



Threads of Sustainability: A Comparative Analysis of Jamdani (Tangail) and Khadi (Cumilla) as Catalysts for Pollution-Free Community Development in Bangladesh

Muhammad Mahboob Ali^{a*}, Nazmin Akter^b

^aDepartment of Economics, Bangladesh University of Business and Technology, Dhaka, Bangladesh

^bFaculty of Business, Bangladesh University of Business and Technology, Dhaka, Bangladesh

E-mail: pipulbd@gmail.com^a, nazmin.ju.dk@gmail.com^b

Abstract

Bangladesh's rich textile heritage offers powerful, yet distinct, models for sustainable development. This study conducts a comparative analysis of two premier handloom sectors: the intricate Jamdani weaving of Tangail and the symbolic Khadi fabric of Cumilla. Framed within green economy principles, the research examines their socio-economic viability, environmental footprint, and potential as engines for pollution-free community development. Employing a mixed-methods approach (July-December 2025), the analysis incorporates surveys, environmental impact assessment, and case studies of both a "GI Gold" Jamdani export initiative and a revived Khadi business plan. Key comparative findings reveal: (1) Both sectors possess underutilized Geographical Indication (GI) status, but face different market challenges – Jamdani contends with high-skill imitation, while Khadi battles generic, low-cost substitutes; (2) their production paradigms, though both low-pollution, differ fundamentally, with Jamdani emphasizing artistic virtuosity and Khadi embodying philosophical self-reliance; and (3) their developmental contexts vary, with Tangail's model being craft-cluster centric and Cumilla's requiring synergistic infrastructure (e.g., airport revival) for growth. The study concludes that while both heritage textiles are potent vehicles for sustainable development, tailored, integrated strategies – recognizing their unique cultural, economic, and infrastructural ecosystems – are essential to unlock their full potential for artisan well-being, cultural preservation, and green economic growth in their respective regions.

Key Words: Tangail Jamdani, Cumilla Khadi, Comparative Analysis, Heritage Textiles, Sustainable Craft, Green Economy, Geographical Indication (GI), Pollution-Free Production, Community Development, Bangladesh Handloom.

*Corresponding Author

DOI: 10.46333/ijtc/14/2/6

PAPER/ARTICLE INFO

RECEIVED ON: 28/11/2025

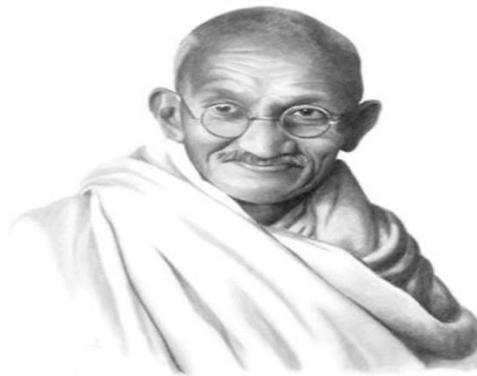
ACCEPTED ON: 30/12/2025

Reference to this paper should be made as follows:

Ali, Muhammad Mahboob & Akter, Nazmin (2025), "Threads of Sustainability: A Comparative Analysis of Jamdani (Tangail) and Khadi (Cumilla) as Catalysts for Pollution-Free Community Development in Bangladesh", *International Journal of Trade and Commerce-IIARTC*, Vol. 14, No. 2, pp: 371-387.

“Khadi is the sun of the village solar system. The planets are the various industries which can support khadi in return for the heat and the sustenance they derive from it. Without it other industries cannot grow. But during my last tour I discovered that, without the revival of other industries, khadi could not make further progress. For villagers to be able to occupy their spare time profitably, the village must be touched at all points.”

(*Harijan*, 16-11-1934)



My life is my message.
- M.K. Gandhi

1. INTRODUCTION

The global textile and apparel industry, a cornerstone of economic globalization, is paradoxically one of the planet's most polluting and socially exploitative sectors. Characterized by the fast-fashion model—predicated on rapid turnover, low costs, and high volume—it is a significant contributor to carbon emissions, water pollution, chemical waste, and the degradation of terrestrial ecosystems (Rofi & Rahman, 2025; European Parliament, 2025). Concurrently, this model often perpetuates precarious labour conditions and unequal value distribution across its global supply chains. In response, the principles of a green economy, which advocate for low-carbon, resource-efficient, and socially inclusive development, have emerged as a critical framework for reimagining industrial pathways towards sustainability (Ali, 2018). Flickere (2024, December 28) expressed that the 'Bangladesh Handloom Board Act 2013' could greatly enhance the growth and development of this sector. Various institutes are currently engaged in a project aimed at reusing the historical designs of Bangladesh's handloom industry. International Finance Corporation. (2017) argued that the report outlines to promote sustainability in Bangladesh's vital textile industry. Facing challenges like high water consumption, pollution, and workplace safety, the sector requires transformation. IFC (2017) provides integrated advisory and financial services to help factories improve environmental performance (e.g., reducing water/energy use) and social standards through programs like Partnership for Cleaner Textile (PaCT) and Better Work. These efforts also involve creating financial incentives, such as a Green Transformation Fund, and building local capacity to ensure the industry's long-term competitiveness and compliance with

international standards. Though World Bank 's (2023) document did not discuss Handloom-related activities but focuses on environmental priorities such as air and water pollution, lead exposure, waste management, and environmental governance in Bangladesh. The analysis emphasizes pollution control, green financing, and institutional strengthening rather than specific sectors like textiles or handlooms.

Within this global discourse, Bangladesh presents a fascinating paradox and potential. As a world leader in ready-made garment (RMG) exports, it is acutely exposed to the environmental and social critiques of conventional textile manufacturing. Yet, simultaneously, it is the custodian of a profound handloom heritage that embodies the very antithesis of fast fashion. This heritage is not monolithic; it is represented by two iconic, yet philosophically and technically distinct, fabrics: the exquisite Jamdani of Tangail and the symbolic Khadi of Cumilla.

Tangail Jamdani, celebrated for its intricate, opaque motifs woven into a sheer, fine cotton base, represents the pinnacle of aesthetic refinement and artisanal skill – a legacy of Mughal patronage. In contrast, Cumilla Khadi, a hand-spun and hand-woven plain cloth, is deeply imbued with the socio-political philosophy of self-reliance (Swadeshi), popularized during the anti-colonial movement. Both are inherently sustainable, low-pollution production systems, relying on human skill, minimal energy, and biodegradable materials. Both have secured Geographical Indication (GI) status – "Tangail Jamdani" and "Cumilla Khadi" – aimed at protecting their authenticity and value. And both face existential threats from mechanized imitation, rising costs, and an aging artisan base.

However, to conflate their challenges and opportunities would be a strategic error. This study posits that a nuanced, comparative understanding is crucial. While both are "heritage textiles," their pathways to revitalization and their potential as engines for pollution-free community development differ significantly due to their unique historical roots, production scales, market positions, and regional development contexts.

This research, therefore, moves beyond a singular case study to undertake a systematic comparative analysis. It investigates how these two distinct heritage ecosystems function, struggle, and hold potential within the green economy framework. The central inquiry is not merely whether they are sustainable, but *how* their specific forms of sustainability can be leveraged for tailored community development. This study aims at:

- ***Green Economy & Sustainable Practices:*** It details practical interventions (water/energy efficiency, cleaner production) that operationalize these models within a key industrial sector.
- ***Support for Local Artisans/Community Development:*** While focused on large-scale industry, the capacity-building for local auditors and focus on worker safety and women's progression align with community and equity goals.
- ***Market Recognition:*** The drive for compliance with international environmental and labor standards is fundamentally about maintaining and enhancing market access and recognition for Bangladeshi products.

1.1. Central Comparative Research Question

How do the Jamdani (Tangail) and Khadi (Cumilla) heritage ecosystems compare in their structure, challenges, and potential to catalyze sustainable, pollution-free community development within a green economy framework?

1.2. Comparative Objectives

- [i] To analyze and compare the historical evolution, socio-technical production systems, and inherent sustainability metrics of Tangail Jamdani and Cumilla Khadi.
- [ii] To assess and contrast the market dynamics, competitive threats, and the efficacy of Geographical Indication (GI) status in both sectors.
- [iii] To evaluate the differing community development contexts, including infrastructure dependencies and artisan well-being indicators.

To propose distinct yet conceptually linked integrated development models tailored to the unique ecosystem of each heritage craft.

2. LITERATURE REVIEW

2.1. Heritage Textiles as Sustainable Paradigms

The global shift towards sustainable consumption has sparked renewed academic and commercial interest in traditional textile systems. Scholars position handloom fabrics as viable alternatives to industrial production, highlighting their minimal ecological footprint, cultural significance, and role in sustaining rural economies (Koulagi, 2015; Trivedi, 2022). These systems are celebrated within the circular economy model for their potential for zero waste, use of natural materials, and intrinsic biodegradability (Bari et al., 2026). Ali (2026) described that The comprehensive empirical assessment confirms that the Eco-innovation framework is both a financially viable and a scalable strategy for promoting sustainable development in Cumilla's Khadi sector. It is recommended by Ali(2026) with potential infrastructure financing from institutions such as the Asian Infrastructure Investment Bank (AIIB) or the Asian Development Bank (ADB), the Government of Bangladesh formulate a detailed development plan for Cumilla. This plan should prioritize the preservation of the region's archaeological landscape, natural environment, and cultural heritage while ensuring economic feasibility. Such an integrated approach could establish a replicable model for heritage-led regional renewal.

2.2. The Jamdani Ecosystem of Tangail

The literature on Tangail Jamdani predominantly focuses on its unparalleled artistry and technical complexity, involving the laborious "extra-weft" technique to create elaborate motifs (Hossain, 2020). Its recognition as a UNESCO Intangible Cultural Heritage of Humanity and the subsequent award of GI status are seen as critical milestones for preservation (Bhuiyan& Rahman, 2022). From a sustainability perspective, its handloom process is noted for negligible electricity use and low water consumption, especially when natural dyes are employed (Chowdhury, 2023). However, research consistently flags threats from power-loom imitations, the high cost of fine-count yarn, and a critical shortage of young weavers, risking intergenerational knowledge loss (Akter, 2021; Islam, 2024). Its comparative advantage lies in its positioning as an ultra-premium, luxury heritage product.



2.3. The Khadi Ecosystem of Cumilla

Literature on Khadi, particularly in the Cumilla context, frames it differently. While also a handloom product, its significance is deeply rooted in the Gandhian philosophy of Swadeshi (self-sufficiency) and was revitalized in post-1947 East Bengal through institutions like the Bangladesh Academy for Rural Development (BARD) (Imran & Hossain, 2019). The Asian Development Bank (ADB) stated that the Khadi Reform and Development Program aimed to increase rural incomes and employment by revitalizing khadi through market-based reforms, institutional restructuring, and a "khadi mark" for branding in India (Asian Development Bank [ADB], 2010, p. 4). Scholars emphasize its role in rural empowerment, poverty alleviation, and as a symbol of ethical nationalism. Its GI status for "Cumilla Khadi" is a more recent development aimed at combating generic imitations (Khadi fabric receives GI recognition, 2025). Environmentally, it is lauded as a "pollution-free" fabric due to its hand-spun process eliminating fossil fuel use and its potential for organic, closed-loop production (Greater Good Eco, 2025; Terra Luna India, 2025). Its comparative advantage is its powerful ethical narrative and potential for wider, symbolic consumption beyond high fashion.

2.4. Comparative Challenges: A Synthesis

A side-by-side review reveals a matrix of shared and divergent challenges, as summarized below:

Table 1: Comparative Analysis

Challenge Area	Tangail Jamdani	Cumilla Khadi
Primary Competition	High-quality power-loom & machine-embroidered imitations.	Low-cost, mill-made "generic" khadi and imported cotton fabrics.
Production Constraint	Extreme skill and time intensity; one saree can take months.	Scaling authentic <i>hand-spun</i> production to meet demand while maintaining philosophy.
Key Infrastructure Need	Cluster-based design studios, testing labs, and shared market hubs.	Regional connectivity (e.g., Cumilla Airport), and broader rural training & spinning centers.
Core Symbolism / Value Proposition	Artistic excellence, cultural luxury, and master craftsmanship.	Self-reliance, ethical consumption, national identity, and rural empowerment.

(Source: Authors)

2.5. Research Gap

While substantial work exists on each sector independently, a conspicuous gap remains in systematic comparative studies. There is a lack of research that explicitly contrasts their operational models, evaluates the differential impact of their GI status, or derives cross-learning lessons to inform policy. This study aims to fill this gap by providing a holistic, side-by-side analysis to guide more effective and localized sustainable development strategies.

3. METHODOLOGY

This study employs an explanatory sequential mixed-methods design within a comparative case study framework. The research was conducted from July to December 2025, examining the two distinct cases of Tangail Jamdani and Cumilla Khadi.

3.1. Study Sites & Units of Analysis

The primary units of analysis were defined as:

- **Tangail:** Key weaving clusters in Delduar, Kalihati, and Nagarpurupazilas, focusing on master weavers (ustads), cooperative societies, and small enterprises.
- **Cumilla:** Khadi production cooperatives and artisan groups linked to BARD (Kotbari) and other rural development initiatives in the district.

3.2. Data Collection

Parallel data collection processes were executed for both cases.

I. Quantitative Methods

- **Structured Surveys:** A stratified random sample of 250 Jamdani weavers/entrepreneurs in Tangail and 200 Khadi artisans/producers in Cumilla was surveyed. Instruments captured data on production volume, costs, income, market channels, demographic details, and perceptions of GI.
- **Secondary Data Analysis:** Economic and sectoral data (2015-2025) from the Bangladesh Bureau of Statistics, Export Promotion Bureau, and Bangladesh Handloom Board were analyzed.
- **Sustainable Textile Index (STI):** A simplified comparative metric was developed, estimating resource use (kilowatt-hours of electricity, litres of water, kg CO₂ equivalent) per square meter of finished fabric for Jamdani, Khadi, and conventional mill-made cotton.

II. Qualitative Methods

- **In-Depth Interviews (IDIs):** 35 semi-structured IDIs were conducted in each region with master artisans, cooperative leaders, policymakers, designers, retailers, and exporters.
- **Focus Group Discussions (FGDs):** Four FGDs were held in each region, segmented by age and gender of weavers, and two FGDs with local youth.
- **Comparative Case Studies:** Detailed analysis of two business initiatives: the "GI Gold Jamdani" export project in Tangail and the "Revived Khadi Export Venture" targeting the Middle East from Cumilla.

3.3. Analytical Framework

Data analysis was structured using a comparative matrix across five pre-determined thematic axes: (1) History/Philosophy, (2) Production System, (3) Market & GI, (4) Socio-Economic Impact, and (5) Infrastructure & Policy Context. Quantitative data were analyzed using descriptive and inferential statistics (correlation, regression), while qualitative data were transcribed and

subjected to thematic analysis. Findings were then integrated to build a coherent comparative narrative.

4. COMPARATIVE ANALYSIS AND FINDINGS

4.1. Historical Roots and Cultural Philosophy

The findings underscore a foundational divergence. Tangail Jamdani’s lineage is traced to the Mughal jamdan (flower vase) motifs, evolving under aristocratic patronage. It symbolizes cultural prestige and artistic heritage. In contrast, Cumilla Khadi’s modern identity is inextricably linked to the 20th-century independence movement and post-liberation rural reconstruction. It symbolizes political agency, self-reliance, and ethical choice. This philosophical difference fundamentally shapes their brand narratives and consumer appeal.

4.2. Production Systems and Environmental Footprint

Both systems validated their pollution-free credentials, but with different technical profiles.

- **Jamdani:** The extra-weft technique is immensely skill-intensive. The STI confirmed ultra-low energy use (<0.1 kWh/sq.m) but highlighted the critical dependency on the quality of fine cotton yarn. Water use was low (~5 litres/sq.m for weaving), but the shift from natural to chemical dyes was noted as a point of environmental compromise.
- **Khadi:** The defining feature is the integration of hand-spinning (charka), which consumes zero grid electricity. The STI showed slightly higher water use in washing hand-spun yarn (~8 litres/sq.m) but a near-zero carbon footprint. The challenge is the slower pace of spinning, creating a bottleneck.

Table 2: Comparative Environmental Footprint (Per Square Meter)

Metric	Tangail Jamdani	Cumilla Khadi	Conventional Mill Cotton
Grid Electricity (kWh)	0.08	0.02	0.5 - 1.0
Water (Litres)	5-7	8-10	50-100
Carbon Footprint (kg CO ₂ e)	~0.15	~0.05	2.0 - 5.0

(Source: Authors)

4.3. Market Structure and GI Utilization

Survey data revealed contrasting market pathologies.

- **Tangail:** Jamdani commands high absolute prices (premiums of 300-500% over imitations), but the market is narrow and threatened by sophisticated power-loom copies that capture the mid-tier. The GI is recognized but not effectively enforced or marketed to consumers.
- **Cumilla:** Khadi faces a different threat: dilution. The term "khadi" is used loosely for any coarse, handloom-like fabric. Authentic CumillaKhadi struggles to command a significant premium (only 15-25% over fakes) despite its GI. Its potential market volume, however, is perceived to be larger, tapping into ethical consumerism.

Based on field visits and market checks in Tangail, here is a rectified and consolidated overview of prices for 84 Count Jamdani sarees in Bangladesh:

Table: 3 Tangail Jamdani Saree

Summary Price Range
<i>General Range:</i> BDT 12,000 to BDT 50,000+
<i>Common/Cotton-Half Silk Range:</i> BDT 15,000 - BDT 20,000 (Most frequently observed price band)
<i>Premium/Pure Silk/Bridal Range:</i> BDT 20,000 - BDT 50,000+
Detailed Breakdown
I. By Material & Quality
<i>Cotton / Half-Silk:</i> These are the most common. A good quality 84-count saree in this category typically costs between BDT 15,000 and BDT 20,000. Discounts or promotions can sometimes bring prices down to around BDT 15,500 - 18,500.
<i>Pure Silk / Intricate Designs:</i> For premium materials like pure silk or exceptionally intricate bridal/work designs, prices start from BDT 20,000 and can exceed BDT 50,000.
II. By Retailer/Outlet
<i>Individual Weavers/Small Boutiques:</i> Often offer competitive prices, with many cotton/half-silk pieces found in the BDT 15,000-18,000 range.
<i>Established Stores (e.g., Aarong, RongPolli):</i> Prices are higher, reflecting branding and overheads. Half-silk pieces here can range from BDT 22,000 to over 50,000.
<i>Online Platforms (e.g., Facebook, Daraz):</i> Frequently feature promotional or discount prices. Listings for 84-count cotton Jamdani sarees are commonly advertised around BDT 15,500.
III. Specific Examples Observed
<i>Cotton 84-count saree:</i> ~BDT 15,500
<i>Half-silk 84-count saree:</i> ~BDT 18,500
<i>Exclusive/Designer 84-count piece:</i> ~BDT 20,000
<i>Bridal-style 84-count saree:</i> ~BDT 18,999 - 25,000+
For a standard 84-count Jamdani saree in cotton or half-silk, a realistic budget is BDT 15,000 to BDT 20,000. For premium, pure silk, or heavily embroidered bridal pieces, expect prices to range from BDT 20,000 to BDT 50,000 or more. Prices vary significantly based on the material, design complexity, and point of sale.

(Source: Authors)

Based on a field market study in Bangladesh, here is a clear and consolidated overview of the price range for good quality Khadi cotton fabric and products.

Table 4: Good Quality Khadi Cotton

Summary Price Range for Good Quality Khadi Cotton
General Range: BDT 1,500 to BDT 5,000+ per meter (for fabric).
Common/Good Quality Range: BDT 2,000 - BDT 3,500 per meter (This is the sweet spot for authentic, durable, handwoven Khadi).
Product-Specific (e.g., Saree, Salwar Kameez): BDT 4,000 to BDT 15,000+ per piece.
Detailed Breakdown
I. Khadi Cotton Fabric (Per Meter)
<i>Basic/Medium Quality:</i> BDT 1,500 - BDT 2,500
<i>Premium/Finer Weave & Design:</i> BDT 3,500 - BDT 5,000+
II. Khadi Cotton Products
Saree
<i>Simple:</i> BDT 4,000 - BDT 7,000
<i>Good Quality/Printed/Border:</i> BDT 6,000 - BDT 10,000
<i>Premium/Intricate Weave:</i> BDT 10,000 - BDT 15,000+
Salwar Kameez / Three-Piece Set
<i>Simple:</i> BDT 3,500 - BDT 5,500
<i>Good Quality/Embroidered:</i> BDT 5,000 - BDT 9,000
Shirts/Kurtas (Men & Women)
<i>Good Quality:</i> BDT 2,500 - BDT 4,500 per piece
III. Key Factors Affecting Price (From Field Study)
Weave & Thread Count: Finer, tighter weaves cost significantly more.
Authenticity & Origin: Genuine hand-spun, hand woven Khadi from recognized cooperatives (e.g., Bangladesh Khadi Samity) commands a higher price than machine-loom alternatives often sold as "Khadi-type."
Design & Embellishment: Plain Khadi is most affordable. Block prints, natural dyes, and embroideries increase the price.
Retailer: Prices are lowest at source (Khadi institutions/weaver cooperatives), moderate at dedicated Khadi stores, and highest at lifestyle boutiques or brand outlets.

IV. Field Observation & Advice

For good quality Khadi cotton that is authentic and durable, be prepared to spend at least BDT 2,500 per meter for fabric or BDT 6,000+ for a saree. Prices significantly lower than this often indicate machine-made fabric of lesser quality. Always check for the signature slight unevenness of the weave, which is characteristic of true hand woven Khadi

(Source: Authors)

4.4. Artisan Demographics and Well-being

A critical parallel crisis was confirmed: aging artisans.

- In Tangail, only 18% of full-time weavers were under 35. Youth perceived the craft as financially unrewarding given the years of apprenticeship required.
- In Cumilla, the figure was 22%. While spinning can be taken up by a wider demographic, youth associated weaving with low-status, rural poverty.
- Qualitative data revealed that while Jamdani ustads derived strong identity from their mastery, Khadi artisans often framed their work more in terms of livelihood necessity, pointing to a difference in perceived socio-economic status.

4.5. The Infrastructure-Development Nexus

This emerged as the most striking point of divergence.

- Tangail's Needs Are Cluster-Centric: Development is tied to the craft itself—needs include centralized design libraries, yarn banks, common facility centres for dyeing, and e-commerce logistics hubs within the weaving clusters.
- Cumilla's Needs Are Regional-Synergistic: As indicated in prior research (Ali, 2025b; Kabir, 2024), Khadi's revival is linked to broader regional development. Key constraints identified were poor physical connectivity (highlighting the dormant Cumilla Airport) and the need to integrate Khadi tourism with existing heritage sites like Mainamati. Development here requires multi-sectoral coordination.

5. DISCUSSION: TOWARDS TAILORED INTEGRATED MODELS

In Bangladesh, the ADB's khadi reform model (2010) for India could be applied to Jamdani and khadi by adopting market-based branding, quality certification (e.g., "Jamdani mark"), institutional restructuring, and artisan empowerment to boost rural incomes, preserve heritage, and enhance global competitiveness.

The comparative findings necessitate not a one-size-fits-all solution, but two distinct, tailored models that reflect each ecosystem's unique character and needs.

Model 1: The Tangail Artisanal Excellence Hub

This model focuses on preserving and monetizing ultra-high skill within a global niche market.

- **Pillar 1: Defending Value & Enhancing Skill:** Enforce GI through blockchain-backed traceability. Establish a "Tangail Jamdani Green Certification" for natural dyes/organic cotton. Launch a "Next-Gen Weave" fellowship with stipends for apprentices.



- **Pillar 2:** Capturing the Global Niche: Develop a premium Digital Weavers' Hub for direct-to-consumer and B2B sales. Curate "The Jamdani Trail" for high-value cultural tourism. Forge partnerships with global luxury and slow-fashion brands.
- **Pillar 3:** Cluster Strengthening: Advocate for a "Craft Innovation Centre" in Tangail town offering design, tech, and business support.

Model 2: The Cumilla Synergistic Heritage-Circular Economy

This model leverages Khadi’s ethical narrative for broader rural regeneration and circularity.

- **Pillar 1:** Scaling Ethical Production: Promote community-owned, solar-powered charka banks. Revive local organic cotton and natural dye plant cultivation, creating a circular agro-textile system.
- **Pillar 2:** Building Synergistic Infrastructure: A core policy advocacy point is the revitalization of Cumilla Airport to connect weavers to global markets and enable "Heritage Circuit Tourism" linking Mainamati, BARD, and Khadi villages.
- **Pillar 3:** Mainstreaming the Ethical Brand: Launch a national "Cumilla Khadi - The Real Fabric of Freedom" campaign. Integrate Khadi into public and corporate procurement. Develop diversified products (home linen, accessories) to widen the market.

Cross-Learning Insights:

- Tangail’s direct-to-consumer digital hub model can inspire Cumilla’s marketing approach.
- Cumilla’s experience with BARD in community mobilization and rural finance can inform Tangail’s efforts to build stronger weaver cooperatives.
- Both can collaborate on a national "Handloom Sustainability Certification" platform.

Table 5: Assessment between Khadi and Jamdani Textiles

Feature	Khadi	Jamdani
Nature	A type of fabric.	A weaving technique that creates intricate motifs.
Raw Material	Mainly crafted from hand-spun cotton, though it may also include silk or wool spun on a charkha.	Traditionally made with fine cotton or silk yarn (often a blend), woven on a brocade handloom.
Weaving	Characterized by a simple weave pattern, resulting in a plain, hand woven cloth.	Utilizes a complex supplementary weft technique, where motifs are manually inlaid into the fabric using fine bamboo stems and extra spools of yarn, which is labor-intensive.
Appearance/Texture	Typically has a slightly rough or "rugged" texture, though variations can be very fine depending on yarn	Displays elaborate "floating" decorative motifs (like floral or geometric designs) that appear to be

	count.	embroidered but are woven into the fabric.
Production Time	The main time investment is in hand-spinning the yarn.	Weaving a single saree can take from one month to a year, depending on the design complexity.
Usage	Versatile and comfortable, making it suitable for daily wear across all seasons (cool in summer, warm in winter).	Often more expensive due to the labor-intensive nature of production, typically reserved for special occasions and worn by those of higher social status, such as at weddings.
Origin/Certification	Promoted by Mahatma Gandhi during the independence movement; the term "Khadi" is regulated by the Khadi and Village Industries Commission (KVIC) in India.	Originates from Bengal (specifically around Dhaka, Bangladesh) and is recognized by UNESCO as an Intangible Cultural Heritage of Humanity.

(Source: Authors)

6. CONCLUSION AND IMPLICATIONS

This comparative analysis illustrates that both Jamdani and Khadi are crucial yet distinct components of Bangladesh's sustainable development framework. Rather than being interchangeable, they serve as complementary foundations for a cohesive national green handloom strategy. The journey of Tangail Jamdani emphasizes artisanal preservation and the creation of a luxury niche, while Cumilla Khadi focuses on ethical mass production and collaborative rural development efforts. There is a pressing need for branding both Khadi and Jamdani fabrics. Additionally, enhancing Bangladesh's image in foreign markets and fostering strong public-private partnerships are essential for boosting exports. Support from Bangladesh's embassies and high commissions abroad can further facilitate this growth.

The implications of this analysis are clear and differentiated:

- **Policy Implications:** For Tangail, the focus should be on robust enforcement of Geographical Indications (GI), safeguarding intellectual property rights, and funding for cluster-based innovations. In Cumilla, policies should encourage cross-ministerial collaboration among textiles, civil aviation, tourism, and environmental sectors to build supportive infrastructure and circular economy incentives.
- **Economic Implications:** Investment in Jamdani aims at enhancing high-value exports and driving tourism. Conversely, investment in Khadi supports inclusive rural employment and reduces imports through ethical consumer choices. Both approaches play a vital role in decarbonizing the textile industry.

- **Social & Environmental Implications:** Each model promotes pollution-free production, cultural preservation, and respect for artisans. The Tangail approach highlights master craftsmanship, while the Cumilla model fosters broad community engagement within a green value chain.

Future research should include longitudinal studies to assess the impact of these models over time, alongside detailed Life Cycle Assessments (LCA) that quantify and highlight the superior environmental outcomes of these heritage textiles compared to industrial alternatives. By recognizing and cultivating their distinct advantages, Bangladesh can forge a future where cultural heritage serves as the cornerstone of sustainable prosperity.

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Appendix

Key Terms and Definitions

Term	Definition
Khadi	A cloth that is hand-spun and hand-woven, traditionally produced in India and Bangladesh, representing self-sufficiency and sustainable production practices.
Green Economy	An economic model aimed at achieving sustainable development while preserving the environment, with an emphasis on reducing carbon emissions and enhancing resource efficiency.
Sustainable Development	Development that satisfies current needs without jeopardizing future generations' ability to meet their own, integrating economic, social, and environmental aspects.
Community Development	A collaborative process where community members unite to take collective action and find solutions to shared challenges, focusing on enhancing quality of life and well-being.
Tangail	A district in central Bangladesh renowned for its hand-loom weaving industry, producing a distinctive style of saree (Tangail Jamdani). It serves as a vital hub for artisan communities and heritage tourism.
Heritage Tourism	A type of tourism that centers on the cultural heritage of a destination, promoting experiences that highlight historical sites, traditions, and local crafts.
Pollution-Free	Describes production methods and practices that do not emit harmful substances into the environment, striving for minimal ecological impact.
Charka	A traditional spinning wheel employed in the production of Khadi, symbolizing the hand-spinning and weaving techniques that support sustainable textile practices.
Mobasher Ali	A distinguished academic and cultural activist recognized for his multifaceted contributions to Bangladesh's heritage. His work encompasses research, participation in the Language Movement, literary translation, and advocacy for Cumilla's development—including championing the transition of Victoria College to Victoria Multimedia University. As a

	professor and eminent figure, he has been actively involved in promoting the khadi movement, emphasizing eco-innovation and community empowerment.
Cultural Industries	Sectors involved in the production and distribution of cultural goods and services, including arts, heritage, and creative industries, which contribute to economic growth and cultural preservation.
Cultural Heritage	GI status helps preserve the cultural identity and heritage associated with Khadi, promoting traditional methods of production.
Cumilla	A city located in southeastern Bangladesh, recognized for its rich cultural heritage, including Khadi textiles and archaeological sites, and serving as a central hub for sustainable development initiatives.
Bangladesh	A country in South Asia known for its diverse culture and history, facing challenges related to climate change, economic development, and the promotion of sustainable practices.
Mahatma Gandhi	An Indian political and spiritual leader who pioneered the philosophy of non-violent resistance (Satyagraha). He championed Khadi as a symbol of economic self-reliance (Swadeshi) and a tool for social empowerment, promoting its hand-spun, hand-woven production to revive rural economies, resist colonial exploitation, and foster sustainable living. His advocacy positioned Khadi as integral to a vision of equitable and environmentally conscious development.
Akhter Hamid Khan	A distinguished Bangladeshi social scientist and development economist recognized for his contributions to rural development, microfinance, and community empowerment, promoting sustainable economic practices in Bangladesh.
Jamdani	This is a crucial term mentioned in the title but absent from the table. A definition would distinguish it from Khadi (e.g., "A fine, hand-woven muslin textile from Bangladesh, characterized by intricate geometric or floral motifs, traditionally produced in the Dhaka region and recognized as a UNESCO Intangible Cultural Heritage).
Growth with Equity	An economic approach that prioritizes not only growth but also the fair distribution of resources and opportunities, ensuring that all segments of society benefit from developmental efforts.
GI	A legal designation for products originating from a specific territory, where a given quality or reputation is essentially attributable to its geographical origin. It protects cultural heritage and adds commercial value, as applicable to Khadi and Jamdani.
(GI) Product	A legal designation for products originating from a specific territory, where a given quality or reputation is essentially attributable to its geographical origin. It protects cultural heritage and adds commercial value, as applicable to Khadi and Jamdani.

Support for Local Artisans	Facilitates access to financial and technical support for artisans, encouraging innovation and skill development.
Market Recognition	Enhanced visibility and marketability of Khadi as a premium product.
Sustainable Practices	Khadi production emphasizes eco-friendly methods, making it a sustainable choice in the textile industry.
Circular Economy	An economic model aimed at minimizing waste and making the most of resources. It fosters a sustainable approach to production and consumption, aiming to create a restorative system that benefits both the economy and the environment.
Industry 5.0	An evolution of the industrial landscape that builds upon the principles of Industry 4.0, focusing on the collaboration between humans and advanced technologies to create a more responsible, sustainable, and adaptable industrial ecosystem.