Investigating Consumption Values and Purchase Intentions in Metaverse Shopping: A Pilot Study

Martina Columbano

Ph.D. Candidate in in Communication, Markets and Society
IULM University - Department of Business, Law, Economics
and Consumer Behavior 'Carlo A. Ricciardi'
Via Carlo Bo 1, 20143 - Milan, Italy
martina.columbano@studenti.iulm.it

Alice Venturini

Ph.D. Candidate in in Communication, Markets and Society
IULM University - Department of Communication, Arts
and Media Giampaolo Fabris
Via Carlo Bo 1, 20143 - Milan, Italy
alice.venturini4@studenti.iulm.it

Investigating Consumption Values and Purchase Intentions in Metaverse Shopping: a Pilot Study

Abstract

Consumers are increasingly using the metaverse to enjoy memorable shopping experiences. However, to date, research has yet to focus on the predictors of consumer behaviour in these digital environments. To address this gap, we empirically validate the metaverse-specific consumption values theorized by Venturini and Columbano (2023) to predict the antecedents of the purchase intention in these virtual platforms. An online experiment was conducted with 187 respondents from MTurk and analyzed using a linear regression model. Utilitarianism, social identity, and pro-enviromental engagement were found to significantly influence purchase intention. These findings have important implications for both theory and practice.

Keywords

Metaverse; consumption values; purchase intention; digital fashion marketing; consumer behaviour

Introduction and objectives

With the rise in popularity of the gaming industry, nowadays the metaverse represents a well-established marketing channel for fashion brands (BOF and McKinsey, 2022). The idea of a parallel world that can digitally replicate people's lives started to develop rapidly after Mark Zuckerberg's announcement of Meta's massive investments in these virtual environments in October 2021.

Metaverse platforms, such as Roblox, Decentraland, Second Life, to name a few, are massively scaled and interoperable network "which can be experienced synchronously and persistently by an effectively unlimited number of users with an individual sense of presence, and with continuity of data, such as identity, history, entitlements, objects, communications, and payments" (Ball, 2022). Immersion in such virtual environments is characterized by behavioural realism, that is, the degree to which virtual humans behave as they would in the physical world, as well as by social presence, namely the extent to which users believe they are in the presence of and interacting with other real human beings (Blascovich et al., 2002).

From a marketing perspective, metaverse platforms allow brands to give birth to their own world in a way that no video, ad, words, or image could do. For instance, fashion brands and designers entered these realms with activities such as creating skins for gaming avatars, hosting fashion shows in metaverse platforms and doing digital fittings (Venturini and Columbano, 2023). Each of these worlds can be unique and create fully immersive experiences for customers, being more engaging than traditional advertising.

The COVID-19 pandemic has further accentuated the use of digital platforms while paving the way for a new digital reality that consumers started to accept and integrate into their daily lives (Islam et al., 2021). Indeed, in 2022 the global market size of the metaverse was estimated at USD 65.51 billion dollars (Grand View Research, 2023), and by 2030 it is expected to rise to 678.8 billion U.S. dollars (Bloomberg, 2022).

Despite its continuous growth, academic attention toward the metaverse is still scant. Very few empirical studies exist on this subject (Murtas et al., 2023; Ramadan, 2023), and the literature examining consumer behaviour in the metaverse is currently limited (Jafar et al., 2023; Venturini and Columbano, 2023). Therefore, this study aims at giving a contribution to this scarce body of research by trying to gain a deeper understanding of which consumption

values are involved in the metaverse usage, and to what extent they contribute to consumers' purchase intentions in virtual environments.

Research question

Considering the aforementioned premises, the purpose of this research is to answer the following questions: *(1) Which consumption values define shopping within the metaverse context? (2) In what ways do the different consumption values contribute to purchase intention in metaverse-based stores?* To answer these questions, the metaverse-specific consumption values theorized by Venturini and Columbano (2023) will serve as a theoretical lens and a quantitative approach will be adopted.

Conceptual framework

Scholars differ in how they conceptualize consumption values. For instance, Sweeney and Soutar (2001) proposed four notions of value: emotional or sentimental, social, quality or performance, and price value. Babin et al. (1994) assessed consumer perceptions of hedonic and utilitarian values in shopping activities, while Mathwick et al. (2001) developed and tested a scale for measuring experiential value of catalogue shoppers versus Internet shoppers.

Among these conceptualizations, the theory of consumption values (Sheth et al., 1991) has been the most widely employed to better explore consumers' use of new technologies and innovations (Mäntymäki et al., 2020). Sheth et al. identified five values that influence consumer choice: functional, social, emotional, epistemic, and conditional value. However, it is widely agreed that TCV is too general, and studying consumption values in specific contexts could allow for more precise insights into consumer behaviour (Kaur et al., 2021; Talwar et al., 2020; Tan et al., 2022). Notably, only one qualitative study has attempted to adapt the generic values proposed by the TCV to define the consumption values involved in metaverse usage (Venturini and Columbano, 2023). For this reason, the research framework proposed by Venturini and Columbano (2023) will serve as a theoretical lens to understand which consumption values define shopping within the metaverse context and to what extent they contribute to purchase intention in virtual stores.

1.2 Purchase intention and context specific consumption values

Purchase intention is an important aspect of consumer behaviour (Talwar et al., 2020). According to literature, a key antecedent of purchase intention is the perceived value that individuals may derive from the use of a product or service (Carlson et al., 2015; Lu and Hsiao, 2010), thus embodying consumers' needs, desires, and expectations (Sweeney and Soutar, 2001). For what concerns digital realms, Venturini and Columbano (2023) suggest that metaverse users derive value from five different dimensions. The research model (*Figure 1*) includes the five metaverse-specific consumption values adapted from TCV and the purchase intention as the dependent variable. A brief description of each value will be provided below:
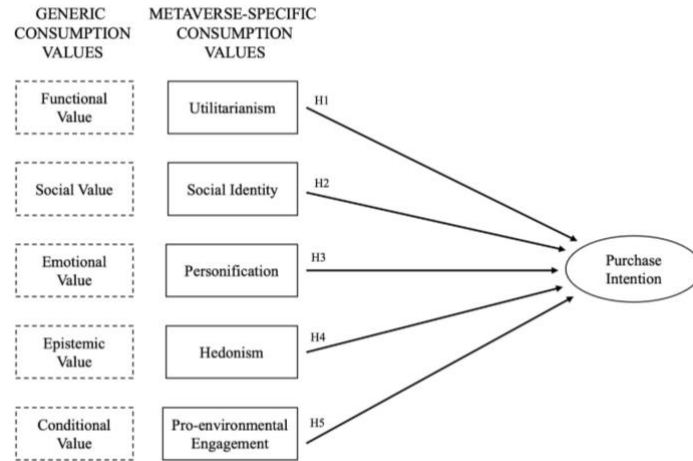
Figure 1. Research Model

Functional value is the perceived utility obtained from the capacity of an alternative for functional, utilitarian, or physical performance (Sheth et al., 1991). According to prior research, consumers derive functional value from the utilitarian attributes of a product (Malodia et al., 2021; Youn and Lee, 2019). For this reason, in the current study functional value is labelled as *utilitarianism,* representing the extent to which users perceive metaverse platforms to be useful in terms of economic convenience, ease of processes and the possibility it grants to be both producer and consumer of digital artifacts (Venturini and Columbano, 2023). Thus, we propose the following hypothesis:

H1: Utilitarianism has a positive effect on purchase intention in the metaverse.

Social value is the perceived benefit derived from an alternative's connection with one or multiple social groups (Sheth et al., 1991). In the metaverse context, consumers were found to derive value from using digital platforms according to their *social identity* projects (Venturini and Columbano, 2023). Previous literature suggests that social identity is a psychological state that individuals use to collectively represent who they are and where they belong by associating themselves with certain social groups (He et al., 2012). *Social identity* is derived from different practices related to the expression of the self and the relationship with others, thus helping metaverse users to affirm themselves in terms of self-expression, self-image, and self-esteem (Venturini and Columbano, 2023). Therefore, our second hypothesis is:

H2: Social identity has a positive effect on purchase intention in the metaverse.

Emotional value pertains to the perceived benefit derived from an alternative's capacity to evoke emotions or affective states (Sheth et al., 1991). Prior studies have argued that consumers are often emotionally attached to their possessions and derive emotional value by personifying them (Malodia et al., 2021; Yu, 2020). In the present study, emotional value, labelled as *personification,* represents the ability of the metaverse to arouse feelings and emotions (Venturini and Columbano, 2023). These feelings can be influenced by the realism of avatars, environments, and interactions, as well as the attributions of human characteristics to the consumer-brand relationship. Accordingly, we propose the following hypothesis:

H3: Personification has a positive effect on purchase intention in the metaverse.

According to Sheth et al. (1991), the *epistemic value* pertains to the perceived utility derived from an alternative's ability to arouse curiosity, provide novelty, and satisfy a desire for knowledge. Previous research suggested that epistemic value is linked to the consumers' desire to explore new technologies and learn new practices (Malodia et al., 2021; Mäntymäki and Salo, 2015; Petrovčiková and Sudzina, 2018; Talwar et al., 2020). In the current study, epistemic value is labelled as *hedonism,* and it represents the extent to which fashion consumers use the metaverse to acquire brand knowledge or to experience brands in a different manner (Venturini and Columbano, 2023). Metaverse is perceived as enjoyable by users not only because of its ability to arouse curiosity or offer pleasurable experiences, but also because it gives them additional information about brands. Thus, we argue that:

H4: Hedonism has a positive effect on purchase intention in the metaverse.

Conditional value relates to the perceived benefit arising from a particular situation or set of circumstances that the decision-maker encounters when evaluating an alternative (Sheth et al., 1991). Within the metaverse context, conditional value has been found to relate to personal values of metaverse users, namely their consistency with their own wholeness and mentality in order to define their personal identity (Hertz and Krettenauer, 2016). Among these personal values, sustainability plays a pivotal role (Venturini and Columbano, 2023). Sustainability can be conceptualized in terms of *pro-environmental engagement* (Bouman et al., 2020), that is, the motivations, beliefs, attitudes, and actions that stimulate individuals to engage in activities in favour of the natural environment. On these grounds, we hypothesize that:

H5: Pro-environmental engagement has a positive effect on purchase intention in the metaverse.

Method

Consistently with previous research in the TCV realm (Kaur et al., 2021; Tandon et al., 2021; Talwar et al., 2020) a quantitative approach was adopted to analyze the relationship between metaverse-specific consumption values and the purchase intention. Therefore, H1-H5 were tested with a pilot study through an online Qualtrics survey. A total of 187 valid responses were gathered, from participants aged 14 to 52 (44,92% female and 55,08% male, average age = 22.1; SD = 6.5). Participants were recruited through MTurk, as a large body of research has demonstrated that it can be a reliable and cost-effective source of high-quality and representative data (e.g., Buhrmester et al., 2011; Goodman and Paolacci, 2017; Kees et al., 2017; Sheehan and Pittman 2016). The respondents were informed about the objectives of the study, the voluntary nature of participation as well as their freedom to quit the survey at any time. To assess response quality, the participants' familiarity with the metaverse and the survey completion time were assessed. All participants received compensation for their participation.

As an experimental stimulus for the study, a 50-second video depicting a shopping experience within a metaverse clothing store was selected. Two versions of the stimulus were available, depicting respectively a female and a male avatar, and participants were assigned to the stimulus according to their preferred gender identity. After viewing the video, participants were asked to express their purchase intention and to fill out five additional Likert scales representing each of the five metaverse-specific consumption values (all items have been summarized in *Table 1*). All variables were measured on 7 points Likert scales (from strongly disagree to strongly agree). Lastly, demographic data (age, gender, and country of origin) was also collected.

Purchase Intention	• I am willing to purchase fashion items through metaverse stores • I will purchase fashion items through metaverse stores • I would like to reuse the metaverse store	Adapted from Talwar et al. (2020)	α = 0.626 ω = 0.626
Utilitarianism	• The metaverse store functionally performs well • The interaction with the metaverse store shown is clear and understandable • I find this metaverse store easy to use • Learning how to use the metaverse store appears to be easy	Adapted from Chakraborty et al. (2022)	α = 0.715 ω = 0.718
Social Identity	• Using the metaverse could help me gain social approval • Using the metaverse could challenge the way I am perceived by others • Using the metaverse could give me a chance to show off my metaverse experiences to others • Using the metaverse could help me stand out among my peers	Adapted from Talwar et al. (2020)	α = 0.722 ω = 0.723
Personification	• The avatar looks like a human to me • I find the avatar friendly • I feel attached to the avatar • I feel delighted while interacting with the avatar • The avatar is quit intelligent	Adapted from Malodia et al. (2021)	α = 0.771 ω = 0.773
Hedonism	• Metaverse stores would make shopping more interesting and playful • using metaverse stores would be satisfying • The engagement I would have in metaverse stores would always be meaningful • I am curious to use metaverse stores and do now things with them • I would actively look forward to instances when I can shop in a metaverse store	Adapted from Malodia et al. (2021)	α = 0.787 ω = 0.788
Pro-environmental Engagement	• I would consider joining the metaverse if real-life clothes may affect the environment • I would consider joining the metaverse if real-life clothes cause the depletion of our natural sources • I would consider joining the metaverse if real-life clothes usage causes air pollution	Adapted from Barbarossa et al (2015)	α = 0.608 ω = 0.618

Table 1. Questionnaire Items with Cronbach's alpha (α) and McDonald's omega (ω).

Findings

A linear regression model was conducted using RStudio (version 2022.02.3+492) for the analysis. The model results, summarized in *Figure 2*, highlight a significant effect of utilitarianism (coefficient = 3.365; p = 0.001), social identity (coefficient = 2.432; p = 0.016) and pro-environmental engagement (coefficient = 4.438; p = 0.001). The coefficient of 0.241 suggests a small positive association between personification and purchase intention, this however is not significant (p = 0.810). Lastly, the coefficient of the relationship for hedonism (coefficient = -0.417), indicates a small negative association with purchase intention, but it is not statistically significant (0.677).
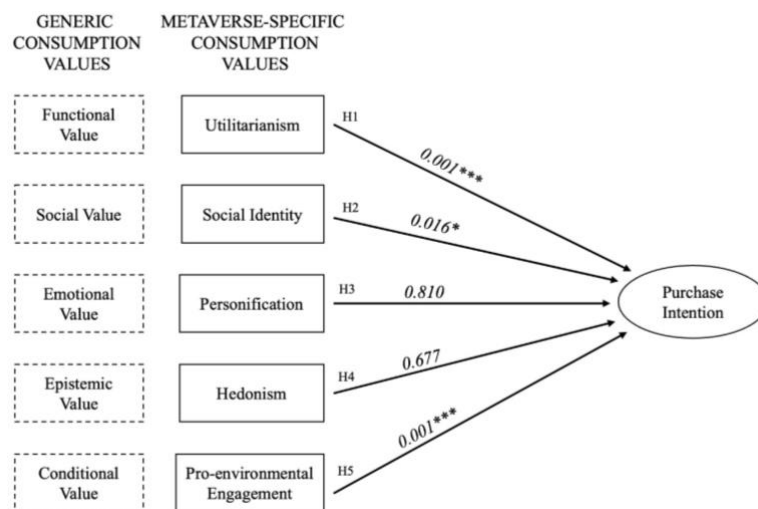

Figure 2. Model and Summary of Results

The model summary statistics indicate an overall good model fit where: $R^2=0.707$ and adjusted $R^2=0.699$, RMSE decreases from H_0 (0.634) to H_1 (0.348) indicating that the predictors are explaining some of the variability in the outcome variable, and the F-statistics (87.34, on 5 and 181 DF) is significant ($p = <0.001$) indicating that the model is statistically significant. Moreover the Durbin-Watson test for autocorrelation ($H_0=2.255$; $H_1= 1.868$) is not statistically significant indicating no substantial or significant autocorrelation between residuals. Lastly, $R=0.841$, indicates a strong linear relationship between the model variables.

Discussion and conclusion

By empirically validating the metaverse-specific consumption values theorized by Venturini and Columbano (2023), this study offers crucial insights on the motivations associated with the use of the metaverse. Five hypotheses related to the direct association between consumption values and purchase intentions have been investigated to answer RQ1 and RQ2. The research findings empirically support all hypotheses, except H3 and H4.

We found that utilitarianism has a significant positive association with purchase intention in the metaverse (H1). Users appreciate the functional performances of the metaverse as well as its clarity and ease to use. Therefore, the greater the utilitarianism, the more likely consumers are to purchase items in digital environments. These findings are consistent with those of prior studies related to similar digital technologies (Kaur et al., 2021; Talwar et al., 2020; Tandon et al., 2021).

The results supporting H2 suggest that social identity is also positively associated with purchase intention. Users are motivated to use the metaverse because it helps them gain social approval and stand out among peers, thus changing the way they are perceived by others. Therefore, consistently with previous literature (Kaur et al., 2021; Talwar et al., 2020; Tandon et al., 2021), as their need for self-expression is satisfied, users are more likely to purchase in these digital environments.

We hypothesized a positive relation between personification and purchase intention (H3), which was unsupported as we found a non-significant association between the two. The findings are consistent with existing studies that removed emotional value from their research model (Kaur et al., 2021; Talwar et al., 2020; Tandon et al., 2021). We attribute this result to the nature of the stimulus that we have chosen, as users were only able to choose the gender of their avatar and not to customize it according to their preferences. This could have reduced the emotional value, that is, the personification of the avatar, and thus the intention to purchase garments in the metaverse.

H4 was not supported because the results suggest that hedonism has a negative and non-significant influence on the purchase intention. The findings differ from existing studies that have found epistemic value to be a significant predictor for purchase intention toward digital services (Kaur et al., 2021; Talwar et al., 2020). Again, the cause could be linked to the type of stimulus, which represented a shopping experience in a digital environment. Users were found to appreciate the ability of the metaverse to create pleasurable experiences that satisfy their hedonic motives (Venturini and Columbano, 2023), but they don't perceive the shopping experience as enjoyable per se.

Finally, users perceive the metaverse as environmentally-friendly and thus, consistently with their personal values (that is, conditional value), they would consider buying virtual clothes as an alternative to real life ones. These findings partially correspond to some literature (Kaur et al., 2021; Talwar et al., 2020; Tandon et al., 2021) but not with the arguments of Park and Lee (2011) and Turel et al. (2010), who found conditional value to be inappropriate in the context of online games and digital artifacts, and removed it from their research framework.

This study makes relevant theoretical contributions. First, it represents one of the initial empirical investigations into the incorporation of the metaverse within the fashion industry, demonstrating how metaverse-based strategies can create unique fashion experiences and thus influence purchase intention in virtual environments. Secondly, it highlights the role of functional, social, and sustainable values as important determinants of consumer behaviour in virtual platforms. While prior studies have already discussed the impact of consumption values in digital technologies (e.g., Kaur et al., 2021; Mäntymäki et al., 2020; Talwar et al., 2020; Tan et al., 2022; Tandon et al., 2021), debates on the metaverse are still limited. By analyzing a metaverse-driven experience with implications for the fashion domain, this work adds value to the theme of virtual experiences as part of omnichannel retailing.

Limitations and further research

Despite its contributions, the present research has some limitations that can be addressed in future research. First of all, this study being a pilot in nature and considering the novelty of the topic, the sample was quite small. Future research should include a larger sample in order to increase statistical power and internal validity as well as generalizability of findings.

Secondly, the chosen stimulus was a video stimulus, with no prices or interactive experiences. It was chosen as a neutral stimulus for the data collection, as our participants may have differed in what metaverse platforms they used. Moreover, users were only able to choose the gender of their avatar and not to customize it according to their preferences or interact with it due to the nature of the stimulus chosen. Future studies could involve a higher number of participants in a specific metaverse environment while providing more customizable avatars.

Third, the current study does not include any types of moderating variables. Future research should focus on conducting replication studies implying structural equation modelling and including moderating variables such as age and gender to capture changes in metaverse consumer behaviour.

Finally, our research focused on the fashion context. In order to generalize the results, it would be necessary to replicate the study using not only fashion metaverse shopping experiences but also other product categories.

Managerial implications

Metaverse development firms can use our insights to develop their offerings in order to meet customers' values, thereby allowing for a stronger customer engagement via virtual worlds. Brand managers as well should capitalize on these findings to create more effective marketing strategies and offer unique and memorable user experiences through immersive technologies.

References

Babin, B. J.; Darden, W. R.; Griffin, M. (1994). Work and/or fun: Measuring hedonic and utilitarian shopping value. *Journal of Consumer Research, 20(4)*, 644–656.

Ball, M. (2022). *The metaverse: And how it will revolutionize everything*. Liveright Publishing.

Barbarossa, C.; Beckmann, S. C.; De Pelsmacker, P.; Moons, I.; Gwozdz, W. (2015). A self-identity based model of electric car adoption intention: A cross-cultural comparative study. *Journal of Environmental Psychology, 42*, 149–160.

Blascovich, J.; Loomis, J.; Beall, A. C.; Swinth, K. R.; Hoyt, C. L.; Bailenson, J. N. (2002). Immersive virtual environment technology as a methodological tool for social psychology. *Psychological Inquiry, 13(2)*, 103–124.

Bloomberg. (2022, March 9). *Metaverse Market Size Worth $678.8 Billion by 2030: Grand View Research, Inc*. Bloomberg. https://www.bloomberg.com/press-releases/2022-03-09/metaverse- market-size-worth-678-8-billion-by-2030-grand-view-research-inc

BOF; McKinsey. (2022). *The State of Fashion 2023: Resilience in the Face of Uncertainty*. Business of Fashion. https://www.businessoffashion.com/reports/news-analysis/the-state-of-fashion -2023-industry-report-bof-mckinsey/

Bouman, T.; Steg, L.; Johnson-Zawadzki, S. (2020). The value of what others value: When perceived biospheric group values influence individuals' pro-environmental engagement. *Journal of Environmental Psychology, 71(6)*, 101470.

Buhrmester, M.; Kwang, T.; Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science, 6(1)*, 3–5.

Carlson, J.; O'Cass, A.; Ahrholdt, D. (2015). Assessing customers' perceived value of the online channel of multichannel retailers: a two country examination. *Journal of Retailing and Consumer Service, 27*, 90–102.

Goodman, J. K., & Paolacci, G. (2017). Crowdsourcing consumer research. *Journal of Consumer Research, 44(1)*, 196–210.

Grand View Research. (2023). *Metaverse market size, share, growth, & trends report, 2030.* https://www.grandviewresearch.com/industry-analysis/metaverse-market-report

He, H.; Li, Y.; Harris, L. (2012). Social identity perspective on brand loyalty. *Journal of Business Research, 65(5)*, 648–657.

Hertz, S. G.; Krettenauer, T. (2016). Does Moral Identity Effectively Predict Moral Behavior? A Meta-Analysis. *Review of General Psychology, 20(2)*, 129–140.

Islam, T.; Pitafi, A. H.; Arya, V.; Wang, Y.; Akhtar, N.; Mubarik, S.; Xiaobei, L. (2021). Panic buying in the COVID-19 pandemic: a multi-country examination. *Journal of Retailing and Consumer Service*, *59*, 102357.

Jafar, R. M. S.; Ahmad, W.; Sun, Y. (2023). Unfolding the impacts of metaverse aspects on telepresence, product knowledge, and purchase intentions in the metaverse stores. *Technology in Society, 74*, 102265.

Kaur, P.; Dhir, A.; Talwar, S.; Ghuman, K. (2021). The value proposition of food delivery apps from the perspective of theory of consumption value. *International Journal of Contemporary Hospitality Management, 33(4)*, 1129–1159.

Lu, H. P.; Hsiao, K. L. (2010). The influence of extro/introversion on the intention to pay for social networking sites. *Information Management, 47(3)*, 150–157.

Kees, J.; Berry, C.; Burton, S.; Sheehan, K. (2017). An analysis of data quality: Professional panels, student subject pools, and Amazon's Mechanical Turk. *Journal of Advertising, 46(1)*, 141–155.

Malodia, S.; Islam, N.; Kaur, P.; Dhir, A. (2021). Why do people use Artificial Intelligence (AI)-enabled voice assistants? *IEEE Transactions on Engineering Management*.

Mäntymäki, M.; Islam, A. N.; Benbasat, I. (2020). What drives subscribing to premium in freemium services? A consumer value-based view of differences between upgrading to and staying with premium. *Information Systems Journal, 30(2)*, 295–333.

Mäntymäki, M.; Salo, J. (2015). Why do teens spend real money in virtual worlds? A consumption values and developmental psychology perspective on virtual consumption. *International Journal of Information Management, 35(1)*, 124–134.

Mathwick, C.; Malhotra, N.; Rigdon, E. (2001). Experiential Value: Conceptualization, Measurement and Application in the Catalog and Internet Shopping Environment. *Journal of Retailing*, 77, 39–56.

Murtas, G.; Pedeliento, G.; Mangiò, G. (2023). Luxury fashion brands at the gates of the Web 3.0: An analysis of early experimentations with NFTs and the metaverse. *Journal of Global Fashion Marketing*.

Park, B. W.; Lee, K. C. (2011). Exploring the value of purchasing online game items. *Computers in Human Behavior, 27(6)*, 2178–2185.

Petrovčiková, K.; Sudzina, F. (2018). Smartphone adoption: Design of factors within the framework of theory of consumption values. In *Consumer Behavior, Organizational Strategy and Financial Economics: Proceedings of the 21st Eurasia Business and Economics Society Conference*, Budapest (pp. 53–62). Springer International Publishing.

Ramadan, Z. (2023). Marketing in the metaverse era: toward an integrative channel approach. *Virtual Reality 27*, 1905–1918.

Sheehan, K.; Pittman, M. (2016). *The Academic Researcher's Guide to Mechanical Turk*. Irvine, CA: Melvin and Leigh.

Sheth, J. N.; Newman, B. I.; Gross, B. L. (1991). Why we buy what we buy: A theory of consumption values. *Journal of Business Research, 22(2)*, 159–170.

Sweeney, J.; Soutar, G. N. (2001). Consumer perceived value: the development of a multiple item scale. *Journal of Retailing, 77(2)*, 203–220.

Talwar, S., Dhir, A., Kaur, P.; Mäntymäki, M. (2020). Why do people purchase from online travel agencies (OTAs)? A consumption values perspective. *International Journal of Hospitality Management, 88*, 102534.

Tan, T. M.; Makkonen, H.; Kaur, P.; Salo, J. (2022). How do ethical consumers utilize sharing economy platforms as part of their sustainable resale behavior? The role of consumers' green consumption values. *Technological Forecasting & Social Change, 176*, 121432.

Tandon, A.; Kaur, P.; Bhatt, Y.; Mäntymäki, M.; Dhir, A. (2021). Why do people purchase from food delivery apps? A consumer value perspective. *Journal of Retailing and Consumer Services, 63*, 102667.

Turel, O.; Serenko, A.; Bontis, N. (2010). User acceptance of hedonic digital artifacts: A theory of consumption values perspective. *Information & Management, 47(1)*, 53–59.

Venturini, A.; Columbano, M. (2023): 'Fashioning' the metaverse: A qualitative study on consumers' value and perceptions of digital fashion in virtual worlds. *Journal of Global Fashion Marketing.*

Youn, S. Y.; Lee, K. H. (2019). Proposing value-based technology acceptance model: Testing on paid mobile media service. *Fashion and Textiles, 6(1)*, 1–16.

Yu, C. E. (2020). Humanlike robots as employees in the hotel industry: Thematic content analysis of online reviews. *Journal of Hospitality Marketing & Management, 29(1)*, 22–38.