

Sustainable Fashion as A Catalyst for Women's Socio-Economic Transformation: Proposing an Integrated Empowerment-Driven Circular Fashion Model in India

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ABSTRACT

The goal of this research is to investigate how sustainable fashion relates to women's socio-economic empowerment within an Indian context, emphasising the need for an integrated, inclusive approach to solving environmental and social problems. The fashion industry is considered a significant contributor to economic growth as well as providing much-needed employment, especially for women; however, the structures in which it operates often prevent equitable participation and empowerment from being achieved. The objectives of the research are to critically assess how sustainable fashion contributes to women's empowerment and to create an Integrated Empowerment-Driven Circular Fashion Model (IEDCFM) to link sustainability, education and economic participation through women-led initiatives.

The qualitative research method uses secondary data, such as academic literature, policy documents, and reports produced by both international and national organisations. By using a thematic analysis of the information retrieved, the researcher will identify the main themes and gaps that exist around the principles of sustainability, gender inequity, and economic inclusion as it relates to the fashion ecosystem.

According to findings of this research, women's empowerment strategies and sustainable fashion initiatives have very little connection to each other. Furthermore, the research identifies multiple barriers to market access as well as limitations in the design education system and fragmented, uncoordinated or underperforming institutional support systems. There are numerous significant opportunities for inclusive growth including circular economies, community-based initiatives and utilizing technology. The IEDCFM framework is offered as one possible solution for bringing these components together.

In conclusion, sustainable fashion can play a vital role in supporting women's empowerment through the application of integrated frameworks and collective action. The study highlights the importance of achieving systemic alignment between education, industry, and policy for sustainable and inclusive development.

Keywords: *Sustainable Fashion, Women Empowerment, Circular Economy, Design Education, Inclusive Development.*

1. INTRODUCTION

Fashion and textiles are being recognized as some of the most ecologically damaging industries in the world, due to their huge contribution to the degradation of the environment through carbon emissions, excessive water consumption and large quantities of waste produced. The United Nations Environment Programme has estimated that the clothing and textile industry accounts for 8-10% of global carbon emissions and almost 20% of wastewater produced (UNEP 2020), demonstrating the tremendous environmental impact this sector has had. In addition to the damage done to the environment, the "linear" way that the fashion industry produces and sells clothing, characterised by very short production times

and high levels of consumption puts pressure on the planet's last resources and causes landfills to be filled with waste. A more in-depth study by Niinimäki et al. (2020) has confirmed that the current fashion system is not sustainable because of the over-production of clothes and the over-consumption of them, so there must be a much quicker movement away from the current way of doing things to a more sustainable and circular way.

In the Indian socio-economic landscape, the textile and fashion industry is probably the most representative of artisanal and rural development as the country's largest employer of labour and its oldest tradition of producing and selling textiles globally. Given that the Indian textile industry employs more than 45 million people directly, with a high percentage of women employed in handlooms and handicrafts, it plays an important role in employing female labourers. Though they are at the centre of the industry, women continue to work in the informal sector where they earn lower wages, have less job security and have little to no access to formal education or institutional support. This reflects a larger structural imbalance in which women's economic participation does not automatically lead to economic empowerment and increases the level of gender inequality in the Indian fashion and textile industry.

According to Fletcher (2014), Sustainability in the fashion industry includes ecological as well as social and ethical perspectives, including, but not limited to, the welfare of the people who manufacture clothing—primarily women. This view is consistent with the current emphasis on Inclusive Development throughout the world; sustainable development is widely seen as a multidimensional construct that involves environmental, economic, and social factors.

Overall, the circular economy has become an increasingly popular and viable solution for addressing environmental problems as well as instilling sustainable practices in society over the last several years. The circular economy model is focused on creating a reduction of waste through the reuse, recycling and efficient use of materials which can help to extend the lifespan of products. As outlined by Geissdoerfer et al. (2017), the circular economy creates a way of developing the economy that uses less new resources and produces less waste through innovative design and manufacturing methods. In the fashion industry, the use of circular economy practices (such as upcycling of materials, recycling textiles, and promoting slow fashion) has the potential to create new ways of developing the economy and producing goods while also helping to minimize the impact on the environment. Additionally, the opportunities that will be created through a circular economy will create a greater economic opportunity for women, as many of the production systems associated with the circular economy are labour intensive and often involve decentralised, community-based, forms of work.

In addition, the United Nations Sustainable Development Goals (SDGs), along with other global policy frameworks, support integrating gender equality and sustainability into practices and decisions that promote women's equality and empowerment (Goal 5). Through the focus on promoting responsible consumption and production patterns (Goal 12), the SDGs also underline the need for the development of strategies that link gender equality to the advancement of sustainable development. Beyond supporting economic empowerment through the provision of opportunities for women to participate in economies, SDG 5 makes it clear that a critical part of achieving gender equality is empowering women and providing equal opportunities for women to lead and participate in decision-making processes. Economic empowerment provides a key pathway to achieving gender equality and there are many, many ways women can be economically empowered and lead organisations in many sectors where they currently exist but do not hold positions of influence. Currently, there exists a considerable difference between how sustainable fashion initiatives are developed and existing structured strategies for empowering women.

Design education is an important factor that will help shape future industry practices. In India, design education has focused mainly on developing the aesthetic and technical skills needed by designers. This has not led to the integration of gender equality and environmental sustainability perspectives into design, which is problematic. Research indicates that including sustainability in fashion design education is essential for ensuring that designers take responsibility for their work and are prepared to address global issues. Yet, without a unifying framework connecting all three areas (education, practice, social empowerment), current efforts towards achieving sustainability will not have much of a tangible impact.

This study examines the effect of implementing sustainable fashion on women's socio-economic empowerment in India by evaluating current practices, identifying systematic gaps, and analysing the relationship between gender inclusion and sustainability. The research also proposes an Integrated Empowerment Driven Circular Fashion Model (IEDCFM) that systematically links sustainable design education to circular production systems and women's entrepreneurial opportunities. The research findings will provide a comprehensive and scalable way to connect sustainability initiatives with empowerment outcomes, creating a sustainable economy with inclusive growth while protecting the planet.

A qualitative research design using secondary data only has been chosen for this study. The data analyzed in this study came from an extensive review of published literature regarding sustainable fashion, the circular economy, and the empowerment of women. The range of source materials examined included open-access and peer-reviewed journal articles, academic books, government publications, and reports published by international organizations.

Data was gathered from many reliable and free online resources such as DOAJ, Google Scholar, and institutional repositories. Data was gathered from several major references including reports from the World Bank and UN Women; national policy documents like the National Education Policy (2020); and Ministry of Textiles reports. Data was also collected using open access academic works such as those created by Niinimäki et al. (2020) and Geissdoerfer. et al. (2017). These works helped identify global sustainability trends and theoretical frameworks.

The use of a thematic analytical approach helped identify common themes and key issues around issues such as environmental sustainability, gendered inequalities, and economic participation. Data was analysed and grouped into categories of themes e.g. sustainable production, working conditions, education gaps, and empowerment outcomes. Finally, a comparative analysis of successful global models helped assess their potential for application to India.

From synthesizing our findings, we were able to determine significant gaps in the current systems, including a lack of connection between sustainability efforts and strategies for empowering women. This information was used to create a conceptual framework that could be used to begin addressing these two interconnected problems. The methodology of this study was conducted in a rigorous and systematic way as well as provided a sound theoretical basis for the study.

The significance of this research study is both academic and practical. From an academic viewpoint, this research not only provides an original approach to connect sustainable development, gender studies and fashion education but also adds to existing literature by developing a structured way in which to relate sustainability with the empowerment of women. Consequently, it fills a significant gap in the current literature by offering a systematic method of connecting either environmental or economic goals with sustainable development and empowering women.

The research offers practical recommendations to help decision-makers and stakeholders in creating systems that are sustainable for both genders. The results show that there is a significant gap between current sustainability practices and gender-based approaches within design education, and this gap must be bridged in order for an inclusive, resilient economic model to be developed. The framework proposed in this paper provides a structure that can help create policies and programs that support sustainable livelihoods, particularly for women living in disadvantaged areas.

Moreover, this research aligns with the global sustainability agenda by contributing toward the fulfilment of some of the UN Sustainable Development Goals (SDGs), especially those associated with gender equity and responsible production; by emphasising ethical practices, resource efficiency, and social inclusion, this study will support the overall goal of sustainable development. Further, this study will address structural inequality in the Indian fashion industry and will promote a more equitable distribution of opportunities and resources.

This research examines how the Indian fashion sector can be changed into an inclusive and sustainable one through the empowerment of women and their ability to have an impact on their community. Sustainable fashion can also be used as a catalyst for socio-economic change, which will help create a more equitable and ecologically sound fashion network.

2. SUSTAINABLE FASHION AND CIRCULAR ECONOMY: CONCEPTUAL FOUNDATIONS AND EMERGING TRENDS

The emergence of sustainable fashion has reshaped how we think about and produce fashion on a global level. Historically, the global fashion industry has typically operated using a linear business model in terms of production and consumption; they either used raw materials from the earth, produced items quickly, sold them with little regard to waste and excess, or disposed of them when there no longer of value. Sustainable fashion promotes environmentally responsible, socially ethical behaviours within the fashion industry by encouraging the thoughtful use of eco-friendly or sustainable materials, ethically sourced materials, less generation of waste, and fair labour conditions for those who produce our clothing. Fletcher (2014) argues that in terms of sustainability, the fashion industry must view its actions through a broader lens than just the environment; that social justice, worker well-being, and long-term systemic change within the fashion ecosystem are all important components of sustainability and should be included. If we apply this broader view of sustainability to the fashion industry, we can then begin to modify fashion production systems to balance economic growth with ecological sustainability and humane treatment of individuals.

Since the beginning of this century until now, there have been many changes in what is meant by "sustainable fashion" because of growing consumer awareness, government regulations, and global initiatives related to sustainability. A growing number of studies indicate that consumers are becoming increasingly aware of how their purchases affect the environment (Joy et al., 2012) as well as the social implications of their purchasing decisions; thus, creating a greater demand for more responsible and sustainable products. Government and international organisations have also been developing and implementing regulations and sustainability standards to improve the way fashion is produced and consumed. The European Union (EU) has created various policy frameworks, as have numerous countries worldwide; these policy frameworks and sustainability reports highlight the need for circularity, transparency and accountability in textiles and related industries (European Environment Agency, 2022). These changes have paved the way for industries to start changing their practices. However, due to differences in regulatory frameworks, the adoption of sustainable practices varies by region and by market segment.

A key idea at the heart of sustainable fashion is the circular economy, which presents an alternative to the traditional, linear way of producing things (such as clothing). The goal of the circular economy is to reduce waste and increase resource efficiency by keeping items and materials in use for as long as possible. Kirchherr et al. (2017) explain that the circular economy is an economic system that replaces the conventional concept of "end-of-life," with new strategies such as: reduce, reuse, recycle and recover throughout the production and consumption cycles of product(s) and/or material(s). This model focuses on developing products to be durable, repairable, and recyclable, which extends their total life-cycle, while also decreasing their environmental impact. In relation to fashion, embracing the concept of circularity will require significant changes in how we design, produce, distribute, and consume fashion products.

Circular economy principles within fashion exhibit themselves in various circular (ways), such as through use of upcycling, textile recycling, clothing rentals, resale markets and by promoting slow fashion. Upcycling is the process of transforming waste into (newly created) products of greater value than the originally discards (original product). Through upcycling we can reduce our environmental impact through resource conservation while building new items. Textile recycling means reclaiming raw fibers from secondhand used clothing through (many different) recycling methods and refurbishing those reclaimed fibers into new items which could be made in the same production cycle as the (new) products that created them. Renting and reselling products promotes use of multiple owners/use of garments by extending the useful life of value (of) garments to (new) multiple users of a single product. Sandin & Peters (2018) state that these circular practices can decrease the environmental impact of fashion through reduction of resources needed for the fashion supply chain, (while simultaneously) also decreasing volume of waste generated from the creation of garments.

Moreover, circular economy methods can also create new sources for economic opportunities for disadvantaged/marginalized areas. In developing nations like India, where informal workers are a large component of the textile industry, circular economies will allow for decentralized production systems, producing income-generating opportunities for females. Many times, community-based recycling/upcycling projects enable female artisans to participate in an environmentally sustainable manner while maintaining their cultural heritage/traditional skills. The above initiatives support the environment while also promoting social and economic empowerment for women and contribute to achieving global developmental objectives. (Brooks, 2015).

Digital transformation has been another significant force driving the adoption of sustainable fashion by providing new, innovative methods and technologies to help improve efficiency, transparency, and sustainability within the fashion industry. For example, the use of blockchain as a technology allows for traceability from the supply chain to the final product, giving consumers and other stakeholders the ability to verify the origins of clothing as well as how they are produced. The use of artificial intelligence (AI) and data analytics facilitates demand forecasting, inventory management, and waste reductions via improved production processes. Digital design tools and virtual prototyping further reduce physical sampling (thereby minimizing wasted material). Digital innovation plays a key role in facilitating circular business models through resource efficiency and enhanced transparency of the supply chain (Bick et al., 2018).

Moreover, digital marketplace accessibility has allowed new producers and women entrepreneurs to enter the growing environmentally sustainable clothing marketplace. E-commerce and social media platforms provide direct-to-consumer sales, reducing reliance on third-party sellers and increasing profit margins for these producers. Additionally, through digitization, fashion is being democratized; therefore, many cultures and backgrounds are able to impact traditional fashion trends. According to McKinsey &

Company (2023), innovation and the capacity for leading to scalable solutions through digital technology will significantly impact how we create sustainable clothing in the future.

Even though there have been improvements in sustainability and circular design in the fashion industry, there are still several major challenges to overcoming these obstacles as the fashion industry works toward becoming fully sustainable and fully circular. Some of the major obstacles include the lack of standardized sustainability practices and regulatory frameworks causing inconsistencies among manufacturers with regard to their respective sustainable practices, the high cost of sustainable raw materials and technologies presenting major challenges to manufacturers, especially small and medium-size manufacturers; and limited consumer education regarding sustainable fashions often resulting in consumer preference for low-price/fast-fashion products vs. purchasing sustainable products. According to the Organisation for Economic Co-operation and Development, in order to create a circular economy, systemic changes need to occur in production and consumption systems, along with government policy-driven intervention and collaborative efforts between stakeholders. (OECD, 2020).

In India, there are not only the mentioned obstacles but also: informal labour systems; restrictions to both training and education; and poor infrastructure for recycling and waste management. Due to the fact that informal employment is dominant in the textile sector, workers cannot gain access to: social security; skill development; or opportunities in the formal market. Furthermore, without adequate knowledge or awareness of sustainable practices it will be very difficult for producers and consumers to adopt circular models. Solutions to these obstacles must be comprehensive and integrated through the use of educational, policy, technological, and community engagement methods.

Overall, the circular economy and sustainable fashion are two integrated systems offering a vast number of opportunities to make the entire fashion value chain more eco-friendly and socially responsible. There is an undeniable amount of progress that has been made in regards to conceptual and practical development; however, this transition is not yet complete and still varies greatly from one organization or country to another. Achieving long-term sustainability requires the transition from conventional linear production methods (traditional) using the principles of circularity, digitalization of business processes, and inclusivity of all stakeholder interests in order for sustainable brands to succeed in their quest for environmental and social sustainability. The unique issues present within the Indian context afford both opportunities and challenges, thus necessitating that context-specific solutions are developed. By developing solutions to structural barriers and capitalizing on previously unexploited trends, sustainable fashion is likely to become a significant force in promoting both environmentally sustainable practices and improving the socio-economic status of individuals and communities around the world.

3. WOMEN'S EMPOWERMENT IN THE INDIAN FASHION ECOSYSTEM: CHALLENGES AND OPPORTUNITIES

It is widely accepted that women are integral to India's textile/fashion ecosystem as it applies to several industries including: handloom weaving; handicrafts; embroidery; and garment production. All of these are historically inherent and important components of India's rural economy and cultural history. Women's roles in textile production include various forms of labor - for example, many women have had substantial contributions to the production process in each of these areas. Many times, according to the International Labour Organization (ILO 2018), the majority of women who work in developing economies (including India) engage in informal employment; subsequently, these women remain vulnerable through such as low wages, insecure employment and lack of social protection measures. In the Indian textile industry, the inability to identify/reveal the labour of women is seen through home and small scale

production units where the labour of women has no monetary value or is otherwise lost due to their not being recognised in formal economic measurements. The level of invisibility demonstrated through this structural inequality is reflective of a global pattern of gender inequality whereby women's economic contributions are not adequately recognised, nor are they adequately compensated for.

When it comes to empowering individuals, this means not just getting involved in the economy but also having the ability to access education, have a say in how to manage things, control resources and be recognized socially for what they do. Kabeer (1999) defines empowerment as an increase in one's capability to make decisions regarding their own future when they may have been unable to do so before. In the Indian fashion industry, this is highly relevant because of the many cultural beliefs that restrict women from participating (i.e., women cannot work). Empowerment should be viewed as a process of changing women from being neglected/ignored within economic and societal systems to become empowered agents working within these systems.

Women who work in the fashion industry face many challenges, including the high number of informal employment arrangements in the sector. These unregulated workplaces prevent women from receiving formal contracts, minimum wage protection, health insurance, and legal protections. Informal workers, especially women, face a "double disadvantage" when compared to their male counterparts because they often are both economically vulnerable and discriminated against on the basis of their gender (Chen, 2012). In the case of women employed in the textile industry, the double disadvantage leads to exploitative working conditions and low wages as well as little opportunity for skill building. Furthermore, women often cannot travel freely to access employment because many societies do not allow them to do so based on very strict social/cultural norms, which makes it even more difficult for women in the textile industry to find markets or training programs to start their own businesses.

Education and skills development help provide people access to the knowledge and skills needed for economic activity and innovation through empowerment. Specifically, design education is a huge factor in developing the abilities of individuals in the fashion industry, providing them with technical skills plus market trends, sustainability practices and entrepreneurial thrusts; however, design programs in India do not often integrate sustainability/gender into their programs. According to Clark (2008), "fashion education needs to shift to incorporate both ethical and sustainable practices to resolve both environmental and social issues." Without integration between education/skill development and industry there will be no chance for transformational changes.

To address these challenges, a number of initiatives have emerged to support women's empowerment in the fashion ecosystem. Self-help groups (SHGs), non-governmental organizations (NGOs), and microfinance institutions have provided training, financial aid, and access to markets for women artisans. SHGs allow women to save money and earn an income together while providing them with access to credit. Datta and Gailey (2012) indicated that women involved in social entrepreneurship have experienced positive outcomes from such initiatives related to their increase in income, skills development, and higher social status. These initiatives use traditional knowledge combined with modern market strategies to create sustainable jobs for rural and semi-urban women artisans.

While these initiatives have shown success; They are very well-developed, but typically limited in both their scope and their reach. Most of the initiatives are undertaken in isolation, without sufficient linkage to broader policy frameworks and industry-wide networks. As such, they do not have the cumulative effect necessary to create systemic change. In addition, major barriers such as lack of access to advanced technology, inadequate infrastructure, lack of branding or marketing support also limit the growth of

woman-run businesses. The World Bank estimates that developing countries face a significant number of barriers to women entrepreneurs trying to access finance, markets and digital resources; which severely limits the ability of women entrepreneurs to grow their businesses. (World Bank, 2021).

Thus, new opportunities regarding women's empowerment may arise from the new trends of sustainable fashion. The growing interest in ethical, environmentally-friendly, and socially responsible products has created unique markets that emphasize artistry, authenticity, and sustainability; as a result, women artisans with traditional skill sets will find themselves in a better position to take advantage of these opportunities. By using handcraft methods such as handloom weaving, natural dyes, and eco-friendly types of production, sustainable fashion initiatives can decrease their carbon footprints while simultaneously enhancing the value of traditional artistry. As stated by Bair and Gereffi (2014), by including local producers into international value chains through fair trade and ethical sourcing, there is potential to enhance the economic circumstances and bargaining position of local producers.

Online retail, social media, and advertising have provided women with numerous opportunities to successfully operate in the fashion industry. Women can now reach out to consumers directly through these channels, create a brand identity, and establish a relationship with the customer without the use of intermediaries. Selling directly to the buyer has reduced the barriers to entry and has increased profit margins for small-scale manufacturers. Digital technology can provide women and other disadvantaged groups with access to new resources, markets, and networks (Heeks, 2017). In India, programmes that provide training in developing digital skills in addition to online marketplaces have created opportunities for women artisans and craftspeople to market and sell their work globally, thereby enhancing their potential for success.

In addition, to capitalize on these opportunities, it is essential to overcome long-standing structural barriers. These include gender bias, which remains a major barrier for women, limiting their ability to access education, employment, and be in a position of decision-making. Many women face societal pressures that require them to be responsible for duties that are usually expected of the woman, preventing them from taking part in economic activities. Furthermore, inadequate institutional supports like lack of availability for credit, training, and infrastructure also serve as a barrier to women's empowerment. Women's ability to achieve gender equality must come through not only through economic intervention but changes to societal norms and institutions that uphold gender inequities (Duflo, 2012).

In addition to those mentioned previously, to achieve sustainable development in fashion, a comprehensive understanding of environmental and social factors relating to sustainability is required of the fashion industry's use of sustainable materials, products and practices. Economic opportunities can be achieved through sustainable practices but must have initiatives such as global policies and programs in place that guarantee equal pay; healthy work environments; and access to educational opportunities related to educational programs/training to help women gain economic independence. In order for all these elements to occur, there must be collaboration between policymakers, educational institutions, industry stakeholders, and community organizations that will empower women and create an environment that supports them.

Empowering women within the Indian fashion industry is a multifaceted and complex topic that consists of challenges and opportunities alike for women professionals within this industry, even though this group of professionals represents a key component making up the Indian fashion industry. Women professionals within the Indian fashion industry contribute significantly, yet their contributions do not receive adequate recognition as a result of structural inequalities and informal work conditions, which exist within this

industry. However, women's empowerment can now be seen through new emerging trends in sustainable fashion, as well as trends related to digital transformation due to new technologies providing new and different pathways for women to participate in both the economic and social aspects of society. There needs to be an all-around and integrated approach to addressing any of the current challenges, which includes education; supports from governmental policies; new forms of technology; and, engaging the community. Once we can leverage these emerging trends, while addressing the current structural barriers women professionals face within India's fashion industry, sustainable fashion will be a major driving force in advancing women's empowerment and driving development that's inclusive of everyone in India.

4. KEY RESULTS AND FINDINGS

The systematic analysis revealed a series of interrelated findings that highlighted both structural gaps and emerging opportunities within the Indian fashion ecosystem.

Gap between Sustainable Fashion Practices and Women's Empowerment Initiatives

According to the analysis, there is a large gap between women's empowerment initiatives and sustainable fashion's practices. They are both very well promoted in terms of policies, institutional programs, and industry practices but have developed in parallel to each other instead of being integrated together. Most sustainable fashion initiatives are based on environmental outcomes- like reducing waste- and other resource efficient and eco friendly materials. Women's Empowerment Programs focus mainly on developing skills, helping with financial inclusion and providing new livelihoods.

A number of interventions since the establishment of the UN's Sustainable Development Goals have been implemented to promote both sustainability and gender equity. Unfortunately, the majority of these interventions have been implemented without considering or consulting on either of these two areas; therefore, there is little collaboration between groups focused on sustainability and those focused on gender equity. As a result, there is still significant room for improvement in addressing both the sustainability and gender inequality issues globally. A key challenge in achieving progress on these two interrelated issues is the lack of a common framework that enables collaboration across organizations working towards either goal.

Potential of Circular Economy Models for Inclusive Economic Opportunities

The results showed clearly that circular economy models can provide significant possibilities to create inclusive economic opportunities for women workers who participate in informal work settings (or sectors). The activities of upcycling/recycling/repair and reuse were identified as activities that could provide labour-intensive opportunities compatible with decentralized production methods as such practices would be used by individuals working in their homes or community.

It was observed that women able to participate in income-generating activities via circular initiatives without requiring major financial investment, large scale infrastructure, or overwhelming infrastructure. Further, these types of models support resources and reduce impact to the environment; thereby, aligning the economic activities with the objectives of sustainability. Furthermore, the analysis indicated that circular systems have the potential to support the value of traditional craft skills and craftsmanship allowing for women artisans to gain access to elite markets who value sustainability and ethical production.

Despite numerous restrictions placed on circular economy models — including insufficient institutional support, limited access to markets and technical knowledge limitations — there is no doubt that circular fashion systems represent an important vehicle for combining environmental sustainability and women's economic empowerment.

Limitations of Design Education in Addressing Sustainability and Gender Perspectives

During our study, we have identified a number of major gaps in India's design education today, particularly with respect to how little sustainable and gender-sensitive practices are incorporated. The results of our research show that the majority of the content of design courses have a strong emphasis on beauty, technical skill, and commercial trends at the expense of social inclusion and environmental sustainability.

As a result of this educational gap, emerging designers were not aware of, or adequately equipped to respond to, the major challenges surrounding sustainable fashion and the growing issue of gender inequality. In addition, the absence of cross-discipline methods limited students' ability to see how environmental and socioeconomic problems are related.

The research also revealed that design education does not provide students with much opportunity to gain real world experience; instead, there are many theoretical concepts taught at school that students will later encounter when working on their jobs. This disconnect between theory and practice has resulted in a diminished capacity of design education to either empower individuals or produce new designs. Consequently, the ability of design education to serve as a force for social development is significantly diminished.

Effectiveness of Community-Based and Women-Led Initiatives

Through the study of several case studies, it has been shown that women-led and community-based initiatives successfully provide both economic and environmental benefits. Many of these initiatives combine traditional wisdom with modern practices to create a new approach to solving local issues that can optimise the use of local resources.

Women-owned businesses and self-help groups have shown to accomplish significant support for eco-friendly production through natural dyeing, hand woven cloth, and recycling textiles. By creating income from these projects they have also created social recognition and increased women's ability to participate in decision making.

In addition, it was discovered that there is a strong correlation between successful initiatives and having access to institutional support, such as training, financial resources and market linkages. Initiatives that had an element of capacity building or support (mentorship/networking) were more effective in sustaining the programme long term and creating lasting scalable impact.

Some of these programs exist solely in their local community with no support or infrastructure from a city or state level to help expand and grow outside of their local area. There was no national framework and no coordination of efforts therefore preventing these programs from having an impact systemically on their respective communities through the country.

Role of Digital Technologies and Policy Support in Enabling Scalable Solutions

Digital technology and government regulations make it possible for fashion companies to have scalable and sustainable options. By using digital platforms such as ecommerce and social media, women entrepreneurs can access customers directly rather than needing middlemen, thereby keeping more money.

Technological tools, including digital design software, supply chain management systems, and data analytics help to make the fashion industry more efficient, transparent, and allow for better resource utilization. They also made it possible to forecast demand more accurately, result in less waste of materials, and help to improve the overall production process.

The report has identified several ways in which policy interventions contribute to creating a conducive environment for sustainable and inclusive development through Government schemes, financial incentives, and regulatory frameworks to support sustainable practices and women-owned businesses.

There has been some progress; however, overcoming challenges such as digital illiteracy, limited access to technology, and poor infrastructure to use technology will require a combination of technology and policy support depending on both the level of digital adoption and the ability of the women-led businesses and the communities to scale their businesses.

Need for an Integrated and Structured Framework

An overall study showed there is a growing demand for an organized and integrated system connecting sustainability to education to women's empowerment. All existing efforts to date have been piecemeal and uncoordinated; hence, their collective impact has been very limited and difficult to scale up.

The need for a well-rounded, all-inclusive solution that addresses the links between environmental sustainability, gender inequality, and economic development was demonstrated. This would include integrating sustainable practices into design education, supporting women-led businesses through technological or other types of institutional intervention, and promoting circular production systems.

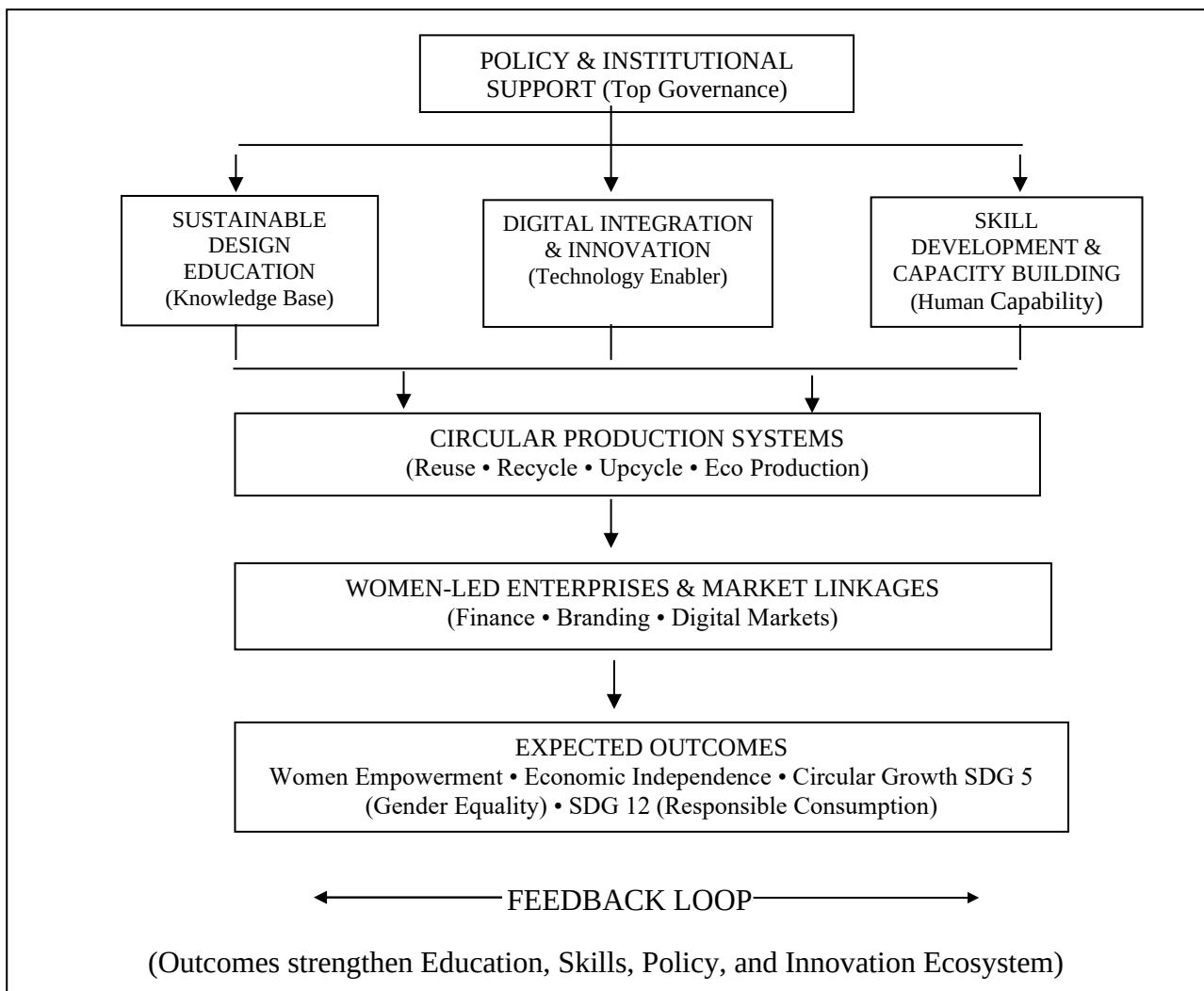
The absence of a framework is seen as one of the greatest obstacles to inclusive and sustainable development across the fashion sector. Integrating all components of sustainable fashion's potential's capacity for supporting women's empowerment through the establishment of an integrated model was viewed to be critical in bridging these gaps.

Summary of Key Insights

To sum up, results from the research showed that even though there has been much success in promoting sustainable fashion as well as women's empowerment, the two areas have not been integrated enough in order to be effective at creating positive change. Both circular economy models and community-based initiatives were found to have great potential in creating sustainable and inclusive outcomes, but were limited by structural and institutional barriers to impact those outcomes.

Some of the most important enablers of overcoming these barriers and creating systemic change include; a redesigning of design education through understanding the use of digital technologies in fashion design as well as policy to support these new methodologies of design. For sustainable fashion to function optimally as a catalyst for the socio-economic transformation of women in India will require an integrated and comprehensive solution.

5. INTEGRATED EMPOWERMENT-DRIVEN CIRCULAR FASHION MODEL (IEDCFM)



The Integrated Empowerment by Empowerment Circular fashion model (IEDCFM) offers a systemic method for meeting both environmental sustainability and women's socio-economic empowerment within the Indian fashion ecosystem. The IEDCFM is a proposed solution to the fragmented approach of current efforts aimed at being supportive of sustainability initiatives and women's empowerment (which are typically executed independently).

The model is based upon the premise that sustainable fashion will include not only environmental aspects of sustainability but will also consider social justice and economic equity. Women are viewed as one of the most important participants in the fashion value chain; therefore, it is necessary for women to participate in every level of the production process, from research and development through the decision-making process regarding finished goods. The model is thought of as a series of tiered components that all work together to create a continual, interconnected cycle, where education serves as the foundation for achieving quantifiable social, economic, and environmental impacts.

Through the strategic organization of information/knowledge, skills, and resources at all levels of the IEDCFM, as well as through the use of feedback systems for ongoing development and adaptability, this model establishes an integrated strategy to develop sustainability practices that are not simply stand-alone actions but part of a collective environmental context of empowerment, innovation and long-term resilience.

Key Components of the Framework

Sustainable Design Education Layer: The Sustainable Design Education Layer is the base level of the complete system, and it lays the groundwork for future fashion professionals to develop the way they think and know about their industry. The Education Layer's purpose is to embed sustainability into design education, as well as gender sensitivity, so that students can understand the societal and environmental impact of their designs in a holistic way.

Curriculum changes should reflect this vision by including curriculum topics such as circular design, fair trade, eco-friendly textiles, and gender-sensitive methods. In addition to the theoretical knowledge gained from the classroom, students need real-world experience through industry partnerships, experiential learning, or community service, in order to link their academic understandings to what is done in practice. The Sustainable Design Education Layer helps foster creativity and stimulate innovation in the learner so that they can create solutions that are environmentally and socially just.

Skill Development and Capacity Building: With the assistance of the Skill Development and Capacity Building Activities, we want to create an opportunity for women involved in the fashion industry to increase their abilities. More specifically, focusing on providing informal and marginalised women with accessible and affordable training programmes, which will enable them to participate more effectively in sustainable means of production.

All training programmes will include sustainable practices, such as incorporating eco-friendly dyes, reducing waste, and upcycling materials into their creations. Additionally, developing essential skills such as digital literacy, money management, and entrepreneurship will be a major focus throughout the training process. The training framework will encourage both mentoring and peer to peer networks as a means to share knowledge and continue to improve on these skills.

This portion of the project supports women's capacity to increase their economic independence and empowerment through building their individual and collective capabilities and moving into higher value jobs from lower value ones.

Circular Production Systems: The circular production systems component is the framework's operational heart and focuses on advancing sustainable and resource-efficient producing operations. It focuses on the adoption of circular economy principles such as recycling, reuse, repairing and regenerating materials to achieve minimum environmental impact and maximum resource efficiency.

This component is based on community-based production models, which allow decentralized participation through sustainable production by women in their local communities. These models lower the barriers to mobility and infrastructure, creating more opportunities for women to participate in the economy as well as promote economic inclusivity. When traditional craftsmanship is combined with contemporary sustainable practices, circular systems become more resourceful, therefore preserving culture and creating innovations.

Women-Led Enterprises and Market Linkages: The aim of this component is to enhance women's entrepreneurship through assisting in establishing and developing women owned enterprises. Additionally, this component seeks to resolve specific barriers to entrepreneurial development, such as the limited access to finance, as well as the lack of access to marketplace and business networks, which are common obstacles faced by female entrepreneurs.

Funding women-owned businesses through microfinance, credit and investment is a key component of the framework, along with creating solid market linkages such as participating in fairs, trade and e-commerce. These digital connections allow direct interaction between producers and consumers, thereby eliminating the need for middlemen and increasing profits for both parties.

The framework also creates women entrepreneurs as decision-makers in the fashion industry, enhancing their economic independence through added decision-making power.

Policy and Institutional Support: Through the Policy & Institutional Support component of this initiative there will be created any supportive framework necessary to allow an effective way of implementing the Environmental Policy Framework placing strong emphasis on Government departments working together with NGO's, industry stakeholders (such as the EPA), and Academic institutions to develop better implementation processes.

Though it can be difficult for businesses to find funding, policy interventions are intended to help achieve sustainable development through fair treatment of workers and support for female entrepreneurship. The infrastructure, training and financial resources that institutions provide contribute to an overall ecosystem of support for both empowerment and sustainability. Collaborations such as public/private partnerships or community-based initiatives help enhance the scalability and overall effectiveness of the model; good governance and cooperative efforts further enhance this element of the sustainable framework.

Digital Integration and Innovation: Digital innovation and integration are paramount to:

- Create efficiencies
- Provide transparency
- Enable scalability within the Framework

Digital technologies such as ecommerce platforms, supply chain management systems, and data analytics tools enable supply chain participants to develop improved Resource management and better market access.

The digital economy enables participants to trace products during every stage in the supply chain and allows all parties participating in that supply chain to validate production practices (ethics). Additionally, digital platforms enable Women Entrepreneurs to access larger Market segments, build brand recognition, and connect directly with Customers.

This section describes some of the challenges that exist for companies wishing to adopt digital tools, especially concerning infrastructure development (the ability to create and support an infrastructure in any given location), creating training programs to provide individuals the necessary skills to use the digital tools that are being provided by the organization. This element provides a pathway for innovation and long-term sustainability by incorporating technology into all aspects of the Value chain.

Expected Outcomes

The IEDCFM is expected to have a significant impact on the environment, economy, and society. It will provide women with greater economic independence, as it will allow them access to skill development, resource provision, and entrepreneurship; therefore, helping develop women's decision-making authority.

Additionally, the IEDCFM will encourage sustainable production and consumption to conserve the environment and efficiently manage resources. By implementing circular principles in fashion, waste production will decrease, and the life cycle of fashion products will be better managed.

The integration of education, industry, and community and their linkages creates an interconnected system which enables collaboration and innovation to be developed in a more effective manner. Therefore, the entire fashion industry will benefit from this integration through improvement in its overall resilience and effectiveness.

The final point of the framework - the focus on advancement of gender equality and improving the sustainability of production processes - will assist to support wider, long-term development goals. By improving or eliminating the root causes of inequality and enabling job creation and sustainable practices within the IEDCFM will create the foundation for a more inclusive, equitable and sustainable fashion ecosystem in India.

6. CONCLUSION

The research found that sustainability as part of fashion was an important and powerful means of overcoming both the impact of degrading the environment and marginalizing women in society, particularly in India. However, the research also showed that although the fashion industry was increasingly adopting sustainable practices, the focus of those sustainability efforts has been primarily environmental. Because of these limitations, sustainable fashion as a holistic tool for inclusive development remains unrealized.

While women were found to be contributors to the fashion and textile industry, they faced barriers to equitable economic opportunity, including informal employment, limited access to education/training, and limited participation in decision-making processes. Emerging practices such as circular economies and digital transformation have provided many possibilities for participation, particularly in decentralized and community production systems; however, these opportunities are not fully utilized because there are no coordinated, scalable frameworks.

The Integrated Empowerment-Driven Circular Fashion Model (IEDCFM) provides a means to resolve each of the aforementioned issues through a formalised and complete structure that connects sustainability and empowerment as one cohesive framework. The model links a range of components, including sustainable design education, skills training, circular production systems, women owned businesses, policy development and support, and digital innovation into a single and cohesive system. Findings suggest that the fashion industry can use a more comprehensive approach to engage multiple levels of interaction within the industry's ecosystem create synergistic opportunities and improve environmental and socio-economic outcomes.

To put this framework into formal effect and continue moving forward, collaboration between all stakeholders (policymakers, institutions, industry, and community based organizations) is necessary. Isolated (stand alone) efforts will not be sufficient to address the frequently complex and inter-connected nature of many of the barriers detailed in this study. In addition, in order to implement sustainability strategies along with empowerment initiatives, a well-coordinated, multi-faceted approach that places women as the centre of change and the key drivers of change in the fashion industry is required.

The research also identified education and capacity building as being two critical areas of support for sustainable changes over the long term. Integrating gender equity and sustainability into design education and training and developing the knowledge and skills required to conduct business effectively in an ever changing fashion industry, will equip those individuals with the capacity to become leaders and create change. Additionally, integrating digital technology and providing policy support mechanisms to improve scalability, market access and institutional capacity will assist in developing a strong and educated female workforce as future leaders.

Overall, this study determined that there was an integrative, broad approach through which Sustainable Fashion could produce substantial social and economic transformation for women in India. The study also developed a strategic roadmap to accomplish that goal by aligning environment sustainability, economic empowerment and social equity; however, while an action plan was developed, it is recognized that the new framework is still theoretical in nature and needs further empirical research and implementation in order to more firmly establish validity once it is implemented on the ground.

Further studies are needed in order to test the functionality and effects of the proposed model in real environments. Empirical studies, pilot programs and case studies will provide information regarding the framework's operationalisation process and its ability to scale, which could then, ultimately, help refine the model and make it more useful in different contexts. This research creates a strong argument that the entire Sustainable Fashion industry will benefit from viewing it as a comprehensive, cohesive field and establishes the groundwork for using Sustainable Fashion to further lawfully, socially and environmentally inclusive development within India's fashion industry.

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