

# Sustainable Business Model Archetypes in the Handloom Industry: A Case Study of Bodh Shawl Weavers

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## Abstract

This paper presents a case study on the application of Eight Sustainable Business Model Archetypes within the handloom industry, with a focus on Bodh Shawl Weavers. The archetypes explored include maximising material and energy efficiency, creating value from waste, substituting with renewables, delivering functionality rather than ownership, adopting a stewardship role, encouraging sufficiency, repurposing the business for society/environment, and developing scale-up solutions. This case study illustrates how innovation drives sustainability through the transformation of traditional business processes, product diversification, and the development of enhanced market access strategies. The findings reveal that integrating these archetypes into business models not only enhances environmental responsibility but also fosters economic growth, strengthens competitiveness, and preserves cultural heritage. Through strategic innovation, businesses can address challenges related to market access and competition while contributing to the principles of a circular economy and sustainable development in the handloom sector.

**Keywords:** Eight Sustainable Business Model Archetypes, Handloom, Sustainability, Innovation, Environmental Responsibility, Sustainable Development

## Introduction

Sustainability has emerged as a central concept in global development discourse, highlighting the urgent need to balance economic progress, social equity, and environmental preservation. Sustainability fundamentally seeks to balance present development needs with the capacity of future generations to meet their requirements. Contemporary socio-economic models and consumption patterns, however, often prioritise short-term financial gains, resulting in widespread environmental degradation and natural resource depletion (Harriram et al. 2024).

The textile and fashion industries exemplify these challenges. While the Industrial Revolution increased production efficiency by replacing traditional craft-based systems with mechanised power looms, it also introduced mass production models that generate substantial waste. Today, the textile sector is considered the second-largest polluting industry globally (Choudhury, 2014). The fast-changing fashion phenomenon has further intensified the problem, promoting a “throwaway culture” that encourages the rapid consumption and disposal of inexpensive, low-quality garments. This cycle contributes significantly to resource exhaustion, landfill accumulation, and environmental pollution (Dissanayake & Sinha, 2012).

Amid growing awareness of these issues, sustainable fashion has emerged as a response to the industry’s social and environmental shortcomings. This movement emphasises eco-friendly materials, ethical labour practices, and systemic transformation in textile production and consumption patterns (Nayak et al, 2020). One significant strategy within this movement involves the revival of traditional handloom weaving, which offers a sustainable, small-scale production method rooted in community knowledge and cultural heritage (Rahaman et al, 2024). These crafts challenge exploitative

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industrial models and present meaningful alternatives that emphasise quality, longevity, and authenticity.

Handloom weaving, in particular, holds significant potential. It requires less energy, generates minimal waste, and supports the livelihoods of artisans, many of whom belong to rural and marginalised communities (Wanniarachchi & Dissanayake, 2020). Incorporating such traditional practices into the modern fashion value chain contributes to multiple dimensions of sustainability: environmental, social, and economic. Furthermore, the global fashion industry is gradually adopting responsible practices and seeking ways to integrate local knowledge systems and low-impact production methods (Ma et al, 2024).

Despite growing interest, academic research exploring the contribution of the fashion craft industry to sustainable and ethical fashion remains limited. This gap underscores the need for empirical and theoretical studies that examine how traditional textile practices can be leveraged to mitigate the negative impacts of fast fashion.

### The Indian Handloom Industry

The Indian handloom industry represents a significant contributor to the national economy and cultural heritage, serving as the second-largest source of employment in the country after agriculture. According to the Fourth All India Handloom Census (2019-20), approximately 3.5 million individuals are directly or indirectly dependent on this sector, with 72% of them being women. The majority of these individuals belong to economically marginalised communities residing in rural or remote areas. Consequently, this sector plays a vital role in sustainable employment generation, income inequality reduction, and rural-to-urban migration mitigation (Fourth All India Handloom Census, 2019-20).

In addition to its economic importance, the handloom industry embodies India's rich cultural legacy. The industry's capacity to produce intricate, customised designs, often unattainable through mechanised processes, underscores its uniqueness and value. Furthermore, handloom weaving is an inherently sustainable practice, relying on traditional methods that consume minimal energy and generate limited waste. This characteristic distinguishes the handloom sector as a model of environmentally responsible production (Annappoorani, 2021). The sector's decentralised and unorganised structure, however, presents significant challenges for performance assessment and potential evaluation (Hazarika & Goswami, 2018). Data from successive handloom censuses indicate a consistent

decline in the number of weavers, raising concerns about the sector's long-term viability.

The rise of the power loom industry has compounded these challenges. Powerlooms enable faster and more cost-effective textile production, creating a competitive disadvantage for handloom weavers (Singh & Shashi, 2018). Despite their affordability and efficiency, powerloom fabrics lack the artisanal quality, cultural depth, and environmental sustainability of handloom products. Nevertheless, the handloom industry continues to contribute significantly to India's export earnings. Its products are particularly appreciated by environmentally conscious consumers in advanced economies, who recognise their sustainable production processes and cultural value (Reichheld et al, 2023). With strategic interventions, including better market access, support for weavers, and promotion of traditional crafts, the handloom industry has the potential to overcome its challenges and thrive as a cornerstone of sustainable and inclusive growth in India.

### Review of Literature

A business model is a foundational framework that outlines how an organisation creates, delivers, and captures value. It serves as a strategic tool guiding firms in defining customer segments, articulating value propositions, establishing revenue streams, managing costs, and designing operational processes (Teece, 2010; Fiel, 2013). Despite widespread application, business models lack a universally accepted definition owing to their interdisciplinary nature and sector-specific adaptability (Zott et al, 2011). This conceptual flexibility facilitates diverse interpretations and enables business model evolution in response to market dynamics and sector-specific requirements.

Growing awareness of environmental degradation, climate change, and social inequalities has prompted the reimagining of traditional business models to align with sustainability principles (Martí, 2018). Sustainable business models (SBMs) aim to embed environmental, social, and economic goals into core business strategies (Evans et al, 2017). Unlike conventional models focused on short-term profitability, SBMs emphasise long-term value creation through minimising environmental harm, promoting social equity, and ensuring economic resilience (Aagaard, 2019). From a stakeholder perspective, SBMs represent systems that connect internal and external stakeholders to co-create sustainable value (Geissdoerfer et al, 2016; Schaltegger, Hansen, & Lüdeke-Freund, 2012).

To support this paradigm shift, several frameworks have emerged. Stubbs and Cocklin (2008) proposed

a model emphasising sustainability embedded in organisational values and culture. The Value Mapping Tool by Bocken et al (2013) assists firms in identifying avenues for sustainable innovation, while Joyce and Paquin's (2016) Triple-Layered Business Model Canvas (TLBMC) integrates social, environmental, and economic considerations into business planning. Szekely and Dossa (2017) introduced an eight-step model designed to help firms embed sustainability systematically into their operations. However, despite these efforts, significant challenges persist in fully operationalising sustainability principles, particularly in terms of developing coherent and actionable models (Pieroni et al, 2019; Whiteman et al, 2013). Addressing this gap, Bocken, Short, Rana, and Evans (2014) developed the Sustainable Business Model Archetypes, categorizing key approaches into eight distinct strategies: (1) maximizing material and energy efficiency; (2) creating value from waste; (3) substituting with renewables and natural processes; (4) delivering functionality rather than ownership; (5) adopting a stewardship role; (6) encouraging sufficiency; (7) repurposing business for societal/environmental purposes; and (8) developing scale-up solutions. This framework has gained broad acceptance for its flexibility and relevance, including within traditional sectors such as the handloom industry, where sustainability-led transformations are redefining business models.

Central to the successful implementation of SBMs is innovation, which extends beyond technology to include rethinking business models, optimising processes, and diversifying product offerings (Dziallas, 2020). Innovation enables organisations to respond effectively to evolving consumer needs and environmental demands (Santarsiero et al, 2024). It supports market differentiation, improves efficiency, and enhances resilience in dynamic business environments (Attah et al, 2023; Ogbumbada & Nwachukwu, 2024). For traditional industries like handloom weaving, innovation is a strategic imperative to remain relevant, expand reach, and preserve artisanal knowledge in the face of rising competition (Mamidipudi & Bijker, 2018; Lv et al, 2018). Furthermore, it allows firms to navigate uncertainty and capitalise on emerging opportunities (Johnson & Walker, 2023).

Thus, the convergence of robust sustainability frameworks and innovation creates a viable pathway for traditional and modern businesses alike to transition toward more inclusive, environmentally responsible, and future-ready models of operation. The objective of this study is to assess how the handloom industry aligns with the Eight Sustainable Business Model Archetypes and to explore how the adoption of additional innovations, as outlined within these archetypes, can enhance the sector's sustainability. This analysis is conducted through

an in-depth case study of Bodh Shawl Weavers, offering insights into how traditional handloom enterprises can evolve towards more sustainable and resilient business models. By exploring these archetypes within the context of the handloom industry and the case of Bodh shawl weavers, this paper aims to demonstrate how sustainable business models can foster inclusive growth, preserve cultural heritage, and address contemporary challenges.

## Methodology

This study employed a case study methodology to examine sustainable practices at Bodh Shawl Weavers, a woollen handloom textile manufacturing enterprise in Kullu district, Himachal Pradesh, India. This exploration was conducted using the Sustainable Business Model Archetypes framework. The case study method was chosen for its ability to facilitate an in-depth investigation, allowing for the detailed examination of data within a specific context and the analysis of real-life phenomena (Mariotto et al, 2014). Data collection occurred during 2023-24 through semi-structured interviews and field observations, generating comprehensive qualitative insights. The primary participants included the owner and employees of Bodh Shawl Weavers.

The scope of this study is limited to examining the applicability of the following eight Sustainable Business Model Archetypes within the Indian handloom sector, using Bodh Shawl Weavers as a representative case:

- Material & Energy Efficiency
- Value from Waste
- Renewables & Natural Processes
- Functionality over Ownership
- Stewardship Role
- Encourage Sufficiency
- Repurpose for Society
- Scale-Up Solutions

The research is limited to analysing sustainability practices, innovation adoption, and business model transformation at the enterprise level. It provides insights into how traditional handloom businesses can transition toward sustainability by aligning with established archetypes.

## Results and Discussion

### *Genesis*

Founded by Mr. Paljor Bodh in 1972, Bodh Shawl Weavers evolved from a small-scale, home-based enterprise to a registered sole proprietorship. Over time, the business has grown to employ 50 permanent weavers, alongside

20 additional staff members, including salespeople, cleaners, and dyers. The company also collaborates with various home-based weavers and artisans involved in hand-spinning, all of whom contribute to its production ecosystem.

Bodh Shawl Weavers operates two production facilities: one dedicated to weaving and another for processing, equipped with machinery for carding, dyeing, twisting, thread winding, and spinning. The company is committed to sustainable fashion practices, embedding environmental and social responsibility into its operations. The data collected for this study were systematically analysed and categorised according to the Sustainable Business Model Archetypes framework.

#### 5a. Maximise Material Productivity and Energy Efficiency

The handloom industry exemplifies sustainable practices through its optimisation of material productivity and energy efficiency. Traditional handloom weaving methods rely on human labour rather than mechanised processes, making them inherently energy-efficient. Unlike power looms, handlooms do not depend on electricity, significantly reducing their carbon footprint. The industry often sources raw materials locally, such as cotton, silk, and wool, which minimises transportation emissions. Additionally, handloom textiles are crafted with an emphasis on durability, fostering a culture of sustainability by reducing the demand for frequent replacements. This approach not only addresses environmental concerns but also aligns with the growing consumer preference for high-quality, long-lasting products. The inherently slow and meticulous handloom weaving process fosters craftsmanship appreciation while countering the throwaway culture characteristic of mass production industries. By optimising resource use and ensuring minimal waste, the handloom sector exemplifies how traditional practices can meet modern sustainability goals.

Bodh Shawl Weavers exemplify these principles through their unique and sustainable practices. Yarn spinning, a critical step in fabric production, is done manually by engaging women from local communities, thereby reducing energy consumption and creating livelihood opportunities. The weavers undergo extensive training under master weavers and initiatives organised by the District Industries Centre. This training equips them with skills to handle materials efficiently, ensuring maximum output with minimal input. Raw materials are ethically sourced from pastoralists who practice transhumance, migrating with their flocks to alpine pastures called '*thaches*' in Lahaul-Spiti and Kinnaur during summer, and to Bilaspur plains during winter.

This traditional practice relies entirely on foot travel, ensuring zero carbon emissions during transportation. Furthermore, the weavers implement strategies to minimise waste during weaving, optimising yarn usage and maintaining high standards of material efficiency. By integrating these methods, Bodh Shawl Weavers demonstrate a commitment to sustainable production while preserving the cultural heritage of handloom weaving.

#### 5b. Create Value from Waste

The handloom industry offers immense potential for creating value from waste, transforming by-products like fabric scraps, leftover yarn, and dye residues into new, marketable products. These waste materials, which might otherwise contribute to environmental degradation, can be repurposed into items such as cushion covers, patchwork quilts, and decorative tapestries. By adopting circular production practices, the industry not only minimises waste but also generates additional revenue streams. For example, fabric remnants can be creatively used in patchwork designs or converted into home décor items, adding aesthetic and functional value. Moreover, repurposing waste aligns with the principles of a circular economy, promoting sustainability and reducing the environmental impact of production processes.

Bodh Shawl Weavers have successfully embraced this archetype by implementing innovative waste management strategies. Leftover materials from shawl and suit production are repurposed into smaller items, including table runners, cushions, handkerchiefs, carry bags, and key tags, based on scrap dimensions (Fig. 1). Additionally, unsold or old knitted products are unravelled, and the yarn is reused to create new designs. The weavers also repurpose the borders of old shawls to craft decorative borders for table mats (Fig. 2). Furthermore, they compost biodegradable waste, including wool scraps and natural dye residues, supporting soil health and reducing



Fig. 1: An old shawl repurposed to make cushion cover



**Fig. 2: Borders of an old shawl repurposed to make borders of table mat.**

landfill contributions. By adopting these practices, Bodh Shawl Weavers exemplify how traditional industries can create economic value while promoting environmental sustainability. These initiatives not only reduce waste but also create a unique value proposition for their products, strengthening their brand's commitment to sustainability.

#### *5c. Substitute with Renewables and Natural Processes*

The handloom industry prioritises the use of renewable materials and natural processes, ensuring minimal environmental impact. Artisans often work with biodegradable fibres like organic cotton, wool, and silk, which are more sustainable compared to synthetic alternatives. These fibres not only reduce the carbon footprint but also decompose naturally, contributing to a healthier ecosystem. The weaving process itself is powered entirely by human labour, eliminating the need for electricity and further enhancing energy efficiency. By embracing renewable resources and traditional techniques, the industry supports biodiversity, reduces reliance on non-renewable resources, and preserves the environment for future generations.

Bodh Shawl Weavers emphasise sustainability through the use of renewable materials and natural processes. From the procurement of raw materials to the eventual decomposition of the end product, every stage of the lifecycle adheres to a sustainable approach. They source wool from pastoralists practising sustainable grazing methods, ensuring environmentally responsible raw material procurement. Natural dyes derived from onion peels, walnuts, and plant-based sources are used to colour their textiles, reducing chemical pollution. Bodh Shawl Weavers have also installed solar panels to meet the limited electricity needs of their carding, dyeing and other machines, further decreasing their carbon footprint. The factory's proximity to a stream in Mohal provides easy access to water for washing wool and dyeing

processes, ensuring minimal resource wastage. All chemicals used in these processes are handled responsibly to mitigate environmental risks. The emphasis on renewable materials and energy efficiency allows Bodh Shawl Weavers to produce eco-friendly products while maintaining high-quality standards. Their commitment to innovation and sustainability sets a benchmark for other handloom industries.

#### *5d. Deliver Functionality Rather Than Ownership*

The concept of delivering functionality rather than ownership offers a transformative approach to sustainable consumption. In the handloom industry, this model could involve offering textile rentals, cooperative ownership, and repair services. For instance, businesses could rent high-quality, handcrafted textiles for special occasions, enabling customers to enjoy exquisite products without permanent ownership. This approach reduces overconsumption and extends the lifecycle of textiles. Cooperative ownership models could also allow multiple users to collectively own and share unique or expensive textiles. By focusing on functionality and access rather than outright sales, the handloom industry can promote sustainable consumption patterns and create new revenue streams.

While Bodh Shawl Weavers does not currently operate under this model, significant implementation potential exists. Shawls and stoles, which are outer garments, could be offered through subscription-based services, allowing customers to exchange items seasonally and access new designs without ownership. This shift toward a service-oriented model would encourage more sustainable consumption practices. Additionally, Bodh Shawl Weavers could provide repair or dry-cleaning services to extend the lifespan of their products, enhancing customer satisfaction and reducing waste. Implementing these practices would not only align with their commitment to sustainability but also provide an opportunity to innovate within the traditional handloom sector. The transition to functionality-oriented business models would also strengthen consumer loyalty, as customers value the opportunity to engage more deeply with the brand and its sustainable ethos. By exploring this untapped potential, Bodh Shawl Weavers can further align their practices with modern sustainability trends.

#### *5.e. Adopt a Stewardship Role*

Adopting a stewardship role requires taking responsibility for the entire lifecycle of products, from sourcing raw materials to post-consumer waste management. The handloom industry can achieve this by ethically sourcing

materials, supporting local communities, and preserving traditional weaving techniques. Fair wages and secure working conditions for artisans ensure sustainable livelihoods and cultural preservation. Consumer education on proper textile care can further extend product lifespan and reduce waste. Introducing take-back programs like those followed by renowned brands like Zara and H&M, where old or damaged items are recycled or composted, represents another step toward environmental stewardship.

Bodh Shawl Weavers embody this stewardship ethos by employing workers from the tribal areas of Lahaul-Spiti and Kinnaur, with a focus on providing opportunities for women. During peak demand periods, rural women are engaged on a contractual basis, working from home using their looms. This inclusive approach not only supports economically weaker sections but also preserves traditional weaving practices. Bodh Shawl Weavers maintain ergonomic working conditions, ensuring the well-being of their employees. Raw materials are sourced ethically, with pastoralists adhering to controlled grazing practices in alpine pastures to protect soil health. Bodh Shawl Weavers have built a loyal customer base through collaborations with brands like FabIndia and participation in national and international exhibitions. Consumer education efforts could be enhanced through comprehensive product care guides. This would enable buyers to better maintain their shawls, thereby extending their lifespan and promoting sustainable consumption practices. By prioritising ethical practices and community welfare, they exemplify the true essence of environmental and social stewardship.

#### *5f. Encourage Sufficiency*

The handloom industry inherently promotes sufficiency by focusing on slow production processes that result in limited supply, thereby discouraging overconsumption. Unlike mass-produced textiles, handloom products are designed for durability and longevity, encouraging consumers to buy less and invest in high-quality, timeless pieces. This aligns with the principles of sufficiency, which emphasise reducing material and energy intensity in modern societies. Second-hand markets for handloom products further incentivise consumers to maintain their textiles, fostering a culture of reuse and sustainability.

Bodh Shawl Weavers promotes sufficiency through durable, timeless designs, particularly their GI-tagged Kullu shawl borders. Their versatile products serve multiple purposes, catering to various consumer needs. For instance, shawls can double as throws, and stoles can be styled as ponchos. Additionally, they offer dry cleaning services to ensure proper care and maintenance of their

woollen products. The longevity of these items reduces the need for frequent replacements, slowing the product replacement cycle. Expensive pieces, like Pashmina shawls, are often passed down through generations, further extending their lifecycle and cultural value.

#### *5.g. Repurpose for Society*

The handloom industry plays a crucial role in supporting local communities by providing sustainable livelihood opportunities, particularly for women and unemployed youth in rural areas. Artisans can work from home, allowing them to balance earning a livelihood with household responsibilities. By preserving traditional crafts within families, the industry ensures the continuation of cultural heritage while fostering community development. Training programs and workshops equip individuals with weaving skills, enabling them to secure sustainable employment and contribute to the broader economy.

Bodh Shawl Weavers exemplify this societal repurposing by employing numerous individuals, including those with special needs. For instance, they employ a differently-abled individual for ironing tasks, demonstrating their inclusive employment practices. Additionally, they have introduced a winter woollen collection for babies, addressing the need for natural, sustainable clothing in harsh winters. These woollen baby clothes, known for their antibacterial and antifungal properties, offer an eco-friendly alternative to synthetic materials. By addressing societal needs while promoting sustainability, Bodh Shawl Weavers highlight the broader impact of the handloom industry. Furthermore, their focus on intergenerational training ensures the continuity of traditional weaving practices, enabling young artisans to carry forward the legacy of handloom craftsmanship while innovating for modern markets. Their social initiatives underline the role of handloom industries as catalysts for holistic community development.

#### *5h. Develop Scale-Up Solutions*

Scaling up the handloom industry requires a balance between growth and sustainability. Digital platforms like e-commerce websites and social media enable artisans to reach global markets, increasing visibility and sales. Collaborations with national and international brands bring handloom products to larger audiences, while export opportunities allow artisans to share their unique crafts worldwide. Establishing handloom clusters, where resources and expertise are shared, can enhance production efficiency and reduce costs. These scale-up solutions ensure the industry remains competitive while preserving its cultural and environmental values.

Bodh Shawl Weavers are actively implementing scale-up strategies to broaden their market reach and enhance brand visibility. They have embraced online sales through their dedicated website and maintain a robust presence on social media platforms such as Facebook and Instagram, regularly engaging their audience with updates on products and activities. To further strengthen their digital footprint, Bodh Shawl Weavers could consider expanding to leading e-commerce platforms like Myntra and Amazon. Their registration under the Geographical Indications (GI) Act safeguards the authenticity of their products, particularly the renowned Kullu Shawl borders. Collaborations with prominent brands such as FabIndia and participation in national and international exhibitions have also played a significant role in boosting their visibility. Nevertheless, the export process presents notable challenges. Global markets' stringent quality standards challenge handloom products, whose artisanal nature inherently includes slight variations and irregularities. While these attributes are celebrated in niche markets, they may lead to rejection under rigid industrial benchmarks. Moreover, size variations pose another critical issue. International markets, especially in Europe, demand standardised dimensions that may not align with those traditionally produced for domestic consumers. Returned items due to size mismatches are often difficult to resell locally, resulting in potential inventory losses.

To address these challenges, strategic measures are necessary, including the implementation of enhanced quality control processes, adapting production to meet export-specific size requirements, and fostering market education to highlight the unique value of handcrafted goods. Additionally, investing in digital storytelling through videos showcasing production processes, the cultural significance of their craft, and the artisans behind the work, can foster deeper consumer engagement and appreciation. By leveraging innovative tools, exploring strategic partnerships, and addressing these challenges effectively, Bodh Shawl Weavers can create a scalable yet sustainable growth model. Expanding their reach while adhering to ethical and eco-friendly practices will not only ensure long-term success but also contribute to preserving their rich cultural heritage and empowering their artisan community.

The analysis of Bodh Shawl Weavers reveals complex interactions among the Eight Sustainable Business Model Archetypes that extend beyond simple implementation assessments. The enterprise demonstrates particularly strong synergies between material efficiency, waste valorisation, and renewable resource utilisation, creating what can be termed an "environmental stewardship nexus." This integration occurs naturally within the

handloom context, where traditional practices inherently minimise resource consumption while maximising output utility. The manual production processes that characterise handloom weaving eliminate electricity dependency for core operations, while the artisanal approach to material handling ensures minimal waste generation. These practices, evolved over generations, align seamlessly with contemporary sustainability principles without requiring fundamental operational restructuring. Likewise, the stewardship and society repurposing archetypes demonstrate exceptional integration within the handloom context, highlighting the natural alignment between traditional craft practices and social sustainability. Bodh Shawl Weavers' employment of individuals from marginalised tribal communities and differently-abled persons illustrates how traditional enterprises can serve as vehicles for inclusive development without compromising operational efficiency. This social embeddedness extends beyond employment to encompass cultural preservation, skill transfer, and community development, creating multiple value streams that are difficult to replicate in conventional manufacturing contexts.

## **Conclusion**

This case study demonstrates how traditional handloom enterprises can successfully integrate sustainability principles through the adoption of the Eight Sustainable Business Model Archetypes. The company demonstrates strong integration with archetypes such as maximising material and energy efficiency, creating value from waste, utilising renewable resources, encouraging sufficiency, and repurposing the business for societal benefit through active community engagement. These practices reflect a meaningful commitment to environmental responsibility, cultural preservation, and inclusive development. Alignment with three specific archetypes--delivering functionality over ownership, adopting comprehensive stewardship roles, and developing scale-up solutions---requires further development. To address these gaps, the study offers targeted recommendations aimed at deepening the company's alignment with all eight archetypes. Implementing these suggestions can further enhance Bodh Shawl Weavers' sustainability performance and position it as a comprehensive model for other enterprises within the handloom sector.

## **Policy Implications for Sustainable Handloom Development**

The findings of this study have significant implications for policy formulation aimed at promoting sustainability

within the handloom sector. Government interventions should recognise that handloom enterprises possess inherent sustainability advantages that require support and enhancement rather than wholesale transformation. Policy frameworks should focus on amplifying existing sustainable practices while addressing specific implementation gaps, particularly in areas such as functionality delivery and scale-up solutions. This approach would be more cost-effective and culturally appropriate than attempting to impose external sustainability standards that may conflict with traditional practices.

The development of handloom-specific sustainability certification programs emerges as a critical policy priority. Unlike generic textile certifications, these programs should recognise the unique characteristics of handloom production, including the positive value of artisanal variations and the cultural significance of traditional methods. Such certifications would help handloom products compete more effectively in global markets by clearly communicating their sustainability advantages to environmentally conscious consumers. The certification process should incorporate traditional knowledge validation alongside conventional environmental impact assessments, ensuring that cultural heritage preservation receives equal weight with environmental protection.

Export facilitation policies require fundamental restructuring to accommodate the realities of handloom production. Current standardisation requirements often penalise handloom products for characteristics that are indicators of authenticity and sustainability. Policy interventions should focus on market education initiatives that help international buyers understand the value proposition of handloom products, including their environmental benefits and cultural significance. Additionally, export promotion schemes should provide technical assistance for quality consistency without compromising the artisanal nature of the products.

Financial support mechanisms need to be redesigned to encourage sustainability adoption while preserving traditional production methods. Subsidies for sustainability upgrades, such as solar panel installation and natural dye adoption, should be coupled with requirements for traditional skill preservation and community employment. This approach ensures that modernisation efforts strengthen rather than undermine the social and cultural foundations of the handloom sector. Cluster development initiatives should focus on creating regional networks that facilitate knowledge sharing and collective marketing while maintaining the decentralised character of handloom production.

This case underscores the pivotal role of innovation in advancing sustainability, not just by leveraging

technological progress but by reshaping business models, expanding product portfolios, and embracing circular economy practices. Initiatives such as introducing take-back programs and adopting service-based models like product rental or subscription services can further strengthen the company's sustainability and market competitiveness.

In conclusion, Bodh Shawl Weavers exemplifies the potential for traditional industries to thrive by embracing sustainable business models and innovation. With the right support and strategic interventions, the handloom sector can overcome structural challenges, expand its global presence, and contribute significantly to a circular and culturally rich economy. This study reaffirms that sustainability and tradition are not opposing forces, but rather complementary drivers of long-term resilience and growth. Enhancing handloom sector sustainability requires businesses to adopt innovative strategies aligned with circular economy principles. The 'Deliver Functionality Rather Than Ownership' strategy exemplifies this approach by offering handwoven products through rental or subscription services rather than direct sales. This approach reduces resource consumption, extends product lifecycles, and promotes reuse and material efficiency. Additionally, the implementation of take-back programs, allowing consumers to return used textiles for refurbishment, recycling, or repurposing, can significantly reduce textile waste and strengthen sustainable production cycles.

In addition to business model innovation, the sector must address existing structural challenges, particularly the intense competition from low-cost power-loom products and limited access to international markets. Targeted government intervention is essential in this regard, providing financial incentives, capacity-building programs, and infrastructural support to help handloom enterprises scale operations and compete more effectively. Furthermore, enhancing marketing strategies through compelling storytelling and the use of digital platforms can shift consumer preferences toward ethically produced, culturally rich handwoven textiles. To remain relevant and resilient, the handloom sector must also foster a culture of continuous innovation. This includes leveraging new technologies, forming creative partnerships, and staying attuned to market trends and consumer feedback through regular strategic reviews. By embedding innovation into their core strategies, handloom businesses can overcome existing challenges, unlock new growth opportunities, and contribute significantly to sustainable development. Bodh Shawl Weavers, by integrating such forward-thinking practices, has the potential to set a benchmark for sustainability within the traditional handloom industry and beyond.

This single-case study may not comprehensively represent diverse practices across India's handloom sector. The qualitative approach, relying on interviews and observations, may introduce subjective interpretations. Furthermore, the study's focus on internal stakeholders excludes regional and cultural variations among other handloom enterprises. Broader studies involving multiple cases and stakeholders are needed for more generalizable findings.

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