Is digital fashion retailing offering a leap in value to consumers? A preliminary web content analysis of consumers' perceptions

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Research Rationale and Questions. Digital fashion is virtual clothing using 3D software to build a true-to-life garment that can be visualized and simulated to look like real clothing (Särmäkari, 2021). Initially, digital fashion aimed at facilitating creative design, and reducing resources spent on making a couple of samples before a final design or creation. During and post the Pandemic, the fashion industry saw a shrink in fashion production and consumption in the real physical world but an increase in the virtual digital worlds. It has been agreed that digital and sustainability will offer the fashion industry the biggest opportunities for growth (BoF and McKinsey & Company, 2021). Since Mark Zuckerberg rebranded Facebook to Meta with a vision to solidify the social media giant, metaverse, a sci-fi concept has turned omnipresent buzzword and been touted as the future of the internet. From then on, digital fashion is often discussed in tandem with the metaverse. It is believed that digital fashion, the technology-enabled dematerialization could not only extend consumers' fashion consumption into the metaverse with a market size of $176 billion (BoF and McKinsey & Company, 2022) but also is the solution to the issues of fashion waste and overconsumption (BoF Team, 2021). However, it is still not clear if or how specifically digital fashion creation, distribution, usage, and disposal deliver value to a customer or if it is possible for digital fashion to replace real clothes.

According to Kim and Mauborgne (1997), when companies align innovation with utility, price, and cost positions, simultaneously pursuing differentiation and low cost, value innovation occurs. Value innovation focuses on creating a leap of value for buyers, thereby opening new and uncontested market space. Kim and Mauborgne (2000) proposed a Buyer Utility Map (BUM) with six utility levers (customer productivity, simplicity, convenience, risk, fun and image, environmental friendliness), and six stages of the buyer experience cycle (purchase, delivery, use, supplements, maintenance, disposal) to identify full range (36 spaces) of utility propositions for creating exceptional utility. This BUM can also be used to analyze the merits of the offering. Specifically, via the blue ocean strategy utility levers, analyzing these six factors facilitates an understanding of the value behind a proposed offering. Digital fashion entrepreneurs, such as the founders of DressX, claimed, "digital fashion will be a vital category for every brand's business model, including luxury brands, and it will be the most sustainable category of all". In recent years, a few digital fashion business models emerged including multi-brand retailers and e-commerce platforms. These digital fashion businesses carry digital fashion collections from contemporary brands and designers, offer 'influencer marketing campaign' packages for brands to give their influencers digital, rather than physical, clothes, and sell digitally worn-only fashion to consumers. They also claim that users benefit from being seen in high-end looks that they otherwise may not have access to. In addition, the construction of a digital couture brand produces far less waste, energy, and air miles. Also, no water or chemicals

are used for the creation or usage of digital fashion, and the production of a digital garment. The design and production processes of digital garments can take anything from a couple of days to several months. Analyzing digital fashion businesses by cross-referencing claimed benefits against each of the utility levers, one can see that extant digital fashion retailers or e-commerce platforms do create utility in the levers of customer productivity, simplicity, convenience, risk controlling, fund and image, and environmental friendliness.

Figure 1: Histogram of Comment's Polarity Scores

However, successful value innovation can only occur when identified exceptional value is created and delivered to users. It is critical to investigate to what extent the claimed value is truly delivered to users which are not clear yet. To this end, this preliminary research is to examine whether digital fashion retailers are offering value innovation, namely a leap in value to consumers.

Method. DressX is an international digital fashion multi-brand retailer, producing digital fashion under its own label in partnership with a variety of designers, as well as acts as a platform through which other designers and brands can sell their digital products (Hall, 2021). In 2021, DressX sponsored fashion influencer, Safiya Nygaard(2021), having 9.39 million YouTube subscribers posted a video, *I wore Digital Clothes for A week*. Video reviewers are allowed to leave comments. We scraped all the comments and a total of 2,219 direct comments (no replies) were collected two months after the video was posted. To be noted here is that only comments were collected. Sentiment analysis, word frequency, and word coherence were further explored to analyze the contents of the comments.

Figure 2: Word Cloud

Findings and Discussion. Sentiment analysis found that almost 51.76% of comments are neutral while, 18.26% of comments are positive, and 17.67% of comments are negative, indicating consumers' overall perceptions of "wearing" digital fashion are not very enthusiastic yet (see figure 1). Word frequency analysis found that the most frequently mentioned words include clothes, lying, just, photoshops, digitally, wears, people, and money (see figure 2).

Figure 3: Word Coherent Plot

To better understand what hot topics people discussed in the comments, we separated each comment into individual words and studied the coherency between two words (see figure 3). The thickest lines indicate stronger coherency. Results showed word pairs with strong coherency include waste-money, real-life, photoshop-lol, money-spend, bad-photoshop, and edit-photo. These results showed that consumers do not perceive value from digital fashion delivery
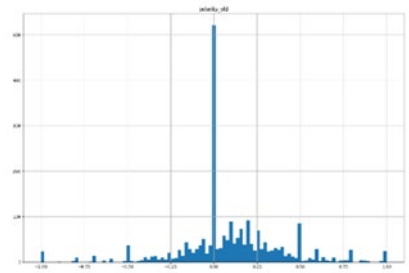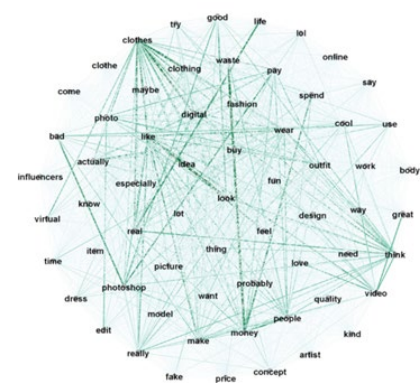
through photoshop, and even consider spending on such digital fashion is waste. For instance, one comment says, "*this concept makes me so irrationally angry. Lie it's nothing against Saf or the designers or anything, it's just so pointless. The only way I could see it worrying is if we all wore some google-glass type thing and you could see people walking around in real-time with it on. Otherwise, you're just paying $40 for someone to photoshop a dress on you which you could learn to do for free with probably better results.*"

Empirical evidence showed the majority of audiences have not been ready to accept digital-only fashion even though they agree that dematerialization through consuming digital-only fashion could be a sustainable solution. Overall, consumers have not perceived a leap in value delivered by digital-only fashion, and hence do not think it is a real thing. In conclusion, more efforts and improvement are needed in delivering claimed value to buyers to allow value innovation to occur and digital fashion retailers and e-commerce platforms to prosper.

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