

Analysis Of Digital Fashion Investigation: Past and Present

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Abstract: This investigation emphasizes the advancement of contemporary high-tech fashion by outlining the development of fashion and culture. As part of a bigger inquiry, a literature review was conducted on a number of studies. For following investigation, we were able to divide this collection into three key categories: marketing and communication, production and design, and social and cultural issues. The research's primary areas of interest are Design and Production & Culture and Society, which accounted for over approximately half of the content selected. The study thoroughly discusses all important research and subtopics, resulting in a comprehensive and diversified overview and contributing in the enhancement of digital clothing and style design.

<u>Keywords</u> – Digital fashion, Clothing & styling, Fashion design, fashion culture, communication & marketing <u>Introduction</u>

Fashion is inextricably linked to a variety of businesses, including banking, information and communication technology, culture, and entertainment. As a result, its societal impact is expanding. Several fashion companies, for example, have supported to the fight against COVID-19 by creating additional face masks and hand sanitizers. In addition, fashion firms have donated to charities and medical institutions across the world to help local populations. The epidemic has underlined the Significance of Styling & clothing as a catalyst of digital change.

Over time, the advancement of technology has shaped fashion. The advent of water and steam-inducing mechanization in textile manufacture was the primary development in the first revolution. The second revolution expedited the manufacture of garments even further by introducing electricity. The third revolution brought the use of electronics and information technology in the fashion business. The technical breakthroughs known as "Industry 4.0" are considered to have had a substantial influence on the fashion industry. Physical network space, the Internet of Things (IoT), IT tools, personalized services, localization, and the digitization of fashion heritage are all examples of digital advances.

The rise of technology has had an influence on every part of the this industry. The employment of technology in fashion communication and advertising presents an opportunity to increase trade and consumer interactions.

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This is due to the fact that it provides a favorable environment for development and advancement. Its implications on fashion creation and manufacturing point to advancements in HRM systems and sustainable production. It influences culture and society, has an impact on education, and influences how people conduct their daily lives. As the fields of fashion media and digitization grow, it is evident that additional study is required to recognize and interpret these problems coherently.

Literature Review

In July 2019, a systematic review of the literature was done in order to provide a thorough study of the digital fashion sector. Using the search phrases "fashion" and "digital," five databases (IEEE, ACM, Eric, Springer Link, and Scopus) were searched from 1950 to 2019. 491 of the 910 search results were considered relevant for inspection. Following a thorough review of the relevant literature (as shown in Figure 1), the digital clothing & styling business was divided into three major groupings. Culture and Society (C&S), with 81 items, Design and Production (D&P), with 155 items, and Communication and Marketing (C&M), with the most items (255). Sub-divisions were recognized by all classifications. To expand the category of Communication and Marketing, the sub-categories C&M: Practice, C&M: Enabling Tools, and C&M: Societal Implications were included. Similarly, Design and Production was separated into two categories: D&P: Process and Technology Implementation and D&P: Product Development. Finally, the Culture and Society category was divided into C&S: Culture, C&S: Education, and C&S: Society. The category of Communication and Marketing (C&M) has the most published research (51.9 percent of all relevant publications). Noris et al. (2021) covered it. The other two groups collected 31.6% and 16.5% of the study literature on digital fashion, respectively. Not only is there a quantitative balance in the first 'Based on current study, it was discovered that the remaining two categories might also be grouped in a qualitative manner. Using a framework based on chronological order. The operations that precede a production are referred to as design and production, or D&P.

Advertising and promotion of any business or product, whether physical or digital, continues to be influenced by cultural and socioeconomic factors. C&S stands for the environs in which fashion is created. As a result, this study came to a conclusion and added to the analysis provided by Noris et al. Specific studies in the field of digital fashion investigation will be the focus of the year 2021 in order to develop in this discipline.

Discussion

The first category refers to creativity and implement elements/processes, tangible and invisible, designed by man or machine and contribute to the advancement of the clothing & styling industry. (Noris et al., Citation2021, p. 5)

1. D&P: Development of Product

The word "product development" implies that this subcategory is primarily focused on developing methods that help in the design of fashion products. The phrase "product" of duration refers to both tangible and intangible elements attached to Clothing & styling industry. In order to improve and automate the sketching process, this specific group is focused on creating new and advanced tools and processes, such as technology for creating sketches and drawings, computer vision techniques, 3D modelling, and CAD systems.

The topic also includes the development of innovative methods that make use of large data and networks. Fractal patterns, Colour forecasting, and the creation of diverse textures are examples of new products made using techniques like genetic programming and common adversary learning. It also includes conducting research and developing new technologies to effectively extract visual information from images and photographs. (Dai, Citation2011; Dongdong, Citation 2012; Gu & Liu, Citation 2010; Kharbanda & Bajaj, Citation 2013; Kuswanto, Iftira, & Hapinesa, Citation 2018; Lee, Lim, Jung, & Park, Citation 2015; Li, Lu, Geng, & Wang, Citation2009; Liu, Zeng, Tao, & Bruniaux, Citation 2019; Long, Li, & Luo, Citation 2009; Muni, Pal, & Das, Citation 2006).

Design & Production: Process and technology Execution

According to this particular classification, the discussion is focused on how automation advancements have improved the productivity and success of decision-making processes in the clothing& styling sector. (Yu et al., Citation2011). The objective is to boost effectiveness in operations, enhance the life cycle of products (Lee, Citation2017), guarantee superior performance, minimize lead time, and reduce risks by utilizing advanced techniques like radio-frequency identification, inventory control, true replenishment, and warehouse management (Leitz, Solti, Weinhard, & Mendling, Citation2018; Pedrielli et al., Citation2016; Shen, Ding, Wang, & Ren, Citation2019).

The development of specialized forecasting models and algorithms that can predict sales data patterns for popular products (Choi, Hui, & Yu, Citation 2011) or identify the best pricing strategies for sales is another area of research.

The paper also discusses how organizations can increase efficiency and streamline operations by utilizing digital manufacturing technology, such as knitting and printing procedures (Taylor & Townsend, Citation 2014). The enhancement of models for service quality, the introduction of novel robotic technologies with the goal of reaching greater levels of flexibility, and the advancement of resource planning systems (ERP) are only a few topics covered under the operations focus (Xu & Lai, Citation2011).

The study also considered innovative methods for managing human resources, including developing electronic human resource management (E-HRM) platforms (Ma, Citation 2010) and investigating how technology could help initiatives for worker welfare, public responsibility initiatives, and encouraging female capitalism. It also examined the benefits of fusing technological innovation with human expertise, including how this affects the professional skills and digital literacy needed by the clothing & styling industry. One example is the need for knowledge of how to use communication tools to make wise decisions. Identifying and selecting appropriate materials, for instance, or using technology to improve skills and help junior designers are just a few examples.

2. Culture and society

C&S: This class covered the fields where in virtual style interacts with and contributes to the improvement of (i) cultures (ii) society

C&S: Culture: - This sub-category consists of various topics that cover aspects like clothing culture and heritage, history, customs and tradition, religion, art and performances in the digital age.

The presentation demonstrated the connection between religious and cultural heritage and the digital

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development of clothing & styling sector. It demonstrated how digitization might encourage the spread of regionally particular religious clothing & styling trends, such as modest clothes, in a more globalized fashion landscape. It also demonstrated how religious practices can be incorporated into clothing by using Muslim patterns that were digitally produced (Andriana, Citation 2019; Indarti & Peng, Citation 2017). Additionally, numerous perspectives on creative methods for preserving fashion as an artistic form and a part of cultural heritage for societies were considered and presented. These strategies incorporate the digitalization of documents to arrange collections, not just for profit-making but also to advance cultural understanding (Martin & Ko, Citation2011; Takahashi, Citation2013).

Historical designs must be preserved in archives since they are priceless resources for designers and crucial for maintaining heritage. Modern interactive technologies that enhance visitor satisfaction and experiences at installations and museums are the main theme of the articles in this area. The analysis also examined the fashion practices of specific nations or regions, such as Africa, as well as Japanese dress and behavior.

A less important stream explores the moral difficulties brought up by technological development, such as wearable technology's ownership of data, the moral conundrums surrounding the selling of false goods, and the environmental effects of rapid fashion consumption. Its goal is to assist participants' usage of sustainability by improving their understanding of it.

C&S: Society: - The final division refers to investigations and analysis that considered and presented the ways in which the entire digital fashion system can engage with our community. Despite its smaller size compared to other categories, this one is evaluated independently as it examines the impact of digital fashion on society through its proposed investigation. The instances pertain to the fashion Internet of Things' usage and its repercussions on society or wearables' influence on customer's daily routine, their amalgamation, and the link with social concerns like safety and surveillance. (Ebling, Citation2016; Harris, Citation2008; Lamontagne, Citation2014).

Conclusion & Limitations

The study discovered that there is a lot of research on subjects connected to Culture and Society as well as Design and Production. Although research on communication and marketing is the most prevalent, inquiries into other topics are becoming more common in the fashion sector. The D&P category serves as an illustration of how the research community is more focused on replacing manual processes with digital ones. One such instance is the replacement of manual Colour palette extraction with automation approaches, or the position and viewpoint of designers and managers regarding ecological issues, life-cycles, and the consequences of digitalization on pollution.

The Culture and Society category, also known as C&S, highlights how fashion has a strong cultural influence and how that influence has impacted the community. It focuses on a variety of themes, such as the obligation of educators to teach fashion designers cutting-edge approaches to problems like sustainability and enhancing the fashion sector's environmental effect.

The development of technology has an influence on the clothing & styling industry as a whole. The aforementioned assertion is the outcome of in-depth investigation of a number of concerns that call attention to the changes now occurring in the fashion industry. As a result of these developments, the clothing & styling

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sector is gaining a number of advantages.

Additionally, the current pandemic has accelerated the trend of digitization in the fashion business but, this also presents a challenge because the sector must adapt to the new technology and their effects on society. The Covid19 epidemic may have accelerated corporate digital transformation and increased interest in performing ground-breaking research and studies in the associated field.

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