The Role of Digital Startups in Addressing Shifts in Fashion Consumer Behavior

Arya Chanchal

Student, The British School, Delhi

Abstract

This research paper explores the role of digital startups in addressing the evolving consumer behavior within the fashion industry. The paper first uses Maslow's hierarchy of needs as a conceptual framework to analyze the various factors that influence consumer purchasing decisions in the aforementioned industry before evaluating how the increasing impact of digital transformation and advanced technologies, coupled with a rising emphasis on sustainability, has significantly altered fashion consumer behavior. The latter half of the paper entails case studies of innovative digital startups such as DressX and the Metaverse Fashion Week hosted on Decentraland to understand how these companies are responding to and shaping the future of fashion by addressing these emerging consumer needs. The findings underscore the pivotal role of digital startups in fostering innovation and offering consumers more accessible, convenient, and sustainable fashion experiences.

Keywords: Fashion industry, Digital transformation, Sustainability, Innovation, Consumer Behaviour

Introduction

As per reports, the revenue for the fashion industry worldwide is projected to hit $770.90 billion in 2024 and the compound annual growth rate (CAGR) is expected to show 8.94% until 2029, indicating solid growth for the next several years (Statista, 2024). The US alone accounts for $358.70 billion in revenue in 2024, and the market is expected to grow by 2.11% until at least 2028 (Statista, 2023). The success and growth of this industry may have something to do with the fact that it is anything but static; it is ever-changing as a result of the large influence macroeconomic factors such as social, economic, and technological factors have on it. Many of these factors cause changing trends in the industry - some of which may be temporary, but others, such as the desire for technological integration and sustainability, are arguably perceived to be more permanent. Since these trends have a large influence on consumer behavior - "how individuals and groups make decisions to purchase, use, and dispose of goods and services. This field examines the motivations, influences, and processes that guide consumer choices" (Radu, 2023) - it remains vital for manufacturers and retailers to predict and even influence these trends if they wish to gain an advantage in the otherwise competitive market.

Interestingly, while there are examples of the fashion industry incumbents jumping on the bandwagon by innovating their products and services to leverage the careful interplay of sustainability and digital technology desired by the industry's customers, the digital startups rising to this challenge are often seen as truly inspirational. In line with the aforementioned, this research paper aims to answer the following question: '**How are digital fashion startups leveraging sustainability and technological innovation to meet changing consumer behavior in the fashion industry, and what implications does this have for**

traditional fashion businesses?'

Understanding Consumer Behavior in the Fashion Industry

Maslow's hierarchy of needs is a helpful tool for understanding consumer behavior in any industry. According to Maslow, human needs are arranged in a hierarchical order, with physiological needs at the very bottom and more creative and intellectually oriented self-actualization at the top (as seen in the image to the left). It is believed that the needs become tougher to achieve as one goes higher up in the pyramid. The different factors that drive consumer behavior and the 'need' for products and services sold by the fashion industry can be understood through this model. Firstly, income is an influencing factor. For individuals with low incomes and relatively lower social statuses, purchasing clothes becomes a matter of meeting the more basic physiological and security needs. On the other hand, for people with higher incomes and those potentially belonging to the higher classes of society, fashion purchases may become more luxurious to meet the self-esteem needs of the individuals via dressing to represent social status or even gaining more respect from others. In line with this, studies show that as income level increases, luxury items account for a greater share of the consumer's market basket (Henry, 2014). Interestingly, however, beyond income, the need one sees fashion fulfilling is also heavily dependent on their gender. As per Oleson (2004), money attitudes were most related to safety needs (27.5%) for men, whereas money attitudes were most related to esteem needs (26.7%) for women.
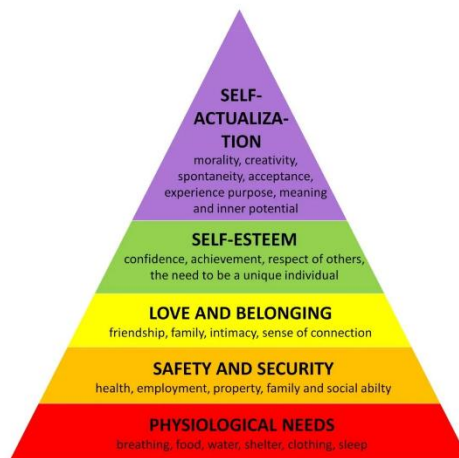
On some rare occasions, demographic factors may not matter as much, and the need for love and belonging may lead to irrational decisions. For example, fast fashion - "trendy clothing that samples ideas from the catwalk or celebrity culture and turns them into garments at breakneck speed to meet consumer demand" (Rauturier, 2023) - has spread in the industry like wildfire, with several high-street brands like H&M and Zara bringing such fashion to the market. Ultimately, several individuals are likely to buy into fast fashion because they wish to be accepted by or fit into a social group. While this may not seem ration, it can be further explained by the social identity theory (Tajfel, 1981) wherein if a person is part of a group where the norm is to regularly wear new outfits and be up to date on all fashion trends, then the need for love and belonging mold purchasing behaviors even more.

Notable Transformations in Fashion Consumer Behavior

The likes of Deloitte have noticed that the role of the consumer in the fashion industry has shifted from one of enabled dominance to passive observance. As per the report published by the company, "they (the

consumers) are no longer content with simply buying fashion products. They want to interact, belong, influence, and be the brands from which they buy. Informed, selective, and in charge, they care about how they look in public and on social media, and about the perception of the goods they buy and own" (Lay, 2018). Two primary reasons for this shift are advancements in digital technologies and the growing requirement for sustainability.

Digital Transformation in the Fashion Industry and the Shaping of Consumer Behavior

Digital transformation in the fashion industry focuses on how fashion brands use digital technologies to create new business processes and customer experiences or enhance existing ones. While many think digital transformation is always a result of integrating complex technologies, it could be as simple as launching an e-commerce store.

That being said, the biggest potential of the adoption of 3D Virtual Design (3DVD) in the fashion industry is that it allows "a nonphysical economy to emerge in which garments and services exist beyond the physical realm and contribute to dematerialization because they will never be produced in reality" (Casciani, Chkanikova and Pal, 2022). This has several benefits, including optimizing material resource consumption, shortening production time, fostering design creativity, and reducing costs. Furthermore, because 3DVD technologies enable made-to-measure algorithmic and computational design, the personalization of garments and adaptation to consumers' needs and behavior can be bettered (Volino, Cordier and Magnenat-Thalmann, 2005).

The growing awareness of efficiency and innovation in the fashion industry leads consumers to prefer brands that leverage digital advancements to enhance their shopping experiences. This shift can also be attributed to the high level of technology acceptance among today's consumers. According to the Technology Acceptance Model, the use of any technology is directly influenced by an individual's intention to use it, which is, in turn, shaped by the perceived usefulness and ease of use of the technology (Worthington and Burgess, 2021). Evidently, the convenience offered by digital technologies is driving increased demand. A survey published by EY supports this, stating that "consumers' use of mainstream and emerging technology across multiple aspects of their lives has increased dramatically. They are increasingly relying on such tools to make life easier, save them money and time…" (Rogers, 2023).

The Influence of Sustainability on Fashion Consumer Behavior

As per Mollenkamp, "In the broadest sense, sustainability refers to the ability to maintain or support a process continuously over time. In business and policy contexts, sustainability seeks to prevent the depletion of natural or physical resources so that they will remain available for the long term". Sustainability in the fashion industry has long been a problem. As per the UN, the fashion industry is responsible for up to 10% of the world's carbon emissions, largely due to the long supply chains (Biela-Weyenberg, 2023). For instance, consumers discard around 92 million tons of clothing yearly, and synthetic fiber waste decaying in landfills is one of the largest greenhouse gas emitters. The industry also consumes 93 billion metric tons of clean water each year, about half of what Americans drink annually (Cho, 2021). This is due to the high water-consuming fabrics like cotton - one kilogram of cotton used to produce a pair of jeans can consume 7,500 to 10,000 liters of water—the amount a person would drink over ten years (Cho, 2021).

The demand for sustainability from the fashion industry has increased in recent years, consequently altering consumer and manufacturer behavior. The COVID-19 pandemic could have been seen as the

catalyst for this change. For instance, a survey conducted by Accenture of more than 3,000 consumers in 15 countries across five continents in the early months of the pandemic - shortly after many countries had implemented stay-at-home orders - showed that consumers had already 'dramatically evolved' and that 60% were reporting making more environmentally friendly, sustainable, and ethical purchases since the start of the pandemic. Furthermore, according to the consultancy company, this increased demand for more consciousness in consumerism was not to be mistaken as a short-term trend but a way of life, here to stay for many (Accenture, 2020). Beyond the pandemic, other macroeconomic events, such as soaring inflation and the war in Ukraine, also adversely impacted the market and triggered the realization for more manufacturers to integrate sustainability into their operations. Nicole Rycroft, founder and executive director of non-governmental organization Canopy, sums it up well by stating that "For those companies where perhaps sustainability was a 'nice to have,' it's moved on to the 'have to have' priority list, and it's moved up from being just the purview of the sustainability team and sustainability director to something that's directly linked into the CEO or the board" (Early, 2023).

Digital Fashion Startups: Responding to Changing Consumer Behavior

It is a well-known fact that startups tend to be more agile and innovative, have a greater appetite for risk, and are usually more experimental in nature compared to established corporations (Krasadakis, 2023). As a result, it is not very surprising that digital startups are innovatively combining and meeting the increasing demand for digital technology integration and sustainability in the fashion industry. Below are two examples of such companies.

DressX

In 2018, Daria Shapovalova and Natalia Modenova, two sisters, founded DressX, which is today identified as a "leading digital fashion retailer." Since its founding, the brand has partnered with Bershka, H&M, Rebecca Minkoff, and DUNDAS and raised a $15 million series A round led by Greenfield in 2023, with participation from Slow Ventures, Warner Music, Red DAO, The Artemis Fund, and others (Medved, 2023).

When asked about how they came up with DressX, the founders highlighted how, after having been a part of the traditional fashion industry for more than 15 years, they wanted to contribute to the shift that was occurring in the direction of a more digital future and one built on the practices of sustainability. The importance of being a part of this movement was further underscored for them when a study by their team found that "9% of customers in developed countries only buy new clothes to make a picture for their social media" (Times Monaco, 2023). Such behaviors may seem unrealistic but are reflective of the reality, especially in this social media and influencer era, as detailed in the application of Maslow's hierarchy of needs in the literature review, where constant wardrobe updating and consequent content creation help people meet their love and belonging as well as self-esteem needs - usually in the form of engagement from their social media audience. The two sisters, therefore, created a new way to shop for content, in which every girl is given a chance to wear any dress she desires in digital form.

This startup has been as successful as it is today because it identified and provided a solution for a genuine challenge in the industry. With the rise of content creation, the demand for fashion items is seeing an exponential increase, but there is also now a bigger focus than ever before on more flexibility, constant newness, and uniqueness. For the traditional industry, this comes with significant challenges; firstly, the need for easy return processes for the garments, once used for content, needs to be improved. Furthermore,

the environmental cost of constantly producing new items cannot be justified, as many consumers are increasingly boycotting fast fashion. Therefore, in such a market, DressX is able to leverage the digital transformation occurring in the industry to "democratize fashion for the final consumer, allowing clients to digitally dress in the clothing they always wanted to wear - as seen in the image to the left - and get instant verification from their followers on social media" all while being sustainable since "the production of a digital garment on average leaves 97% less CO_2 footprint, than the production of a physical garment" (Times Monaco, 2023).

Decentraland Metaverse Fashion Week
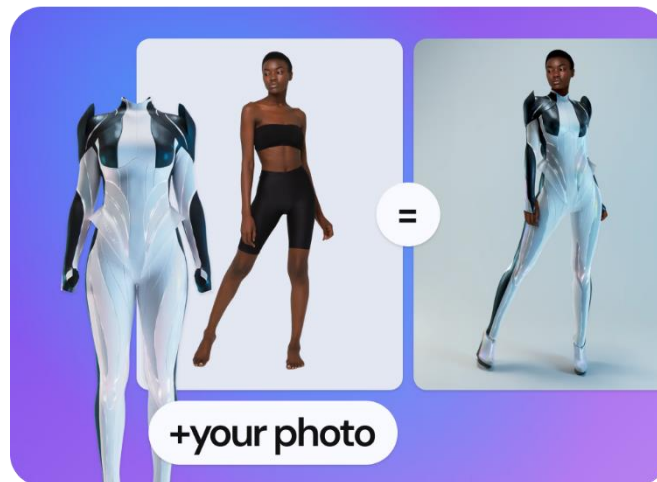
Fashion shows are an essential part of the fashion industry. While the history of such shows dates back many decades, Steven Kolb, CEO of the Council of Fashion Designers of America, explains the purpose of such shows and their evolution very well by saying that they "have always been about creating visibility and exposure for a designer's collection with the ultimate intention of selling clothes. As the world became more connected, the fashion show evolved from smaller, local events to larger international experiences" (Klerk, 2021). Over time, with the digital transformation occurring in the wider industry, the world has also started to witness a great deal of technological integration into fashion shows. For instance, Ralph Lauren was applauded for its innovative showcase of its new Polo line for Spring 2015 in a water-screen projection at Central Park in 2014 (Howarth, 2014).

However, in more recent times, especially as a result of the COVID-19 lockdowns and restrictions on fashion events, virtual fashion shows or fashion weeks have introduced themselves to the world as a game changer, surpassing the boundaries of innovation. More specifically, in March 2022, the world's first-ever metaverse fashion week was hosted by Decentraland - "a 3-D digital game-like social environment which is a user-owned, Ethereum-based virtual world platform that allows users to be part of shared digital experiences" (Lodge, 2023). The event was a success as it was attended by more than 108,000 people who could participate in myriad events such as fashion shows and after-parties (McDowell, 2022). Moreover, those attending could purchase physical items/merchandise or choose to purchase the visual products in the form of non-fungible tokens (NFTs) from the brand-specific boutiques at the Fashion District, which were deliverable in real life.

Once again, Maslow's hierarchy of needs can be applied to understand why the metaverse would be a success amongst consumers. Firstly, a fashion event in this format pushes a socially oriented world with constant availability, enabling people to log on at any time while the event was active. The aforementioned creates a scenario similar to what is witnessed in computer gaming, where the facilitation of friendships

and bonding with people who have similar interests has been evidenced. Participating in the Metaverse, therefore, could satisfy the need for love and belonging among people (Brown, 2012). Furthermore, self-esteem needs, which are centered around the feelings of power, worth, self-confidence, and capability, may motivate users to make purchases of fashionable digital clothing exhibited in the boutiques at Metaverse as it could help them gain 'bragging rights,' both in the virtual space as well as in real life. Finally, the highest need in the pyramid is self-actualization (Brown, 2012). According to Maslow, self-actualizers are likely to strive for perfection, as self-actualization involves the full realization of one's creativity, autonomy, and social potential. In the context of virtual spaces like the metaverse, these platforms provide users the ability to meet their self-actualization needs by enabling creative self-expression and personal fulfillment. For instance, according to Kim, Lee, and Kang (2012), customization through these assets enhances self-expression, enabling users to portray idealized versions of themselves, thus fulfilling their psychological need for creativity and identity formation. Hussain & Griffiths (2008) further suggest that virtual self-expression can lead to psychological rewards, as users can embody versions of themselves that they may be unable to in real life.

The sustainable side of virtual fashion should not be overlooked. With the focus shifting to the virtual creation of different styles, cuts, and materials, virtual fashion shows on the metaverse can minimize fashion waste significantly as it eradicates the need to produce several physical samples, consequently saving materials, promoting energy consumption, and avoiding harmful emissions that come from the manufacturing process. Even the return rates of clothing due to sizing issues, which occur quite frequently in the traditional industry and harm the environment due to transportation emissions caused by the back-and-forth shipping, are minimized as 3D design technologies in the virtual space can allow for more precise virtual fittings leading up to fashion events. Finally, and most obviously, the requirement for people to travel to a physical venue ceases to exist in the case of virtual fashion shows, saving billions of carbon emissions.

Conclusion

The fashion industry is constantly evolving; however, digital transformation and the growing demand for sustainability in recent years are arguably two of the most significant drivers of change in consumer behavior. Ultimately, understanding these shifting behaviors and preferences is crucial for any brand that aims to succeed and remain relevant in the fashion industry. This research paper aimed to analyze consumer behavior in the industry before evaluating how digital start-ups have addressed these evolving demands.

As explored in the paper, consumer behavior when purchasing fashion is influenced by a variety of factors. Maslow's hierarchy of needs serves as a strong model to illustrate how fashion purchases can meet different individual needs, and how income, societal position, and even gender can impact the importance of these needs. What has become increasingly clear, however, is that digital transformation and the growing pressure for sustainable practices are reshaping consumer behaviors and challenging brands to meet these new demands.

Several digital startups have entered the market with the aim of providing products and services at the intersection of digital innovation and sustainability. DressX and Decentraland's Metaverse are notable examples of brands successfully operating in this space. While the question of whether digital fashion could ever replace physical fashion or whether the industry can truly become 100% sustainable remains unanswered, these innovative startups offer promising hope for the future of the industry.

Bibliography

1. Accenture (2020). COVID-19: Impacto en el comportamiento del consumidor | Accenture. [online] www.accenture.com. Available at: https://www.accenture.com/cl-es/insights/consumer-goods-services/coronavirus-consumer-behavior-research.

2. Biela-Weyenberg, A. (2023). Sustainability Challenges in the Fashion Industry. [online] Oracle.com. Available at: https://www.oracle.com/ae/retail/fashion/sustainability-challenges-fashion/.

3. Brown, P. (2012). The Legend of Zelda and Abraham Maslow's Theory of Needs: A Social-Psychological Study of the Computer Game and its Players. [online] Available at: https://pure.manchester.ac.uk/ws/portalfiles/portal/54522692/FULL_TEXT.PDF.

4. Casciani, D., Chkanikova, O. and Pal, R. (2022). Exploring the nature of digital transformation in the fashion industry: opportunities for supply chains, business models, and sustainability-oriented innovations. Sustainability: Science, Practice and Policy, [online] 18(1), pp.773–795. doi:https://doi.org/10.1080/15487733.2022.2125640.

5. Cho, R. (2021). Why Fashion Needs to Be More Sustainable. [online] State of the Planet. Available at: https://news.climate.columbia.edu/2021/06/10/why-fashion-needs-to-be-more-sustainable/.

6. Early, C. (2023). Green is the new black as fashion sector fast-forwards on sustainability trend. Reuters. [online] 2 Mar. Available at: https://www.reuters.com/business/sustainable-business/green-is-new-black-fashion-sector-fast-forwards-sustainability-trend-2023-03-02/.

7. Henry, L.M. (2014). Income Inequality and Income-Class Consumption Patterns. Economic Commentary (Federal Reserve Bank of Cleveland), pp.1–4. doi:https://doi.org/10.26509/frbc-ec-201418.

8. Howarth, D. (2014). Polo Ralph Lauren debuts SS15 collection in holographic fashion show. [online] Dezeen. Available at: https://www.dezeen.com/2014/09/12/polo-ralph-lauren-spring-summer-2015-new-york-fashion-week-holographic/.

9. Hussain, Z. and Griffiths, M.D. (2008). Gender Swapping and Socializing in Cyberspace: An Exploratory Study. CyberPsychology & Behavior, 11(1), pp.47–53. doi:https://doi.org/10.1089/cpb.2007.0020.

10. Kim, C., Lee, S.-G. and Kang, M. (2012). I became an attractive person in the virtual world: Users' identification with virtual communities and avatars. Computers in Human Behavior, 28(5), pp.1663–1669. doi:https://doi.org/10.1016/j.chb.2012.04.004.

11. Klerk, A. de (2021). The fascinating history of the catwalk show. [online] Harper's BAZAAR. Available at: https://www.harpersbazaar.com/uk/fashion/a35783366/history-catwalk-show/.

12. Krasadakis, G. (2023). How is Innovation Different in Startups? [online] 60 Leaders. Available at: https://medium.com/60-leaders/how-is-innovation-different-in-startups-6b9b66760dc3.

13. Lay, R. (2018). Digital Transformation in the Fashion Industry. [online] Deloitte Switzerland. Available at: https://www2.deloitte.com/ch/en/pages/consumer-industrial-products/articles/ultimate-challenge-fashion-industry-digital-age.html.

14. Lodge, M. (2023). What Is Decentraland? [online] Investopedia. Available at: https://www.investopedia.com/what-is-decentraland-6827259.

15. McDowell, M. (2022). Metaverse Fashion Week: The hits and misses. [online] Vogue Business. Available at: https://www.voguebusiness.com/technology/metaverse-fashion-week-the-hits-and-misses.

16. McLeod, S. (2024). Maslow's hierarchy of needs. [online] SimplyPsychology. Available at: https://www.simplypsychology.org/maslow.html.

17. Medved, M. (2023). Inside the Digital Fashion Explosion With DressX. [online] nft now. Available at: https://nftnow.com/features/inside-the-digital-fashion-explosion-with-dressx/.

18. Mollenkamp, D. (2023). What is Sustainability? How Sustainabilities Work, Benefits, and Example. [online] Investopedia. Available at: https://www.investopedia.com/terms/s/sustainability.asp.

19. Oleson, M. (2004). Exploring the Relationship between Money Attitudes and Maslow's Hierarchy of Needs. International Journal of Consumer Studies, [online] 28(1), pp.83–92. doi:https://doi.org/10.1111/j.1470-6431.2004.00338.x.

20. Radu, V. (2023). Consumer Behavior in Marketing - Patterns, Types, Segmentation. [online] Omniconvert Ecommerce Growth Blog. Available at: https://www.omniconvert.com/blog/consumer-behavior-in-marketing-patterns-types-segmentation/.

21. Rauturier, S. (2023). What Is Fast Fashion and Why Is It so bad? [online] Good on You. Available at: https://goodonyou.eco/what-is-fast-fashion/.

22. Rogers, K. (2023). How consumers rely on technology but don't trust it | EY — Global. [online] www.ey.com. Available at: https://www.ey.com/en_gl/insights/consumer-products/how-to-serve-consumers-who-rely-on-tech-but-dont-trust-tech.

23. Statista (2023). Apparel - United States | Statista Market Forecast. [online] Statista. Available at: https://www.statista.com/outlook/cmo/apparel/united-states.

24. Statista (2024). Fashion - Worldwide. [online] Statista. Available at: https://www.statista.com/outlook/emo/fashion/worldwide.

25. Tajfel, H. (1981). Human groups and social categories : studies in social psychology. Cambridge Etc.: Cambridge University Press.

26. Times Monaco (2023). DressX – Future of Fashion - Times Monaco. [online] Times Monaco. Available at: https://www.timesmonaco.com/dressx-future-of-fashion/.

27. Volino, P., Cordier, F. and Magnenat-Thalmann, N. (2005). From early virtual garment simulation to interactive fashion design. Computer-Aided Design, 37(6), pp.593–608. doi:https://doi.org/10.1016/j.cad.2004.09.003.

28. Worthington, A.K. and Burgess, G.L. (2021). Technology Acceptance Model. ua.pressbooks.pub. [online] Available at: https://ua.pressbooks.pub/persuasiontheoryinaction/chapter/technology-acceptance-model/.

29. Ya, W.T. (2023). Fashion Psychology | Using Maslow's Hierarchy of Needs Theory in Metaverse. [online] Medium. Available at: https://medium.com/%E7%8E%8B%E4%BA%AD%E9%9B%85-lucy/using-maslows-hierarchy-of-needs-theory-in-metaverse-8a909cd48fbf.