

Exploring Consumers' Negative Response to Virtual Fashion through the Analysis of their Conversation on Instagram

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Background and Research Objectives. Digital fashion refers to “the virtual creation, production, and representation of one’s identity via computer-generated design (Baek et al., 2022, p. 8)” with an intersection between three-dimensional (3D) virtual technologies and fashion (Chan et al., 2024). For example, retailers create products with 3D devices and enhance online consumer experiences with virtual try-on services (Baek et al., 2022). Advancements in digital fashion now encompass the provision of new intangible products and shopping experiences within virtual retail settings, which will be referred as *virtual fashion in this study*. Virtual fashion includes garments in a gaming environment or metaverse and fashion non-fungible tokens (NFTs). Whereas large brands have invested in virtual fashion products and shopping avenues (Friedman, 2022), there is slow consumer acceptance around the world. Therefore, it is important to identify barriers to consumer adoption of virtual fashion. Given the potential growth in virtual fashion and the scant literature on this topic, the present study aims to explore factors of adopting virtual fashion using Instagram consumer conversational data. We adopted Sheth’s (1981) Innovation resistance theory (IRT) as a theoretical framework because of its usefulness in understanding consumers’ resistance-oriented behaviors. According to IRT, consumers encounter two categories of barriers that prevent their desire to adopt new technologies: (a) functional barriers focus product attributes, including as its usage, value, and risks involved in adoption and (b) psychological barriers relate to traditions or norms and perceived image of innovation (Ram & Sheth, 1989). To assess what is being communicated in an online community for issues regarding the emergence of virtual fashion, this study addresses the following research questions: we propose the following exploratory research questions that can be addressed with SNA and provide foundational knowledge for future research: **RQ1.** What barriers or risks preventing the adoption of virtual fashion can be identified from online community interaction?; **RQ2.** What are distinct cultural characteristics or interaction patterns observed among the community members?

Methods. Netnography was conducted to investigate digital communication among consumers about virtual fashion in an online community, the Business of Fashion (BoF) Instagram page. The exploratory and flexible nature of netnography is particularly suitable for studying specific cultures that emerge through online interactions. The BoF, originally a fashion blog website, has become a leading intelligence source in the fashion industry (BoF, n. a.). As of February 2024, BoF has 2.9 million followers and has posted 9,906 posts on Instagram. BoF regularly publishes articles on various issues and topics in the fashion industry, and the comments section of each

post often features active conversations among consumers, making it an appropriate subject for this study.

A web crawler was designed to collect BoF posts including various terms related to virtual fashion (i.e., avatar, metaverse, NFT, virtual). This Instagram web crawler identified posts containing these keywords from BoF's posts and collected the posts and their comments. Content that contained the keywords but was not related to the issue was excluded from the sample. Ultimately, a total of 1,249 comments from 51 posts between January 2022 and January 2023 were secured. The study targeted publicly available Instagram conversation data. Therefore, the data collection process meets ethical standards for the collection and use of social media data.

Based on the collected data, sentiment and content analyses were conducted. Content analysis is a technique for objectively and systematically identifying specified characteristics of messages (Holsti, 1969). Firstly, preliminary themes were developed based on the IRT. Secondly, three researchers refined the list of themes by preliminarily coding 8% of the sample. After this preliminary coding, the researchers gathered to compare and discuss coding. This process allowed each researcher to achieve a consensus in understanding the data and themes. Following this, the data was segmented into three equal parts, with each researcher responsible for coding two-thirds of the entire dataset. After individual coding sessions, cross-validation was carried out to ensure reliability and accuracy. Finally, all three researchers convened to collectively review and validate the coding outcomes, ensuring consistency in the analysis.

Results and Discussion. The sentiment analysis resulted in 866 negative comments about technologies involved with virtual fashion (e.g., virtual experiences and investment in virtual products/services). Five themes derived from IRT guided the data analysis to provide an in-depth understanding of the multifaceted nature of resistance to innovation in virtual fashion. One comment could be classified into multiple themes. As a result, 397 out of 866 comments were classified under IRT themes (i.e., usage, value, risk, tradition, and image barriers), whereas 469 comments did not show a direct association with IRT dimensions.

Functional barriers (n=170). Comments regarding *usage barriers* (n=4) entailed challenges in learning or using a new system. A few consumers complained about the complexity of virtual technologies. For example, one consumer wrote, "It's exhausting. I need a simplified version to explain a whole world I don't understand." Comments regarding *value barriers* (n=92) reflected the lack of advantages in adopting virtual fashion, for instance, "Maybe I'm old but I don't see the point in investing in a digital image when you can download almost any .JPG off the internet for free." Comments regarding *risk barriers* (n=74) involved uncertainty about innovation. Phrases concerning persistence were observed repeatedly, including "just a temporary trend", "will crash", and "will not last". Some consumers did not like the idea of investing in virtual fashion. For example, "Sooo [So,] I'm supposed to spend money on dressing these weird digital paper dolls?"

Psychological barriers (n=302). Comments regarding *tradition barriers* (n=98) indicated reluctance to adapt to new culture or behavioral patterns. Numerous consumers expressed their preference in reality over virtual world. One consumer mentioned, "Or... and just hear me out here... you could try living in the REAL world... interacting with REAL PEOPLE... feeling REAL EMOTIONS... and wearing REAL CLOTHING." Comments regarding *image barriers*

($n=204$) included negative impressions of a new system or its primary stakeholders. A great number of consumers felt the virtual fashion trend is a push or hype that is not real, for example, “why does fashion need to convince itself so hard that NFT’s are cool? they’re not”. Additionally, negative comments about Mark Zuckerberg, the CEO of Meta, were often observed, such as, “Can’t he [Zuckerberg] just leave the tangible world alone? He isn’t fashion”.

Lastly, comments that were not directly relevant to IRT dimensions consisted of simple words of emojis expressing their emotions, questions about new technologies, sharing thoughts, experiences, information about innovation, and suggesting important factors that could influence innovation adoption. The average number of comments per post ($M_C=25.27$) and likes per comment ($M_L=6.34$) showed the community’s shared culture with lively relationship of exchange and interaction among the members.

Implications. The present study contributes to the literature on virtual fashion and innovation adoption by identifying resistance factors that impede consumers from adopting products or services involved in virtual fashion. Findings of the study indicate that excessive and forceful advertising actually makes consumers form unfavorable image towards innovation as well as its primary stakeholders (e.g., Meta). The analysis of actual consumer conversations provides richer insights regarding consumer concerns and assists in revising the advertising strategy to be more balanced and respectful of consumer preferences. Based upon the findings, it is imperative for future research endeavors to explore and identify its drivers to provide a comprehensive understanding of consumer responses towards virtual fashion.

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