

# THREADS OF INNOVATION NAVIGATING FASHION'S EVOLUTION AND SUSTAINABILITY

---

Prof. Anwar Khan

---



# Threads of Innovation

## Navigating Fashion's Evolution and Sustainability



# Threads of Innovation

## Navigating Fashion's Evolution and Sustainability

Prof. Anwar Khan



**BOOKS ARCADE**

KRISHNA NAGAR, DELHI

# Threads of Innovation: Navigating Fashion's Evolution and Sustainability

Prof. Anwar Khan

© RESERVED

This book contains information obtained from highly regarded resources. Copyright for individual articles remains with the authors as indicated. A wide variety of references are listed. Reasonable efforts have been made to publish reliable data and information, but the author and the publisher cannot assume responsibility for the validity of all materials or for the consequences of their use.

No part of this book may be reprinted, reproduced, transmitted, or utilized in any form by any electronic, mechanical, or other means, now known or hereinafter invented, including photocopying, microfilming and recording, or any information storage or retrieval system, without permission from the publishers.

For permission to photocopy or use material electronically from this work please access [booksarcade.co.in](http://booksarcade.co.in)

## BOOKS ARCADE

### Regd. Office:

F-10/24, East Krishna Nagar, Near Vijay Chowk, Delhi-110051

Ph. No: +91-11-79669196, +91-9899073222

E-mail: [info@booksarcade.co.in](mailto:info@booksarcade.co.in), [booksarcade.pub@gmail.com](mailto:booksarcade.pub@gmail.com)

Website: [www.booksarcade.co.in](http://www.booksarcade.co.in)

Edition: 2024

ISBN: 978-81-19923-10-6



# CONTENTS

<b>Chapter 1.</b> Breaking Barriers: Navigating Visual Impairment in the Fashion Industry .....	1
— <i>Prof. Anwar Khan</i>	
<b>Chapter 2.</b> Analysis of Post-Consumer Textile Waste Recycling in India: Fiber and Paper Recycling .....	14
— <i>Prof. Gaura Srivastava</i>	
<b>Chapter 3.</b> Sustainability Unveiled: Transforming Fashion and Textile Production for a Greener Future .....	23
— <i>Prof. Prachi Garge</i>	
<b>Chapter 4.</b> Revitalizing Rogan Art: Tradition, Challenges, and Future Strategies.....	32
— <i>Prof. Nishith Mehta</i>	
<b>Chapter 5.</b> Analysis of Daiva Rituals and Cultural Activities.....	45
— <i>Prof. Manasee Kakkad</i>	
<b>Chapter 6.</b> Exploring the Cultural and Historical Significance of the Indian Apparel Concept.....	58
— <i>Prof. Aarushi Purohit</i>	
<b>Chapter 7.</b> Revolutionizing Bridal Fashion: Augmented Reality's Impact on Virtual Try-Ons, Consumer Preferences, and Market Dynamics.....	69
— <i>Prof. Anwar Khan</i>	
<b>Chapter 8.</b> Confluence of Luxury and Technology: Enhancing Brand Experiences through Personalization and Digital Innovation in the Fashion Industry.....	82
— <i>Prof. Harsh Mohanty</i>	
<b>Chapter 9.</b> Revolutionizing Fashion E-Commerce: A Comprehensive Analysis of User Engagement and Sustainable Practices in the Style Lease Popup Model .....	96
— <i>Dr. Peeyush K Gupta</i>	
<b>Chapter 10.</b> Optimizing Apparel Sizing with Artificial Intelligence: A Comprehensive Analysis of Sizing Matrix Implementation in the Fashion Industry .....	107
— <i>Prof. Mahi Khare</i>	
<b>Chapter 11.</b> A Brief Discussion on 11th Dimension .....	117
— <i>Prof. Pooja Kalai</i>	
<b>Chapter 12.</b> Sustainable Beauty Revolution: Navigating Environmental Challenges and Shifting Consumer Trends in the Beauty Industry.....	129
— <i>Prof. Namrata Momaya</i>	
<b>Chapter 13.</b> Social Impact through Fashion Technology .....	141
— <i>Prof. Aarushi Purohit</i>	

## CHAPTER 1

### **BREAKING BARRIERS: NAVIGATING VISUAL IMPAIRMENT IN THE FASHION INDUSTRY**

---

Prof. Anwar Khan, Assistant Professor  
ISDI, ATLAS SkillTech University, Mumbai, Maharashtra, India  
Email Id- anwar@isdi.in

#### **ABSTRACT:**

In everyday social situations like job interviews, first dates, and social events, how we appear holds a significant role in how we are perceived. For most people, picking out an outfit for the day is a straightforward task, thanks to visual cues like patterns, colors, and textures that indicate stylish and socially appropriate clothing. However, for individuals with visual impairment, the process involves relying on touch, memory, and sound to accomplish the same task. Having limited vision often hinders the ability to identify colors and patterns, making it challenging to put together suitable clothing combinations. This difficulty contributes to a prevailing myth, especially among those who are blind, that grooming is a secondary concern compared to the myriad other challenges they face. The aim is to evaluate how fashion brands can support the visually impaired and enhance their daily task of identifying and locating clothing in stores. Understanding the unique needs and thought processes of individuals with visual impairment is crucial to gaining meaningful insights. By addressing these aspects, the goal is to create a better and more inclusive experience for them in the future, recognizing them as a new target market. This research underscores the vital intersection of visual impairment and the fashion industry, shedding light on the challenges faced by individuals with blindness or visual impairments in navigating a visually driven world. The future scope involves a comprehensive approach towards technology, psychology, global perspectives, policy advocacy, longitudinal studies, collaboration, policy implementation, employment opportunities, industry impact, and continued representation to create a more inclusive and informed environment for visually impaired individuals in the fashion world.

#### **KEYWORDS:**

Clothing, Fashion Industry, Fashion World, Market, Social.

### **1. INTRODUCTION**

In the contemporary world, individuals evaluate others not solely based on their professional competence or excellence in their work but also on how they present themselves visually, including their attire. Let's pause and envision preparing for an event. What crosses your mind and catches your eye when selecting an outfit? How do you ensure harmony between different clothing pieces? Now, close your eyes and picture performing the same task with limited or no vision. How would you navigate choosing clothes in such a scenario? Could you determine your preferred outfits and colors based on memory and the fabric's texture? For individuals who are blind or visually impaired, the process of selecting an outfit relies on touch and memory. They use these senses to pick clothing from their closet, and when making purchases, they depend on customer service or a trusted individual to assist them, aiding in the creation of a mental catalog of each specific outfit [1],[2].

In this specific manner, individuals can discern and pinpoint their attire choices for a given day. Going to such lengths to present oneself favorably aids in comprehending the significant role appearance plays for visually impaired individuals. The judgments people make based on others' looks can impact their lives and decision-making. Adherence to societal standards



regarding appearance affects decision-making for professional meetings or special occasions. The term "inside view" pertains to a person's self-perception and attitude toward their body image, influencing how others perceive them. Clothing and physical appearance, acting as a visual code, can convey details about status, socioeconomic position, and psychological characteristics. This research specifically focuses on analyzing how societal views, classifications, and assumptions about the visual appearance of individuals with blindness and visual impairment influence them [3], [4].

### *1.1. Why is it crucial for individuals with visual impairments to dress well?*

In the course of my research, I engaged in a conversation with an individual who prefers not to be named. This person highlighted the heightened pressure for those with visual impairments to present themselves well in various situations such as dates, job interviews, and social events. The individual emphasized that when a visually impaired person steps out, often only the blindness is noticed by those who can see. Consequently, there exists the imperative to ensure a polished appearance, as individuals with visual impairments are not only representing themselves but also an entire segment of people with disabilities [5].

The sighted world, as mentioned, tends to be highly judgmental, placing significant importance on appearance. Society often subjects individuals with visual impairments to unfair assumptions, perceiving them as mentally slow or less informed due to their disability. Moreover, there is a common misconception that individuals with visual impairments, because of their vision loss, are not interested in being fashionable, enjoying makeup, or preparing themselves for various occasions. This leads to the unfounded assumption that they dislike interaction and are perpetually dependent on others [6].

Everyone encounters their own set of challenges in various ways, and as a society, we simply need to afford them opportunities in the real world. Just because one aspect is flawed doesn't mean the rest share the same flaw. Understanding their true potential is impossible unless we provide them with a chance. Visually impaired (VI) individuals are among the most creative people globally. Their daily tasks, which for others might seem routine, require innovative problem-solving skills due to their limited or absent vision. They strive for as much independence as possible, often driven by their education and rehabilitation, showcasing the capabilities of those without sight. Research indicates that many visually impaired individuals develop mental and physical organizational systems, including methods for identifying and locating clothes. These efforts underscore the time and dedication they invest in achieving success in their daily lives.

In our society, there's a common misconception that if someone has limited vision, their appearance is somehow incorrect. However, this belief is inaccurate. Individuals with visual impairments (VI) often have a strong interest in fashion and beauty. Prominent VI figures in the fashion world, such as Lucy Edwards and Molly Burke, share their stories of overcoming adversity and gaining respect not only within the VI community but also in the fashion industry [7], [8]. Molly Burke's perspective challenges the idea that a cure is needed for her condition. Instead, she desires more people to hear her story and increase awareness. Focusing on improving one's eyesight can be a discouraging narrative for blind individuals, as it significantly undermines their motivation to engage in various activities. Burke believes that the notion of solving disabilities rather than embracing them is detrimental to the confidence of disabled individuals, as disability is an integral part of who she is, and she wouldn't trade it for anything.

Lucy Edwards, a visually impaired woman with a successful career, serves as a great inspiration to those with disabilities, demonstrating that nothing is impossible. As the first blind BBC



Radio 1 host, she shattered stereotypes, proving that disability doesn't hinder career success. This achievement represents a significant step toward acceptance, acting as a small motivator for the rest of the population and fostering true inclusion. Considering the insights shared by these incredible individuals, it's crucial to avoid any possibility of discrimination based on the appearance of their disability. Research indicates that individuals with disabilities often face challenges being taken seriously, necessitating extra efforts to present themselves professionally. Therefore, it is critical for them to seamlessly blend in with the rest of the group [9], [10].

### *1.2. How do individuals with visual impairments choose their outfits and what method do they use?*

When they complete a task and receive recognition, it boosts their self-esteem, a universal human experience. Visually impaired people are no different; accomplishing daily activities independently fosters confidence. This empowerment not only opens up new opportunities but also allows them to make decisions autonomously, breaking away from dependence on others. Independence holds great significance for those with visual impairments, proving that their abilities are not restricted by their disability. Purchasing outfits at a store becomes a symbolic act, demonstrating that nothing is beyond their reach and that they are just as capable as those with sight [11], [12].

The research addresses the challenges faced by individuals with blindness or visual impairments in navigating a visually driven society, particularly in the context of clothing choices. The research begins by highlighting the significance of appearance in social situations and the straightforward task of picking out an outfit for those with normal vision. The research delves into societal views, classifications, and assumptions about the visual appearance of individuals with blindness and visual impairment, and the literature of the previous study is discussed in the literature review section. The methodology involves primary research through surveys and conversations with visually impaired individuals, an eye specialist, and a brand owner. Finally, the research ends with a conclusion section that explains the outcome and future of this research.

## **2. LITERATURE REVIEW**

Pereira L. et al. [13] explored consumer perspectives and practices regarding sustainability in the fashion industry, recognizing the industry's significant environmental impact. Despite widespread awareness and concern among consumers, the study finds that sustainable practices are not always reflected in their actual purchasing behavior. Qualitative research, including interviews with consumers, reveals that many implement various sustainable practices in their buying choices. However, barriers such as lack of education, information, knowledge, and transparency hinder the broader adoption of sustainable fashion. The study emphasizes the crucial role of companies in educating consumers and addressing these barriers to promote more conscious decision-making and foster a sustainable future in the fashion industry.

Gazzola P. et al. [14] addressed the imperative for fashion companies to redefine their business models due to significant changes in the competitive landscape and shifts in consumer lifestyles. Focusing on emerging trends in the fashion industry, the study highlights sustainability and the circular economy as crucial drivers for long-lasting competitiveness. The research particularly explores how these principles influence the perception of the fashion world among younger generations. After mapping industry trends and analyzing sustainability from both demand and supply perspectives, the study presents survey results, emphasizing the behavior of students, especially Generation Z, towards sustainable fashion and circular economy principles. The analysis confirms the growing importance of sustainability issues,

especially for Generation Z, providing insights into gender-specific perspectives and the relevance of the circular economy in the overall consumer perception.

Thorisdottir T. and Johannsdottir L. [15] studied the complex nature of the fashion industry, a global giant driven by symbolic lifestyle aspirations and creative design. With mass production and a low-cost structure promoting consumerism, the industry heavily strains natural resources. The research focuses on Corporate Social Responsibility (CSR) and its impact on sustainability in fashion. Conducting a systematic literature review from 2003 to 2019, the study finds that CSR strategies in the fashion industry prioritize sustainability, business models, and supply chain innovation. Commitments extend to the economy, environment, and society, emphasizing eco-friendly products and workers' safety. The study presents a micro-meso-macro framework linking CSR and sustainability with actions in brand equity, culture, supply chain management, activism, and human rights. The findings contribute valuable insights for academia, practitioners, and policymakers, offering a comprehensive overview of domestic and multinational fashion companies' operations, highlighting key studies, and identifying research trends and gaps in the field.

Huynh P. et al. [3] explored the intersection of digital innovation and circular business model innovation in the context of the fashion industry, aiming to facilitate the transition to a circular economy (CE). The study employs an inductive, exploratory multiple-case study method, examining ten fashion companies of various sizes (large, small medium-sized firms, and startups). The research identifies three archetypes of digital-based circular business models in the fashion industry: the blockchain-based supply chain model, the service-based model, and the pull demand-driven model. The pull demand-driven model, emphasizing radical business and digital innovations, is highlighted as crucial for the fashion circular economy transition. The study provides insights for business managers on selecting circular business models based on intrinsic capacities, technological competencies, and CE strategies. It emphasizes the importance of collaboration between large fashion incumbents and technology suppliers/startups for radical innovations. The research also underscores the need for policy support, balanced demand-supply side strategies, and a reevaluation of reducing unnecessary new demand to accelerate the fashion industry's transition to a circular economy. The study contributes to closing the gap between theory and practice in the context of the fashion industry's environmental impact and circular economy adoption.

Thinakaran S. et al. [16] addressed the adverse environmental impacts of the fashion industry, particularly during production and post-consumption, and explored the challenges hindering the adoption of circular economy (CE) practices in the Indian fashion industry. The research identifies twenty-one challenges categorized into Industrial management, Labour, Material, Regulations, Knowledge, Collaboration, and Infrastructure. An integrated multi-criterion decision-making (MCDM) approach, including fuzzy Decision-Making Trial and Evaluation Laboratory Model (DEMATEL), Analytical Network Process (ANP), and Technique for Order Performance by Similarity to Ideal Solution (TOPSIS), is applied to evaluate these challenges. The study reveals costly raw materials, absence of certifications, problems in collection and separation, weak technical know-how, and absence of shared vision as the top five challenges to CE practices in the Indian fashion industry. Additionally, the causal interrelationships among these challenges provide insights for industrial management to address and mitigate these barriers effectively. The study emphasizes the importance of overcoming these challenges to promote CE practices and achieve sustainable development goals in the Indian fashion industry.

Bukantaité S. et al. [17] explored the perspective of fashion industry managers regarding the importance of creativity competence and its practical application in the fashion retail sector.

Through semi-structured interviews with middle managers, three key categories of activities requiring creativity competence were identified: performing technical assignments, interacting with clients, and managing staff. The study emphasizes the significance of creativity in the fast-changing and dynamic environment of the fashion industry, particularly for middle managers who serve as mediators between general managers and salespersons. Effective communication of organizational purposes and values by managers is crucial for fostering creativity within a team.

The research reveals that managers employ various methods to promote creativity, including verbal interactions, delegation of responsibilities, sales promotion games, information systemization, social network engagement, feedback provision, and encouragement of independent problem-solving. The study's findings provide insights for developing job descriptions that attract suitable employees to fashion sales roles, enhance the understanding of creativity's importance in daily sales tasks, boost sales staff motivation, and improve overall sales outcomes.

The previous studies explore various aspects of the fashion industry, exploring topics such as sustainability, circular economy, corporate social responsibility (CSR), digital innovation, and creativity competence. The studies reveal the challenges and opportunities within the industry, highlighting the role of consumers, managers, and technological advancements. The current research suggests addressing and overcoming challenges related to visual impairment within the context of the fashion industry. It implies an exploration of how individuals with visual impairments navigate and participate in the fashion world, which is primarily a visual and image-driven industry.

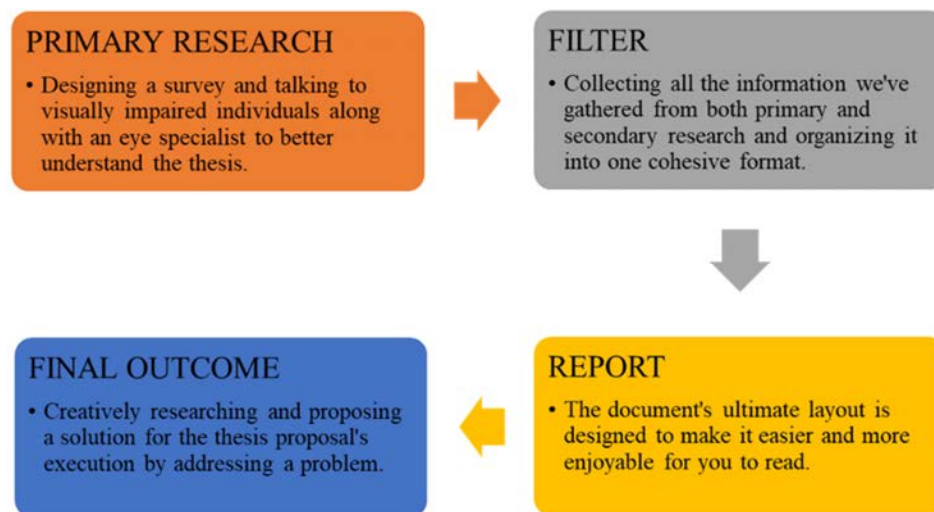
### 3. METHODOLOGY

#### 3.1.Design:

The process outlined involves several key stages, beginning with "PRIMARY RESEARCH." In this phase, the researchers plan to design a survey and engage in conversations with visually impaired individuals, along with consulting an eye specialist. The objective is to gain firsthand insights and perspectives that can contribute to a deeper understanding of the central thesis. By directly involving the target demographic and seeking professional expertise, the primary research aims to enrich the investigation with authentic and specialized information. Following the primary research, the next step is "FILTER."

This stage entails systematically collecting and organizing all the information obtained from both primary and secondary research. The purpose is to distill the diverse data into a cohesive and manageable format. This process likely involves identifying key themes, categorizing findings, and eliminating redundancies, ensuring that the data is streamlined and ready for analysis.

Moving forward, the researchers enter the "REPORT" phase. Here, the focus is on presenting the research outcomes in a document that is not only informative but also reader-friendly. The layout and structure of the report are strategically designed to enhance readability and engagement. This stage recognizes the importance of effective communication, making the document accessible and enjoyable for a diverse audience. The culmination of the entire research endeavor is encapsulated in the "FINAL OUTCOME." In this phase, the researchers apply creative thinking to propose solutions for executing the thesis. This involves addressing the identified problem or challenges through innovative means. The outcome represents the synthesis of research findings, creative problem-solving, and a forward-looking approach to contribute to the field of study.



**Figure 1: Illustrate the Design of the Survey.**

Figure 1 shows how the survey was designed. The outlined process reflects a comprehensive and systematic approach to research, from engaging with primary sources to distilling information, presenting it in a well-structured report, and culminating in creative proposals for addressing the thesis's central problem. Each stage contributes uniquely to the overall research journey, emphasizing a methodical and thoughtful progression toward achieving the research objectives.

### 3.2.Sample:

This survey aims to delve into the collective mindset and attitudes of respondents regarding various aspects related to visually impaired individuals, with a specific focus on their engagement with the fashion world. This survey underscores the thoroughness and inclusivity of the research. It implies that a wide range of questions and topics have been addressed to gather a holistic understanding of the attitudes and beliefs held by the participants. This comprehensive approach is likely to provide a nuanced and detailed insight into the complexities surrounding the intersection of visual impairment and the fashion industry. The purpose of these surveys was to understand how individuals with visual impairment engage as consumers in the realm of fashion and to enhance their future experiences. The survey may explore aspects such as independence, inclusivity, market opportunities, and the role of awareness in shaping attitudes.

### 3.3.Instrument:

This survey question's purpose and scope is to highlight a systematic examination of people's perceptions and attitudes towards visually impaired individuals in the dynamic and multifaceted world of fashion.

1. What is your age?
2. Do you know the difference between a visually impaired person and a blind person?
3. Do you think a visually impaired person can be independent?
4. Are visually impaired people often ignored as target consumers?
5. Do you think visually impaired people care about fashion/brands?

6. According to you, do visually impaired people dress on their own/take assistance from someone?
7. When fashion talks about inclusivity, have visually impaired people ever come to mind?
8. Do you think there's a market for visually impaired people in the fashion world?
9. Do you believe that having a braille tag on the garments for the price and description of the outfits will not only help the visually impaired but also help the brands increase sales?
10. Do you think apps help the visually impaired feel closer to being independent?
11. Should there be awareness among the people and brands of these consumers and how beneficial it can be for the companies?
12. Will you be okay with encountering changes in the current store or products, if there's a possibility that it will better the lives of the visually impaired by some amount?

#### 3.4.Data Collection:

Table 1 presents responses to a series of questions, shedding light on perceptions and attitudes towards visually impaired individuals in the context of fashion and inclusivity. From age demographics to beliefs about independence, fashion preferences, and the potential market impact, the data provides valuable insights into the need for awareness and consideration in the industry.

S. No.	Questions	Response
1.	What is your age? 15-20 21-26 27-32 32 and above	3% 91.3% 4% 1.7%
2.	Do you know the difference between a visually impaired person and a blind person? Yes No Maybe	87% 4.3% 8.7
3.	Do you think a visually impaired person can be independent? Yes No Maybe	69.6% 4.3% 26.1%
4.	Are visually impaired people often ignored as target consumers? True	91.3%

	False	8.7%
<b>5.</b>	Do you think visually impaired people care about fashion/brands? Yes No Maybe	30.4% 0% 69.6%
<b>6.</b>	When fashion talks about inclusivity, have visually impaired people ever come to mind? Yes No Maybe	13% 65.2% 13%
<b>7.</b>	Do you think there's a market for visually impaired people in the fashion world? Yes No Maybe	9.1% 13% 39.1%
<b>8.</b>	Do you believe that having a braille tag on the garments for the price and description of the outfits will not only help the visually impaired but also help the brands increase sales? Yes No Maybe	73.9% 8.7% 17.4%
<b>9.</b>	Do you think apps help the visually impaired feel closer to being independent? Yes No Maybe	52.2% 4.3 43.5%
<b>10.</b>	Will you be okay with encountering changes in the current store or products, if there's a possibility that it will better the lives of the visually impaired by some amount? Yes No Maybe	95.7% 1%



		3.3%
<b>11.</b>	According to you, do visually impaired people dress on their own/take assistance from someone?	
	On their own	13%
	Take assistance	21.7%
	Don't know	34.8%
	Maybe	21.7%
	Yes	8.7%
<b>12.</b>	Should there be awareness among the people and brands of these consumers and how beneficial it can be for the companies?	
	Strong Disagree	0
	Disagree	0
	Neutral	8.7%
	Agree	47.8%
	Strongly Agree	43.5%

### 3.5.Data Analysis:

The conducted survey brought forth truly astonishing statistics. The participation of 23 individuals highlighted a significant lack of awareness or ignorance in society, as 65 percent of respondents did not perceive visually impaired individuals as falling under the umbrella of inclusivity. This underscores the prevailing societal misconceptions. Moreover, an overwhelming 95.7 percent expressed agreement and willingness to embrace changes that could enhance coexistence for everyone. The comprehensive set of questions posed in the survey indicated that visually impaired individuals may be regarded as a potential target market not only in India but globally.

## 4. RESULT AND DISCUSSION

The interviews conducted provided valuable insights that turned out to be an enlightening and enriching experience in various aspects. The questions primarily focused on clothing style, the challenges faced in choosing outfits, the psychology of visually impaired individuals, and perspectives from both an ophthalmologist and a brand owner. These discussions significantly contributed to better connecting the pieces of my thesis. The planned outcome was a direct result of these insightful conversations.

### 4.1.Understanding the minds of the visually impaired and the brands:

#### i. Store vs Online

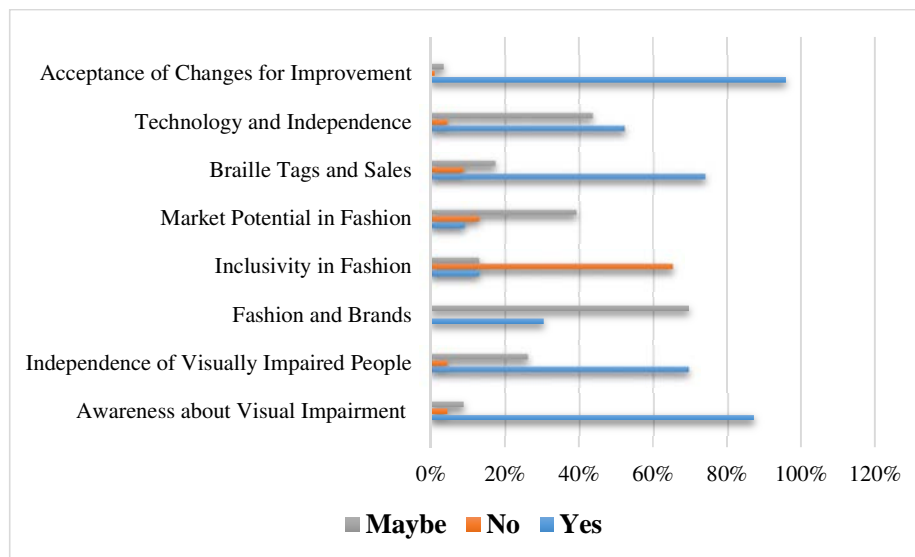
Brick-and-mortar shopping holds greater appeal for visually impaired individuals compared to online shopping. This preference is rooted in the tactile experience of feeling fabric textures, gauging quality and appreciating the embossment of outfits – aspects that are uniquely accessible in physical stores. Therefore, enhancing the accessibility of in-store shopping is crucial for providing visually impaired individuals with a more enriching experience. The

challenge with online shopping lies in the limited availability of accessibility features. Even when present, the outfit descriptions are often inadequate and lack the necessary detail, dissuading visually impaired individuals from engaging in online shopping.

ii. *Independent:*

Striving for independence is a fundamental and primary aspiration for every person, including those who are visually impaired. Like everyone else, they desire to be seen not as a burden but as integral individuals. Independence holds great significance for them, emphasizing their capability and identity. Unfortunately, there's a common misunderstanding in society that visually impaired individuals constantly need assistance in all situations. However, the truth is, that offering a helping hand when needed is appreciated, but it's essential to avoid assuming dependency and instead encourage their autonomy.

For the most part, they choose to live a minimal lifestyle. Simplicity is key for them because it enables self-reliance and navigation without relying on others. By keeping things uncomplicated, they avoid unnecessary clutter and always know where to find their belongings. Their preferred shopping environment is well-organized, where every product is easily accessible without requiring assistance from others. People with visual impairments enjoy going out and socializing with their peers, whether it's going to cafes, attending concerts, or interacting with others. There's a common misconception that individuals who have lost their vision would be uninterested in such activities and prefer staying at home. However, the reality is that preferences vary from person to person, and not all visually impaired individuals prefer staying indoors. Even among visually impaired individuals, some enjoy going out. The idea here is to envision creating inclusive spaces that are open to everyone, regardless of their abilities. Isn't this the future we aspire to, where individuals don't have to rely on others for necessities?



**Figure 2: Illustrate Perceptions and Attitudes towards Visual Impairment in the Fashion Industry: A Survey Analysis.**

Figure 2 presents the results of a survey focusing on perceptions and attitudes toward visual impairment within the context of the fashion industry. Each row corresponds to a specific question, and the columns represent the percentage distribution of responses in the categories "Yes," "No," and "Maybe." The first set of questions addresses the participants' awareness of

visual impairment. Notably, 87% of respondents claim to have awareness of visual impairment, while 4.3% admit to being uninformed, and 8.7% express uncertainty. The second set of inquiries explores the perceived independence of visually impaired individuals. The majority, 69.6%, believe that visually impaired people can lead independent lives. However, 4.3% express doubt and 26.1% remain uncertain about this aspect.

Moving on to the intersection of fashion and visual impairment, the third set of questions reveals that 30.4% of respondents think visually impaired people care about fashion and brands. Surprisingly, 69.6% either deny this assumption or remain unsure about the correlation. The fourth set delves into inclusivity in the fashion industry, with only 13% associating visually impaired individuals with fashion inclusivity. In contrast, a substantial 65.2% do not make this connection, and 13% remain unsure. The fifth set explores the perceived market potential for visually impaired individuals in the fashion world. Merely 9.1% of respondents believe there is a market, while 13% reject this notion, and 39.1% remain uncertain.

The next set of questions concerns the effectiveness of Braille tags in enhancing sales and aiding visually impaired individuals. A significant 73.9% believe that incorporating Braille tags can be beneficial, while 8.7% express skepticism and 17.4% remain unsure. In the realm of technology and independence, the seventh set of questions reveals that 52.2% think technology, such as apps, can help visually impaired individuals feel closer to independence. However, 4.3% disagree, and 43.5% remain undecided on this matter.

The penultimate set investigates the participants' openness to changes in stores or products if they could improve the lives of visually impaired individuals. A resounding 95.7% express acceptance, with only 1% opposing such changes, and 3.3% remaining undecided. Finally, the last set of questions gauges perceptions about visually impaired individuals dressing independently. Only 13% believe they dress on their own, while 21.7% acknowledge assistance, 34.8% are uncertain, and 21.7% respond with "maybe." In summary, the survey provides insights into the awareness, attitudes, and perceptions of respondents regarding visual impairment within the fashion industry, shedding light on potential areas for improvement and inclusivity.

## 5. CONCLUSION

The contemporary world places a significant emphasis on visual presentation, impacting societal perceptions and judgments. Individuals with visual impairments encounter not only practical challenges in choosing and coordinating outfits but also face societal assumptions and stereotypes. The research emphasizes the importance of appearance for individuals with visual impairments, particularly in professional and social settings. The research reveals that individuals with visual impairments often face unfair assumptions and misconceptions, challenging the notion that they are disinterested in fashion or lack a desire for self-presentation. Through interviews and surveys, the research delves into the unique challenges faced by visually impaired individuals in the fashion realm. The findings suggest a prevailing lack of awareness and understanding in society, as evidenced by the survey results showing that a significant percentage of respondents do not associate visually impaired individuals with fashion inclusivity or perceive them as potential consumers in the fashion world. The research also highlights the importance of independence for individuals with visual impairments and their desire to be seen as capable individuals. Shopping preferences, organizational skills, and the pursuit of a minimal lifestyle are revealed as strategies for achieving independence and navigating the world with confidence. The methodology and survey results provide valuable insights into the perceptions and attitudes of respondents, indicating areas where awareness and inclusivity in the fashion industry can be improved. The majority of respondents express

openness to changes in stores or products that could enhance the lives of visually impaired individuals, emphasizing the potential for positive transformations in the industry. In essence, this research serves as a call to action for increased awareness, inclusivity, and understanding in the fashion industry regarding individuals with visual impairments. By dispelling misconceptions, acknowledging the diverse preferences and capabilities of visually impaired individuals, and implementing inclusive practices, the fashion industry has the opportunity to break down barriers and create a more accessible and equitable space for all.

## REFERENCES:

- [1] Disabilityhorizons, “Being blind doesn’t mean you can’t be fashionable.” Accessed: Dec. 12, 2023. [Online]. Available: <https://disabilityhorizons.com/2020/09/being-blind-doesnt-mean-you-cant-be-fashionable/>
- [2] Disabilityhorizons, “8 misconceptions about visual impairment and blindness busted.” Accessed: Dec. 21, 2023. [Online]. Available: <https://disabilityhorizons.com/2020/05/8-misconceptions-about-visual-impairment-and-blindness-busted/>
- [3] P. H. Huynh, “Enabling circular business models in the fashion industry: the role of digital innovation,” *Int. J. Product. Perform. Manag.*, vol. 71, no. 3, pp. 870–895, Feb. 2022, doi: 10.1108/IJPPM-12-2020-0683.
- [4] Vogue, “Why disability representation is crucial to building a better, more inclusive fashion industry.” Accessed: Dec. 21, 2023. [Online]. Available: <https://www.vogue.in/fashion/content/why-disability-representation-is-crucial-to-building-a-better-more-inclusive-fashion-industry>
- [5] Forbes, “The Fight For Adaptive Fashion: How People With Disabilities Struggle To Be Seen.” Accessed: Dec. 21, 2023. [Online]. Available: <https://www.forbes.com/sites/annahaines/2021/06/24/the-fight-for-adaptive-fashion-how-people-with-disabilities-struggle-to-be-seen/?sh=4b846a5d694d>
- [6] C. A. Moran, E. Eichelmann, and C. J. Buggy, “The challenge of ‘Depeche Mode’ in the fashion industry – Does the industry have the capacity to become sustainable through circular economic principles, a scoping review,” *Sustain. Environ.*, vol. 7, no. 1, Jan. 2021, doi: 10.1080/27658511.2021.1975916.
- [7] L. G. Galatti and J. Baroque-Ramos, “Circular economy indicators for measuring social innovation in the Brazilian textile and fashion industry,” *J. Clean. Prod.*, vol. 363, p. 132485, Aug. 2022, doi: 10.1016/j.jclepro.2022.132485.
- [8] N. Bhandari, J. A. Garza-Reyes, L. Rocha-Lona, A. Kumar, F. Naz, and R. Joshi, “Barriers to sustainable sourcing in the apparel and fashion luxury industry,” *Sustain. Prod. Consum.*, vol. 31, pp. 220–235, May 2022, doi: 10.1016/j.spc.2022.02.007.
- [9] R. M. Pelikánová, T. Němečková, and R. K. MacGregor, “CSR Statements in International and Czech Luxury Fashion Industry at the Onset and during the COVID-19 Pandemic—Slowing Down the Fast Fashion Business?,” *Sustainability*, vol. 13, no. 7, p. 3715, Mar. 2021, doi: 10.3390/su13073715.
- [10] S. Bondarenko, “Methodological Foundations of Creating a Quality Management System of Business Processes on The Principles of Sustainability at The Fashion Industry Enterprise,” *Qual. - Access to Success*, vol. 23, no. 186, Feb. 2022, doi: 10.47750/QAS/23.186.33.

- [11] F. A. Inan, A. S. Namin, R. L. Pogrund, and K. S. Jones, "Internet use and cybersecurity concerns of individuals with visual impairments," *Educ. Technol. Soc.*, vol. 19, no. 1, pp. 28–40, 2016.
- [12] H. Gdl z and H. B. Yangın, "Evaluation of a Web-Based Sexual Health Education Program for Individuals with Visual Impairments," *Sex. Disabil.*, vol. 39, no. 4, pp. 715–730, 2021, doi: 10.1007/s11195-021-09692-1.
- [13] L. Pereira, R. Carvalho, . Dias, R. Costa, and N. Antnio, "How Does Sustainability Affect Consumer Choices in the Fashion Industry?," *Resources*, vol. 10, no. 4, p. 38, Apr. 2021, doi: 10.3390/resources10040038.
- [14] T. S. Thorisdottir and L. Johannsdottir, "Corporate Social Responsibility Influencing Sustainability within the Fashion Industry. A Systematic Review," *Sustainability*, vol. 12, no. 21, p. 9167, Nov. 2020, doi: 10.3390/su12219167.
- [15] T. S. Thorisdottir and L. Johannsdottir, "Corporate social responsibility influencing sustainability within the fashion industry. A systematic review," *Sustainability (Switzerland)*, vol. 12, no. 21, pp. 1–64, 2020. doi: 10.3390/su12219167.
- [16] S. Thinakaran, P. Chandravelu, S. G. Ponnambalam, B. Sankaranarayanan, and K. Karuppiah, "Analyzing the Challenges to Circular Economy in Indian Fashion Industry," *IEEE Access*, vol. 11, pp. 711–727, 2023, doi: 10.1109/ACCESS.2022.3233197.
- [17] S. Bukantait and . Sedereviit-Paiauskin, "FASHION INDUSTRY PROFESSIONALS' VIEWPOINTS ON CREATIVITY AT WORK," *Creat. Stud.*, vol. 14, no. 1, pp. 145–159, Apr. 2021, doi: 10.3846/cs.2021.14277.

## CHAPTER 2

### ANALYSIS OF POST-CONSUMER TEXTILE WASTE RECYCLING IN INDIA: FIBER AND PAPER RECYCLING

---

Prof. Gaura Srivastava, Assistant Professor  
ISDI, ATLAS SkillTech University, Mumbai, Maharashtra, India  
Email Id- gaura.srivastava@atlasuniversity.edu.in

#### ABSTRACT:

Recycling of post-consumer textile waste in India, with an emphasis on the process's fiber component. Sustainable solutions are required as the clothing sector grows and the negative environmental effects of textile waste become more urgent. This report looks at post-consumer textile waste recovery in India today, highlighting potential, difficulties, and common practices in the fiber recycling industry. The study examines the effectiveness and efficiency of current recycling techniques, including chemical and mechanical procedures, and assesses their effects on sustainability and fiber quality. The abstract also explores the legal structures and rules that oversee the management of textile waste in India, emphasizing the importance that industry partnerships and governmental efforts have in encouraging ethical recycling methods. The socio-economic ramifications of recycling post-consumer textile waste are also examined, with a focus on opportunities for employment growth, community involvement, and the advancement of a circular economy.

#### KEYWORDS:

Environment, Post-Consumer, Raw Material, Textile Waste, Waste Recycling.

#### 1. INTRODUCTION

Waste recycling is a critical activity in the worldwide search for ecologically sensitive and sustainable practices. This sophisticated process includes converting wasted materials into reused resources, reducing the environmental effect of increasing trash, and promoting a circular economy. Waste recycling is, at its heart, a complex solution to environmental deterioration, resource depletion, and energy saving [1], [2]. Because of the large volume of garbage produced by contemporary civilizations, a paradigm change from old disposal systems to comprehensive recycling solutions is required. One of the key advantages of garbage recycling is that it reduces the demand for natural resources. Recycling minimizes the demand for virgin resources by reusing items such as paper, glass, plastics, and metals, saving energy and minimizing the environmental damage associated with extraction and processing. Furthermore, recycling reduces the pressure on landfills, where non-biodegradable garbage often accumulates, causing long-term environmental problems. Recycling items from dumps not only extends the life of these disposal sites, but also reduces the flow of dangerous chemicals into the soil and water systems [3], [4].

The Realities of post-consumer textile waste in India remain that recycling is too costly. Smaller firms with fewer design, color, and style possibilities transform the majority of post-consumer recycling into blankets and home materials. The blankets are stored for use in relief camps following natural disasters, while the materials are utilized for domestic uses by homeowners. The big elephant in the room is the scarcity of knowledge, resources, and data in this area. Post-consumer recycling is a costly industrial operation [5], [6]. Clothes would have to be classified by color and substance, and the presence of fabric mixtures makes sorting much more difficult. Fabric pollution must also be considered. Because of all of these considerations, post-consumer textile recycling may be a costly process that cannot be initiated without a



significant investment. That is where my dissertation comes in. By developing that mechanism, the garbage is blended to create distinct items using a similar production formula. Paper and paper machine experiments have been pretty fruitful, and they have the potential to be expanded on much further [7], [8]. It is critical to research waste reduction in the fashion sector. It is also significant since customers do not have the opportunity to participate in responsible disposal.

Waste recycling is critical to lowering greenhouse gas emissions. Traditional waste disposal processes, such as incineration and garbage dumps, contribute considerably to the production of greenhouse gases such as carbon dioxide and methane. Reusing, on the other hand, decreases the requirement for energy-intensive industrial processes used in the manufacture of items from raw materials. As a result, the carbon footprint connected with resource extraction, transportation, and production is reduced, adding to overall climate change mitigation efforts. The economic benefits of garbage recycling are also important. The recycling business creates jobs at all phases of the process, from collecting and sorting to processing and production. As recycling becomes more popular, it supports innovation and the development of technology that improves waste management efficiency. Furthermore, the recycled materials market is expanding, offering economic incentives for organizations and people to actively engage in recycling activities.

Education and awareness initiatives, which develop a culture of accountability and environmental stewardship, are critical in encouraging garbage recycling. Communities and organizations all around the globe are realizing the value of implementing sustainable practices, with efforts ranging from single-stream recycling programs to recycling waste into energy projects. Governments also play an important role by establishing regulatory frameworks, promoting recycling, and implementing fines for inappropriate garbage disposal [9], [10]. Despite these encouraging developments, worldwide hurdles remain in developing comprehensive trash recycling systems. In certain areas, insufficient infrastructure, uneven recycling rules, and a lack of general knowledge limit the effectiveness of recycling operations. Furthermore, the complexity of certain materials, such as mixed chemicals or electronic trash, makes separation, the process, and recycling feasible. To address these issues, governments, corporations, and people must work together to invest in infrastructure development, enact coherent recycling regulations, and prioritize studying and developing ways to improve recycling technology.

### *1.1 General properties of Textile Fibers:*

the basic components of textiles have a wide range of general qualities that dictate their use, robustness, and adaptability in the enormous field of the textile industry. These fibers, which come in natural and synthetic variants, are the building blocks for a wide range of goods, from garments and home textiles to technical and manufacturing applications. Their physical characteristics, which also determine their behavior, look, and tactile features, are fundamental to their operation. The principal characteristics are length, strength, elasticity, flexibility, and fineness. The lengths of the fibers vary greatly; filament fibers may reach significant lengths, whereas staple fibers are often rather short. Finer fibers are often linked to a softer feel and a more opulent look. Fineness, or diameter, affects the texture and texture of textiles. Strength is a crucial component of textile durability and is affected by several variables, including the fiber material's intrinsic strength, its structure, and the existence of flaws or contaminants.

Textiles' comfort and ability to hold their form are enhanced by elasticity, the fiber's capacity to stretch and return to its original length. While synthetic yarns like spandex are designed to provide certain stretch properties, natural fibers like silk and wool often show exceptional

elasticity. The drape and general handling of fibers throughout the manufacturing process are influenced by their flexibility, or how easily they can bend or fold. Beyond the fundamental mechanical and physical characteristics, fibers may also have unique qualities like heat resistance, flame retardancy, and moisture absorption.

Fibers may be roughly divided into two categories based on their origin: natural and synthetic. Since ancient times, natural fibers made from wildlife, plants, or minerals have been used. Drawn from the seed fibers of the cotton plants, cotton is one of the most often used natural fibers because it is comfortable, absorbent, and breathable. The stem of the flax plant yields linen, which is very durable and has a crisp feel. Wool is a protein-based fiber that is derived from sheep and other animals and can wick away moisture and offer warmth and insulation. Silkworms generate silk, which is prized for its smoothness, luster, and light weightness. Although historically important, the use of mineral fibers like asbestos has decreased because of health risks related to inhaling them. On the other hand, synthetic fibers are created by humans using chemical processes and come in a variety of features that are customized for certain uses. The common synthetic fabric polyester is prized for its strength, ability to resist wrinkles, and speed of drying. Created to replace silk, nylon is known for its strength, resistance to abrasion, and adaptability. Acrylic provides warmth, softness, and resilience to chemicals and sunshine, making it a popular alternative to wool.

## 2. LITERATURE REVIEW

Zhou J et al. [11] explained color sorting using computer vision in Waste Textile Recycling which is the key constraint limiting waste textile recycling are efficient and high-accuracy adaptive color and material sorting technologies. The combining of discarded textiles of various hues renders the rebuilt starting point of textile fiber unusable or of poor quality. Some issues associated with automated color screening for waste recycled textiles.

Wojnowska-Baryła I et al. [12] Recovery and organic recycling strategies are used in fabric waste management. described Post-consumer bio-based textile debris refers to any form of clothing or home item created from manufactured bio-based textile that the owner no longer needs and chooses to discard. According to the waste management hierarchy, textile scraps from consumers should be biologically recycled. However, there is still an issue in implementing selected textile waste collection accompanied by sorting, this would prepare the trash for organic recycling. Multi-material textiles provide a barrier to recycling since there is no technically feasible technique for sorting textile waste products consisting of just one kind of fiber material.

Ponnambalam S et al. [13] explained analyzing the barriers to textile waste recycling which Textile industry post-consumer trash is often landfilled or burnt. Large volumes of textile waste have been dumped, causing major environmental issues. Technological advancements are advocating for textile recovery; yet, the textile industry's embracement of textile recycling is impeded by a variety of problems. The goal of this research is to identify and analyze different hurdles to adopting recycling of textiles in India, embracing all aspects of sustainability, such as social, economic, and environmental.

Wang Y et al. [14] described designing sustainable furniture using waste textile recycling which is Exotic garbage is becoming more substantial, and the amount of waste textiles is rapidly increasing, doing damage to the earth's biosphere. Concurrently, the production of furniture requires a substantial quantity of wood. The paint and glue employed in its production are also sustainable and dangerous to humans. As a result, one of the most pressing environmental issues that must be addressed right now is the disposal of waste textiles and the environmentally friendly recycling of furniture. In light of this predicament, this research

suggests a method that combines environmentally conscious design with composite component production. Using microwave expansion technology, this research created a waste textile-starch mixture by merging waste textiles and clothing, starch, and other components. The substance is biodegradable, non-polluting, and ecologically beneficial. It may be adjusted to satisfy various design requirements. The material is then used for sustainability furniture design in this study, yielding a series of design designs that incorporate sustainable qualities.

Pensupa N et al. [15] explained Methods For recycling textile waste that are sustainable which is Textile market development is influenced not just by population increase, but also by economic and style cycles. The textile industry's quick fashion cycle has resulted in excessive consumption and waste creation. Because the textile and apparel business is one of the nation's most polluting sectors, this might have a detrimental environmental effect. Textile production is a chemically demanding process that needs a large amount of water during its operations. The principal wastes created during the textile manufacturing process are wastewater and fiber wastes.

Sanchis-Sebastiá M et al. [16] described acid hydrolysis as a process of chemically recycling discarded textiles which is The fashion industry having a significant environmental effect, particularly owing to increasing waste textile creation as a consequence of rapid fashion business practices. Although fiber-to-fiber recycling techniques are being developed, they are downcycling systems in which the mechanical qualities of the textile fibers deteriorate with each cycle. As a result, new approaches are needed to fully close the retail loop by chemically recovering textile fibers that are unsuitable for conventional methods of recycling or resale owing to their low quality. We investigated the idea of employing acid hydrolysis to completely depolymerize the fibers of cotton in waste textiles, resulting in a glucose solution that might then be utilized to create chemicals or fuels. Although a one-step sulfuric acid technique was unable to generate high glucose production, a two-step approach combining concentrated and slightly diluted sulfuric acid was able to obtain a glucose yield of more than 90%.

Rashid M et al. [17] explained the problems of waste textiles and composite goods and their recycling possibilities which is A vast amount of textile waste is gotten rid of in landfills or burnt, resulting in resource loss and adverse environmental consequences. To solve these challenges, researchers are exploiting textile waste to build composite materials. Although creating composites temporarily fixes the issue, unless suitable manufacturing and recycling processes are used, these composites will ultimately end up in landfills after their usefulness. This research evaluated the feasibility, advantages, downsides, and limits of several composites made from textile waste, as well as their recycling techniques, in terms of having little or no environmental effect after their life cycle.

Baumi J et al. [18] described glycerin from biodiesel generation as used in textile waste recycling which is The biodiesel business now generates 260.000 tons of glycerin as a byproduct, which has absorption issues in the market, which consumes 30,000 tons per year. Around 3.4 million tons of polyamides are produced globally by the textile industry for use in clothing, with 15-51% of the material being wasted as waste. The goal of this experiment was to reuse textile rayon 66 waste with glycerin from biodiesel, adding value to these existing supply chains. Heating crude or purified glycerin to 190°C, followed by a combination of textile fiber waste along with water as a non-solvent, results in recycled PVA 66 powder. Thermal investigation revealed that its thermal response remained similar to polyamide 66, with degradation at 461° C and certain decays for impurities in crude glycerin such as acetone and free fatty acid residues.

Jin W et al. [19] described Recycling various textile scraps to produce methane which is the significant growth in textile waste has become a major worldwide problem, requiring alternative strategies to relieve severe environmental contamination and resource loss caused by incorrect disposal and management. Anaerobic digestion, also called AD, is a low-cost, environmentally friendly technique that converts organic wastes into renewable energy (methane) that might be beneficial for recovering textile waste. In this research, AD was used to investigate the feasibility of 11 widely accessible textile wastes in everyday life, as well as methane production efficiency, biodegradability (BD), degradation process, and microbial interactions in communities during AD. Except for blue denim, all textile wastes exhibited an apparent degradation from an integrated form to fragmented bits after 18 days.

Han F et al. [20] explained resource recycling based on waste textiles which is the standard recycling architecture of waste textiles was outlined based on current results to encourage the creation of a closed-loop system of the textile industry chain. The techniques of resource recycling, such as primary recycling, physical recycling, and chemical recycling, were investigated, and the benefits and drawbacks of each recovery process were explored. Simultaneously, the advancement of research in the process of recycling single-component fibers such as cellulose fiber, polyamide textile fiber, protein dietary fiber, and typically mixed textiles was discussed.

### 3. DISCUSSION

Raw materials are a varied range of substances taken or gathered from the Earth, each with distinct properties and qualities that impact their usage in many sectors. These materials are essential to the global trade in goods and serve as the basic ingredients for the manufacture of commodities. Raw material properties may be generically classified into chemical, mechanical, physical, and economic aspects. Physical qualities are the intrinsic attributes of a substance that determine its appearance, state of issue, and texture. Metals like iron and aluminum, for example, have great density, conductivity, and brilliance. Cotton and other natural fibers have a pleasant and fibrous feel. These physical characteristics have an impact on how ingredients are handled and used in industrial processes. Chemical properties are related to the chemical makeup and reaction of raw materials. Hydrocarbons in crude oil, for example, serve as the basis for the petrochemical sector, contributing to the creation of plastic, fuels, and numerous chemical goods. Understanding raw material chemical characteristics is critical for guaranteeing compatibility with planned applications and production processes. The structural and mechanical qualities of materials, which include strength, hardness, and flexibility, are referred to as mechanical characteristics. Different varieties of wood, for example, have different mechanical properties that make them suited for certain uses such as building, furniture, or paper manufacture. Metals are often tested to assess their strength at tensile stress, yield value, and other mechanical qualities, which are critical in sectors such as aerospace and engineering.

Raw material availability, cost, and consumer demand are all economic features. The economic feasibility of harvesting or manufacturing a certain raw material is determined by variables such as resource availability, accessibility, and geopolitical issues. Furthermore, variations in market demand and price affect the economic viability of specific raw resources. Raw materials may be further classed depending on their origin, with renewable resources and those that are not distinguished. Resources that are renewable, such as lumber and some agricultural products, may be replenished over time, but nonrenewable resources, such example fossil fuels and minerals, are limited and depleted via exploitation. Raw materials frequently fall as primary, secondary, or tertiary in the context of industrial manufacturing. Minerals, agricultural goods, and fossil fuels are examples of primary raw materials that are derived directly from

nature. Secondary raw materials are created from primary raw materials via processes such as production or refining, while final raw materials are created through the fabrication of components and parts for additional integration into finished products. The properties and qualities of raw materials are fundamental to the notion of life cycle analysis, which evaluates a material's environmental effect from extraction or growth to disposal.

### *3.1 Textile Fibers ( Mixed Shredded Fabrics):*

Textile fibers play an important part in the huge tapestry that is the worldwide fashion and textile business, with every fiber type providing distinct properties to the textiles that they make. Mixed shredded textiles stand out as a different and new technique that challenges standard conceptions of textile manufacturing and sustainability. Mixed shredded materials are an example of the circular economy idea, which embraces the concepts of reusing and recycling to reduce the environmental effect of textile waste. These fabrics are made from a combination of shredded or recycled fabrics, which may include abandoned garments, factory leftovers, or other previously used materials.

The gathering and sorting of textile waste is the first step, followed by shredder or cutting the materials into smaller bits. These pieces are subsequently reprocessed, often in combination with fresh or virgin fibers, to produce a regenerated yarn or cloth with a distinct composition. As a consequence, the textile incorporates a complex story of reused clothing, highlighting the beauty of environmentally sound and circle design.

One of the most important advantages of mixed shredded fabrics is their ability to remove textiles from landfills, therefore solving the terrible problem of textile waste that affects the fashion industry. These materials help to reduce the harmful emissions and resource depletion related to traditional textile manufacturing by recycling discarded garments and leftovers. Furthermore, the utilization of existing materials in mixed shredding fabrics coincides with the upcycling concept, giving new life to textiles that would otherwise add to the rising waste management difficulties.

Beyond their environmental advantages, mixed shredded textiles have a variety of aesthetic and practical attributes that engage designers and customers alike. The variable composition of these textiles, created by the combination of various fibers and textures, results in a visually lively and eclectic material. The intrinsic variability in color, arrangement, and texture throughout mixed shredded materials reflects the shredded textiles' different origins, creating a distinct and surprising style. Because each batch of blended shredded fabric creates a unique canvas for designers in clothing and craftspeople, this unpredictability lends an element of inventiveness to the creative process.

### *3.2 Natural Fibers:*

Natural fibers, which are sourced from organisms, animals, or minerals, are a broad and environmentally benign category in the textile business. Natural fibers derived from plants, such as cotton, linen, and hemp, provide breathability, and comfort, and are biodegradable. Cotton, in particular, is a popular natural material noted for its softness and adaptability. Linen, a flax plant fiber, has a natural sheen and outstanding moisture-wicking characteristics. Hemp, a fast-renewing material, is both durable and sustainable. Wool and silk are two animal-based natural fabrics that are highly valued for their different properties. Wool from sheep gives insulation and resilience, but silk from silkworms provides a rich and silky feel. Furthermore, minerals help produce natural fibers via instances such as asbestos, which was previously employed for its fire-resistant characteristics but has since been phased out owing to health concerns.



### 3.3 Paper Making and Recycling:

The centuries-old skill of papermaking, which has its roots in human history, is evidence of how raw materials can be transformed into a flexible medium that has influenced creative expression, communication, and education. The first step in the process is choosing appropriate raw materials, which are often made from plant fibers. A key source is wood pulp, which may be produced chemically or mechanically. Hardwoods like eucalyptus and softwoods like pine are popular options. Conversely, sustainable papermaking is aided by non-wood resources like cotton, hemp, or recycled paper. To turn the fibers into a form of pulp, the raw ingredients go through several processes. This is an important phase that affects the final properties of the paper. While chemical pulping uses chemicals to remove lignin, the organic glue that binds fibers, mechanical pulping includes physically grinding and purifying the wood. Different paper qualities are produced by these pulping techniques; mechanical pulp produces larger, opaque sheets, whilst chemical pulp produces smoother, more transparent sheets. After pulping, the process of making paper goes through several steps, each of which affects the texture, power, and appearance of the finished product. To improve certain properties, fillers, sizing people, and colors may be added to the pulp after it has been combined with water to create a slurry. The dewatering and shaping process is then started by spreading the slurry onto a paper machine, which is a moving mesh screening or conveyor. Water percolates through the mesh, resulting in an uninterrupted web of entwined threads. The mat, which is now known as the "wet web," is dried to the appropriate moisture content after being further pressed to eliminate water.

The phases that follow entail finishing and refining procedures that give the paper certain qualities. Calendaring improves the smoothness and gloss of the paper's surface by running it through smooth rollers. The coating may be used to offer unique finishes or enhance printability. Paper that is meant for certain applications, like printing or packaging, could go through extra processes like surface sizing or chemical coating. After that, the finished product is sliced or twisted into rolls so that it may be distributed and used in a wide range of applications. Papermaking has a long history dating back to ancient civilizations; it is thought that paper originated in China about 200 BCE. Chinese papermaking skills, which were first made from mulberry bark, hemp, and rags, progressively made their way to Europe and the Arab world, where they sparked a profusion of written information and cross-cultural contact. Paper mills were established across Europe throughout the Middle Ages, using water-powered mills to automate the labor-intensive process. The invention of the press for printing in the fifteenth century increased the demand for paper and led to technological developments in the papermaking industry. The Industrial Revolution brought continuous paper machines and accelerated the expansion of the paper industry by the 19th century, mechanizing the process of making paper.

Modern papermaking uses technological advancements to improve productivity, sustainability, and product variety. To address environmental concerns and minimize the environmental effects of waste disposal, recycled paper is an essential component of current papermaking processes. Furthermore, the use of enzymes and other natural treatments, together with other developments in pulping technology, support resource-efficient and sustainable practices. In addition, the industry's dedication to environmental stewardship is supported by the use of eco-friendly additives, waste reduction techniques, and closed-loop water systems. Papermaking is a cultural and artistic legacy as well as an industrial practice. Craftspeople and modern artists investigate the many ways that paper may be used as a medium for communication, experimentation, and expression. The tactile properties of each sheet and the attention to detail in its creation ensure that handmade paper, produced by hand using age-old techniques, will



always be appealing in creative undertakings. The movement toward a paperless society and the digitalization of information are two issues that the worldwide paper business must deal with. But paper's timeless appeal, along with environmentally friendly methods and a commitment to excellence, guarantees its relevance in a society that appreciates both the advancement of technology and the maintenance of handicrafts.

#### 4. CONCLUSION

An examination of post-consumer textile waste recycling in India, emphasizing the fiber component in particular, highlights the progress and obstacles encountered in the quest for sustainable practices in the textile sector. Examining current recycling techniques shows a complex environment in which chemical and mechanical processes are essential to recovering fibers from waste textiles. But for these techniques to be successful, problems like contamination, deterioration, and a demand for cutting-edge technology must be resolved. The legal frameworks and regulations that oversee the management of textile waste in India are significant factors that influence how recycling programs develop. Collaborations between the government and businesses are essential to creating an atmosphere that is favorable to ethical recycling methods.

The recycling of leftover textiles from consumers has significant socioeconomic ramifications, including the ability to create jobs, engage the community, and develop a circular economy. Although significant progress has been made, there is a strong need for comprehensive approaches that include enhanced collecting infrastructure, technical advancements, and awareness campaigns to maximize the recycling process.

#### REFERENCES:

- [1] S. S. Rahman, S. Siddiqua, and C. Cherian, "Sustainable applications of textile waste fiber in the construction and geotechnical industries: A retrospect," *Cleaner Engineering and Technology*. 2022. doi: 10.1016/j.clet.2022.100420.
- [2] M. I. Khan, L. Wang, and R. Padhye, "Textile waste management in Australia: A review," *Resources, Conservation and Recycling Advances*. 2023. doi: 10.1016/j.rcradv.2023.200154.
- [3] M. Juciene, V. Dobilaitė, D. Albrektas, and R. Bliūdžius, "Investigation and evaluation of the performance of interior finishing panels made from denim textile waste," *Text. Res. J.*, 2022, doi: 10.1177/00405175221109636.
- [4] N. P. Tran, C. Gunasekara, D. W. Law, S. Houshyar, S. Setunge, and A. Cwirzen, "Comprehensive review on sustainable fiber reinforced concrete incorporating recycled textile waste," *J. Sustain. Cem. Mater.*, 2022, doi: 10.1080/21650373.2021.1875273.
- [5] J. E. DeVoy, E. Congiusta, D. J. Lundberg, S. Findeisen, and S. Bhattacharya, "Post-Consumer textile waste and disposal: Differences by socioeconomic, demographic, and retail factors," *Waste Manag.*, 2021, doi: 10.1016/j.wasman.2021.10.009.
- [6] E. J. Cho, Y. G. Lee, Y. Song, H. Y. Kim, D. T. Nguyen, and H. J. Bae, "Converting textile waste into value-added chemicals: An integrated bio-refinery process," *Environ. Sci. Ecotechnology*, 2023, doi: 10.1016/j.ese.2023.100238.
- [7] D. S. Stefan, M. Bosomoiu, and M. Stefan, "Methods for Natural and Synthetic Polymers Recovery from Textile Waste," *Polymers*. 2022. doi: 10.3390/polym14193939.

- [8] D. G. K. Dissanayake and D. Weerasinghe, "Managing post-industrial textile waste: current status and prospects for Sri Lanka," *J. Text. Inst.*, 2021, doi: 10.1080/00405000.2020.1845461.
- [9] S. S. Chopra, L. Dong, G. Kaur, C. Len, and C. S. Ki Lin, "Sustainable process design for circular fashion: Advances in sustainable chemistry for textile waste valorisation," *Current Opinion in Green and Sustainable Chemistry*. 2023. doi: 10.1016/j.cogsc.2022.100747.
- [10] A. Grillo-Méndez, M. Marzo-Navarro, and M. Pedraja-Iglesias, "Citizen participation in circular economy systems for textile waste: an initial approach," *CIRIEC-Espana Rev. Econ. Publica, Soc. y Coop.*, 2022, doi: 10.7203/CIRIEC-E.106.18274.
- [11] J. Zhou, X. Zou, and W. K. Wong, "Computer vision-based color sorting for waste textile recycling," *Int. J. Cloth. Sci. Technol.*, vol. 34, no. 1, pp. 29–40, Mar. 2022, doi: 10.1108/IJCST-12-2019-0190.
- [12] I. Wojnowska-Baryła, K. Bernat, and M. Zaborowska, "Strategies of Recovery and Organic Recycling Used in Textile Waste Management," *Int. J. Environ. Res. Public Health*, vol. 19, no. 10, p. 5859, May 2022, doi: 10.3390/ijerph19105859.
- [13] S. G. Ponnambalam, B. Sankaranarayanan, K. Karuppiah, S. Thinakaran, P. Chandravelu, and H. L. Lam, "Analysing the Barriers Involved in Recycling the Textile Waste in India Using Fuzzy DEMATEL," *Sustainability*, vol. 15, no. 11, p. 8864, May 2023, doi: 10.3390/su15118864.
- [14] Y. Wang, C. Liu, X. Zhang, and S. Zeng, "Research on Sustainable Furniture Design Based on Waste Textiles Recycling," *Sustainability*, vol. 15, no. 4, p. 3601, Feb. 2023, doi: 10.3390/su15043601.
- [15] N. Pensupa *et al.*, "Recent Trends in Sustainable Textile Waste Recycling Methods: Current Situation and Future Prospects," *Top. Curr. Chem.*, vol. 375, no. 5, p. 76, Oct. 2017, doi: 10.1007/s41061-017-0165-0.
- [16] M. Sanchis-Sebastiá, E. Ruuth, L. Stigsson, M. Galbe, and O. Wallberg, "Novel sustainable alternatives for the fashion industry: A method of chemically recycling waste textiles via acid hydrolysis," *Waste Manag.*, vol. 121, pp. 248–254, Feb. 2021, doi: 10.1016/j.wasman.2020.12.024.
- [17] M. E. Rashid, M. R. Khan, R. U. Haque, and M. Hasanuzzaman, "Challenges of textile waste composite products and its prospects of recycling," *J. Mater. Cycles Waste Manag.*, vol. 25, no. 3, pp. 1267–1287, May 2023, doi: 10.1007/s10163-023-01614-x.
- [18] J. Baumi, C. M. Bertosse, G. M. Carvalho, and C. L. B. Guedes, "Utilization of glycerin from biodiesel production in textile waste recycling," *Rev. Virtual Quim.*, 2017, doi: 10.21577/1984-6835.20170097.
- [19] W. Jin *et al.*, "Recycling different textile wastes for methane production: Morphological and microstructural changes and microbial community dynamics," *Waste Manag.*, vol. 151, pp. 154–162, Sep. 2022, doi: 10.1016/j.wasman.2022.07.018.
- [20] F. Han, C. Lang, and Y. Qiu, "Research progress in resource recycling based on waste textiles," *Fangzhi Xuebao/Journal of Textile Research*. 2022. doi: 10.13475/j.fzxb.20210901510.

## CHAPTER 3

### SUSTAINABILITY UNVEILED: TRANSFORMING FASHION AND TEXTILE PRODUCTION FOR A GREENER FUTURE

---

Prof. Prachi Garge, Assistant Professor  
ISDI, ATLAS SkillTech University, Mumbai, Maharashtra, India  
Email Id- prachi.garge@atlasuniversity.edu.in

#### ABSTRACT:

The fashion and textile industry, traditionally criticized for neglecting sustainability, is undergoing a profound shift. As global concerns for sustainability rise and consumers become more environmentally conscious, stakeholders are adopting strategic solutions to integrate eco-friendly practices. This paper aims to review the recent trends in sustainable fashion and textile production, spanning the entire production process from fiber to garment. By examining the roles of governing bodies, manufacturers, retailers, and consumers, we explore the transformative journey toward a greener future. This comprehensive review explores the historical oversight of sustainability in the fashion and textile industry, shedding light on the sector's transformation driven by global sustainability interests and heightened consumer awareness. Stakeholders are strategically incorporating eco-friendly practices across various stages, from fiber to garment production and supply chain management. Sustainable fashion emerges as a pivotal force with the potential to positively impact the environment, society, and the economy. The paper delves into recent trends, encompassing fiber, yarn, fabric, and garment manufacturing, while emphasizing the collaborative efforts of governing bodies, manufacturers, retailers, and consumers in shaping a more sustainable industry.

#### KEYWORDS:

Environment, Eco-Friendly, Sustainable Fashion, Society, Textile Industry.

#### 1. INTRODUCTION

Many sustainability commentators view 'fashion' as diametrically opposed to ecological principles due to its close association with evolving trends and premature disposal of products. The fashion industry is commonly intertwined with consumer capitalism and the constant pursuit of growth driven by increased material throughput. This growth imperative fuels faster production and consumption of fabric and garments [1], [2]. Sophisticated psychological marketing techniques and trend forecasting, prevalent in the fashion industry, further propel this growth. The consequences on resources are substantial, particularly evident in the colossal water demand needed to cultivate and process cotton for a single T-shirt, which amounts to approximately 600 liters. These challenges persist amid a period of 'water bankruptcy,' where escalating pollution hampers clean water access while demand steadily rises. Nevertheless, the water resources embedded in a T-shirt are underutilized, as current statistics reveal that people in industrialized countries are making purchases at unprecedented levels, irrespective of actual necessity [3], [4]. It is due to these factors consumerism, relentless growth, staggering rates of resource consumption, and more that a comprehensive and critical educational approach to sustainability issues in the fashion industry must not align with the existing status quo. Instead, it should adopt a new paradigm or analytical framework for a deeper understanding.

Failing to do so would confine responses to critiques of the current fashion industry model within the boundaries of established ideas and behaviors, resulting in a replication of familiar outcomes. This aligns with the findings of complex systems analysis, which acknowledges that seeking improvements in the same conventional areas embeds the same thinking patterns into

our behaviors. Such an approach drastically limits the potential impact of our actions, emphasizing the necessity of initiating significant, long-term changes. Fashion trends exhibit a transient nature, while a society's values evolve in accordance with its beliefs and culture. Fashion is not merely an ambitious portrayal of reinterpreted values to fulfill specific functions or agendas; rather, it is an evocative and refreshing concept deserving appreciation within society [5], [6]. The way someone looks may be used as a nonverbal communication strategy to provide information about their ideals, lifestyle, and social standing. The field of fashion communication has undergone a significant metamorphosis, moving from just portraying a basic picture of look and feelings to evoking emotional experiences via interactive components included into apparel.

A fashion trend's success depends on how society perceives and evaluates it; the measure of social acceptability is used to determine the trend's influence. Different motivating factors that emphasize people's values and behavioural characteristics influence this acceptance. Aspirationalism is essential in today's consumer culture because it creates a link between the wealthy as well as the economically disadvantaged when it comes to adopting trends. A customer in China who decides to spend three months' worth of pay on an LVMH handbag serves as an example. Additionally, ease access to personal loans provided by both private as well as nationalized banks further facilitates people's financial liquidity [7], [8]. Some businesses even go so far as to allow credit purchases for stylish products, with simple alternatives for monthly installments. The young of today (those between the ages of 15 to 20) exhibit boldness and a desire to attempt, explore, and experiment when it comes to modern consumer behaviour, which is vital in determining how long fashion trends last. Gone are the days when experiences are limited by geography in a world where web technologies have enabled global connectivity. There are less and fewer differences in the purchasing habits of young people since they all have the need to interact with peers who share their interests, connect with social networks, and feel appreciated [9], [10].

The traditional consumerist strategy, which takes a top-down approach, is becoming less and less relevant in today's environment. A more nuanced view is offered by consumption theories, which contend that fashion is more than just a means of expressing one's social standing. Better explanations for this tendency may be found in populist models or trickle-across theories, which emphasize the predominance of ideas and lifestyles affecting product purchases rather than obligingly adhering to wealthy or cultural idols. Knowledge and experience are highly valued in today's society, which makes it possible for everyone, regardless of income level, to cherish special moments [11], [12]. By creating a level playing field where information serves as a shared platform, it enables both the financially secure and the less fortunate to compete on an equal footing. Essentially, the line separates individuals who are ignorant from those who are knowledgeable.

### *1.1.Face of Everyday fashion:*

Beyond the boundaries of European or Western trends, everyday fashion represents a separate dimension apart from elite or high fashion. It takes the form of an interactive process in which people who want to be recognized intentionally use distinctive attire to represent who they are physically. This is in contrast to the traditional capitalist fashion model, where the elite dictate trends disseminated from top to bottom in society. These people wear fashionable clothes in an effort to draw a line between their own look and the prevailing style conventions, in keeping with the opinions and behaviours of their peers or social groupings. They basically want to use clothing to build relationships, get respect, and communicate their ideals. They see clothing as a social grace and a powerful nonverbal communication tool.

There is a clear break from the conventional fashion cycle in the world of modern daily wear, which usually consists of stages of classic fashion and ephemeral fads. Rather, we see a change in the compositions that characterize these fashion ideas. Each month, the ways that fashionable trimmings like buttons or pins, along with watches, jewellery, hair bands, and sashes coordinate with traditional dress shirts and pants to create a variety of styles, change quickly. This phenomenon is especially noticeable in dress trends for clubs and parties. Thus, after the basic components of the traditional look—the dress shirt as well as the trouser/skirt—the details and accessories that complete the ensemble keep changing quickly, much like the dynamics of a trend [13], [14]. The substantial ideological values that clothes and fashion communicate are highlighted by the sociological ramifications of fashion trends. Fashion trends serve as outward manifestations of a certain dress code and cultural milieu that help to define a consumer's identity in a given setting. By their lifestyle choices as well as attitudes, these trends seek to express the individuality of the consumer. The fluidity of lifestyle preferences changes throughout time, pointing to a change in the style and technique of clothing appropriate for different events and setting a norm. Emotional expectations and existing societal ideals serve as the basis for these standards. Fashion trends include aspects like collars, necklines, hemlines, waistlines, shoulder lines, sleeve lines, and hip lines, and they need a rigorous design focus and attention to garment details. Examining Google's fashion trends report which can be found at [www.thinkwithgoogle.com/spring-2015-fashion-trends-google](http://www.thinkwithgoogle.com/spring-2015-fashion-trends-google) offers insightful information on the current status of trends in the apparel industry [15]. There is a steady increase in demand for styles such as midi skirts, jogging pants, waist trainers, palazzo pants, and tulle skirts. Concurrently, there has been a seasonal surge in popularity for styles including white jumpsuits, high-waisted bikinis, rompers, shift dresses, as well as lace dresses. These fashion trends not only defy prevailing fabric assumptions in society, but they also infuse modern human living with a fresh feeling of elegance or natural well-being. For example, tulle is no longer only for fancy parties or high couture, and knitted stretch denim is no longer limited to loungewear. Each fashion trend aims to improve the look and feel for the customer, whether it's through kinematic comfort (jogger pants) for those who find heavy trousers uncomfortable, a lightweight and airy silhouette (tulle skirts), or ease of donning and doffing (jumpsuits). A significant tendency can be seen in the patterns of user search behaviour: numerous fashion trends have broken through conventional class barriers. Rather, they fit into "personal identity" patterns that are shaped by psychographic factors including age, ethnicity, gender, sexual orientation, interests outside of work, and memberships in different subcultures. This is a prime example of how modern fashion cycles deviate from traditional hierarchical frameworks.

## 2. LITERATURE REVIEW

C. Colombi and E. D'Itria, [16] Studied the fashion industry is undergoing a significant transformation, driven by stakeholder pressures for sustainability. Companies are adopting strategic solutions that prioritize sustainability, incorporating effective organizational and production models. The circular economy (CE) has emerged as a key business model to address sustainability issues in the fashion industry. This study employs a technological-driven perspective to analyze digital practices in European fashion companies, aiming to support their sustainability agendas and implement circular business models. The focus is on digital transformation as an asset for fostering sustainability. The study identifies business model innovations (BMIs) categorized into eight archetypes, guiding the modeling of mechanisms that contribute to circularity. Through an iterative data modeling process, the article introduces a taxonomy highlighting current approaches and incremental changes towards achieving a circular economy through digital solutions. R. Nayak, [17] Studied Fiber is converted to yarn, yarn to fabric, or fabric to clothing via a series of steps in the fashion and textile industries. There is proof from the past that sustainability has not gotten enough consideration in these



procedures. However, the sector is increasingly implementing sustainable methods due to growing customer awareness and worldwide interest. In order to satisfy sustainability standards, stakeholders in the fashion production process from fibre production to garment manufacture and supply chain management are using a variety of strategies. Sustainable fashion products may support social, economic, and environmental well-being and help create a more environmentally friendly future. Data and conclusions from pertinent reviews and research publications from a variety of databases are combined in this study. It examines current developments in eco-friendly fashion and textile manufacturing, focusing on fibre, yarn, fabric, and garment production processes. Furthermore, included are the functions of producers, merchants, consumers, and regulatory agencies in advancing sustainable practices

K. Fletcher and D. Williams, [18] Studied This essay provides critical insights into the creation and implementation of a sustainability-focused master's program in the fashion industry at London College of Fashion in the United Kingdom. The course was introduced in 2008 and is based on an ecological, collaborative, and participatory perspective. It promotes a method of teaching fashion that centres on action, process, as well as creative participation in the convoluted path toward a sustainable economy, society, and environment. This is in contrast to traditional educational methods that place more emphasis on end products and preparing students for careers in the business world. The course's broad disciplinary approach and theoretical underpinning, which is based on design for sustainability, are outlined in this document. Through an analysis of student work, it explores the potential and difficulties inherent in this methodology. This entails resolving discrepancies in institutional epistemologies, clarifying the responsibilities that designers play in sustainability frameworks, and developing techniques for illustrating sustainability as a process and an activity.

### 3. DISCUSSION

The way that young people see fashion trends serves a value-expressive purpose by giving them a way to express their core values, attitudes, and beliefs via the things they wear and carry. Fashionable things serve as platforms for expressing personal style and ideals. Still, not everyone is as enthusiastic about adopting fashion trends as others are, with a particular tendency shown in young people. This age group, which includes adolescents (those between the ages of 12 and 17), teenagers, and young adults, devotes more effort to maintaining their public persona than to pursuing scholastic goals. The main cause of this age group's increased interest in fashion is peer pressure and hero worship, which are essential components of the process of forming one's identity throughout adolescence. College campuses can act as reflections of the fashion trends of the day. Consequently, fashionable clothing is actively sought after by college students who are actively involved in the identity formation stage of Erikson's psychological development. Historically, the manufacture of textiles and fashion has included complex procedures that often ignored ecological standards. Nonetheless, the fashion and textile sectors are being forced to adopt eco-friendly solutions due to the increased consumer awareness and the worldwide focus on sustainability. In order to achieve sustainability criteria, stakeholders are applying a variety of solutions across the manufacturing chain, from fibre to garment and even extending into supply chain management. Using sustainable production methods for fashion goods may have a good effect on the economy, society, and environment, helping to create a eco-friendlier and sustainable future. This study covers many phases of the manufacturing process, such as fibre, yarn, fabric, and garment creation, and gives an overview of current developments in sustainable fashion and textile production. It also looks at the responsibilities that consumers, retailers, producers, and regulatory organizations play in promoting sustainable textiles and fashion. Sustainability is now the main focus of a major transition in the global fashion business. India, one of the biggest



textile and clothing manufacturers in the world, is actively contributing to this paradigm change. This article explores the history of sustainable fashion in India, with a particular emphasis on projected changes in the sector by 2024. Examining the present situation in the developing sustainable fashion scene on the subcontinent is crucial to understanding the future of sustainable fashion in India.

### *3.1.Increasing Awareness:*

Consumer awareness of sustainability in the fashion sector is rising, which is one of the major changes India is now going through. A whopping 85% of Indian customers actively take sustainability into account while making purchases, according to a 2020 Nielsen poll. This awareness represents a long-term movement that is expected to gain up steam in the next years, rather than just a fleeting fad.

### *3.2.Rise of Sustainable Brands:*

India's move towards sustainable fashion is being propelled by several forces, such as increased consumer consciousness, dynamic market changes, and an unwavering dedication to cultivating an eco-friendly and socially responsible fashion scene. Indian consumers are becoming well-informed change agents who carefully consider the social and environmental effects of the products they buy. Consumers actively search for businesses that place a high priority on ethical labour methods, transparent supply chains, or sustainable materials. This revolutionary change is more than just a fad; it's a fundamental reorganization of the Indian fashion sector. It heralds a shift toward a future in which accountability and sustainability are prioritized. For the international fashion community, India is a powerful example of how a country with a strong textile legacy can turn its focus to a more sustainable and responsible future [19], [20]. The fashion sector in India is about to see a significant boost in the adoption of sustainability measures thanks to technology. It is expected that innovations like 3D knitting machines, which drastically cut down on fabric waste, and the use of blockchain-based systems for transparent supply chains would proliferate. These technology developments not only support sustainability initiatives but also increase productivity and reduce expenses, benefiting the environment and the industry in tandem.

### *3.3.Circular Fashion:*

In India, the notion of circular fashion which prioritizes upcycling, recycling, as well as resale is expected to catch on. Like global heavyweights like Rent the Runway, a number of businesses that specialize on apparel rental and resale have already had significant success. Anticipations for 2024 include a wider array of prominent firms embracing the circular fashion concept, thereby reducing the ecological consequences linked to rapid fashion.

### *3.4.Sustainable Fashion Weeks:*

India, a country well-known for its colourful fashion weeks, is moving toward sustainability. Events such as Lakmé Fashion Week in Thailand are increasingly embracing sustainable designs and eco-friendly methods. It is anticipated that more designers and businesses will attend similar events in the next year, demonstrating their unwavering dedication to sustainable fashion.

### *3.5.Ethical Labor Practices:*

In the Indian fashion sector, a greater focus on moral labour standards is anticipated by 2024. Customers are become more aware of the effects rapid fashion has on both the environment and people in general. Companies will come under more scrutiny to make sure that their

workforce is paid fairly and has safe working conditions. The expansion of ethical certifications like Fair Trade and SA8000, which provide customers peace of mind that their purchases support moral workplace norms, is one anticipated trend.

### 3.6. Sustainability Metrics and Reporting:

An increasingly important tenet of sustainable fashion is transparency. The Indian fashion industry will place more focus on sustainability reporting and measurements in the coming years. In order to provide customers, the information they need to make educated decisions, brands will have to furnish validated information on their effects on the environment and society. Furthermore, by continuously improving their processes, companies will be encouraged by sustainability reporting to reduce their carbon footprint as well as overall environmental effect.

India's prospects for sustainable fashion in 2024 are bright and promising. The fashion industry is experiencing a significant transformation, marked by the rise of circular fashion, innovative developments in fashion technology, and the widespread use of sustainable textiles. Nonetheless, it is still imperative to take use of positives like innovation, export potential, and job development while tackling problems like consumer education and affordability. India's fashion sector is advancing sustainability and social responsibility by adopting ethical labour standards, bolstering sustainability reporting, and encouraging teamwork.

On the other hand, businesses adopt and use these technologies to increase the visibility and traceability of their inventories, use real-time data and analytics for better planning and allocation, and keep an eye on their omnichannel customer interactions. Businesses in the fashion retail industry have completely transformed the process of developing, sourcing, shipping, stocking, distributing, and servicing items because of these technological improvements. The mapping of the Fashtech (Fashion Technology) Ecosystem is shown in Figure 1.

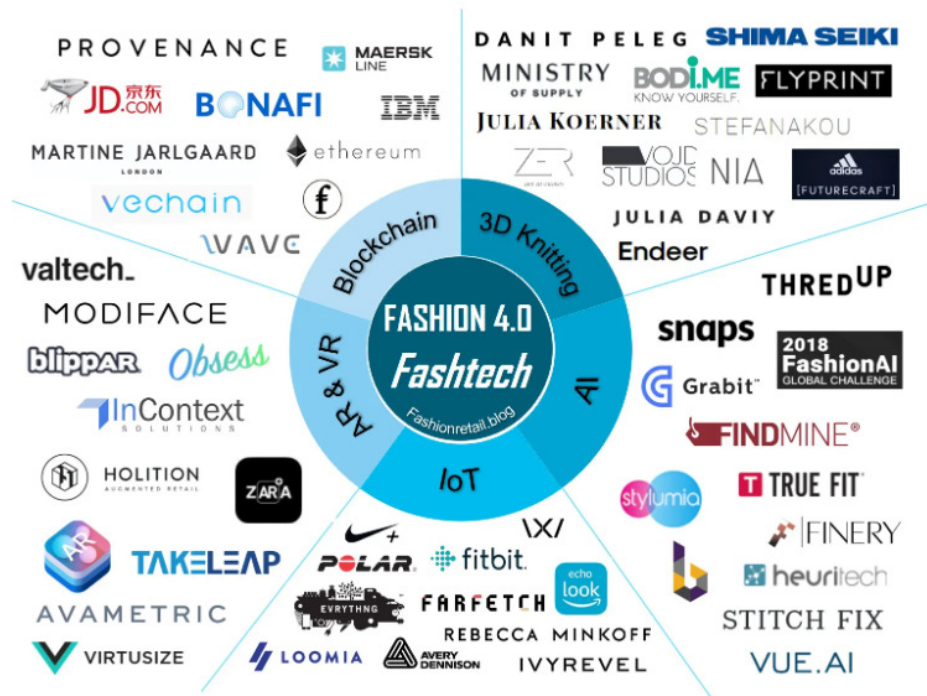


Figure 1: Illustrate the Mapping of the Fashtech Ecosystem.

The advent of digital technology has brought about a profound transformation across various industries, triggering a shift where some entities emerge as winners while others face the risk of extinction.

In the context of fashion retail, digital pure players like Farfetch, Birchbox, Reformation, Everlane, and Rent the Runway have disrupted traditional models, embodying the essence of the Experience Economy and individual segmentation. Born-digital companies, often referred to as "millennials," adeptly respond to evolving shopping behaviors through innovative business models, leveraging technology as an enabler. CEOs, recognizing the imperative of digital transformation, must prioritize this shift, extending beyond mere technology acquisition.

True transformation necessitates the establishment of a new vision aligned with strategic goals, the delineation of future capabilities, the restructuring of organizations to incorporate analytics capabilities and the uberization of the workforce, and the creation of platform ecosystems for logistics and manufacturing. This comprehensive approach forms the foundation for a new operating model.

Fashion retail is currently undergoing a remarkable disruption, showcasing its ability to innovate supply chain management and mitigate seasonality risks. As a trailblazer in adapting to the uncertainties of demand, overstocks, and manufacturing lead times, the industry is once again setting an example for others navigating the digital era. Online dynamics are reshaping traditional retail expansion and market approaches, prompting many fashion retailers to recalibrate their strategies, reducing reliance on brick-and-mortar establishments. While industry giants like Zara and Amazon play pivotal roles in this revolution, it's the adaptability of long-tailers and niche pure players that truly fuels the transformation. In this dynamic landscape, survival hinges on adaptability rather than sheer strength.

#### **4. CONCLUSION**

The fashion and textile industry has historically shown a lack of emphasis on sustainability throughout its production processes. However, with the growing global interest in sustainability and increased consumer awareness, there is a notable shift towards adopting eco-friendly practices.

Stakeholders are implementing various strategies across different stages of fashion production to meet sustainability requirements. Sustainable fashion has the potential to contribute significantly to environmental, social, and economic well-being, paving the way for a greener future.

This review highlights recent trends in sustainable fashion and textile production, shedding light on advancements in fiber, yarn, fabric, and garment manufacturing. Moreover, the collaborative efforts of governing bodies, manufacturers, retailers, and consumers play crucial roles in driving the adoption of sustainable practices within the industry.

the fashion and textile industry is experiencing a notable transition toward sustainability, addressing historical oversights in its production processes. Stakeholders are implementing diverse strategies to meet sustainability standards, potentially contributing to environmental, social, and economic well-being.

Sustainable fashion emerges as a powerful catalyst for change, offering a glimpse into a future where collaborative efforts among governing bodies, manufacturers, retailers, and consumers play integral roles in shaping a more environmentally conscious and socially responsible industry.

**REFERENCES:**

- [1] M. Salolainen, A.-M. Leppisaari, and K. Niinimäki, "Transforming Fashion Expression through Textile Thinking," *Arts*, 2018, doi: 10.3390/arts8010003.
- [2] C. Baeza and E. Quinn, "Transforming the Fashion Industry by: The Evolution of Design & Merchandising Education," *J. High. Educ. Theory Pract.*, 2021, doi: 10.33423/jhetp.v21i15.4902.
- [3] E. S. Silva, H. Hassani, and D. Ø. Madsen, "Big Data in fashion: transforming the retail sector," *J. Bus. Strategy*, vol. 41, no. 4, pp. 21–27, Jul. 2019, doi: 10.1108/JBS-04-2019-0062.
- [4] K. Hope, "How social media is transforming the fashion industry," *BBC News*, 2016.
- [5] A. Peirson-Smith and J. Craik, "Transforming Sustainable Fashion in a Decolonial Context: The Case of Redress in Hong Kong," *Fash. Theory - J. Dress Body Cult.*, 2020, doi: 10.1080/1362704X.2020.1800985.
- [6] M. Sanchis-Sebastiá, V. Novy, L. Stigsson, M. Galbe, and O. Wallberg, "Towards circular fashion - transforming pulp mills into hubs for textile recycling," *RSC Adv.*, 2021, doi: 10.1039/d1ra00168j.
- [7] T. M. Landgren and A. Pasricha, "Transforming the fashion and apparel curriculum to incorporate sustainability," *Int. J. Fash. Des. Technol. Educ.*, 2011, doi: 10.1080/17543266.2011.613856.
- [8] K. C. Langi, S. Sabana, H. A. Ahmad, and D. Widiawati, "Killer's Fashion: Transforming the Potential of Nias Saber's Amulets into Indonesian Fashion Accessories," *Humaniora*, 2020, doi: 10.21512/humaniora.v11i2.6416.
- [9] N. Särämäkari, "Digital 3D Fashion Designers: Cases of Atacac and The Fabricant," *Fash. Theory - J. Dress Body Cult.*, 2023, doi: 10.1080/1362704X.2021.1981657.
- [10] R. Trisno, F. Lianto, and M. Choandi, "An interior-architecture concept for fashion-accessory-interior: Transforming space from body to transformable fashion interior," *Int. J. Eng. Res. Technol.*, 2020, doi: 10.37624/ijert/13.11.2020.3262-3265.
- [11] H. Y. Kim, Y. Lee, E. cho, and Y. J. Jung, "Digital atmosphere of fashion retail stores," *Fash. Text.*, 2020, doi: 10.1186/s40691-020-00217-6.
- [12] B. Moeran, "More than just a fashion magazine," *Curr. Sociol.*, 2006, doi: 10.1177/0011392106066813.
- [13] S. I. Shin, "Transforming into Fashion Firms or Multi-Country Suppliers? Accounting for Varied Firm Trajectories in the Deindustrialising Korean Apparel Industry," *J. Dev. Stud.*, 2019, doi: 10.1080/00220388.2017.1404032.
- [14] L. Cassidy and K. Fitch, "Beyond the catwalk: Fashion public relations and social media in Australia," *Asia Pacific Public Relations J.*, 2013.
- [15] M. Rolfsen and G. Knutstad, "Transforming management fashions into praxis: Action research project in AutoParts," *Action Res.*, 2007, doi: 10.1177/1476750307083724.
- [16] C. Colombi and E. D'Itria, "Fashion Digital Transformation: Innovating Business Models toward Circular Economy and Sustainability," *Sustainability*, 2023, doi: 10.3390/su15064942.

- [17] R. Nayak, “A Review of Recent Trends in Sustainable Fashion and Textile Production,” *Curr. Trends Fash. Technol. Text. Eng.*, 2019, doi: 10.19080/ctfte.2019.04.555648.
- [18] K. Fletcher and D. Williams, “Fashion Education in Sustainability in Practice,” *Res. J. Text. Appar.*, 2013, doi: 10.1108/RJTA-17-02-2013-B011.
- [19] C. Laurell and C. Sandström, “Disruption and social media - Entrant firms as institutional entrepreneurs,” *Int. J. Innov. Manag.*, 2014, doi: 10.1142/S1363919614400064.
- [20] R. Capurro, R. Fiorentino, R. M. Galeotti, and S. Garzella, “The Impact of Digitalization and Sustainability on Governance Structures and Corporate Communication: A Cross-Industry and Cross-Country Approach,” *Sustain.*, 2023, doi: 10.3390/su15032064.

## CHAPTER 4

### REVITALIZING ROGAN ART: TRADITION, CHALLENGES, AND FUTURE STRATEGIES

---

Prof. Nishith Mehta, Assistant Professor  
ISDI, ATLAS SkillTech University, Mumbai, Maharashtra, India  
Email Id- nishith.mehta@atlasuniversity.edu.in

#### ABSTRACT:

Rogan painting, a distinctive cloth printing technique originating from Kutch, Gujarat, India, boasts a rich historical legacy. Employing a meticulous process involving boiled Castor oil and vegetable dyes, artisans create intricate designs on fabric using a metal stylus. Despite its historical significance, the lack of concrete records confirming its Indian origin challenges the preservation of Rogan art. This study delves into the roots, challenges, and potential strategies for revitalizing this unique artistic tradition. The historical roots of Rogan art can be traced to the Hindu and Muslim Khatri communities in Gujarat. Initially a seasonal pursuit during weddings, the advent of machine-made textiles in the late 20th century posed economic challenges, leading to a decline in practitioners. Presently, only two families actively preserve this art form, emphasizing the urgent need for sustained efforts to safeguard its heritage. The Abdulgafur Khatri family, with eight generations in Rogan art, epitomizes preservation efforts. Initiatives like free education for girls and live demonstrations during the Rann Utsav showcase their commitment. However, challenges persist in elevating Rogan art's status beyond fairs and melas. Recognition and respect for artisans are crucial components in the preservation puzzle. Sales dynamics and challenges faced by Rogan artists reveal a 50-50 distribution between international and domestic markets, with online sales constituting 40%. Challenges in online sales arise due to the absence of live demonstrations, impacting the conveyance of Rogan art's uniqueness. Conversations with Rogan artists, including Rizwan Khatri, unveil the historical origin, color preparation, and intricate process spanning 10-12 days to creating a Rogan painting. Innovative strategies, such as the envisioned Rogan art wedding box, present opportunities for broadening Rogan art's appeal and sustaining market relevance. This study provides insights into Rogan art's historical roots, current challenges, and potential strategies for its revitalization. By addressing economic shifts, leveraging online platforms, and integrating Rogan art into contemporary contexts, the preservation and appreciation of this unique art form can transcend traditional confines and find a place in the global artistic landscape.

#### KEYWORDS:

Color, Cloth Printing, Economic, Rogan Art, Rogan Painting.

### 6. INTRODUCTION

Rogan painting, an intricate cloth printing technique, originates from Kutch, Gujarat, India. In this traditional craft, a mixture of boiled Castor oil and vegetable dyes is meticulously applied to fabric using a metal stylus for painting. The historical roots of this oil-based paint application trace back to the Hindu and Muslim Khatri community in Gujarat, specifically among the lower castes.

Despite the suggestive Indian name "Rogan" and some traditional designs, there is a lack of reliable historical records confirming its Indian origin. The term 'Rogan' is derived from Persian, signifying varnish or oil. Rogan art, an ancient cloth printing technique originating from Kutch, Gujarat, India, stands as a testament to cultural richness and artistic ingenuity. The



tradition involves applying a mixture of boiled Castor oil and vegetable dyes to fabric using a metal stylus, resulting in intricate designs. Despite its historical significance and unique method, Rogan art faces challenges that threaten its survival.

Originally practiced in various locations across Gujarat, Rogan painting gained popularity during wedding seasons, as women from lower castes sought decorative clothing and bed coverings. Consequently, it became a seasonal art form, flourishing when weddings were prevalent, while artisans engaged in alternative occupations like agriculture during other times of the year. However, the advent of cost-effective machine-made textiles in the late 20th century led to a relative increase in the price of Rogan-painted products, prompting many artists to shift to different professions. Presently, only two families continue to preserve and practice this unique art form in the country [1], [2].

### *6.1. Covering the News:*

The last eight generations of Rogan art in Kutch have left a legacy. Gafur Bhai, a member of the Khatri family, reveals that they provided free education to many girls, enabling them to create basic designs. Approximately 25 girls from the family contribute to their work. To promote Rogan, the family conducts live demonstrations for every visitor at their doorstep, patiently answering questions and explaining techniques during the 30-minute sessions. On average, the family receives 150 visitors daily. During the Rann Utsav, the Kutch desert festival from November to February, this number increases to 250 or even 300. Despite their efforts, there is a challenge in elevating Rogan to the status it deserves. Tyagi, a designer working to preserve Rogan and other endangered crafts, emphasizes the need for these arts to be recognized beyond fairs and melas. Tyagi advocates for acknowledging the crafts' importance and ensuring the artisans receive the respect and livelihood they deserve.

The Khatri family typically sells their pieces to tourists in Bhuj, approximately 25 miles from their village in Nirona. However, the pandemic disrupted their peak season, causing financial losses. Khatri expressed concern about the business's dependence on tourists, with no alternative sources. While the family has ventured into online platforms like Amazon, they find it challenging due to the intricate nature of Rogan's art. According to Khatri, a common retail buyer may not grasp the significance and might be deterred by the prices. Unlike in-person interactions where a demo helps visitors understand the product's value, online platforms lack this personal touch, making it challenging to convey the uniqueness of Rogan art, which might otherwise be mistaken for ordinary embroidery work.

The longstanding craft, traditionally supported by local patrons for generations, faced the threat of extinction in the 1980s when these patrons shifted towards purchasing more economical fabrics. The Abdulgafur Khatri family, practitioners of this craft for many generations, found themselves unemployed. Living in a village with limited alternative livelihood options, survival became challenging due to diminishing prospects. Abdul Gafur Khatri and his younger brother, Sumar Daud Khatri, were among those grappling with these difficulties. Despite only completing the 4th grade in Gujarati, Abdulgafur Khatri initially contemplated seeking employment in Ahmedabad and Mumbai during the 1980s to support his family. However, severe droughts in Kutch further complicated job prospects for the Khatri family. Recognizing that his family lacked other opportunities due to their age and limited skills or education, Abdulgafur Khatri worked tirelessly to rescue the traditional Rogan Art of Kutch from extinction. Through years of dedicated effort, he revitalized the craft, which had lost its significance in the local context, producing items with international appeal. He transformed Rogan from a craft primarily used for adorning fabrics in local communities into an art form globally acknowledged as a rare textile art cherished by art and craft enthusiasts.

People in India who are familiar with Rogan Art fall into various categories:

1. Attendees of the Rann festival.
2. Individuals who keep track of the gifts that Narendra Modi presents to other nations, indicating those who closely follow the actions of the Prime Minister, whether they are tourists from abroad or Indian citizens.
3. Students in fashion and textile design, as well as travelers intrigued by ancient traditional art forms and their historical background.
4. Craft organizations and non-governmental organizations (NGOs) collaborate closely with artisans involved in handicrafts.
5. Participants in the textile industry.
6. Lastly, residents of Gujarat.

#### *6.2. Historical Roots and Cultural Significance:*

Rogan art finds its roots in the Hindu and Muslim Khatri community of Gujarat, specifically among the lower castes. The art form gained popularity during the wedding seasons, becoming a seasonal pursuit for women seeking decorative clothing and bed coverings. However, with the advent of machine-made textiles in the late 20th century, Rogan art faced economic challenges, leading to a decline in practitioners. Presently, only two families are actively preserving this unique art form, highlighting the need for sustained efforts to safeguard its heritage [3], [4].

#### *6.3. Current Challenges and Economic Shifts:*

The economic landscape poses a significant challenge to Rogan's art. The dependence on tourism for sales, disrupted by the recent pandemic, has highlighted vulnerabilities in the traditional business model. The intricacy of Rogan's art poses hurdles in online sales, where conveying its uniqueness becomes challenging. Moreover, the shift from a seasonal pursuit to a primary occupation faces skepticism and misconceptions, impacting the market perception of Rogan's art.

This study explores the intricate Rogan painting technique originating from Kutch, Gujarat, India. Rooted in the Hindu and Muslim Khatri community, Rogan art faces challenges despite its unique method. The study covers the Khatri family's preservation efforts, offering free education and live demonstrations during the Rann Utsav. Challenges arise from the pandemic disrupting tourism-dependent sales and online platforms struggling to convey Rogan art's uniqueness. Strategies for revitalization involve educational initiatives, collaborations, and adapting to online platforms [5], [6].

This study engages with Rogan artists, delving into color preparation, painting creation, and market dynamics. Sales dynamics, the impact of COVID-19, and the challenge of preserving colored jelly shelf life are discussed. The literature of the previous study is discussed in the literature review section.

The discussion section discusses Rogan art's awareness spread through festivals, Prime Minister Modi's gifts, and interest from fashion students. The study introduces the concept of a Rogan art-themed Wedding Box, envisioning a comprehensive wedding experience encapsulated in Rogan art. Preservation efforts and challenges are outlined, emphasizing the need for recognition and respect for artisans. Finally, the study ends with a conclusion section that explains the outcome and future of this study.

## 7. LITERATURE REVIEW

Chaturvedi D. [7] addressed the decline of traditional arts in the face of sustainability challenges and fast fashion. It emphasizes the importance of making these arts capable of revival in a fast-paced world that often neglects time-consuming processes. The focus is on Rogan Art, a time-consuming and labor-intensive craft, highlighting its unique materials such as castor oil and handmade colors. The study identifies the high cost associated with the lengthy process and the limited availability of materials. A key suggestion for sustaining Rogan Art involves making its materials more accessible, such as introducing ready-made colors, to replace the traditional process of crafting materials from scratch. The study takes a qualitative approach to review the history and revival of Rogan Art, aiming for future sustainability. It recognizes the need for adapting traditional arts to contemporary demands while preserving their historical significance. Selwadiya S. et al. [8] focused on documenting the diverse art forms in Nirona, Kutch, Gujarat, including Rogan painting, copper bell crafting, lacquer art, leather art, and weaving. Despite the cultural richness derived from these art forms coexisting in one location, Nirona faces survival challenges, placing these traditions on the brink of extinction. The study aims to document these art forms, explore the reasons for their decline, and analyze architectural interventions contributing to their survival. New suggestions are proposed based on that analysis to support and uplift these endangered art forms.

Pandya A. and Vishwakarma A. [9] revived the endangered art of Rogan painting by meticulously documenting its traditional textiles. The primary objectives include detailed documentation of the Rogan painting craft and authenticating changes in manufacturing processes, colors, motifs, and products. Data was purposively collected from five craftsmen actively practicing Rogan painting in the traditional method. The study reveals significant transformations in the production process, tools, equipment, motifs, and colors used in the traditional hand painting art of Rogan craft. Stark R. et al. [10] studied to enhance engagement with the health sciences library among students, staff, and faculty. The PharmArt program encouraged individuals to create pharmacy-themed artworks, which were then showcased in a two-hour art show and gala at the library. Data collected during the event was compared to previous library programming to evaluate success. Results indicated a significant increase in participation, both physically and digitally. Physical attendance and art piece submissions saw a substantial rise, with a total increase of 52 participants (347% increase) compared to previous events. Social media engagement witnessed a remarkable surge, including a 2224% increase in clicks, a 1200% increase in shares, and a 24% overall reach within the school community. The conclusion drawn from the study suggests that incorporating student, staff, and faculty artworks into a library-hosted event successfully boosted participation in comparison to prior programming. The approach not only brought together various stakeholders to share creative interests but also fostered a casual atmosphere for cross-curricular discussions among attendees. Mino T. [11] explored how postcolonial nations, such as India, grapple with the legacy of higher education systems established by former colonizers. In response, visionaries in India sought to create culturally relevant approaches inspired by the US liberal arts college model. Young Indians, recognizing the need for a broader understanding to address societal challenges, are turning to alternatives to the specialized university model prevalent in Indian higher education. The study addresses three key questions: How have Indian universities established their liberal arts tradition? What tensions do they navigate? And, what lessons can African countries draw from these examples? The research, conducted through document analysis and interviews with stakeholders, focuses on three new liberal arts universities in India. These institutions, rooted in Indian indigenous thought, empower students to pursue self-discovery while fostering a commitment to improving the Indian context. However, the universities face tensions, including the pressure to produce employable graduates, balancing

Western and Eastern traditions, and ensuring financial sustainability while promoting inclusion. The study suggests that the findings are relevant to African countries, which share a colonial history with India and are also working towards developing culturally relevant educational traditions. The insights offer valuable lessons for navigating challenges in higher education and building institutions that align with indigenous values in postcolonial contexts.

Bramantyo T. [12] explored the significant impact of communication technology and the Internet on daily life, leading to the phenomenon known as the Internet of Things (IoT). It highlights the pervasive nature of networks and the transformative potential brought about by the modern computer, leading to the so-called Revolution 4.0, marking the future generation of the internet. The focus of the study was on digital art, examining three notable occurrences: the emergence of Virtual Reality (VR) in the art world, the principles of digital art accessible to everyone, and the anticipated future characterized by artistic creativity enabled by technology. The study aims to provide a descriptive analysis of the multidimensional space occupied by digital art, steering clear of defining its specific meaning or delving into theoretical criticism. The key takeaway from the study is the acknowledgment of technological disruption in the art world, impacting art education and traditional arts. The study emphasizes that disruption has become a consistent subject of discussion within academic circles, showcasing the evolving landscape of art in the face of technological advancements.

Woronkiewicz J. et al. [13] addressed the increasing interest in the connections among arts, entrepreneurship, and innovation. It highlights the lack of specificity in defining these concepts and their overlaps, particularly in understanding how each mutually reinforces the others. The study introduces a comprehensive definition of art entrepreneurship, serving as both a conceptual framework and a distinct field of study. That definition aids in identifying studies for a special issue exploring the interrelations among arts, entrepreneurship, and innovation, with a specific focus on their impacts on workers, firms, and industries.

The current study of revitalizing Rogan's art necessitates preserving its history, addressing economic challenges, and adapting to modern platforms. The Abdulgafur Khatri family's dedication, coupled with strategic initiatives, can foster a renewed appreciation for Rogan's art on a global scale. The study underscores the dynamic process of adaptation, innovation, and sustained commitment to Rogan art's artistic legacy.

### 3. DISCUSSION

#### *a. Encountering the artists*

Delving further into the realm of art, the author chose to embark on a journey to Kutch to personally connect with the artisans. The author engaged with Rogan artists and explored museums, craft centers, and various organizations such as Khamir, Shrujan, LLDC, Bhuj Craft Centre, and more, to deepen their understanding of Rogan art.

#### *i. Conversations with Rizwan Khatri*

##### *1. About The Artist*

Rizwan Khatri is a Rogan artist hailing from Nirona Village in Bhuj, Kutch.

##### *2. History And Origin*

This art form, which has a history of 400 years, originated in Persia, traveled to Sindh, and eventually found its way to Kutch. In Persia, "Rogan" translates to "oil," and any pigment base using oil is referred to as "Rogan."

### 3. Color Preparation

Due to the uniqueness of the process, they are unable to demonstrate it. The artists venture into forest areas to create their paint. Castor oil is boiled for 2-3 days until it transforms into a thick paste. Natural pigments, in powder form, are mixed with the jelly obtained by beating it on a rock, resulting in the desired colors.

### 4. Painting Creation Process

1. The entire painting preparation process spans 10-12 days:
2. The initial 2-3 days are dedicated to developing the colors [14], [15].

Following that, a day is spent outlining. These outlines must be completed within 2 hours of applying the paint to ensure a mirror effect on the other half or another cloth.



**Figure 1: The Rogan paint is spread over one portion of the fabric, while the remaining section is pressed onto the painted surface to create a mirrored design. This method allows artists to make efficient use of the paint.**



**Figure 2: As part of the Rogan art creation process, the artworks are conventionally exposed to sunlight for drying the Rogan painting.**

In Figure 1, an illustration showcases a typical Rogan art process. On one side of the cloth, Rogan paint is applied, and the other side is pressed against the painted surface, creating a mirrored pattern.

This technique allows painters to utilize paint more efficiently, ensuring that the design is accurately mirrored on the other half or another piece of cloth. Figure 2 further exemplifies this process. Additionally, it mentions that as part of the Rogan art-making process, the artworks are often exposed to sunshine. This exposure to sunlight serves the purpose of drying the Rogan paint, a crucial step in the detailed and methodical creation of these intricate paintings [16], [17].

**Table 1: The intricate process of creating a 24 x 17-inch painting unfolds as follows.**

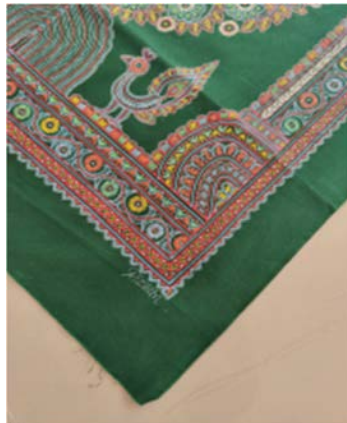
Days 1-2	Devoting two days to the initial phase, Castor oil is meticulously boiled to achieve a thick, jelly-like paste.
Day 3	A full day is dedicated to blending natural pigment powders with the prepared castor oil jelly. This involves using a stone to thoroughly mix the colors and create five distinct hues, which are then preserved in an airtight container with water for future use over 10-12 days.
Day 4	For the commencement of a new painting, outlines must be swiftly crafted within two hours of applying the paint to ensure an accurate mirroring effect. The colored jelly is skillfully applied to the left palm, utilizing a stainless steel stylus. As the jelly interacts with body heat, it softens and is drawn like a string. This softened jelly is then applied to the cloth beneath, with the assistance of a finger underneath and the stylus above. The color adheres to the cloth as the jelly follows the movement of the finger.
Days 4-5	The artwork undergoes exposure to sunlight during this period.
Days 6-7	Once the outline has completely dried, intricate details are painstakingly added to the painting.
Days 8-9	The artwork is once again placed under sunlight during this phase.
Days 10-12	The final product emerges, reaching completion between the 10th and 12th day of this detailed and methodical artistic process.



Table 1 displays the following is the detailed procedure for making a painting that measures 24 by 17 inches. In the initial two days, Castor oil is boiled to create a thick, jelly-like paste for Rogan art. On the third day, natural pigment powders are blended with the castor oil jelly, creating five distinct hues stored for future use. Day four marks the commencement of a new painting, with swift outline crafting using a stylus and colored jelly. Days four to five involve sunlight exposure, and intricate details are added on days six to seven. The artwork is exposed to sunlight again on days eight to nine, and the final product emerges between the 10th and 12th day, concluding this meticulous artistic process. Figure 3 shows the 50-year-old Purple Ghagra with little details. Figure 4 display the latest artwork shown on the wall.



**Figure 3: Illustrate the 50-year-old Purple Ghagra with Limited Information.**



**Figure 4: Illustrate the most recent artwork on the wall.**

*b. Sales as indicated by the artist:*

### 3.2.1. Market sales

1. The distribution between international and domestic markets is evenly split at 50-50%.
2. Offline sales constitute 60%, while online sales account for 40%.
3. This discrepancy is attributed to the fact that in offline sales, artisans can provide a live demonstration of the painting creation process, which is more challenging to achieve online.

### 3.2.2. Covid Sales

1. Before the pandemic, they gained widespread recognition and a global market presence.
2. Sales experienced a decline during the COVID-19 period, but they are now making a significant recovery post-pandemic.

### 3.2.3. Challenges Faced

1. The challenge lies in extending the shelf life of colored jelly beyond 10-12 days. Once the color reacts with the air, it gradually dries and becomes unusable if not entirely consumed.
2. Online sales pose difficulties due to the absence of a demo or video showcasing the complete product creation process.
3. Raising awareness among the younger generation involves adapting to their preferred styles and designs.

#### c. *Engaging In A Conversation With Gafur Bhai And Jabbar Bhai*

The author had the opportunity to meet Gafur bhai's family, particularly his brother Jabbar bhai, a 27-year-old artist who has been honing his craft for the past 13-14 years. Jabbar bhai emphasized the uniqueness of each family in their artistic endeavors, despite sharing the fundamental principles of art and craft. Gafur bhai, in 1985, introduced intricate detailing to Rogan's art, enhancing the portrayal of each element in the paintings. Instead of merely outlining elements, such as leaves, he incorporated inner lines, elevating the overall aesthetic.

The author learned that since 2005, Indian Prime Minister Narendra Modi has been gifting Rogan art paintings, making the Tree of Life a symbol associated with the art form. Not only is it the Prime Minister's favorite, but it has also been appreciated by various dignitaries, including those from the film industry such as Amitabh Bachchan, Sanjay Leela Bhansali, Shabana Azami, and singer Neha Bhasin. Even the ex-governor of Gujarat, O. P. Kohli, and the President of India have expressed interest in this unique art form.

Since 2010, Gafur bhai and his family have been imparting their knowledge to over 300 girls in the village. While some continue to practice and support the family with orders, others have moved on due to familial responsibilities. Jabbar bhai highlighted the challenge of misinformation, where students and researchers gather incomplete information and intend to copy the rest from the internet. Contrary to common belief, only two families are currently engaged in Rogan art. Jabbar bhai clarified that the portrayal of a united artistic community is inaccurate. Some families left due to stagnant income growth. Despite claims of 11 generations in Rogan art, Jabbar bhai asserted that he and his brothers represent the eighth generation.

The discussion further delved into the sales dynamics of clothing, fashion materials, and paintings. Interestingly, paintings demonstrated a significantly higher sales rate compared to clothing. When asked about applying the art to stitched and ready-made materials, Jabbar bhai expressed concerns about potential spoilage, leading to the wastage of the entire fabric. As a precaution, they prefer painting on unstitched material, allowing buyers the flexibility to use it as they please.

The issue with clothing arises when certain individuals replicate our work, print it, and sell it at significantly lower prices to unsuspecting buyers unfamiliar with Rogan art. It's challenging to prevent such unauthorized reproduction, as those involved often provide numerous excuses,

rendering any argument futile. While we focus on designing creations provided by designers, it's essential to clarify that we do engage in customized work," explained Gafur Bhai. During further discussions, it was highlighted that awareness of this art is spreading for several reasons:

1. The Runn festival.
2. People observing the gifts that Prime Minister Narendra Modi has been presenting to other countries. This information is mainly known to those who follow our PM's activities, including tourists and Indians.
3. Individuals such as fashion and textile design students, as well as those interested in traditional art forms and their history.
4. People from Gujarat.

Considering these categories, the author inquired with Jabbar Bhai about the strategy for reaching individuals outside these identified groups [18], [19]. In Figure 5 shown the famous "Tree of Life" painting.



**Figure 5: Illustrate the famous "Tree of Life" painting.**

*d. Wedding Box*

The concept of 'The Wedding Box' originated when the author encountered ornate boxes serving as wedding invitations. This sparked the idea of crafting a personalized wedding box that would encapsulate the entire wedding journey, from the initial preparations to the final celebration. The envisioned box would house all the elements integral to the event, including décor materials, props, the wedding theme, the unique narrative of the bride and groom, and every meticulous detail attended to throughout the occasion. Example of the Wedding Box in Figure 6.



**Figure 6: Illustrate the Wedding Box.**

Embellished with Rogan art, the box would boast LED lights and music upon opening. The creator even entertained the notion of incorporating a speaker and light settings within the box to provide a complete spectacle for the couple, serving as a nostalgic reminder of the time spent in wedding preparations and the main event itself.

Staying true to Rogan art as the primary visual theme, the idea of a complete Rogan art wedding emerged. Every aspect of the celebration, from decorations and props to the bride and groom's jewelry, would feature Rogan's art. The comprehensive wedding box would include details such as all key functions, materials utilized, songs played, and the overarching theme of the wedding. Functioning as versatile keepsakes, the wedding box could serve as invitations, a memory repository, and even a heartfelt gratitude gift from the couple to their guests.

#### *e. Preservation Efforts and Challenges*

The Abdulgafur Khatri family, spanning eight generations in Rogan art, exemplifies dedicated preservation efforts. Gafur Bhai's initiatives, including free education for girls and live demonstrations during the Rann Utsav, showcase a commitment to keeping the tradition alive. However, challenges persist in elevating Rogan art's status beyond fairs and melas. Recognition and respect for artisans are essential components in the preservation puzzle.

#### *f. Strategies for Revitalization*

To ensure the future of Rogan art, a multi-faceted approach is imperative. Educational initiatives, akin to those undertaken by the Khatri family, can foster a new generation of artists. Collaborations with craft organizations and NGOs can provide support and exposure beyond traditional markets. Adapting to online platforms, while challenging, requires innovative marketing strategies to convey the value of Rogan's art. The integration of Rogan art into contemporary contexts, as seen in the envisioned Rogan art wedding box, can broaden its appeal and sustain market relevance [20], [21].

Revitalizing Rogan art involves not only preserving its historical roots but also navigating the challenges posed by a changing economic landscape. The dedication of families like the Abdulgafur Khatri family, coupled with strategic initiatives, can pave the way for a renewed appreciation of Rogan art. By addressing misconceptions, embracing online platforms, and fostering education and collaboration, Rogan art can transcend its traditional confines and find a place in the global artistic landscape. The preservation of Rogan's art is not merely a cultural endeavor but a dynamic process of adaptation, innovation, and sustained commitment to artistic legacy.

## **4. CONCLUSION**

The journey through the rich tapestry of Rogan art reveals a captivating story of resilience, heritage, and the delicate dance between tradition and modernity. Originating from Kutch, Gujarat, India, this intricate cloth printing technique, employing boiled Castor oil and vegetable dyes, has etched its place in cultural history. The art's historical significance is intertwined with the Hindu and Muslim Khatri communities in Gujarat, particularly among the lower castes. However, Rogan art faces contemporary challenges, notably in the shifting economic landscape and the recent disruptions caused by the pandemic. The dependence on tourism for sales, coupled with the intricate nature of the art form, poses hurdles in online marketing. The traditional business model, rooted in live demonstrations and personal interactions, faces skepticism and misconceptions in the online realm. Engaging with Rogan artists, particularly the Khatri family, sheds light on their innovative strategies and challenges. From the meticulous process of creating Rogan art, involving the boiling of Castor oil, blending

pigments, and the intricate painting creation process, to the market dynamics and challenges faced during the pandemic, the narrative unfolds. The envisioned Rogan art wedding box, incorporating Rogan art into every aspect of a wedding celebration, emerges as a creative strategy to revitalize and contemporize this traditional art form. In essence, revitalizing Rogan's art is not merely about preserving a historical craft; it's a dynamic process of adaptation, innovation, and sustained commitment to artistic legacy. The journey through Rogan's art unveils not only a vibrant past but also a potential future where tradition and modernity coalesce to ensure the enduring legacy of this unique artistic expression.

## REFERENCES:

- [1] H. Vaartio-Rajalin, R. Santamäki-Fischer, P. Jokisalo, and L. Fagerström, "Art making and expressive art therapy in adult health and nursing care: A scoping review," *International Journal of Nursing Sciences*, vol. 8, no. 1, pp. 102–119, 2021. doi: 10.1016/j.ijnss.2020.09.011.
- [2] M. V. Orlandini, "Pop Art," *Art Transl.*, vol. 14, no. 2, pp. 191–203, Apr. 2022, doi: 10.1080/17561310.2022.2085466.
- [3] L. North, "The gender of 'soft' and 'hard' news: Female journalists' views on gendered story allocations," *Journal. Stud.*, vol. 17, no. 3, pp. 356–373, Apr. 2016, doi: 10.1080/1461670X.2014.987551.
- [4] G. A. Al Karazoun, "A Linguistic Analysis on Errors Committed by Jordanian EFL Undergraduate Students: A Case of News Headlines in Jordanian Newspapers," *English Lang. Teach.*, vol. 9, no. 8, p. 170, Jul. 2016, doi: 10.5539/elt.v9n8p170.
- [5] X. Zhang and A. A. Ghorbani, "An overview of online fake news: Characterization, detection, and discussion," *Inf. Process. Manag.*, vol. 57, no. 2, p. 102025, Mar. 2020, doi: 10.1016/j.ipm.2019.03.004.
- [6] B. Liu *et al.*, "Matching Article Pairs with Graphical Decomposition and Convolutions," in *Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics*, Stroudsburg, PA, USA: Association for Computational Linguistics, 2019, pp. 6284–6294. doi: 10.18653/v1/P19-1632.
- [7] D. K. Chaturvedi, "A study on Traditional Rogan Art of India," *Int. J. Res. Publ. Rev.*, pp. 1542–1545, Jun. 2022, doi: 10.55248/gengpi.2022.3.6.12.
- [8] S. Selwadiya, S. A. Mishra, and K. Trivedi, "REVIVING ART FORMS OF NIRONA-THROUGH ARCHITECTURE," *Int. J. Res. -GRANTHAALAYAH*, vol. 6, no. 10, pp. 176–186, Oct. 2018, doi: 10.29121/granthaalayah.v6.i10.2018.1176.
- [9] A. Pandya and A. Vishwakarma, "Rogan, the traditional hand painted textile of Gujarat," *Indian J. Tradit. Knowl.*, vol. 9, no. 4, pp. 644–650, 2010.
- [10] R. Stark, M. Paris, E. Rogan, M.-K. Finnegan Dopkins, and C. Etter, "Art Show Paints a Collaborative Picture: Increasing Engagement in a Pharmacy and Health Sciences Library," *Hypothesis Res. J. Heal. Inf. Prof.*, vol. 29, no. 2, Mar. 2021, doi: 10.18060/25200.
- [11] T. Mino, "Building a Liberal Arts Tradition in India," *Rev. Española Educ. Comp.*, no. 39, pp. 123–137, Jun. 2021, doi: 10.5944/reec.39.2021.30042.
- [12] T. Bramantyo, "Digital art and the future of traditional arts," *Music Scholarsh.*, no. 1, pp. 96–110, 2021, doi: 10.33779/2587-6341.2021.1.096-110.

- [13] H. Vaartio-Rajalin, R. Santamäki-Fischer, P. Jokisalo, and L. Fagerström, “Art making and expressive art therapy in adult health and nursing care: A scoping review,” *Int. J. Nurs. Sci.*, vol. 8, no. 1, pp. 102–119, Jan. 2021, doi: 10.1016/j.ijnss.2020.09.011.
- [14] D. Heddon and C. Turner, “Walking Women: Shifting the Tales and Scales of Mobility,” *Contemp. Theatr. Rev.*, vol. 22, no. 2, pp. 224–236, May 2012, doi: 10.1080/10486801.2012.666741.
- [15] C. Peterson, “‘Inspiration’ and how it is found: Exploring psychological and information behaviour theories,” *Art Libr. J.*, vol. 45, no. 3, pp. 85–89, Jul. 2020, doi: 10.1017/alj.2020.12.
- [16] I. Yoon-Ramirez and B. W. Ramirez, “Unsettling Settler Colonial Feelings Through Contemporary Indigenous Art Practice,” *Stud. Art Educ.*, vol. 62, no. 2, pp. 114–129, Apr. 2021, doi: 10.1080/00393541.2021.1896416.
- [17] S. Febres-Cordero, A. D. F. Sherman, J. Karg, U. Kelly, L. M. Thompson, and K. Smith, “Designing a Graphic Novel: Engaging Community, Arts, and Culture Into Public Health Initiatives,” *Health Promot. Pract.*, vol. 22, no. 1\_suppl, pp. 35S–43S, May 2021, doi: 10.1177/1524839921996405.
- [18] R. Brown, “Art and Science in the Romantic Imagination,” *Am. Sci.*, vol. 105, no. 2, p. 82, 2017, doi: 10.1511/2017.125.82.
- [19] U. Jäggi, C. Joray, Y. Brülhart, E. Luijckx, and S. Rogan, “Verletzungen in den Kampfsportarten Judo, Taekwondo und Ringen – Eine systematische Übersichtsarbeit,” *Sport. · Sport.*, vol. 29, no. 04, pp. 219–225, Dec. 2015, doi: 10.1055/s-0041-106939.
- [20] V. De Villiers, D. Blaauw, and A. Fourie, “‘Dit was erg, baie, baie erg.’ Die effek van COVID-19 op informele straathandelaars in die middestad van Kaapstad,” *Tydskr. vir Geesteswetenskappe*, vol. 62, no. 2, pp. 291–310, Jun. 2022, doi: 10.17159/2224-7912/2022/v62n2a3.
- [21] R. A. David and M. Rhee, “The Impact of Language as a Barrier to Effective Health Care in an Underserved Urban Hispanic Community,” *Mt. Sinai J. Med.*, vol. 65, no. 5–6, pp. 393–397, 1998.



## CHAPTER 5

### ANALYSIS OF DAIVA RITUALS AND CULTURAL ACTIVITIES

Prof. Manasee Kakkad, Assistant Professor  
ISDI, ATLAS SkillTech University, Mumbai, Maharashtra, India  
Email Id- manasee.kakkad@atlasuniversity.edu.in

#### ABSTRACT:

The customs, ceremonies, and culture of the Tulu people are vibrant and rich. There is a history of eight centuries of spirit worship. A centuries-old custom from a previous era of Indian civilization. Daiva Kola ritual performances are customary, culturally grounded jobs or activities that uphold people's faith in or trust in god, particularly for those who live in Dakshina Kannada. It originated from numerous generations. People from a select few castes performed the Daiva Kola ritual performance, which is a caste-based job that benefits the whole Dakshina Kannada district. We discuss potential theoretical conceptualizations that can account for the aesthetic shift from the individual to the collective universal through an analysis of a South Indian rite known as bhuta kola. Two primary conceptual frameworks can be derived from the multi-layered character of a socio-religious ritual performance.

#### KEYWORDS:

Adae Festival, Daiva Kola, Kanara Land, Paddanas, Perlocutionary.

#### 1. INTRODUCTION

From the coastal districts of Karnataka, India, comes the traditional folk dance known as daiva kola (Tulunadu) [1]. Since the Tulu-speaking community worships local deities, the ritual performance is greatly individualized, and this study looks into the relationship between folks who follow their traditions and are part of their culture. Coastal Wood's residents are involved in their culture and traditions, and they are committed to providing daiva kola-related services. Additionally, these ritual performers have access to alternate employment alternatives [2]. Known collectively as Tulu Nadu, the Dakshina Kannada regions of Karnataka and the Kasargod taluk of Kerala are home to the Tulu-speaking community, who practice the age-old daiva kola religious practice. Spiritual worship or the worship of divine or semi-pagan spirits appears to be a primitive kind of worship according to the Dravidians of Tulunadu [3]. They are socially conscious through their rituals, beliefs, music, novels, dances, conversations, extravagances, and thoughts. cultural values, modes of thinking, and economic environments devoted to rural populations across many locations [4].

The idea of dual worshipping local spirits and goddesses is accepted by Tulunadu's companions in Karnataka. The Brahmin priests lead the temple's veneration of Spirit gods, who are quiet spectators that can only be approached through representations [5]. These spirits, on the other hand, are a more personal local deity that has a more unified influence on the lives of the believers. Even so, there are several locations with wooden buildings that date back to before Buddhism [6]. The findings indicate that the aboriginal people (prehistoric group) positioned their deities without. As they were not used to the solitary setting of temple worship, there was a great deal of formality [7]. Even now, the gods and goddesses of the villages are not alone; they enjoy being placed in the open air [8]. For them, there aren't any specific temples; perhaps they're under a large tree's cover. These gods occasionally mark the edge of the city to bid farewell or welcome [9]. The main feature of this ritual, also known as "Bhoota Kola" or "Nema," is storytelling (via ballads or "paddanas") that extols the virtues and acts of the spirits [10]. This invites the spirit to take possession of the impersonator, who then dances all night

long to hypnotic drum beats. This highly stylized dance honors the 400+ local spirits, each of whom has a distinct tale that has been passed down orally down the generations in the form of ballads [11].

Through a distinctive blend of colors, costumes, storytelling, dancing, and music, the Bhoota Kola ritual offers a stunning glimpse into the world of spirits. Following the rite, the devout obtain blessings and the courage to confront life's challenges head-on from the spirit. In the popular media and its many forms news and magazine articles, literary texts, radio broadcasts, online series, television series, films, and more indigenous narratives have not benefited greatly from globalization [12]. This well-known media area evolved into only available to native people following their classification as "Scheduled Tribes" under the Indian Constitution. To improve their lot in life, laws like the Untouchability Practices Act of 1955, the Scheduled Caste and Scheduled Tribe (Prevention of Atrocities) Act of 1989, the Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act of 1993, and others were introduced (Sengupta, 2013, p. 23). Karnataka has a tribal population of over 7%, while the overall tribal population in India is 8.61% (Statewise Total & Tribal Population, 2011 Census). Their tales have evolved into Indigenous people's relationship with the forest and the natural world is fundamental to who they are.

When Shiva, the main character, realizes his foolishness and runs or sleeps down in the middle of the jungle at night the forest officer places his palms together in adoration of the Daiva, or the audience faces the appearance of the boar and overcomes his dread of it, the viewer is transported to a world of faith and organic connection, which is essential to human values. It is possible to see the movie as providing an indigenous perspective on the environment and natural resources. There is no direct causal connection between a spirit and a severed limb given our methodological skepticism [13]. Therefore, asking the driver to "teach the police a lesson" is pointless if done at a nominal value. However, a relationship exists between the villagers' "belief" in the existence of the daiva, the police officers' "belief" that the daiva is the reason for their limb loss and the intended outcome to "teach them a lesson." The "lesson" was effectively imparted not in the manner the story portrays it, if one is to take it at face value because the "beliefs" that both the villagers and the officers hold cause the police to behave in a way that results in the release of the inmates [14][15]. The believer's perlocutionary effects involve the police, to whom he is meant "to teach a lesson," while his illocutionary objective is intended towards the daiva.

The lesson is ultimately successfully supplied, and the police comply with the fairness principle. It was not the direct result of the speech act (or ritual performance) addressed to the daiva that was intended to have this perlocutionary impact. It was, at most, meant to be an incidental result of this act of communication that the spirit mediated. The believer perceives this as a successful realization of his illocutionary intention: he begged the daiva 'to teach them a lesson', and the daiva obliged [16].

That being said, for us, with our lapsed faith in the daiva, the repercussions should be analyzed as unintentional perlocutionary effects resulting from the coincidence of the police and villager shared fear of the spirit of justice and belief in it. The illocutionary intention of a ritual or summons made by followers of the daiva with the hope of pleading with him to resolve their situation may be in vain for us since our faith in butas and daivas has been suspended [17]. Unintentionally, however, the perlocutionary effect might have a similar or even identical outcome to the intended illocutionary one. I'm going to refer to this type of effectiveness as "perlocutionary efficacy". Perlocutionary efficacy, however, is limited to the social realm in our three-tierontology.

## 2. LITERATURE REVIEW

The entire community participates in the planning and carrying out of the ceremony at each kola or nema. Nobody just watches things happen. The performance centers on the spirit, but the actual work involved in planning and carrying it out is a ritualistic performance with inherent power. It makes the village's social structure tangible by involving every caste and religious group, including the Muslims and Brahmins. Each of the village's fourteen communities in Kodlamogaru has a certain function to do.

Claus et al. [18] studied that Hindu Cosmology does not include Paddanas, which are a wholly unique and Proto-Dravidian cosmology. The broad cultural definition of spirit possession that is discovered is found in India's southern regions. As part of his numerous attempts to explain spirit possession as a completely singular psycho-social occurrence, Claus has offered critical critiques. However, after doing a thorough investigation, it was observed that the author looked to religious beliefs about spirit possession and mediumship cults, oral traditions, and ideologies to provide an ethnographically useful explanation of spirit possession. The deceased's spirits are mostly those of the same (or frequently very same) kind, occupying the bodies of people regarded as suitable and skilled mediums, helpful to the community. The medium must have the right instruction in the rituals necessary to call the spirits to achieve mastery and domination over them. Using protective foods, clothing, language, and other practices protects the body. This suggests that society views ritual, social, and temporal aspects of religion, as well as spirit intrusion.

Peter J et al. [19] studied that The performance incorporates a significant portion of the original text. It is now a personal history narrative after being significantly altered and customized in thirty-two ways in the initial viewpoint. But in their place were spoken words, which turned us into observers of the real mythical event. We appear to be there. Through tradition, the woman's field song has been reduced to a historical record before eventually being supplanted by another legend. Kumar is in charge of the song's performance, which was once associated with the woman; it is perceived as a component of a public ritual performance. Women who take part in these ceremonies consider them to be sacred and ethically acceptable. Male participants appear to share the same emotions. Modern males, however, who are not believers, view these cults as ways to blatantly exploit women. In conclusion, ritual activities could (and in some cases, undoubtedly do) easily develop into this if the entertainment and drama dimensions take precedence over the ritual dimension and the enduring, widespread social functions.

Neff et al. [20] Studied that the purpose of the ethnographic data is to attempt to explain specific aspects of these specific cultural connections and demonstrate how they can be applied to assist in explaining the phenomenon of spiritual possession. Claus's experience working in the Southwest has inspired him. Indian coast; the Tulu-speaking people of Karnataka State's South Kanara District. The most prevalent form of worship in this area is spirit medium cults. A very common phenomenon among the rural peasant phenomenon is spirit possession. The many oral traditions that recount the history of spirits in humankind and explain their apotheosis have validated and confirmed this. Sociological and psychological frameworks provide anthropologists with a poignant perspective on spirit possession.

Francine et al. [21] discussed the presence of supernatural punishments that defy established social norms. The religious authorities who specifically rule over both deities are known as pujas, or village priests, and talk about them through oral traditions the fact that the encounters are reported in both legendary and memoir form and that there is a prevalent belief, demonstrate how the people in these areas interact with the gods overnight. To sum up, religious folklore genres serve as the boundary between the real world of society and the world of mythology,

combining to create a single textual space where both are intertwined. Using as her starting point the sung poetic ritual texts from the west coast of South India (Coastal Karnataka), discussing the connection between text structure and the social and geographic distribution of specific local and sub-regional Cults provide multifaceted responses to the concerns of gender, genre, the relationship between ritual dramatization and narrative, particularly about death, as well as the success or failure of rituals in the eyes of the locals.

### 3. DISCUSSION

#### 3.1 Practicing Cultural Events:

##### 3.1.2 Ancestor Worship:

In our ancestral home in Kundapura, in the Udupi region of Karnataka, I get to see an annual ceremony to appease Nandikeshwara, a Daiva or Bhoota, every summer vacation between April and May. This custom is called Tambila or Jakani. This time, the Bhoota Sthana is completely cleaned up before a fire is started there. A dish is made with fried brown rice powder, coconut shavings, and jaggery. On banana leaves, the combination is served. Another banana leaf is stretched out on a small cot that is positioned close to the shrine. Next, a cooked rice ball is positioned on the leaf, its color changed to yellow with the use of turmeric. After a rag is soaked in kerosene, it is wrapped around a pole, inserted between the cooked rice balls, and lighted. The neck of a chicken is severed over the flame, causing droplets of blood to land on the rice. The ritual ends with the lighting of certain incense sticks. The bird is subsequently cooked by the family and eaten as Prasad as shown in Figure 1.



**Figure 1: Illustrate ancestral rituals during the worship.**

**3.1.2 South kanara land:** The historical account of South Kanara before British colonial rule can be broadly classified into four periods: the Āṇupa period, spanning from approximately



the sixth to the end of the fourteenth century; the Vijayanagara period, spanning from mid-fourteenth to seventeenth century; the Keṇḍi Nāyakas period, spanning from early seventeenth to eighteenth century; and the Hyder Ali and Tipu Sultan period (1763–1799). The names of the royal dynasty in later inscriptions are Āṇuṇa or Āṇuṇa, and Āṇuṇarasa ruled over South Kanara. Since ancient times, the majority of South Kanara has been an agricultural region, and land riches were referred to as bāṇu, which means life and subsistence. Private persons also had land, in addition to the nobility. Warriors, Brahman priests, temples, and ordinary people were granted land by the king in the early Āṇuṇa period. Additionally, taxes on rice, cotton, pepper, areca nuts, and paddy were gathered by the royal family. The Vijayanagara era saw significant development in South Kanara. A hierarchy of territories was established, with the uppermost territory, called sīme, being a small kingdom governed by a local monarch, and the lowest region, guttu, being the jurisdiction of the village landlord. There appeared to be Jains among the sīme rulers, who rose to prominence in South Kanara in the Vijayanagara era. The chiefs of administrative units and local society were subject to the authority of būta rites, which were organized by the administrative and geographical units of the time. A family's head and its būta were at the bottom of the system, with the king and būta of sīme being the highest in position.

**3.1.3 Paddanas- Oral epics:** Legendary heroes who were elevated to godhood after their deaths are the subject of folk stories. These songs, which have been passed down from generation to generation, are sung by the community of impersonators. Usually, during the traditional Kola performance, the impersonator's wife, mother, or sister sings these ballads as a drum known as a member creates rhythmic beats. There are different Pad-danas accessible for different entities, like Babbairya Pad-dana, Kalluti-kalkuda Pad-dana, and Kotichannaya Pad-dana. In the myth of Bobbairya, for example, the fishermen in coastal regions worship the Muslim merchant spirit known as Bavubeary. They were instructed to locate a tree to construct the boat by the temple's deity, Brahma. After much searching and thinking they would be unsuccessful, they eventually discovered a tree behind the temple as shown in Figure 2. As they headed out with all of their money, they came across pirates. Although Bavubeary put up a valiant battle, he was exhausted and lost at sea. After they completed their boat, they began to make a living off of it and decided to return home. He requested permission to rule as one of the local deities of the many temples after he passed away and transformed into a spirit.



**Figure 2:** Illustrate the people who praise the song related to the Paddanas fest.

**3.1.4 Kola's portrayal:** The word "kola" means decoration, festivity, etc. Four or five castes Parava, Pambada, Koppala, Nalke, and Panara make up the performers. A family of these spirit impersonators lives in each region or shrine; they are the honored ones who perform this ceremony and receive rice in return. One of the most important ceremonies on the day of Kola is carrying the idol and other holy objects to the site of the real Kola performance, called the Bhandaara. This covers all of the objects required for the holy ritual, such as the idol, mask, throne, jewels, shields, chowries, swords, and other artifacts as shown in Figure 3. Several sculptures made of brass depicting both human and animal shapes are also present.



**Figure 3: Illustrate the decoration for Kola's portrayal celebration.**

On a banana leaf or a palm tree branch, the Niagara anklets are arranged. The village officials give him aruca rice. A portion of the flowers are scattered on each of the four corners by the performer, who accepts the sandal paste and area flower from the priest. The impersonator's and his assistant's legs twitch as they perform a ritual dance due to anklets. They move their two hands in each of the eight directions, touch them with both hands and wave them again before tying on the anklets. Carrying burning torches, the performer exits the stage to pay homage to the village god, the protectors of the eight directions, and the guardians of the village limits, if the temple is close by. The impostor makes their way towards all members of the audience, but especially the customers. The spirit expresses his happiness at the arrival of people who are significant and his irritation at the absence of one. Here, the spirit impersonator shows them gratitude by bowing and lowering the flame. Next, he performs a portion of the pad-dana performed by the worried spirit. A facial mask resembling the totem animal's visage is also worn by spirits with totemic origins.

**3.2 Festival Adae:** Western Africa's Ashanti people celebrate the Adae Festival. One of the most significant ancestor customs among the Ashanti people is the day of rest that is observed. Adae is celebrated twice a year, on a Sunday and a Wednesday, throughout a six-week cycle. An annual nine times is when the Adae cycle is repeated as shown in Figure 4. To express gratitude to the gods and ancestors for the bountiful harvest, Adae is observed. Because they have been set since ancient times, Adae's holidays are not interchangeable.





**Figure 4: Illustrate the celebration of the Adae Festival.**

**3.3 Pchum Ben:** Offerings are made to ancestors on certain occasions such as Pchum Ben and the Cambodian New Year as shown in Figure 5. Many Cambodians honor their deceased family members, some of whom may have been seventh-generation descendants of Pchum Ben. Monks sing the suttas in the Pali language overnight in preparation for the opening of the gates of hell, an event believed to occur once a year and related to the Pali Canon's cosmology of King Yama. There are many who claim that this event also honors the souls of those who burn in hell for their transgressions. Om Sam Ol said, "Hell is far from people; those souls and spirits cannot see the sun; they have no food to eat or clothes to wear."



**Figure 5: Illustrate the Pchum Ben New Year celebration.**

**3.4 Ahom Celebration:** Me Dam Me Phi is the name for the ancestor worship in Tai, where "me" denotes worship, "dam" denotes the spirits of the family members who have passed away, and "phi" denotes god. Some claim that this holiday also honors the souls who burn in hell for their transgressions as shown in Figure 6. The core of the Ahom faith in Assam is ancestor worship. According to the Ahoms, an individual's role as an ancestor after death is temporary since they eventually transform into God or Phi. Additionally, they believe that a person's eternal soul, which unites with the supreme soul and assumes the qualities of a spiritual being, invariably bestows blessings upon their family. For this reason, each Ahom in the family builds a pillar known as a "Damkhuta."



**Figure 6:** Illustrate the people who celebrate Ahom festivals.

**3.5 Occupation of Tulumnadu:** In Tulumnadu, farming and the cultivation of various crops, including plantains and coconuts, constituted the primary forms of employment. These crops later served as the basis for all oral epics. These oral epics were transmitted orally from one person to another to spread the word about the Daivas as extremely strong beings who needed to be revered and feared. Folk poetry, which discusses stories, legends, and riddles, is regarded as an extremely rich and well-liked genre of oral literature in Tulumnadu. To date, over a thousand riddles have been discovered and published.

**3.6 Bhootha:** In Tulu, kola means "play" and bhootha means "spirit." Tulu-speaking people of Dakshina Kannada, Karnataka, and certain areas of Kerala essentially celebrate it as a spirit worship rite as shown in Figure 7. The coastal regions of Tulu Nadu are home to the Animist practice of Buta Kola, or spirit worship. Daiva/Bootha Since Kola has been since the end of the Indus Valley Civilization, the sculptures, talismans, and other artifacts from that era attest to the presence of spirits. Because both cultures flourished at roughly the same period and shared a similar view of the reverence of the dead, it is also possible to observe the influence of Dravidian culture on Tuluvas culture. Aside from the dances and muggas (masks), one of the most fascinating aspects of Kola is the Bright colors like red, orange, yellow, and white that are utilized for face painting symbolizing the spirits' fighting nature. The spirits are classified into three separate categories kind, regal, and fierce.



**Figure 7: Illustrate the Bhootha makeup and costumes.**

*3.6 Forms of Appreciation:* Four main types of worship are recognized as shown in Figure 8.

- i. Bhuta: In the village where the Bhutas are believed to reside, the Bhutas are treated to a demi-god dance on its sacred grounds.
- ii. Bandi: A performer who is a member of one of the five communities of performers presides over chariots in Bandi; except from this one aspect, Bandi and Kola are fairly similar.
- iii. Nema: Well-off families perform a private rite called Nema annually as a show of respect for the Daivas and Bhutas.
- iv. In Agelu-Zambia: the Daiva/bhuta is offered beer, rice, and meat on a banana leaf by the family as a form of respect. Every year or whenever their wishes are fulfilled, this ritual is performed.



**Figure 8: Illustrate the different types of worship practices.**



**3.6.1 Panjurli:** The godly being revered in Kola as a diva is called Panjurli. A male wild boar named Panjurli is known to exist. The farmers started to worship the wild boar spirits in an attempt to safeguard their farmlands because, according to oral epics, several wild boars in Tulumindu once ruined the farmlands. The wild boar tale, which relates that Goddess Parvathi reared a male wild boar's child and loved it tenderly, is supposed to have been incorporated into Hinduism through the Tulava oral epics, or paddanas as shown in Figure 9. Yet, it became increasingly destructive and mischievous over time, eventually destroying Mount Kailsh's gardens. The wild boar was slaughtered by Lord Shiva, who became enraged by this. Goddess Parvathi became extremely agitated and Lord Shiva had to placate her by bringing the animal back to life as a ghost and sending it to Earth to assist and defend us. The beginning of the agricultural era, approximately 3000 BC, is when the worship of Panjuli is believed to have originated.



**Figure 9: Illustrate the Panjurli costume and makeup.**

**3.6.2 Jumadi & Bunte:** Paddanas (oral epics) tells of a Demon named Dhumasura who caused chaos, ruin, and suffering all around him. The only thing that could stop him was a creature that was half woman and half man at the same time as shown in Figure 10. While Goddess Parvathi and Lord Shiva were traveling to destroy this evil, Parvathi became extremely hungry. Lord Shiva gave her everything, but in the end, he donated himself. After Parvati consumes her husband's body, the two gods merge to become Jumadi. The first human to worship this combination of Lord Shiva and Goddess Parvati became the Banta spirit, who is constantly worshipped alongside Jumadi.



**Figure 10: Illustrate the dressing of Jumati and Bunte.**

**3.6.3 Satyadevta:** They venerated this stone in the middle of the forest, believing that it would give them the confidence to hunt and that those who had excellent faith in the stone would have their wishes fulfilled. This was in the past when hunting was the only means of subsistence. This stone is said to contain the spirit of Goddess Lakshmi, who took on the form of Sathya Devatha, during her incarnation as Sita as shown in Figure 11.



**Figure 11: Illustrate the dressing of Satyadevta.**

#### 4. CONCLUSION

Dispersed Indian cults involving indigenous deities, like the Siri cult, are quite uncommon in South India. The cult's highly planned and widely distributed non brahmanical ritual is a stounding. A district-wide kinship organization known as matrilineality was established by the dominating caste, the Bants, according to the legend of Siri. Unlike other bhfitas, Siri does not exhibit fearsome qualities; her ritual possession is always viewed as kind rather than malevolent. A member of any other matrilineal caste is not defiled by Siri's possession since she is connected to the dominant caste. Between the Great and Little traditions, the Siri cult occupies a middle ground in terms of local orthodoxy. Perhaps the same fear exists in other South Indian communities. While scattered and independent shamans are known to treat the afflicted from other parts of South Asia, institutions catering to the afflicted in other South Indian civilizations may be less highly organized than non-existent. More ethereal feelings and ethical precepts are at the center of the Siri myth. There is a myth about women's status and kinship. It provides evidence in favor of matrilineality on the one hand, but it also makes the possible weaknesses in the system apparent. To preserve the lineage of their ancestry, men invest their fortune in women. However, because incest is illegal, they are compelled to give their women to other men rather than themselves. The overt concern is caused by common sins such as lust, greed, selfishness, and weakness. In the absence of male protection, women must preserve the integrity and lineage of their ancestors. A recurring issue is anxiety over being abandoned, powerless, and poorly managed.

#### REFERENCES:

- [1] S. J. Bronner and R. P. Armstrong, "The Powers of Presence: Consciousness, Myth, and Affecting Presence," *J. Am. Folk.*, 1983, doi: 10.2307/540955.
- [2] H. Osborne and R. P. Armstrong, "The Powers of Presence: Consciousness, Myth, and Affecting Presence," *J. Aesthetic Educ.*, 1982, doi: 10.2307/3332201.

- [3] C. Geertz, "Ethnology and General: Igama Tirtha: Five Studies in Hindu-Balinese Religion. C. Hooykaas," *Am. Anthropol.*, 1966, doi: 10.1525/aa.1966.68.1.02a00470.
- [4] J. C. Wright, "C. Hooykaas: Āgama tīrtha: five studies in Hindu-Balinese religion. (Verhandelinger der Koninklijke Nederlandse Akademie van Wetenschappen, Afd. Letterkunde, Nieuwe Reeks, Deel LXX, No. 4.) 253 pp., 23 plates, 5 maps. Amsterdam: N. V. Noord-Hollandsche Uitgevers Maatschappij, 1964. Guilders 35.," *Bull. Sch. Orient. African Stud.*, 1966, doi: 10.1017/s0041977x00061486.
- [5] C.-K. Shih, "Genesis of Marriage among the Moso and Empire-Building in Late Imperial China," *J. Asian Stud.*, 2001, doi: 10.2307/2659698.
- [6] M. MARRIOTT and R. B. INDEN, "Toward an Ethnosociology of South Asian Caste Systems," in *The New Wind*, 2012. doi: 10.1515/9783110807752.227.
- [7] A. Thornton and T. E. Fricke, "Social change and the family: Comparative perspectives from the west, China, and South Asia," *Sociol. Forum*, 1987, doi: 10.1007/BF01124383.
- [8] J. A. Laub, "Assessing the servant organization; Development of the Organizational Leadership Assessment (OLA) model. Dissertation Abstracts International," *Procedia - Soc. Behav. Sci.*, 1999.
- [9] A. Philips, "Rethinking culture and development: Marriage and gender among the tea plantation workers in Sri Lanka," *Gend. Dev.*, 2003, doi: 10.1080/741954313.
- [10] "The castes and tribes of Southern India," *Nature*, 1910, doi: 10.1038/084365a0.
- [11] S. V. Ketkar, "Castes and Tribes of Southern India. By Edgar Thurston," *Am. Anthropol.*, 1910, doi: 10.1525/aa.1910.12.3.02a00110.
- [12] D. Thomas *et al.*, "Closing the health and nutrition gap in Odisha, India: A case study of how transforming the health system is achieving greater equity," *Soc. Sci. Med.*, 2015, doi: 10.1016/j.socscimed.2015.06.010.
- [13] T. Kivisild *et al.*, "The genetic heritage of the earliest settlers persists both in Indian tribal and caste populations," *Am. J. Hum. Genet.*, 2003, doi: 10.1086/346068.
- [14] M. Meyerhoff and N. Mendoza-Denton, "Aesthetics in Styles and Variation: A Fresh Flavor," *Annual Review of Anthropology*. 2022. doi: 10.1146/annurev-anthro-101819-110056.
- [15] S. S. Bean, "Shakti: Power in the Conceptual Structure of Karimpur Religion. By Susan Snow Wadley. Chicago: The University of Chicago Studies in Anthropology, Series in Social, Cultural, and Linguistic Anthropology 2, 1975. x, 222 pp. Illustrations, Tables, Notes, Appendixes, References. \$5.00 (paper).," *J. Asian Stud.*, 1977, doi: 10.1017/s0021911800161741.
- [16] S. Ryzhakova, "A folkloristic and anthropological approach to the study of ritual and performance in India: Cases of Daiva-nyama (Bhoota-kolam) and Yakshagana," *Letonica*, 2017.
- [17] I. Macchiarella, *Multipart music: A specific mode of musical thinking, expressive behaviour and sound*. 2012.
- [18] P. J. Claus, "Spirit possession and spirit mediumship from the perspective of Tulu oral traditions," *Cult. Med. Psychiatry*, 1979, doi: 10.1007/BF00114691.



- [19] P. J. Claus, "The Siri Myth and Ritual: A Mass Possession Cult of South India," *Ethnology*, 1975, doi: 10.2307/3773206.
- [20] D. L. Neff, "Aesthetics and Power in Pambin Tullal: A Possession Ritual of Rural Kerala," *Ethnology*, 1987, doi: 10.2307/3773417.
- [21] F. Brinkgreve, "Offerings to Durga and Pretiwi in Bali," *Asian Folkl. Stud.*, 1997, doi: 10.2307/1178726.

## CHAPTER 6

### EXPLORING THE CULTURAL AND HISTORICAL SIGNIFICANCE OF THE INDIAN APPAREL CONCEPT

---

Prof. Aarushi Purohit, Assistant Professor  
ISDI, ATLAS SkillTech University, Mumbai, Maharashtra, India  
Email Id- aarushi.purohit@atlasuniversity.edu.in

#### ABSTRACT:

The idea of Indian clothing is rich in cultural and historical importance; it's like a colorful tapestry with strands of identity, history, and creative expression. Traditional attire, which has its roots in India's rich past, captures the subcontinent's varied cultural environment. Clothes like the kurta, dhoti, and saree represent centuries-old traditions and ceremonies while also showcasing regional uniqueness. Indian clothing is known for its elaborate patterns, vivid colors, and opulent textiles, which frequently have symbolic meanings that allude to spirituality, social standing, and family ties. Apart from that, the history of Indian fashion is a fascinating story of how different periods from the luxurious Mughal era until the British colonial influence adapted and combined different designs. Furthermore, clothing is closely linked to religious rites, with certain articles of clothing worn during ceremonies and rituals. Indian clothing is important in more ways than one; it's an artistic language that conveys social conventions and cultural values. Indian fashion has been internationally recognized in the modern era for its unique blend of modernism and heritage. In addition to preserving age-old artisanal techniques, the resurgence of handlooms and traditional craftsmanship advances sustainability in the apparel sector. Essentially, the Indian clothing idea weaves together the strands of tradition, history, and modern expression to capture a cultural heritage that endures over time.

#### KEYWORDS:

Cultural, Clothes, Clothing, Industry, Indian Fashion, Sustainable.

#### 1. INTRODUCTION

An essential component of human civilization, the idea of clothing goes beyond simple utilitarianism to weave a nuanced web of cultural, social, and individual meaning. Fundamentally, clothes communicate subtleties of personality, social roles, and cultural affinities. It is a material manifestation of identity. Over millennia have passed, and the development of clothing reflects the dynamic interaction of environmental, technical, and aesthetic variables. Clothing has reflected the ebb and flow of human civilization from the early utilitarian outfits of ancient cultures to the complex and varied sartorial choices of the contemporary day. In terms of culture, clothes are a storehouse of customs, meanings, and ceremonies that serve as visual languages for conveying social standards and common values [1], [2]. Diverse cultures exhibit unique styles of dressing, with clothes often acting as indicators of social standing, religious beliefs, or ethnicity. The rich tapestry of worldwide sartorial variation is borne forth by the vivid colors of an Indian saree, the religious robes of the Japanese kimono, or the fitted suits of Western professional wear. Furthermore, clothes and rites of passage are linked, with certain clothes denoting significant ceremonial milestones that mark life changes from conception to death [3], [4].

The idea of clothing is deeply entwined with the social dynamics of human relationships, even beyond cultural symbols. Clothing shapes initial impressions and affects perceptions as a nonverbal communicator. The "dressing for success" phenomenon highlights how clothes

affect one's self-esteem and conformity to social norms. As a dynamic manifestation of style, fashion broadens the conversation by influencing trends that reflect cultural ideals, technical developments, and even defiance of accepted standards [5], [6]. The dynamic field of fashion showcases an ongoing conversation between innovation and tradition, nostalgia and futurism. On a personal level, clothes are a tool for people to express who they are their personalities, preferences, and goals. Each item of clothing in a wardrobe represents memories, societal influences, and changing identities, forming carefully chosen tales of personal histories. The strong correlation between clothing and one's self-perception which affects mood, assurance, and even cognitive functions is a significant aspect of the psychology of dressing. Choosing what to wear may become a daily ritual that can empower, soothe, or even alter the person. Technological developments have fundamentally changed how we think about garments, altering how clothing is made, designed, and worn. The mass manufacturing and the decentralization of fashion were made possible by the revolution in garment manufacture brought about by the onset of industrialization [7], [8]. Fashion and technology have come together to create smart fabrics, 3D-printed clothes, and sustainable methods that are upending preconceived ideas about what constitutes appropriate apparel in the modern day. Discussions about ethical sourcing, environmental sustainability, and the place of fashion in a world that is changing quickly all revolve around the idea of clothing.

Clothes are more than just an item of clothing; they are a complex means of expressing culture, identity, social interactions, and personal stories. Clothes serves as a symbolic word that conveys social positions, cultural customs, and life events. The dynamic history of humankind is reflected in the ever-evolving fashion industry, which demonstrates the interaction between tradition and innovation. As an instrument of self-expression, clothing affects how people see themselves as well as how society views them. The method by which clothing is made is changing as a result of technical developments in the industry, which also challenge conventional wisdom and open the door to a future in a fashion that is more technologically advanced and environmentally conscious. Beyond the simple production of clothing, fashion design is a complex and dynamic field that encompasses a wide range of creative expression, cultural influences, technical advancements, and personal identities [9], [10]. Fashion design is fundamentally an elaborate dance between imagination and utility, in which designers imagine, sketch, and create clothing that fulfills practical needs while also conveying stories, evoking feelings, and capturing the spirit of the time. The creative process starts with inspiration from a variety of sources, such as art, nature, historical eras, or sociopolitical movements. This helps to shape the designer's vision and provide the framework for a collection that works together.

The process of designing involves thorough study, drawing, and fabric selection. Designers then work with the interaction of materials, hues, and shapes to create one-of-a-kind, eye-catching creations. Fashion designers are storytellers who use their creations to convey tales that relate to cultural settings, question social standards, or honor history. They are more than just designers of apparel. Fashion designers often find inspiration in traditional clothing, workmanship, and symbolism, combining these cultural elements to create a complex tapestry that seamlessly blends the old and the modern. The world of fashion design has transformed thanks to technology, which has given designers new tools and methods to realize their ideas. Precise and comprehensive graphics are made possible by computer-aided design (CAD) software, which expedites the design process and lets designers play with complex patterns and structures. Furthermore, smart textiles which may add utility beyond aesthetics such as temperature-regulating fabrics or clothes infused with electronics for interactive experiences are a result of improvements in fabric technology. The fusion of technology and fashion creates new creative opportunities and challenges designers to push limits and reimagine what is

possible for clothing. The process of creating clothing is intrinsically teamwork, requiring a symphony of expert craftspeople, patternmakers, and seamstresses to translate the designer's idea into actual clothing. The process's intricate workmanship honors conventional knowledge while using contemporary methods, creating a vibrant conversation between the two eras. Fashion designers are starting to pay more attention to sustainable techniques as they become more conscious of the environmental effects of their designs. The fashion industry is undergoing a transition towards healthier and environmentally aware design techniques, ranging from investigating circular fashion ideas to ethically sourcing materials.

The core of fashion design is individual identity and self-expression, as designers work to produce items that speak to a wide range of consumers. The runway turns into a platform for uniqueness celebration, political commentary, and personal tales that question conventional standards and explore identity. Fashion designers are embracing variety in body sizes, races, and gender identities, questioning conventional standards of elegance and promoting a more diverse representation in the business. As a result, inclusivity has become a focus point in the industry. The dynamic and always-changing area of fashion design sees trends come, go, and sometimes come back, reflecting the seasonal character of fashion. Designers must walk a tightrope between adhering to their creative vision and changing with the lifestyles and tastes of their clientele. The fast-paced nature of the fashion business, which is fueled by cyclical trends and seasonal collections, makes it difficult for designers to be innovative while still taking an ethical and ecological stance.

## 2. LITERATURE REVIEW

Velasco-Molpeceres A et al. [11] explained Instagram fashion brands use moderation as a communications strategy which is the factor that has led to sustainable slow fashion firms' increasing influence in the market, especially in terms of their digital strategy and communication management. To compare their perspectives with the study's findings, we used a combined research approach that included in-depth interviews with ten professionals and experts in the fields of fashion and digital communication, as well as a comparative content analysis of both qualitative and quantitative indicators. YosoLOVEamor, LIFEGLIST, ECOALF, Alohas, and ECOOLOGY are the five sustainable fashion businesses that were selected. They were picked based on the social and environmental responsibility of their business ventures, and an extensive analysis of their Instagram accounts was conducted.

Castagna A et al. [12] described the fashion industry's commitment to sustainability which is awareness of sustainability in the fashion sector. Since it's unknown why people adopt these habits, it's important to think about how different identities and self-signals affect how consumers see slow fashion. Results from two experimental investigations indicate that when non-conformity, pro-environment, and frugal signals are emphasized, consumers' word-of-mouth (WOM) and status perceptions increase. This study emphasizes the significance of boosting status via personalization to improve ownership.

Nobile T et al. [13] explained an overview of studies on digital fashion which is the evolution of the digital fashion industry by giving a broad overview of fashion design and industry. It is a component of a bigger study that included a review of 491 pertinent publications in the literature. Three primary categories communication and advertising, design and production, and culture and society were found via the corpus's study. The areas of Design and industry and Art and Society, each of which accounted for around 48% of the chosen literature, are the main emphasis of this research.

Adamkiewicz J et al. [14] explained the sustainable fashion business and greenwashing due to the significant environmental effect that the fashion industry has, it is now in the center of a

sustainability storm. The fashion industry has to quickly adopt much more ethical business methods to fully realize the promise of the circular economy. This will also need to influence customer attitudes and behavior toward circular goods and services. The adoption of strategies aimed at winning back consumers' confidence and the rejection of greenwashing tactics will boost consumers' favorable perceptions of fashion businesses. This research shows how much greenwashing could endanger the fashion industry's ability to address issues about the adoption of a more sustainable economic model in the context of recycling-focused design, a decrease in byproducts, reduced energy use, and prudent consumer behavior.

Bhardwaj V and Fairhurst A [15] described quick fashion as a reaction to alterations in the fashion sector which is The fashion garment business has changed dramatically in the past twenty years in particular. Retailers now want cheap costs and adaptability in manufacturing, design, and timeliness to market all essential tactics to sustain a successful position in the ever-demanding fashion industry due to the industry's shifting dynamics. This article examines the research on developments in the fashion garment sector during the 1990s, emphasizing the rise of the idea of "throwaway" or "fast fashion."

Thorisdottir T and Johannsdottir L [16] explained the fashion industry's sustainability and corporate social responsibility which is one of the biggest enterprises in the world is a complex phenomenon that is fueled by the inventiveness of designers and builders as well as desires for a symbolic lifestyle. Because of mass manufacturing and a low-cost structure that drives consumerism overall, it exhausts the earth's resources. This research aims to investigate the relationship between sustainability and social responsibility in the fashion sector. There was a thorough study of the literature. This included the scholarly works published between 2003 and 2019 that were found in two scientific databases with an emphasis on fashion, sustainability, and corporate social responsibility (CSR). The results show that managers in the clothing sector adopt a CSR strategy that emphasizes sustainability, innovative business models, as well as supply chain innovation. These strategies involve making commitments related to the economy, surroundings, and/or society, with a particular emphasis on the production of environmentally friendly goods and the safety of workers.

Bick R et al. [17] described the newest trends are now accessible to all consumer classes, a move that is frequently hailed as the "democratizing" of fashion; nevertheless, the long-term health hazards to the health of humans and the environment connected with low-cost apparel remain concealed. The water-intensive cotton cultivation, the untreated dyes released into nearby water sources, the low pay, and unfavorable working conditions of laborers the environmental and social consequences of textile manufacture are many. In this study, we argue that there is a worldwide environmental justice challenge that has been brought about by negative externalities at every stage of the fast fashion production chain. Fast fashion allows customers to purchase more clothing for less money, but the risks to their health are disproportionately felt by people who labor in or reside close to textile production sites.

Blas Riesgo S et al. [18] Explained a comparison between sustainable and non-sustainable consumers which is the understudied market for sustainable fashion buyers, contrasting them with Spanish consumers on average, and defining the factors that encourage and inhibit the purchase of sustainable fashion, thereby adding to the body of knowledge on the attitude-behavior gap. Following the Principles of Planned Behavior and based on a sample of 1,063 surveyed and 23 concentrate group participants, the results show that the biggest barrier preventing consumers from purchasing sustainable products or doing so more frequently is a lack of trust in fashion brands and their sustainable statements.

Sellitto M et al. [19] described comparing large retailers' fast fashion and slow fashion operations' competitive priorities in an emerging economy which is The slow and fast fashionable sales processes of major retailers in a developing country are driven by competitive goals. The six biggest Brazilian enterprises engaged in both rapid and leisurely fashion are included in the research. Four specialists examine the top priorities of rivals in fashion supply networks during the qualitative phase of the methodical approach. Subsequently, there is a quantitative phase whereby the practitioners balance the demands of fast fashion or slow fashion logistics goals with the assistance of AHP, the process of analytical hierarchy.

Wren B [20] explained eco-friendly supply chain administration in the rapid fashion sector which is the long-term effects of their supply networks on the environment. This research examines the sustainability reports of two prominent companies with strong sustainability messaging H&M and Everlane to assess SSCM in the fast fashion sector. This comparison shows that fast fashion companies have not included downstream and upstream constituents in their SSCM initiatives to the same extent. Fast fashion retailers need to encourage cooperation in the direction of more extensive supply chain SSCM regulations going the future. Brands need to connect with suppliers and customers, reevaluate product design standards, and invest in long-term carbon reductions and infrastructure for energy if they want to drastically lessen their effect.

### 3. DISCUSSION

The fascinating journey through time that is the history of fashion ties together the strands of social norms, culture, and personal expression. Clothes have served as an artistic canvas, an identity identifier, and a reflection of society's ideals from the dawn of human civilization to the modern, international fashion business. The history of fashion may be found in ancient societies when clothes had symbolic meaning in addition to being functional. For instance, in ancient Egypt, the usage of certain textiles and patterns indicated a person's position within the hierarchical framework, and clothing was a means of expressing social rank. In addition to providing protection, the elaborate Roman robes and Greek-draped clothing represented the artistic values of these ancient cultures. During the Middle Ages, many styles that were inspired by commerce, religion, and feudalism emerged. Sumptuary regulations enforced a strict social hierarchy by restricting what people might wear according to their social station. The Renaissance was a time of great change, as the resurgence of classical culture and art led to an increase in elaborate and opulent apparel. The exotic textiles and patterns brought by the thriving commerce routes of the seventeenth and eighteenth centuries increased the variety of European dress.

The emergence of Rococo fashion, which included ornate gowns, corsets, and wigs, occurred in the 18th century. Fashion publications also began to appear during this time, offering a forum for the dissemination of trends and the inspiration of style. A significant shift in fashion brought about by the French Revolution represented the rejection of noble extravagance. The revolutionary spirit was echoed in the Empire silhouette, which was defined by high measurements and simpler patterns. In contrast, the Victorian period was characterized by ornate costumes, crinolines, and expensive accessories, which reflected the social norms and principles of modesty that were prevalent at the time. Propelled by technical developments, socioeconomic movements, and a quickly changing global environment, the 20th century saw remarkable transformations in fashion. With their short skirts and defiant attitude, the flapper revolutionized gender roles throughout the Roaring Twenties. While World War II introduced rationing and utility clothes, the Great Depression's economic struggles produced more sensible and reasonably priced apparel. Haute couture and Christian Dior's renowned designs brought a fashion revolution in the post-war era.



With the advent of ready-to-wear designs and the growing impact of street style, the fashion industry became more accessible in the second half of the 20th century. A profound cultural change occurred in the 1960s when teenage counterculture influenced fashion choices. The miniskirt, vivid colors, and psychedelic designs became icons of disobedience and individuality. The bohemian look and disco glam were two of the many trends that were popular in the 1970s. Excessive fashion, power getting dressed, and the ascent of renowned designers like Gianni Versace and Karl Lagerfeld characterized the 1980s. At the start of the new century, designers drew influence from many historical periods while embracing technological developments, creating a blend of the past and the future. Fast fashion and the quick spread of trends were made possible by the democratization of fashion brought about by globalization and the development of the internet. Concerns over the fashion industry's influence on the environment led to the rise in popularity of sustainable and ethical fashion. The 21st century has also seen a rise in diversity in the fashion industry as designers pushed for inclusiveness and questioned traditional notions of beauty.

### *3.1 Medieval Clothing:*

The period of medieval clothing, approximately from the 5th until the 15th century, included a complex web of economic, social, and cultural elements that profoundly impacted the era's fashion scene. In the medieval age, clothing was not just a question of personal taste but also a direct reflection of one's social status and line of work in a hierarchical society. Rich materials like velvet, silk, and brocade, sometimes ornamented with elaborate needlework and diamonds, were worn by nobility and royalty. Flowing capes and ornate headdresses enhanced the royal appeal while denoting wealth and prestige. In sharp contrast, peasants wore straightforward, utilitarian clothing made of rough wool or linen, which reflected their agricultural lifestyle. The characteristic medieval silhouette saw significant changes. Early medieval clothing was distinguished by loose tunics that were often fastened at the hips and worn with hose or leggings. Long, flowing lines characterized women's garments, and coverings for the head were typical. The profile changed during the Middle Ages to draw attention to horizontal lines, resulting in the renowned rendering of the point Gothic arches that are reflected in both clothing and architecture. The houppelande, an expansive overgrown with broad sleeves and a raised collar, gained popularity, giving the wearer's profile a dramatic, extended appearance. Women's gowns included extravagant headdresses and trains, while men's hose became longer and often embellished with ornamental codpieces.

The medieval sumptuary rules were essential in controlling clothes according to social status and preserving a distinct visual hierarchy. These rules imposed restrictions on the kinds of materials, hues, and accessories that people from various social classes may wear, further solidifying the divisions between aristocrats, clergy, and commoners. The higher classes were identified with subdued earth tones and undyed textiles, while the lower classes were connected with bright colors of bright reds, blues, and greens. In addition to serving as a social status indicator, medieval clothing also served as a platform for religious expression. Clergy personnel dressed in elaborate and symbolic robes during religious occasions. The elaborate needlework and holy symbols on the chasuble, adjust, and all highlighted the wearers' celestial status. The visual variety of the medieval religious environment was largely a result of the distinctive habits of monastic orders, which represented their specific theological commitments. In addition, the medieval era saw the rise of fashion as an unpredictable force, with trends and fashions changing in reaction to changes in the economy and culture. Regional differences in medieval attire were influenced by trade routes that permitted the interchange of materials, spices, and clothes. For example, the dress of Europe was influenced by the exotic

materials and styles that the Crusades brought back from the East. New materials and styles were also able to spread because of the growth of medieval marketplaces and trade fairs.

### *3.2 Regency Fashion Era:*

From 1811 to 1820, the Regency period represented a new phase in the trajectory of fashion, distinguished by grace, minimalism, and a break from the opulence of the Georgian era that came before it. Named after the Prince Regent, who took the throne when King George III was temporarily incapacitated, this era saw changes in the political and fashion spheres. Grecian and Roman aspects were revived in regency fashion, which showed the influence of classical style and was sparked by the archeological findings at Pompeii and Herculaneum. The advent of the high-waisted shape, sometimes referred to as the Empire waist, profoundly altered women's fashion in particular. Lightweight materials like silk and muslin were used for the gowns, highlighting the bodies' natural shapes and flowing contours. Delicate accents like lace and embroidery matched the neoclassical inspirations, resulting in a style that was both elegant and understated.

With its columnar form and high waist, the chemise dress came to represent the Regency period. Greater freedom of movement was made possible by the lack of a constricting corset, which reflected the era's acceptance of a more natural and free silhouette. There was a noticeable change in women's hairstyles as well, with the intricate coiffures of the Georgian period giving place to the straightforward Grecian designs. Hairstyles that were braided and embellished with streamers or delicate ornaments gained popularity, highlighting a softer, more ethereal appeal. The Regency period saw a return to refinement and grace in menswear. With its long tails and fitting bodice, the tailcoat quickly established itself as a mainstay of formal attire. Pants replaced breeches, and cravats an early version of the necktie became associated with refined style. Wool and silk fabrics, which strike a balance in comfort and style, were preferred. The dandy, personified by individuals like Beau Brummell, became a cultural icon, signifying a well-groomed guy with excellent taste. The impact of political and cultural changes on dress was another characteristic of the Regency period. The French Revolution and the Napoleonic Wars had a significant effect on fashion because of the need for simplicity and financial limitations. A more democratized attitude to style was shaped by the dissemination of trends to a wider audience via the greater availability of design plates and periodicals. The Romantic Movement influenced color, pattern, and theme choices in fashion by emphasizing emotion and personal expression.

### *3.3 Fashion during the 90's:*

Fashion saw a notable shift in the 1990s, with a vibrant fusion of several trends spanning from glamorous to grunge. The development of experimental and hip-hop music in particular had a big impact on how the fashion world was shaped. Flannel shirts, baggy sweaters, and combative footwear are the quintessential pieces of grunge fashion, which arose as a defiant reaction to popular fashions.

The rise in favor of Calvin Klein and its "heroin chic" style, which featured skinny models with messy looks, coincided with the rise in popularity of minimalist aesthetics. Retro elements from the 1970s and 1980s also had a rebirth during this time, with neon colors, platform shoes, and bell bottoms among them. Supermodels like Cindy Crawford and Naomi Campbell became legendary as high fashion welcomed the trend. Sportswear and streetwear also gained popularity as companies like Adidas, as well as Nike, came to represent casual cool. The varied fashion scene of the 1990s reflected a societal trend toward independence and opposition to strict fashion standards, creating a lasting legacy that still has an impact on modern fashion.

### 3.4 Fashion in India:

India's fashion is a kaleidoscope tapestry that blends historical legacies, modern expressions, and a wide range of cultural influences. Indian fashion, which has its roots in antiquated customs, is a vivid fusion of hues, materials, and artistry that captures the nation's rich history and ever-changing social structure. The nation's fashion identity is greatly influenced by traditional Indian clothing, with its elaborate decorations and regional variances. The lehenga choli and salwar kameez highlight the variety of fashions seen in many locations, while a saree, which is a six to nine-yard cloth draped gracefully, represents elegance and heritage. The elaborate embroidery methods, such as kantha and zardozi, preserve generations-old artisanal traditions that date back hundreds of years. The history of India is entwined with the development of Indian fashion, from the grandeur of the Mughal Empire to the impact of colonialism and the following attempts to recover cultural identity. The emergence of British colonialism led to the blending of Indian and Western designs, creating ensembles such as the Anarkali suit.

Encouraged by leaders like Mahatma Gandhi, the promotion of indigenous handmade and textile businesses flourished after independence, leading to a resurgence of interest in traditional materials like khadi. Indian fashion was greatly influenced by the worldwide diaspora and Bollywood's emergence in the second half of the 20th century. Bollywood emerged as a cultural force that created trends, affecting not just the Indian public but also how the world saw Indian fashion. Designers who combined traditional features with modern sensibilities, like Ritu Kumar and Manish Malhotra, were instrumental in introducing Indian fashion to the world. The dynamic fusion of modernity and heritage is the Indian fashion scene of today. Well-known designers like Anita Dongre and Sabyasachi Mukherjee have won praise from all around the world for their ability to slickly combine avant-garde designs with traditional workmanship. A prominent event on the international fashion calendar, India Fashion Week highlights the range of talent in the nation, from avant-garde streetwear to classic couture. Sustainable fashion has also become more popular, emphasizing ethical sourcing, eco-friendly processes, and the resuscitation of age-old weaving methods. Figure 1 shows fashion in India.



**Figure 1: Represents Fashion in India.**

### 3.5 Impact of the Pandemic on the Fashion Industry:

The worldwide pandemic has had a dramatic effect on the fashion environment, bringing about a paradigm change that goes beyond the runway and redefines the fundamental nature of the business. It has caused unprecedented delays and seismic upheavals across sectors. The global fashion industry faced a series of cascading consequences as it struggled with the numerous

problems posed by the COVID-19 epidemic. These consequences reshaped supply networks, customer behavior, and the entire notion of style. E-commerce and online purchasing experiences surged as a result of brick-and-mortar retail facing an existential crisis with lockdowns and social exclusion tactics. Designers and companies questioned the value of the conventional model, which led to a major reevaluation of the fashion calendar that was previously determined by season and fashion weeks. Fashion Weeks' cancellation or virtualization sparked a discussion among industry participants about the sustainability and rate of continuous production, with an increasing recognition of the environmental cost and the necessity for more measured, thoughtful approaches to design and consumption.

The pandemic's economic effects revealed the fashion supply chain's weaknesses, with many garment workers forced into insecure employment due to canceled orders and other interruptions. Demands for sustainable and ethical practices gained traction as the crisis brought attention to how exploitative fast fashion is. Consumers demanded fair labor policies, environmental responsibility, and transparency from brands, which led to increased scrutiny. The outbreak sparked a wider discussion about the industry's obligations to the environment and humans. The pandemic's effects on work-from-home standards and lifestyle modifications changed consumer expectations, creating a need for clothes that are practical, adaptable, and comfortable. The rise in sales of loungewear and athleisure apparel indicated a change in customer preferences as they looked for apparel that combined style with comfort in a society where people are less socially connected. The pre-pandemic era of ostentatious and trend-driven wearing markedly changed with the emergence of practical fashion and the decrease of occasion-based dressing. With its focus on longevity and classic style, sustainable fashion gained popularity as buyers looked for better quality and longer-lasting items.

#### 4. CONCLUSION

The Indian clothing idea is a dynamic tapestry that interweaves tradition, identity, and creative expression and is a living tribute to the subcontinent's rich cultural and historical legacy. The wide range of clothing items, including the kurta, dhoti, and saree, serve as an art form that conveys cultural values while also showcasing regional variances and symbolizing centuries-old traditions and rituals. Indian clothing's elaborate patterns, vibrant hues, and plush materials have profound symbolic implications that represent spirituality, social standing, and ties to family. Indian fashion changed throughout the years, absorbing elements from the Mughal to the British colonial periods but retaining its own identity. Given that certain clothes are worn throughout different rites and ceremonies, the clothing's importance is further highlighted by its association with religious traditions. Beyond only being aesthetically pleasing, the Indian clothing idea bridges the gap between the past & the present by fusing tradition and modernity in current representations. Furthermore, the resurgence of handlooms and traditional craftsmanship promotes ecology in the global fashion scene in addition to conserving antiquated artisanal techniques. Essentially, the idea of Indian attire is not merely a way to wear; it is an artistic expression that endures, capturing the flexibility, resiliency, and eternal beauty of the Indian cultural past.

#### REFERENCES:

- [1] P. Shao and H. Lassleben, "Determinants of consumers' willingness to participate in fast fashion brands' used clothes recycling plans in an omnichannel retail environment," *J. Theor. Appl. Electron. Commer. Res.*, 2021, doi: 10.3390/jtaer16070181.
- [2] X. Wang, X. Wang, J. Lei, and M. C. ho Chao, "The clothes that make you eat healthy: The impact of clothes style on food choice," *J. Bus. Res.*, 2021, doi: 10.1016/j.jbusres.2020.10.063.

- [3] S. A. Møller, P. U. Rasmussen, M. W. Frederiksen, and A. M. Madsen, "Work clothes as a vector for microorganisms: Accumulation, transport, and resuspension of microorganisms as demonstrated for waste collection workers," *Environ. Int.*, 2022, doi: 10.1016/j.envint.2022.107112.
- [4] K. Dissanayake and R. Pal, "Sustainability dichotomies of used clothes supply chains: a critical review of key concerns and strategic resources," *International Journal of Logistics Management*. 2023. doi: 10.1108/IJLM-10-2022-0410.
- [5] K. Kapusy and E. Lógó, "The extended shopping experience of used clothes in Hungary," *Period. Polytech. Soc. Manag. Sci.*, 2020, doi: 10.3311/PPSO.14221.
- [6] S. E. Cudney, A. Wayne, and E. A. Rozanski, "Clothes dryer-induced heat stroke in three cats," *J. Vet. Emerg. Crit. Care*, 2021, doi: 10.1111/vec.13131.
- [7] D. T. H. Aruan and I. Wirdania, "You are what you wear: examining the multidimensionality of religiosity and its influence on attitudes and intention to buy Muslim fashion clothing," *J. Fash. Mark. Manag.*, 2020, doi: 10.1108/JFMM-04-2019-0069.
- [8] C. Gaylarde, J. A. Baptista-Neto, and E. M. da Fonseca, "Plastic microfibre pollution: how important is clothes' laundering?," *Heliyon*. 2021. doi: 10.1016/j.heliyon.2021.e07105.
- [9] J. Montusiewicz, M. Miłosz, J. Kęsik, and K. Żyła, "Structured-light 3D scanning of exhibited historical clothing—a first-ever methodical trial and its results," *Herit. Sci.*, 2021, doi: 10.1186/s40494-021-00544-x.
- [10] J. Mohammad, F. Quoquab, and N. Z. Mohamed Sodom, "Mindful consumption of second-hand clothing: the role of eWOM, attitude and consumer engagement," *J. Fash. Mark. Manag.*, 2020, doi: 10.1108/JFMM-05-2020-0080.
- [11] A. Velasco-Molpeceres, J. Zarauza-Castro, C. Pérez-Curiel, and S. Mateos-González, "Slow Fashion as a Communication Strategy of Fashion Brands on Instagram," *Sustain.*, 2023, doi: 10.3390/su15010423.
- [12] A. C. Castagna, M. Duarte, and D. C. Pinto, "Slow fashion or self-signaling? Sustainability in the fashion industry," *Sustain. Prod. Consum.*, vol. 31, pp. 582–590, May 2022, doi: 10.1016/j.spc.2022.03.024.
- [13] T. H. Nobile, A. Noris, N. Kalbaska, and L. Cantoni, "A review of digital fashion research: before and beyond communication and marketing," *Int. J. Fash. Des. Technol. Educ.*, vol. 14, no. 3, pp. 293–301, Sep. 2021, doi: 10.1080/17543266.2021.1931476.
- [14] J. Adamkiewicz, E. Kochańska, I. Adamkiewicz, and R. M. Łukasik, "Greenwashing and sustainable fashion industry," *Curr. Opin. Green Sustain. Chem.*, vol. 38, p. 100710, Dec. 2022, doi: 10.1016/j.cogsc.2022.100710.
- [15] V. Bhardwaj and A. Fairhurst, "Fast fashion: response to changes in the fashion industry," *Int. Rev. Retail. Distrib. Consum. Res.*, vol. 20, no. 1, pp. 165–173, Feb. 2010, doi: 10.1080/09593960903498300.
- [16] T. S. Thorisdottir and L. Johannsdottir, "Corporate Social Responsibility Influencing Sustainability within the Fashion Industry. A Systematic Review," *Sustainability*, vol. 12, no. 21, p. 9167, Nov. 2020, doi: 10.3390/su12219167.



- [17] R. Bick, E. Halsey, and C. C. Ekenga, "The global environmental injustice of fast fashion," *Environmental Health: A Global Access Science Source*. 2018. doi: 10.1186/s12940-018-0433-7.
- [18] S. Blas Riesgo, M. Lavanga, and M. Codina, "Drivers and barriers for sustainable fashion consumption in Spain: a comparison between sustainable and non-sustainable consumers," *Int. J. Fash. Des. Technol. Educ.*, 2023, doi: 10.1080/17543266.2022.2089239.
- [19] M. A. Sellitto, D. R. F. Valladares, E. Pastore, and A. Alfieri, "Comparing Competitive Priorities of Slow Fashion and Fast Fashion Operations of Large Retailers in an Emerging Economy," *Glob. J. Flex. Syst. Manag.*, vol. 23, no. 1, pp. 1–19, Mar. 2022, doi: 10.1007/s40171-021-00284-8.
- [20] B. Wren, "Sustainable supply chain management in the fast fashion Industry: A comparative study of current efforts and best practices to address the climate crisis," *Clean. Logist. Supply Chain*, 2022, doi: 10.1016/j.clscn.2022.100032.



## CHAPTER 7

### REVOLUTIONIZING BRIDAL FASHION: AUGMENTED REALITY'S IMPACT ON VIRTUAL TRY-ONS, CONSUMER PREFERENCES, AND MARKET DYNAMICS

---

Prof. Anwar Khan, Assistant Professor  
ISDI, ATLAS SkillTech University, Mumbai, Maharashtra, India  
Email Id- anwar@isdi.in

#### ABSTRACT:

The way consumers purchase goods and services online is changing due to augmented reality, and companies are finding new methods to provide customers with a positive AR experience. Both nationally and internationally, weddings are celebrated. Indians who do not live in the country like to observe their special day according to tradition. The methodology section outlines the research process, starting with an exploration of AR in the fashion industry, the investigation into tech-fashionable brands, and an extension into AR's role in bridal fashion. The study culminates in the conceptualization of the Virtual Bride App for Sulakshana Monga. Nevertheless, there are several locations throughout the globe where bridal designer stores are not accessible. Brides therefore purchase their clothing online. Brides will ultimately benefit from virtually putting these clothes on since it will save time and provide an immersive experience. It will need primary research to narrow this gap. The results highlight consumer preferences and experiences, indicating a significant reliance on mobile apps for shopping. Several outcomes are proposed, including the development of a platform for virtual garment try-ons on the Soltee website, the integration of AR features into Soltee's app, and the creation of AR filters for marketing. The section introduces Sulakshana Monga's brand and envisions the Virtual Bride app as a tool for consumers to virtually try on bridal wear. In conclusion, the research provides a comprehensive exploration of AR in the fashion industry, with a focus on bridal wear, backed by survey results, innovative concepts, and strategic business proposals.

#### KEYWORDS:

Augmented Reality, Bridal Fashion, Consumers, Market, Virtual Bride.

### 5. INTRODUCTION

The endeavor of AR clothes try-on, a domain historically more challenging and lucrative in cosmetics and accessories, is experiencing a notable shift. After years of steady progress, the landscape is swiftly transforming. Experts contend that a surge in recent pilots and investments is propelling the realization of realistic AR clothing, and the pace of this advancement is on the rise.

This transformative development holds the potential to revolutionize digital clothes sales, boost conversion rates, and mitigate e-commerce returns within the fashion industry. AR clothing try-on involves the presentation of three-dimensional digital garments in real time, primarily through mobile phones but also via laptops and other devices. In the thriving wedding market, where individuals often cross borders to find the perfect lehenga, the conventional approach is hardly practical. Hence, virtual try-ons emerge as a promising solution, particularly beneficial for brides seeking an enhanced and convenient shopping experience [1], [2].

#### *a. Augmented Reality in Fashion*

As per ABI Research, by the year 2022, augmented reality is anticipated to be adopted by over 120,000 retailers. Companies must take note, given that the global count of AR-capable devices

is projected to surpass 4 billion. The incorporation of augmented reality in the realm of fashion is transforming the dynamics of customer-business interactions. This innovative technology allows customers to virtually experience products from the comfort of their homes. Through AR, customers gain a better understanding of their potential purchases, facilitating a smoother alignment with their expectations. Ultimately, this contributes to heightened post-purchase satisfaction and fosters increased brand loyalty [3], [4].

#### *b. AR Filters on Social Media*

Instagram reports that a substantial portion, specifically one-third, of the most viewed Instagram stories belong to businesses. Moreover, users spend an average of 75 seconds engaging with AR filters, which is four times longer than their interaction with mobile videos. This scenario presents a significant prospect for the fashion industry to leverage AR filters for cultivating a dedicated brand following. A multitude of renowned brands are capitalizing on filters to allure fresh customers and captivate existing ones. While each employs a distinct approach, the outcome is a novel avenue for users to interact with the product [5], [6].

##### *1.3. Businesses Using AR Filters*

2. Gucci utilized an augmented reality filter, showcasing a holographic pearlescent tiara. The "I See You" filter was specifically crafted to promote self-expression.
3. H&M developed six augmented reality filters as part of the promotional campaign for a line of apparel inspired by 1990s streetwear.
4. Calvin Klein introduced three interactive filters. The "MyCalvins Mood" filter enables users to select one of three mood hues. The "CK Everyone" filter dynamically displays the message "I love every one of me" as the user moves. Lastly, the "Deal with It" filter functions as a distinctive halo effect.
5. Louis Vuitton contributed to the League of Legends game by designing costumes for its characters and concurrently released a complementary filter.

#### *c. Virtual Fittings and Try-ONS*

Empowering customers to experience clothing firsthand, virtual fitting rooms enable individuals to try on garments in the convenience of their homes. This allows consumers to assess size, style, and fit before making a purchase. Projections indicate a substantial growth in the global market for virtual fitting rooms, anticipated to surge from \$3.50 billion in 2021 to \$12.97 billion in 2028.

The research underscores that a staggering 97 percent of consumers have abandoned purchases due to inconvenience. Virtual fitting rooms streamline the try-on process, addressing this concern. Furthermore, 34% of customers express that virtual fitting rooms enhance the enjoyment of online shopping, highlighting their positive impact on the overall purchasing experience [7], [8].

#### *d. Luxury Brands Embracing Virtual Try-ONS*

##### *i. Saks Fifth Avenue:*

At Saks Fifth Avenue, customers can utilize smart glasses or their smartphones to access RPR's virtual garment configurator. This virtual garment rack experience is available both in-store and from the comfort of their homes.

ii. *Ralph Lauren:*

Ralph Lauren employs an augmented reality strategy by placing virtual mirrors in fitting rooms. These mirrors, boasting a remarkable 90% interaction rate, recognize the products brought into the fitting room and simulate a personalized try-on session for the shopper.

iii. *GAP:*

Taking sales to new heights, GAP introduces a comprehensive virtual dressing room. Users can try on GAP's augmented reality apparel, tailored to their body shape and size. This interactive AR solution aims to minimize garment returns, providing consumers with a visual representation of the intended purchase and generating excitement around the new clothing range.

iv. *Tiffany & Co.:*

Renowned luxury brand Tiffany & Co. ventures into augmented reality for selling jewelry. Addressing the significant decision of purchasing an engagement ring, the company developed the Engagement Ring Founder AR shopping application. This personalized AR approach not only eases the stress of a major purchase but also extends Tiffany & Co.'s reach to customers worldwide, fostering long-term connections. These brands strategically leverage augmented reality and virtual try-ons to enhance customer engagement, minimize returns, and create a more personalized shopping experience [9], [10].

e. *The Indian Market Is Fashionably Late To the Tech Party*

The Indian market has stylishly arrived late to the tech scene. In the realm of fashion, akin to other product-centric industries, there is a growing openness to embracing virtual and augmented reality to craft tailored consumer experiences, ultimately driving increased sales. Despite concerted efforts by businesses globally, the progress in adopting such transformative technologies has been notably less pronounced among their Indian counterparts in the past decade.

However, breaking this trend, the renowned e-commerce beauty brand Nykaa has recently announced a strategic partnership with L'Oreal to introduce AI-powered virtual try-on technology called 'ModiFace' on its website. This technology is anticipated to elevate the cosmetic experience for makeup enthusiasts, offering a virtual try-on feature on Nykaa's website and mobile app, facilitating customers in making informed purchases across various beauty categories [11], [12].

f. *Embrace Your Bridal Journey with AR*

Suzanne Harward, a trailblazer in Australian bridal fashion since 1975, has consistently led innovations in bridal design. INHABIT is thrilled to announce its collaboration with Suzanne Harward, introducing an immersive and seamless bridal gown shopping experience through an innovative Augmented Reality (AR) platform.

The Suzanne Harward Virtual View smartphone app, compatible with iOS and Android, empowers brides to explore Suzanne Harward's complete collections of lifelike, true-to-size fashion models within the comfort of their homes. Customers of Suzanne Harward can now enhance their purchasing confidence through the utilization of Virtual View. This revolutionary app provides an intimate and hyper-realistic examination of the exquisite fabrics and intricate details adorning each bridal gown. By presenting the ensembles in a true-to-life setting, customers can make informed decisions, leading to a reduction in product returns and a significant boost in sales for businesses [13], [14].

g. *David's Bridal Partners with Vertebrae to Enhance Wedding Gown Experience through Augmented Reality.*

David's Bridal has partnered with Vertebrae to introduce an innovative augmented reality (AR) experience for wedding gowns. As the nation's leading bridal and special occasion retailer, David's Bridal, in collaboration with Vertebrae, has unveiled a groundbreaking commerce experience. This immersive AR solution allows shoppers to bring wedding attire directly into their homes, offering a 360-degree view of gowns on the internet. David's Bridal is pioneering this AR depth in the bridal industry, providing buyers with the unique ability to virtually walk around dresses in their own space. This technology enables customers to visualize how the gown will look, explore intricate details up close, and even assess its compatibility with other bridal party outfits before making a trip to the stores [15].

The research highlights the transformative impact of augmented reality (AR) in the fashion industry, particularly in the domain of AR clothes try-ons. The narrative emphasizes the growing adoption of AR technology, citing its potential to revolutionize digital clothes sales, boost conversion rates, and reduce e-commerce returns. The methodology of a survey exploring consumer preferences and experiences related to mobile app shopping, online wedding apparel purchases, and the significance of virtual try-ons. The result and discussion section shows the importance of mobile app shopping, challenges with size or fit in online shopping, and the perceived advantages of virtual garment try-ons. Finally, the research ends with a conclusion section that explains the outcome and future of this research.

## 2. LITERATURE REVIEW

Funduk I. and Pavko-Čuden A. [16] focused on the symbolic meanings of the white wedding dress in Slovenia, exploring its construction, performance, and social characteristics. Using a mixed methods approach, the research found that contemporary bridal fashion in Slovenia, influenced by global Western trends, emphasizes symbolic elements such as entrapment, dependency, slenderness, inauthenticity, and exaggerated attributes of brides' bodies. Both qualitative and quantitative analyses affirmed the strong presence of these symbolic elements in modern Slovenian bridal fashion.

Chagas G. and Mezabarba S. [17] explored the dress practices of Muslim women in Brazil, with a specific focus on their choices, preparations, usage, and discussions related to wedding garments. The goal is to comprehend how these women, driven by religious considerations, interpret Islamic norms regarding female body coverage, especially during significant events like weddings. The study explores how they blend bridal fashion trends with their religious beliefs. Through ethnographic fieldwork and personal interviews, the analysis emphasizes that Muslim women seek a modest authenticity, combining elements of "Brazilian culture," "female beauty," and Islam in their marital garments. Ultimately, the research highlights the dynamic interplay between religion and fashion, showcasing a unique aesthetic marked by improvisation and creativity, given the absence of the Islamic fashion industry in the Brazilian market.

Santika W. and Hayatunnufus H. [18] explored the rich traditions of wedding ceremonies and bridal makeup in Nagari Abai Sangir. Through qualitative methods like observation, interviews, and documentation, the study uncovers fascinating details. The marriage ceremonies at Gadang House 21 in Nagari Abai Sangir include pre-marriage rituals, the wedding ceremony itself, and post-wedding events. Before makeup, a significant ritual called *panic* involves the bride and groom eating betel and reciting prayers. Bridal clothing and accessories in Nagari Abai Sangir carry deep meanings. For instance, the bride's attire includes items like *suntiang*, *kuruang* clothes, *sendang*, *orok*, *kaluang omeh*, *galang furnace*, and *tarompa tinggi*. Each element symbolizes important values, such as carrying responsibilities,

showcasing Minangkabau democracy, preserving modesty, emphasizing beauty and wealth, and promoting cautious travel. The groom's attire also holds symbolic significance, representing greatness, adherence to customs, leadership, and thoughtful decision-making. The study emphasizes the cultural richness and meaningful symbolism embedded in every aspect of the bridal attire and ceremony. It concludes by recommending the preservation of these customs in Nagari Abai Sangir, particularly regarding bridal makeup, fashion, and accessories.

Saha I. and Mathew D. [19] studied the flourishing Indian wedding industry, where affluence is on the rise, and brides are increasingly investing in exclusive, high-fashion, designer bridal wear. Despite that trend, there is a lack of published research on the aesthetic preferences of bridal couples in India, particularly regarding innovative designs. That study explores the use of 3D printing technology in creating bridal lehengas and investigates consumer attitudes towards that innovative approach. Through semi-structured interviews with Indian bridal wear consumers and decision-makers, the research finds that respondents exhibit a positive attitude towards 3D-printed bridal lehengas. They perceive higher aesthetics and wearability in these innovative designs, signaling a potential shift in the traditional landscape of bridal wear.

Lavoye V. [20] discussed augmented Reality (AR) virtual try-ons (VTO) have become crucial decision-making tools due to their realistic experience, such as allowing users to virtually try on products like sunglasses. Current research emphasizes spatial presence but neglects social and self-presence in AR experiences. That study addressed the gap by reviewing presence literature in immersive technologies, defining AR spatial, social, and self-presence, and exploring their impact on consumer outcomes. The study underscores the need for a multidimensional perspective and calls for future research to examine contextual factors influencing presence outcomes, considering various marketing channels and product types. However, the study acknowledges limitations in only focusing on current AR-VTO experiences.

Dr. Asha Rathi [21] focused on understanding the perceptions, buying behaviors, and satisfaction levels of consumers in the Indian market. With the rise of urban lifestyles, the Indian consumer market has seen increased income levels, positioning India to become the fifth-largest consumer market globally by 2025. The advent of online shopping has further influenced consumer behavior, providing advantages such as 24/7 accessibility, reduced overhead costs, and a diverse product range. Online shopping, also known as E-tailing, represents a revolutionary trend in Indian commerce, akin to internet banking. Recognizing the importance of understanding consumer tastes, behaviors, and preferences, the study emphasizes that consumers play a pivotal role in shaping market dynamics. Consumer behavior is a complex and multi-dimensional process, and successful marketing decisions hinge on accurate predictions of consumer behavior. In the modern business landscape, anticipating and strategizing for consumer behavior is crucial for the success of any enterprise. Despite a relatively low per capita income, Indian consumers are known for their high import orientation, making India an attractive market even for high-end products. The study highlights keywords such as Changing Dynamics, Consumer Behaviour, Buying Strategies, and Preferences of Consumers in examining these trends.

### 3. METHODOLOGY

#### 3.1. Design:

In the exploration of Augmented Reality (AR) in the fashion industry, the focus was on its transformative potential for customers, offering a glimpse into the future of fashion. Tech-forward brands like Burberry, Gucci, Timberland, and Lacoste embraced AR applications, yet a considerable segment of the population remained unaware of these technological

advancements. The investigation extended to AR's role in bridal fashion, with examples from global platforms like David's Bridal and Say Yes to the Dress. Notably, the study culminated in the conceptualization of a Virtual Bride App tailored for Indian designer Sulakshana Monga, presenting an innovative AR solution for virtual bridal dress trials, particularly catering to long-distance or NRI brides. Figure 1 explains the study methodology.

*i. Augmented Reality (AR) in the Fashion Industry:*

Commencing my exploration into Augmented Reality, I delved into its transformative potential for customers, envisioning it as the future of fashion. Overcoming the challenge of imagining intricate details in a specific silhouette or fabric, AR emerges as a boon, providing consumers with realistic renderings of their chosen design combinations.

*ii. Tech-Fashionable Brands:*

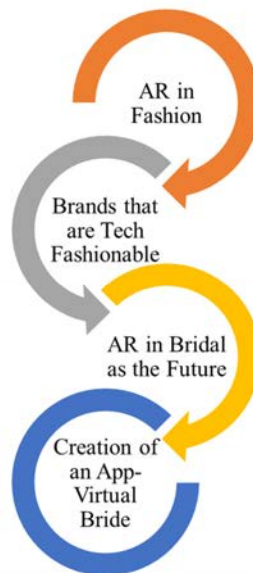
Further investigation led me to delve into brands at the forefront of technology in fashion. Burberry, Gucci, Timberland, and Lacoste were among those adopting AR applications. However, it became apparent that a significant portion of individuals remain unaware of these applications, lacking the technological proficiency to engage with them.

*iii. AR's Role in Bridal Fashion:*

Expanding the scope, I explored the application of Augmented Reality in the bridal market. Notable examples included David's Bridal and Say Yes to the Dress, showcasing the effective integration of AR technology. Interestingly, while such platforms thrive internationally, their presence in India appears limited.

*iv. The Virtual Bride App:*

As the culmination of this study, conceptualized an app tailored for Indian designer Sulakshana Monga. The app incorporates an AR component specifically designed for her bridal dresses, which are frequently showcased internationally. This innovative approach aims to assist long-distance or NRI brides by offering a virtual trial experience for the garments. In Figure 1 shown the Explanation of the research process.



**Figure 1: Illustrate the Explanation of the research process.**



## 2. Sample

This survey comprises five key questions focused on the shopping preferences and experiences of respondents. It explores the significance of the shopping experience through mobile apps, the frequency of purchases from e-commerce platforms, preferred approaches to shopping for weddings, encounters with size or fit issues when shopping online, and opinions on the potential advantages of virtual garment try-ons for brides dealing with long-distance circumstances. The responses to these questions aim to provide insights into the evolving dynamics of consumer behavior, especially in the context of online and mobile-based shopping, and shed light on the challenges and preferences in the wedding apparel market.

## 3. Instrument

With an emphasis on purchases linked to weddings, the study explores consumer preferences and experiences with online shopping, especially concerning mobile applications. Important factors include the importance of the mobile app shopping experience, the frequency with which e-commerce platforms are used, the favored methods of wedding shopping, the difficulties encountered when attempting to fit or size an item while shopping online, and the apparent benefits of virtual try-ons for clothing, particularly for brides who are traveling.

1. Is the shopping experience through mobile apps significant for you?
2. How frequently do you make purchases from e-commerce platforms?
3. What is your preferred approach to shopping for weddings?
4. Have you encountered issues with size or fit when shopping online?
5. In your opinion, would virtual garment try-ons be advantageous for brides facing long-distance circumstances?

## 4. Data Collection

An immersive experience on apps resonates with 85.4% of customers, with 32.9% making monthly purchases. However, 76.8% face challenges related to outfit fit, and 74.4% express the belief that virtual try-ons could greatly benefit long-distance brides. These findings underscore a noticeable technological gap in the bridal industry that warrants attention and advancement.

## 5. Data Analysis

The survey results provide valuable insights into respondents' perspectives on various aspects related to the shopping experience, particularly in the context of weddings and bridal wear. The questions presented aimed to gauge attitudes and preferences, and the following paragraphs break down the findings for each question.

### *i. Importance of Mobile App Shopping:*

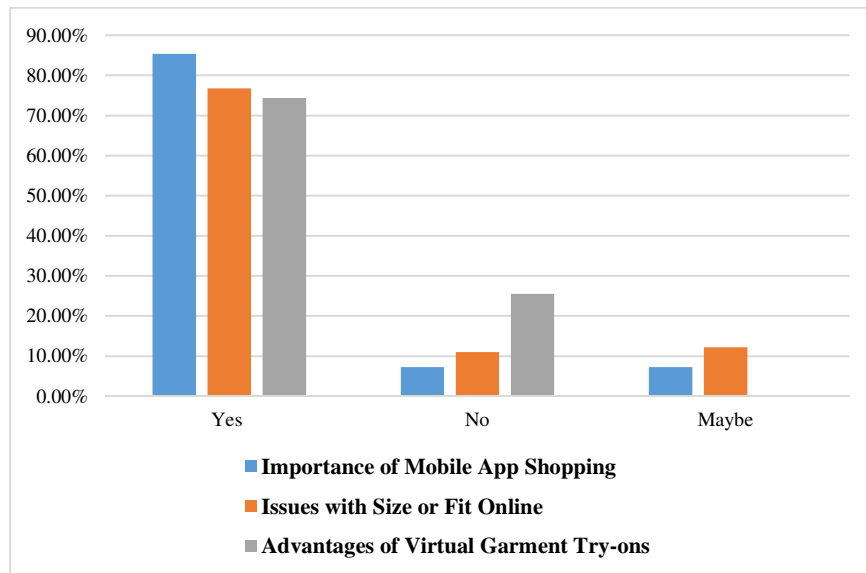
The majority of respondents, accounting for a substantial 85.40%, expressed a clear inclination towards considering mobile app shopping as significant. This overwhelming response suggests a growing reliance on mobile applications for the shopping experience. The respondents' positive affirmation highlights the increasing role of mobile apps in shaping consumer behavior and preferences, emphasizing the need for businesses and platforms to prioritize and enhance their mobile app offerings to cater to this demand. While a small percentage indicated a lack of significance (7.30%), a similar percentage remained undecided (7.30%), indicating the potential for further exploration and improvements in mobile shopping experiences.

### ii. Issues with Size or Fit Online:

A significant 76.80% of respondents reported facing issues with size or fit when shopping online. This finding underscores a common challenge in the online shopping landscape, particularly for items as specific as wedding garments. The high percentage of respondents encountering such issues suggests a need for innovative solutions, perhaps through improved sizing charts, virtual fitting rooms, or more accurate product descriptions. While 11% of respondents did not face size or fit issues, and 12.20% were uncertain, addressing these concerns is crucial for enhancing the overall satisfaction of online shoppers and building trust in the virtual shopping experience.

### iii. Advantages of Virtual Garment Try-ONS:

A notable 74.40% of respondents recognized the advantages of virtual garment try-ons. This indicates a substantial acknowledgment of the potential benefits offered by technology in overcoming the limitations of traditional online shopping, particularly for items as personalized as wedding attire. The positive response suggests a receptiveness to embracing technological innovations that enhance the virtual shopping experience. However, it's noteworthy that 25.60% of respondents may not have fully grasped or appreciated the advantages of virtual garment try-ons. This presents an opportunity for education and awareness-building regarding the potential benefits of such technologies in the context of wedding apparel. Recognizing Patterns and Difficulties in the Online Retail Industry, Figure 2.



**Figure 2: Understanding Trends and Challenges in the World of Online Shopping.**

These survey results shed light on consumer sentiments, revealing both the positive reception and challenges associated with the evolving landscape of wedding-related shopping experiences, especially in the digital realm. Businesses and platforms can leverage these insights to tailor their offerings and address specific pain points, ultimately striving for a more seamless and satisfying shopping journey for consumers.

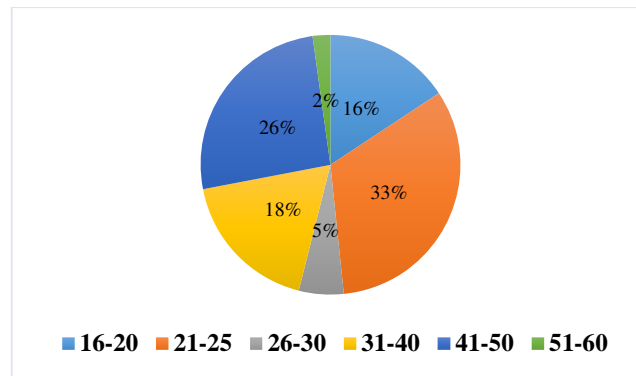
## 4. RESULT AND DISCUSSION

While 85.4% of consumers appreciate immersive app experiences, and 32.9% make monthly purchases, 76.8% encounter fit issues, with 74.4% believing virtual try-ons are advantageous for distant brides. Surprisingly, Soltee employees revealed a lack of AR understanding among

Indians, even though numerous wedding wear designers target international markets. This highlights a significant technology knowledge gap in the bridal market that needs to be addressed.

### 1. By Age

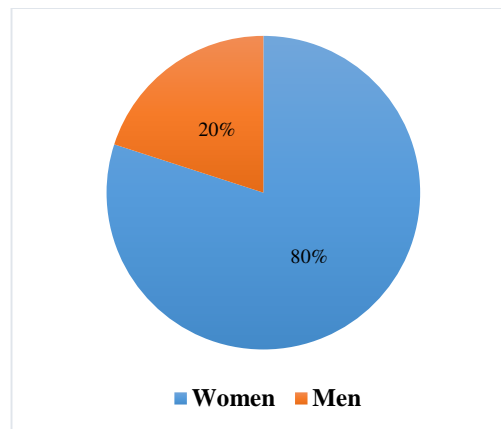
The majority of participants who engaged in the survey were found to be individuals within the age range of 21 to 25, and notably, a substantial portion of them identified as unmarried. This demographic trend revealed a distinct lack of individuals within this age group who were currently in the phase of entering into marital unions or engagements. The survey painted a picture of a predominant focus on younger, unmarried respondents, shedding light on the demographic dynamics within the specified age bracket. Figure 3 shows the age breakdown of survey respondents concerning their demographic distribution.



**Figure 3: Illustrate the Demographic Distribution: Age Breakdown of Survey Participants.**

### 2. By Gender:

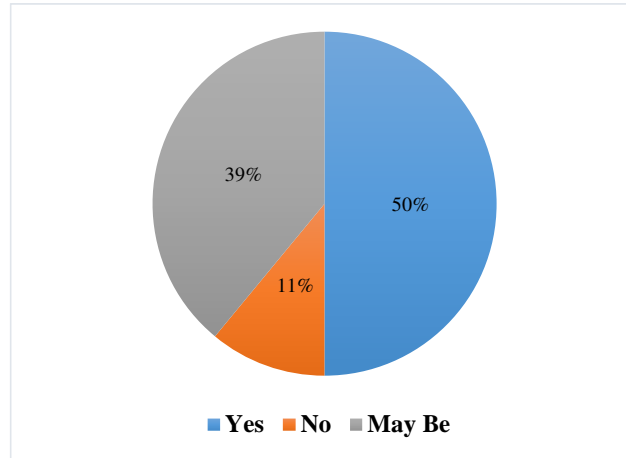
The distribution of respondents based on gender exhibited a marked imbalance, primarily attributed to the survey's thematic emphasis on bridal wear. The disproportionate ratio between male and female participants underscored the targeted nature of the survey, where the subject matter naturally drew a more significant response from individuals identifying with the female gender. This gender skew indicated the tailored nature of the survey's focus, revolving around aspects closely associated with bridal and wedding-related themes. The gender distribution in fashion preferences is seen in Figure 4.



**Figure 4: Illustrate the Gender Distribution in Fashion Preferences.**

### 3. AR In Bridal Wear:

While a noteworthy segment of respondents recognized and acknowledged the potential advantages of incorporating augmented reality (AR) in the realm of bridal wear, a substantial proportion remained uninformed or unfamiliar with this technological application. Despite a recognition of its potential utility, a considerable number of participants had yet to grasp the specifics of AR technology in the context of bridal wear. This disparity in awareness highlighted an opportunity for further education and exploration of AR's capabilities in enhancing the bridal wear experience. Bridal opinions on augmented reality are shown in Figure 5, which celebrates technological trends.



**Figure 5: Illustrate the Celebrating Technological Trends: Bridal Opinions on Augmented Reality.**

A substantial body of research affirms that augmented reality (AR) technology is transforming the landscape of the bridal wear industry, offering brides-to-be an immersive, convenient, and cost-effective method for selecting their ideal wedding dress. This innovation enables designers to present a more extensive array of designs, customization options, and access to a global market, positioning it as a pivotal tool for the industry's expansion and advancement. The rise of e-commerce platforms and online marketplaces has notably simplified the process of shopping for Indian bridal attire from overseas. Furthermore, there is a remarkable 97% increase in the demand for these applications. Despite this growth, a significant portion of the Indian populace remains unaware of AR technology, primarily due to the enduring reliance on traditional, in-person try-ons. According to survey results, 70% of respondents recognize the importance of AR technology in the Indian bridal business, while 30% are not familiar with this technological innovation. In the Indian market, some brands have already begun developing AR applications for their products. However, the adoption of AR in designer bridal wear lags as brides generally prefer physical store visits for garment trials. This poses a challenge for long-distance brides, as 80% of them opt for online shopping. As AR technology advances, it holds the promise of allowing NRI brides to virtually try on designer bridal ensembles from the comfort of their homes.

### 4. Options for outcomes

1. Development of a platform enabling customers to virtually try on clothing on themselves on the Soltee website. 3D models of the Varanasi bridal collection will be built, and augmented reality technologies will follow.

2. An app that lets users virtually view the clothes themselves is being developed, and Soltee's app will get this AR function. The bridal collection will be included in an augmented reality program after being uploaded as 3D models.
3. An AR filter featuring Soltee's wedding line will be posted on the platform, along with a link to the website. The customer may simply try on the clothing and make purchases straight from the internet.

#### 5. *Virtual Bride*

The designs of Sulakshana Monga are artistic creations with flawless fit and craftsmanship. The brand elegantly blends Western concepts with Indian culture to create clothing for the young at heart. From regional to international, Sulakshana Monga's line honors heritage with everything from sophisticated gowns to vibrant wedding wear. With just five *kaarigars* in Hauz Khas hamlet when it first began, the brand has now expanded globally. She has clients who purchase online as a result.

This brand would benefit greatly from an augmented reality application as it would increase consumer happiness, lower return rates, and foster an immersive experience that will grow sales.

Customers will be able to choose the costume they want to wear and then virtually try it on using this program, which will be accessible on the app store. The brand's color scheme, typography, and general look served as the primary sources of inspiration for the designs.

#### 6. *Plan of business*

The goal of Virtual Bride is to use AR technology to generate 3D models for bridal wear companies. Only those who subscribe to the application with a charge will be able to use the augmented reality function. Both iOS and Android will support this application. The target population will be Indians living outside of India and long-distance brides. Virtual Bride will target companies with a worldwide clientele.

### 5. CONCLUSION

Customers' opinions of augmented reality are increasingly positive. The ease of purchasing products online has allowed for further advancements in augmented reality technologies. India's wedding market is a traditional one, with customers traveling from all over the world to purchase clothing.

The Indian wedding industry will benefit from virtual try-ons' increased brand sales, wider consumer base, and lower return rates. Additionally, designers will have the opportunity to grow their businesses in other nations and towns. To sum up, augmented reality technology is revolutionizing the wedding wear market by giving prospective brides a more engaging, affordable, and accessible method to choose their dream bridal gown. The exploration of Augmented Reality (AR) in the fashion industry, particularly in the domain of clothing try-ons, has witnessed a transformative shift.

The traditionally challenging and lucrative sector, historically dominated by cosmetics and accessories, is now experiencing rapid advancements.

The surge in recent pilots and investments indicates a growing realization of realistic AR clothing, promising to revolutionize digital clothes sales and mitigate e-commerce returns, especially in the dynamic and diverse landscape of the fashion industry. In summary, the convergence of Augmented Reality and the fashion industry represents a paradigm shift in



customer-business interactions. The evolving landscape offers exciting possibilities for brands to create innovative and personalized experiences, ultimately reshaping the future of fashion retail. As the momentum of AR adoption accelerates, businesses that strategically integrate these technologies stand poised to thrive in the dynamic and competitive world of fashion.

## REFERENCES:

- [1] D. Chatterjee and C. Vasek, "Bollywood: Cross Pollination between Film Costumes and Fashion," *Fash. Pract.*, vol. 12, no. 2, pp. 219–244, May 2020, doi: 10.1080/17569370.2020.1769357.
- [2] S. C. U., "Reviving Sustainable Consumption in Clothing: A Bridal Gown Innovative Approach," *Alexandria Sci. Exch. J.*, vol. 43, no. 3, pp. 47–52, Apr. 2022, doi: 10.21608/asejaiqsae.2022.237425.
- [3] A. Menon, S. Bhagat, and S. Iqbal, "The Impact of Augmented Reality in Fashion Retail Stores in India□: Opportunities and Challenges," *IOSR J. Bus. Manag.*, vol. 22, no. 7, pp. 61–67, 2020, [Online]. Available: [https://d1wqtxts1xzle7.cloudfront.net/64054934/H2207076167.pdf?1596097762=&response-content-disposition=inline%3B+filename%3DThe\\_Impact\\_of\\_Augmented\\_Reality\\_in\\_Fashi.pdf&Expires=1613933488&Signature=BIp0R9yxIYd2hjk6PMrA8RicoDP45BurqZyOVI3kp9liy9cXGw3q2H-](https://d1wqtxts1xzle7.cloudfront.net/64054934/H2207076167.pdf?1596097762=&response-content-disposition=inline%3B+filename%3DThe_Impact_of_Augmented_Reality_in_Fashi.pdf&Expires=1613933488&Signature=BIp0R9yxIYd2hjk6PMrA8RicoDP45BurqZyOVI3kp9liy9cXGw3q2H-)
- [4] S. Abou El-Seoud and I. Taj-Eddin, "An Android Augmented Reality Application for Retail Fashion Shopping," *Int. J. Interact. Mob. Technol.*, vol. 13, no. 01, p. 4, Jan. 2019, doi: 10.3991/ijim.v13i01.9898.
- [5] M. S. Shamsi and A. Abad, "Creating Purchase Intention through Social Media: The use of AR enabled Social Media Filters," *J. CONTENT COMMUNITY Commun.*, vol. 17, no. 9, pp. 46–62, Jun. 2023, doi: 10.31620/JCCC.06.23/05.
- [6] S. Ibáñez□ Sánchez, C. Orús, and C. Flavián, "Augmented reality filters on social media. Analyzing the drivers of playability based on uses and gratifications theory," *Psychol. Mark.*, vol. 39, no. 3, pp. 559–578, Mar. 2022, doi: 10.1002/mar.21639.
- [7] J. Pei, "The effective communication system using 3D scanning for mass customized design," in *Digital Manufacturing Technology for Sustainable Anthropometric Apparel*, Elsevier, 2022, pp. 211–229. doi: 10.1016/B978-0-12-823969-8.00001-0.
- [8] M. Ernst, A. Christophersen, M. Böhm, and U. Botzenhardt, "Efficient virtual garment fit evaluation infrastructure based on synthetic avatar target customer groups for MtM application," *Commun. Dev. Assem. Text. Prod.*, vol. 1, no. 2, pp. 160–169, Dec. 2020, doi: 10.25367/cdatp.2020.1.p160-169.
- [9] U. Okonkwo, *Luxury Online*. London: Palgrave Macmillan UK, 2010. doi: 10.1057/9780230248335.
- [10] I. Khelladi, C. Lejealle, S. R. Vessal, and S. Castellano, "Individuals' motivations to purchase virtual clothes," in *2021 IEEE International Conference on Technology Management, Operations and Decisions (ICTMOD)*, IEEE, Nov. 2021, pp. 1–5. doi: 10.1109/ICTMOD52902.2021.9739372.

- [11] S. Sharma, L. Patnaik, S. Pattnaik, and G. Mohapatra, "Study on consumption of fast food and its association with BMI among medical students in a tertiary care center of eastern India," *Int. J. Nutr. Pharmacol. Neurol. Dis.*, vol. 13, no. 3, pp. 140–144, Jul. 2023, doi: 10.4103/ijnpnd.ijnpnd\_2\_23.
- [12] S. Munshi, "'Women of substance': Commodification and fetishization in contemporary advertising within the Indian 'Urbanscape'," *Soc. Semiot.*, vol. 7, no. 1, pp. 37–51, Apr. 1997, doi: 10.1080/10350339709360368.
- [13] R. Elangovan, F. G. Irudayasamy, and S. Parayitam, "Testing the market efficiency in Indian stock market: evidence from Bombay Stock Exchange broad market indices," *J. Econ. Financ. Adm. Sci.*, vol. 27, no. 54, pp. 313–327, Dec. 2022, doi: 10.1108/JEFAS-04-2021-0040.
- [14] S. Kanojia, D. Singh, and A. Goswami, "Impact of herding on the returns in the Indian stock market: an empirical study," *Rev. Behav. Financ.*, vol. 14, no. 1, pp. 115–129, Mar. 2022, doi: 10.1108/RBF-01-2020-0017.
- [15] J. S. Siregar, "Effect of Europe on Royal Wedding Clothes Yogyakarta Palace," *Adv. Sci. Lett.*, vol. 23, no. 1, pp. 113–116, Jan. 2017, doi: 10.1166/asl.2017.7239.
- [16] F. IRENA and P.-Č. ALENKA, "Constructional, performance and social characteristics of contemporary Slovenian wedding dress," *Ind. Textila*, vol. 68, no. 01, pp. 17–21, Mar. 2017, doi: 10.35530/IT.068.01.1309.
- [17] G. Fonseca Chagas and S. R. Mezabarba, "Dressed to Marry: Islam, Fashion, and the Making of Muslim Brides in Brazil," *Religions*, vol. 10, no. 9, p. 499, Aug. 2019, doi: 10.3390/rel10090499.
- [18] W. Santika and H. Hayatunnufus, "Overview of Marriage Customs and Bridal Make Up at Gadang House 21 Nagari Abai Sangir Room, South Solok Regency, West Sumatra," *J. Tata Rias dan Kecantikan*, vol. 4, no. 2, p. 109, Oct. 2022, doi: 10.24036/jitrk.v4i2.106.
- [19] I. Saha and D. J. Mathew, "Perceptions and Dynamics Affecting Acceptance of 3D-Printed Bridal Lehenga in India," in *Lecture Notes in Mechanical Engineering*, 2021, pp. 197–211. doi: 10.1007/978-981-15-5689-0\_18.
- [20] V. Lavoye, "Augmented Reality: Toward a Research Agenda for Studying the Impact of Its Presence Dimensions on Consumer Behavior," in *Smart Innovation, Systems and Technologies*, vol. 337 SIST, 2023, pp. 641–648. doi: 10.1007/978-981-19-9099-1\_44.
- [21] Dr. Asha Rathi, "NEW TRENDS IN INDIA'S CONSUMER BUYING BEHAVIOUR," *EPRA Int. J. Econ. Bus. Rev.*, pp. 6–10, Mar. 2023, doi: 10.36713/epra12575.

## CHAPTER 8

### CONFLUENCE OF LUXURY AND TECHNOLOGY: ENHANCING BRAND EXPERIENCES THROUGH PERSONALIZATION AND DIGITAL INNOVATION IN THE FASHION INDUSTRY

---

Prof. Harsh Mohanty, Assistant Professor  
ISDI, ATLAS SkillTech University, Mumbai, Maharashtra, India  
Email Id- harsh.mohanty@atlasuniversity.edu.in

#### ABSTRACT:

The trajectory of digital in the luxury industry has become clearer, highlighting its critical role in growth and brand equity. The research focuses on blending luxury brand experience with technology, addressing the gap in incorporating technology into the luxury experience. The challenge lies in the experimental nature of technology and its constant evolution, along with the associated costs. The thesis aims to bridge the gap between technology and luxury brands, emphasizing the importance of using technology correctly for a personalized consumer experience. Findings reveal luxury brands are incorporating technology to enhance consumer experiences, particularly by bridging online and offline retail. Luxury shoppers prioritize personalized service, making strategic technology use crucial for brand success. The conclusion emphasizes the necessity for luxury brands to carefully strategize their digital presence, considering the unique needs of each brand. Prospects suggest that while luxury brands globally are integrating technology into marketing, India is yet to fully embrace this trend. The recommendation is for Indian luxury stores to adopt technology in their marketing strategies to enhance the consumer shopping experience, aligning with the evolving landscape of technology. The results indicate a clear consumer interest in staying technologically informed, growing annual consumption of luxury goods, a preference for overseas purchases, and a surprising inclination towards physical retail stores despite the convenience of online shopping. The survey also underscores the significant impact that AR and VR experiences can have on purchasing decisions. In conclusion, the research highlights the imperative for luxury brands to embrace a digital attitude, cater to evolving consumer expectations, and leverage technology to provide a personalized and immersive brand experience. The findings contribute valuable insights for luxury brands seeking to navigate the ever-changing landscape of consumer preferences and technological trends.

#### KEYWORDS:

Brand, Luxury, Shopping, Technology, Trend.

### 1. INTRODUCTION

Personalization is bringing forth a new, worldwide technology revolution in fashion. In the current digital era, technology has an impact on all industries, and to thrive, one must stay up to date on the newest advancements in technology. A brand's communication strategy is a crucial component that helps to reinforce its core principles, values, and range of goods and services. Its main goal is to evoke an atmosphere, a sense of mystery, and appeal to the customers' emotional or illogical brains. The majority of companies focus more on the in-store consumer experience than the technology aspect. Digital encounters, however, are essential. Customers of luxury companies in particular need to have an amazing experience. The millennial generation is thought to be more interested in experiences than in things, therefore to keep them interested in a business, it needs to stay as technologically inventive as possible. Because luxury consumers are always more interested in substance than style, they are more

likely to engage with businesses that share their values and have a compelling narrative to tell than with companies that are just interested in selling their goods [1], [2]. The integration of technology and the in-store experience is the focus of my thesis. Many businesses are attempting to use technology, but the primary obstacle is that it's still experimental and technology is always changing, so there's only so much that can be done with it at this point. The firms should also consider the expense of embracing the technology itself and integrating it into their online and physical storefronts. Businesses introduce novel ideas that they hope would revolutionize the way we buy, but they often fall flat, or they pull off spectacular stunts like 3D projections of fashion shows that are visually stunning but fall short in terms of real, long-lasting technical innovation. To serve today's consumers, all brands and merchants must adopt a digital attitude. Even in the luxury market, shops still struggle and seem unable to provide the kind of customized service that today's customers need. That's why I'm interested in learning more about how phygital might improve the premium brand experience via this thesis [3], [4].

Digital catalysts are reshaping the landscape, underscoring the imperative of digitalization in the realm of luxury. Many prestigious luxury brands are integrating cutting-edge technology, particularly through the infusion of Augmented Reality (AR) and Virtual Reality (VR), to revolutionize their retail experiences. Notably, Neiman Marcus, a prominent American department store, has elevated its retail offering with the introduction of the Memory Mirror—an interactive touchpoint [5], [6]. This innovative mirror enables customers to view outfits from a comprehensive 360-degree perspective, facilitating comparisons and sharing options. Similarly, the flagship Rebecca Minkoff store in New York City boasts a smart video wall suggesting new styles as customers pass by, exemplifying the transformative power of digital initiatives in luxury spaces. Furthermore, French luxury giant Christian Dior has seamlessly woven technology into the fabric of couture through the integration of VR headsets in select boutiques. This strategic move creates an immersive 3D experience, allowing patrons to delve into the collection and the ambiance of the runway. By embracing such technological advancements, Christian Dior ensures its continued relevance and delivers an elevated, avant-garde in-store experience [7], [8].

The significance of digitalization in the luxury fashion space is increasingly pivotal, as a growing number of brands leverage digital touchpoints to engage with the tech-savvy consumer base, particularly the millennial generation. This trend is poised to intensify as younger demographics assume a dominant role in luxury spending. Luxury retailers are progressively embracing technology to enrich the consumer journey across all channels, recognizing the evolving preferences of their clientele. In response to the dynamic lifestyle of luxury consumers, brands are adapting to meet their demands anytime, anywhere. It is no longer sufficient for luxury brands to confine themselves to local markets; instead, they must strategize to connect with their global customer base. Noteworthy is the approach adopted by Farfetch, a leading luxury online retailer, targeting affluent travelers navigating the Mediterranean during the summer. Farfetch enables direct delivery to the nearest port across 13 cities, allowing purchases to be conveniently collected upon the boat's next docking—an illustration of the evolving landscape where luxury brands extend their reach to cater to the mobile and discerning luxury consumer [9], [10].

### *Customer Experience*

Customers who engage with luxury brands exhibit a distinct preference for behaviors characterized by superior craftsmanship and exceptional quality. The proliferation of products and exclusive offerings in both online and offline realms has heightened the expectations of digitally savvy consumers regarding brand experiences. Presently, approximately 80 percent

of luxury sales are influenced by digital interactions, indicating that consumers, in their pursuit of luxury items, traverse various digital touchpoints. The conventional luxury shopper now embarks on a blended online and offline journey, seeking social media insights from peers or recommendations from trusted bloggers before visiting a physical store and finalizing their purchase decisions. In this context, the shopping experience must consistently align with buyers' expectations, particularly within the luxury segment, leveraging every opportunity to provide an optimal user experience to an increasingly digital-savvy clientele [11], [12].

The evolving landscape of luxury consumer expectations necessitates that luxury brands elevate their standards of quality and overall experience beyond those offered by conventional retailers. While luxury brands have traditionally been associated with opulence, status symbols, and exclusivity, the current trend in Europe emphasizes luxury products that not only embody a narrative but also deliver experiential and emotional value, resonating with the consumer mindset. Digital-savvy consumers of luxury goods, spanning across Millennials and Generation X, are shifting their focus away from ostentation and glamour, prioritizing products that offer a meaningful and individualized experience [1], [13].

In the aftermath of the pandemic, industry experts anticipate a potential resurgence for the luxury market. Despite the immediate challenges faced during the crisis, there is a belief that affluent consumers, having weathered short-term hardships, may become more receptive to new and enduring possibilities. Chris Gray emphasizes that luxury items, by offering a sense of possibility and freedom to dream, can become particularly appealing after a crisis, when individuals find it challenging to envision a better future amid the immediate turmoil. The health crisis, affecting individuals irrespective of their income or wealth, is expected to instigate a transformation in the luxury market's focus, directing it toward wellness and well-being. This shift implies a redefinition of luxury that aligns with individual, planetary, and societal well-being. It presents an opportunity for a fresh discourse on luxury that emphasizes experiential authenticity and healing. As the global crisis prompts a slowdown, luxury brands are afforded the chance to introspect, delving deeper into the essence of their brands and contemplating their present and future meanings. This period serves as an opportune moment for luxury brands to actively shape and fortify their brand perceptions, thereby creating enduring value [14], [15].

The research highlights the impact of personalization and technology on the luxury fashion industry. It emphasizes the necessity for brands to stay technologically innovative, especially in catering to the millennial generation, which values experiences over material possessions. The integration of technology, particularly augmented reality (AR) and virtual reality (VR), is explored as a means for luxury brands to enhance the in-store customer experience. The research methodology involves a survey focusing on the preferences and behaviors of millennials and baby boomers regarding technology, luxury goods, and shopping. The data analysis includes insights into staying updated on technology, frequency of luxury purchases, preferences for buying from India or overseas, online versus offline luxury shopping, factors influencing retail outlet visits, interest in AR and VR experiences, and the impact of AR/VR on purchase decisions. Finally, the research ends with a conclusion section that explains the outcome and future of this research.

## 2.

### 3. LITERATURE REVIEW

Tran T. et al. [16] explored the evolving role of branded applications (apps) in modern omnichannel marketing strategies. The study, based on value co-creation literature, delves into the influence of consumer brand engagement on perceived quality and brand loyalty through



the process of value co-creation. Utilizing online survey data from 355 brand app users, the conceptual model is tested using partial least squares structural equation modeling. The findings indicate that personalized branded apps drive brand co-creation, mediated by consumer brand engagement, leading to increased perceived quality and brand loyalty among users. While the study provides valuable insights, it acknowledges limitations such as self-reported data and a sample bias of U.S. student respondents, emphasizing the need for marketers and app designers to collaborate in creating value co-creation platforms for personalized and engaging customer experiences. The research contributes to understanding the complex interactions between personalization, engagement, co-creation, loyalty, and perceived value within the context of branded applications.

Zariman N. et al. [17] investigated the e-service quality of mobile commerce applications (MCA) and its impact on customer loyalty intention among online shoppers in Malaysia. Utilizing the adapted SERVQUAL model, the research aims to understand how MCA service dimensions influence customer satisfaction and, subsequently, customer loyalty intention. The study, based on data collected through an online survey with 120 participants, reveals that all SERVQUAL dimensions, except reliability, security, and usability, significantly influence customer satisfaction. Additionally, the analysis indicates that customer satisfaction acts as a mediator between certain SERVQUAL dimensions (assurance, personalization, responsiveness, and information quality) and customer loyalty intention. Despite the small effect size, the findings underscore the importance of considering these factors for the enhancement of MCA, particularly in the context of the growing digital business environment.

Huynh P. et al. [18] investigated the intersection of digital innovation and circular business models in the fashion industry, aiming to expedite the transition to a circular economy (CE) and mitigate the industry's environmental impact. Through an inductive, exploratory multiple-case study method involving ten fashion companies of varying sizes, the study identifies three archetypes of digital-based circular business models: the blockchain-based supply chain model, the service-based model, and the pull demand-driven model. The pull demand-driven model, emphasizing radical business and digital innovations, emerges as potentially transformative for the fashion CE transition. The study underscores the importance of intrinsic business capacities, technological competencies, and CE strategies in selecting appropriate circular business models. It also highlights the need for collaboration between large fashion incumbents and technology suppliers/startups for more radical innovations. The research emphasizes the necessity of policies and regulations to facilitate the digital CE transition and advocates for a balanced approach addressing both demand and supply sides, considering market patterns and consumer acceptance challenges.

The study concludes by urging a reevaluation of strategies to reduce unnecessary new demand in the fashion industry. Overall, the study contributes to bridging the gap between theory and practice, providing valuable insights for business managers, policymakers, and industry stakeholders.

Behr O. [19] studied the clothing industry is poised for significant transformations driven by digital advancements, with a focus on Smart Clothes emerging as a promising trend. These intelligent garments go beyond traditional functions, incorporating technological and digital features. While wearables like smartwatches have gained attention, the literature has not extensively explored the realm of intelligent apparel. That study sheds light on the potential of Smart Clothes, showcasing applications such as biometric body analysis in sports and healthcare, assistance systems for sensory organs, and interactions with the Internet of Things (IoT). The evolution of Smart Clothes demands a reevaluation of product development approaches, business models, and collaborations. The study categorizes various developments

in digital technology applications and product concepts within the fashion industry, providing insights into product innovation and the creation of new business models. Casciani D. et al. [12] examined the digital transformation within the fashion industry, focusing on the adoption of 3-dimensional virtual and digital (3DVD) technologies. Through desk research, the study reviews emerging cases of companies actively utilizing technologies such as 3D modeling, virtual and augmented reality (VR and AR), 2- and 3-dimensional scanning, and digital twinning (DT). The analysis highlights how the integration of these digital technologies presents opportunities to dematerialize traditional fashion supply chains, impacting garment production, distribution, and sustainability-oriented innovations. The study maps the innovative shifts occurring in various aspects of the fashion industry, including processes, products, and services. By adopting 3DVD technologies, fashion companies can drive innovation in products and services, optimize operational processes, and significantly reduce lead times in design, prototyping, manufacturing, marketing, and retailing. Digital transformation also influences business models, leading to multicentred innovations that affect value creation, delivery, and capture. Furthermore, the analysis emphasizes that digital transformation has a profound impact on sustainability across the fashion supply-chain processes, addressing cultural, environmental, economic, and societal dimensions. The study underscores the significance of cultural sustainability, showcasing how 3DVD technologies contribute to cultural transformation in design processes, encourage diversity and self-expression from the consumer perspective, and bring about changes in the organizational culture of fashion companies actively participating in digital transformation.

Zou Y. et al. [20] explored the realm of digital fashion's impact on the fashion industry, focusing on the often-overlooked aspect of audience emotional and cognitive responses on social networking platforms. Analyzing a vast dataset of 52,891 posts about digital fashion and virtual fashion through k-means clustering, Latent Dirichlet Allocation (LDA) topic modeling, and sentiment analysis, the research unveils both positive and neutral emotions in the public's perception of digital fashion. The study explores a wide array of topics, shedding light on how digital technology innovations influence job creation, talent demand, marketing strategies, profit structures, and industrial chain innovation in fashion-related businesses. Beyond serving as a valuable reference for researchers in related fields, the study offers insights and data references for industry practitioners, providing a comprehensive understanding of the current landscape and trends in digital fashion.

The collection of research explores various aspects of digital transformation in the fashion industry.

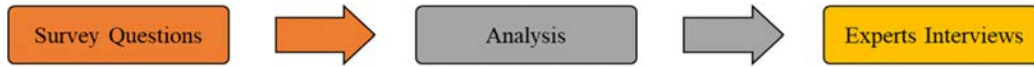
The studies cover topics ranging from the evolving role of branded applications in omnichannel marketing and the impact of e-service quality on customer loyalty in mobile commerce applications to the intersection of digital innovation and circular business models in fashion. This research suggests a strategic approach in the fashion industry that combines the allure of luxury with the transformative power of technology to deliver enhanced and personalized brand experiences. This concept aligns with the evolving landscape where fashion brands seek to differentiate themselves and cater to the preferences of modern, tech-savvy consumers.

## 4. METHODOLOGY

### a. *Design*

This survey focuses on elevating the luxury brand experience through the integration of technology, a dimension that has largely remained on the periphery of the industry. The survey aims to explore how luxury brands are currently embracing technology to enhance customer experiences and identify the specific market segments they are targeting. The survey conduct

will provide insights into public perceptions and reveal areas where luxury brands may be falling short in capturing consumer attention. This primary research will offer valuable thoughts and insights, guiding the direction of survey design.



**Figure 1: Illustrate the Survey Design.**

*b. Sample*

Table 1 offers a comparative analysis of Baby Boomers' and Millennials' (ages 18 to 35) internet participation. In terms of technology adoption, Millennials exhibit a higher reliance, with an average of 4 mobile devices personally used, surpassing the 3.5 devices reported by Baby Boomers. This discrepancy suggests a notable generational gap in the integration of mobile technology into daily life. When it comes to internet usage, Millennials lead with a weekly average of 17.5 hours, contrasting with the 16.4 hours reported by Baby Boomers. The data underscores the significant digital presence of Millennials, emphasizing the importance of online platforms in their daily routines. Social media emerges as a key arena for demographic distinctions.

An overwhelming 98% of Millennials actively engage in social media, showcasing a near-universal adoption of these platforms. In contrast, 75% of Baby Boomers participate in social media, indicating a considerable but comparatively lower prevalence. This discrepancy highlights the divergent social media landscapes that luxury brands must navigate to effectively target and engage their desired demographic.

**Table 1: Shows a comparative insight into the digital engagement of Millennials (aged 18-35) and Baby Boomers.**

	Millennials 18-35	Baby boomers
<b>Number of mobile devices personally used</b>	4	3.5
<b>Weekly time spent on the internet</b>	17.5 hours	16.4 hours
<b>Social media usage</b>	98%	75%

*c. Instrument:*

The survey explores preferences and behaviors related to technology, luxury goods, and shopping. It delves into individuals' interest in staying updated on the latest technologies and gadgets, frequency of luxury goods purchases, preferences for buying luxury items from India or overseas, and choices between online and offline luxury shopping. Additionally, it investigates factors influencing the approach to retail outlets and gauges interest in augmented reality and virtual reality experiences in luxury stores, with a focus on whether such technologies impact purchase decisions.

1. Do you enjoy staying informed about the latest technologies and gadgets?
2. How frequently do you acquire luxury items?
3. Do you lean towards purchasing luxury goods from India or abroad?
4. Do you favor buying luxury items online or through traditional offline channels?
5. What factors influence your choice to visit a retail store?

6. Are you intrigued by the idea of experiencing augmented reality and virtual reality in luxury retail stores?
7. If so, do you believe it would impact your purchasing decisions positively?

d. *Data Collection:*

The survey collected responses from individuals across different age groups to gain insights into their experiences with luxury brands. The age distribution of the participants is as follows:

1. A significant portion of respondents, constituting 26.7%, fell within the age bracket of 18-24. This demographic is often associated with younger consumers who are likely to have distinct preferences and expectations when engaging with luxury brands. Understanding their perspectives contributes to unraveling the evolving dynamics of luxury consumption among the youth.
2. The age group of 25-34 was the most prominent, representing 33.7% of the surveyed participants. This demographic, often characterized as young professionals and early-career individuals, holds considerable influence over market trends. Their responses provide valuable insights into the preferences and behaviors of individuals navigating the intersection of career and personal aspirations.
3. Participants between the ages of 35 and 44 accounted for 20.9% of the survey respondents. This demographic likely includes established professionals and individuals in their careers. Exploring their experiences sheds light on the preferences of a group that may prioritize different aspects of luxury, such as longevity and enduring value.
4. The age category of 45-54 comprised 18.6% of the respondents. This group, often associated with established professionals and those in their mid-career to later stages provides insights into the evolving perspectives of individuals with potentially discerning tastes and preferences shaped by their life experiences.

By segmenting the survey responses based on age, the aim was to discern patterns and variations in the experiences of luxury brands among different age cohorts, thereby contributing to a comprehensive understanding of the diverse consumer landscape in the luxury market. Table 2 presents a distribution of survey respondents by age group, revealing a range of viewpoints about luxury brands.

**Table 2: Shows the Distribution of Survey Participants Across Age Groups, Unveiling Varied Perspectives on Luxury Brands.**

Ages	Percentages
18-24	26.7%
25-34	33.7%
35-44	20.9%
45-54	18.6%

e. *Data Analysis*

i. *Interest in staying updated on the latest technologies/gadgets.*

The objective was to explore people's inclination towards staying updated with the latest technologies and gadgets, considering the pervasive influence of technology in our lives. The outcome revealed that the majority expressed a preference for staying updated, followed by some who were indifferent, and a few who were not inclined to be technologically updated. The key insight derived is that staying updated with technology is deemed important for everyone in the contemporary era.

ii. *Frequency of purchasing luxury goods.*

The objective of inquiring about the frequency of luxury goods purchases was to understand how often Indian luxury buyers make such acquisitions. The observation highlights a consistent annual increase in luxury product consumption in India, with individuals from tier 1 and tier 2 cities being the primary contributors. The outcome reveals that, despite the overall growth in luxury consumption, the majority of buyers make purchases only for special occasions, and a few do so yearly. The insight gleaned from these responses emphasizes the need to focus marketing efforts on those who purchase luxury items for special occasions, aiming to attract them to the brand more frequently.

iii. *Preference for buying luxury goods from India or overseas.*

The objective of the survey was to discern consumer preferences regarding the purchase of luxury goods in India versus overseas. The outcome revealed a predominant inclination towards buying luxury products from overseas, with a notable 20% annual increase in consumers traveling to destinations hosting outlets of renowned designer luxury brands. The insight derived from these responses indicates that people favor overseas purchases due to simplicity, convenience, a wider range of options, and more cost-effective offerings compared to the luxury market in India.

iv. *Preference for online or offline luxury shopping.*

The objective of the question was to determine the preferred mode of luxury shopping, whether online or offline, given the prevailing shift towards online platforms. Surprisingly, the majority expressed a preference for purchasing luxury items from physical retail stores despite the convenience of online shopping. The unexpected outcome suggests potential factors such as the sluggish growth of luxury e-commerce and the distinctive shopping habits of luxury buyers. Consequently, the insight points towards integrating technology into offline stores to offer consumers an immersive offline digital experience. This strategy aims to cater to consumer preferences for both human connection and digital interactions in the realm of luxury shopping.

v. *Factors influencing the choice to visit a retail outlet.*

The question aimed to understand the motivations behind consumers choosing retail outlets for luxury purchases. The majority expressed a preference for the unique experience offered by stores, followed by considerations like brand image, loyalty, and the allure of captivating window displays. The insight gained suggests that a retail store serves as the focal point for experiencing the brand narrative, highlighting the importance of storytelling and personal values over mere transactional interest. Despite the thriving online business, the findings emphasize that physical stores continue to be established globally, indicating a consumer preference for brands that provide a meaningful narrative and align with personal values rather than those solely focused on sales.



vi. *Interest in experiencing augmented reality and virtual reality in luxury retail.*

The objective of inquiring about interest in augmented reality (AR) and virtual reality (VR) in luxury retail stores was to assess consumer enthusiasm and whether technological advancements could attract them to luxury brands. The majority expressed a keen interest in experiencing AR and VR, anticipating a unique and immersive digital encounter that would memorably engage them. The outcome underscores the rapid increase in AR and VR investments in recent years and highlights the renewed interest generated by technology within the luxury sector.

vii. *Impact of AR/VR on purchase decisions.*

The question aimed to determine whether the interest in augmented reality and virtual reality (AR/VR) among consumers translates into an impact on their purchasing decisions. The outcome revealed that 93% of respondents affirmed that utilizing AR/VR would indeed influence their decision to purchase a product. The insight gleaned from this result supports the thesis that seamlessly blending experience and technology is achievable, emphasizing the significance of incorporating AR/VR in enhancing the consumer purchase journey.

## 5. RESULT AND DISCUSSION

Hence, the importance of digitalization for luxury brands is evident. This is driven by a shift in their target market, compelling them to embrace digital platforms as the primary means to connect with the evolving consumer base. While striving for technological relevance, these brands also aim to provide consumers with a glimpse of their heritage through unique consumer experiences. To appeal to a younger audience, luxury brands must adopt a mindset similar to fast fashion brands, which are more accessible to the youth. In India, where access to French luxury brands like Chanel or Dior is limited, reaching out to this new clientele becomes imperative. The pandemic presents an opportunity for luxury brands to formulate positive strategies, leveraging digital platforms as a key survival tool.

a. *Interest in Staying Updated on Latest Technologies/Gadgets:*

The first aspect analyzed in Figure 2 pertains to individuals' interest in staying abreast of the latest technologies and gadgets. This category gauges the extent to which respondents actively seek out information and updates in the ever-evolving landscape of technology. Understanding this interest provides valuable insights into the general tech-savviness and curiosity of the surveyed population.

b. *Frequency of Purchasing Luxury Goods*

The second component delves into the purchasing behavior of respondents concerning luxury goods. By exploring the frequency with which individuals indulge in luxury purchases, this aspect sheds light on the economic dynamics and consumer patterns within the luxury market. This information is crucial for brands aiming to tailor their strategies to align with the purchasing habits of their target audience.

c. *Preference for Buying Luxury Goods from India or Overseas*

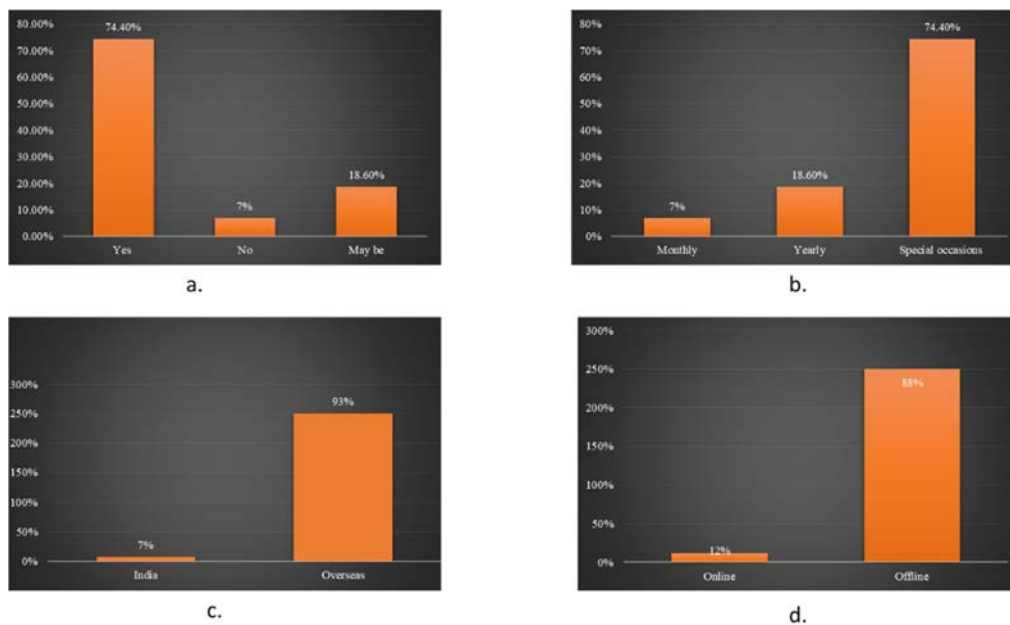
Figure 2's third segment investigates respondents' preferences when it comes to the origin of luxury goods. Understanding whether individuals lean towards domestic or international markets offers valuable market insights. This data aids in deciphering factors such as perceived quality, brand loyalty, and the influence of global trends on the preferences of the surveyed population.

#### d. Choice Between Online and Offline Luxury Shopping

The final facet explored in Figure 2 centers on the preference between online and offline channels for luxury shopping. By dissecting the choices individuals make in the realm of retail, this aspect unveils the evolving landscape of consumer behavior. It sheds light on the convenience, experience, and trust factors that influence the decision-making process when it comes to luxury purchases.

In summary, Figure 2 serves as a comprehensive visual representation of the diverse responses garnered from the survey.

Each component, from technological curiosity to purchasing preferences, contributes to a holistic understanding of consumer behavior in the context of technology and luxury consumption. This nuanced insight is invaluable for businesses seeking to tailor their offerings and strategies to meet the dynamic demands of their target audience.



**Figure 2: Illustrate the Responses of the people. a. Interest in staying updated on the latest technologies/gadgets. b. Frequency of purchasing luxury goods. c. Preference for buying luxury goods from India or overseas. d. The choice between online and offline luxury shopping.**

Provides a comprehensive illustration of the responses gathered from the participants, shedding light on various aspects related to consumer behavior and preferences in the context of luxury retail.

The figure is segmented into three key components, each offering valuable insights into distinct facets of the survey.

#### a. Factors influencing the choice to visit a retail outlet:

The first segment of Figure 3 delves into the factors that play a pivotal role in influencing consumers' decisions to visit a physical retail outlet.

Through the survey, participants were asked to articulate the considerations and motivations that drive them to opt for in-person shopping experiences. This section aims to unravel the

intricate web of elements impacting the choice to engage with brick-and-mortar establishments, providing a nuanced understanding of the dynamics shaping consumer preferences in the realm of luxury retail.

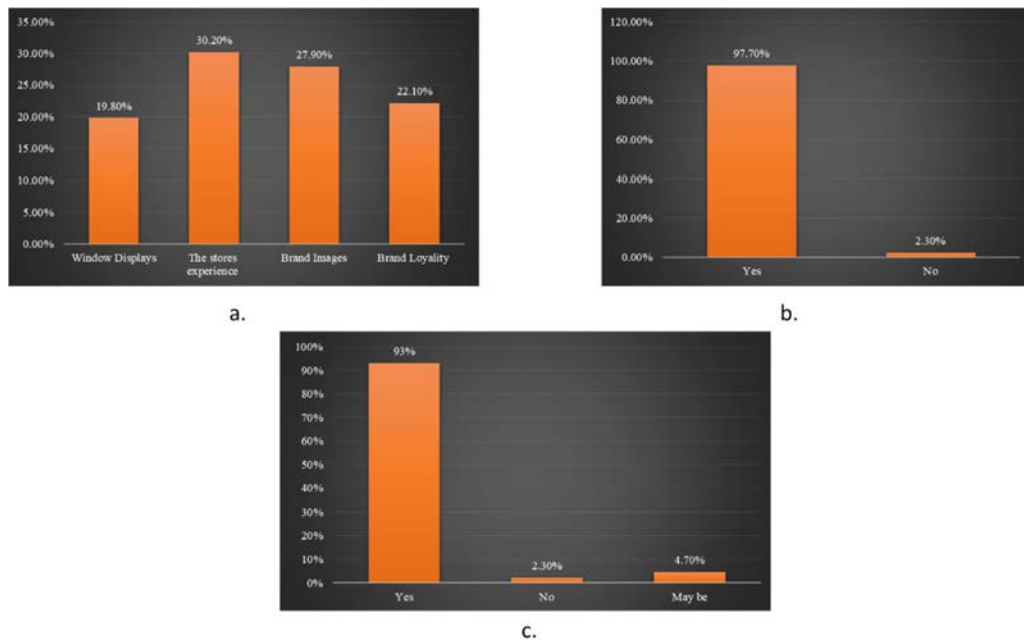
*b. Interest in experiencing augmented reality and virtual reality in luxury retail stores:*

The second component of Figure 3 explores participants' levels of interest in immersive technologies such as augmented reality (AR) and virtual reality (VR) within the domain of luxury retail. This section seeks to gauge the receptiveness of consumers to innovative and technologically-driven experiences while shopping for luxury goods. By examining the degree of enthusiasm expressed by respondents, the figure aims to highlight the potential of AR/VR in elevating the overall retail encounter for luxury consumers.

*c. Assessment of whether AR/VR experiences impact purchase decisions:*

The final portion of Figure 3 is dedicated to assessing the perceived impact of augmented reality and virtual reality experiences on consumers' purchase decisions. Participants were prompted to reflect on whether their engagement with AR/VR technologies within luxury retail spaces influenced their choices when making a purchase. This critical evaluation serves to provide conclusive insights into the effectiveness of incorporating immersive technologies as strategic tools in the luxury retail landscape.

In essence, Figure 3 serves as a visual representation of the multifaceted dimensions explored in the survey, presenting a comprehensive overview of respondents' perspectives on factors influencing retail outlet visits, interest in AR/VR experiences, and the potential impact of these technologies on purchase decisions.



**Figure 3: Illustrate the Responses of the people. a. Factors influencing the choice to visit a retail outlet. b. Interest in experiencing augmented reality and virtual reality in luxury retail stores. c. Assessment of whether AR/VR experiences impact purchase decisions.**

The survey aimed to explore public perceptions of technology and brand experiences, as well as identify the current target market for luxury brands. The research focused on Millennials and Gen Z, investigating their awareness of technological trends such as augmented reality and

virtual reality and assessing whether the adoption of these technologies by luxury brands influences their purchasing decisions. Additionally, the study delved into consumer preferences regarding online and offline retail, revealing a growing luxury market in India in terms of consumption rather than accessibility. Despite a digital preference for convenience, the survey found that luxury buyers still lean toward in-store purchases. Overall, the primary research sought to uncover consumer sentiments and identify areas where luxury brands may fall short in attracting and retaining customers. The findings underscore the importance of digital integration for luxury brands in delivering an unforgettable customer experience, as evidenced by both primary and secondary research.

## 6. CONCLUSION

The research underscores the transformative impact of personalization on the global fashion landscape, driven by a burgeoning technological revolution. The digital era demands continuous adaptation to evolving technologies across all industries, necessitating a keen awareness of the latest advancements. A brand's communication strategy, with its focus on creating emotional connections, remains pivotal. Despite an emphasis on in-store experiences, digital encounters play a critical role, especially for luxury brands aiming to captivate the experience-oriented millennial audience. The findings indicate a growing interest in technology-enhanced experiences among luxury consumers, emphasizing the need for brands to bridge the gap between online and offline realms. The consumer survey provided valuable insights into the preferences and behaviors of luxury buyers. It revealed a consistent increase in luxury product consumption in India, with a preference for overseas purchases. Despite the digital age, the majority still favors in-store purchases, highlighting the importance of physical retail spaces. Interest in augmented reality and virtual reality experiences in luxury retail was high, with a majority believing it would positively impact their purchase decisions. The study's methodology encompassed a well-designed survey targeting Millennials and Baby Boomers, exploring their technological interests, purchasing behaviors, preferences, and the impact of immersive technologies. The data analysis provided a nuanced understanding of consumer attitudes, informing the imperative for luxury brands to integrate digital strategies tailored to the evolving preferences of their target audience. In essence, the research underscores the significance of digitalization in the luxury fashion space. The future prospects suggest a growing need for luxury brands in India to embrace technology in their marketing strategies, aligning with the evolving expectations of consumers. The findings reinforce the notion that successful luxury brands will be those that adeptly blend technology with an unwavering commitment to personalized, meaningful experiences for their discerning clientele.

## REFERENCES:

- [1] S. V. Akram *et al.*, "Implementation of Digitalized Technologies for Fashion Industry 4.0: Opportunities and Challenges," *Sci. Program.*, vol. 2022, pp. 1–17, Aug. 2022, doi: 10.1155/2022/7523246.
- [2] P. Bertola and J. Teunissen, "Fashion 4.0. Innovating fashion industry through digital transformation," *Res. J. Text. Appar.*, vol. 22, no. 4, pp. 352–369, Nov. 2018, doi: 10.1108/RJTA-03-2018-0023.
- [3] C. Watanabe, W. Akhtar, Y. Tou, and P. Neittaanmäki, "Fashion-driven Textiles as A Crystal of A New Stream for Stakeholder Capitalism – Amazon's Endeavor," *Int. J. Manag. Inf. Technol.*, vol. 12, no. 2, pp. 19–42, May 2020, doi: 10.5121/ijmit.2020.12202.

- [4] M. Kim and K. Cheeyong, "Augmented Reality Fashion Apparel Simulation using a Magic Mirror," *Int. J. Smart Home*, vol. 9, no. 2, pp. 169–178, Feb. 2015, doi: 10.14257/ijsh.2015.9.2.16.
- [5] P. Gazzola, E. Pavione, R. Pezzetti, and D. Grechi, "Trends in the Fashion Industry. The Perception of Sustainability and Circular Economy: A Gender/Generation Quantitative Approach," *Sustainability*, vol. 12, no. 7, p. 2809, Apr. 2020, doi: 10.3390/su12072809.
- [6] L. Pereira, R. Carvalho, Á. Dias, R. Costa, and N. António, "How Does Sustainability Affect Consumer Choices in the Fashion Industry?," *Resources*, vol. 10, no. 4, p. 38, Apr. 2021, doi: 10.3390/resources10040038.
- [7] V. Scuotto, E. Arrigo, E. Candelo, and M. Nicotra, "Ambidextrous innovation orientation effected by the digital transformation," *Bus. Process Manag. J.*, vol. 26, no. 5, pp. 1121–1140, Dec. 2019, doi: 10.1108/BPMJ-03-2019-0135.
- [8] M. Matarazzo, L. Penco, G. Profumo, and R. Quaglia, "Digital transformation and customer value creation in Made in Italy SMEs: A dynamic capabilities perspective," *J. Bus. Res.*, vol. 123, pp. 642–656, Feb. 2021, doi: 10.1016/j.jbusres.2020.10.033.
- [9] E. Baek, S. Haines, O. H. Fares, Z. Huang, Y. Hong, and S. H. M. Lee, "Defining digital fashion: Reshaping the field via a systematic review," *Comput. Human Behav.*, vol. 137, p. 107407, Dec. 2022, doi: 10.1016/j.chb.2022.107407.
- [10] S. Skjulstad and A. Morrison, "Fashion Film and Genre Ecology," *J. Media Innov.*, vol. 3, no. 2, pp. 30–51, Nov. 2016, doi: 10.5617/jmi.v3i2.2522.
- [11] W. H. Akhtar, C. Watanabe, Y. Tou, and P. Neittaanmäki, "A New Perspective on the Textile and Apparel Industry in the Digital Transformation Era," *Textiles*, vol. 2, no. 4, pp. 633–656, Dec. 2022, doi: 10.3390/textiles2040037.
- [12] D. Casciani, O. Chkanikova, and R. Pal, "Exploring the nature of digital transformation in the fashion industry: opportunities for supply chains, business models, and sustainability-oriented innovations," *Sustain. Sci. Pract. Policy*, vol. 18, no. 1, pp. 773–795, Dec. 2022, doi: 10.1080/15487733.2022.2125640.
- [13] A. S. M. Sayem, *Digital Fashion Innovations*. Boca Raton: CRC Press, 2023. doi: 10.1201/9781003264958.
- [14] E. D'Itria and C. Colombi, "Biobased Innovation as a Fashion and Textile Design Must: A European Perspective," *Sustainability*, vol. 14, no. 1, p. 570, Jan. 2022, doi: 10.3390/su14010570.
- [15] R. C. Oliveira, I. de A. Näas, and S. Garcia, "Fashion Industry 4.0: A Bibliometric Review in the Fashion Industry," *Res. Soc. Dev.*, vol. 11, no. 12, p. e490111234203, Sep. 2022, doi: 10.33448/rsd-v11i12.34203.
- [16] T. Tran, D. G. Taylor, and C. Wen, "Value co-creation through branded apps: enhancing perceived quality and brand loyalty," *J. Res. Interact. Mark.*, vol. 17, no. 4, pp. 562–580, Jun. 2023, doi: 10.1108/JRIM-04-2022-0128.
- [17] N. F. M. Zariman, N. Humaidi, and M. H. Abd Rashid, "Mobile commerce applications service quality in enhancing customer loyalty intention: mediating role of customer satisfaction," *J. Financ. Serv. Mark.*, vol. 28, no. 4, pp. 649–663, Dec. 2023, doi: 10.1057/s41264-022-00190-9.



- [18] P. H. Huynh, ““Enabling circular business models in the fashion industry: the role of digital innovation,”” *Int. J. Product. Perform. Manag.*, vol. 71, no. 3, pp. 870–895, Feb. 2022, doi: 10.1108/IJPPM-12-2020-0683.
- [19] O. Behr, “Fashion 4.0-Digital Innovation in the Fashion Industry,” 2018. [Online]. Available: <https://www.lumobodytech.com/lumo-run/>
- [20] Y. Zou, D.-B. Luh, and S. Lu, “Public perceptions of digital fashion: An analysis of sentiment and Latent Dirichlet Allocation topic modeling,” *Front. Psychol.*, vol. 13, Dec. 2022, doi: 10.3389/fpsyg.2022.986838.

## CHAPTER 9

### **REVOLUTIONIZING FASHION E-COMMERCE: A COMPREHENSIVE ANALYSIS OF USER ENGAGEMENT AND SUSTAINABLE PRACTICES IN THE STYLE LEASE POPUP MODEL**

Dr. Peeyush K Gupta, Assistant Professor  
ISDI, ATLAS SkillTech University, Mumbai, Maharashtra, India  
Email Id- peeyush.gupta@atlasuniversity.edu.in

#### **ABSTRACT:**

The rapidly changing field of fashion e-commerce, with a focus on the Style Lease Popup Model as a ground-breaking method that combines sustainable operations with user interaction. This approach, which promotes the circular economy and redefines conventional consumer habits, emerges as a viable answer as the fashion industry wrestles with ethical and environmental issues. Using an extensive examination, we investigate the dynamic components that render this model revolutionary: the incorporation of cutting-edge technologies like augmented realities for virtual try-ons, the use of digital platforms for smooth transactions, and immersive user experiences inside popup spaces. The research also explores the model's effects on the environment, taking into account its ability to minimize fashion waste and encourage responsible consumerism. Through its focus on ethical sourcing, transparency, and community involvement, the Style Lease Popup Model not only attracts attention from consumers but also meets the increasing need for sustainable options. The goal of this research is to provide a comprehensive understanding of how technical innovation, environmental concern, and user-centric design will come together to reshape fashion e-commerce in the future.

#### **KEYWORDS:**

E-Commerce, E-Commerce, Lease Pop-up, Style Lease, Swap Shop.

### **1. INTRODUCTION**

Fashion E-commerce has seen a revolutionary transition, emerging as a powerful and dynamic force in the retail industry. Fashion fans can now explore, discover, and buy the newest trends from the ease of their screens thanks to a vibrant online economy that has emerged from the intersection of technology, consumer behavior, and the continually growing digital environment. Fashion e-commerce platforms have revolutionized old retail paradigms by providing customers with an unparalleled degree of choice and immediacy via their accessibility and ease. The internet world has transformed into a democratizing place where a wide range of styles, cultures, and views come together, from established global fashion giants to up-and-coming boutique enterprises [1], [2].

The Appeal of fashion e-commerce is not limited to its ease of use; it also extends across national borders. Customers may easily browse a worldwide marketplace and find distinctive fashions and trends from all around the globe. In addition to increasing customer choice, this democratization of fashion gives up-and-coming designers and independent firms a platform to market to a larger audience [3], [4] Because of this, e-commerce for fashion has turned into a creative engine that encourages uniqueness and originality.

The focus on user experience is one of the characteristics that set fashion e-commerce apart. Personalized suggestions, virtual try-on technology, and intuitive interfaces are just a few instances of how platforms work to make user experiences immersive and interesting. The fusion of artificial intelligence (AI) and augmented reality (AR) has improved the experience

of shopping on the Internet by enabling customers to see how clothes will fit and appear before making a purchase. In addition to bridging the gap between online and offline purchasing, these technical developments also meet the changing needs of tech-savvy customers [5], [6].

### *1.1 Pop-Ups in India:*

Fashion e-commerce has seen a revolutionary transition, emerging as a powerful and dynamic force in the retail industry. Fashion fans can now explore, discover, and buy the newest trends from the comfort of their screens thanks to a vibrant online economy that has emerged from the intersection of technological advances, consumer behavior, and the continually growing digital environment. Fashion e-commerce sites have revolutionized old retail paradigms by providing customers with an unparalleled degree of choice and timeliness via their accessibility and ease. The internet world has transformed into a democratizing place where a wide range of styles, cultures, and emotions come together, from established global fashion giants to up-and-coming boutique enterprises [7], [8].

The Appeal of fashion e-commerce is not limited to its ease of use; it also extends across national borders. Customers may easily browse a worldwide marketplace and find distinctive fashions and trends from all around the globe. In addition to increasing customer choice, this globalization of fashion gives up-and-coming designers and independent firms a platform to market to a larger audience. E-commerce for fashion has turned into a creative engine that encourages uniqueness and originality. The focus on user experience is one of the characteristics that set fashion e-commerce apart. Personalized suggestions, virtual try-on technology, and intuitive interfaces are just a few instances of how platforms work to make user experiences immersive and interesting. The fusion of artificial intelligence (AI) and augmented reality (AR) has improved the experience of shopping on the Internet by enabling customers to see how clothes will fit and appear before making a purchase. In addition to bridging the gap between online and offline purchasing, these technical developments also meet the changing needs of tech-savvy customers [9], [10].

### *1.2 Stylease Popup:*

The Sty Lease Pop-Up unites fans of sustainability and fashion to celebrate their shared passion for playing with trends and protecting the environment. Additionally, it's a place where individuals can broaden their perspectives on circularity in fashion, celebrating the luxury of choice and helping every single one of them find a new fashion niche. The pop-up will provide an opportunity for style experimentation and introduce visitors to an array of vintage, pre-owned, and statement pieces in fashion. They will be able to immerse into the stories of luxury and discover how technological advancements are supporting the luxury of the past in the present. People may explore the infinite options and find their styles in this 360-degree interactive and immersive arena. The pop-up's many experiences allow visitors to connect with fashion technology.

## **2. LITERATURE REVIEW**

Sutinen U et al. [11] explained online shopping activities related to fashion which is A significant facet of fashion e-commerce is the rise in novel forms of online customer behavior. These varied behaviors include looking for, evaluating, ordering, and returning clothing goods. They are carried out via diverse consumer actions, motivated by a range of factors, and characterized by a variety of believed risks and goals. Thus, the goal of this research is to manage the risk related to fashion e-commerce by identifying and analyzing customer actions. In this qualitative research, 12 risk-management strategies used by customers in fashion e-

commerce are identified and discussed. Customers engage in these activities by looking up information and codes, comparing products, changing their orders, and postponing purchases.

Shen Z [12] described Examining eco-friendly clothing online sustainability in fashion e-commerce due to its detrimental effects on the environment. Since the emergence of social media, the effectiveness of marketing strategies and their effect on customer behavior have posed further challenges to the e-commerce of sustainable fashion. Therefore, the purpose of this research is to use social media texts in sustainable fashion marketing to positively influence customer behaviors. Using OnTheList, a sustainable fashion business, as a case study, it performed a combination of text mining and ANOVA analysis on Facebook postings. The findings indicate that like and commenting behaviors of customers are favorably impacted by texts about sustainability, whereas comments and sharing behaviors are positively impacted by texts about pricing. However, social media messages about businesses and goods have little effect on customer behavior. As a result, the research advances the managerial and theoretical understanding of contemporary sustainable fashion e-commerce, particularly in poor nations.

Ornati M et al. [13] explained Body measurement virtual fit platforms in e-commerce fashion which is clothing is a dematerialized, embodied experience. Clothing cannot be handled or tried on before being purchased or delivered to an online fashion store; this leads to fit problems and, therefore, returns. Fashion brands are using virtual fit services such as size suggestions to address this problem. To put it simply, virtual fit systems use algorithms to match consumer body data with fashion products that may be the appropriate size and fit. All parties engaged in this process want to gain something from it: companies hope to increase customer happiness and decrease returns; consumers hope to get more options; and platform providers hope to profit from the sale of tools and services. Virtual fit services, however, are powered by systems curation, and commercialization of fashion customers' physical data, as studies conducted on online platforms in other disciplines reveal.

Heuer D et al. [14] described brand rivalry in online fashion retail which is managers to comprehend brand competition brought on by sale prices within a shop when creating pricing plans. As far as the authors are aware, this research is the first to look at this subject in the context of fashion e-commerce. quantify cross-price elasticities in two separate product categories using a unique data set given by a major European e-commerce corporation, including over 3.3 million observations. Regression analysis reveals surprisingly tiny amounts of cross-brand rivalry because fashion goods' uniqueness prevents consumers from benefiting from enhanced e-commerce market transparency. Additionally, since there is a relatively tiny proportion of strong but extremely apparent impacts, brand competition patterns are unique.

Sanmiguel P et al. [15] Explained the business web to online shopping which is a company's sustainability plan and is now a crucial component of its management and business strategy for growth and success. The dissemination of sustainability-related plans and initiatives has grown in significance for businesses and brands alike. This study examines the communication channels that fashion firms use to promote their sustainable strategies, from e-commerce to corporate websites, and it makes recommendations for how these channels may be improved.

Petkova I et al. [16] described e-commerce fashion companies acquire both practical and moral credibility in the industry which is the method by which E-Commerce and Good Commerce, two forms of online fashion businesses, get ethical and practical acceptance in the fashion industry. To gain legitimacy, E-Commerce, and Social Commerce businesses engage in a mechanism that combines their moral popularity with pragmatic influence. This observation is based on three years of participant research with one of the most significant E-Commerce fashion companies, interviews with executives in other online shopping and Social Business

organizations, and apparel manufacturers in New York and Milan. By creating narratives that represent a fit between their intended cultural identity and technological proficiency, e-commerce and social trading startups establish moral credibility with fashion brands. The next step for e-commerce and crowdfunding businesses is to obtain pragmatic legitimacy by turning their ethical discourse into standardized, socially acceptable business procedures.

Goti A. et al. [17] explained in business-to-customer fashion retail, artificial intelligence which is The use of AI in business-to-customer (B2C) e-commerce has expanded significantly in recent years. Examining the importance and effects of AI in the context of fashion e-commerce is the aim of this study. To do this, a thorough analysis of the scientific literature was conducted, and 219 papers on the topic were examined using information from the World Wide Web of Science as well as the Scopus databases. AI methods were first used to classify the articles. They fell into two groups when it came to fashion e-commerce. The identification of scholarship gaps in the use of AI was made possible by these categorizations.

Sanny L et al. [18] described an intention to purchase in the local and global e-commerce fashion sector which is the effect of the two types of sales promotion tools (financial and non-financial) on consumers' desire to buy fashion items in domestic and foreign e-commerce while taking their perceived quality into account. To capture consumer buy intention in the increasingly competitive worldwide and local e-commerce market, it is necessary to implement a sales promotion plan that aligns with Indonesian customer attitudes. Customers who have purchased fashion goods via domestic or foreign e-commerce were given online questionnaires as the major source of data for this strictly quantitative study. To validate the theoretical framework and study hypotheses, path analysis was used.

Sruthi K and Prabhu S [19] explained the Influence of recommendar systems on consumer decisions in fashion e-commerce websites which is a better understanding of the impact of customized recommendations and recommender systems in fashion e-commerce websites. It provides details on how recommender systems affect a customer's choice to buy, enabling the development of more effective data-driven solutions. Based on data collected from customers who have shopped for a variety of fashion goods on e-commerce websites, it can be inferred that using the ideas given below to explore products based on brand, color, or pattern saves time and increases the likelihood of finding what you're searching for.

Dutta U [20] described a story of color variants self-supervised learning and representation in fashion e-commerce which is Identifying color variations, or fashion goods that are identical in design (or style) but vary only in color, is a critical issue in fashion e-commerce, both in terms of consumer experience and income. For our fashion e-commerce business, we provide a general architecture that uses deep visual representational training at its core to solve this issue. Manually acquired triplets, which are supervisory signals, might be used to train our architecture. Nevertheless, obtaining human annotations for the complete massive dataset often seen in fashion e-commerce systems, like ours, is impractical while collecting all the challenging corner situations. Fortunately, we discovered that this significant issue in fashion e-commerce might be fixed as well through straightforward color jitter-dependent image augmentation.

### 3. DISCUSSION

The Style Lease Popup Model's sustainable principles are a ground-breaking method of consuming fashion that goes against the established conventions in the business. Within this novel framework, the notion of renting clothing emerges as a potent remedy for the ecological and moral dilemmas linked to rapid fashion. This model's key components are its dedication to promoting a circular economy, highlighting the cyclical nature of garment consumption, and



reframing the conventional linear "take-make-dispose" style system. This strategy lessens the total need for new production by incentivizing customers to lease clothing for a certain amount of time rather than buy it outright. This lessens the environmental impact of resource exploitation and manufacturing procedures.

The Style Lease Popup Model's definition of sustainability goes beyond simple leasing; it also includes a careful selection of clothing that gives priority to long-lasting design, ethical sourcing, and environmentally friendly materials. As essential elements of this concept, pop-up stores function as vibrant venues that not only promote mindful consumption but also celebrate it. These transitory retail locations develop become centers of learning, raising customer knowledge of the effects of fashion on the environment and encouraging ethical purchasing. In addition to competing for visual attractiveness, the brands and designers taking part in these popups are devoted to eco-friendly manufacturing practices and transparent supplier networks, matching their principles with the expanding market for ethical fashion substitutes.

Furthermore, the Style Lease Popup Model cleverly makes use of technology to improve overall sustainability and expedite operations. Digital platforms are essential for smooth leasing transactions since they make it very easy for people to browse, reserve, and bring back fashion products. Furthermore, these solutions' integrated data analytics aid in inventory management optimization, reducing waste and guaranteeing a longer lifespan for every garment.

Virtual try-on experiences and augmented reality (AR) further improve the model's efficiency by eliminating the need for in-person try-on and the corresponding carbon impact. In addition, the Style Lease Popup Model encourages cooperation and a feeling of community within the fashion industry.

Through the assembly of many stakeholders, such as designers, consumers, and proponents of sustainability, these popups serve as stimulants for discourse and creativity. Designers are urged to try their hand at upcycling and recycling old clothing to create one-of-a-kind, fashion-forward creations. As a result, consumers take an active role in the environmentally friendly fashion movement, helping to reduce fashion waste in addition to having access to a changing wardrobe.

This strategy has a social effect that goes beyond empowering local communities since pop-up events feature the work of up-and-coming designers and craftspeople and provide them with a platform that reaches a larger audience. By doing this, the Style Lease Popup Model encourages ethical and fair trade ideals, having an impact that extends beyond the realm of fashion consumption. These pop-ups also function as educational centers, offering talks and workshops that explore the subtleties of sustainable living and encourage people to make thoughtful decisions in all spheres of their lives.

### *3.1 The Immersive Space:*

The 360-degree immersive Sty Lease Pop-Up is designed to delight the senses and revel in opulent elegance. The pop-up, which focuses on inspiring ideas about vintage and pre-owned luxury, seeks to provide customers with a firsthand look at vintage luxury goods and spaces for contemplation and indulgence in renting unique luxury items. Conventional retail settings, reinvent the core of the shopping experience for customers. Entering this cutting-edge area is like stepping into a dynamic environment where the lines between the digital and physical realms are blurred.

Modern technology and architectural wonders come together to create a setting that goes beyond the norm and welcomes guests on a holistic exploration voyage. Through interactive displays and augmented reality mirrors, customers may enter carefully curated worlds where they can virtually try on clothing, peruse a variety of fashion collections, and customize the experience of shopping in ways that are not possible in conventional settings. The immersive environment stimulates the mind in addition to the senses, providing a comprehensive narrative that tells the tale of each garment from its conception to its ethical and ecological manufacturing process. Figure 1 shows the Immersive Space User- Experience.



**Figure 1: Represents Immersive Space User- Experience.**

### *3.1.1 A Scent Vending Machine:*

The smell vending machine powered by ScentBird is an innovative blend of technology and scent curating that takes the process of selecting a signature scent to a whole new level of customization and experience. Upon approaching, consumers are welcomed by the machine's elegant and user-friendly interface, which is embellished with the unique ScentBird logo. Using ScentBird's enormous collection of fragrances, the vending machine provides a wide selection of scented treats packaged in stylish vials. Using the touchscreen, customers may interact with smell groupings, notes, and even personalized suggestions based on their past ScentBird decisions.

The option to obtain a little trial-sized scent sample from ScentBird's vast selection with every purchase is a unique aspect of this olfactory distributor that encourages users to broaden their olfactory horizons.

The device uses data-driven insights to provide tailored suggestions and is easily connected with ScentBird's user profiles, resulting in a dynamic and engaging scent discovery experience. This creative partnership transforms the conventional scent shopping experience, offering both aficionados and newcomers an enjoyable and technologically advanced voyage. Figure 2 shows the Scent Vending Machine.



**Figure 2: Represents the Scent Vending Machine.**

### 3.1.2 The Curato Bar:

Powered by Absolut Vodka and Jimmy's Cocktails, the Curato Bar is one of the most entertaining stations at the pop-up. A tablet is handed to each client to indicate what they like and detest in terms of taste preferences. a remarkable paradise for mixologists that expertly combines the premium spirits of Absolut Vodka with the craft expertise of Jimmy's Cocktails to provide discriminating customers with a never-before-seen sensory experience. Tucked away behind its stylish walls, the bar radiates a vibe that seamlessly blends contemporary style with the lively energy of mixology. Equipped with an assortment of superior Absolut Vodka options, bartenders can create concoctions that turn drinking into an artistic endeavor. The collaboration with Jimmy's Cocktails adds a personalized touch with a carefully designed menu that combines creative mixes with Absolut's classic qualities. Flavor and artistry are celebrated at the Curato Bar also curato bar shown in Figure 3, which serves everything from traditional martinis to cutting-edge blends. Customers take a journey through the carefully selected selections with each drink, where the inventiveness of Jimmy's Cocktails and the purity of Absolut Vodka combine to provide a sophisticated and engaging drinking experience that goes beyond the norm.



**Figure 3: Represent the Curato Bar.**

### 3.1.3 The Photo-Booth & Photomaton Machine:

The Photomaton is an addition to the photo booth where guests can take self-portraits and interact with luxury and vintage product try-ons. When they exit the area, they can capture a moment in time from their visit to the pop-up on camera. Driven by Photomaton's inventive energy, the Photo-Booth & Photomaton Machine presents itself as an alluring fusion of contemporary technology and nostalgia. This quirky picture experience goes above the norm, taking visitors on a visual voyage where modern flair blends with historical charm. Steeped in the history of Photomaton's renowned photo booths, the device skillfully combines the appeal of immediate prints with state-of-the-art digital improvements. Visitors enter a retro-styled booth that captures the spirit of a bygone age and is emblazoned with Photomaton's everlasting emblem. The iconic four-shot picture strip history is preserved while an entertaining selection of filters, frames, and effects are accessible via an easy-to-use touchscreen interface. The device, which is powered by Photomaton's dedication to quality and genuineness, guarantees clear, colorful prints that function as material keepsakes for special occasions. Figure 4 Shown the Photo-Booth & Photomaton Machine



**Figure 4: Represents the Photo-Booth and Photomaton Machine.**

### 3.1.4 The Swap Shop:

Without upsetting the environment's natural order, consumers may give their cherished luxury items a new home with The Swap Shop. Customers who bring in their gently used and antique luxury goods may exchange them for another item at the pop-up that is equal in value at The Swap Shop. The Swap Shop is a thriving hub for sustainable clothes, representing conscientious consumption and the circular economy. Inside its warm walls, people engage in a reshaping trade of used clothing, giving new life to clothing items that might otherwise be left in closets or add to the environmental impact of rapid fashion. Fashion aficionados get together to swap their lightly used items at the Swap Shop, which promotes a feeling of community and collaborative accountability by operating on the tenets of reducing, reusing, and recycling. This vibrant center goes beyond conventional store layouts, creating a setting where fashion becomes an eco-friendly, cooperative project Figure 5 shows Swap Shop.





**Figure 5: Represents Swap Shop.**

#### **4. CONCLUSION**

The Style Lease Popup Model is a game-changing concept in fashion e-commerce that reimagines the sector by skillfully fusing sustainable business principles with user participation. After a thorough examination, it is clear that this novel approach tackles important ethical and environmental issues related to conventional fast fashion in addition to captivating customers with immersive experiences. The idea encourages circular fashion, eliminating waste and lowering the need for fresh manufacturing by offering a dynamic leasing method. The integration of technology, environmental responsibility, and social responsibility in pop-up locations creates a transformational experience for users, transforming the consumption of fashion into an intentional and collaborative activity. When combined with a strong digital platform, augmented reality (AR) for virtual try-ons increases user involvement and accessibility, making environmentally friendly choices more enticing and approachable. With its dedication to open and moral business procedures and its community-building programs, the Style Lease Popup Model is positioned to be a leader in the fashion industry going forward. This strategy not only satisfies customer needs for an environmentally friendly and active fashion e-commerce scene, but it also establishes a new benchmark as consumers look for alternatives that are meaningful and socially responsible. The convergence of user-centric design, technical innovation, and environmental conscience ushers in a new age in which sustainability and style come together to pave the way for a more responsible and optimistic future for the fashion e-commerce industry.

#### **REFERENCES:**

- [1] W. H. Cheng, S. Song, C. Y. Chen, S. C. Hidayati, and J. Liu, "Fashion meets computer vision: A survey," *ACM Computing Surveys*. 2021. doi: 10.1145/3447239.
- [2] A. Velasco-Molpeceres, J. Zarauza-Castro, C. Pérez-Curiel, and S. Mateos-González, "Slow Fashion as a Communication Strategy of Fashion Brands on Instagram," *Sustain.*, 2023, doi: 10.3390/su15010423.



- [3] S. Ray and L. Nayak, "Marketing Sustainable Fashion: Trends and Future Directions," *Sustainability (Switzerland)*. 2023. doi: 10.3390/su15076202.
- [4] L. Gomes de Oliveira, F. G. Miranda, and M. A. de Paula Dias, "Sustainable practices in slow and fast fashion stores: What does the customer perceive?," *Clean. Eng. Technol.*, 2022, doi: 10.1016/j.clet.2022.100413.
- [5] J. Tepe and S. Koohnavard, "Fashion and game design as hybrid practices: approaches in education to creating fashion-related experiences in digital worlds," *Int. J. Fash. Des. Technol. Educ.*, 2023, doi: 10.1080/17543266.2022.2103591.
- [6] S. Blas Riesgo, M. Lavanga, and M. Codina, "Drivers and barriers for sustainable fashion consumption in Spain: a comparison between sustainable and non-sustainable consumers," *Int. J. Fash. Des. Technol. Educ.*, 2023, doi: 10.1080/17543266.2022.2089239.
- [7] M. Bodenheimer, J. Schuler, and T. Wilkening, "Drivers and barriers to fashion rental for everyday garments: an empirical analysis of a former fashion-rental company," *Sustain. Sci. Pract. Policy*, 2022, doi: 10.1080/15487733.2022.2065774.
- [8] B. Wren, "Sustainable supply chain management in the fast fashion Industry: A comparative study of current efforts and best practices to address the climate crisis," *Clean. Logist. Supply Chain*, 2022, doi: 10.1016/j.clscn.2022.100032.
- [9] X. Long and J. Nasiry, "Sustainability in the Fast Fashion Industry," *Manuf. Serv. Oper. Manag.*, 2022, doi: 10.1287/msom.2021.1054.
- [10] K. Bailey, A. Basu, and S. Sharma, "The Environmental Impacts of Fast Fashion on Water Quality: A Systematic Review," *Water (Switzerland)*, 2022, doi: 10.3390/w14071073.
- [11] U. Sutinen, H. Saarijärvi, and M. Yrjölä, "Shop at your own risk? Consumer activities in fashion e-commerce," *Int. J. Consum. Stud.*, vol. 46, no. 4, pp. 1299–1318, Jul. 2022, doi: 10.1111/ijcs.12759.
- [12] Z. Shen, "Mining sustainable fashion e-commerce: social media texts and consumer behaviors," *Electron. Commer. Res.*, vol. 23, no. 2, pp. 949–971, Jun. 2023, doi: 10.1007/s10660-021-09498-5.
- [13] M. Ornati, A. Picco-Schwendener, and S. Marazza, "Sizing up the body: Virtual fit platforms in fashion e-commerce," *Int. J. Fash. Stud.*, vol. 9, no. 1, pp. 199–218, Apr. 2022, doi: 10.1386/infs\_00066\_1.
- [14] D. Heuer, M. Brettel, and J. Kemper, "Brand competition in fashion e-commerce," *Electron. Commer. Res. Appl.*, vol. 14, no. 6, pp. 514–522, Oct. 2015, doi: 10.1016/j.elerap.2015.07.007.
- [15] P. SanMiguel, S. Pérez-Bou, T. Sádaba, and P. Mir-Bernal, "How to Communicate Sustainability: From the Corporate Web to E-Commerce. The Case of the Fashion Industry," *Sustainability*, vol. 13, no. 20, p. 11363, Oct. 2021, doi: 10.3390/su132011363.
- [16] I. Petkova, "Between high-tech and high-fashion: How E-Commerce fashion organizations gain moral and pragmatic legitimacy in the fashion field," *Poetics*, vol. 57, pp. 55–69, Aug. 2016, doi: 10.1016/j.poetic.2016.04.001.

- [17] A. Goti, L. Querejeta-Lomas, A. Almeida, J. G. de la Puerta, and D. López-de-Ipiña, "Artificial Intelligence in Business-to-Customer Fashion Retail: A Literature Review," *Mathematics*, vol. 11, no. 13, p. 2943, Jun. 2023, doi: 10.3390/math11132943.
- [18] L. Sanny, T. D. Julianto, S. Savionus, and B. W. bin Y. Kelena, "Purchase intention in the fashion industry on local and international E-commerce in Indonesia," *Int. J. Asian Bus. Inf. Manag.*, 2022, doi: 10.4018/IJABIM.20220701.0a4.
- [19] S. K and S. Prabhu, "Influence of Consumer Decisions by Recommendar system in fashion e-commerce website," in *2022 International Conference on Decision Aid Sciences and Applications (DASA)*, IEEE, Mar. 2022, pp. 421–424. doi: 10.1109/DASA54658.2022.9765312.
- [20] U. K. Dutta, S. Repakula, M. Parmar, and A. Ravi, "A Tale of Color Variants: Representation and Self-Supervised Learning in Fashion E-commerce," *Proc. AAAI Conf. Artif. Intell.*, vol. 36, no. 11, pp. 12482–12488, Jun. 2022, doi: 10.1609/aaai.v36i11.21516.

## CHAPTER 10

### OPTIMIZING APPAREL SIZING WITH ARTIFICIAL INTELLIGENCE: A COMPREHENSIVE ANALYSIS OF SIZING MATRIX IMPLEMENTATION IN THE FASHION INDUSTRY

Prof. Mahi Khare, Assistant Professor  
ISDI, ATLAS SkillTech University, Mumbai, Maharashtra, India  
Email Id- mahi@isdi.in

#### ABSTRACT:

The Revolutionary effect of artificial intelligence (AI) on improving clothing size, with an emphasis on a thorough examination of the fashion industry's use of sizing matrices. The wide variety of body dimensions and shapes is frequently too much for traditional sizing techniques to handle, which may result in problems like improper fits and a rise in product returns. By using cutting-edge algorithms and artificial intelligence to provide a more accurate and inclusive sizing experience, the integration of AI provides a solution.

This study investigates the use of size matrices that are dynamically modified by artificial intelligence algorithms using large datasets that include customer reviews, purchase histories, and body measurements. AI-enabled virtual fitting rooms provide customers a customized and engaging experience by letting them virtually try on clothes and see how various things would suit their individual body types. The abstract highlights the transition from uniform sizing to a customized and customer-focused strategy, in which AI acts as a sizing the concierge, pointing customers in the direction of choices that suit their unique tastes. The research also takes into account the advantages for sustainability, as AI-driven sizing helps to lessen the environmental effect of return shipments. This study adds to the continuous development of garment sizing procedures in the fashion industry by offering insights into the thorough deployment of AI-powered sizing matrices.

#### KEYWORDS:

Artificial Intelligence, Fashion Industry, Size, Matrix Virtual Reality.

#### 1. INTRODUCTION

A revolutionary paradigm change has occurred in the fashion industry as a result of the use of Artificial Intelligence (AI), altering everything from design and manufacturing to marketing and consumer experience. This confluence of technologies is not just a fad; rather, it is a profound shift that will fundamentally alter the way the fashion industry functions. Design is one of the areas where AI is most affecting the fashion industry. Large-scale statistics, such as past fashion trends, client tastes, and cultural influences, are analyzed by AI algorithms, giving designers important insights for producing original and commercially viable designs. This data-driven method fosters innovation by giving designers a thorough grasp of changing customer preferences for style.

As a result, fashion designers are able to create collections that have a stronger emotional connection with their intended market [1], [2] .

AI has an impact on manufacturing as well, where sustainability and efficiency are key considerations. Artificial intelligence (AI)-powered smart manufacturing streamlines the supply chain, lowers material waste, and forecasts demand to maximize efficiency in the production process.

Manufacturers may minimize excess inventory and maximize resource efficiency by adjusting output in response to customer patterns that are anticipated with the use of predictive analytics. This leads to a more ecologically aware and sustainable apparel sector in addition to improving operational efficiency. AI's function in internet commerce is to help companies with their marketing, customer care, and sales efforts [3], [4]. The field of e-commerce is evolving due to artificial intelligence (AI), intelligent machines, vision-based image categorization, deep learning, and facial recognition. Figure 1 shows the interconnection between Ai and Fashion Creativity.



**Figure 1: Represents the interconnection between Ai and Fashion Creativity.**

### *1.1 Technology in Fashion:*

Technology and fashion have combined to create a whole new paradigm that has redefined the industry as a whole. Modern digital technologies provide fashion designers hitherto unheard-of powers in the design and prototype domain, enabling the creation of elaborate and accurate designs via 3D modeling and virtual prototyping. The conventional sequential path from design to manufacturing has been upset, and in its stead is a more flexible and effective method that makes use of technology to facilitate virtual testing and refinement [5], [6]. Simultaneously, in an effort to reduce waste and maximize resource use, innovative production methods like additive manufacturing and 3D printing are being investigated. The rise of wearables and smart textiles, which turn clothes into a living connection with the digital world, is arguably the clearest example of how fashion and technology are convergent.

### *1.2 Augmented Reality(AR) & Virtual Reality(VR):*

Customers may now enjoy an immersive and engaging experience to Augmented Reality (AR) and Virtual Reality (VR), which have completely changed the fashion business. Fashion designers have used AR and VR into their stores to improve the in-store experience and allow shoppers to virtually try on clothing. Many fashion firms have adopted augmented reality and virtual reality technologies in recent years, developing apps and adding ARVR elements to their storefronts to increase consumer [7], [8]. Figure 2 shows the virtual reality aspects in term of customer prospective regarding Fashion.



**Figure 2: Represents the virtual reality aspects in term of customer prospective regarding Fashion [9] .**

### *1.3 Relation between Ai and Sizing Matrix of Fashion:*

The fashion industry's size matrix and artificial intelligence (AI) work together in a symbiotic connection to transform the conventional method of clothing fitting. AI is essential to improving the sizing matrix because of its sophisticated algorithms and machine learning powers. It provides a flexible and dynamic solution to accommodate the wide diversity of body types and sizes that customers have. The analysis of data is one of the core links. In order to find patterns and connections, AI analyzes large datasets that include customer reviews, purchase histories, and body measurements. AI's ability to analyze data allows it to build and improve scaling matrices that precisely represent the characteristics and tastes of the intended audience. With AI at its core, the size matrix takes on life of its own and changes in real time to meet the needs of customers and emerging fashion trends [10], [11].

The outcome of AI integration, virtual fitting rooms, improves the connection between AI and the sizing matrix. These online environments enable customers to engage with the size matrix in a customized way by digitally trying on clothes and seeing how various outfit combinations would suit their individual body types. As a result, the AI-driven size matrix turns into a tool for improving the shopping experience for customers by offering insightful predictions about how clothes will feel and appear before being bought. By altering the size matrix, AI helps the garment sector be more sustainable. Artificial intelligence-driven sizing matrices are in line with the increasing need for environmentally friendly practices by mitigating the environmental impact of product returns brought on by incorrect size. This partnership demonstrates a common commitment to ethical and environmentally friendly fashion processes.

## **2. LITERATURE REVIEW**

Guo S et al. [12] explained Block chain Technology Applications in Sustainable Fashion Production Chain which is States In the fashion industry today, using eco-friendly materials is a common business strategy that may affect a fashion product's production process's environmental implications as well as its cost. The market demand for fashion items may be influenced by the incorporation of environmentally friendly materials, particularly in light of the public's developing social conscience. The information transparency games over



environmental initiatives in fashion manufacturing processes are examined in this essay. A fashion store that leads the Stackelberg market and places orders with a maker of eco-friendly fashion items. The fashion shop has the option of using block chain technology or using an eco-label to inform customers about the impact on the environment of their products. Meanwhile, the manufacturer with doubts about their reputation might have the real ecological value of the fashion product devalued since the customers and the fashion merchant cannot see the environmental quality.

Casciani D et al. [13] described Examining the fashion industry's digital transformation prospects for distribution networks, business models, and innovations with a focus on sustainability which states an outline of the fashion industry's digital transition, including the potential and impacts it presents for supply chains, company structures, and innovations focused on sustainability. A desk research evaluation of new examples of businesses actively using a three-dimensional virtual and digital (3DVD) technology, including digital twinning (DT), 2- and 3-dimensional (2D/3D) scanning, virtual and augmented reality (VR and AR), and 3D modeling, was conducted. The research maps the creative changes taking place in the processes, goods, and services of the fashion sector and demonstrates how the use of digital technology offers chances to dematerialize the conventional fashion supply-chain system for garment manufacture and distribution. Fashion companies' adoption of 3DVD technology opens up new avenues for product and service innovation as well as process optimization to reduce lead times for designing, developing prototypes, manufacturing, marketing, and retailing, streamline operations, and rearrange working phases. Additionally, these competencies propel metacentric business model innovations, impacting changes in value generation, delivery, and capture.

Yeo S et al. [14] Explained Examining how Instagram users' purchasing choices are affected by AI-powered technology in the age of digitalization which is Technology has advanced rapidly in the previous several decades, particularly in the field of social media networks. New apps driven by artificial intelligence (AI) are always emerging to better and strengthen innovative methods of communicating on social media platforms, especially Instagram. Customers now need to accept the adoption of a digital experience, which has changed the psychological and social customer journey. The main goal of the AI apps is to analyze consumer browsing patterns in order to attract new customers and grow enterprises. In this cutthroat and competitive market, Instagram's commercial advantages have even reached the fashion sector. Online and brick-and-mortar buyers may make different decisions about what to buy when fashion goods are presented in such a snappy and captivating manner.

Lee E and Kim Y [15] described mass customization that reflects different individual customization trends has been growing in the fashion business lately. The smart fashion business, which is based on wearable technology, is also advancing product development by offering different customizable content products. Thus, the goal of this research is to create items in the smart clothing industry that represent the traits of Generation MZ and mass customization, as well as to create a website where these products can be bought. Techniques In order to generate strategic directions and recommendations for mass customization that are relevant to the smart fashion sector, this research first examined five factor-specific aspects of massive customization in general terms as well as the primary consumer characteristics of Generation MZ. Second, the website was created using the Wix content management system (CMS) to choose from a variety of functional and design alternatives for the tech pocket intelligent fashion items, which were created using embedding fabric electrical technology based on an electronic embroidery machine. Outcomes Based on the programming material for

Generation MZ, two different kinds of tech pocket intelligent fashion products were developed: a personalized women's bomber jacket and a customized men's trench coat.

Shrivastava A et al. [16] explained online clothes rentals that promote sustainability: circular fashion driven by micro-celebrities on Instagram which is merchants and manufacturers are looking for creative ways to lessen the negative environmental effects that their business has. These businesses are going to lose the eco-aware customers. A new trend in fashion is circular fashion, which encourages reusing and recycling old clothes. An emerging industry that promotes circular fashion practices that contribute to both the environment and the economy is the online rental of worn clothing. This research looks at the factors that lead consumers to use online platforms for renting used clothes. The research concludes that the usefulness of these platforms, convenience of use, mental state, and social pressure drive the behavioral intent of the customers to use these platforms. This conclusion is based on the theoretical foundations of a single theory of adoption and utilization of electronic devices and the trustworthiness of the source theory.

Zafar F and Sarwar A [17] described fashion blogs' impact on millennials' technology-driven behavior which is Within the framework of Pakistan's fashion business, digital technologies have shifted the viewpoints of millennial consumers from conventional to creative. The purpose of the research was to find out how fashion blogs affected the shopping decisions made by millennial consumers. The study used the Technology Acceptance Model (TAM) and took into account the following research variables: perceived utility, perceived ease of use, perceived social impact, considered credibility of influencers, and innovativeness in fashion. A convenience sample was used to gather 300 answers to a survey. The results of the research showed that millennials' purchase intentions were significantly predicted by their attitude toward fashion blogs, perceived utility, perceived social impact, and perceived influencer legitimacy.

Hermawan and Suharnomo S [18] explained information technologies as a strategic resource the role of human capital effectiveness in promoting organizational change readiness which is The organization will directly be impacted strategically by the use of technology. Applications used to generate, process, store, and distribute knowledge inside businesses are referred to as technology applications in a sense of infrastructure. Information technology's capacity to provide a competitive advantage will boost an organization's ability to do so. The goal of the study is to determine how information technology capability (ITC) affects an organization's readiness for change (RTC), as mediated by leadership and employee effectiveness (HCE). To close the research gap, these two major ideas are presented. 49 men and 117 females, representing the organizational level of 166 design-based fashion production industry in Central Java, made up the study sample.

Tymoshenko O et al. [19] described characteristics of the fashion industry's digitalization processes which is the characteristics of the fashion industry's digitization processes, as well as the primary avenues for the development of digital technology and their immediate effects on the fashion landscape. Methodology for research. The goal of the research, of particular, an approach that is methodical to the study of the history of fashion, digital technologies, and possible futures in the creative business, as well as examination of current developments in the fashion industry, dictates the choice for study methodologies.

Ahlfänger M et al. [20] explained knowledge sharing and protection in balance: the effectiveness of official oversight in open innovation initiatives which is The challenge with open innovation (OI) initiatives is to provide transparent methods for information sharing while maintaining enough security to prevent knowledge loss. While earlier studies have addressed

a number of strategies to strike a balance between sharing and safeguarding, these approaches either place an excessive or insufficient focus on knowledge protection. In order to augment existing research, we investigate in this paper whether formal oversight mechanisms, prespecified behaviors, and prespecified outcomes might be used as more effective project management techniques. Using an analysis of 106 fresh product OI studies in high-technology companies, we examine their impact on OI project outcomes and information leakage and compare it with contracts. It is shown that project performance is influenced by predetermined behaviors in the shape of an inverted U, but project performance is increased linearly by predetermined outcomes.

Xu J et al. [21] described examining Post-Pandemic sustainable fashion consumption practice which are The worldwide trend of sustainable transition is greatly aided by the consumption of used clothes; nevertheless, the COVID-19 pandemic has created a problem for the development of this consumption model. Promoting ethical buying habits will be a successful strategy for advancing the sustainable growth of the clothing sector. Based on the single theory of acceptance and utilization of technology (UTAUT), this research examines the factors that impact consumers' usage of platforms for sharing used apparel in the post-pandemic period, starting with fashion sharing behavior. The Chinese clothes-sharing market is the subject of the study backdrop throughout its expansion. The results showed that people's knowledge of sanitation and health protection increased as a result of the epidemic.

### 3. DISCUSSION

Artificial intelligence (AI) is revolutionizing the fashion business, there are significant ethical issues and problems that need to be resolved. This covers concerns about algorithmic prejudice, data privacy, and the possible loss of human labor Data privacy is one of the main ethical issues with AI adoption in the fashion industry. There is a chance that the massive volumes of consumer data that businesses gather and analyze may be misused or abused as they train their algorithms and provide individualized purchasing experiences. The thought of their personal data being used for targeted advertising or other reasons without their express authorization may make customers uneasy. Hence, it is essential for fashion enterprises to provide transparency about their data gathering methodologies and get informed permission from their clientele. Algorithmic prejudice is a problem that arises when AI systems reinforce and magnify preexisting social biases. For instance, an algorithm may carry out discriminating patterns in its suggestions and decision-making if it was educated on past sales data that exhibits such patterns.

Serious repercussions might result from this, such the propagation of stereotypes or less opportunity for marginalized groups. Because of this, it's critical that businesses check their AI systems on a regular basis to make sure damaging prejudices aren't being reinforced. Finally, as AI technology develops, there are worries regarding the possible displacement of human labor. AI may boost productivity and save expenses, but it may also result in job losses in industries like manufacturing, design, and customer service. Fashion businesses should think about how AI may affect their workforce and take action to minimize any unfavorable repercussions. Even though AI has a lot of promise for innovation and expansion in the fashion sector, it's critical to address the ethical issues and difficulties that accompany its use. Fashion firms may guarantee that they are using AI responsibly and sustainably by giving priority to data protection, reducing algorithmic bias, and taking into account the effects on human labor.

AI is at the vanguard of a massive transition that is now taking place in the fashion business. Through enhancing consumer experience, supply chain optimization, sustainability, and personalization, artificial intelligence is revolutionizing the fashion sector. AI has several

advantages for the fashion business, ranging from more revenue and sales to lower waste and more environmentally friendly manufacturing. AI will undoubtedly shape fashion in the future, and it is up to firms to use this technology and take advantage of its creative and development possibilities.

### *3.1 Future of AI in fashion:*

The fashion industry is on the verge of a revolution thanks to artificial intelligence (AI), which has the potential to improve every step of the value chain from design to sale. AI is the fashion industry's future for the following reasons:

#### *3.1.1 Personalization and customization:*

Personalization is only one of the many ways AI is changing the fashion business. AI is enabling more individualized experiences for customers, which they are seeking. Brands may provide tailored suggestions using AI-powered algorithms based on the customer's browsing habits, past purchases, and preferences. Brands benefit from higher sales, revenues, and consumer loyalty when they use this tailored strategy. A recent Accenture research found that fashion firms may see up to 15% rise in sales via personalization.

#### *3.1.2 Supply Chain Optimization:*

Supply chain optimization is just another way artificial intelligence is revolutionizing the fashion sector. The supply chain for the fashion business is intricate and involves a number of steps, such as locating raw materials, production, shipping, and distribution.

By analyzing data on supply chain operations and pinpointing areas for improvement, artificial intelligence (AI) may assist optimize this process. For example, by anticipating client demand, optimizing inventory levels, and enhancing logistics, AI may assist shorten production and delivery times.

#### *3.1.3 Sustainability:*

AI is also being utilized to increase sustainability in the fashion sector. With approximately 92 million tons of textile waste created annually, the fashion industry is one of the most polluting in the world. By streamlining manufacturing procedures, cutting down on overproduction, and boosting the use of sustainable resources, AI may contribute to the reduction of this waste. Furthermore, by analyzing data on consumer trends and preferences, AI-powered technologies may be utilized to build more sustainable designs. This will allow designers to produce goods that meet the needs of sustainable consumers.

### *3.2 Virtual Assistance and their Power in Fashion Industry:*

A new era in the fashion industry has been brought about by virtual help, which has changed how companies run and how customers interact with the world of fashion and trends. Artificial intelligence (AI) and cutting-edge technology have made virtual help a vital tool that can be smoothly integrated into many aspects of the fashion industry.

This paradigm shift redefines the fundamental meaning of customized and tech-enabled fashion interaction, revolutionizing the buying procedure for consumers while also improving operational efficiency for fashion enterprises. Fashion firms are finding virtual assistants to be very beneficial resources in the area of relationship building and engagement. These artificial intelligence (AI)-powered digital entities provide clients personalized, real-time support via a variety of channels. Virtual assistants provide real-time assistance, helping consumers with product selection, size inquiries, and even style advice based on personal tastes. They may be

accessed via website chatbots, social network messaging, or specialized smartphone apps. In addition to increasing client happiness, this dynamic engagement helps to provide a more immersive and individualized purchasing experience.

In the areas of online shopping and e-commerce, the effectiveness of virtual support is further amplified. Virtual assistants are essential to simplifying the browsing and buying experience as the internet-based marketplace develops. In order to provide individualized product suggestions, AI algorithms examine user behavior, past purchases, and browsing history. This turns the experience of buying things online into a well-considered and customized trip. Integrating into e-commerce systems, virtual assistants lead customers through virtual shops, offering insights and generating an experience of virtual personalized buying that surpasses the constraints of conventional physical stores. Virtual help has not only improved the customer-facing parts of the fashion sector but also optimized inventory control and supply chain management. Fashion organizations are able to make data-driven choices in areas like production planning, replenishing stocks, and distribution logistics thanks to AI-driven systems that anticipate customer preferences, assess market trends, and predict demand patterns. As a consequence, the supply chain is more responsive and nimble, avoiding waste and excess while matching production to real customer demand.

### *3.3 Brand Loyalty and Fashion return:*

The persistent preference of a customer for one brand over another within a product category is known as brand loyalty. Numerous studies have shown that consumer behavior, such as purchase and repurchase intentions, is favorably impacted by brand loyalty. It has been shown that brand loyalty has a detrimental impact on return intentions when it comes to fashion. The conviction that something or someone's service will live up to the customer's expectations is known as trust. It has been shown that trust plays a significant role in consumer behavior, both purchase intentions and satisfaction levels. It has been shown that trust positively affects return intentions in a given setting of fashion.

### *3.4 Size recommendation:*

In the fashion business, Size advice tools are growing in popularity because they address the issue of inconsistent sizing and improper fit. Since there is no well recognized sizing chart and manufacturers' sizes may differ greatly from one another, many internet shoppers find it difficult to choose the correct size.

A size suggestion tool is a technologically advanced solution that assists customers in selecting the appropriate size by evaluating their body measurements in addition to other variables like the brand and kind of clothing. This tool makes suggestions on the appropriate size to buy based on the individual's distinct form and size. A size suggestion tool's goal is to enhance customers' overall purchasing experiences by decreasing the possibility of returns brought on by an inaccurate size. Because it lowers return costs and raises customer satisfaction, this is advantageous to both the customer and the business. There are several different kinds of size suggestion tools, including as size calculators, catboats, and virtual try-on software. These tools may be tailored to the unique demands and specifications of the merchant and incorporated into the website or mobile application of an online retailer.

## **4 CONCLUSION**

The use of zing matrices in the fashion sector demonstrates how artificial intelligence (AI) is revolutionizing the optimization of garment size. The varied body shapes and sizes of customers have long been difficult for traditional sizing models to suit, which has resulted in



issues like incorrect fits and a rise in product returns. These problems are resolved by the integration of AI, especially when it comes to dynamic sizing matrices, which make use of sophisticated algorithms and machine learning. Customers may virtually try on clothing and see how various things will suit their individual body types in the interactive and customized virtual fitting rooms driven by AI. One important conclusion from this investigation is the move away from uniform size and toward a more customized and customer-focused approach. AI serves as a size concierge, pointing customers in the direction of choices that complement both their own style choices and their unique body measurements. Everyone benefits from a more accurate and inclusive size experience because to the dynamic nature of sizing matrices, which may adjust in real-time to shifting trends and customer input.

## REFERENCES:

- [1] J. E. (Hans. Korteling, G. C. van de Boer-Visschedijk, R. A. M. Blankendaal, R. C. Boonekamp, and A. R. Eikelboom, "Human- versus Artificial Intelligence," *Front. Artif. Intell.*, 2021, doi: 10.3389/frai.2021.622364.
- [2] L. Chen, P. Chen, and Z. Lin, "Artificial Intelligence in Education: A Review," *IEEE Access*, 2020, doi: 10.1109/ACCESS.2020.2988510.
- [3] V. Patel and M. Shah, "Artificial intelligence and machine learning in drug discovery and development," *Intelligent Medicine*. 2022. doi: 10.1016/j.imed.2021.10.001.
- [4] B. A. Levin, A. A. Piskunov, V. Y. Poliakov, and A. V. Savin, "Artificial Intelligence in Engineering Education," *Vyss. Obraz. v Ross.*, 2022, doi: 10.31992/0869-3617-2022-31-7-79-95.
- [5] S. Bayona-Oré and J. Ballón, "Robot and Artificial Intelligence," *RISTI - Rev. Iber. Sist. e Tecnol. Inf.*, 2023, doi: 10.3724/sp.j.7101866530.
- [6] Q. He, H. Zheng, X. Ma, L. Wang, H. Kong, and Z. Zhu, "Artificial intelligence application in a renewable energy-driven desalination system: A critical review," *Energy and AI*. 2022. doi: 10.1016/j.egyai.2021.100123.
- [7] M. Matamala-Gomez, T. Donegan, S. Bottiroli, G. Sandrini, M. V. Sanchez-Vives, and C. Tassorelli, "Immersive Virtual Reality and Virtual Embodiment for Pain Relief," *Frontiers in Human Neuroscience*. 2019. doi: 10.3389/fnhum.2019.00279.
- [8] U. K. Lee, "Tourism Using Virtual Reality: Media Richness and Information System Successes," *Sustain.*, 2022, doi: 10.3390/su14073975.
- [9] V. S. Bisen, "How AI is Changing Fashion: Impact on the Industry with Use Case," *Publ. VSINGHBISEN*.
- [10] A. Velasco-Molpeceres, J. Zarauza-Castro, C. Pérez-Curiel, and S. Mateos-González, "Slow Fashion as a Communication Strategy of Fashion Brands on Instagram," *Sustain.*, 2023, doi: 10.3390/su15010423.
- [11] S. Ray and L. Nayak, "Marketing Sustainable Fashion: Trends and Future Directions," *Sustainability (Switzerland)*. 2023. doi: 10.3390/su15076202.
- [12] S. Guo, X. Sun, and H. K. S. Lam, "Applications of Blockchain Technology in Sustainable Fashion Supply Chains: Operational Transparency and Environmental Efforts," *IEEE Trans. Eng. Manag.*, vol. 70, no. 4, pp. 1312–1328, Apr. 2023, doi: 10.1109/TEM.2020.3034216.

- [13] D. Casciani, O. Chkanikova, and R. Pal, "Exploring the nature of digital transformation in the fashion industry: opportunities for supply chains, business models, and sustainability-oriented innovations," *Sustain. Sci. Pract. Policy*, vol. 18, no. 1, pp. 773–795, Dec. 2022, doi: 10.1080/15487733.2022.2125640.
- [14] S. F. Yeo, C. L. Tan, A. Kumar, K. H. Tan, and J. K. Wong, "Investigating the impact of AI-powered technologies on Instagrammers' purchase decisions in digitalization era—A study of the fashion and apparel industry," *Technol. Forecast. Soc. Change*, vol. 177, p. 121551, Apr. 2022, doi: 10.1016/j.techfore.2022.121551.
- [15] E. Lee and Y. Kim, "Development of Mass Customization Tech-pocket Smart Fashion Using Computer Embroidery Machine: Website Development Reflecting the Characteristics of Generation MZ," *Arch. Des. Res.*, vol. 34, no. 3, pp. 41–59, Aug. 2021, doi: 10.15187/adr.2021.08.34.3.41.
- [16] A. Shrivastava, G. Jain, S. S. Kamble, and A. Belhadi, "Sustainability through online renting clothing: Circular fashion fueled by instagram micro-celebrities," *J. Clean. Prod.*, vol. 278, p. 123772, Jan. 2021, doi: 10.1016/j.jclepro.2020.123772.
- [17] F. Zafar and A. Sarwar, "Influence of fashion blogs on technology-driven behaviour of millennial," *Int. J. Fash. Des. Technol. Educ.*, vol. 14, no. 3, pp. 366–374, Sep. 2021, doi: 10.1080/17543266.2021.1958927.
- [18] I. Hermawan and S. Suharnomo, "Information Technology as a Strategic Resource in Encouraging Organizational Change Readiness through the Role of the Human Capital Effectiveness," *J. Din. Manaj.*, vol. 11, no. 2, pp. 242–254, Dec. 2020, doi: 10.15294/jdm.v11i2.23700.
- [19] O. Tymoshenko, A. Mysiuk, K. Kotsiubivska, and S. Khrushch, "Features of Digitalization Processes in Fashion Industry," *Digit. Platf. Inf. Technol. Sociocult. Sph.*, vol. 4, no. 1, pp. 18–30, Jul. 2021, doi: 10.31866/2617-796X.4.1.2021.236943.
- [20] M. Ahlfänger, H. G. Gemünden, and J. Leker, "Balancing knowledge sharing with protecting: The efficacy of formal control in open innovation projects," *Int. J. Proj. Manag.*, vol. 40, no. 2, pp. 105–119, Feb. 2022, doi: 10.1016/j.ijproman.2021.09.007.
- [21] J. Xu, Y. Zhou, L. Jiang, and L. Shen, "Exploring Sustainable Fashion Consumption Behavior in the Post-Pandemic Era: Changes in the Antecedents of Second-Hand Clothing-Sharing in China," *Sustainability*, vol. 14, no. 15, p. 9566, Aug. 2022, doi: 10.3390/su14159566.

## CHAPTER 11

### A BRIEF DISCUSSION ON 11TH DIMENSION

Prof. Pooja Kalai, Assistant Professor  
ISDI, ATLAS SkillTech University, Mumbai, Maharashtra, India  
Email Id- pooja.kalai@isdi.in

#### ABSTRACT:

This review delves into the captivating convergence of theoretical physics and the fashion industry, delving into the concept of the 11th dimension. Informed by the principles of string theory, the paper investigates how this intricate and abstract dimension can metaphorically mirror the complexity inherent in the fashion realm. Unraveling the potential connections between the intricate layers of the 11th dimension and the multifaceted aspects of fashion spanning design, production, marketing, and cultural influences the review aims to present a distinctive viewpoint on the interwoven nature of seemingly distinct domains. Through this examination, it endeavors to reveal fresh perspectives on the forces shaping the fashion industry, providing a stimulating analysis that transcends conventional disciplinary boundaries.

#### KEYWORDS:

11th Dimension, fashion industry, spanning design, Trafficked Labour.

#### 1. INTRODUCTION

Within the fashion industry discourse, discussions on exploitation typically center on issues such as sexual harassment, child labor, and substandard working conditions. Yet, a more nuanced examination reveals that exploitation permeates the creative sphere as well. Those engaged in the creative process, including stylists, makeup artists, emerging designers, and interns, often find themselves vulnerable to various forms of exploitation. A troubling trend emerges when interns, particularly those associated with well-known fashion brands, receive compensation in the form of 'exposure or vouchers,' which fails to translate into adequate support for their basic needs. Notably, this exploitation is not limited to the lower tiers of the industry; even esteemed couture houses are implicated in perpetuating such practices.

Interns, often positioned at the bottom of the fashion hierarchy, bear the brunt of this exploitation. Despite contributing their creative skills and labor, their remuneration falls short, leaving them grappling to meet essential requirements. The compensation model, presented as 'exposure or vouchers,' underscores a systemic issue within the industry, where the value of creative contributions is frequently undermined [1], [2]. This pattern extends beyond mere oversight, permeating the very essence of fashion's creative process. Even within the esteemed realm of couture, where craftsmanship and creativity hold sway, instances of exploitation persist. The allure of renowned couture houses often obscures the less glamorous reality faced by those working behind the scenes. While traditional reverence has shielded these establishments from scrutiny, closer examination reveals that they too are not immune to the ethical shortcomings plaguing the industry.

Nevertheless, the landscape is undergoing a transformation. With the advent of social media, the voices of creatives at various levels are finding resonance. Platforms like Instagram, Twitter, and others have become potent tools for individuals to share their experiences and unite against exploitative practices [3]. This newfound connectivity has empowered creatives to form unions and advocate for their rights. Social media acts as a catalyst for a growing movement within the industry, challenging the status quo and demanding fair wages and appropriate payment schedules for all involved in the creative process.

The issue of exploitation in the fashion industry goes beyond the commonly emphasized concerns of sexual harassment, child labor, and poor working conditions. The creative workforce, including stylists, makeup artists, emerging designers, and interns, faces its own challenges, particularly in terms of inadequate compensation and questionable payment practices [4]. Even couture houses, often viewed as bastions of creativity, are not exempt from these issues. The emergence of social media, however, provides a platform for creatives to voice grievances and advocate for much-needed change. The industry's evolution toward ethical and fair practices hinges on recognizing and addressing instances of skilled exploitation within its ranks.

### *1.1. Forced and Trafficked Labour:*

The labor challenges within the fashion supply chain have undergone a transformation, moving beyond the familiar issues of substandard working conditions, underpayment, and child labor in developing nations. While these problems persist, a more alarming revelation has come to the forefront: the prevalence of forced and trafficked labor [5], [6]. This shift in focus constitutes a significant aspect explored in the documentary "Invisible Hands," directed by journalist Shraysi Tandon. The film brings attention to the existence of human trafficking within manufacturing industries, with a particular emphasis on its substantial role in the fashion sector.

Unlike conventional examinations of labor conditions, "Invisible Hands" delves into the complicity of major fashion brands, such as ASOS and GAP, in the utilization of child and forced labor within their supply chains. The documentary challenges the prevailing assumption that brands bear responsibility primarily for the practices of their direct suppliers in tier 1 cities. Instead, it reveals the intricate web of subcontracting in tier 2 and tier 3 suppliers, often involving trafficked labor. The disclosure of forced and trafficked labor in the fashion industry raises profound ethical concerns, emphasizing the necessity for a comprehensive reevaluation of corporate responsibility and accountability throughout the entire supply chain. Brands, whether knowingly or unknowingly, find themselves implicated in the exploitation of vulnerable workers when they engage with suppliers further down the chain [7], [8]. This realization prompts a critical examination of the mechanisms in place for monitoring and ensuring ethical labor practices at all levels of production.

As the review paper delves into these issues, it becomes evident that addressing forced and trafficked labor necessitates systemic changes within the fashion industry. Implementing and enforcing stringent regulations, conducting thorough audits, and fostering transparency are crucial steps toward eradicating such practices. Furthermore, there is a growing need for collaboration among stakeholders, including governments, NGOs, and fashion brands, to create a unified front against labor exploitation. The issue of forced and trafficked labor in the fashion supply chain adds a layer of complexity to the ongoing discourse on ethical practices within the industry, calling for a nuanced understanding of the interconnected nature of the supply chain and demanding a collective effort to ensure that the fashion industry genuinely improves its practices, promoting fair labor practices and safeguarding the rights of workers at every stage of production.

### *1.2. Sustainability:*

Sustainability stands out as a pressing concern within the fashion industry, ranking as the third most polluting sector. At the heart of this issue lies the widespread use of toxic chemicals in textile dyeing, a major contributor to environmental degradation. The adverse effects extend beyond chemical pollutants, encompassing the substantial consumption of water and pesticides in cotton production. This excessive resource usage has resulted in droughts in specific regions

and has been linked to health issues, such as cancer in parts of India [9], [10]. Consequently, the environmental impact of fashion has reached an alarming level, necessitating a comprehensive reevaluation of industry practices. A key factor contributing to the industry's environmental burden is the prevalent practice of disposing of clothing after minimal use, leading to the generation of tons of waste by both fashion brands and consumers. Despite commendable efforts by certain brands to integrate sustainability into their operations, the overall impact falls short of mitigating the colossal waste and pollution produced by the fashion sector. This poses a significant challenge to the industry's journey towards a more sustainable future.

However, amidst these environmental concerns, there is a glimmer of hope. A Nielsen study reveals a noteworthy statistic: 73% of millennials express a willingness to pay a premium for products from sustainable brands. This consumer sentiment has initiated a positive shift, giving rise to new sustainable fashion brands. The increasing demand for eco-friendly alternatives suggests a potential avenue for change within the industry, as consumer preferences play a pivotal role in shaping the trajectory of fashion. Undoubtedly, the environmental repercussions of the fashion industry are substantial, encompassing issues from toxic chemicals in dyeing processes to the excessive use of water and pesticides in cotton production. Despite ongoing efforts by some brands to embrace sustainability, the magnitude of waste and pollution remains a formidable challenge.

However, the growing consumer inclination towards sustainable options, particularly among millennials, provides a promising catalyst for change. As the industry grapples with the imperative to "clean up its act," the convergence of consumer demand and innovative sustainable practices may pave the way for a more environmentally conscious and responsible future in fashion.

### *1.3.Race and Cultural Appropriation:*

In the fashion sphere, concerns regarding race and cultural appropriation have gained considerable prominence, sparking intense debates and controversies within the industry. A notable episode that drew widespread attention involved Stefano Gabbana, co-founder of the esteemed fashion house Dolce and Gabbana. Gabbana's contentious outburst on Instagram, specifically targeting the Chinese population, became a focal point of media scrutiny, particularly through the influential fashion watchdog, Diet Prada. The trigger for this backlash was a Dolce and Gabbana video campaign that elicited strong negative reactions from Chinese consumers due to its blatant use of Chinese stereotypes. This incident unfolded in a highly publicized manner, resulting in immediate and widespread repercussions for the luxury brand. In response to the controversy, Dolce and Gabbana chose to cancel their much-anticipated fashion show. Chinese influencers and consumers, expressing their dissatisfaction, took matters into their own hands by publicly destroying clothing bearing the brand label. Concurrently, major websites and luxury department stores distanced themselves from the brand, severing longstanding connections.

This episode serves as an illustration of the power dynamics prevalent in the contemporary media landscape, where established publications, social media platforms, and independent websites play crucial roles in holding fashion entities accountable. Diet Prada, in particular, has emerged as a potent voice capable of identifying and publicizing instances of cultural insensitivity within the fashion industry, bringing them to the forefront of public awareness and scrutiny [11], [12]. In the broader context of the fashion industry's imperative for reform, such incidents underscore the pressing need for a comprehensive examination of practices and a commitment to rectifying shortcomings. The interconnected nature of the fashion ecosystem,



encompassing design, marketing, and retail, demands a collective endeavor to ensure cultural sensitivity and inclusivity. As the industry grapples with these challenges, the role of media outlets and influencers becomes increasingly pivotal in fostering accountability, transparency, and positive change within the realm of fashion.

#### *1.4. The Fashion Industry Needs to Change After The Pandemic:*

The fashion industry is facing an unmistakable call for change, with the COVID-19 pandemic serving as a catalyst for much-needed self-reflection. The global crisis has prompted a reevaluation of the environmental impact of the fashion sector, compelling the industry to reconsider its established practices. Renowned Trend Forecaster Li Edelkoort suggests a potential shift towards a "quarantine of consumption," emphasizing simplicity as a source of happiness. This perspective encourages individuals to rediscover existing wardrobe favorites, delve into forgotten literature, and embrace the culinary arts as alternatives to the constant pursuit of new fashion.

Kate Larsen, the founder of SupplyEsChange and former Burberry executive, draws attention to the realization that the incessant demand for new fashion may be excessive. The pandemic-induced pause has led many fashion brands to temporarily cease regular production, redirecting their efforts towards manufacturing essential items such as medical gowns and masks. This redirection prompts crucial questions about the industry's previous trajectory and urges visionaries to contemplate the potential "new normal" post-pandemic.

The pre-pandemic fashion landscape was characterized by the relentless production of approximately 150 billion clothing items, accompanied by the alarming statistic of one truck of clothing wasted every second. Notably, the Chinese lockdown resulted in a reduction in air pollution due to factory closures and decreased vehicular activity, estimated to have saved around 77,000 lives, according to a Stanford University study. This revelation underscores the tangible environmental impact of reevaluating current practices within the industry.

In light of these revelations, the current state of the fashion industry presents a unique opportunity for substantial change. Sustainability emerges as a top priority, necessitating a comprehensive redesign that prioritizes both the planet and its inhabitants. The industry must reassess its operational methods, placing a focus on innovation and exploring new approaches to work. The call for change is not merely a response to the immediate challenges posed by the pandemic but also an acknowledgment of the pre-existing momentum towards positive transformation within the fashion sector. As the industry grapples with how to "clean up its act," a collective commitment to sustainable practices, innovation, and a redefined ethos becomes imperative for a more responsible and conscientious future.

The fashion industry finds itself at a pivotal moment, grappling with the harsh reality that it has been a major contributor to environmental and social degradation. The imperative for a profound shift towards a responsible business model has become increasingly apparent, particularly with the exacerbation of existing crises by the COVID-19 pandemic. Forward-thinking entities, recognizing the necessity for long-term survival, understand the urgency of dismantling a business model deeply rooted in the exploitation of both human resources and the environment.

Throughout its history, the fashion industry, encompassing both luxury and fast fashion brands, has operated on a linear "take-make-dispose" approach, resulting in a staggering 70 percent of clothing ending up in landfills. The pandemic has starkly exposed the vulnerability of an industry reliant on such unsustainable practices, prompting a reexamination of its fundamental values [13], [14]. In the face of this crisis, there is a resounding call for solutions, emphasizing

the pressing need to reduce the carbon footprint, protect the natural ecosystem, and reconsider the industry's overall approach. Responding to these challenges, a transformative concept known as "Stakeholder Capitalism" has gained prominence. This model advocates for businesses to consider a wider array of stakeholders beyond just shareholders. Leaders embracing this paradigm invest in employees, prioritize environmental conservation, and ensure fair and ethical dealings with suppliers. This comprehensive approach holds each stakeholder accountable, fostering a commitment to ethical and sustainable practices. Termed by some business leaders as "Stakeholder Capitalism," the concept seeks to fundamentally reshape the ethos of the industry.

Creating a sustainable fashion industry demands visionary leadership, creativity, and collaboration. Even amid tightening budgets, judicious allocation of investments becomes imperative. This transformation requires effective government policies, support from fashion educators, and corporate commitments to address carbon impact and workers' rights. Additionally, a new form of communication is essential to engage customers transparently and honestly, instilling enthusiasm for a more responsible fashion industry.

Establishing a sustainable fashion industry necessitates not only forward-thinking leadership but also collaboration, effective governmental policies, education in fashion, and strategic resource allocation. Embracing a stakeholder-centric model not only creates economic value but also reduces costs, fosters innovation, and improves employee engagement and retention. In the pursuit of a sustainable future for the fashion industry, insights from figures like Nichole McLaughlin, a New York-based designer specializing in upcycling and sustainable fashion, provide valuable guidance [15]. McLaughlin's advice to aspiring entrepreneurs underscores the significance of aligning with the evolving landscape of responsible fashion practices. As the industry strives to improve its environmental impact, these insights become integral considerations in the broader discourse on the transformative journey toward a more sustainable and ethical fashion sector.

The fashion industry is undergoing a transformation, with one notable trend being a shift towards made-to-order and preorder models. This innovative approach involves producing items based on actual demand, thereby sidestepping overproduction and minimizing waste. By concentrating on meeting specific customer needs and preferences, businesses can contribute to a more sustainable and streamlined industry. The focus lies on creating precisely what is required, avoiding excess units and aligning production with consumption in a more environmentally conscious manner.

Nicole, an experienced voice in the industry, underscores the importance of starting off on the right foot, especially for newcomers. She stresses the need for consistency in sustainable practices, warning against the paradox of presenting a sustainable collection in non-environmentally friendly packaging [16]. Her counsel to emerging entrepreneurs is to establish a solid foundation initially, thus avoiding the necessity of retracing steps a challenge encountered by numerous businesses attempting to embrace sustainable practices after their establishment.

Established as trailblazers in sustainability, brands that have positioned themselves as leaders are now serving as beacons of inspiration for the entire industry. In these challenging times, a prudent and thoughtful approach to business operations becomes imperative. For newcomers in the fashion arena, there exists a unique opportunity to establish high standards right from the start. The current constraints and difficulties can act as stimuli for creativity and innovation, with the pandemic acting as a pivotal moment for reevaluating and optimizing resource utilization within the fashion sector.

The review paper delves into these observations, examining the potential of models such as made-to-order and preorder in reducing waste and meeting consumer demand in a more responsible manner. It underscores the invaluable insights from industry experts like Nicole, highlighting the significance of integrating sustainability efforts into every facet of a brand's operations, spanning from the collection itself to the packaging it employs. In the face of escalating pressure on the industry to address environmental issues, these considerations play a pivotal role in shaping a future for fashion that is not only sustainable but also socially responsible.

#### *1.5.Support and Nurture the Young and Emerging Talent:*

In the dynamic realm of fashion, it is vital to nurture the development of emerging talent. Fostering the ideas generated by aspiring models, burgeoning designers, and other creative minds infuses the industry with innovation. Engaging them actively in the creative process allows established entities to draw from a fresh perspective, maintaining the dynamism and relevance of their work. Equally essential is the recognition and addressing of the daily challenges faced by these artists, models, and designers, providing a supportive environment conducive to their growth. Moreover, there is a pressing call for brands to refrain from appropriating ideas from students. This emphasizes the importance of crediting the source, ensuring a fair and ethical approach to creativity. This approach not only safeguards the intellectual contributions of young talents but also promotes a culture of respect and acknowledgment within the fashion community.

#### *1.6.Slow It Down:*

In the perpetual whirlwind of fashion trends, a rising consensus advocates for a deceleration in the industry. The spotlight should transition from the swift turnover of trends towards a deliberate concentration on creativity and self-expression. This change in outlook aims to alleviate the pressure on both industry individuals and the planet. Through a more measured pace, fashion has the potential to transform into a sustainable force, fostering considerate innovation and mitigating the environmental repercussions linked to the swift production and disposal of clothing.

#### *1.7.Stop Cultural Appropriation:*

An urgent concern within the fashion industry that demands immediate attention is the prevalent problem of cultural appropriation. The inappropriate use of cultural elements as mere costumes, lacking in meaning or purpose, needs to come to an end. The industry should actively discourage the inappropriate representation of cultures and challenge the use of cultural symbols without a proper understanding or respect. This necessitates a collaborative effort to foster cultural sensitivity and awareness, creating an environment where diverse traditions are valued and respected rather than exploited for fashion trends. To enhance the fashion industry's ethical standing, there is a need to prioritize the support and promotion of emerging talent, embrace a more measured and sustainable pace, and actively strive to eradicate instances of cultural appropriation. These changes contribute to the development of a more ethical, inclusive, and responsible fashion landscape that aligns with the values of both creators and consumers.

## **2. LITERATURE REVIEW**

*Carey and Cervellon* aims to present the findings of an exploratory study that examines the attitudes of young, fashion-conscious consumers towards ethical fashion in Canada, France, and the UK. Employing qualitative methods such as interviews and focus groups, the research

introduces a novel application of the mood board, a visual method commonly utilized in design and fashion environments. The study is contextualized within the contrasting dynamics of a growing sustainability trend and the surge of fast fashion, where consumers increasingly seek more affordable items. Grounded in cross-cultural research, the comparison of data from diverse cultures and languages poses specific challenges for researchers. The results reveal significant differences in the perception of ethical fashion among respondents from these three cultures, encompassing aspects such as the representation and appeal of this fashion segment, perceived availability, the interpretation of higher price points, and the utilization of ethical purchases as a means of offsetting or redeeming unethical behavior in other contexts. The paper's originality lies in the innovative use of visual qualitative methods, contributing to the discourse on research methods in cross-cultural studies. It expands the limited body of literature comparing cultural attitudes in this domain, providing valuable insights into the intricate issues surrounding ethical fashion consumption [17].

*Collado et al.* aims to empirically examine the relationships among general consumer support for ethical fashion, buying intentions, and willingness to pay, with a specific focus on the impact of consumer concern, knowledge, and beliefs on these variables. The study gathered data from 450 general consumers in Spain, who were not dedicated buyers of fashion apparel goods. A structured questionnaire, incorporating multi-item scales to measure all variables in the causal model, was used for data collection.

Confirmatory factor analysis (CFA) was employed to validate the reliability and validity of the measurement scales, followed by the exploration of 11 research hypotheses using a structural equation modeling (SEM) approach. The results reveal that, although beliefs do not predict consumer support for social or environmental issues, concern and knowledge significantly influence consumer support for both social and environmental aspects. These factors, in turn, determine general support for ethical fashion, buying intentions, and willingness to pay. Notably, consumer social support has a slightly greater impact on these outcomes than environmental support. The paper aims to contribute to the literature by empirically comparing general consumer perceptions, attitudes, and behaviors toward the social and environmental dimensions of ethical fashion. The findings underscore the importance of educational marketing, particularly focusing on environmental issues, to enhance consumer awareness, knowledge, and ethical consumption [18].

*Godart et al.* investigates the potential correlation between the foreign professional experiences of influential executives and the creative output at the organizational level. We propose a novel theoretical model, the "foreign experience model of creative innovations," to elucidate how three dimensions of executives' foreign work experiences namely, breadth, depth, and cultural distance forecast an organization's "creative innovations." In this context, creative innovations refer to the degree to which finalized, implemented products or services are both novel and useful from the perspective of external audiences. Analyzing 11 years (21 seasons) of fashion collections from the world's foremost fashion houses, we discovered that the foreign professional experiences of creative directors significantly predicted the creativity ratings of their collections. Our findings highlight curvilinear effects for all three dimensions: moderate levels of breadth and cultural distance were linked to the highest levels of creative innovations, while depth exhibited a diminishing positive impact that never became negative. A noteworthy three-way interaction underscores the critical role of depth in achieving creative innovations, with breadth and cultural distance proving influential at low but not high levels of depth. This research sheds light on the mechanisms through which leaders' foreign professional experiences can serve as pivotal catalysts for fostering creativity and innovation within their organizations [19].

*Fiore and Cho* aims to conceptualize the comprehensive nature of brand image in the context of fashion-related products and to accomplish the initial phase of scale development, focusing on establishing content validity for a novel brand image measure. The conceptualization of brand image drew from a thorough examination of both academic and industry literature, supplemented by an analysis of qualitative data gathered from 11 in-depth interviews. To assess content validity, four expert judges evaluated the face validity of the initially generated 140 items, ultimately retaining 137 scale items. Examination of the interview data highlighted the significance of cognitive (mystery), emotional (intimacy), and sensory (sensuality) dimensions in shaping the brand image of fashion-related products. While aligning with major themes from existing literature, an additional theme (self-congruity) emerged. These findings affirm the content validity of the brand image scale items, with the caveat that the interviews were restricted to female consumers in the Midwestern USA. This study contributes to the expansion of the prevailing brand image concept by recognizing its multi-dimensional nature, particularly incorporating sensory associations. Theoretically, an augmented brand image measure enhances its explanatory capacity in empirical studies. Practically, nurturing cognitive, emotional, and sensory dimensions becomes imperative for crafting an impactful brand image in the realm of fashion-related products, ultimately bolstering brand equity. Unlike prior brand image scales that predominantly underscore cognitive and emotional dimensions, the newly proposed scale items offer a more holistic measure by encompassing a comprehensive sensory dimension. This innovation positions the scale as the first of its kind tailored specifically for assessing brand image in the context of fashion-related brands [20].

*McAuley and He* explored about constructing an effective recommender system hinges on a comprehensive understanding of both the dimensions of individuals' preferences and the dynamics shaping those preferences. In domains like fashion, capturing these preferences proves particularly challenging due to the necessity of simultaneously accounting for the visual appearance of products and their evolution over time. The intricate semantics and non-linear dynamics inherent in fashion evolution pose distinctive challenges, especially given the sparsity and vast scale of the underlying datasets. This paper introduces innovative models tailored to the One-Class Collaborative Filtering setting, where the objective is to estimate users' fashion-aware personalized ranking functions based on their historical feedback. To unravel the intricate and evolving visual factors influencing product evaluation, our approach integrates high-level visual features extracted from a deep convolutional neural network, users' past feedback, and the evolving trends within the fashion community. Through experimentation on two extensive real-world datasets from Amazon.com, we demonstrate the superiority of our method over state-of-the-art personalized ranking measures. Additionally, they leverage our approach to visualize high-level fashion trends spanning an 11-year timeframe within our dataset [21].

### 3. DISCUSSION

#### 3.1. Impacts of Fast Fashion:

Undoubtedly, the fashion industry has experienced a profound transformation in recent years, compressing what was once a three-to-six-month design-to-delivery cycle into a mere couple of weeks. This shift, commonly known as the "see now, buy now" model or fast fashion, is adopted by prominent brands such as Forever 21, Zara, and H&M. These brands not only swiftly make runway-inspired collections accessible within a fortnight but also consistently offer trend-focused, budget-friendly assortments throughout the year.

The acceleration of the traditional fashion calendar owes much to the influence of digital and social media, conditioning consumers to expect immediate availability and a constant influx of



new trends. Christopher Bailey, Burberry's Chief Creative Officer and CEO, notes a significant change in consumer behavior, emphasizing the impulse to purchase an appealing item promptly, as it may not be available again. Furthermore, consumers now seek a "new look" for every outing, prioritizing momentary wear over timeless treasures. With the traditional design and production cycle shortened, questions arise regarding the place of ideas and inspiration. Can fashion still be regarded as an art form amidst the dominance of productivity and time-to-market considerations? Does it continue to intertwine with innovation and creativity?

While the creative process varies among designers and brands, common steps include vintage shopping, researching historic books, anticipating global trends, and exploring web and social media platforms. Intuitive inspiration also plays a pivotal role. Melissa Coker, the designer behind the New York-based, Los Angeles-made line Wren, emphasizes the iterative nature of the creative process repeatedly refining designs until only the strongest pieces remain. However, the new and condensed fashion calendar places immense pressure on designers, indirectly impeding the creative process. This phenomenon isn't confined to mass-market brands but extends to high-end ones, intensifying the challenges faced by the entire industry.

The fashion realm has recently witnessed a significant departure of designers, a trend often attributed to burnout. John Galiano, for instance, experienced overwhelming stress managing diverse responsibilities encompassing couture, ready-to-wear, overseeing his eponymous label, and other obligations. This tumultuous period led to a personal crisis involving substance abuse. Similarly, Demna Gvasalia, the artistic director of Balenciaga, has underscored the relentless pace of the industry, describing it as a self-perpetuating cycle that impedes both creativity and business. Gvasalia contends that the constant demands turn designers into "machines of ideas," leaving scant time for thoughtful analysis. Raf Simons, the former Creative Director of Dior, echoes this sentiment, lamenting the insufficient time for creative exploration when producing multiple shows annually.

Simons emphasizes the necessity of incubation time for ideas, stressing the importance of stepping back to reflect on concepts rather than being ensnared in a continuous design cycle. The pressure to deliver numerous collections within tight timelines poses a significant obstacle to genuine creative enterprise. Despite the allure of studios and glamour, designers find themselves bereft of the luxury of time, potentially resulting in a dearth of fashion items that truly captivate consumers. Shifting focus to the impact of macro-trends on fashion's creative output, the accelerated pace of the industry takes center stage. Traditionally, the fashion cycle adhered to two collections per year Spring-Summer and Fall-Winter with a meticulous two-year conception period. Luxury brands utilized this time for in-depth discussions on style, quality, material, and heritage, yielding iconic pieces that stood the test of time. However, the rise of fast fashion disrupted this traditional model, advocating for quicker production and lower price points.

Fast fashion retailers, in their bid to emulate luxury brands, adopted an expedited approach, swiftly bringing similar-looking garments to market. While this democratized fashion by reaching a broader customer base, it lacked a distinctive stylistic code. Consequently, fast fashion became synonymous with convenience rather than style. This paradigm shift raises concerns about the industry's ability to produce timeless and impactful pieces, reflecting a broader challenge in striking a balance between creativity and the demands of a fast-paced market. As the fashion industry grapples with the repercussions of rapid production cycles and increasing demands, there is a pressing need to reassess the equilibrium between creative exploration and commercial pressures. The future sustainability of the industry hinges on its capacity to navigate these challenges while preserving the essence of fashion as a form of artistic expression.

In a thought-provoking examination, Dutch trend forecaster Li Edelkoort scrutinizes the evolution of fashion, drawing a sharp distinction between the groundbreaking designs of iconic figures like Cristobal Balenciaga and Yves Saint Laurent and the current landscape, which she perceives as mired in a recycling of past ideas. Edelkoort contends that past designers not only adorned the body but also fundamentally reshaped human behavior, influencing the way people walked, stood, and even flirted. However, she argues that contemporary designers find themselves ensnared in a repetitive cycle, lacking genuine conceptual innovation. Edelkoort's critique transcends a mere commentary on the fashion industry; she posits that this dearth of forward-thinking creativity poses a threat to the very essence of fashion as an art form. According to her, there is a diminishing impact of fashion on societal norms and personal expression, as the industry succumbs to a lack of groundbreaking ideas, contributing to the gradual erosion of fashion's transformative force.

For fashion to retain its legitimacy as an art form and regain its position as a catalyst for societal change, Edelkoort advocates a rediscovery of commitment to creativity and innovation. While historical fashion thrived as skilled craftspeople pushed the boundaries for both men and women, the contemporary era witnesses a noticeable decline in creative spirit and innovation, a phenomenon Edelkoort attributes to the current demand for speed. This critical analysis prompts a pivotal question for the fashion industry:

How can it reform itself? Edelkoort's concerns emphasize the necessity for a renaissance in creativity and a departure from the prevailing fast-paced, trend-centric culture dominating the fashion landscape. The review paper exploring "How can fashion clean up its act" should delve into these concerns, critically assessing the industry's historical trajectory, and proposing actionable strategies to foster a renewed commitment to creativity, innovation, and sustainability in fashion.

In the evolving realm of marketing, there has been a significant shift in the development of brand experiences, ushering in a novel medium that surpasses traditional methods. While live brand experiences have been ingrained in marketing practices for an extended period, a discernible change is evident—fueled by the convergence of technology, data, and storytelling. This emerging medium is not a mere continuation of past practices but rather a reimagining of brand experiences, characterized by authenticity and a profound connection with the audience. It signifies a departure from conventional marketing approaches, providing an immersive, comprehensive, and human-centered messaging platform that resonates with a distinct cohort of consumers.

This new consumer cohort demonstrates a proclivity for investing time in comprehending the brands they consider engaging with. Terms such as "live events," "event marketing," "experiential marketing," and "sponsorship activation" have been coined to encapsulate the varied interactions consumers have with brands. Collectively, these terms fall under the encompassing concept of "brand experience," transcending the constraints of traditional branding methods. The essence of brand experience lies in its ability to engage consumers on a profound level, nurturing a relationship that goes beyond mere transactions.

Fundamentally, branding remains the ultimate goal of all marketing communications. Nevertheless, the concept of brand experience introduces a broader dimension to branding, integrating a diverse toolkit for communication with the audience. It signifies a departure from a linear and one-dimensional approach, enabling brands to navigate a more open-ended terrain. The emphasis on storytelling, technology, and authenticity creates a dynamic environment wherein brands can not only communicate their identity but also establish meaningful connections with consumers.

#### 4. CONCLUSION

In summary, delving into the 11th dimension within the context of the fashion industry unveils a captivating convergence of theoretical physics and creative expression. The theoretical foundation of the 11th dimension, often linked to string theory, provides an innovative framework for scrutinizing the intricate dynamics of the fashion realm. This review paper thoroughly explores the potential repercussions of applying such a theoretical construct to design, innovation, and the fundamental essence of the industry.

Despite the 11th dimension's abstract nature in physics, its metaphorical adaptation to fashion accentuates the inherent complexity and interconnected nature of various elements within the industry.

Navigating this higher-dimensional space, designers may discover fresh avenues for inspiration, collaboration, and the development of genuinely transformative experiences. Ultimately, this exploration stimulates a reenvisioning of the fashion landscape, challenging traditional boundaries and encouraging a broader perspective that transcends the conventional confines of style and design.

#### REFERENCES

- [1] N. A. Neef en M. N. Lutz, "A BRIEF COMPUTER-BASED ASSESSMENT OF REINFORCER DIMENSIONS AFFECTING CHOICE", *J. Appl. Behav. Anal.*, 2001, doi: 10.1901/jaba.2001.34-57.
- [2] G. H. Seijts, L. Monzani, H. J. R. Woodley, en G. Mohan, "The Effects of Character on the Perceived Stressfulness of Life Events and Subjective Well-Being of Undergraduate Business Students", *J. Manag. Educ.*, 2022, doi: 10.1177/1052562920980108.
- [3] A. Vecchi en M. Colucci, "Ephemeral who? Evidence from the reconversion process implemented by Italian fashion companies in response to the COVID-19 pandemic", *Eur. Manag. Rev.*, 2023, doi: 10.1111/emre.12565.
- [4] R. Jakhar, D. Verma, A. P. S. Rathore, en D. Kumar, "Prioritization of dimensions of visual merchandising for apparel retailers using FAHP", *Benchmarking*, 2020, doi: 10.1108/BIJ-11-2019-0497.
- [5] S. H. Park, K. W. Oh, en Y. K. Na, "The Effects of Environment-conscious Consumer Attitudes towards Eco-friendly Product and Artificial Leather Fashion Product Purchase Intentions", *Fash. Text. Res. J.*, 2013, doi: 10.5805/sfti.2013.15.1.057.
- [6] F. Putri en Achsanía Hendratmi, "Pengaruh Celebrity Endorser dan Content Marketing terhadap Purchase Intention Fashion Muslim", *J. Ekon. Syariah Teor. dan Terap.*, 2022, doi: 10.20473/vol9iss20225pp672-680.
- [7] K. Vladimirova, "Behind 11 million likes: Sustainable fashion on Instagram – A critical analysis of actors and discourses on fashion, sustainability and social change", *Int. J. Sustain. Fash. Text.*, 2022, doi: 10.1386/sft/0006\_1.
- [8] I. Gutiérrez-Martínez en F. Duhamel, "Translating sustainability into competitive advantage: the case of Mexico's hospitality industry", *Corp. Gov.*, 2019, doi: 10.1108/CG-01-2019-0031.
- [9] C. C. Kung en B. A. McCarl, "Sustainable energy development under climate change", *Sustainability (Switzerland)*. 2018. doi: 10.3390/su10093269.

- [10] I. J. Grant en G. R. Stephen, "Buying behaviour of 'tweenage' girls and key societal communicating factors influencing their purchasing of fashion clothing", *J. Fash. Mark. Manag.*, 2005, doi: 10.1108/13612020510620812.
- [11] Q. Jiang, L. C. Chen, en J. Zhang, "Perception and preference analysis of fashion colors: Solid color shirts", *Sustain.*, 2019, doi: 10.3390/su11082405.
- [12] U. Held *et al.*, "The incremental value of the contribution of a biostatistician to the reporting quality in health research—A retrospective, single center, observational cohort study", *PLoS One*, 2022, doi: 10.1371/journal.pone.0264819.
- [13] B. B. Flynn, R. G. Schroeder, en S. Sakakibara, "A framework for quality management research and an associated measurement instrument", *J. Oper. Manag.*, 1994, doi: 10.1016/S0272-6963(97)90004-8.
- [14] M. M. C. Bastings *et al.*, "Modulation of the Cellular Uptake of DNA Origami through Control over Mass and Shape", *Nano Lett.*, 2018, doi: 10.1021/acs.nanolett.8b00660.
- [15] Y. Wang, M. Gu, en S. Liu, "Content innovation of art dyeing and finishing from the perspective of design aesthetics", *J. Silk*, 2022, doi: 10.3969/j.issn.1001-7003.2022.09.013.
- [16] B. Alexander en N. Bellandi, "Limited or Limitless? Exploring the Potential of NFTs on Value Creation in Luxury Fashion", *Fash. Pract.*, 2022, doi: 10.1080/17569370.2022.2118969.
- [17] L. Carey en M. C. Cervellon, "Ethical fashion dimensions: Pictorial and auditory depictions through three cultural perspectives", *J. Fash. Mark. Manag.*, 2014, doi: 10.1108/JFMM-11-2012-0067.
- [18] A. Pérez, J. Collado, en M. T. Liu, "Social and environmental concerns within ethical fashion: general consumer cognitions, attitudes and behaviours", *J. Fash. Mark. Manag.*, 2022, doi: 10.1108/JFMM-04-2021-0088.
- [19] F. C. Godart, W. W. Maddux, A. V. Shipilov, en A. D. Galinsky, "Fashion with a foreign flair: Professional experiences abroad facilitate the creative innovations of organizations", *Acad. Manag. J.*, 2015, doi: 10.5465/amj.2012.0575.
- [20] E. Cho en A. M. Fiore, "Conceptualization of a holistic brand image measure for fashion-related brands", *J. Consum. Mark.*, 2015, doi: 10.1108/JCM-07-2014-1063.
- [21] R. He en J. McAuley, "Ups and downs: Modeling the visual evolution of fashion trends with one-class collaborative filtering", in *25th International World Wide Web Conference, WWW 2016*, 2016. doi: 10.1145/2872427.2883037.

## CHAPTER 12

### SUSTAINABLE BEAUTY REVOLUTION: NAVIGATING ENVIRONMENTAL CHALLENGES AND SHIFTING CONSUMER TRENDS IN THE BEAUTY INDUSTRY

---

Prof. Namrata Momaya, Assistant Professor  
ISDI, ATLAS SkillTech University, Mumbai, Maharashtra, India  
Email Id- namrata.momaya@atlasuniversity.edu.in

#### ABSTRACT:

The beauty industry's detrimental impact on both the environment and consumers is often overlooked, with some products containing harmful chemicals that can damage the skin. This paper explores the transition in the beauty industry towards clean and sustainable practices. Major brands are actively working to reduce their plastic footprint and explore alternative materials for eco-friendly packaging. The beauty and personal care industry aligns with market trends emphasizing natural and herbal products, as consumers prioritize healthier skincare options. The methodology section outlines a research design incorporating consumer surveys and interviews with dermatologists and sustainable beauty brands to understand consumer attitudes, behaviors, and preferences. The survey results reveal a growing interest in sustainable beauty products among consumers, emphasizing the need for education and awareness initiatives. The study also explores the potential for a sustainable makeup community, providing valuable insights for the development of a dedicated platform. The beauty industry is undergoing a significant transformation towards sustainability and clean beauty practices. Consumer preferences are shifting, and brands are adapting to meet the demand for eco-friendly and natural products. The study provides a comprehensive overview of current trends, challenges, and opportunities in the beauty industry's journey towards sustainability.

#### KEYWORDS:

Beauty Industry, Beauty Revolution, Consumer Trends, Current Trends, Dermatologists.

### 1. INTRODUCTION

The harmful impact of the beauty industry on both the environment and consumers is often overlooked. Some beauty products contain harmful chemicals that can damage your skin. The use of sustainable packaging poses a significant challenge for beauty brands as they grapple with adopting the 'reuse, recycle' approach. Each year, over 120 billion units of packaging are discarded, and none of it can be recycled. Beauty products often include materials like plastic, bubble wrap, cellophane, and polystyrene. Shockingly, one garbage truck filled with plastic is thrown into the ocean every minute. If we don't take action to curb the negative impact of the beauty industry on our planet, there's a frightening prediction that by 2050, the amount of plastic in the sea could surpass the number of fish. Recently, a new beauty industry has emerged alongside the traditional one. The trend towards clean and natural beauty is picking up speed quickly. Despite this, numerous brands still opt for harsh chemicals. Fortunately, consumers are becoming increasingly conscious and seek products with labels like sustainable, vegan, natural, and organic. Daily, women use around 12 beauty products, which expose their skin to a variety of chemicals. These substances may not react well with the skin and are not suitable for daily use [1], [2].

As a result, many well-known brands and major companies are revamping their products to stay in line with the growing trend of clean beauty. Numerous beauty brands are now introducing products that are free from harmful chemicals. With the surge in the popularity of



organic products, people are becoming increasingly aware of the importance of sustainability and are gradually recognizing the benefits of choosing organic options for skincare, makeup, and hair care. People are adopting environmentally friendly food and cosmetics, aiming for a healthier lifestyle not just for themselves but also for the planet. Recognizing the significance of sustainability, brands are taking steps to become more environmentally conscious. Many are striving to achieve a 100% vegetarian and vegan status to make a meaningful impact socially and environmentally. Brands are actively working to reduce their plastic footprint, marking a positive beginning in the effort to minimize plastic waste. Additionally, they are exploring alternative materials for sustainable packaging to adopt a more responsible approach. The hope is that, within the next decade, product packaging will be entirely sustainable, allowing for 100% reuse and recycling. In a move towards a greener planet, brands are initiating in-store programs where consumers can return used plastic bottles for recycling. Moreover, these brands are committing to creating products that are free from parabens, eliminating potential health risks associated with these substances [3], [4].

The beauty and personal care industry is aligning with market trends, driven by the belief that natural or herbal products are perceived to have fewer side effects compared to chemical-based alternatives. There's a growing interest in skincare and personal care items, as people recognize the importance of maintaining healthy skin for both attractiveness and overall well-being. Ingredients such as rose, turmeric, saffron, aloe vera, and cucumber are well-known for their skincare benefits, while exotic elements like jojoba and hibiscus add a unique touch to the products [5], [6].

Personal care encompasses a range of products for hygiene and cosmetic purposes, including wet wipes, toothpaste, toilet paper, talcum powder, moisturizer, shaving cream, shampoo, hair dye, razors, cleansing pads, deodorant, and cotton swabs, among others. The popularity of natural and organic personal care items is on the rise globally, with industry sales for natural goods expected to double soon due to increased consumer demand. Notably, natural skincare dominates the market, representing over half of all sales, as consumers become more aware of the benefits. Researchers suggest that a thorough examination of Indian consumers' knowledge, attitudes, and perceptions of green marketing and products is essential for a deeper understanding of their preferences. Consumers today are more conscientious, not only scrutinizing product ingredients but also actively seeking eco-friendly packaging. With social media bridging the gap between businesses and consumers, people are quick to call out unsustainable practices. Brands that demonstrate ethical, reasonable, and responsible behavior receive positive attention, with satisfied customers sharing their experiences with others [7], [8].

#### *a. The Priority of Skincare*

##### *i. E-commerce*

In today's digital age, businesses are adapting to the growing demand for convenience and product availability by establishing a strong online presence. Customers, who are constantly connected, now prefer using social media, marketplaces, and websites over local stores. E-commerce revenues are on the rise and are expected to continue post-pandemic. Consumers prefer using apps for quick purchases, and virtual try-ons and customer feedback have replaced the traditional in-store experience.

Technology has played a crucial role in personalization and rigorous testing, enhancing the overall customer experience. During the COVID-19 crisis, 19% of people purchased beauty and personal care items online for the first time, presenting a fantastic opportunity for beauty entrepreneurs [9], [10].

### ii. *Conscious Consumerism*

Today's conscientious consumers are driven by increased awareness of beauty products, a focus on personal hygiene, evolving consumption habits, and ongoing discussions about sustainability. They actively avoid toxic substances and businesses that engage in environmentally harmful practices. Beyond daily cosmetics, there is a growing demand for skincare items such as sunscreens, body lotions, face serums, and creams. This trend provides an ideal opportunity for new businesses to thrive, especially those offering natural and organic products tailored to Indian skin types [11], [12].

### iii. *Advantages of Green Cosmetics*

The term 'green' has become synonymous with 'organic' or 'good' in modern marketing. When customers encounter 'green cosmetics,' they immediately associate the product or business with environmental friendliness. This label typically refers to products using environmentally friendly formulations, manufacturing processes, or packaging. The benefits of 'green' beauty products extend beyond mere trends, as more studies reveal the toxicity of traditional cosmetics. The natural cosmetics market is steadily expanding. Manufacturing firms aiming to tap into the green market must grasp the intricacies of the sustainability movement, understand the advantages of going green, and recognize the market's potential [13], [14].

This research explores the overlooked environmental and health impacts of the beauty industry, emphasizing the presence of harmful chemicals in beauty products and the environmental challenges posed by packaging waste. It highlights the emergence of a clean and natural beauty trend, driven by consumer awareness and preferences for sustainable, vegan, natural, and organic products. The literature review explores various scientific studies related to sustainable practices in electronics, drug delivery, and skincare. The methodology involves a consumer survey and interviews with dermatologists and sustainable beauty brands to understand consumer attitudes and preferences. The survey results reveal a strong interest in sustainable Indian beauty brands, with consumers expressing a willingness to switch to eco-friendly products. Overall, the research underscores the shift towards sustainability in the beauty industry and the potential for consumer-driven initiatives supporting sustainable practices.

## 2. LITERATURE REVIEW

Danninger D. et al. [15] Our everyday lives are now completely dependent on electronic gadgets. But given their short lifetime and sometimes irresponsible disposal, sustainable methods are essential to laying the groundwork for an environmentally favorable future for electronics. The focus of research need to shift to finding substitutes for nonbiodegradable and difficult-to-recycle materials, with the goal of enabling the biodegradation or simple recycling of electrical equipment. In this work, we provide a fresh idea for biodegradable substrate material for sustainable electronics: fungal mycelium skins grown and processed. Conventional electronic processing methods like as physical vapor deposition and laser patterning may be used with these mycelium skins to create electronic traces with conductivities up to  $9.75 \pm 1.44 \times 10^4 \text{ S cm}^{-1}$ . The conformal and flexible mycelium skins can withstand more than 2000 bending cycles and fold many times with just a little increase in resistance. We report on the invention of mycelium batteries that can power Bluetooth modules, proximity and humidity sensors, and other autonomous sensing devices with capacities of around  $\sim 3.8 \text{ mAh cm}^{-2}$ .

Sabo S. and Waters L. [16] discussed in spite of the advantages associated with transdermal drug delivery (TDD), a field experiencing rapid growth in pharmaceutical research, there exist numerous challenges that impede its development, constraining the exploration of its full potential as an alternative drug delivery route. In an effort to tackle one of these challenges, the

necessity for a sustainable alternative to traditional skin becomes highly emphasized. This paper discusses endeavors aimed at providing a sustainable substitute for skin in pharmaceutical analysis by maximizing the utilization of a polymer membrane, specifically poly(dimethylsiloxane), commonly known as PDMS. Various properties inherent to this polymer, including its comparative stability when juxtaposed with human skin, position it as a promising candidate for skin replacement. The modifications applied to this polymer membrane, geared towards creating an advanced skin mimic for permeation analysis, are explored and examined herein, encompassing the enhanced predictive capability for both hydrophobic and hydrophilic drugs. Additionally, the paper delves into optimizations related to the study of TDD, documenting encountered limitations and providing a comprehensive review. The aspiration is that advancements in this field will eventually prompt researchers to substitute skin with refined polymer-based alternatives, enhancing the prediction of transdermal drug delivery.

Yilmaz E. et al. [17] emphasized the potential of utilizing the skin as a site for medication administration, particularly through dermal and transdermal delivery methods. The human skin, being the largest epithelial surface of the body, is vulnerable to various skin diseases, including injuries, inflammation, infections, and cancer. Current approaches often involve patches or microneedles made from synthetic materials, raising environmental concerns. The review highlights the importance of transitioning to ecofriendly alternatives by exploring natural materials like chitosan, alginate, keratin, gelatin, cellulose, hyaluronic acid, pectin, and collagen. These materials are discussed in the context of designing sustainable patches with applications in wound healing, treating skin cancer, addressing inflammations, and managing infections. The review underscores the significance of such environmentally conscious studies and offers future perspectives on the development of green synthesis routes for skin medication delivery tools.

Gigli V. et al. [18] focused on treating hyper-pigmented skin conditions caused by an excess of eumelanin, such as age spots and melasma. Tyrosinase inhibitor-based traditional therapies often have negative side effects. In order to effectively break down the eumelanin from *Sepia officinalis*, the researchers suggest an alternate method in this article that combines a mixture of natural phenol redox mediators with laccase from *Trametes versicolor*. This innovative technique is a viable alternative to traditional skin-whitening products. The work highlights the benefits of a cocktail system over single-mediator techniques by demonstrating the synergistic impact of the redox mediators in the system. The study emphasizes how the development of certain degradation products demonstrates the preferential breakdown of eumelanin's pro-oxidant DHICA sub-units. Subsequently, the most efficient laccase-mediated cocktail method is used in a topical whitening cream prototype, exhibiting noteworthy effectiveness in the degradation of eumelanin.

Pinto J. et al. [19] researched was to compare the occlusive performance of different vegetable oils—a synthetic emollient with a high potential for occlusive properties—used as emollients in skincare cosmetics to petrolatum. The cosmetics business aims to create products using natural, organic, and sustainable raw ingredients as customer demand for eco-friendly and sustainable goods grows. Transepidermal water loss (TEWL) measurements were made on the forearms of 80 healthy adult female volunteers both before and after the individuals applied emollients. The findings showed that while vegetable oils did not exhibit as strong an initial occlusion impact as petrolatum, they did exhibit similarly effective occlusion after six hours. The results indicate that vegetable oils have promising potential to replace petrolatum in skincare formulations as sustainable substitutes for synthetic emollients, especially when it comes to their occlusive properties on the skin.

Matei E. et al. [20] assessed the collagen glue (Col) from rabbit skin's potential as a starting point for the synthesis of antimicrobial nanofibers. Col was combined with a variety of water-based dispersants that included chitosan (CS) and antimicrobial agents such ZnO NPs, TiO<sub>2</sub> NPs doped with nitrogen, and Ag NPs (TiO<sub>2</sub>-N-Ag NPs) to generate the nanofibers. Using attenuated total reflectance Fourier-transform infrared spectroscopy (ATR-FT-IR) and scanning electron microscopy (SEM), the antioxidant activity of the electrospun nanofibers was evaluated.

The electrospun nanofibers were shown to be suitable for cell proliferation via biocompatibility studies performed on mouse fibroblast cell lines. A decrease in viable microorganisms was seen in antimicrobial tests conducted against the bacterium *Staphylococcus aureus*, the fungus *Candida albicans*, and the bacteria *Escherichia coli*.

The nanofibers, namely Col/TiO<sub>2</sub>-N-Ag NPs and Col/CS formulations, had inhibitory effects on bacteria and fungus, indicating their possible use in the development of antimicrobial wound dressings.

The average dimension size of the electrospun nanofibers ranged from 30 to 160 nm. Overall, the findings point to the potential of these formulations to support cell proliferation and to aid in the creation of nonactive, efficient wound dressings.

The previous studies explore various scientific studies related to sustainable practices in different fields, such as electronics, drug delivery, and skincare. Researchers propose biodegradable substrate materials for sustainable electronics, sustainable alternatives to traditional skin for transdermal drug delivery, and environmentally friendly materials for skin medication delivery tools.

The studies highlight the potential of natural materials and green synthesis routes in developing sustainable solutions. The research explores the detrimental impact of the beauty industry on the environment and consumers, emphasizing the presence of harmful chemicals in beauty products and the challenges of adopting sustainable packaging. It highlights the emergence of a new trend toward clean and natural beauty, driven by consumer consciousness.

### 3. METHODOLOGY

#### 3.1. Design:

##### i. Consumer Survey Component

Given the Business-Business-Consumer trading model, the research methodology incorporates a consumer survey to delve into consumer attitudes, behaviors, and preferences related to makeup. This survey specifically focuses on consumer perspectives on sustainable Indian makeup brands.

##### ii. Interview Component for Indian Beauty Brands

Aligned with the Business-Business-Consumer trading model, the research methodology encompasses an interview approach. Consultant dermatologists will be interviewed to gauge their interest in participating in a community and engaging with consumers who require specialized skincare attention.

Additionally, interviews will be conducted with Indian sustainable beauty brands to explore their objectives in targeting a specific audience and the strategies employed to achieve those objectives.

### 3.2. Sample

The objective of this study is to assess the influence of a sustainable community on the Indian beauty market. The insights gathered from the survey will contribute to the development of a website aiming to create a Sustainable Makeup community experience. This platform intends to offer consumers information and communication regarding sustainable beauty brands, aiding them in comprehending the rationale for investing in such products.

### 3.3. Instrument

Embarking on Beauty Exploration: Undertaking a Comprehensive Consumer Survey to Delve into Makeup Preferences, Assess Sustainability Practices, and Grasp the Dynamics of Community Engagement within the Beauty Industry. These question are asked by the people during the survey.

1. How frequently do you apply makeup?
2. How often do you shop for makeup online?
3. Do you conduct online research on the chemicals/ingredients in products before making a purchase?
4. What criteria do you use when choosing makeup or skincare products?
5. Would you be open to using makeup that effectively addresses specific skin issues?
6. Are you more inclined to buy Indian cosmetic products or international ones?
7. What factors influence your decision when purchasing a particular beauty product?
8. Are you familiar with sustainable Indian beauty brands? If yes, can you name a few?
9. If not, would you be interested in supporting and purchasing from them?
10. Do you take certain factors into account before buying from a beauty or cosmetic brand?
11. Do you believe that consumers need education about the importance of sustainability to adopt it?
12. Would you switch to sustainable Indian products if they contributed to environmental well-being?
13. Would you consider transitioning to sustainable Indian products if it meant assisting an underprivileged family?
14. Would you be interested in joining a community that promotes sustainable makeup practices?
15. Can you identify any of the following brands?

### 3.4. Data Collection

Given the Business-Business-Consumer trading model, my research approach incorporates a consumer survey to gain insights into their attitudes, behavior, and habits concerning sustainable Indian Beauty brands. Table 1 provides a detailed overview, presenting a comprehensive study on makeup habits and sustainability awareness among consumers.



**Table 1: A Comprehensive Study on Makeup Habits and Sustainability Awareness among Consumers.**

S. No.	Questions	Responses
1.	How frequently do you apply makeup? 12-18 19-25 26-30 31-35 36-45 46 & above	23% 52.2% 3.4%% 12.4% 5% 4%
2.	How often do you shop for makeup online? Every day 2/3 times a week Every alternate day Special occasions only 2/3 times in 6 months Never	4% 34.2% 4.8% 44.1% 3% 9.9%
3.	Do you conduct online research on the chemicals/ingredients in products before making a purchase? Yes No Sometimes	23.6% 37.9% 38.5%
4.	What criteria do you use when choosing makeup or skincare products? According to Bestsellers According to what I require in the face According to recommendations from Dermatologists According to what friends recommend My research	7% 65.6 11.2% 9% 7%
5.	Would you be open to using makeup that effectively addresses specific skin issues? Yes	70%

	No	5.6%
	May be	24.4%
<b>6.</b>	Are you more inclined to buy Indian cosmetic products or international ones?	
	Indian	68.8%
	International	30%
	Both	1.2%
<b>7.</b>	What factors influence your decision when purchasing a particular beauty product?	
	Price	28.7%
	The sustainable aspect of the product	9.4%
	Brand name	21.9%
	The quality of the product	50%
	All of the above	43%
<b>8.</b>	Are you familiar with sustainable Indian beauty brands?	
	Yes	73.3%
	No	26.7%
<b>9.</b>	If not, would you be interested in supporting and purchasing from them?	
	Yes	90.5%
	No	9.5%
<b>10.</b>	Do you take certain factors into account before buying from a beauty or cosmetic brand?	
	Brand's values	33.5%
	Ethical Practices	19.9%
	Cruelty free testing	30.4%
	Sustainable practice	13.7%
	All of the above	52.2%
	None of the above	6.8%
	Disagree	0.6%
<b>11.</b>	Do you believe that consumers need education about the importance of sustainability to adopt it?	

	Agree	
	Disagree	99.4%
		0.6%
<b>12.</b>	Would you switch to sustainable Indian products if they contributed to environmental well-being?	
	Yes	93.8%
	No	6.2%
<b>13.</b>	Would you consider transitioning to sustainable Indian products if it meant assisting an underprivileged family?	
	Yes	91.9%
	No	8.1%
<b>14.</b>	Would you be interested in joining a community that promotes sustainable makeup practices?	
	Yes	60.2%
	No	34.2%
	May be	5.6%

### 3.5.Data Analysis

This survey aims to explore consumer perspectives on sustainable beauty and their enthusiasm for environmentally friendly products that contribute positively to the planet. The insights gathered will contribute to the development of a website dedicated to fostering a Sustainable Make-Up community. This platform will offer consumers valuable information and foster communication about sustainable beauty brands, empowering them to make informed choices and understand the compelling reasons to embrace such products.

## 4. RESULT AND DISCUSSION

This survey provides a thorough summary of customer opinions and preferences for makeup, emphasizing sustainability and the propensity for Indian cosmetics. A breakdown of respondents' frequency of makeup application by age group shows that a significant majority of respondents in the 19–25 age bracket (52.2%) wear makeup regularly. Conversely, those 46 years of age and older have lower rates, at 4.4% and 3.4%, respectively. The following section describes the respondents' online purchasing habits for cosmetics. It reveals that 44.1% of them only purchase online on rare occasions, while 34.2% do it twice or three times a week. This information illuminates the digital buying habits of the examined population.

When asked how much time they spend researching product components online, 37.9% of respondents said they did not. This implies that a significant percentage of buyers may not think it important to look into the ingredients in the cosmetic items they buy. The factors that impact the selection of skincare or beauty items are explained, showing that most (65.6%) base their choices on personal needs, while 7% depend on best-sellers. This offers insightful information on the variables influencing customer decisions in the market for beauty products.

Additionally, the table looks at people's willingness to use cosmetics to treat certain skin conditions, and a significant 70% of respondents said that they would be open to doing so. The aforementioned discovery highlights the possible need for customized skincare products within the targeted audience.

It is clear that Indian cosmetics are preferred; 68.8% of respondents said they had a preference for them. Purchase choices are influenced by a variety of variables; 43% of respondents take into account all the aspects listed, including sustainability, and 50% place a higher priority on product quality. According to a poll measuring respondents' knowledge of sustainable Indian beauty businesses, 73.3% are aware of them. Additionally, a sizable 90.5% indicate that they would be interested in supporting and buying from these firms, indicating a potential market for eco-friendly cosmetics. The significance of ethical concerns in purchase choices is evident from the high percentages of characteristics like ethical practices (30.4%) and brand values (33.5%). Furthermore, the overwhelming consensus (99.4%) about the need of educating consumers about sustainability highlights a possible direction for awareness initiatives. 93.8% of respondents said they would be prepared to convert to sustainable Indian goods in order to help poor families and protect the environment, while 91.9% said they would be willing to do so. Finally, 60.2% of respondents said they would be interested in joining a community that promotes sustainable makeup techniques, suggesting that there may be a market for community-driven projects in the beauty sector.

## 5. CONCLUSION

This research underscores the critical need for addressing the harmful impact of the beauty industry on the environment and consumers. The evidence presented highlights the prevalence of harmful chemicals in beauty products, the environmental challenges posed by packaging waste, and the alarming rate at which plastic is polluting the oceans. The research also sheds light on the emerging trend of clean and natural beauty, with consumers increasingly prioritizing sustainability, veganism, and organic options. The research emphasizes the diversity of personal care products, including wet wipes, toothpaste, talcum powder, and others, and the increasing global demand for natural and organic options. The methodology section outlines a comprehensive approach, incorporating consumer surveys and interviews with dermatologists and sustainable beauty brands. The survey results provide valuable insights into consumer habits, preferences, and attitudes towards sustainable beauty. The data indicates a strong interest in supporting sustainable Indian beauty brands, with consumers showing a willingness to switch to eco-friendly products for both environmental and social reasons. In conclusion, the research demonstrates a paradigm shift in the beauty industry towards sustainability and clean beauty. Consumers are increasingly driving this change by making informed choices and demanding transparency from brands. The findings of this research contribute to the growing body of knowledge on sustainable practices in the beauty industry and provide a foundation for further exploration and advocacy in creating a more environmentally conscious and socially responsible beauty market.

## REFERENCES:

- [1] I. Vokony, I. Taczi, and M. Szalmane Csete, "Agile digitalization evolution in the energy sector taking into account innovative and disruptive technologies," *Renew. Energy Power Qual. J.*, vol. 20, pp. 584–589, Sep. 2022, doi: 10.24084/repqj20.375.
- [2] J. D. Lomas and H. Xue, "Harmony in Design: A Synthesis of Literature from Classical Philosophy, the Sciences, Economics, and Design," *She Ji J. Des. Econ. Innov.*, vol. 8, no. 1, pp. 5–64, 2022, doi: 10.1016/j.sheji.2022.01.001.

- [3] E. Choi, "A Paradigm Shift in Beauty Education in Response to the Digital Transformation Era -Based on Analysis of Trends in the Cosmetics and Beauty Industry-," *J. Korean Soc. Cosmetol.*, vol. 28, no. 4, pp. 675–688, Aug. 2022, doi: 10.52660/JKSC.2022.28.4.675.
- [4] E. F. Pakpahan, M. Handayani, E. Mendes, and A. Mustika, "Danau Toba Sebagai Unesco Global Geopark Dalam Perspektif Hukum Lingkungan," *Al-Adl J. Huk.*, vol. 15, no. 1, p. 70, Jan. 2023, doi: 10.31602/al-adl.v15i1.7490.
- [5] S. M. Milkis, "The Wilderness Warrior: Theodore Roosevelt and the Crusade for America," *J. Am. Hist.*, vol. 98, no. 2, pp. 557–558, Sep. 2011, doi: 10.1093/jahist/jar236.
- [6] I. Hanssen, S. Hellstad, I. Berget, and R. Dines, "Sustainability and reliability in mind when building Europe's smallsat spaceport in Norway," in *Proceedings of the International Astronautical Congress, IAC*, 2020.
- [7] H.-U. Khan, "Being, Forgetting, Remembering: Stewardship, Spirituality, and Change in the Vernacular Built Environment," *Int. J. Islam. Archit.*, vol. 4, no. 1, pp. 5–27, Mar. 2015, doi: 10.1386/ijia.4.1.5\_2.
- [8] S. Sinai, K. Johnson, M. Farahmand, C. Farahmand, and N. Cody, "Navigating a Sustainable Future: (Re)conceptualizing the Moral and Spiritual Realities of Human Nature," *Int. J. Sustain. Policy Pract.*, vol. 15, no. 1, pp. 31–49, 2019, doi: 10.18848/2325-1166/CGP/v15i01/31-49.
- [9] S. A. Cahyono, C. Agus, S. A. S. Raharjo, A. W. Nugroho, and Y. Indrajaya, "Strategic tropical natural resources management and household socio-economic resilience due to the Covid-19 pandemic," in *Agricultural Bioeconomy: Innovation and Foresight in the Post-COVID Era*, 2022, pp. 167–182. doi: 10.1016/B978-0-323-90569-5.00007-X.
- [10] S. A. Cahyono, C. Agus, S. A. S. Raharjo, A. W. Nugroho, and Y. Indrajaya, "Strategic tropical natural resources management and household socio-economic resilience due to the Covid-19 pandemic," in *Agricultural Bioeconomy*, Elsevier, 2023, pp. 167–182. doi: 10.1016/B978-0-323-90569-5.00007-X.
- [11] V. Vishnubhatla and A. Agashe, "Is Conscious Consumerism a Step Towards Society 5.0? A Review Paper," *ECS Trans.*, vol. 107, no. 1, pp. 3267–3279, Apr. 2022, doi: 10.1149/10701.3267ecst.
- [12] İ. Dere and İ. AKTAŞLI, "Conscious Consumerism Education in Social Studies Courses: Reflections of an Action Research," *Int. J. Contemp. Educ. Res.*, vol. 7, no. 1, pp. 215–227, Oct. 2022, doi: 10.33200/ijcer.666525.
- [13] I. Dini and S. Laneri, "The New Challenge of Green Cosmetics: Natural Food Ingredients for Cosmetic Formulations," *Molecules*, vol. 26, no. 13, p. 3921, Jun. 2021, doi: 10.3390/molecules26133921.
- [14] A. Ferreira, X. Vecino, D. Ferreira, J. M. Cruz, A. B. Moldes, and L. R. Rodrigues, "Novel cosmetic formulations containing a biosurfactant from *Lactobacillus paracasei*," *Colloids Surfaces B Biointerfaces*, vol. 155, pp. 522–529, Jul. 2017, doi: 10.1016/j.colsurfb.2017.04.026.
- [15] D. Danninger, R. Pruckner, L. Holzinger, R. Koeppe, and M. Kaltenbrunner, "MycelioTronics: Fungal mycelium skin for sustainable electronics," *Sci. Adv.*, vol. 8, no. 45, Nov. 2022, doi: 10.1126/sciadv.add7118.



- [16] S. Sabo and L. J. Waters, "Poly(dimethylsiloxane): A Sustainable Human Skin Alternative for Transdermal Drug Delivery Prediction," *J. Pharm. Sci.*, vol. 110, no. 3, pp. 1018–1024, Mar. 2021, doi: 10.1016/j.xphs.2020.11.028.
- [17] E. G. Yilmaz, E. Ece, Ö. Erdem, I. Eş, and F. Inci, "A Sustainable Solution to Skin Diseases: Ecofriendly Transdermal Patches," *Pharmaceutics*, vol. 15, no. 2, p. 579, Feb. 2023, doi: 10.3390/pharmaceutics15020579.
- [18] V. Gigli, D. Piccinino, D. Avitabile, R. Antiochia, E. Capecchi, and R. Saladino, "Laccase Mediator Cocktail System as a Sustainable Skin Whitening Agent for Deep Eumelanin Decolorization," *Int. J. Mol. Sci.*, vol. 23, no. 11, p. 6238, Jun. 2022, doi: 10.3390/ijms23116238.
- [19] J. R. Pinto, S. A. Monteiro e Silva, V. de S. S. Holsback, and G. R. Leonardi, "Skin occlusive performance: Sustainable alternatives for petrolatum in skincare formulations," *J. Cosmet. Dermatol.*, vol. 21, no. 10, pp. 4775–4780, Oct. 2022, doi: 10.1111/jocd.14782.
- [20] E. Matei *et al.*, "Sustainable Rabbit Skin Glue to Produce Bioactive Nanofibers for Nonactive Wound Dressings," *Materials (Basel)*, vol. 13, no. 23, p. 5388, Nov. 2020, doi: 10.3390/ma13235388.

## CHAPTER 13

### SOCIAL IMPACT THROUGH FASHION TECHNOLOGY

Prof. Aarushi Purohit, Assistant Professor  
ISDI, ATLAS SkillTech University, Mumbai, Maharashtra, India  
Email Id- aarushi.purohit@atlasuniversity.edu.in

#### ABSTRACT:

This study conducts a sociological analysis of dress trends and changes in the socio-cultural environment to investigate the relationship between women's fashion and societal transformation. The purpose of this study is to investigate several fashion-related theories and ascertain the nature and significance of this relationship. A behavioral reaction to the social setting aimed to assess some of the most significant areas of clothing-related social psychology research critically. The review covers research that has been published in two primary areas: (1) interactions between the body, dress, and the self; and (2) dress as a stimulus and its effects on conduct, attributions about oneself, and attributions made by others. We list the theoretical techniques that have been applied to this research, give a brief overview of this research's history that highlights its most important discoveries, and suggest potential future research fields.

#### KEYWORDS:

Anthropology, Cultural studies, Makeup, Self-expression, Sustainability.

#### 1. INTRODUCTION

There are many different aspects to studying clothing and fashion. They are referred described as "hybrid subjects" by some academics since they combine many disciplinary methodologies and conceptual frameworks, such as anthropology, studies in economics, history, literature, art history, sociology, cultural studies, design studies, economics, and visual culture [1]. Generally speaking, there has been a lot of discussion on such a ubiquitous issue as clothing. the top educational institutions with titles that included phrases like clothing and fashion were, first, technical training centers and design colleges that catered to the business community, as well as secondly, museums that are dedicated to studying clothing history[2]. The development of research centers, scholarly publications, and graduate programs bearing such titles illustrates how different approaches were only integrated across disciplines and institutions in the final decades of the 20th century, making it feasible to discuss something akin to "fashion studies." [3]. Style is personal.

Everybody has a different sense of style and fashion. What I would consider fashionable can appear to be a fashion faux pas, and vice versa. Fashion, in my view, is a means of expressing oneself. One cannot wear everything that is deemed "fashion" in the world of fashion [4]. Fashion is about dressing how you feel comfortable and still look good or stick out. You may express yourself through your wardrobe and sense of style and character. You can characterize yourself. Your wardrobe says a lot about the kind of person you are. Our identity is also shaped by the things we wear [5]. Whether we like it or not, the things we wear send out messages that influence how other people perceive us. A person's outward look can convey messages subtly and in a language of its own. Although clothing doesn't reveal your true identity to others, it does contribute to the limited picture that they have of you online First encounter [6]. Fashion is a means of self-expression that can help us feel more confident and connected to our inner selves. When our appearance and the things we wear complement our identity, personality, and attitude, we might feel more confident [7]. These signals about the "self" are communicated to

others as well, however, some of the Beyond a cursory synopsis of fashion, identity, and the self, communications study frequently overlooks or fails to investigate how fashion exemplifies the diverse dimensions of personal identity [8]. We discover that there are approaches employed in a Western setting that push the boundaries and strive for a comprehensive approach to the study of communications by looking more closely at scholarly works from both inside and outside the field of fashion and communication, particularly as it pertains to the formation of identity. In addition to interdisciplinary work from cultural studies, fashion theory, and anthropology that can be applied to the study of building identity, this literature review examines a variety of texts in human and cultural communication scholarship. Sustain overlapping identities while providing agency in greater power hierarchies [9]. Authors like Barnard and Davis have written about the use of dress to convey culture and identity, therefore the relationship between fashion and communication has long been of interest [10]. There has been some analysis of fashion and its expressive qualities beyond the utilitarian, protective functions of clothes. The definition of fashion and agency in connection to communications scholarship may be found in Fashion as Agency. Next, I will look at claims made by early feminist researchers regarding the oppressive and useless function of fashion. Representations is the second theme of the literature review Identification, and Difference First, research on clothing norms in various cultural milieus will be incorporated into this part from anthropological and cultural studies.

## 2. LITERATURE REVIEW

Clothes not only convey an individual's identity but also offer cues to onlookers that might help them establish a first opinion. Women who wear sensuous or "revealing" clothing, for example, are typically viewed as less capable, wise, and moral than women who dress more fully or suitably for the situation.

Preeti Sharma *et al.*[11]discussed that Trends are what drive the fashion industry: a new trend takes traction, designers interpret it in their ways, the public buys into it, it fades, and a new trend emerges. The word "trends" encompasses a broad spectrum of subjects and businesses, including clothing, accessories, makeup, tattoos, body art, plastic surgery, interior design, and furniture. This research endeavors to ascertain the variables that have been deemed influential in shaping fashion industry trends.

Saravanan *et al.*[12]discussed that while a society's values are set and constantly changing by its ideas and culture, fashion trends come and go. Fashion is an inspiring and novel idea that deserves to be portrayed for the admiration of society and that enhances our innate sense rather than an ambitiously projected image of a reinterpreted classic value to serve any purpose or objective. A person begins to look for a way to lessen his dissonance or he wants to improve. Today's youth try to understand fashion trends as a means of expressing their emotions, and they choose clothes that reflect their values and personal qualities. The conventional social agenda of fashion trends, the Generation Z mindset is credited with launching the trend of anonymous style and self-expression. Today's conduct is characterized by self-expression and self-image, which pave the way for individuality and societal conformity after evolving from a pre-capitalist feudal social structure to a post-modern one.

Johannsdottir *et al.*[13]discussed that Aspirations of symbolic lifestyles and the inventiveness of architecture and design fuel the fashion industry, one of the world's greatest industries, which is a complex phenomenon. Because of its mass production and low-cost structure, which encourage general consumerism, it pushes the limits of natural resource use. This research aims to investigate the impact of corporate social responsibility on sustainability in the fashion

sector. A thorough evaluation of the literature was done. The results show that managers in the fashion industry follow a CSR strategy that emphasizes supply chain innovation, sustainability, and business models. They also make commitments to the economy, environment, and/or society, with a focus on worker safety and the production of eco-friendly goods. The micro-meso-macro framework, which highlights supply chain management, activism, brand equity, culture, and human rights, presents actions that link CSR and sustainability with businesses' operations.

Jessica *et al.* [14] discussed the fast fashion business and the phenomena of thrifting, on the environment and society. Due to its mass manufacture using polluting materials and market demand, fast fashion, which meets the needs of consumers for quick and reasonably priced fashion trends, is harmful to the environment.

However, by offering reasonably priced and sustainable alternatives, the phenomenon of thrifting—the practice of purchasing used clothing—can lessen the detrimental effects of fast fashion. The phenomenological approach is the one employed by the researchers in this study to pinpoint unique viewpoints of a phenomenon that has occurred or is occurring to thrifting actors.

Elena *et al.* [15] studied the investigation and evaluation of an organization's, service's, or product's environmental effects across its existence. Life Cycle Thinking is a way of thinking that emerged from the concept of "sustainable development," which holds that social, economic, and environmental growth must be interwoven. Considering a product as a collection of processes, material, and energy fluxes (inputs and outputs), connected to every stage of its life cycle, from design to end of life, is a novel concept in contrast to previous thinking. The textile industry is deeply concerned with sustainability, despite its prominence in the economy.

### 3. DISCUSSION

Understanding individual and group behavior in a sociocultural context, as demonstrated by changes in women's attire, is the main goal of this research. A historical analysis of clothing trends and styles should be demonstrated. There is a correlation between alterations in attire and societal shifts. To determine the nature and relevance of this association is the aim of this research.

There could be a more insightful explanation of fashion than what is now known by analyzing the connection between changes in the sociocultural context and changes in attire. The country's overall economy has been impacted by economic trends. The circumstances that women find themselves in have been influenced by cycles of prosperity and depression. The societal context's economic components influenced the total amount of money earned and, maybe more crucially, the total amount wasted. At any given period, the apparel worn has an impact on the overall state of the economy.

*Production:* It is distinct from business or economic studies, which use general but compartmentalized theory to study supply chains, organizations, branding, and commerce. Instead, it strives for a holistic understanding and comprehension of how production and consumption are mutually determined.

The phrase "fashion system" is frequently employed. However, researchers using the production-oriented method see fashion differently than Roland Barthes, who considered it an abstract meaning system ingrained in language. As a network of organizations made up of textile firms, clothing manufacturers, retailers, trade associations, fashion periodicals, stylists, photographers, designers, and models. These organizations function as a system because their

network is built on extremely regimented communication, which leaves little room for individual innovation. When applied in this context, the word "fashion system" is emic and commonly used by fashion designers and other apparel industry professionals.

*Self-Expression through Fashion:* the most essential daily decisions you make that help you to express your self-identity. We can convey a little bit of our personalities nonverbally through our attire. You may wear an eye-catching statement piece to show that you're an extravert, or you could choose floral prints to show off your sensitive side. The inhabitants of Brighter Kind are encouraged to maintain their individuality through their fashion choices and other personal expressions. You shouldn't let growing older make you less concerned with your appearance scents like aftershave a favorite perfume, or cloth feel as shown in figure 1.



**Figure 1: Illustrate the self-expression through fashion.**

In addition to being a fantastic means of self-expression, clothes may also have an impact on our confidence and behaviors, according to studies. Wearing clothing we love makes us feel good about ourselves, and this is especially crucial for the welfare of the elderly. The benefits of fashion for the elderly don't end there! Whether it's a vintage item that takes its owner back to their adolescence or a piece that reminds them of a specific period in their life, the items in our wardrobes can hold a multitude of memories. The elderly can benefit much from fashion by reflecting on their past, which enhances their quality of life.

*Expression of Self, Fashion, And Mental Health:* A person's performance and mentality were affected by their attire. Certain clothing items may have symbolic importance, according to the study. Furthermore, our performance and psychological condition may be affected by the clothing we wear. 'Enclothed cognition' is the term for this changing into a tiny black dress for a big night out after work is one example of this. We may very likely experience a quantitative effect on our mental state and subsequent behavior since the black garment has symbolic significance (seductive, formal, and stimulating). Findings from an intriguing 2019 study also



showed that men dress to project their desired image, while women typically dress to reflect their feelings. Ladies, then, evaluate their emotions and choose their attire accordingly. Style is a means of expressing oneself to them.

Self-expression is facilitated by fashion. It makes you feel good about yourself when you dress in stylish, comfortable, or creative clothing. By your wardrobe choices, you can convey your sense of self-awareness and confidence. Style is inherent in an individual, while fashion is found in clothing. Liberal, individualistic, and open-minded values are represented by fashion. It represents freedom and is a way to show one's individuality.

*The social purpose of fashion trends:* The visual culture and clothing patterns that are portrayed in fashion trends model the identity of the consumer in a given setting. These fashion trends aim to convey the consumer's social agenda through identity through their attitude and way of living decisions. From one era to the next, lifestyle preferences shift. Stated differently, they offer a style and approach to wearing appropriate for a certain event that establishes a norm. These fashion expectations are a result of the emotional expectations of the dominant societal ideals as shown in Figure 2.



**Figure 2: Illustrate the social attraction towards itself.**

Many fashion trends have completely sidestepped the topic of class and instead follow patterns of "personal identity" that are determined by psychographic factors based on age, race, gender, sexual orientation, leisure activities, and other variables. This is evident from the patterns of user search behavior sub-cultural allegiances.

*Clothing That Accentuates Your Best Qualities:* Subliminal messages about your personality are sent by the colors you choose and the clothes you wear. Furthermore, studies have demonstrated that a person's clothing choices can not only reflect their personality but also have an impact on their mental state as shown in Figure 3.



**Figure 3: Illustrate the self-activities through clothes.**

Your look affects a person's first impression of you. For this reason, how one presents themselves at a job interview when forming new friendships, and in many other life circumstances. Someone or a group may become interested in you less or desire to learn more about you based just on your appearance.

#### **4. CONCLUSION**

Self-expression is facilitated by fashion. It makes you feel good about yourself when you dress in stylish, comfortable, or creative clothing. By your wardrobe choices, you can convey your sense of self-awareness and confidence. Style is inherent in an individual, while fashion is found in clothing. Liberal, independent, and open-minded are the values of fashion. It represents freedom and is a way to show one's individuality. The idea is that those who reject fashion as shallow have never really considered the significance and background of clothing. Everyday creativity is possible and can be shown via your outfit. It should convey your ideals, personality, and something about who you are as a person. Unfitting or unflattering clothing can cause a person to have a negative body image, which can seriously impair their self-esteem.

You might feel more confident and have a better body image when you dress in clothes that fit your particular physique. There's a fashion great means of strengthening one's self-confidence. You may build a unique ensemble that will leave you confident and at ease no matter the occasion by knowing your style, the colors you look best in, and the things that best represent your personality and way of life. Fashion alters your self-perception. Whether we want to acquire a new piercing or dye our hair depends on our unique personalities. Depending on how someone feels about their attire, they may have different judgments of themselves in terms of friendliness, emotional stability, dominance, and work proficiency. Individuals who report feeling satisfied with their apparel tend to be more gregarious than those who don't. The shade and our confidence levels can be directly impacted by the comfort, fit, and style of our garments. When people change the way they dress, almost 96% of them report a corresponding shift in their mental condition. Individualism, liberty, and open culture are all represented by fashion. It is a way to show one's individuality and a sign of liberty.

## REFERENCES:

- [1] O. Tymoshenko, A. Mysiuk, K. Kotsiubivska, and S. Khrushch, "Features of Digitalization Processes in Fashion Industry," *Digit. Platf. Inf. Technol. Sociocult. Sph.*, 2021, doi: 10.31866/2617-796x.4.1.2021.236943.
- [2] C. J. Ashworth, "The Impact of Social Media on SME Online Retailing in the Fashion Sector The Impact of Social Media on SME Online Retailing in the Fashion Sector," *Int. J.*, 2011.
- [3] M. A. Wyne, F. A. Khan, and K. Shafi, "Impact of the Social Demonstration of Luxury Brands on Brand Engagement Behaviors: Role of Consumer-brand Identification," *Int. Rev. Manag. Mark.*, 2018.
- [4] M. Bouzon and K. Govindan, *Sustainable Fashion Supply Chain Management*. 2015.
- [5] M. Foith, "Virtually Witness Augmentation Now: Video Games and the Future of Human Enhancement," *M/C J.*, 2013, doi: 10.5204/mcj.729.
- [6] S. M. Peoples, "Fashioning the Curator: The Chinese at the Lambing Flat Folk Museum," *M/C J.*, 2015, doi: 10.5204/mcj.1013.
- [7] V. Subrahmanyam, "Expanding Conflicts of Interest in Public Health Research," *Voices Bioeth.*, 2021, doi: 10.52214/vib.v7i.8700.
- [8] A. Bartlett, "Business Suit, Briefcase, and Handkerchief: The Material Culture of Retro Masculinity in <em>The Intern</em>," *M/C J.*, 2016, doi: 10.5204/mcj.1057.
- [9] C. L. Moore, "Digital Games Distribution: The Presence of the Past and the Future of Obsolescence," *M/C J.*, 2009, doi: 10.5204/mcj.166.
- [10] F. Andreallo and C. Chesher, "Prosthetic Soul Mates: Sex Robots as Media for Companionship," *M/C J.*, 2019, doi: 10.5204/mcj.1588.
- [11] S. N. -, R. -, and P. S. -, "A Study on Factors Affecting Fashion Trends that Impacts the Society," *Int. J. Multidiscip. Res.*, 2023, doi: 10.36948/ijfmr.2023.v05i01.1440.
- [12] D. D. Saravanan, "Fashion trends and their impact on the society," *Res. Gate*, 2015.
- [13] T. S. Thorisdottir and L. Johannsdottir, "Corporate social responsibility influencing sustainability within the fashion industry. A systematic review," *Sustainability (Switzerland)*. 2020. doi: 10.3390/su12219167.

- [14] Rangga Timur Aryaputra, T. Okta Wibowo, R. Juan Stefan, R. Yusiana, and Jessica, "The Phenomenon of Thrifting As An Alternative Solution Related to Reducing Environmental Impact on Fast Fashion," *Formosa J. Multidiscip. Res.*, 2023, doi: 10.55927/fjmr.v2i8.5696.
- [15] S. Ndachengedzwa and E. Stecca, "The {Fashion} {Industry} and {Its} {Impact} on the {Environment} and {Society}," *Sense Sustain.*, 2016.