardized covariance between purchase intention and functional value is 1.072, between social value and functional value is 1.111, between emotional value and functional value is 1.122. [3]: The smallest eigenvalue is negative indicates model misspecification; standardized covariances are larger than 1; buyers: social value and functional value is 1.110; non-buyers: the standardized covariance between purchase intention and functional value is 1.072, between social value and functional value is 1.111, between emotional value and functional value is 1.122. [4]: buyers: the standardized covariance between purchase intention and functional value is 1.013, between social value and functional value is 1.125; non-buyers: between purchase intention and functional value is 1.004, between social value and functional value is 1.087, between emotional value and functional value is 1.099. [5]: construct covariances larger than 1, buyer: between purchase intention and functional value: 1.012, between social value and functional value 1.125; non-buyer: between purchase intention and functional value is 1.003, between social value and functional value is 1.088, between emotional value and functional value is 1.098.

4.4.3 Structural Model and Multigroup Analyses (First-order)

To build structural model and conduct multigroup analyses for first-order constructs, I first tested relationships between each consumer value and purchase intention and between each covariate and purchase intention. These relationships can help me identify independent variables and covariates in the structural model. By regression purchase intention on each consumer value, each consumer value significantly impact purchase intention (all consumer values have $p < .001$, except for ownership: $p = .001$). Except for age and team identification, demographics and experience with Brandon Roy are dummy variables: direct experience with Brandon Roy (has direct experience = 1), indirect experience with Brandon Roy (has indirect experience = 1), NBA Top Shot purchase experience (buyer = 1), gender (man = 1), race (White = 1), education (undergraduate degree = 1), annual income (under $75,000 = 1), employment (full-time employment = 1), and marital status (married = 1). Except for annual income, demographic categories were chosen due to the highest percentage in the group. To test the robustness of choosing $75,000, I also used $100,000 as a criterion (under $100,000 = 1). Even changed the split criterion, income does not impact purchase intention ($b = 0.07$, $SE = 0.24$, $p = .776$, 95% CI = [-0.41, 0.54]).

Among them, team identification ($p < .001$), direct experience with Brandon Roy ($p < .001$), indirect experience with Brandon Roy ($p < .001$), NBA Top Shot purchase experience ($p < .001$), man ($p = .029$), full-time employment ($p = .009$), and married ($p < .001$) impact purchase intention. Therefore, I included them as covariates. Since I include direct and indirect experience with Brandon Roy, a multicollinearity issue may exist. The Pearson correlation coefficient between direct and indirect experience with Brandon Roy is .40, which is a moderate correlation. Therefore, I include both as covariates. Like study 2, NBA Top Shot purchase experience is not

included as a covariate because I used multigroup analyses. Since age did not impact either purchase intention (b = 0.01, SE = 0.01, p = .158, 95% CI = [-0.01, 0.03]) or nostalgia (b = 0.01, $S.E$ = 0.01, p = .065, 95% CI = [0.00, 0.02]), I did not include it as a covariate. Thus, I built a structural model with a regression:

$$Purchase\ intention_i = \alpha_1 Interaction_i + \alpha_2 Status_i + \alpha_3 Fun_i + \alpha_4 Nostalgia_i + \alpha_5 Expressive_i + \alpha_6 Monetary_i + \alpha_7 Monetary_i + \alpha_8 Teamid_i + \alpha_9 Direct_i + \alpha_{10} Indirect_i + \alpha_{11} Man_i + \alpha_{12} Full_i + \alpha_{13} Married_i + \varepsilon_i$$

The structural model shows an acceptable fit with χ^2 = 803.377, df = 514, p < .001, χ^2/df = 1.56, CFI = .964, NFI = .907, RMSEA = .044, SRMR = .113. Regression results in the structural model are summarized in Table 4.12. Among all covariates, only team identification impacts purchase intention. Therefore, I kept team identification as a covariate and removed others: $Purchase\ intention_i = \alpha_1 Interaction_i + \alpha_2 Status_i + \alpha_3 Fun_i + \alpha_4 Nostalgia_i + \alpha_5 Expressive_i + \alpha_6 Monetary_i + \alpha_7 Monetary_i + \alpha_8 Teamid_i + \varepsilon_i$

The structural model shows an acceptable model fit. The model indices are summarized in Table 4.14. Results in the structural model show that fun (b = 0.33, p = .004) and monetary value (b = 0.77, p < .001) increase purchase intention. Results are presented in Table 4.13.

Table 4.12

Structural model results with all covariates

	b	*SE*	*p*	95% CI
Interact	0.04	0.10	.662	[-0.15, 0.23]
Status	-0.03	0.14	.851	[-0.29, 0.24]
Fun	0.32*	0.13	.011	[0.07, 0.57]
Nostalgia	-0.21	0.12	.076	[-0.44, 0.02]
Express	0.09	0.07	.148	[-0.03, 0.22]
Ownership	0.03	0.09	.769	[-0.16, 0.21]
Money	0.74***	0.15	<.001	[0.45, 1.03]
Teamid	0.33***	0.08	<.001	[0.17, 0.48]

Direct	-0.02	0.15	.917	[-0.31, 0.28]
Indirect	0.24	0.15	.106	[-0.05, 0.53]
Man	0.05	0.12	.686	[-0.19, 0.29]
Full	0.20	0.16	.220	[-0.12, 0.52]
Married	0.20	0.12	.114	[-0.05, 0.44]

Note. Interact: social interaction; Status: Social status; Express: expressive value; Money: monetary value; Teamid: team identification; Direct: direct experience with Brandon Roy; Indirect: indirect experience with Brandon Roy; Full: full-time employment; *b*: unstandardized estimates; *SE*: standard error; CI: confidence interval; *$p < .05$, **$p < .01$, ***$p < .001$.

Table 4.13

Structural model results with a significant covariate

	b	*SE*	*p*	95% CI
Interact	0.07	0.10	.472	[-0.12, 0.27]
Status	-0.04	0.14	.760	[-0.31, 0.23]
Fun	0.33**	0.12	.004	[0.11, 0.56]
Nostalgia	-0.22	0.12	.072	[-0.46, 0.02]
Express	0.10	0.06	.131	[-0.03, 0.22]
Ownership	0.02	0.09	.852	[-0.17, 0.20]
Money	0.77***	0.15	<.001	[0.47, 1.07]
Teamid	0.37***	0.07	<.001	[0.23, 0.51]

Note. Interact: social interaction; Status: Social status; Express: expressive value; Money: monetary value; Teamid: team identification; *b*: unstandardized estimates; *SE*: standard error; CI: confidence interval; *$p < .05$, **$p < .01$, ***$p < .001$.

Even though first-order measurement invariance does not confirm between buyers and non-buyers, I included results of multigroup analyses to compare with results from the second-order constructs and a data-driven approach in next two subsections. The free model and constrained models (including the models that constraint each path) have a model misspecification issue because the smallest eigenvalue is negative. Furthermore, comparing the free and the constrained model, the p-value ($p = .438$) does not show a significant difference between buyers and non-buyers. Even though constraining the path between purchase intention and ownership is significantly different from the free model ($p = .003$), the model misspecification issue and the insignificant results between the free and constrained model

indicate no differences between buyers and non-buyers among all consumer values. Model indices are summarized in Table 4.14. Free model results are presented in Table 4.15.

Table 4.14

Multigroup analyses model indices

	χ^2	*df*	*p*	χ^2/df	CFI	NFI	RMSEA	SRMR	*p* (Free)
Structural	513.946	369	<.001	1.39	.981	.935	.037	.043	
Free	1062.412	738	<.001	1.44	.960	.881	.056	.049	
Constrained	1070.257	746	<.001	1.43	.960	.880	.055	.050	.438
Interact	1062.857	739	<.001	1.44	.960	.881	.055	.049	.529
Status	1062.391	739	<.001	1.44	.960	.881	.055	.049	.702
Fun	1062.789	739	<.001	1.44	.960	.881	.055	.049	.817
Nostalgia	1061.960	739	<.001	1.44	.960	.881	.055	.049	.832
Express	1062.609	739	<.001	1.44	.960	.881	.055	.049	.571
Ownership	1067.422	739	<.001	1.44	.959	.881	.056	.049	.003**
Money	1062.009	739	<.001	1.44	.960	.881	.056	.049	.821

Note. Except for the Structure model, all models in this table has the misspecification issue: the smallest eigenvalue is negative; Structural: without group differences; Free: free all paths; Constrained: constraint all paths; consumption value: constraint that path (e.g., Interact: constraint the relationship between social interaction and purchase intention); Interact: social interaction; Status: Social status; Express: expressive value; Money: monetary value; **$p < .01$.

Table 4.15

Free model results

	Buyer				Non-buyer			
	b	*SE*	*p*	95% CI	*b*	*SE*	*p*	95% CI
Interact	0.14	0.11	.184	[-0.07, 0.36]	0.02	0.18	.927	[-0.34, 0.37]
Status	-0.05	0.18	.782	[-0.41, 0.31]	0.05	0.19	.791	[-0.32, 0.42]
Fun	0.27	0.15	.080	[-0.03, 0.57]	0.32*	0.16	.046	[0.01, 0.63]
Nostalgia	-0.19	0.15	.206	[-0.47, 0.10]	-0.13	0.18	.460	[-0.49, 0.22]
Express	0.06	0.12	.626	[-0.17, 0.28]	0.13	0.08	.081	[-0.02, 0.28]
Ownership	0.13	0.10	.176	[-0.06, 0.32]	-0.40*	0.19	.032	[-0.77, -0.03]
Money	0.75***	0.21	<.001	[0.34, 1.15]	0.68**	0.20	.001	[0.28, 1.08]
Teamid	0.43***	0.09	<.001	[0.25, 0.62]	0.21	0.12	.079	[-0.02, 0.45]

Note. Interact: social interaction; Status: Social status; Express: expressive value; Money: monetary value; *b*: unstandardized estimates; *SE*: standard error; CI: confidence interval; *p < .05, **p < .01, ***p < .001.

4.4.4 Structural Model and Multigroup Analyses (Second-order)

Same as the first-order structural model and multigroup analyses, I first test the variable relationships with purchase intention for the second-order constructs, including social, emotional, and functional values. I regressed purchase intention on each value to check whether each value should be included in the structural model. The structural models show an acceptable model fit except for the functional value model. The factor loading of monetary value on the functional value is larger than 1 (1.016) and the variance of the monetary value is negative (-.033), indicating model misspecification issue. The results in structural models reveal that all second-order consumption values (all second-order values have $p < .001$) impact purchase intention. Therefore, I include them in the structural model. Since team identification, direct experience with Brandon Roy, indirect experience with Brandon Roy, gender, employment, and marital status impact purchase intention, which have been tested in the first-order constructs, I included them as covariates for the second-order structural models:

$$Purchase\ intention_i = \alpha_1 Social_i + \alpha_2 Emotional_i + \alpha_3 Functional_i + \alpha_4 Teamid_i + \alpha_5 Direct_i + \alpha_6 Indirect_i + \alpha_8 Man_i + \alpha_9 Full_i + Married_i + \varepsilon_i$$

The structural model results show model misspecification issue because the standardized covariance between second-order constructs are larger than 1 with model indices: $\chi^2 = 1020.982$, $df = 533$, $p < .001$, $\chi^2/df = 1.92$, CFI = .939, NFI = .882, RMSEA = .057, SRMR = .126. Regression results of the structural model are presented in Table 4.16.

Table 4.16

Second-order structural model results with all covariates

	b	*SE*	*p*	95% CI
Social	3.41	1.75	.051	[-0.01, 6.83]
Emotional	-0.73	1.48	.621	[-3.63, 2.17]
Functional	-3.32	3.97	.403	[-11.10, 4.46]
Teamid	0.25	0.28	.364	[-0.29, 0.80]
Direct	-0.01	0.15	.963	[-0.31, 0.29]
Indirect	0.24	0.15	.117	[-0.06, 0.53]
Man	0.00	0.12	.985	[-0.25, 0.24]
Full	0.21	0.17	.222	[-0.12, 0.54]
Married	0.24	0.13	.065	[-0.01, 0.49]

Note. Teamid: team identification; Direct: direct experience with Brandon Roy; Indirect: indirect experience with Brandon Roy; Full: full-time employment; *b*: unstandardized estimates; *SE*: standard error; CI: confidence interval; *$p < .05$, **$p < .01$, ***$p < .001$.

After including all covariates, none of them significantly impact purchase intention. Therefore, I removed all covariates:

$$Purchase\ intention_i = \alpha_1 Social_i + \alpha_2 Emotional_i + \alpha_3 Functional_i + \varepsilon_i$$

The structural model has a model misspecification issue because the standardized covariances between some constructs are larger than 1. Results show that social value ($p = .063$), emotional value ($p = .660$), and functional value ($p = .432$) do not impact purchase intention, impact purchase intention. Therefore, I rejected H1-3. Results are summarized in Table 4.17.

Table 4.17

Second-order structural model results without covariates

	b	*SE*	*p*	95% CI	Hypothesis
Social	4.39	2.36	.063	[-0.24, 9.02]	H1 reject
Emotional	-0.60	1.38	.660	[-3.30, 2.09]	H2 reject
Functional	-6.02	7.65	.432	[-21.01, 8.98]	H3 reject

Note. b: unstandardized estimates; *SE*: standard error; CI: confidence interval.

Table 4.18

Second-order multigroup analyses model indices

	χ^2	*df*	χ^2/df	CFI	NFI	RMSEA	SRMR	*P* (Free)	Hypothesis
Structural[1]	553.505	311	1.78	.962	.918	.052	.070		/
Free[2]	1020.815	622	1.64	.943	.867	.067	.078		/
Constrained[3]	1024.199	625	1.64	.943	.867	.067	.077	.279	H4 reject
Social[4]	1021.207	623	1.64	.943	.867	.067	.078	.980	H4a reject
Emotional[5]	none	none	none	none	none	none	none	none	H4b reject
Functional[6]	1022.871	623	1.64	.943	.867	.067	.078	.154	H4c reject

Note. Results of Chi-square test in each model ($p < .001$), except for the emotional value (none); Structural: the structural model; Free: free coefficients of all paths; Constrained: constraint coefficients of all paths; value: constraint path between that value and purchase intention (e.g., Social: constraint the path between social value and purchase intention). [1]: standardized covariance >1, between social value and functional value: 1.071; [2]: standardized covariance >1, buyer: between social value and functional value: 1.089, non-buyer: between social value and functional value: 1.038, between emotional value and functional value: 1.054, R-square of purchase intention for non-buyer is negative (-0.070); [3]:standardized covariance >1, buyer: between social value and functional value 1.024, non-buyer: between social value and functional value 1.410, between emotional value and functional value 1.342; [4]: standardized covariance >1, buyer: between social value and functional value 1.089, non-buyer: between social value and functional value 1.030, between emotional value and functional value 1.045, R-square of purchase intention is negative (-0.139); [5]: model does not converged; [6]: standardized covariance >1, non-buyer: between social value and functional value 1.240, between emotional value and functional value 1.255.

Table 4.19

Second-order free model results

	Buyer				Non-buyer			
	b	*SE*	*p*	95% CI	*b*	*SE*	*p*	95% CI
Social	2.70***	0.74	<.001	[1.25, 4.16]	2.45	9.07	.787	[-15.33, 20.24]
Emotional	-1.05	0.71	.139	[-2.44, 0.34]	2.43	8.30	.770	[-13.85, 18.71]
Functional	0.20	2.14	.924	[-4.00, 4.41]	-34.35	168.06	.838	[-363.74, 295.04]

Note. b: unstandardized estimates; *SE*: standard error; CI: confidence interval; ***$p < .001$.

Even without significant results and with the model misspecification issue, I include multigroup analyses results that test my hypotheses. The results of multigroup analyses show that the free model has misspecification issue because the standardized covariances between some second-order constructs are larger than 1. When comparing the free model and the constrained model (constraint all paths), the results does not indicate any differences between buyers and non-buyers (p = .279). I further compared the free model and the model that constraint one path each time to reveal hypotheses testing results. The results also confirmed that social (p = .980), emotional (none), and functional value (p = .154) are not different between buyers and non-buyers. When constraining the path between emotional value and purchase intention, the model fails to converge, indicating model misspecification issue. Thus, testing the difference between the Free model and the model that constrained emotional value fails to provide results. Based on the non-difference between the Free and the Constrained model, H4 (including H4a, H4b, and H4c) are rejected. All models in Table 4.18 have model misspecification issue. I summarized free and constrained model results in Table 4.18. I included free model regression results in Table 4.19.

4.4.5 Structural Model and Multigroup Analyses (Data Driven Approach)

Since the first-order models show better fit than second-order models, I used a data driven approach to rebuild model with first-order constructs. Compared to the first-order construct model that I proposed, I removed "team identification" from the model because the expressive value captures the impact of team identification on purchase intention. Two pieces of evidence supports this argument. First, I proposed a consumption value model to identify values that impact purchase intention of sport NFT collectibles. Team identification is used as a control variable to tease out the effect on purchase intention. However, the high correlation between the

expressive value and team identification (.78, see Table 4.7) indicate that I should keep the expressive value because it is a construct regarding consumption value. Second, the measurement of expressive value focuses on expressing team identification (e.g., The displayed NBA Top Shot Moment featuring Brandon Roy reflects my team identification). Participants who wish to express their team identification through sport NFT collectibles may have a high team identification level. Based on above evidence, I removed team identification from the structural model.

Removing team identification from the structural model, I analyzed measurement invariance, the measurement model and construct validity, and the structural model at the first-order level. First, I tested the measurement invariance between round 1 and 2 of data collection. The indices of the measurement models of Whole (combined data), Round1, and Round 2 show an acceptable model fit. When using the configural model, the model reports a misspecification issue (the smallest eigenvalue is negative). The measurement invariance may not be confirmed due to the model misspecification issue in the configural model, even though other model indices show an acceptable model fit in the configural model, the metric model does not different from the configural model (p = .674, ΔCFI = .001, ΔRMSEA = .001, ΔSRMR = .005), and the scalar model does not different from the metric model (p = .303, ΔCFI = .001, ΔRMSEA < .001, ΔSRMR < .001). Since the survey design of round 1 and 2 data collection remained the same and they were collected in a close proximity (1 day in between), I concluded that round 1 and 2 data are invariant in their measurement (see Table 4.20).

Table 4.20

Measurement invariance model indices (round; data driven)

	χ^2	*df*	*p*	χ^2/df	CFI	NFI	RMSEA	SRMR
Whole	424.654	296	<.001	1.43	.980	.937	.039	.045

	χ^2	*df*	*p*	χ^2/df	CFI	NFI	RMSEA	SRMR
Round 1	458.088	296	<.001	1.55	.962	.902	.056	.051
Round 2	403.421	296	<.001	1.36	.959	.865	.057	.046
Configural[1]	860.275	592	<.001	1.45	.961	.888	.056	.048
Metric	876.393	611	<.001	1.43	.962	.886	.055	.053
Scalar	898.457	630	<.001	1.43	.961	.883	.055	.053

Note. [1]: the smallest eigenvalue is negative.

With measurement invariance, I combined two rounds of data and further tested the measurement model and construct validity by using CFA. The measurement model shows an acceptable model fit (see Whole in Table 4.20). All standardized factor loadings are significant, ranging from .61 to .97. The values of CR are above .70, indicating convergent validity of constructs (Hair et al., 2019). The values of AVE are larger than .50, providing further evidence of convergent validity (Fornell & Larcker, 1981). The squared correlations between constructs are lower than the values of AVE, showing discriminant validity between constructs (Hair et al., 2019). Factor loadings, Cronbach's alpha, CR are presented in Table 4.21. Correlations, squared correlations, and AVE are presented in Table 4.22.

Table 4.21

First-order factor loadings, Cronbach's alpha, and CR (data driven)

Item	*β*	*α*	CR
Social interaction (adapted from Yang et al., 2024; developed by Peterson et al., 2008)		.929	.931
Having the displayed NBA Top Shot Moment featuring Brandon Roy helps me feel like part of the NBA Top Shot community.	.90		
Having the displayed NBA Top Shot Moment featuring Brandon Roy enables me to feel that I belong to the NBA Top Shot community.	.92		

Item	β	α	CR
Having the displayed NBA Top Shot Moment featuring Brandon Roy helps me connect with other collectors in the NBA Top Shot community.	.90		
Having the displayed NBA Top Shot Moment featuring Brandon Roy allows me to build relationships with others in the NBA Top Shot community.	.79		
Social status (adapted from Meshram & O'Cass, 2018)		.914	.919
Owning the displayed NBA Top Shot Moment featuring Brandon Roy makes me feel like I have a high social standing among other collectors.	.89		
Owning the displayed NBA Top Shot Moment featuring Brandon Roy earns me respect from other collectors.	.91		
The displayed NBA Top Shot Moment featuring Brandon Roy helps me project a positive image in the NBA Top Shot community.	.87		
Fun (adapted from Ducoffe, 1995)		.925	.929
Purchasing the displayed NBA Top Shot Moment featuring Brandon Roy is a fun experience.	.89		
Owning the displayed NBA Top Shot Moment featuring Brandon Roy is enjoyable.	.91		
I am very pleased with owning the displayed NBA Top Shot Moment featuring Brandon Roy.	.90		
Nostalgia (adapted from Cho et al., 2019)		.895	.896
The displayed NBA Top Shot Moment featuring Brandon Roy is a nostalgic reminder of my past experiences watching the NBA.	.81		
The displayed NBA Top Shot Moment featuring Brandon Roy makes me feel a sense of fondness for my experiences as an NBA fan.	.90		

Item	β	α	CR
The displayed NBA Top Shot Moment featuring Brandon Roy reminds me of my cherished memory related to the NBA.	.88		
Expressive value (adapted from Wallace et al., 2021; developed by Carroll & Ahuvia, 2006)		.963	.964
The displayed NBA Top Shot Moment featuring Brandon Roy reflects my team identification.	.95		
The displayed NBA Top Shot Moment featuring Brandon Roy is an expression of my team identification.	.96		
The displayed NBA Top Shot Moment featuring Brandon Roy mirrors my team identification.	.93		
Ownership (adapted from Homburg et al., 2015)		.775	.782
The ownership of the displayed NBA Top Shot Moment featuring Brandon Roy can be verified.	.79		
The ownership of the displayed NBA Top Shot Moment featuring Brandon Roy is capable to be verified.	.82		
The ownership verification of the displayed NBA Top Shot Moment featuring Brandon Roy is functional.	.61		
Monetary value (adapted from Ali, 2011)		.943	.945
The displayed NBA Top Shot Moment featuring Brandon Roy is financially rewarded.	.78		
Investing in the displayed NBA Top Shot Moment featuring Brandon Roy seems to generate high returns.	.89		
I believe that the financial returns of the displayed NBA Top Shot Moment featuring Brandon Roy will be high in the future.	.91		
The displayed NBA Top Shot Moment featuring Brandon Roy has sufficient potential to grow in the future.	.89		
I think investing the displayed NBA Top Shot Moment featuring Brandon Roy is highly rewarding.	.90		
Purchase intention (adopted from Schlimm et al., 2024; developed by Putrevu & Lord, 1994)		.977	.977

Item	β	α	CR
It is very likely that I will buy the displayed NBA Top Shot Moment featuring Brandon Roy.	.96		
I will purchase the displayed NBA Top Shot Moment featuring Brandon Roy the next time I have the chance to.	.97		
I will definitely buy the displayed NBA Top Shot Moment featuring Brandon Roy.	.97		

Note. β: standardized factor loading; α: Cronbach's alpha; all measured on a 7-point Likert scale.

Table 4.22

First-order correlations, squared correlations, and AVE (data driven)

	Interact	Status	Fun	Nostalgia	Express	Owner	Money	PI
Interact	.772							
Status	.72 (.51)	.790						
Fun	.70 (.49)	.82 (.67)	.811					
Nostalgia	.73 (.53)	.70 (.49)	.78 (.61)	.744				
Express	.47 (.22)	.63 (.40)	.59 (.35)	.60 (.37)	.898			
Owner	.54 (.29)	.39 (.15)	.40 (.16)	.42 (.18)	.15 (.02)	.543		
Money	.53 (.28)	.83 (.68)	.75 (.56)	.63 (.39)	.60 (.36)	.27 (.07)	.775	
PI	.49 (.24)	.74 (.54)	.72 (.52)	.57 (.33)	.69 (.47)	.21 (.04)	.82 (.67)	.934

Note. Interact: social interaction; Status: social status; Express: expressive value; Owner: ownership; Money: monetary value; PI: purchase intention; squared correlations in parentheses; AVE on diagonal.

With convergent and discriminant validity of constructs, I further tested measurement invariance between buyer and non-buyers. The Buyer and Non-buyer models show an acceptable model fit. Even though the NFI in the Non-buyer model is below .90 (NFI = .853), other indices show an acceptable model fit. The configural model has an acceptable model fit with most model indices within threshold (except for NFI = .885). The metric model and the scalar model also show an acceptable model fit. The metric model does not significantly different from the configural model (p = .155, ΔCFI < .001, ΔRMSEA = .001, ΔSRMR = .005) and the scalar

model does not significantly different from the metric model (p = .336, ΔCFI = .001, ΔRMSEA < .001, ΔSRMR = .001). Therefore, measurement invariance is confirmed between buyers and non-buyers. Model indices are summarized in Table 4.23.

Table 4.23

Measurement invariance model indices (transaction experience; data driven)

	χ^2	*df*	*p*	χ^2/df	CFI	NFI	RMSEA	SRMR
Buyer	414.364	296	<.001	1.40	.971	.907	.049	.045
Non-buyer	470.842	296	<.001	1.59	.939	.853	.071	.061
Configural	882.578	592	<.001	1.49	.958	.885	.059	.050
Metric	907.983	611	<.001	1.49	.958	.882	.058	.055
Scalar	929.462	630	<.001	1.48	.957	.879	.058	.054

After passing the measurement invariance test, I examined the impacts of consumer values on purchase intention and the differences between buyer and non-buyers. I included all consumer values in the structural model as independent variable and used purchase intention as a dependent variable. I only used indirect experience with Brandon Roy as a covariate because direct experience with Brandon Roy, man, full-time employed, and married do not impact purchase intention when testing them simultaneously. Thus, the regression is:

$$Purchase\ intention_i = \alpha_1 Interaction_i + \alpha_2 Status_i + \alpha_3 Fun_i + \alpha_4 Nostalgia_i + \alpha_5 Expressive_i + \alpha_6 Ownreship_i + \alpha_7 Monetary_i + \alpha_8 Indirect_i + \varepsilon_i$$

The structural model show an acceptable model fit (indices in the row of "Structural" in Table. 4.23). The regression results show that fun (b = 0.38, p = .001), expressive value (b = 0.27, p < .001), and monetary value (b = 0.83, p < .001) increase purchase intention. Structural model results are summarized in Table 4.24. I further tested the differences between buyers and non-buyers. While the free model has a low NFI (.874), it shows an acceptable model fit with other indices are within thresholds. I further constrained all paths to create a constrained model and compared it with the free model. The non-significant result indicates invariant between

buyers and non-buyers for all consumer values (p = .176). I also constrained one path each time and included the results of comparisons between these models and the free model. Even though constraining the relationship between ownership and purchase intention shows a significant result (p = .002), it does not indicate a difference due to the non-difference between the constrained and free models. Results are summarized in Table 4.25. Free model results are presented in Table 4.26.

Table 4.24

Structural model results with a significant covariate (data driven)

	b	*SE*	*p*	95% CI
Interact	0.01	0.11	.954	[-0.21, 0.22]
Status	-0.02	0.14	.884	[-0.30, 0.26]
Fun	0.38**	0.12	.001	[0.15, 0.60]
Nostalgia	-0.21	0.13	.099	[-0.45, 0.04]
Express	0.27***	0.06	<.001	[0.15, 0.38]
Ownership	-0.04	0.11	.684	[-0.25, 0.16]
Money	0.83***	0.15	<.001	[0.53, 1.14]
Indirect	0.50**	0.14	.001	[0.21, 0.78]

Note. Interact: social interaction; Status: social status; Express: expressive value; Money: monetary value; Indirect: indirect experience with Brandon Roy; *b*: unstandardized estimates; *SE*: standard error; CI: confidence interval; *p < .05, **p < .01, ***p < .001.

Table 4.25

Multigroup analyses model indices (data driven)

	χ^2	*df*	*p*	χ^2/df	CFI	NFI	RMSEA	SRMR	*p* (Free)
Structural	512.819	322	<.001	1.59	.971	.926	.046	.092	
Free	993.641	644	<.001	1.54	.951	.874	.062	.089	
Constrained	1005.148	652	<.001	1.54	.950	.873	.062	.089	.176
Interact	993.551	645	<.001	1.54	.951	.874	.062	.089	.908
Status	993.692	645	<.001	1.54	.951	.874	.062	.089	.646
Fun	994.384	645	<.001	1.54	.951	.874	.062	.089	.620
Nostalgia	993.345	645	<.001	1.54	.951	.874	.062	.089	.952
Express	993.640	645	<.001	1.54	.951	.874	.062	.089	.596
Ownership	999.436	645	<.001	1.55	.950	.873	.062	.089	.002**
Money	993.403	645	<.001	1.54	.951	.874	.062	.089	.685

Note. Structural: without group comparison; Free: free all paths; Constrained: constraint all paths; value: constraint the path between that value and pi (e.g., Interact: constraint the path between interact and pi); Interact: social interaction; Status: social status; Express: expressive value; Money: monetary value; *p* (Free): p-value compared with the Free model; ** p < .01.

Table 4.26

Free model results (data driven)

	Buyer				Non-buyer			
	b	*SE*	*p*	95% CI	*b*	*SE*	*p*	95% CI
Interact	0.03	0.12	.796	[-0.20, 0.26]	0.00	0.19	.982	[-0.37, 0.38]
Status	-0.05	0.19	.791	[-0.42, 0.32]	0.07	0.19	.703	[-0.31, 0.46]
Fun	0.25	0.15	.105	[-0.05, 0.55]	0.35*	0.16	.030	[0.03, 0.66]
Nostalgia	-0.13	0.14	.371	[-0.40, 0.15]	-0.11	0.19	.556	[-0.48, 0.26]
Express	0.29**	0.10	.004	[0.09, 0.48]	0.22***	0.06	<.001	[0.10, 0.35]
Ownership	0.10	0.10	.333	[-0.10, 0.30]	-0.49*	0.20	.016	[-0.88, -0.09]
Money	0.82***	0.22	<.001	[0.39, 1.26]	0.70**	0.20	.001	[0.30, 1.10]
Indirect	0.66***	0.19	<.001	[0.29, 1.02]	0.02	0.22	.917	[-0.40, 0.45]

Note. Interact: social interaction; Status: social status; Express: expressive value; Money: monetary value; Indirect: indirect experience with Brandon Roy; *b*: unstandardized estimates; *SE*: standard error; CI: confidence interval; *$p < .05$, **$p < .01$, ***$p < .001$.

4.4.6 Common Method Bias

The common method bias section includes results with team identification and without team identification. I include them to show that the theory and the data drive approaches have similar common method bias results. First, I tested common method bias in the theory approach model (with team identification). The result of the Harman's single-factor test show that the largest proportion variance of a factor is .53, indicating that the factor explains 53% of total variance. Since 53% is close to 50% threshold, I further used single-factor CFA with MLR estimation. The single-factor CFA does not have an acceptable model fit. Moreover, the chi-square test between the single-factor and my model reveals that the single-factor model fits worse than my model ($p < .001$).

Second, I conducted the same tests in the data driven approach model (without team identification). Similar to the results of the theory approach model, the Harman's single-factor test shows that the largest proportion variance of a factor is .54. The single-factor CFA shows the same pattern as the theory approach model. The model fit of the single-factor CFA is worse than my model ($p < .001$). Therefore, the common method bias may not be a major concern in my study. However, since my data fails the Harman's single-factor test, I acknowledged the potential common method bias as a limitation in 4.5.3 Limitations and Future Research. The single-factor CFA model indices are summarized in Table. 4.27

Table 4.27

Single-factor CFA method model indices

		χ^2	*df*	*p*	χ^2/df	CFI	NFI	RMSEA	SRMR
Theory	Single-factor	3493.928	405	<.001	8.63	.588	.560	.164	.117
	My model	513.946	369	<.001	1.39	.981	.935	.037	.045
Data	Single-factor	2775.261	324	<.001	8.57	.615	.587	.163	.109
	My model	424.654	296	<.001	1.43	.980	.937	.039	.045

4.5 Discussion

With the evolving sport NFT context, study 3 aimed to propose and empirically test a hierarchical consumer value model in sport NFT consumption and examine the moderating effect of transaction experience. Since the second-order construct model does not show an acceptable fit, study 3 used a first-order construct model to reveal consumption values in the sport NFT context. Study 3 found that fun, expressive value, and monetary value motivate purchase intention, which align with the literature that finds consumers are motivated by a combination of intrinsic and extrinsic factors (Kang et al., 2025). Surprisingly, social interaction, social status,

nostalgia, and ownership did not impact purchase intention. Even though sport NFT providers offer various fan experiences, such as community, scarce collectibles, nostalgic collectibles, and ownership verification, these experiences fail to directly drive purchase intention. Consumers care about having positive feeling through collections and express team identification through lucrative collectibles. Findings also indicates that consumption values of sport NFT collectibles may not be largely different from other types of NFTs, such as profile picture and art NFTs, because fun, expressive, and monetary values have been found among them (e.g., Yang et al., 2024).

Furthermore, different from my hypotheses, study 3 did not find a moderating effect of transaction experience in the relationships between consumption values and purchase intention. Similar to study 2, the null moderating effect of transaction experience may be due to the knowledge and interest of non-buyers. Park and Lee (2025) found that hedonic value and monetary value drive buyers instead of non-buyers. Whereas Yilmaz et al. (2023) found similar motivation reasons for social, emotional, monetary, and functional values between buyers and non-buyers. In the sport NFT context, engagement experiences, such as standing out from the crowd, interacting with like-minded people, and expressing team identification may be meaningful and valuable to market relevant consumers. For outsiders, these experiences may be meaningless and less valuable as they are either not interested in or understand the sport NFT context.

4.5.1 Theoretical Contributions

Study 3 contributes to TCV, NFT literature, and the sport NFT literature. First, study 3 extends TCV by identifying the null moderating effect of transaction experience to the sport NFT context, beyond the NFT context (Yilmaz et al., 2023). Yilmaz et al. (2023) used the Perceived

Value Scale (Sweeney & Soutar, 2001), which extends TCV, to reveal that buyers and non-buyers report similar words of social interaction and uniqueness in the NFT context. Extending to the sport NFT context, study 3 identifies that transaction experience does not moderate the relationships between consumption values and purchase intention.

Second, study 3 challenges Jiang and Byon (2026) by finding a non-significant effect of social interaction and ownership on purchase intention, which expands their understanding in sport NFT consumption. Unlike investigating sport NFTs in general, such as NBA Top Shot, NFL All Day, and FIFA Collect (formerly FIFA + Collect) (Jiang & Byon, 2026), study 3 shows that when examining a specific sport NFT context, social interaction does not directly impact purchase intention. In the NBA Top Shot context, social interaction is not a surface-level value. Instead, it drives purchase intention by enhancing consumers' perceived belonging, which has been found in study 1. Similar to social interaction, when investigating the NBA Top Shot context, study 3 finds that ownership fail to drive purchase intention. Even though providers offer information of Flow Blockchain and Moment ID, consumers may focus on team identification expression beyond ownership verification as study 3 identifies expressive value. Furthermore, various identification expression experiences, such as Showcase and pin Moments on consumers' profile pages may make expressive value more salient than ownership in the NBA Top Shot context.

Third, study 3 contributes to the sport NFT literature on the understanding of historic collectible consumption. Although study 3 did not find an impact of nostalgia on purchase intention, the significant impact of indirect experience with the chosen player in the stimuli may indicate that following players' news after their retirement may drive historic collectible consumption. The understanding is critical as sport NFT providers increasingly market their

collectibles from historical iconic players. For example, the NBA Top Shot provides specific sets, such as Run it Back, and emphasize historic Fast Break during offseasons. Thus, revealing the impact of indirect experience with retired players opens a path for future studies to investigate whether news outlets impact (e.g., social media, steaming channels, or newspapers) historic collectible consumption.

Fourth, study 3 contributes to the sport NFT literature by expanding the null effect of social status to the sport NFT context, which aligns with the non-significant finding in art NFTs (Yang et al., 2024). Study 3 shows that similar to the art NFT context, providing scarce collectibles at a surface level is insufficient to drive sport NFT consumption. This may be due to the underlying mechanism of distinctiveness beyond scarcity based on the finding of study 1. The finding also informs that although consumers discuss scarcity and social recognition (Kang et al., 2025), offering scarce collectibles without truly heightening distinctiveness may fail to motivate consumption.

Fifth, study 3 advances the understanding of transaction experience to expressive value and nostalgia, expanding previous understanding on group differences in social interaction, social status (including scarcity), fun, ownership, and monetary value in the literature (Park & Lee, 2025; Vega & Camarero, 2024; Yilmaz et al., 2023). Study 3 reveals that, similar to other consumption values, non-buyers but with understanding or interest and buyers are not significantly different in expressive value and nostalgia. This finding is critical as it indicates that purchase experience does not matter to NFT consumption. However, understanding or interest to the sport NFT context may influence purchase decisions. Since NFTs use blockchain technology, keep updating consumer experiences, and experienced market hype, potential consumers may hesitate to purchase NFTs if they lack basic product literacy or interest.

Last but not the least, study 3 provides a methodology to qualify market-relevant non-buyers. Instead of using NFT familiarity (Vega & Camarero, 2024; Yilmaz et al., 2023), study 3 utilizes understanding or interest (or both) in a sport NFT context to identify market-relevant non-buyers. With this approach, the revealed null moderating effect further support the irrelevance of transaction experience in NFT consumption, which is important to sport NFT providers as they are struggling with mass adoption. Instead of segmenting consumers based on their purchase experience, sport NFT providers should focus on offering baseline product literacy and interest to attract regular sport fans.

4.5.2 Practical Implications

Study 3 offers practical implications for sport NFT providers. First, sport NFT providers are expected to design their NFT collectibles that can facilitate enjoyment because fun is identified as a consumption value. Sport NFT providers can not only provide video clips on the court, but also off the court (e.g., in the locker room). For example, the champagne shower after winning the NBA Finals may be a cherishing moment for fans. Besides video clips of players, sport NFT providers can offer Moments for fans. For instance, fans who attend games may wish to record their big milestone of their game experiences (e.g., the 1st, the 10th, or the 100th game). Fans may find it enjoyable to convert their video clips as NFT collectibles, such as visiting teams' merchandise stores, interacting with team mascots, or checking out food in arenas. Providers may enable fans to record their game attendance and uploaded on the NBA Top Shot to create fans' Moments.

Second, sport NFT providers should help consumers demonstrate their team identification. Similar to purchasing physical sport cards and memorabilia (e.g., game used basketball or player worn shoes) to show-off, providers can use Metaverse to display consumers'

collections. For example, they can collaborate with Decentraland, which is a Metaverse platform, to offer a space for NBA Top Shot Moments. Within the space, Top Shot consumers can have their sub-spaces, where they can display their Moments. Consumers can pick their favorite Moments to showcase, which can be seen by all visitors, such as those beyond a sport NFT platform.

Third, sport NFT providers are expected to facilitate monetary value by controlling numbers of supply. In the sport NFT context, monetary value is driven by scarcity of collectibles. Study 3 also finds high correlations between social status and monetary value. However, large amount of supply, even offering Legendary or Ultimate Moments, may dilute financial potentials of sport NFT collectibles. Sport NFT providers would control the number of video clips they offer each year or game season and the number of supply for each video clip. For instance, Dapper Labs can set a fix number of new video clips created and number of Moments minted for a game season. By controlling the supply, sport NFT collectibles are expected to be seen as scarce products and may increase their financial potentials.

Fourth, segmenting buyers and non-buyers may not be necessary as study 3 found non-significant differences in consumption drivers between two groups. Currently, the NBA Top Shot provides different homepages for users and non-users. Providers could offer the same homepage that market fun, team identification expression, and investment opportunities. For instance, the NBA Top Shot can advertise the excitement of Moments (e.g., dunk, steal, and jump shot), purchasing Moments to show team support, and getting financial returns.

4.5.3 Limitations and Future Research

Although study 3 has theoretical contributions and practical implications, it remains the following limitations. First and foremost, the stimuli in my survey design may need to be

revisited for result validity. Although the stimuli consist of screenshots from the NBA Top Shot platform, the way that they present fan experiences are different from the platform, where these experiences are shown on different web pages. Although I provided text descriptions to explain these experiences, I did not check whether consumers noticed the stimuli, which threatens my results. The null effects may be due to lack of notice instead of non-significant consumption values. Therefore, future studies are expected to use a more realistic design and check the effectiveness of the stimuli. Future studies could enable participants to experience a sport NFT platform by browsing websites, such as product pages, and ask them to list features and experiences they found on the platform. Participants are expected to list all features (they can have multiple chances to revisit the platform) that will be measured in a study to ensure the effectiveness of stimuli. Moreover, similar to study 2, self-reported understanding or interest is a limitation of study 3 (see discussion about this limitation in section 3.5.3 Limitations and Future Research).

Second, consumption values in study 3 are based on fan experiences in the series 2025-26 NBA Top Shot context, when the context was during a beta test. Since sport NFT collectibles, such as NBA Top Shot, keep evolving, other consumption values, such as social approval, may need researchers' attention. Although the NBA Top Shot offers thumbs-up feature on Activity Feed, it is limited because consumers do not know whether they receive thumbs-up. The experience of social approval may be more salient in the future. For example, sport NFT platforms may use leaderboards to rank users based on numbers of followers or received thumbs-up. Although consumers aim to fit in a social group by getting approvals from others, social approval is distinct from social interaction as the fitting in process is through social recognition instead of through mutual interaction activities. Therefore, testing whether and how social

approval drives consumption would provide valuable understanding of social value in sport NFT consumption and offer an implication to design products that facilitate social approval.

Third, the chosen player and team in the stimuli may fail to reveal the nostalgia effect. In the stimuli, the chosen Moment features Brandon Roy in the Portland Trail Blazers is based on three criteria (1) a historical player, (2) at least a Rare tier, and (3) reasonable price. These criteria may limit the choices of player and team. Future studies may use an iconic player from a team with legacy to test the nostalgia effect. For example, future studies can use Larry Bird from the Boston Celtics, who had 3 Champion titles and Final MVP. Since the prices of his Moments are relatively high (from $46 to $2,833 according to the Marketplace in May 2026), future studies may choose the one with a reasonable price to avoid deterring consumers from purchasing. Also, researchers could use a pilot study to test whether the chosen player can trigger nostalgia. A pilot study would first present the player and ask participants to recognize the player. Then, participants will respond to the extent of cherishing game attendance and watching experiences.

Fourth, study 3 was designed as a correlational study instead of a causal study, which may be cautious to interpret the results. Not designing as a causal study may limit the understanding of how consumer values influence sport NFT consumption. During the study design, except nostalgia, first-order consumer values (e.g., social interaction, social status, and fun) in study 3 were identified based on NFT (e.g., Yang et al., 2024; Yilmaz et al., 2023; Zalan & Toufaily, 2024) and sport NFT literature (e.g., Kang et al., 2025; Park & Lee, 2025). The second-order consumer values, including social, emotional, and functional values, were conceptualized by using TCV (Sheth et al., 1991a, 1991b). Future studies can use experimental design to reveal the consumer value effects in sport NFT consumption. For instance, to test

whether expressive value causes purchase intention, researchers could use a two-level between-subjects design (high vs. low). Specifically, participants will first see a Moment stimulus and will be assigned into one of two groups. A high expressive value condition describes that purchasing the displayed Moment will be listed on Featured Activity Feed, which includes certain purchase behaviors. Whereas, a low condition describes that purchasing will be listed on regular Activity Feed, which includes all purchase behaviors. Since Featured Activity Feed lists fewer behaviors than regular one, the former is expected to receive more attention from others and offer more opportunities to express team identification.

Fifth, high correlations between first-order constructs (e.g., .83 between social status and monetary value) warrant caution in interpreting the results. High correlations between constructs may lead multicollinearity issue, which may inflate the impacts of independent variables. Therefore, scholars and practitioners may be cautious about applying study 3 results in practice. However, the high correlations among constructs may reflect a phenomenon in the NBA Top Shot context. For example, the high correlation between social status and the monetary value may be due to the close link between scarcity and Moment transaction. High social status refers to higher rank that can be earned by purchasing exclusive and highly-priced Moments. Therefore, scarce Moments are associated with high prices on the secondary market which translates to increased monetary value.

Additionally, the low factor loadings of the ownership3 (the third item of ownership) are low in pilot study (.58), main study (.60), and main study with a data driven approach (.61). The wording “the ownership verification of the displayed NBA Top Shot Moment featuring Brandon Roy is functional” may be vague to participants because the item does not ask for ownership

verification. Therefore, future studies may use other measurement for ownership or adapt the measurement with better wording.

Moreover, potential common method bias may lead to a systematic measurement error that threatens results (Podsakoff et al., 2003). Even though procedural remedies were used in the survey design and post statistics tests were conducted, common method bias may be a concern in the survey. Moreover, although single-factor CFA results eliminate the common method bias issue, the Harman's single-factor test with a major factor that explains above the majority (50%) variance may indicate potential issue. Therefore, further studies may use methods to control common method bias in pre-remedies and post-tests. For instance, for the procedure remedies, researchers may add a measured common factor that should be unrelated to the targeted constructs (e.g., consumer values) in the survey. Researchers can test the correlations between the measured common factor and targeted constructs to check common method bias. Researchers can also modify the wording of questions and choices to avoid acquiescence (agree or disagree regardless of content).

Besides these limitations, future studies can investigate various attributes of functional value in sport NFT consumption. I conceptualize functional value as verifying ownership of sport NFT collectibles and monetary value through transaction. I focused on ownership verification because it differentiates NFT collectibles from fungible digital products (Sharma et al., 2022). I include monetary value as it has been widely identified as a consumer value in the NFT (e.g., Yilmaz et al., 2023) and sport NFT literature (e.g., Kang et al., 2025). However, functional value can include utility, such as gamification and rewards (e.g., free game tickets). For example, some studies conceptualized function value of NFTs as benefits and utility from

NFTs (Yilmaz et al., 2023; Zalan & Toufaily, 2024). Therefore, future studies may conceptualize functional value of sport NFT collectibles broadly and test its relationship with consumption.

Furthermore, future studies can investigate expressive value, such as preferences beyond team identification. Although consumers may showcase their collectibles featuring their favorite teams, they may express their prized possessions, such as those with dedicated product design. For example, the NBA Top Shot released a Legendary Moment featuring OG Anunoby's tip-in during the game 4 of the 2025-2026 NBA Finals. The Moment was designed with golden championship trophy, basketballs as planets, and galaxy. Therefore, future studies may examine the expressive values beyond team identification.

Chapter 5 Conclusion

5.1 Important Findings and Contributions

Sport NFT providers shifted their focus from speculative investment to fan engagement experiences after the market hype. The shift kept sport NFT collectibles evolving, motivating sport NFT providers to update their understandings. Furthermore, the challenges of engaging existing consumers and attracting prospective consumers motivate sport NFT providers to understand the nuances between buyers and non-buyers. Using a survey and experiments, this dissertation proposes a consumption value model that captures current fan experiences in a specific sport NFT context and investigates the moderating effect of transaction experience. Besides the consumption values, this dissertation further examines a seemingly opposing social value dimensions: social interaction and social status and proposes belonging and distinctiveness as underlying mechanisms. Findings of this dissertation contribute to the literature by advancing the understanding of consumption values, especially social values, in a specific sport NFT context for existing and prospective consumers. Findings also offer insights into design and market sport NFT collectibles for existing and prospective consumers.

Study 1 investigated the effects of social interaction and social status on sport NFT consumption and identified the underlying mechanisms. Using two dimensions in ODT (Brewer, 1991), belonging and distinctiveness, study 1 proposed a mediating model, aiming to understand how social interaction and social status impact purchase intention of sport NFT collectibles where social value dimensions are provided in a complementary way. Study 1 revealed a sense of

belonging as a mediator in the positive relationship between social interaction and purchase intention and a sense of distinctiveness as a mediator in the positive relationship between social status and purchase intention. Most importantly, study 1 found the full mediating effects of belonging and distinctiveness, highlighting the importance of the parallel psychological mediators explaining how social interaction opportunities and heightened social status operate to motivate NFT consumption. Besides, study 1 offers practical implications on designing and marketing sport NFT collectibles, as they should foster belonging and distinctiveness beyond social interaction and status experiences at a surface level. The findings are important to sport NFT providers, such as Dapper Labs, as they emphasize scarcity and community (NBA Top Shot, 2025a).

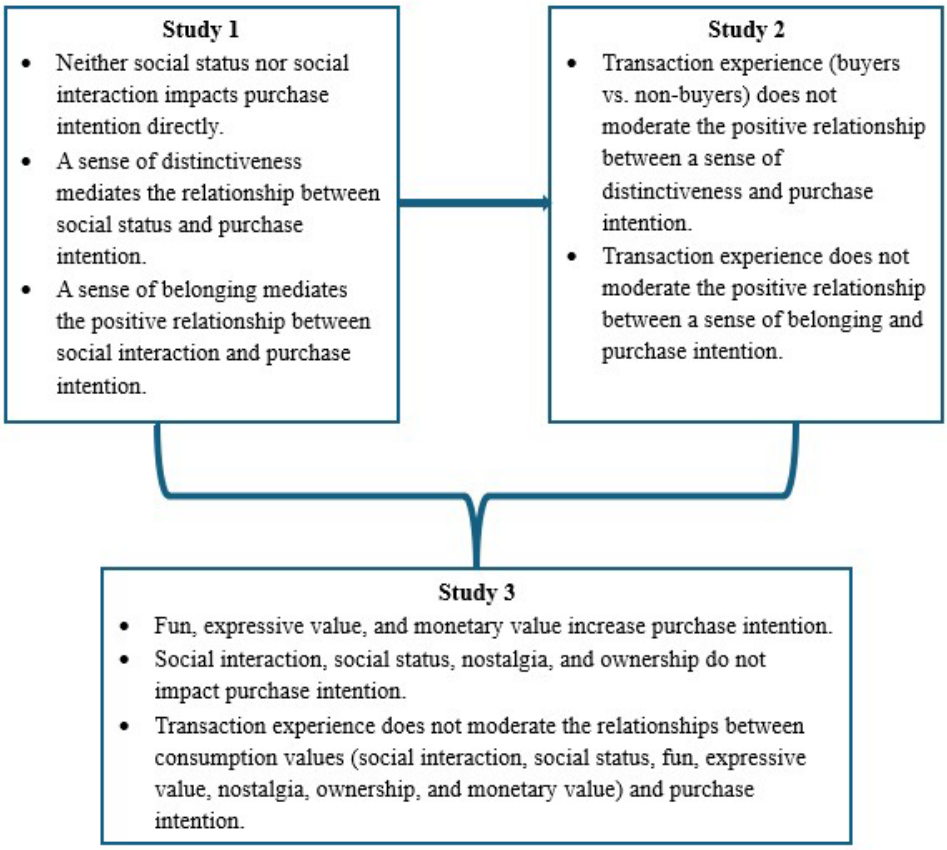
With the understanding of the underlying mechanisms of social values, study 2 further examined whether the positive effects of distinctiveness and belonging differ between existing and prospective consumers, aiming to provide practical implications. By comparing buyers and non-buyers but understand or are interested in the NBA Top Shot, study 2 tested the moderating effect of transaction experience. Although study 2 did not find the moderating effect of transaction experience in either the positive distinctiveness or the positive belonging effects, study 2 provided cleaner and more accurate results by using a methodology to qualify market-relevant non-buyers. Practically, study 2 suggested that when providing or marketing social interaction and social status experiences, it is unnecessary to segment consumers based on their transaction experience. Study 2 findings help sport NFT providers eliminate segmentation strategies between existing and prospective consumers. During the NBA Top Shot beta testing, Dapper Labs employed segmentation strategies between users and non-users (not registered yet) in their homepage of the platform. Although they removed segmentation after beta testing in July

2026, findings of study 2 provide empirical evidence to support the practice for social interaction and social status experiences.

Based on the understanding of social values, study 3 extends to multiple consumption values. Using TCV (Sheth et al., 1991a) to propose a second-order consumption value model, study 3 investigated social, emotional, and functional values in sport NFT consumption and tested the moderating effect of transaction experience. Since the first-order consumption model provides a better model fit, study 3 tested the effects of social interaction, social status, fun, nostalgia, the expressive value, ownership, and the monetary value on purchase intention and the moderating effect of transaction experience. Study 3 found fun, identity expression, and monetary value drive purchase intention while buyers and non-buyers are invariant. However, social interaction, social status, nostalgia, and ownership did not influence purchase intention. Although NFT providers are continuing to add more engagement opportunities and bring back old iconic moments to the platform, it is the hedonic value (fun) and potential monetary gain coupled with expressing fan identity that drove consumption decision. By incorporating the findings of transaction experience in study 2 and 3, this dissertation indicated that understanding or interest in the sport NFT context may provide the same consumption value effects and the inner needs to non-buyers, compared to buyers. Thus, sport NFT providers would use the same product design and marketing strategies to motivate buyers and non-buyers through fun, team identification expression, and financial returns. Similar to study 2, study 3 adds additional empirical support to eliminate segmentation strategies between buyers and non-buyers. Moreover, study 3 opens a path to segment consumers based on their levels of fandom, understanding, and interest of the sport NFT context.

Figure 5.1

Summary of important findings



5.2 Major Limitations and Future Research

Although this dissertation provided theoretical contributions and practical implications, it had the following limitations. First, this dissertation focused on video clip sport NFT collectibles, which limits its generalization to other sport NFT collectibles, such as photo NFTs. Video clip sport NFT is the most common type of sport NFT collectibles in U.S. major sport leagues, such as the NBA, NFL, NHL, and MLS. However, photo sport NFT collectibles, such as Panini America NFTs, which have increasing popularity among consumers, need further investigation because the consumption values may be different. For example, photo sport NFTs are static card that have different visualizations and without sounds compared to video clips, which may

provide different fun to consumers. Future studies may investigate whether the findings in video clip sport NFTs hold for photo NFTs.

Second, the evolving sport NFT context limits the generalization of this dissertation. The NBA Top Shot was a beta product since its launched in October, 2020, and completed beta testing by July 2026. During beta testing, fan experiences and features kept evolving. The fan experiences and features that I investigated in this dissertation may be changed or removed from the NBA Top Shot in the future. Sport NFT providers may be cautious to use the implications if the experiences and features are fundamentally different. Future studies are expected to follow the trend of sport NFT collectibles and examine new experiences and features that are different from my studies. For instance, future studies may investigate gamification in the sport NFT context. The NBA Top Shot provides Road to the Ring, which is a point-based gamification during the 2025-2026 NBA playoffs. Consumers can get points through making picks (e.g., choosing winning teams), lock Moments, purchase packs, and complete quest (e.g., daily login) to win digital and physical prizes, such as Moments, packs, game used basketballs, and jerseys (NBA Top Shot, 2026b). Furthermore, future studies may investigate the value of digital autographs as the NBA Top Shot introduced autographic Moments featuring rookies, such as Cooper Flagg from the Mavericks, VJ Edgecombe from the 76ers, and Kon Knueppel from the Hornets, in the series 2025-26 (NBA Top Shot, 2025b). Autographs may provide social status value as they are limited supplied.

Third, although my stimuli in three studies consist of screenshots come from the NBA Top Shot platform, I did not include serial number for each Moment, which may impact purchase intention. Serial numbers indicate the sequences of Moments that feature the same video clip. For instance, the chosen video clip from Brandon Roy has 399 supplied Moments, including

serial numbers from one to 399. Even though all remain the same, some serial numbers, including the first, jersey, and the last serial numbers (called the original perfect mint serial), are more expensive than other serial numbers. For instance, for the Moment featuring Brandon Roy, the first, jersey (seventh), and 399 serial numbers are priced at $200, $225, and $69, respectively, compared to prices of other serial numbers, ranging from $20-$30 (based on the prices in July 2026). Besides, the first serial number may also impact perceived ownership. Since the Moment with the first number is the one that is minted on the Flow blockchain, whereas rest of Moments in that serial are replicates of the same video clip but with different NFT identifiers. The Moment with the first serial number may provide a higher perceived ownership than other numbers. Therefore, future studies may include serial numbers in their stimuli to control perceived ownership effect and purchase intention.

Fourth, I did not include participants' levels of understanding or interest as covariates. Although I recruited participants who reported they understand or are interested in the NBA Top Shot context, the levels of understanding or interest are unknown (and whether they truly have understanding or interest). Since their understanding or interest may be relevant to their perceived values and purchase intention, missing these covariates may impact the validity of results. Therefore, future studies may ask participants to report experiences and interested features in the sport NFT context. Including levels of understanding and interest may also explain the non-significant results between buyers and non-buyers in study 2 and 3. Since the sport NFT context keeps evolving during beta testing, consumers with understanding or interest may be more important than whether have purchased NBA Top Shot Moments before. It is understanding or interest that enable participants to be familiar with the features and perceived values. Because it is unknown whether participants' responses are based on their knowledge or

are responses of my stimuli. Therefore, future studies may ask participants' understanding before the stimuli and check their understanding of sport NFT experiences after the stimuli.

Fifth, I did not include participants' usage frequency as a covariate, which may impact result validity. Since the NBA Top Shot experienced a market hype in early 2021, some participants may have purchased Moments in 2021 and no longer use the platform after the market decline. Similarly, some participants may join the platform after the market decline due to their fandom and use the platform frequently. Usage frequency may impact perceived values and purchase intention. Thus, future studies may include usage frequency as a covariate and segment consumers based on their usage frequency. Besides, future studies may segment consumers based on their fan engagement levels. Since some consumers are authentic fans whereas others have low fandom but motivated by monetary value. Therefore, instead of segment consumers based on transaction experience, future studies can ask their fan engagement activities (e.g., game attendance, watch, merchandise consumption) and frequency.

Moreover, I used two team identification scales in the dissertation, which may measure team identification from different perspectives. Although the scale from Trail and James (2001) and Trail et al. (2003) provides a shorter scale, it measures fan (speculator) identity from identity theory perspective. Whereas Wann and Branscombe (1993) measures team identification from social identity theory perspective. Since I aim to control team identification in three studies, using Wann and Branscombe (1993) consistently may provide a more accurate measure of team identification. Therefore, future studies may use Wann and Branscombe (1993) to revisit results of study 2 and 3.

Besides the limitations, this dissertation provides directions for future studies. Future studies can investigate the underlying mechanisms and the moderating effects. Study 1 reveals

the importance of the mediating effects beyond the direct effects of social values. Future studies may further explore the underlying mechanisms of consumption values in study 3. For example, fun may increase purchase intention through perceived excitement. Investigating the underlying mechanisms would reveal whether the direct effects hold when introducing mediators. In addition, future studies may test the moderating effect of consumers' knowledge. Study 2 and 3 indicate that the understanding or interest of non-buyers may enable them to have the same consumption value effects as buyers. Future studies may examine whether educating and inspiring general sport fans can motivate consumption. As many sport fans who consume sport merchandises regularly may not understand sport NFT collectibles. Future research may first provide tutorials (e.g., videos) and test the consumption values for this segmentation.

Moreover, future studies can compare the consumption values between men's and women's leagues. Besides the NBA Top Shot, Dapper Labs introduced the WNBA Top Shot, which features game highlights of the WNBA. Consumption values may be different between two products because the WNBA Top Shot did not experience the market hype and their Moment prices are lower than the NBA Top Shot. Therefore, the monetary value effect may be different in the WNBA context. Furthermore, the total supply of Moments in the WNBA context is lower than the NBA context, which may find a different social status effect.

Additionally, future studies may investigate how integration of physical and digital experiences impacts purchase intention of sport NFT collectibles. For instance, the NBA Top Shot offered Community Grant Program to fund in person, such as game attendance, and online events. Besides, NBA Top Shot offers opportunities to meet NBA players, such as Magic Johnson and the 2025-2026 champion player Landry Shamet (NBA Top Shot, 2026a). Similarly, the MLS launched Pick Up Zones, such as Lumen Field in Seattle, Little Havana in Miami, and

Oak Park Mall in Kansas City, where consumers can get free Quests (MLS Quest, 2025b), offering opportunities to get physical rewards, such as game tickets and merchandise.

Last but not the least, future studies may test the effect of purchasing sport NFT collectibles on fan engagement behaviors, such as attending games, watching games, purchasing merchandises, interacting on social media. Since sport leagues are expected to leverage fan engagement experience through NFT collectibles, testing how sport NFT consumption impact fan engagement behaviors may provide further understanding on sport NFT consumption. Park and Lee (2025) found that both buyers and non-buyers report that they would increase sport consumption, such as watching games and visiting stadiums. Future studies may test the effects of sport NFT consumption on consumers' game attendance, merchandise consumption, and social media engagement before and after purchasing sport NFT collectibles.

5.3 Concluding Remarks

With the increasing emphases on fan engagement experiences beyond financial investment and the evolving sport NFT context, sport NFT providers are expected to understand the effects of their fan experiences on sport NFT consumption. Moreover, the underlying mechanisms beyond consumption values are critical for them to design and market their NFT products. Besides, the challenge of engaging existing consumers and attracting prospective consumers motivates sport NFT providers to understand how the consumption values drive purchase intention of these two segmentations. This dissertation aims to extend the current understanding of the consumption values for existing and prospective consumers in an evolving sport NFT context.

Appendices

Appendix A Study Summary

	Study 1	Study 2	Study 3
Research objective	Investigate the impacts of opposing social value dimensions on purchase intention of sport NFT collectibles and reveal the underlying mechanisms.	Extend study 1 and test the difference between buyers and non-buyers.	Provide an understanding of consumer values in sport NFT consumption through a new lens and test the differences between buyers and non-buyers.
Independent variable	Social interaction and social status.	Sense of belonging and sense of distinctiveness	Social interaction, social status, fun, nostalgia, expressive, ownership, and monetary values (first-order); Social, emotional, and functional values (second-order).
Mediator	Sense of belonging and sense of distinctiveness.	None.	None.
Moderator	None.	Transaction experience (buyers vs. non-buyers).	Transaction experience (buyers vs. non-buyers).
Dependent variable	Purchase intention.	Purchase intention.	Purchase intention.
Theoretical model	Optimal Distinctiveness Theory.	None.	Theory of Consumption Values and Mental Accounting Theory.
Methodology	2 x 2 between-subjects design.	2 x 2 between-subjects design.	Survey
Context	NBA Top Shot	NBA Top Shot	NBA Top Shot

Results	1. Neither social status nor social interaction increase purchase intention directly. 2. A sense of distinctiveness mediates the relationship between social status and purchase intention; a sense of belonging mediates the relationship between social interaction and purchase intention.	1. Transaction experience does not moderate the positive relationship between a sense of distinctiveness and purchase intention and between a sense of belonging and purchase intention.	1. Fun, expressive value, and monetary value increases purchase intention. 2. Social interaction, social status, nostalgia, and ownership do not impact purchase intention. 3. Transaction experiences does not moderate the relationships between consumption values and purchase intention.
Theoretical contribution	1. Identify experience design as another source beyond product design for belonging and distinctiveness in NFT consumption and reveal a sense of belonging and a sense of distinctiveness as mediators. 2. Provide empirical evidence of indirect effects of social interaction and social status beyond direct effects. 3. Challenge the NFT literature by investigating a sport NFT context where social interaction and social status are complementary.	1. Solve the inconsistent results in the NFT and sport NFT literature. 2. Provide a method to qualify non-buyers to offer cleaner results.	1. Contributes to the TCV by identifying the null moderating effect of transaction experience to the sport NFT context, beyond the NFT context. 2. Challenged the sport NFT literature about the understanding of social interaction and ownership. 3. Advance understanding of historic sport NFT collectibles by showing the importance of the experience of following athletes. 4. Expand understanding of social status. 5. Expand understanding of transaction experience to expressive value and nostalgia. 6. Provide a method to qualify non-buyers by using understanding and interest beyond familiarity.

Practical implication	1. Be aware of the dual mechanisms of social values and use different marketing messages for social interaction and social status experiences. 2. Design and market sport NFT collectibles that foster distinctiveness and belonging.	1. Not necessary to segment consumers based on their transaction experience when fostering belonging and distinctiveness. 2. Educate non-buyers to cultivate knowledge and interest.	1. Design products that foster fun experience, help consumers express team identification, and with financial potentials. 2. Not necessary to segment consumers based on their transaction experience.
Limitations and future research	1. Used unlocking a team community and the number of supply (with tiers) as a cue for social interaction and social status, respective. May test other cues and revisit stimuli to validate results. 2. Evolving social value features due to the beta testing. May revisit social features. 3. Did not include individual differences, such as needs for belonging and uniqueness, and transaction experience. 4. Sample representativeness concern. 5. May test the moderating effect of tenure in a community. 6. May test the interaction effect of social interaction and social status.	1. Self-reported knowledge may threaten results. 2. May not apply the findings to non-buyers without understanding and interest. 3. May revisit evolving social value features.	1. Stimuli design (especially in nostalgia) and self-reported knowledge may threaten results. 2. Other consumption values. 3. Correlational instead of causal study design. 4. High correlations between constructs. 5. A low factor loading item in ownership. 6. CMB concern. 7. Other attributes of functional value. 8. Expressive value beyond team identification expression.

Appendix B Measurement of Study 1

Construct	Item
Sense of distinctiveness (adopted from White & Argo, 2011)	To what degree would you feel like a unique individual if you owned the NBA Top Shot Moment of Alexandre Sarr that was displayed?
	To what extent would owning the displayed NBA Top Shot Moment of Alexandre Sarr make you feel distinct from others?
	To what extent would owning the displayed NBA Top Shot Moment of Alexandre Sarr make you feel different from others?
Sense of belonging (adapted from Bollen & Hoyle, 1990)	If I own the displayed NBA Top Shot Moment of Alexandre Sarr that helps me join the Washington Wizards' community, I feel that I belong to the Wizards' community.
	If I own the displayed NBA Top Shot Moment of Alexandre Sarr that helps me join the Washington Wizards' community, I see myself as part of the Wizards' community.
	If I own the displayed NBA Top Shot Moment of Alexandre Sarr that helps me join the Washington Wizards' community, I feel that I am a member of the Wizards' community.
Purchase intention (adopted from Schlimm et al., 2024; Putrevu & Lord, 1994 developed)	It is very likely that I will buy the displayed NBA Top Shot Moment of Alexandre Sarr.
	I will purchase the displayed NBA Top Shot Moment of Alexandre Sarr the next time I have the chance to.
	I will definitely buy the displayed NBA Top Shot Moment of Alexandre Sarr.
Team identification (adopted from Wann & Branscombe, 1993)	How important to you is it that the Washington Wizards win?

	How strongly do you see yourself as a fan of the Washington Wizards?
	How strongly do your friends see you as a fan of the Washington Wizards?
	During the season, how closely do you follow the Washington Wizards via ANY of the following: in person, on television, on the radio, online websites, or social media?
	How important is being a fan of the Washington Wizards to you?
	How much do you dislike the greatest rivals of the Washington Wizards?
	How often do you display the Washington Wizards' name or insignia (for example, badges) at your place of work, where you live, in your car, or on your clothing?

Note. measured on a 7-point Likert Scale.

Appendix C Measurement of Study 2

Construct	Item
Sense of distinctiveness (adopted from White & Argo, 2011)	To what degree would you feel like a unique individual if you owned the NBA Top Shot Moment of Brook Lopez that was displayed? To what extent would owning the displayed NBA Top Shot Moment of Brook Lopez make you feel distinct from others? To what extent would owning the displayed NBA Top Shot Moment of Brook Lopez make you feel different from others?
Sense of belonging (adapted from Bollen & Hoyle, 1990)	If I own the displayed NBA Top Shot Moment of Brook Lopez that helps me join the Milwaukee Buck' community, I feel that I belong to the Bucks' community. If I own the displayed NBA Top Shot Moment of Brook Lopez that helps me join the Milwaukee Buck' community, I see myself as part of the Bucks' community. If I own the displayed NBA Top Shot Moment of Brook Lopez that helps me join the Milwaukee Buck' community, I feel that I am a member of the Bucks' community.
Purchase intention (adopted from Schlimm et al., 2024; Putrevu & Lord, 1994 developed)	It is very likely that I will buy the displayed NBA Top Shot Moment of Brook Lopez. I will purchase the displayed NBA Top Shot Moment of Brook Lopez the next time I have the chance to.

	I will definitely buy the displayed NBA Top Shot Moment of Brook Lopez.
Team identification (adopted from Trail et al., 2003; developed by Trail & James, 2001)	I consider myself to be a "real" fan of the Milwaukee Bucks. I would experience a loss if I had to stop being a fan of the Milwaukee Bucks. Being a fan of the Milwaukee Bucks is very important to me.
Need for Uniqueness (adopted from Ruvio et al., 2008).	When a product I own becomes popular among the general population, I begin to use it less. I often try to avoid products or brands that I know are bought by the general population. As a rule, I dislike products or brands that are customarily bought by everyone. The more commonplace a product or brand is among the general population, the less interested I am in buying it.
Need for belonging (adopted from Pardede et al., 2021).	I feel the need to belong with others. I have a need to belong. It is important for me to feel part of others.

Please choose one option that best describes your NBA Top Shot Moment experience. (pre-screening question)	I have purchased NBA Top Shot Moments before. I did not purchase NBA Top Shot Moments before, but I am interested in NBA Top Shot Moments. I did not purchase NBA Top Shot Moments before, but I understand what NBA Top Shot Moments are. I did not purchase NBA Top Shot Moments before, but I understand what NBA Top Shot Moments are and am interested in NBA Top Shot Moments. I did not purchase NBA Top Shot Moments before, and I neither understand what NBA Top Shot Moments are nor interested in NBA Top Shot Moments.
NBA Top Shot Knowledge	Which features does the NBA Top Shot have? Please select all the features that you think the NBA Top Shot has. • Marketplace • Skin (designed as a wrong answer) • Fast Break • Challenges • Leaderboards • Hoops (designed as a wrong answer) • Auctions • Discord Community • Showcase • Moment tier
Have you purchased NBA Top Shot Moments before?	Yes/No

Note. Except the pre-screening question, NBA Top Shot knowledge, and NBA Top Shot Moments purchase experience, others were measured on a 7-point Likert Scale.

Appendix D Measurement of Study 3

Construct	Item
Social interaction (adapted from Yang et al., 2024; developed by Peterson et al., 2008)	Having the displayed NBA Top Shot Moment featuring Brandon Roy helps me feel like part of the NBA Top Shot community.
	Having the displayed NBA Top Shot Moment featuring Brandon Roy enables me to feel that I belong to the NBA Top Shot community.
	Having the displayed NBA Top Shot Moment featuring Brandon Roy helps me connect with other collectors in the NBA Top Shot community.
	Having the displayed NBA Top Shot Moment featuring Brandon Roy allows me to build relationships with others in the NBA Top Shot community.
Social status (adapted from Meshram & O'Cass, 2018)	Owning the displayed NBA Top Shot Moment featuring Brandon Roy makes me feel like I have a high social standing among other collectors.
	Owning the displayed NBA Top Shot Moment featuring Brandon Roy earns me respect from other collectors.
	The displayed NBA Top Shot Moment featuring Brandon Roy helps me project a positive image in the NBA Top Shot community.
Fun (adapted from Ducoffe, 1995)	Purchasing the displayed NBA Top Shot Moment featuring Brandon Roy is a fun experience.
	Owning the displayed NBA Top Shot Moment featuring Brandon Roy is enjoyable.
	I am very pleased with owning the displayed NBA Top Shot Moment featuring Brandon Roy.
Nostalgia (adapted from Cho et al., 2019)	The displayed NBA Top Shot Moment featuring Brandon Roy is a nostalgic reminder of my past experiences watching the NBA.
	The displayed NBA Top Shot Moment featuring Brandon Roy makes me feel a sense of fondness for my experiences as an NBA fan.

	The displayed NBA Top Shot Moment featuring Brandon Roy reminds me of my cherished memory related to the NBA.
Expressive value (adapted from Wallace et al., 2021; developed by Carroll & Ahuvia, 2006)	The displayed NBA Top Shot Moment featuring Brandon Roy reflects my team identification.
	The displayed NBA Top Shot Moment featuring Brandon Roy is an expression of my team identification.
	The displayed NBA Top Shot Moment featuring Brandon Roy mirrors my team identification.
Ownership (adapted from Homburg et al., 2015)	The ownership of the displayed NBA Top Shot Moment featuring Brandon Roy can be verified.
	The ownership of the displayed NBA Top Shot Moment featuring Brandon Roy is capable to be verified.
	The ownership verification of the displayed NBA Top Shot Moment featuring Brandon Roy is functional.
Monetary value (adapted from Ali, 2011)	The displayed NBA Top Shot Moment featuring Brandon Roy is financially rewarded.
	Investing in the displayed NBA Top Shot Moment featuring Brandon Roy seems to generate high returns.
	I believe that the financial returns of the displayed NBA Top Shot Moment featuring Brandon Roy will be high in the future.
	The displayed NBA Top Shot Moment featuring Brandon Roy has sufficient potential to grow in the future.
	I think investing the displayed NBA Top Shot Moment featuring Brandon Roy is highly rewarding.
Purchase intention (adopted from Schlimm et al., 2024; developed by Putrevu & Lord, 1994)	It is very likely that I will buy the displayed NBA Top Shot Moment featuring Brandon Roy.
	I will purchase the displayed NBA Top Shot Moment featuring Brandon Roy the next time I have the chance to.
	I will definitely buy the displayed NBA Top Shot Moment featuring Brandon Roy.
Team identification (adopted from Trail et al., 2003; developed by Trail & James, 2001)	I consider myself to be a "real" fan of the Portland Trail Blazers.
	I would experience a loss if I had to stop being a fan of the Portland Trail Blazers.
	Being a fan of the Portland Trail Blazers is very important to me.

Please choose one that best describes your NBA Top Shot Moment experience. (pre-screening question).	I have purchased NBA Top Shot Moments before. I did not purchase NBA Top Shot Moments before, but I am interested in NBA Top Shot Moments. I did not purchase NBA Top Shot Moments before, but I understand what NBA Top Shot Moments are. I did not purchase NBA Top Shot Moments before, but I understand what NFTs are and am interested in NBA Top Shot Moments. I did not purchase NBA Top Shot Moments before, and I neither understand what NBA Top Shot Moments are nor interested in NBA Top Shot Moments.
NBA Top Shot experience and features	Which features does the NBA Top Shot have? Please select all the features that you think the NBA Top Shot has. Choices: Marketplace, Skin, Fast Break, Challenges, Leaderboards, Hoops, Auctions, Discord Community, Showcase, Moment Tier. (Note. I created Skin and Hoops as incorrect choices).
Direct experience with Brandon Roy	Have you ever had one of the following experiences before: watched Brandon Roy's games, attended his games, or followed his news via media (such as TV, newspapers, websites, or social media) **during his NBA career** (2006-2013)? (Yes/No)
Indirect experience with Brandon Roy	Have you ever followed Brandon Roy's news via media (such as TV, newspapers, websites, or social media) **after he retired from NBA** (after 2013)? (Yes/No)
NFT purchase experience	Have you ever purchased any NFTs before? (Yes/No).
NBA Top Shot Moment purchase experience	Have you ever purchased any NBA Top Shot Moments before? (Yes/No).
NBA Top Shot score	If you have purchased NBA Top Shot Moments before, what is your NBA Top Shot score now? (can report estimated number if you have privacy concern. For example, if your score is 1000, respond: 1000. No comma separate is needed. You can find NBA Top Shot score under "My Collection" on the NBA Top Shot.)
Rare Moment experience	If you have purchased NBA Top Shot Moments before, have you ever purchased any Moments with a rare tier? (Yes/No)
NBA Top Shot spent	What is the estimated amount of money that you spent on the NBA Top Shot in the **past year (from March 2025 to March**

	2026)? (Less than $10; $10-$99; $100-$199; $200-$299; $300-$399; $400-$499; Over $500).
NFT spent	What is the estimated amount of money that you spent on NFTs in the **past year (from March 2025 - March 2026)**? (Less than $10; $10-$99; $100-$199; $200-$299; $300-$399; $400-$499; Over $500).

Note. Consumer values, purchase intention, and team identification will be measured on a 7-point Likert scale.

Appendix E Stimuli of Study 1

Figure E.1

GIF of the NBA Top Shot Moment featuring Alexandre Sarr

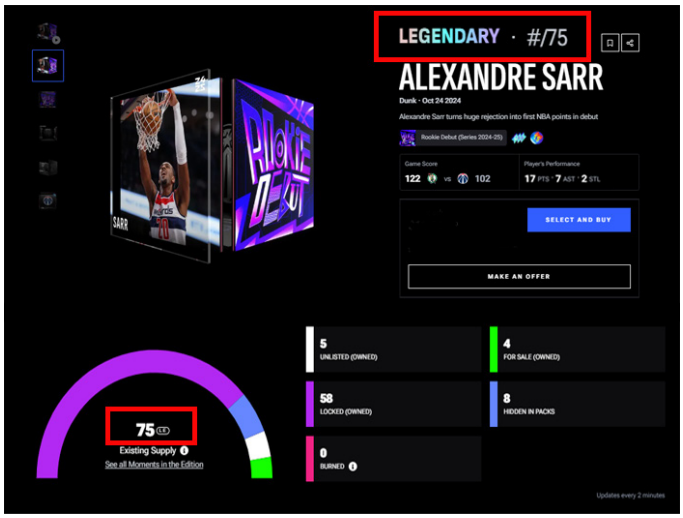


Note. Source: NBA Top Shot platform: https://nbatopshot.com/ (the note is not included in the stimuli).

High social status and high social interaction condition

Please read the entire description and look at the image carefully. Some questions will check your attention. Incorrectly identifying key information may result in disqualification from future studies.

Imagine you're considering purchasing a Top Shot Moment featuring Alexandre Sarr-the same highlight you just watched in the GIF. This Moment is classified as **Legendary**, with only **75** of this Moment on the NBA Top Shot.



You might be interested in joining the Washington Wizards' community on Discord. To join the Wizards' community, you need to collect all Moments from a team set--and the displayed Moment **is part of that set.**

In the **Wizards'** community, you have the following **social opportunities**:

1. Exclusive access to the team channel

2. Chat with other collectors who support the same team

3. Participate in team-specific discussions, predictions, and trade talks

4. Earn roles for collection milestones

5. Showcase team collectibles to demonstrate fandom

6. Challenges & rewards specific to the team

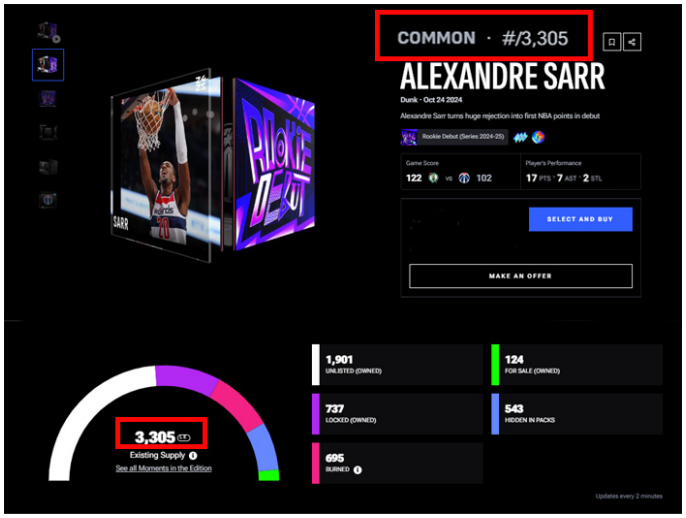
7. Get early info on pack drops or events tied to the team

Note. Source: NBA Top Shot platform: https://nbatopshot.com/ (the note is not included in the stimuli).

Low social status and low social interaction condition

Please read the entire description and look at the image carefully. Some questions will check your attention. Incorrectly identifying key information may result in disqualification from future studies.

Imagine you're considering purchasing a Top Shot Moment featuring Alexandre Sarr-the same highlight you just watched in the GIF. This Moment is classified as **Common**, with **3,305** of Moments on the NBA Top Shot.



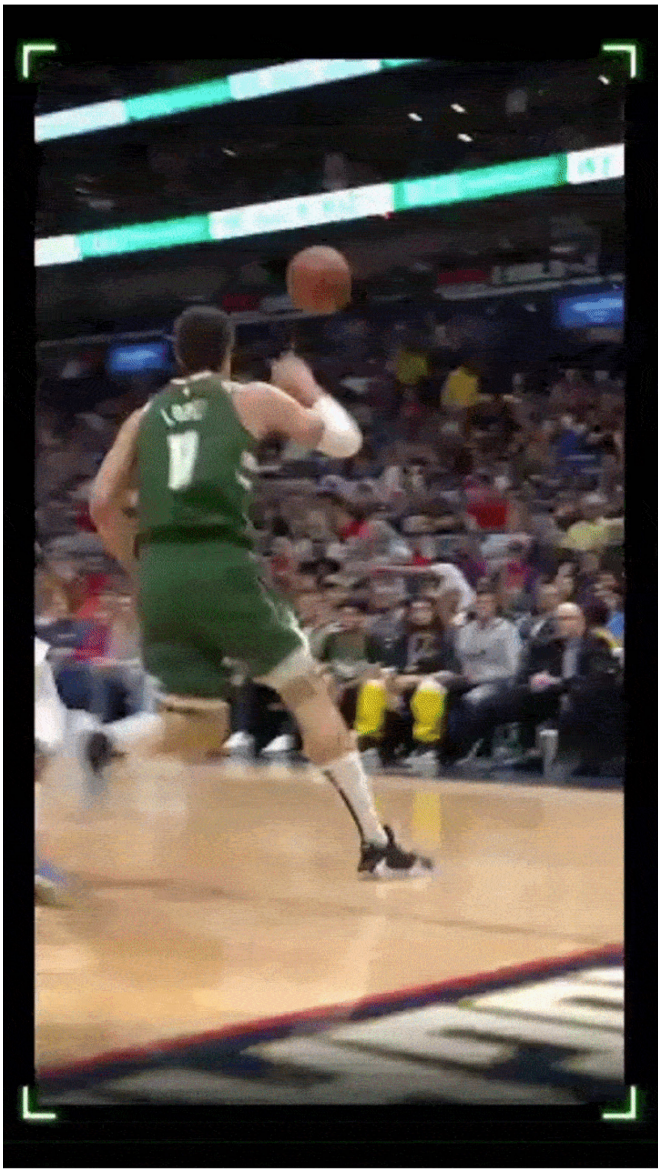
You might be interested in joining the Washington Wizards' community on Discord. To join the Wizards' community, you need to collect all Moments from a team set. **Please note: the Moment above is *NOT* part of the required set,** which means you **CANNOT join the Wizards' community** and **CANNOT unlock any social opportunities in the Wizards' community** by purchasing the displayed Moment.

Note. Source: NBA Top Shot platform: https://nbatopshot.com/ (the note is not included in the stimuli).

Appendix F Stimuli of Study 2

Figure F.1

GIF of the NBA Top Shot Moment featuring Brook Lopez

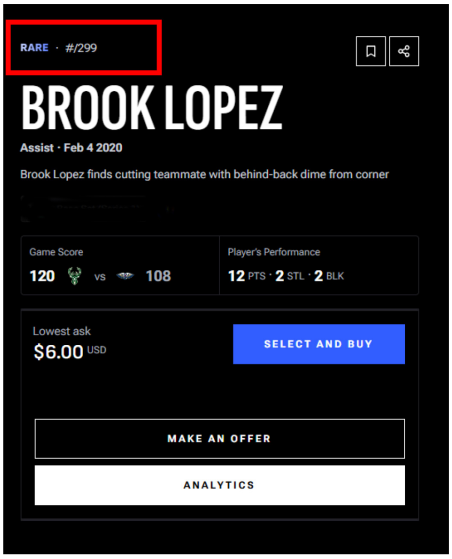


Note. Source: NBA Top Shot platform: https://nbatopshot.com/ (the note is not included in the stimuli).

High social status and high social interaction condition

Please read the entire description and look at the image carefully. Some questions will check your attention. Incorrectly identifying key information may result in disqualification from future studies.

Imagine you're considering purchasing a Top Shot Moment featuring Brook Lopez-the same highlight you just watched in the GIF. This Moment is classified as **Rare**, with only **299** of this Moment on the NBA Top Shot.



You might be interested in joining the Milwaukee Bucks' community on Discord. To join the Bucks' community, you need to collect all Moments from a team set--and the displayed Moment **is part of that set.**

In the **Bucks'** community, you have the following **social opportunities**:

1. Exclusive access to the team channel

2. Chat with other collectors who support the same team

3. Participate in team-specific discussions, predictions, and trade talks

4. Earn roles for collection milestones

5. Showcase team collectibles to demonstrate fandom

6. Challenges & rewards specific to the team

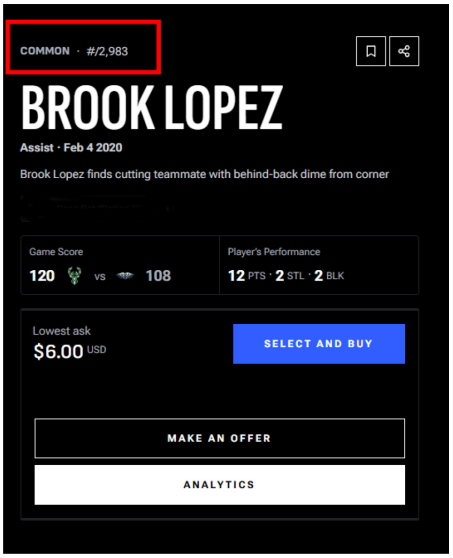
7. Get early info on pack drops or events tied to the team

Note. Source: NBA Top Shot platform: https://nbatopshot.com/ (the note is not included in the stimuli).

Low social status and low social interaction condition

Please read the entire description and look at the image carefully. Some questions will check your attention. Incorrectly identifying key information may result in disqualification from future studies.

Imagine you're considering purchasing a Top Shot Moment featuring Brook Lopez-the same highlight you just watched in the GIF. This Moment is classified as **Common**, with **2,983** of Moments on the NBA Top Shot.



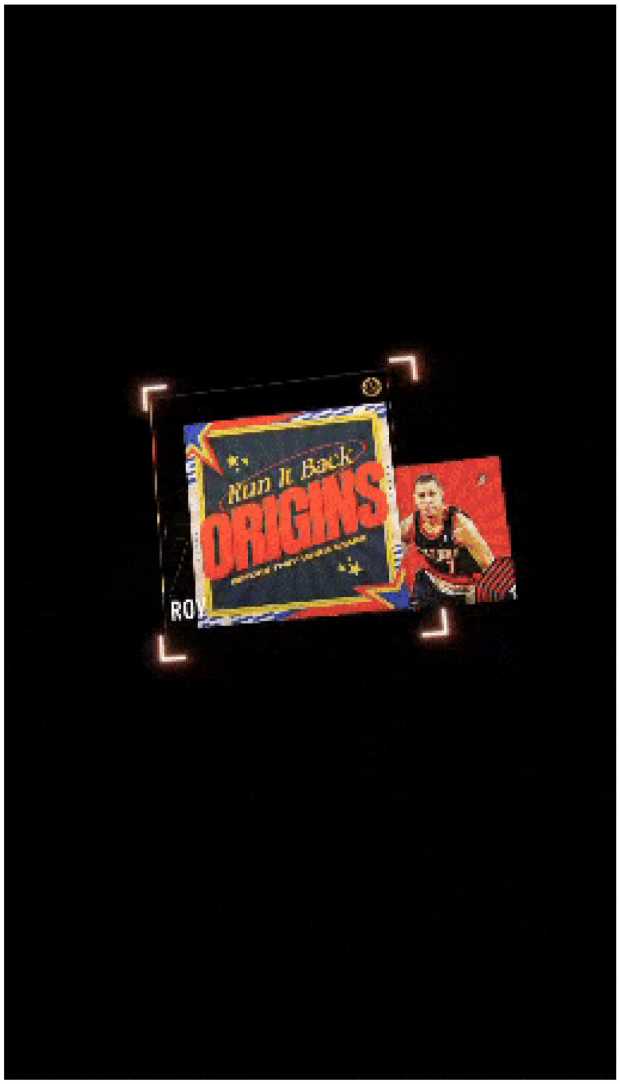
You might be interested in joining the Milwaukee Bucks' community on Discord. To join the Bucks' community, you need to collect all Moments from a team set. **Please note: the Moment above is *NOT* part of the required set,** which means you **CANNOT join the Bucks' community** and **CANNOT unlock any social opportunities in the Bucks' community** by purchasing the displayed Moment.

Note. Source: NBA Top Shot platform: https://nbatopshot.com/ (the note is not included in the stimuli).

Appendix G Stimuli of Study 3

Figure G.1

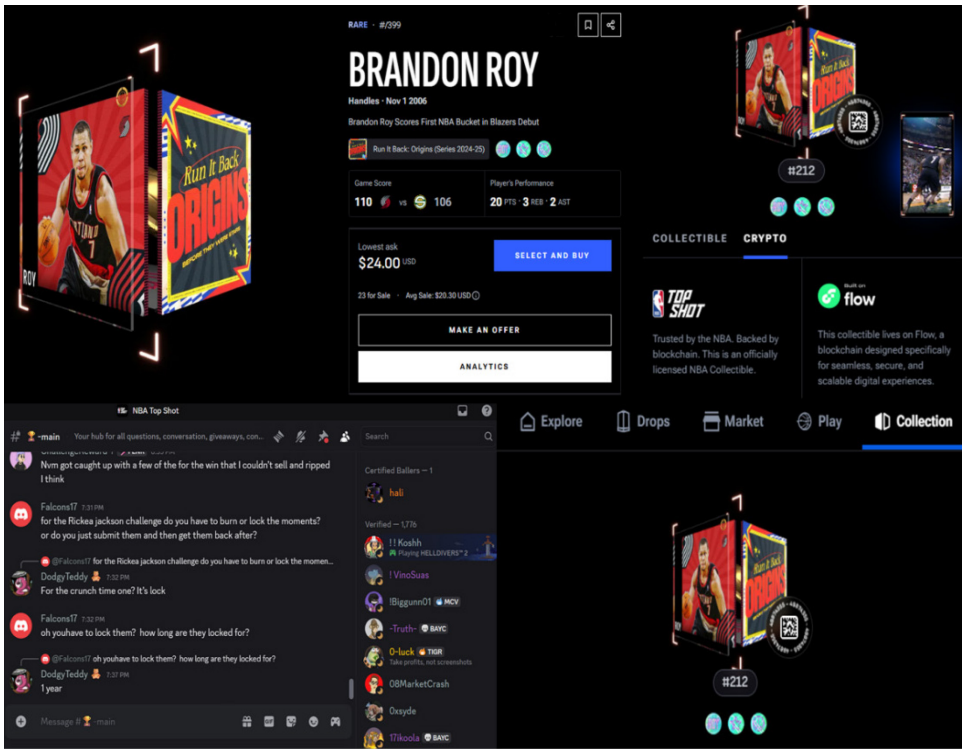
GIF of the NBA Top Shot Moment featuring Brandon Roy



Note. Source: NBA Top Shot platform: https://nbatopshot.com/ (the note is not included in the stimuli).

Figure G.2

Image stimulus featuring NBA Top Shot experiences



By purchasing the displayed Moment featuring Brandon Roy, you can:

- Discuss the Moment in the NBA Top Shot Community.
- Own the Moment with a Rare Tier and only 399 supplied.
- Recall Brandon Roy's debut for the Trail Blazers on November 1, 2006.
- Complete a collection set and win rewards.
- Pin the Moment on your homepage, where every visitor can see it.
- Demonstrate your ownership of the Moment, which will be recorded on the Flow blockchain.
- Sell the Moment on the market.

Note. Source: NBA Top Shot platform: https://nbatopshot.com/ (the note is not included in the stimuli).

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