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Pattern-changing Business Model Framework for the Handloom Industry: A Case Study in Bangladesh

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Abstract

1. Background

Bangladesh handloom sector is a centuries-old cultural industry which is employing over a million people. The handloom sector plays a critical role in rural employment, cultural preservation, and gender-inclusive livelihoods. Despite its socio-economic and heritage value, the industry faces serious challenges, including market disconnection, financial exclusion, technological backwardness, and digital illiteracy. These limitations have contributed to growing generational disengagement and institutional neglect which threaten the sector's sustainability.

2. Originality/Value

This research introduces a Pattern Changing Business Model (PCBM) Framework, that is culturally embedded and digitally enabled approach that reconfigures traditional handloom enterprises through the lenses of business model innovation, cultural sustainability, and inclusive digital transformation. It extends existing theory by embedding artisanal identity, digital facilitation, and co-creation mechanisms into a business model architecture tailored for informal, cultural enterprises in the Global South.

3. Research Objectives

This major research objective is to develop a Pattern Changing Business Model (PCBM) Framework to reposition Bangladesh handloom sectors viability in both local and international markets.

- To identify the key structural, financial, technological, and institutional challenges that handloom SMEs face in Bangladesh.
- To analyze the effectiveness of existing business models in addressing market needs and consumer preferences.
- To develop a pattern-changing business model framework that integrates sustainability, digital engagement, and value co-creation for enhanced competitiveness and resilience.

4. Methodology

This study employs a qualitative-dominant mixed-method case study design across three handloom

clusters: Jamdani (Narayanganj), Banarasi (Dhaka), and Tangail (Tangail). Data collection included 60 in-depth interviews, two multi-stakeholder FGDs, and business and digital tool usage surveys. The analysis followed thematic coding, cross-cluster comparison, and triangulation. The theoretical foundation draws from the Business Model Canvas (Osterwalder & Pigneur, 2010), Resource-Based View (Barney, 1991), Hybrid Organizing (Battilana & Dorado, 2010), and Co-Creation Theory (Prahalad & Ramaswamy, 2004).

5.Findings

The study identifies six core challenges across all clusters, which include financial fragility, technological backwardness, market disconnection, digital exclusion, Institutional gaps, and Cultural erosion. However, cluster-specific variations show potential for targeted innovation, especially in Tangail. The research proposes a modular, adaptable business model that emphasizes artisan storytelling, community-based digital facilitation, hybrid sales channels, cooperative branding, and participatory pricing systems.

6.Implications

Academically, the study enriches the discourse on business model innovation in informal and cultural economies. Methodologically, it introduces a triangulated, multi-cluster approach grounded in knowledge science. Practically, the PCBM Framework offers a viable roadmap for policymakers, NGOs, digital entrepreneurs, and artisan cooperatives to promote inclusive, resilient, and culturally grounded enterprise development. It also provides scalable tools and guidelines that can be replicated in other marginalized craft sectors across the Global South.

Keywords

Bangladesh Handloom Industry, Business Model Innovation, Pattern-Changing Business Model, Rural Entrepreneurship, SME Development.

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Chapter 1: Introduction

1.1 Background of the Study

The handloom industry is one of the oldest forms of craft-based, non-mechanized production in South Asia, embodying a rich confluence of heritage, artistry, and community livelihoods (C. Das et al., 2016; R. Das, 2021; Mishra & Das Mohapatra, 2020). This craft-based handloom sector serves more than just a livelihood path; it is an example of an intangible cultural legacy. Unlike mechanized textile production, handloom weaving is deeply embedded within communities, sustaining intergenerational livelihoods and contributing to social cohesion. The sector has been contributing to rural employment, gender-inclusive workspaces, and regional identities for centuries. From the legendary *Jamdani* of Narayanganj to the *Banarasi* of Dhaka and the *Tangail Tant* of Tangail district, handloom weaving remains an essential cultural practice that intersects identity, design, and sustainability (R. Das, 2021; S. Das, 2020; M. K. Islam & Hossain, 2012; Nipa, 2021).

At present, the sector directly or indirectly employs over 1.5 million people in Bangladesh (R. Das, 2021; Nipa, 2022), including weavers, dyers, hand spinners, embroiderers and allied artisans. It became a backbone of the peripheral economy through creating adequate livelihood avenues. The sector adds more than 10 (ten) billion taka annually to the national treasury as value addition (BHB 2023). Besides, it provides employment opportunities to a million rural people, 50% of which are female. Another half a million people are indirectly engaged in the industry.

The handloom sector in India, Bangladesh, Pakistan, and Sri Lanka, (M. K. Islam & Hossain, 2012; Mamidipudi & Bijker, 2018) evolved as a family-based, labor-intensive practice closely linked to regional identity and cultural expression. In Bangladesh, handloom weaving flourished under the Mughal Empire, especially with the globally celebrated *Ruma* (Ruma et al., 2021), which was later inscribed by UNESCO (2013) as an Intangible Cultural Heritage of Humanity. The economic and social functions of the handloom extend beyond income generation. It supports household-level production, especially among women and the elderly, enables knowledge transmission across generations, and sustains local design aesthetics (R. Das, 2021; S. Das, 2020). In many rural

communities, handloom production is embedded in kinship networks, with informal apprenticeship playing a key role in skill acquisition.

In Bangladesh, most handloom enterprises yet operate informally, lacking access to finance, markets, or institutional support. The few that survive often do so under exploitative arrangements with wholesalers or traders, who provide capital but retain control over design, pricing, and distribution (Islam, M. M., & Ahmed, 2019). Despite its significance, the sector has faced persistent decline over the past two decades due to industrial competition, insufficient modernization, and policy neglect (Bhuiyan, 2020; Bangladesh Handloom Board [BHB], 2023). According to BHB (2023), the number of operational looms decreased from approximately 1.05 million in 2003 to fewer than 183,512 in 2022, marking a decline of over 80%. Similarly, the number of households engaged in handloom weaving fell from around 1.2 million to 312,216 during the same period. Artisan wages have also stagnated, often falling below minimum living standards, leading younger generations to abandon weaving in favor of more stable employment (Rahman & Alam, 2019).

This decline not only jeopardizes rural livelihoods but also threatens Bangladesh's cultural identity. Iconic textiles such as Jamdani, Tangail Tant, and Banarasi sarees, recognized for their historical and aesthetic significance, face extinction due to diminishing artisan participation (Islam & Haque, 2020; UNESCO, 2013). Addressing this crisis requires a business model framework that can preserve cultural centrality while integrating modern marketing, digital engagement, and sustainable practices.

Abundant literature consistently reveals a range of structural, financial, technological and institutional barriers that hinder the development of handloom-based small and medium-sized enterprises (SMEs) in South Asia. These threats are deeply intersected and span economic, technological, institutional, and social domains.

1.1.1 Financial Exclusion and Capital Insecurity

Handloom enterprises typically operate on thin margins and are excluded from formal banking systems. Most weavers depend on advance payments from middlemen, which ties them into

unequal power dynamics and limits their capacity to innovate or expand (Ahmed, 2016). Microfinance institutions (MFIs), though widely present, often fail to offer products tailored to the cyclical and seasonal nature of weaving.

The lack of working capital also discourages investment in newer looms, improved production facilities, or even bulk raw material procurement, leading to inefficiencies and higher unit costs (Chowdhury & Uddin, 2018).

1.1.2 Technological Backwardness

Technological sluggishness is a typical characteristic of the sector. Almost all artisans still rely on outdated looms, manual machines, production techniques, tools and minimal digital adoptions (Rahman, 2013) that are decades old, and innovations in dyeing, design, and inventory management remain rare (Bortamuly & Goswami, 2015). Unlike mechanized mills, handloom units do not benefit from scale or automation and are hence unable to match the speed, consistency, or pricing of industrial competitors (Bhavani, T. A., & Reji, 2015). In many cases, even basic technologies such as mechanical bobbin winds or energy-efficient lighting are absent. Digital design software, product tagging, and online inventory systems are almost entirely missing from the operational landscape of traditional SMEs in Bangladesh.

1.1.3 Market Disconnection and Middlemen Dominance

A recurring issue in the literature is the lack of direct access to markets. Artisans often have no visibility into who buys their products, at what price, and through which channels. This market opacity prevents them from building brand equity or learning from consumer feedback (Ahmed, S., & Nathan, 2014).

Middlemen control the entire value chain in many clusters, from raw material supply and design specifications to marketing and sales. While (Begum, 2017; Mishra & Das Mohapatra, 2020) they play a necessary logistical role, their dominance reduces weavers to low-paid laborers within their enterprises (Hossain et al., 2020). This also makes them vulnerable to delayed payments, misrepresentation of sales value, and price volatility.

1.1.4 Institutional Gaps and Policy Inertia

Although the government of Bangladesh has acknowledged the sector's cultural and employment value, institutional responses have been inconsistent. Various ministries—including textiles, industries, and SME development—operate in silos, with little coordination (Islam & Mahmud, 2020). Subsidy programs, when available, are often difficult to access due to bureaucratic hurdles and a lack of awareness among artisans.

Capacity-building programs are mostly generic, donor-driven, and focused on short-term skill training rather than strategic enterprise development (Rahman, 2013). Meanwhile, many weavers remain unaware of their legal rights, potential branding tools, or export opportunities.

1.1.5 Generational Disengagement and Social Transition

Younger generations are increasingly abandoning handloom work, which they associate with poverty, low status, and manual drudgery (A. Roy, 2020; T. Roy, 2002). The absence of digital integration or formal enterprise structures further discourages youth participation. As urban migration increases, especially among rural males, the knowledge base of weaving is shrinking, raising concerns about long-term viability.

These interrelated challenges underscore the urgency of not just supporting production but reimagining the business model through which handloom SMEs operate. Regardless of its socio-cultural significance, the sector faces fundamental challenges: rapid industrialization, an influx of machine-made textiles, rising raw material costs, and digital illiteracy. What was once a vibrant cottage industry is now struggling to survive amidst policy neglect, lack of institutional finance, and invisibility in modern value chains (Ruma et al., 2021). The transformation of handloom enterprises into sustainable and resilient models is imperative and a cultural and ethical one. With increasing global demand for artisanal, ethical, and slow fashion, Bangladesh's handloom sector holds underlying potential. Yet, unlocking this potential requires critical rethinking of how business models are structured, how markets are accessed, and how artisans participate in the value chain.

1.2 Statement of the Problem

Despite the resilience of handloom artisans, the current business practices remain largely informal, fragmented, and unsound. This thesis identifies five interlocking challenges that define the problem landscape. First, the most pressing issue is financial fragility that affects handloom growth. Most handloom entrepreneurs have limited or no formal finance access. Dependence on middlemen and informal lenders constrains cash flow and stifles scale and investment (FGD 01 Summary). The second most issue is technological disconnection. The weavers heavily rely on outdated looms and no access to computer-aided design (CAD), online cataloguing systems, and customer data analytics. Most respondents cited either unfamiliarity with digital tools or fear of design theft (Hazarika et al., 2016; Ruma et al., 2021) (FGD 02 Summary). Third, market isolation is another obstacle. Almost cases, the middlemen dominate the value chain, taking a disproportionate share of profits while artisans remain invisible to consumers. This results in low pricing and no branding capability for the weavers (R. Das, 2021; M. K. Islam & Hossain, 2012).

Fourth, the institutional Gaps creates the gaps between handloom beneficiaries and government authorities. Although the government has declared the sector a priority for cultural preservation, actual support mechanisms remain bureaucratic, inaccessible, and inconsistently delivered (Mottaleb & Sonobe, 2013) (FGD 02 Summary). Finally, the absence of Business Model Innovation: no established framework exists specifically for handloom SMEs that would facilitate their integration into the digital economy, adapt to consumer trends, and maintain long-term viability. Most businesses rely on traditional models handed down over generations (Mottaleb & Sonobe, 2013; Ruma et al., 2021). So, the fundamental problem is that the handloom sector remains structurally weak, fragmented, and digitally excluded. While global demand for authentic, handmade, and sustainable fashion is rising (Gereffi, 2018; Pedersen et al., 2018), Bangladeshi handloom SMEs struggle to position themselves competitively. This disconnects between potential and performance underscores the need for a pattern-changing business model (PCBM) that integrates both traditional strengths and contemporary tools.

1.3 Research Objectives

The study's major objective is to develop a *Pattern-Changing Business Model (PCBM)* that can shift the traditional handloom sector of Bangladesh as a culturally grounded, digitally empowered, and economically sustainable industry. This PCBM aims to change the outdated, unfair, and fragmented business arrangements that dominate the current landscape with an innovative framework rooted in value co-creation, digital engagement, and sustainability. The study proposes to design a BM by leveraging local artisan knowledge, storytelling, and inclusive technology, that responds to contemporary market demands while preserving the socio-cultural identity of handloom weavers.

Subsidiary Research objectives (SROs): There are three SROs as listed below:

SRO 1: Identify the Structural, financial, technological, institutional, and environmental barriers affecting handloom SMEs in Bangladesh.

The first objective is to investigate the key structural and institutional challenges that restrict the sustainable growth of handloom SMEs. This includes barriers such as lack of supportive policy frameworks, inequitable access to raw materials, market invisibility, and absence of institutional facilitation for environmentally responsible production. By examining these challenges across major handloom clusters, the research explores how these systemic patterns of exclusion inhibit both productivity and sustainability.

SRO 2: Analyze Current Business Practices and Evaluate Their Effectiveness in a Digital Economy.

The second objective is to assess the structure and performance of existing business models used by handloom SMEs, with a focus on their digital readiness, market integration, and customer orientation. This objective evaluates how current practices either align with or diverge from the principles of digital engagement, such as the use of online platforms, social media, mobile payments, and digital storytelling. The analysis will clarify to what extent the present models can ensure competitiveness and value delivery in an increasingly digital marketplace.

SRO 3: To evaluate the readiness and capacity of handloom SMEs and stakeholders to adopt new business model patterns

This objective emphasizes on assessing the transformation capacity or readiness of handloom actors (SMEs, and other stakeholders) to adopt and operate the PCBM. It expands the study's contribution by assessing existing activities, motivations, and barriers to adopting new models. For scaling digital literacy, entrepreneurial mindset, and organizational support structures. In addition, mapping the flexibility across clusters in how responsive different actors are to sustainability, digitalization, and market innovation. This revised objective ensures the PCBM is grounded in real-world feasibility, aligning well with change management theory, diffusion of innovation (Rogers, 2003), and organizational readiness for innovation (Weiner, 2009).

In the below we draw a conceptual linkage between MRO and SROs. This gives us an easy way to understand the study goal.

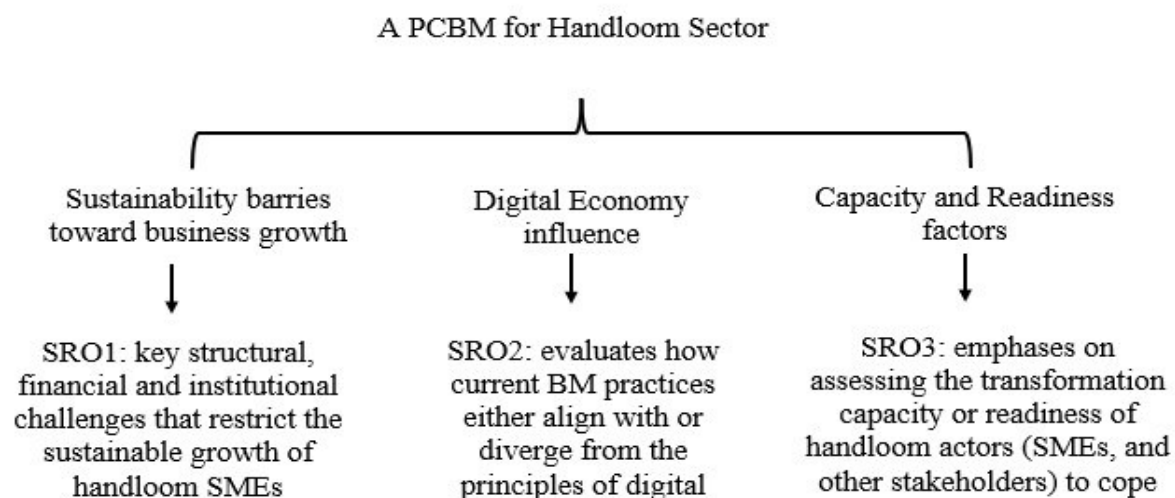


Figure 1 Conceptual link among MRO, SRO & Key constructs

1.4 Research Questions

In line with these objectives, this study designed a major research question (MRQ) with three subsidiary research questions (SRQs). These questions aim to achieve the abovementioned research objectives. The MRQ of this study is on how to develop a new business model framework

that responds to the existing barriers while leveraging emerging opportunities in handloom sector of Bangladesh. In addition, the three SRQs are below.

SRQ1. What are the main challenges and barriers faced by handloom SMEs across key production clusters in Bangladesh?

SRQ2. How are current business models structured, and where do they fail to meet the evolving demands of the market?

SRQ3. What digital, cultural, and strategic elements can be embedded in a new business model to ensure sustainability and growth?

1.5 Rationale and Significance of the Study

Preserving Bangladesh's handloom heritage aligns with UNESCO's recognition of *Jamdani* as an Intangible Cultural Heritage (UNESCO, 2013). However, preserving heritage without enhancing the livelihoods of those who sustain it creates a moral contradiction. Therefore, the study proposed that a business model (BM) that promotes both economic viability and cultural sustainability is therefore essential. The proposed business model is "pattern-changing" because it restructures value creation and delivery through digital engagement, co-creation, and identity-based storytelling—without altering the traditional handmade production. The novelty lies in integrating cultural preservation with digital and marketing strategies, extending Osterwalder's Business Model Canvas by embedding socio-cultural dimensions.

While business model innovation (BMI) has been extensively studied in tech and corporate sectors (Amit & Zott, 2012; Teece, 2010), its application in informal, traditional, and artisanal sectors remains underexplored. This thesis extends the BMI literature by localizing it within the context of rural entrepreneurship, low digital literacy, and embedded cultural labor.

The government's Vision 2041 and the Sustainable Development Goals (SDGs) both prioritize SME development and inclusive economic growth. Yet, policy initiatives have so far failed to develop scalable, sustainable handloom clusters due to a lack of business model thinking. This

study can offer a roadmap for the Bangladesh Handloom Board, SME Foundation, and Ministry of Industries to reframe their support strategies.

NGOs, e-commerce platforms, and ethical fashion brands require actionable frameworks to collaborate effectively with artisan groups. The proposed model offers them a way to integrate heritage products into mainstream and niche markets while maintaining authenticity, transparency, and fair trade.

This research emerges from an urgent need to bridge tradition and transformation. In an age of fast fashion, algorithmic commerce, and climate urgency, handloom industries must evolve—but without erasing their roots. A business model framework tailored to their reality can help them do just that. As the following chapters will establish, this study not only explore problems but also builds toward a culturally embedded, economically viable, and digitally connected future for Bangladesh’s handloom sector. The results of the study guide the handloom sector towards its sustainable growth while conserving the traditional weaving skills and cultural identity of artisans and other stakeholders.

1.6 Scope and Delimitation of the Study

This study is delimited to three traditional handloom clusters including *Jamdani* (Narayanganj), *Banarasi* (Mirpur, Dhaka), and *Tangail Tant* (Tangail) in Bangladesh. Because of access limitations to the other clusters, we have selected these three clusters which also share a large market both the home and abroad.

Besides that, the study also offers several scopes to include the SMEs and household-based handloom units. The skilled workforce such as artisans, designers, retailers, wholesalers, and platform-based sellers also considered as research participants. Moreover, we also consider multi-stakeholders focus group discussions with in-depth qualitative interviews and onsite observation.

The study does not include mechanized textile industries; large exporters not grounded in traditional handloom and quantitative econometric analysis to justify its result. Because, the aim is not generalizability, but deep, contextual insight that can inform scalable, replicable frameworks.

1.7 Structure of the Thesis

This thesis is presented into eight chapters, each systematically designed to fulfill the research objectives through distinct methodologies and analytical processes. The introductory chapter covers the research context, the primary problem statement, and sets forth the Major Research Objective (MRO) alongside the Subsidiary Research Objectives (SROs). Specifically, SRO1 is to identify the structural, institutional, and environmental barriers affecting handloom SMEs. This objective is addressed through an extensive review of sectoral documents and in-depth semi-structured interviews with artisans, intermediaries, and boutique operators, analyzed via open and axial coding to distill thematic barriers. Chapter 2 grounds the study within existing literature, outlining theoretical lenses such as cultural sustainability, co-creation, and digital engagement, which support the analytical framework.

Chapter 3 details the qualitative methodology, justifying purposive sampling across the Jamdani, Tangail, and Banarasi clusters and explaining how participant selection and iterative coding schemes enable an embedded understanding of systemic constraints, directly serving SRO1. To achieve SRO2—analyzing current business practices and evaluating their effectiveness in a digital economy—Chapter 4 deploys a triangulated data analysis approach, integrating qualitative themes from interviews with quantitative metrics such as the prevalence of direct-to-consumer channels, brand storytelling practices, and artisan pricing autonomy, thereby assessing the operational viability of existing models in a digital context.

Chapter 5 synthesizes these findings, directly comparing cluster-specific practices and linking them to readiness indicators. This feeds into SRO3, which seeks to evaluate the readiness and capacity of handloom SMEs and stakeholders to adopt new business model patterns. Here, Chapter 5 presents cross-cluster comparisons of digital literacy, legal documentation status, and boutique integration, analyzed through a readiness index framework. Chapter 6 then interprets these insights against the backdrop of the theoretical frameworks established earlier, culminating in the formulation of the Pattern-Changing Business Model (PCBM). Finally, Chapters 7 and 8 draw conclusions, propose future empirical validations (such as pilot tests in Tangail to operationalize SRO3's insights), and highlight the study's contributions to both academic discourse and policy interventions aimed at revitalizing culturally embedded artisan sector

Chapter 2: Literature Review and Theoretical Background

This chapter aims to provide a comprehensive theoretical and empirical foundation for this study. It critically reviews existing literature on the traditional handloom industry, the structure and limitations of business models in informal sectors, and the prospects of integrating digital tools and sustainability principles into culturally embedded craft economies.

This review also identifies significant research gaps and limitations within existing frameworks and practices that hinder innovation in the traditional handloom sector, particularly in Bangladesh. It draws upon multi-disciplinary scholarship from development studies, business model theory, digital transformation, sustainability, and cultural entrepreneurship to justify the need for a pattern-changing business model framework tailored to the realities of artisan-based enterprises.

2.1 Operational Definitions

I. Handloom

It refers to a manually operated device or frame used for weaving textiles without the use of electricity. It is a traditional tool that enables the interlacing of warp and weft threads to create fabrics, often with intricate patterns and cultural symbolism. In the context of this research, handloom signifies both the physical loom, and the cultural practice tied to artisan identity and heritage. It forms the core of value creation and authenticity in the model.

II. Handloom Industry as a Socially Responsible Movement

The handloom industry is a decentralized, labor-intensive sector that produces woven textiles using hand-operated looms, primarily by rural and semi-urban artisan communities. It includes a wide range of economic activities such as yarn procurement, dyeing, weaving, finishing, and selling. This industry is culturally embedded and contributes to sustainable livelihoods, especially for women and marginalized communities. Within the model, it is considered both a heritage economy and a platform for inclusive growth and innovation.

Moreover, the handloom industry is not only an economic activity but also a socially responsible movement. Several scholars argue that traditional crafts embody cultural identity, community welfare, and sustainable livelihoods (Ahmed & Akter, 2021; Islam & Haque, 2020). In Bangladesh, weaving has historically empowered marginalized groups, particularly women and elderly artisans, who find few alternative employment opportunities (Rahman & Alam, 2019).

By sustaining artisan households, handloom weaving contributes to poverty alleviation and rural resilience (Siddiquee & Hossain, 2018). Furthermore, it preserves intangible cultural heritage, exemplified by the inclusion of Jamdani weaving in UNESCO's Intangible Cultural Heritage of Humanity list (UNESCO, 2013). Unlike mechanized textile production, handloom weaving integrates fair labor practices, community ownership, and environmental responsibility due to its low-carbon, resource-efficient production process (Bhuiyan, 2020).

Therefore, the handloom sector represents a socially responsible movement in three ways:

1. Cultural Centrality: It safeguards national identity and heritage.
2. Livelihood Security: It provides income for vulnerable rural populations, particularly women and the elderly.
3. Sustainability: It aligns with contemporary global concerns about slow fashion, ethical consumption, and environmentally friendly production (Pedersen et al., 2018).

Recognizing the handloom sector as a socially responsible movement strengthens the argument for designing a pattern-changing business model (PCBM) that goes beyond profit maximization to include social empowerment and cultural preservation.

III. Stakeholders

Stakeholders in the handloom sector refer to individuals, groups, or institutions that are directly or indirectly involved in or affected by the production, marketing, regulation, or consumption of handloom products. This includes artisans/weavers, cooperative societies, suppliers, marketers, consumers, NGOs, government bodies, and digital platform providers. Their roles and interactions influence value creation, policy implementation, and systemic transformation. Stakeholder alignment is central to the model's hybrid organizing principle.

IV. Artisans/Weavers

Artisans or weavers are skilled crafts people who use manual looms to weave fabrics, often incorporating traditional motifs and storytelling techniques. They possess generational knowledge of dyeing, weaving, and finishing practices that are often undocumented but highly specialized. In this model, artisans are not passive laborers but active cultural entrepreneurs and co-creators of value. Their empowerment through digital tools, branding, and direct customer engagement is a central outcome of business model transformation.

V. Jamdani

Jamdani is a fine muslin textile traditionally woven on handlooms, originating from Bengal (now Bangladesh and West Bengal, India). Known for its intricate motifs and geometric patterns, Jamdani is made using a discontinuous weft technique that allows for highly detailed designs. It is a UNESCO-recognized intangible cultural heritage, symbolizing craftsmanship and cultural continuity. In this framework, Jamdani is treated as a high-value product line representing the cultural centrality of handloom heritage.

VI. Banarasi

Banarasi refers to the luxurious handwoven silk sarees produced in Varanasi, India, renowned for their rich brocade work, gold/silver zari, and Mughal-inspired motifs. These textiles often involve complex weaving techniques that require collaboration between multiple artisans. Banarasi represents a fusion of cultural tradition and premium craftsmanship, commanding high demand in ceremonial and global fashion markets. Within the model, it is a benchmark of artisanal excellence and export potential.

VII. Tangail Tant

Tangail Tant is a traditional handloom weaving style from Tangail district in Bangladesh, known for its soft cotton texture and subtle floral patterns. The technique emphasizes comfort and aesthetic elegance, making it a daily-wear favorite in the subcontinent. Tangail Tant showcases

community-level weaving clusters and cooperative production practices. In the model, it highlights the diversity and scalability of regional handloom ecosystems.

VIII. Business Model Transformation

Business model transformation in the handloom sector refers to a strategic and structural shift in how value is created, delivered, and captured—driven by digital integration, stakeholder co-creation, and hybrid organizing principles. It involves evolving from isolated artisan work to connected ecosystems that leverage shared branding, consumer interaction, and platform-based selling. This transformation aims to align traditional practices with modern markets without compromising cultural identity. It is the central goal of the proposed framework, ensuring economic resilience and cultural preservation.

IX. The definition of "Pattern" and "Pattern-changing" in Business Models (BM)

To business model theory, a "pattern" indicates a repetitive configuration of BM elements that firms adopt to create, deliver, and capture value (Alexander Osterwalder & Yves Pigneur, 2010). These patterns are not just routines but design logics or prototypes—such as the business-to-business (B2B) model, digital business model, or multi-sided platforms—that are widely recognized and replicated across industries. Zott, C., Amit, R., and Massa, L. (2011) contend that BM patterns reflect firms' cognitive frames and industry norms that guide how value creation architectures are structured. These patterns often emerge over time, becoming institutionalized, especially in traditional sectors, such as the handloom industry in Bangladesh.

Moreover, pattern-changing refers to a thoughtful deviation from conventional BM innovation to adapt to physical changes, market evolution, or technological disruption. It suggests a transformational modification in the core logic of value creation, delivery, and proposition not only incremental improvements. From a theoretical standpoint, pattern-changing aligns with the concept of business model innovation (BMI) defined as the modification or reinvention of the dominant business logic to respond to new opportunities or threats (Chesbrough, 2010; Teece, 2010). Additionally, Boons, F., & Lüdeke-Freund (2013) highlight that sustainable business model innovation often requires challenging embedded industry patterns to introduce new sustainability practices, stakeholder relationships, and digital mechanisms.

In this study, a pattern-changing business model (PCBM) is defined as:

A transformative business model innovation (BMI) that dislocates the dominant practices of handloom SMEs by integrating sustainability, digital engagement, and co-creation, thereby relocation traditional businesses for flexibility, scalability, and market competitiveness in both local and global value chains.

It changes from a historically producer-centered, casual, and wholesale-dominated model to a digitally enabled, identity-driven, and consumer-engaged structure. PCBM has been deliberately employed to capture a form of transformation that is fundamentally distinct from typical notions of radical innovation or standard business model innovation. The proposed model restructures value creation and delivery through digital engagement, co-creation, and identity-based storytelling—without altering the traditional handmade production. Besides, the novelty lies in integrating cultural preservation with digital and marketing strategies, extending Osterwalder's Business Model Canvas by embedding socio-cultural dimensions.

X. Business Models: Definitions and Evolutions

The business model concept has evolved significantly over the past two decades. Originally viewed as a planning tool for startups and internet-based businesses, it is now seen as a strategic framework that encompasses the logic of how an enterprise creates, delivers, and captures value (Teece, 2010). Alexander Osterwalder & Yves Pigneur (2010) describes a business model into nine elements: value propositions, customer segments, customer relationships, channels, revenue streams, key resources, key activities, key partnerships, and cost structure.

XI. Business Model Innovation (BMI)

Business Model Innovation (BMI) refers to the planned redesign of a firm's logic of value creation, delivery, and capture in response to changing internal and external environments (Amit & Zott, 2008; Zott, C., & Amit, 2010). While BMI has been widely applied in tech start-ups and multinational firms, its use in traditional and informal sectors remains limited. However, BMI has enormous potential for informal economies where resource constraints, market fragmentation, and socio-cultural entrenchment often limit conventional growth paths (George et al., 2012). In such

contexts, business model change is less about technology and more about strategic alignment with local realities, value networks, and user participation (Prahalad, C. K., & Ramaswamy, 2004).

XII. Digital Engagement

Digital engagement refers to the process by which individuals or communities actively use digital platforms, tools, and media to interact, communicate, and participate in value-creating activities. In the context of artisan sectors, it includes social media presence, live streaming, e-commerce participation, digital storytelling, and online branding. Digital engagement enables artisans to directly connect with consumers, amplify their visibility, and participate in digital economies. It serves as a catalyst for inclusion, innovation, and empowerment in traditionally marginalized industries like handloom.

XIII. Co-Creation

Co-creation is a collaborative process in which producers and consumers jointly contribute to the creation of value, experiences, or products. It moves beyond transactional relationships by integrating customer feedback, preferences, and creativity into the production and design process. In the handloom context, co-creation allows artisans and consumers to engage through storytelling, customized designs, and interactive feedback loops. This model empowers artisans and fosters a sense of ownership and cultural connection among buyers, enhancing both product relevance and emotional value.

XIV. Sustainability

Sustainability is a multi-dimensional concept that refers to the ability to meet present needs without compromising the capacity of future generations to meet their own, balancing environmental, social, and economic goals. In the handloom sector, sustainability encompasses the use of eco-friendly materials, preservation of cultural heritage, and support for inclusive, community-based livelihoods. It emphasizes long-term resilience, reduced environmental impact, and ethical production practices. Sustainability in this model is not just an outcome, but a guiding ethos embedded across production, distribution, and consumption practices.

2.2 Literature Review

2.2.1 Business model (BM) and business model innovation (BMI) in business literature

This modular view enables firms to analyze and innovate their operations systematically. Amit & Zott (2008); Zott & Amit, 2007; Zott, C., Amit, R., and Massa, L., (2011) argue that a business model is a system of interdependent activities that transcends firm boundaries and includes multiple actors. This view is especially relevant for informal sectors like handloom, where artisans, traders, customers, NGOs, and government agencies are deeply intertwined. However, most conventional models assume formalization, access to capital, and scalability, features rarely present in traditional craft sectors. As Mason, K., & Spring (2011) note, business models in informal economies are often non-linear, shaped by cultural norms, trust-based exchanges, and adaptive improvisation rather than fixed structures.

Applying business model frameworks to handloom SMEs presents unique challenges such as customer segments are often undefined, products are made without market research, value propositions are rooted in tradition but not communicated in commercial language. revenue streams are linear and transactional, lack diversification, and key partnerships are informal, family-based, or exploitative. However, despite these gaps, the modularity of the Business Model Canvas (BMC) provides a useful starting point for adaptation. It allows scholars and practitioners to rethink and redesign business models by customizing their components to the realities of cultural production and informal entrepreneurship.

Hybrid Business Models for Artisan Enterprises

Battilana, J., & Dorado (2010) describe hybrid organizations as those that blend social logic with market-driven activities. This concept is highly relevant to handloom clusters, where community, tradition, and heritage are as important as product and profit. Artisan enterprises require hybrid models that balance economic returns with cultural preservation and social empowerment. In the case of handloom SMEs, innovation must address the dual identity of the weaver as both a cultural custodian and an economic actor. This means business models must recognize the cultural capital of design traditions, enable shared value creation through customer engagement, and maintain craft authenticity while embracing market trends.

Several global case studies illustrate how BMI has revitalized traditional craft sectors: *FabIndia (India)* operates through a decentralized supply chain involving over 50,000 rural artisans, combining heritage branding with urban retail. The firm uses producer-owned companies and co-design mechanisms to align artisan identity with customer preferences (Bhavani, T. A., & Reji, 2015). On the other hand, *Allpa (Peru)*, A fair-trade social enterprise connecting Andean artisans to Western markets. It innovated by standardizing production, using storytelling in marketing, and investing in artisan capacity-building.

Another case of BMI is *GoCoop (India)* functioning as a digital marketplace for handloom cooperatives, combining e-commerce with transparency and decentralized artisan representation. It introduced cluster-based e-governance, enabling artisans to set prices and track demand. Besides this, *Toraja Craft (Indonesia)* a traditional enterprise integrates local tourism with traditional weaving displays and on-site sales, creating a multi-touchpoint experience model for domestic and international buyers.

These examples highlight that BMI in informal sectors requires a process of localization, co-creation, and digital enablement, rather than top-down scaling or corporate strategy replication. In this study, we searched for a business model that maintains cultural identity while enhancing co-creation, and digital enablement building on this theoretical foundation.

2.2.2 Social Media Marketing, the Digital Economy, and Business Model Transformation:

The Role of Social Media in Business Model Innovation

Kaplan & Haenlein (2010) pioneered the conceptualization of social media as a transformative force in business, arguing that platforms like Facebook and Twitter enable firms to engage in real-time interactions with consumers, thus reshaping traditional business models. Their study highlights how user-generated content and viral marketing reduce dependency on conventional advertising, allowing SMEs to compete with larger firms. This insight is critical for the present study, as the handloom sector in Bangladesh—traditionally reliant on local markets—can leverage social media to bypass intermediaries, directly connecting artisans with global consumers, thereby transforming its business model toward digital integration.

Social Media and Value Co-Creation in the Digital Economy

Kietzmann et al. (2011) explore how social media functionalities (e.g., identity, conversations, sharing) facilitate value co-creation between businesses and customers. They emphasize that firms adopting a participatory approach—where consumers contribute to product design and branding—achieve higher engagement and loyalty. This aligns with the proposed Pattern-Changing Business Model (PCBM) for Bangladesh’s handloom industry, where digital storytelling and co-creation (e.g., crowdsourced designs via Instagram or Facebook) can empower weavers, enhance cultural preservation, and expand market reach.

Social Commerce and SME Growth in Emerging Markets

Kim & Ko (2012) investigate how luxury brands use social media marketing to drive perceived value and purchase intent. Their findings reveal that storytelling, influencer collaborations, and aesthetic presentation significantly enhance brand equity. For Bangladesh’s handloom sector—a heritage-based industry—this suggests that PCBM should incorporate visually driven platforms (e.g., Pinterest, Instagram) to showcase craftsmanship, attract ethical consumers, and justify premium pricing, thus shifting from a subsistence model to a scalable digital enterprise.

Digital Platforms and Disruptive Business Models

Digital transformation is a global driver of enterprise innovation, but its application in the handloom and craft sectors remains uneven. While digital tools offer new channels for market access, branding, and payment, artisans often lack the skills, infrastructure, and confidence to use them effectively (UNCTAD, 2020). In Bangladesh, as in much of South Asia, smartphone ownership has risen sharply, and mobile money (e.g., bKash, Rocket, Nagad) is widely used. Yet digital adoption in business contexts—such as Facebook shops, WhatsApp orders, or online storytelling—remains limited among handloom SMEs (GSMA, 2021). This digital lag creates a divide between potential and practice.

Teece (2018) examines how digital platforms disrupt traditional industries by enabling asset-light, scalable operations. His framework underscores the need for dynamic capabilities—adaptive strategies that allow firms to pivot in response to digital trends. Applying this to the handloom sector, PCBM must integrate e-commerce (e.g., Shopify, Etsy), digital payments, and AI-driven

demand forecasting to reduce inefficiencies in supply chains and inventory management, addressing structural challenges identified in the present study.

Platform-Based Market Entry

Platforms like Etsy, GoCoop, and Shopify have enabled artisans globally to bypass intermediaries and access niche and ethical consumer markets. However, platform success depends on digital literacy, visual marketing (photography, video), trust mechanisms (reviews, return policies), and logistics and fulfilment systems. However, these conditions are often unmet in rural Bangladesh, where middlemen provide logistical convenience, though at the cost of artisan agency and profit. In many cases, artisans use digital intermediaries—younger family members, NGO volunteers, or local freelancers—to upload content or manage Facebook pages. While helpful, this indirect usage often prevents full digital empowerment.

Common barriers to digital transformation in the artisan sector includes fear of fraud or design theft online, lack of digital content creation skills, no control over packaging, delivery, or refunds, and skepticism toward social media marketing as an “urban” practice. Despite these concerns, studies show that where minimal support is provided, such as phone-based order tracking or template-driven Facebook store design, artisans rapidly adopt digital tools (Basu, 2021). This indicates the need for low-cost, language-localized, mobile-first business models that reduce friction and align with artisan behaviors.

2.2.3 Sustainability and Social Media in the Digital Economy

Sustainability and circular economy

The handloom sector offers built-in sustainability advantages especially in environmental and social dimensions. It relies on manual production, uses biodegradable materials, and often features small-batch, low-waste processes (Fletcher, 2008). These characteristics align with the global movement toward sustainable and slow fashion. However, sustainability must go beyond materials—it includes social equity, livelihood security, and cultural continuity (Joy et al., 2012). In artisan economies, this means preserving traditional designs, ensuring fair wages, and maintaining community governance over intellectual property.

In emerging research on the circular economy, artisans are seen as potential leaders in regenerative production, repairing, reusing, and recycling materials in low-carbon, high-value processes (Murray et al., 2017). For instance, leftover yarns can be repurposed into accessories, packaging can be made from discarded fabric and repairs and customizations can extend product life. Such strategies not only align with sustainability goals but also open new value propositions for conscious consumers.

Grewal et al. (2020) analyze how social media amplifies sustainable business practices by fostering transparency and consumer activism. Their research shows that brands promoting ethical sourcing and artisan empowerment gain competitive advantage. This directly connects to PCBM's goal of embedding sustainability and digital engagement—using platforms like YouTube to document eco-friendly weaving processes or LinkedIn to attract impact investors—thus repositioning handloom not just as a product, but as a socially responsible movement.

Rise of Ethical Consumers

Global consumers increasingly demand transparency in product origins, production methods, and social impact. Labels like “handmade,” “ethically produced,” and “fair trade” influence purchasing behavior, particularly in Europe and North America (Niinimäki & Hassi, 2011). Customers are not only buying a product but a story—a connection to the maker, a commitment to values, and an experience of authenticity. This aligns with the idea of provenance branding, where the origin of the item enhances its value (Thorsen & Andrew, 2019).

2.2.4 Value Co-Creation and Customer Engagement in Artisan Economies

From Passive Buyer to Active Collaborator

The notion of value co-creation, championed by Prahalad, C. K., & Ramaswamy (2004) holds that value is no longer delivered to consumers but created with them. In artisan economies, co-creation takes the form of customization, collaborative design, pre-orders with feedback, and story-driven marketing. This redefines the consumer–producer relationship from a linear transaction to a participatory exchange. Several models below demonstrate how co-creation can transform handloom businesses

Table 1: Co-creation model in handloom business

Initiative	Country	Customer Involvement	Unique Offering
RangSutra	India	Customers can choose base fabrics and request modifications	Customization of fabrics
KORA	Nepal	Offers "meet the weaver" experiences and lets buyers influence design motifs	Direct interaction with artisans; co-creation of designs
Jamdani Archive Projects	Bangladesh	Involves buyers in digitally preserving ancestral motifs	Cultural preservation through digital documentation

These examples show co-creation enhances emotional engagement, allows premium pricing and improve product-market fit.

Building Relational Value

Handloom businesses often lack repeat buyers because the transaction ends at purchase. However, co-creation encourages ongoing feedback loops, community loyalty and user-generated content (UGC), such as photos and testimonials. In Bangladesh, early experiments with co-creation through Facebook groups and WhatsApp pre-order models show promise. Weavers report higher margins and satisfaction when dealing directly with customers, even if mediated through a digital broker. The future business model must therefore integrate consumer-facing mechanisms that foster interaction, learning, and mutual value creation.

2.2.5 Connection to the Present Study on PCBM in Bangladesh's Handloom Sector

The above summaries of literature collectively validate that social media marketing and digital economy dynamics are fundamental in transforming traditional industries. For Bangladesh's handloom sector, PCBM must synthesize these insights by: Digitizing artisan-consumer interactions (Kaplan & Haenlein, 2010) to reduce dependency on middlemen. Leveraging co-creation (Kietzmann et al., 2011) to involve global audiences in design innovation. Adopting visual storytelling (Kim & Ko, 2012) to enhance brand equity in niche markets. Integrating e-commerce platforms (Teece, 2018) to streamline operations. Promoting sustainability narratives (Grewal et al., 2020) to attract ethical consumers. By embedding these

factors, PCBM can shift the handloom sector from a struggling cottage industry to a digitally empowered, sustainable ecosystem.

2.3 Theoretical Frameworks Guiding the Study

To develop a context-specific business model framework for the traditional handloom sector in Bangladesh, this study is anchored in four key theoretical approaches:

2.3.1 Business Model Canvas (BMC)

The business model term has advanced from a simplistic understanding of revenue mechanisms to an inclusive framework that captures how an organization creates, delivers, and captures value. Osterwalder and Pigneur (2010) proposed the BMC by introducing a modular structure for picturing how a business creates, delivers, and captures value. It has nine blocks that deeply connect with each other shown in the figures.

1. Value Propositions: The core offerings that create value for customers
2. Customer Segments: The specific groups of customers and the business targets.
3. Channels: The communication, sales, and distribution channels used to reach customers.
4. Customer Relationships: The types of relationships established and maintained with customer segments.
5. Revenue Streams: The ways in which the business generates income.
6. Key Resources: The essential assets, whether human, physical, financial, or intellectual, required to operate.
7. Key Activities: The main operations and actions necessary to deliver the value proposition.
8. Key Partnerships: Strategic collaborations and supplier relationships that support the business.
9. Cost Structure: The major cost elements incurred in operating the business.

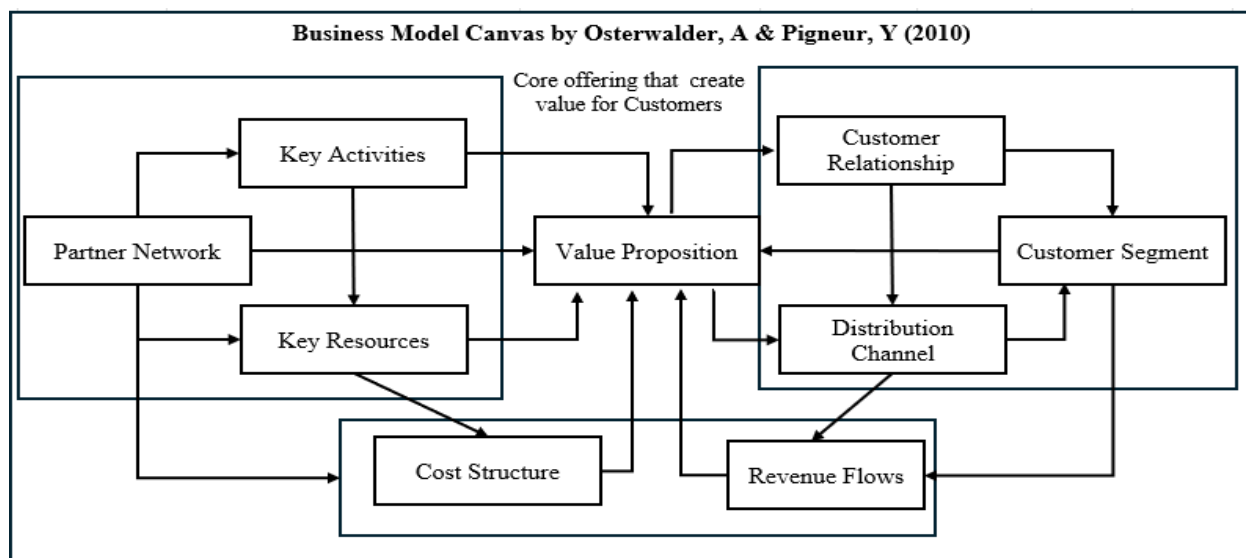


Figure 2 The Business Model Canvas by Osterwalder et al. (2010) edited by author

While widely used in corporate and tech environments, the BMC requires adaptation for the informal, craft-based setting of rural Bangladesh. For instance, “Key Resources” in this context include cultural capital and inherited design knowledge, while “Customer Relationships” may be mediated through digital tools or community-based marketing.

The BMC has become a foundational tool in both academia and practice for articulating and innovating business models. This study uses the BMC as a initial map but modifies it to reflect cultural embeddedness, artisanal agency, and non-linear value flows. While the BMC proposals a versatile template, traditional applications often emphasize economic efficiency and profitability, frequently overlooking socio-cultural dimensions critical to informal sectors. Most frameworks were conceived in the context of industrial or digital enterprises in advanced economies, thus inadequately addressing the realities of traditional artisans who operate in community-oriented, culturally dense environments.

Business Model Innovation vs. Pattern-Changing

BMI has gained traction to sustain competitive advantage among dynamic markets. Chesbrough (2010) argues that firms must frequently reassess and redesign their business models to exploit new technological and market opportunities. Business model innovation typically involves modifying one or more components of the existing model to capture additional value.

However, for Bangladeshi traditional handloom industries which exist within informal economies and depend on centuries-old practices, simply tweaking components does not suffice. These industries are governed by what can be called a "dominant pattern" a dominant logic that determines how artisans produce, market, and sell their products. This pattern is often characterized by dependence on multiple intermediaries, low bargaining power, limited market visibility, and an almost exclusive focus on local or traditional sales channels. The study uses the "pattern-changing" business model concept thus moves beyond typical innovation by fundamentally challenging and reshaping this entrenched logic. It seeks to introduce a hybrid system that integrates digital engagement, consumer co-creation, and cultural storytelling, thereby redefining how value is created and perceived.

2.3.2 Resource-Based View (RBV)

From the RBV lens, a firm creates resource position and utilization as the driver to pursue sustainable growth of business. Wernerfelt (1984) devised the RBV idea to explore a firm's performance concerning the resource position barriers and growth-share matrices. A firm's resources are categorized as tangible and intangible assets that should be valuable and costly to copy the resources and capabilities of competitors. Any size of firm largely depends on capital, expert workforce, machinery as tangible resources to perform economic activities on the one hand. Again, it's goodwill, technology choice, partners' network and trade contracts are the intangible resources to leverage the consistent growth on the other. Barney (1996) pointed out four elements: valuable, rareness, inimitability, and Non-substitutable (VRIN criteria) of the resources that help drive competitive strategy. Firms can achieve a competitive position over rivals by increasing valuable and alternative resources that competitors cannot easily reach and reproducibly (Wernerfelt, 1984).

From RBV lens, the handloom enterprises' resources like ancestral design motifs, community trust, and reputation for craftsmanship fulfill VRIN characteristics. These intangible assets are often unrecognized in formal business analysis those are central to both branding and resilience. However, this study applies RBV to argue that preserving and leveraging traditional knowledge is not nostalgic but strategically essential.

2.3.3 Social Commerce and Direct-to-Consumer Branding

The beginning of social media has given rise to social commerce—a phenomenon where social interactions and user-generated content directly influence buying and selling behaviors. Kaplan and Haenlein (2010) describe social commerce as an evolution of e-commerce that leverages social media platforms to facilitate transactions, reviews, and peer endorsements. This model inherently promotes a more conversational and participatory form of commerce.

Zhang, M., Guo, L., Hu, M., & Liu, (2021) expand on this by discussing the direct-to-consumer (D2C) branding approach, where producers bypass traditional distribution chains and connect directly with end-users via digital platforms. This approach not only enhances profit margins by reducing intermediary costs but also enables producers to control brand narratives and build personalized customer relationships. In the context of traditional industries, D2C strategies empower artisans to communicate the unique heritage, craftsmanship, and cultural stories of their products, thus differentiating themselves in competitive markets.

Relevance to Handloom SMEs

For handloom SMEs in Bangladesh, social commerce and D2C branding offer transformative potential. Historically, handloom artisans have relied on layers of wholesalers and middlemen who capture a disproportionate share of the final product's value. This structure limits artisans' income and disconnects them from the end consumer, who often remains unaware of the cultural significance and painstaking craftsmanship embedded in the product.

By adopting social commerce models, artisans can harness platforms such as Facebook Marketplace and Instagram Shops to showcase their work, narrate its cultural backstory, and interact with consumers directly. This strategy not only improves margins but also forges emotional connections that can translate into brand loyalty. Such approaches align with the objectives of a pattern-changing business model, which aims to disrupt existing patterns of dependency and anonymity in favor of empowerment and visibility.

2.3.4 Hybrid Innovation and Cultural Capital

Handloom SMEs are hybrid organizations: they pursue economic goals (income generation), social outcomes (livelihood security), and cultural preservation. The theory of hybrid organizing (Battilana, J., & Dorado (2010) explains how such organizations balance multiple institutional logics. This framework helps interpret how handloom businesses navigate trade-offs between speed and authenticity, make strategic choices between scale and skill retention and integrate commercial and cultural value. The study builds on this to suggest a hybrid business model that harmonizes artisan identity with innovation.

2.3.5 Digital Storytelling and Co-Creation

Value Co-Creation and Participatory Business Logic

The concept of co-creation was introduced by Prahalad, C. K., & Ramaswamy (2004) wherein value is jointly created by firms and consumers. Unlike traditional models where firms design products in isolation, co-creation emphasizes consumer involvement in shaping offerings, experiences, and brand meanings. This participatory process enables more personalized and contextually relevant products, enhances consumer satisfaction, and fosters deeper brand loyalty. Co-creation includes customization to encompass collaborative ideation, problem-solving, and community-building. It shifts consumers from passive recipients to active partners, fundamentally altering the dynamic of value creation.

Co-creation theory underpins the participatory elements of the proposed framework (Prahalad, C. K., & Ramaswamy 2004). Customers are no longer passive recipients but collaborators in design, storytelling, and branding. This is especially relevant custom weaving models, pre-order and crowdfunding mechanisms, community branding and narrative building. By incorporating co-creation mechanisms, the business model becomes more flexible, relational, and resilient to market shifts.

Digital Storytelling as a Co-Creation Tool

Nowadays, digital storytelling serves as a powerful mechanism to implement co-creation. Product services providers can invite consumers into their cultural universe, exposing them to the stories, people, and processes behind each product through narratives shared on social platforms or

dedicated websites. Consumers, in turn, engage by sharing, commenting, and even contributing their interpretations and preferences, co-creating the brand's evolving story.

Digital storytelling (DST) has emerged as a powerful co-creation tool, enabling participatory engagement between brands, consumers, and communities. One of the most cited works in this field is Lambert (2013), who defines DST as a collaborative process where individuals craft narratives using multimedia elements, fostering emotional connections and shared meaning. His research highlights how digital storytelling democratizes content creation, allowing diverse voices to contribute to brand narratives, thus enhancing consumer engagement and loyalty. This aligns with the broader shift toward participatory culture in marketing (Jenkins, 2006), where co-creation transforms passive audiences into active contributors.

Further expanding on DST's role in co-creation, Burgess (2006) examines how user-generated storytelling on platforms like YouTube facilitates brand-consumer collaboration. His study emphasizes that digital storytelling is not just a marketing tool but a cultural practice that strengthens community bonds and fosters trust. Similarly, Pine & Gilmore (2011) argue that DST enhances experiential value by allowing consumers to embed personal stories into brand ecosystems, creating deeper emotional resonance. Their work suggests that businesses leveraging DST as a co-creation mechanism can achieve higher levels of customer involvement and brand authenticity.

A recent study, by Herskovitz & Crystal (2010), explores DST's impact on organizational storytelling, describing how links the gaps between corporations and stakeholders. The study identified that co-creative storytelling fosters transparency and inclusiveness, particularly in CSR initiatives. Additionally, Prahalad & Ramaswamy (2004) link DST to value co-creation, showing that interactive narratives enable real-time feedback loops, improving product innovation and customer satisfaction. Together, these studies underscore DST's transformative potential in co-creation, offering businesses a dynamic tool for engagement, innovation, and community-building.

In the Bangladeshi handloom context, digital storytelling can forefront the painstaking artistry, traditional techniques, and socio-cultural settings from which these products emerge. This not only educates consumers but also encourages them to see their purchases as acts of cultural

preservation. Thus, digital storytelling acts both as a marketing tool and a participatory platform that aligns perfectly with the co-creation dimension of the proposed business model.

2.3.6 Constructivist Learning for Artisan Adoption

Recent literature highlights how *Constructivist Learning Theory*—rooted in Piaget (1973)’s idea that knowledge is built through experience—can effectively support artisans in adopting new business models. For rural weavers with limited formal education, learning must be participatory, experiential, and tied to existing cultural practices (Vygotsky, 1978; Bruner, 1996). Studies show that artisans absorb digital tools or marketing strategies faster when training aligns with their daily workflows, such as likening social media posting to traditional storytelling (Hussain et al., 2022). This approach bridges the gap between unfamiliar technologies and deeply ingrained craft traditions.

A key insight from recent research is that *learning-by-doing* is far more effective than abstract instruction. For example, a 2023 study in India’s handloom clusters found that weavers who participated in live demonstrations of e-commerce platforms retained 60% more operational knowledge than those who received manuals (Patel & Rao, 2023). Similarly, workshops where artisans co-designed digital content (e.g., Instagram posts featuring their weaving process) led to higher engagement and confidence (Debnath et al., 2021). These findings underscore that constructivist methods—such as peer learning and hands-on experimentation—are critical for adoption.

However, challenges persist. Many training programs fail because they overlook socio-cultural context. A 2022 study in Bangladesh revealed that female weavers often resisted digital tools when training was conducted in formal settings, as they felt disconnected from their communal, home-based work environments (Akter & Islam, 2022). Successful interventions, like those in Ghana’s kente cloth industry, instead used local "master weavers" as trainers and framed digital skills as extensions of traditional apprenticeship models (Owusu-Ansah, 2021). This cultural sensitivity fosters trust and reduces resistance to change.

Ultimately, constructivist learning empowers artisans to own their transformation. By grounding new skills in familiar practices—such as comparing online customer interactions to bargaining in

local markets, training becomes intuitive (Mehrotra, 2023). NGOs like Digital Weave Bangladesh have applied this by integrating mobile payment tutorials into cooperative meetings, resulting in a 40% increase in direct sales (Karim et al., 2023). Such approaches prove that when learning is collaborative, culturally resonant, and incremental, artisans don't just adopt innovations, they adapt and improve them.

2.4 Research Gap and Justification

The review of literature and theory reveals multiple underexplored areas that this study seeks to address.

Limited Application of Business Model Theory in Artisan Economies

Although business model literature has developed in tech, manufacturing, and corporate contexts (Teece, 2010; Zott, C., & Amit, 2010), its application in cultural and craft-based economies is still emergent. Very few studies have adapted these frameworks to understand the business behavior of handloom SMEs. Moreover, existing applications of the Business Model Canvas often fail to account for informality, kinship-based production, and non-monetized value flows common in rural artisan sectors.

Inadequate Integration of Digital and Cultural Logics

Although the literature on digital transformation acknowledges the difficulties in promoting inclusion in rural areas (UNCTAD, 2020; GSMA, 2021), little is known about how digital tools might facilitate culturally grounded business practices like co-design, storytelling, or ritual-based production cycles. Likewise, most of the research separates digital enablement from business model logic, viewing platforms as marketing instruments instead of structural facilitators of new revenue streams and consumer interaction tactics.

Disconnection Between Policy and Practice

Nevertheless, official intentions to bolster the handloom sector, empirical data indicate that most interventions are misaligned with the actual experiences of weavers. Training programs are inadequately tailored, funding mechanisms are challenging to obtain, and initiatives for digital

literacy lack consistency (Rahman, 2013). There is an absence of models that correlate institutional support with entrepreneurial activity, particularly in the hybrid domain between economic necessity and cultural tradition.

Lack of Context-Specific, Field-Based Frameworks

Most existing models are either conceptual or derived from non-comparable contexts. There is a shortage of field-grounded business model frameworks that are co-produced with artisans, tested in specific clusters, and responsive to the social, digital, and economic complexity of the handloom sector. This study addresses that gap by producing a PCBM framework based on data collected from 60 in-depth interviews, two multi-stakeholder FGDs, and respondent business data from three weaving clusters.

2.5 Conceptual Framework: Towards a Pattern-Changing Business Model

Drawing together these diverse strands of academic studies and theories lighten the basis for a pattern-changing business model. From the structural rigor of BMC (Alexander Osterwalder & Yves Pigneur, 2010; Osterwalder et al., 2005) to the adaptive insights into Chesbrough (2010)'s business model innovation, the study grounds itself in well-established business literature. Yet, by weaving in Kaplan and Haenlein's social commerce, Zhang et al.'s D2C branding, Prahalad and Ramaswamy's co-creation, Boons and Lüdeke-Freund & Dembek, (2017)'s cultural sustainability, and Piaget's constructivist learning, the framework moves decisively beyond conventional models

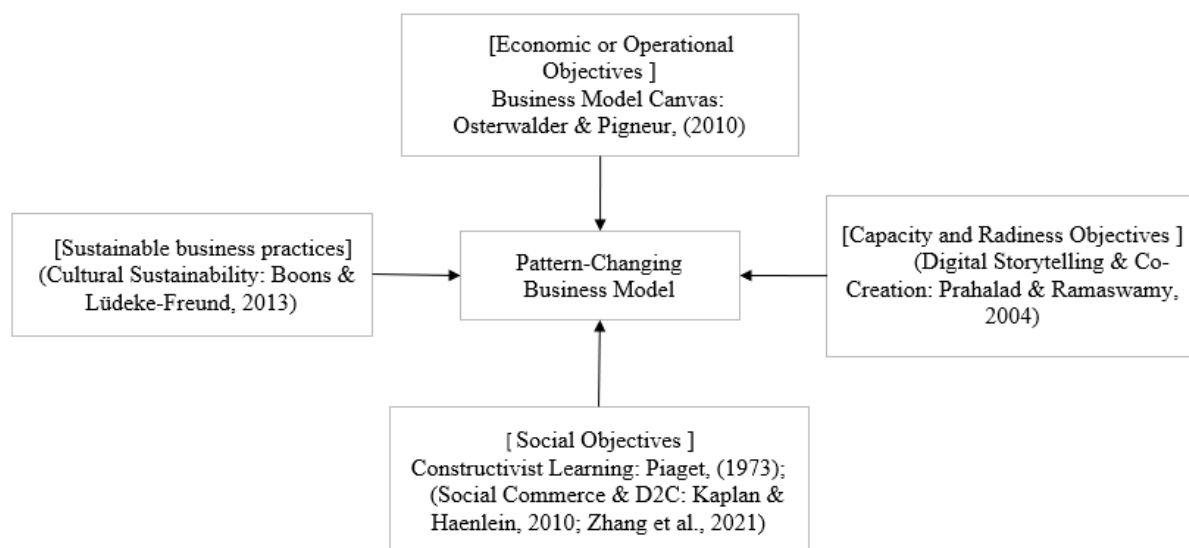


Figure 3 Conceptual diagram of PCBM

This integrated approach enables the business model to simultaneously address economic, social, and cultural objectives. It reimagines customer relationships as participatory partnerships, marketing channels as platforms for storytelling and education, and artisan communities as co-owners of brand narratives. By doing so, it fundamentally alters the dominant pattern governing the handloom sector, aligning commercial viability with cultural preservation and community empowerment.

The conceptual framework combines the above theories into a field-based model that guides both the data collection and the design of the final business model framework. At its heart, the model positions PCBM, interconnected nodes by business model canvas, social commerce and direct-to-consumer branding, digital Storytelling & Co-Creation, constructive learning, and cultural sustainability. And the arrows or connecting lines showing how these integrate to achieve:

2.6 Chapter Summary

This chapter examined interdisciplinary literature pertinent to the study, highlighting conceptual deficiencies and practical limitations in current methodologies for business model development within the handloom sector. It underscored the necessity of modifying traditional business theories, such as the Business Model Canvas, Resource-Based View, and co-creation theory, to align with the realities of informal cultural enterprises.

The chapter also validated the necessity for a hybrid, transformative business model framework that amalgamates digital, sustainable, and relational components while preserving cultural authenticity. A conceptual framework was introduced to direct the empirical phases of the investigation and the formulation of the final model. The subsequent chapter delineates the qualitative case study approach, explicating the processes of data collection, analysis, and interpretation to construct a grounded, theory-informed framework.

Chapter 3: Research Methodology

This chapter explains the research method and data analyses approach to achieve the research objectives. Considering the socio-cultural roots of the handloom business and its operation within informal and community-based systems, a qualitative case study methodology (shown in figure 3.1) was determined to be the most suitable. This approach allowed for a detailed and meaningful understanding of how small and medium-sized handloom businesses create value and how their business models could be improved or transformed.

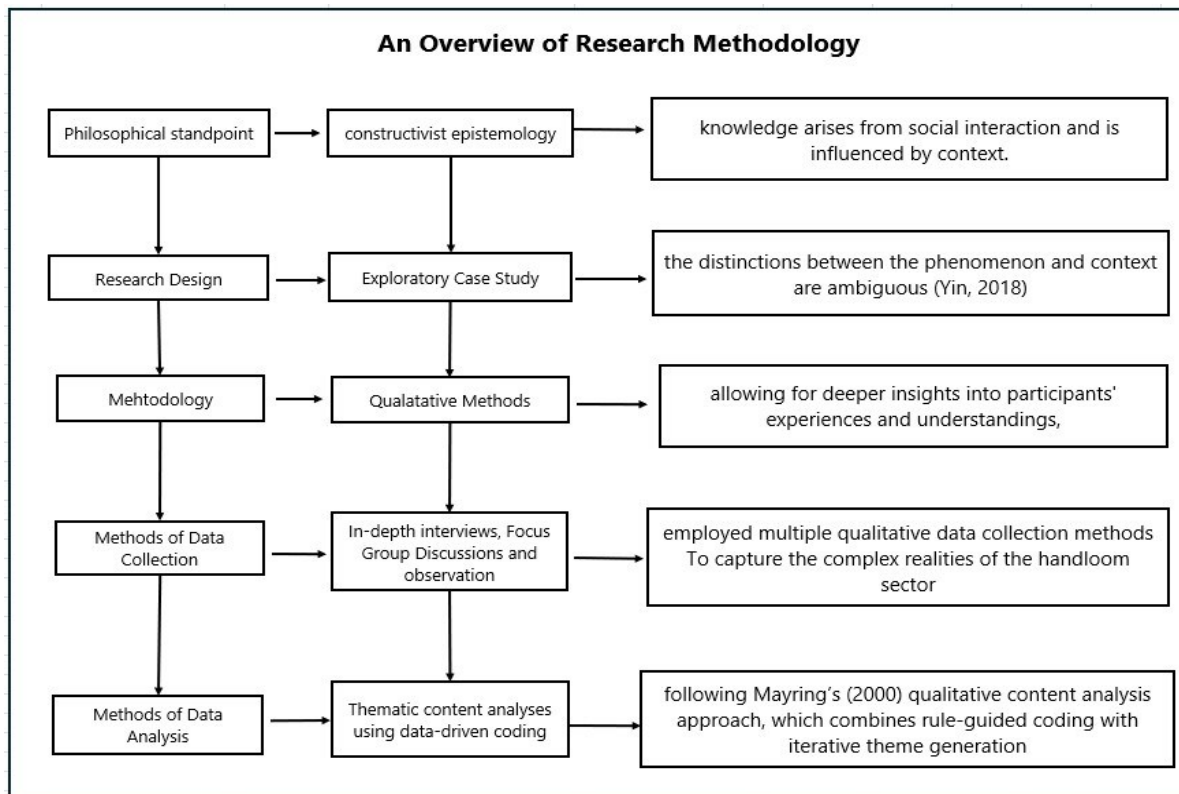


Figure 4 : Overview of Research Methodology

The chapter begins by explaining the research philosophy that guided the study. It then describes the overall research design, including why certain case study locations and participants were selected. The tools used to collect data such as interviews, observations, and document analysis are also explained. This is followed by a discussion of how the data was analyzed to identify

patterns and insights. In addition, the chapter covers important ethical considerations, steps taken to ensure the trustworthiness of the research, and methodological limitations are also addressed.

3.1 Philosophical Orientation and Research Paradigm

This study is grounded in a constructivist epistemology and follows a qualitative interpretivist research paradigm. Constructivism assumes that knowledge is socially created, shaped by the context in which it arises, and co-created through interactions between the researcher and participants (Lincoln, Y. S., & Guba, 1985). It rejects the idea of absolute truth and focuses on the subjective experiences and lived experiences of individuals (Denzin, Norman K Lincoln, 2017). The interpretivist paradigm suits well with the research objectives, as it seeks to understand how handloom weavers' communities in Bangladesh perceive, experience, and practice their business activities within specific cultural and institutional environments. Rather than testing predetermined hypotheses or seeking to produce statistically generalizable results, this study aims to develop deep, context-specific insights. These insights are essential for building a flexible and responsive business model framework that reflects the economic needs, cultural identity, personal agency of artisans, and their community ties. This philosophical approach supports the study's broader objective of developing a transformative business model that reflects economic needs, cultural identity, artisan autonomy, and community connections.

3.2 Research Design and Case Study Strategy

3.2.1 Rationale for Case Study Design

As mentioned above a case study was chosen as the principal research method. It enables the researcher to investigate contemporary phenomena within authentic situations, particularly when the distinctions between the phenomenon and context are ambiguous (Woodside, 2010; Yin, 2017). The study unit encompasses not merely individual weavers or enterprises, but the business conduct of handloom SMEs (such as retailers and online sellers) within designated geographical clusters. Employing a multiple-case research method on three culturally unique handloom clusters: Jamdani (Narayanganj), Banarasi (Mirpur, Dhaka), and Tangail Tant (Tangail) are selected. Each cluster shows a defined case presenting internal diversity, encompassing master weavers, independent craftspeople, shops, policy stakeholders, and digital vendors. However, this design

enables cross-case comparisons to identify the common patterns of business practice, cluster-specific constraints and innovations and opportunities for generalizable business model components. The research is exploratory in explaining the landscape of business models within informal sectors, interpreting stakeholder narratives, and constructive in constructing a business model framework grounded in empirical facts. The focus is on profundity rather than expanse, significance over quantification, and metamorphosis instead of delineation.

3.2.2 Site and Cluster Selection

The decision to classify research sites under cluster labels is not arbitrary but methodologically grounded in historically sustained craft geographies and consumer recognition schemas. Usually, the Bangladesh's handloom sector spans over 400 production zones, yet most of the weaving activity is concentrated in a few key clusters. The clusters are selected based on a few criteria, including signature products, recognition, availability to access the sites, their national significance, stakeholders' reach, diversity in product type, and differing degrees of market access and digital exposure. These clusters are identified as Jamdani, Banarasi, and Tangail. Naming the clusters this way strengthens both internal analytical coherence and external market relevance.

The two clusters (Jamdani and Banarasi) represent the household-based production model and Tangail follows community-based production model. From yarn preparation to final product, almost all family members are engaged in every step with paid labor. Besides, the three clusters have different levels of digital adoption and smartphone penetration, market maturity and customer segmentation, Institutional engagement (NGO/government presence) and Cultural embeddedness and skill transmission. Together, they provide a robust empirical base for developing a modular, adaptable business model that can inform broader application across South Asia's heritage industries.

Table 2: significance of the research clusters

Cluster Name	Location	Signature Product	Production Model	Cultural Status
Jamdani	Rupganj, Narayanganj	Intricate sarees (UNESCO-recognized)	Household looms, master weaver-led	Intangible Cultural Heritage (UNESCO, 2013)
Banarasi	Mirpur, Dhaka	Silk-based brocade sarees	Migrant clusters, wholesale-retail link	Heritage-inspired, high-end but declining
Tangail Tant	Tangail district	Cotton daily wear, scarves	Family enterprises, women-led units	Regionally known, youth-influenced

3.2.3 Cluster Introduction

A. Jamdani- The Heritage Handloom of Bangladesh

Jamdani, known for its complicated motifs and luminous texture, is a signature handloom product of Bangladesh. Jamdani weaving, a highly appreciated textile method, showcases the jewel and master stroke of the Bengali weaver. The Bangladeshi Jamdani is internationally famous for its beautiful designs and its excellent muslin base fabric. The Dhaka (Dhamrai, Sonargaon) and Narayanganj regions primarily host handloom weaving. This centuries-old craft, recognized by UNESCO as an Intangible Cultural Heritage, is distinguished by its labor-intensive production process, where artisans manually interlace geometric or floral patterns into fine cotton or muslin fabric, creating the iconic Jamdani saree (Bhattacharya & Sen, 2018).

The production model remains predominantly household-based (Ahmed, S., & Nathan, 2014), with weavers working in small clusters under a decentralized system. The sector is often relying on middlemen for raw materials and market access (Ahmed, 2016). Despite its global praise, it faces challenges like low wages, lack of modernization, and competition from power looms, threatening its sustainability (Begum, 2017).



Figure 5: Yarn Preparations

Jamdani's customer segment spans elite Bangladeshi buyers, diaspora communities, and international luxury markets, with demand driven by cultural pride and ethical fashion trends (Chakraborty, 2021). The weavers, mostly from marginalized rural communities, endure precarious socio-economic conditions, with women constituting a significant but underpaid workforce (Rahman, 2013). While NGOs and government initiatives aim to revitalize Jamdani through design innovation and digital marketing, systemic issues like artisan exploitation and market fragmentation persist (Kumar, 2018). This case underscores the urgent need for a Pattern-Changing Business Model (PCBM) to preserve Jamdani's heritage while ensuring equitable growth for its artisans.

B. Mirpur Banarasi – A Transnational Handloom Legacy

Banarasi sarees are unequivocally the most favored sarees among fashion-conscious women in Bangladesh. The Banarasi saree, originating in Banaras, embodies a rich historical legacy. It has been deeply rooted in our Bengali culture for many years. The Mirpur Banarasi saree, a distinctive South Asian textile tradition, represents a unique cultural synthesis between Varanasi's classical weaving techniques and Bangladesh's Dhaka-centric handloom heritage (Ahmed, S., & Nathan, 2014); Kumar, 2018). Primarily produced in Mirpur (Dhaka) and adjacent clusters in Bangladesh, these sarees replicate the lavish gold-threaded brocades of traditional Banarasi designs while incorporating local motifs, creating a niche product for the Bengali wedding market (Begum, 2017). The production follows a decentralized, artisan-led model, where master weavers—often migrants from Varanasi or their descendants—supervise small workshops using a mix of

handlooms and semi-mechanized techniques (Islam, M. M., & Ahmed, 2019). However, the sector grapples with rising synthetic yarn costs, competition from Indian imports, and declining artisan interest among youth (Rahman, 2019).

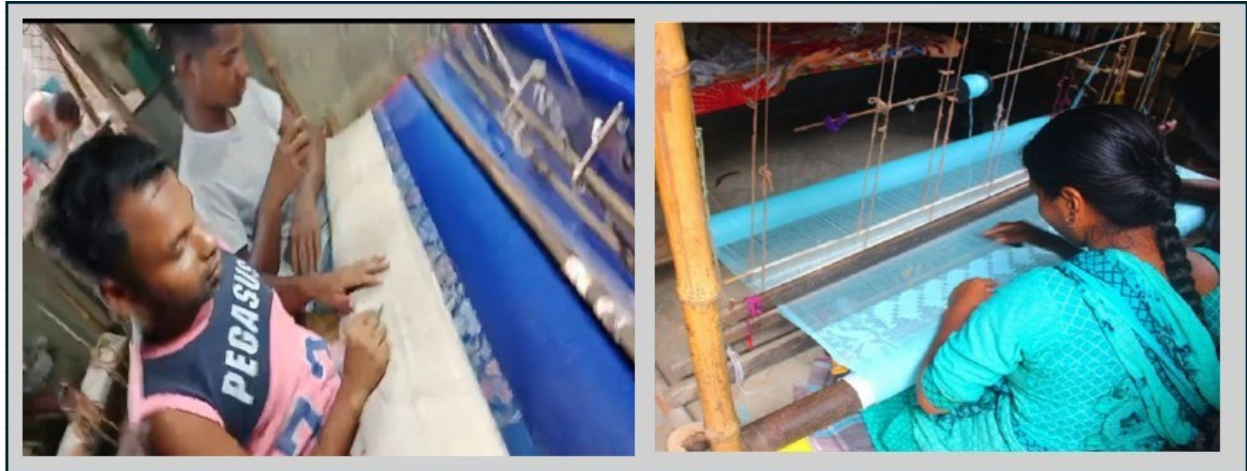


Figure 6: Handloom Sari weaving

Mirpur Banarasi Polli is a distinguished setting for saree fans, situated in the center of Dhaka, Bangladesh. These sarees outfit to upper-middle-class Bangladeshi brides, urban elites, and the diaspora, with their value rooted in cultural prestige and affordability compared to Indian Banarasi (Chakraborty, 2021). This vibrant market, renowned for its superb Banarasi sarees, showcases a display of color, tradition, and craftsmanship that enchants both locals and tourists.

The weavers, largely from marginalized Urdu-speaking (Bihari) and Bengali Muslim communities, face risky working conditions, earning barely 30–40% of the final retail price due to middlemen dominance (Das, 2020). While initiatives like government subsidies for silk imports and designer collaborations aim to revive the craft, challenges like lack of GI protection and power-loom replicas undermine its sustainability (Bhattacharya, 2010). This case underscores the need for a transnational craft revitalization framework that bridges Bangladesh's Mirpur Banarasi with its Varanasi roots, ensuring equitable growth for artisans while leveraging cross-border cultural capital.

C. Tangail Tant – The Heritage Cotton of Bangladesh

Tangail Tant, is also well-known for its breathable cotton fabric and distinctive uneven or striped patterns, originates from the Tangail district and surrounding areas of central Bangladesh (Islam, 2015). These handloom textiles, particularly the Tangail saree, are celebrated for their lightweight texture and vibrant borders, making them a staple in both everyday wear and cultural ceremonies (Bhattacharya, 2010). The weaving is mostly carried out in household units or small cooperatives, often supported by local NGOs to preserve traditional techniques (Ahmed, 2016). Despite its cultural significance, the sector faces challenges such as rising yarn costs, competition from mill-made fabrics, and lack of access to formal markets (Rahman, 2019).



Figure 7: The Physical Marketplace of Handloom products

According to sources in the two basic centers of the district controlled by the Weaver Board, there are roughly one hundred thousand weavers in the district who run 4,151 small looms. On the other hand, the workers of Tangail weaving industry are busy day and night producing sari. Sari buyers from all over the country used to gather at Kortia, Bajitpur and Pathrail in Tangail to buy sari.

Tangail Tant's customer base includes middle-class Bangladeshi women, urban professionals, and the diaspora, who value its comfort and cultural authenticity (Chakraborty, 2021). The weavers, primarily from rural Hindu and Muslim communities, endure low wages and precarious livelihoods, with women constituting a significant but underrecognized portion of the workforce (Begum, 2017). While initiatives like fair-trade certifications and e-commerce platforms aim to modernize the sector, systemic issues like artisan migration and generational disinterest threaten its sustainability (Kumar, 2018). This case highlights the urgent need for a sustainable business

model that integrates traditional craftsmanship with contemporary market demands to secure the future of Tangail Tant.



Figure 8: The image of three handloom Products

3.3 Participant Selection and Sampling

Given the qualitative orientation of the study, purposive and snowball sampling techniques were used to identify information-rich participants across the handloom clusters. Purposive sampling is considered as the main technique to select the three cluster and snow-ball sampling guided us to reach the participants who obtained enough knowledge regarding handloom weaving, marketplace, customer segment, supply chain, and digital tools. Mostly cited studies (Ahmed, S., & Nathan, 2014; Begum, 2017; Chakraborty, 2021; M. S. Islam, 2015) underscore that purposive sampling is optimal for targeting key actors (e.g., master weavers, policymakers), while snowball sampling unveils informal networks (e.g., subcontractors, home-based workers).

Islam (2015) reveals how purposive sampling captures expert perspectives, while snowballing reveals marginalized voices—critical for the present study’s focus on artisan empowerment. Ahmed (2014) highlights how snowball sampling is effective for studying informal supply chains,

a method applicable to exploring Bangladesh’s handloom ecosystem in the present research. Begum (2017) validates the need for multi-stakeholder sampling to diagnose systemic inefficiencies—a approach aligned with this study’s objective of proposing a holistic business model. Chakraborty (2021), illustrates how combining purposive (targeted cohorts) and snowball (hidden populations) methods can expose gendered barriers, informing the present study’s focus on inclusive business models.

For the proposed Pattern-Changing Business Model (PCBM), this dual approach will *identify structural gaps* through purposively sampled SMEs and institutions and *uncover grassroots innovations* via snowballed artisan communities, ensuring the framework is contextually grounded.

3.3.1 Stakeholder Groups

The research participants were selected from five core stakeholder categories based on their roles in ensuring triangulation, shown in table 3.

Table 3: The Representative of the Stakeholders Groups

Stakeholder Group	Roles Represented
Artisans	Independent weavers, family-based loom workers
SME Owners/Master Weavers	Workshop owners, cluster leaders
Retailers and Digital Sellers	Facebook shop owners, boutique operators
Experts and Policymakers	Bangladesh Handloom Board, NGOs, trainers
Handloom Consumers	Urban buyers, digital customers

3.3.2 Sampling and Participant Distribution by Cluster

In Bangladesh, the handloom sector is scattered in many regions. According to BHB 2022-2023 (BHB, 2023) , handloom production is centered in almost 400 regions under 35 districts. Among them, Bandarban, Sirajgonj, Gaibandha, Kustia, Tangail, Dhaka, Narayangonj and Sylhet are most handloom dominant regions. The study selected three handloom regions: Dhaka, Narayangonj, and Tangail based on the three popular handloom types i.e. Jamdani, Banarasi, and Tangail tant. After that, the sample respondents from these clusters are selected using snowball sampling (volunteer sampling). This sampling technique is followed as researchers requested voluntary participation from the respondents of each cluster (M. Saunders et al., 2016).

Table 4: Cluster and Non-cluster wise Sample Size

Cluster Name	Cluster Total Respondent (N=60)	Category of Respondents
Jamdani	17	5 weavers, 4 Artisans, 2 wholesalers, 2 retailers, 4 customers
Banarasi	14	7 weavers & Artisans, 4 wholesalers /retailer, 3 customers
Tangail Tant	16	9 weavers & Artisans, 1 wholesaler, 1 retailer and 1 online seller, 4 customers
Non-cluster	13	9 experts and 4 digital entrepreneurs

Besides that, the study randomly selected online sellers, expert groups and direct users (consumers) as research respondents and labelled them as cross-clusters. Participants were selected based on some criteria such as, a minimum of 5 years of involvement in the handloom sector, willingness to share business details and personal narratives, representation across gender, age, and production scales and relevance to the research objectives (e.g., digital experience, market exposure). Artisans and owners were identified with the help of local NGOs and community leaders. Experts were selected via institutional contacts, and customers were approached through referral and snowball techniques.

3.4 Data Collection Methods

This study employed multiple qualitative data collection methods for capturing the complex realities of handloom SMEs and their operational ecosystems. These included in-depth interviews

with 60 individuals, two multi-stakeholder Focus Group Discussions (FGDs), contextual field observation and photography, business and digital engagement data forms. All interviews and FGDs were conducted in Bengali, transcribed verbatim, and translated into English for analysis. Ethical protocols were maintained throughout data collection.

3.4.1 In-depth Interviews

Interviews followed a semi-structured guide. In-depth interviews formed the core data source. Each session lasted between 45 and 90 minutes. A semi-structured interview guide was used, allowing participants to elaborate freely while ensuring coverage of core themes. The contents of interview questions are explored based on thematic domains. The table below shows the contents of questions under several main themes.

Table 5: The Summary of Interview Contents

Thematic Domain	Key Questions Explored
Business practices	Production methods, cost structure, supply chain
Market access	Buyer types, selling channels, and pricing strategy
Digital engagement	Use of Facebook, mobile money, and online selling
Innovation and learning	Design experimentation, customer feedback
Institutional interaction	NGO/government programs, training received, access to finance
Vision and barriers	Growth plans, frustrations, and generational outlook

A flexible approach allowed for emergent themes and unexpected insights to shape the discussion.

3.4.2 Focus Group Discussions (FGDs)

The study aimed to facilitate cross-stakeholder conversation by organizing two online focus group discussions, thereby generating deeper insights through group interaction. This type of interview is used to define the topic clearly and precisely and the ideal size for group discussion is ranging from 4 to 12 participants (M. N. K. Saunders, 2012). FGD summaries were derived from audio recordings and moderator notes.

Online FGD 1: Conducted via Google Meet

Participants included 3 master weavers, 2 digital retailers, 2 experts from the Bangladesh Handloom Board, 1 NGO representative, and 1 handloom customer.

Online FGD 2: Conducted via Zoom

Participants Included 4 artisans, 2 SME owners, 1 trainer, 1 cultural expert, and 2 youth weavers. Each FGD was moderated using a structured prompt sheet with consent. Key discussions included trust and pricing in value chains, perceptions of online sales, institutional misalignment and cultural disengagement among youth. Summaries were created through thematic distillation of transcripts and moderator notes.

3.4.3 Business and Digital Usage Data

To enhance narratives, concise quantitative questions were asked after in-depth interviews to capture quantity of looms, personnel, and workspace dimensions, monthly output and sales and utilization of digital instruments (smartphone, social media, mobile transactions). This data was tabulated and visualized to provide empirical support for qualitative patterns (see Chapter 4).

3.5 Data Management and Analytical Approach

The data management process for analyzing the Pattern-Changing Business Model (PCBM) in Bangladesh's handloom sector follows a structured qualitative approach, integrating Mayring, (2000)'s qualitative content analysis (QCA) with multi-stage coding and visualization techniques. Besides, the AI tools (such as data analyst tool and Chat GPT version 4) were used only for translation assistance (from Bengali to English), organizing codes, and generating preliminary visualizations (e.g., code maps, code clouds). The AI tool helped us to reduce the redundancy of

data, link codes with categories and identify core themes. All AI outputs were cross-checked, refined, and validated by me to ensure reliability. This clarification emphasizes that AI was supportive, not substitutive, ensuring methodological rigor.

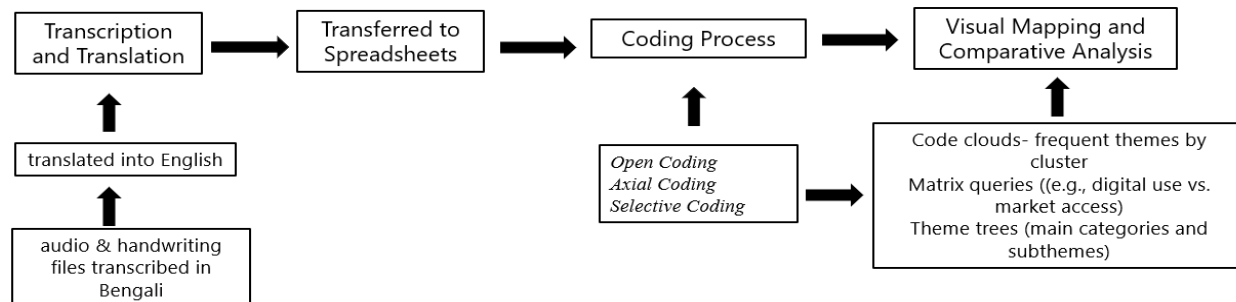


Figure 9: Steps of Data analysis

Raw data (interviews, focus groups) are collected in Bengali (audio/handwritten) and all audio recordings were transcribed manually in Bengali, and checked for accuracy. Then transcripts are translated into English to ensure consistency in analysis. Here the researcher emphasized preserving local expressions, metaphors, and tonal nuances relevant to artisan identity. Before coding process, all interview data are arranged in tabular format using rows and columns to create codes and categories.

3.5.1 Manual Coding Process (Mayring's Content Analysis)

Open Coding: The very initial stage of coding is open code that identify the segmentation of data into meaning units (e.g., “Facebook fear,” “middleman control,” “design copying anxiety”)

Axial Coding: Clustering related codes under broader themes (e.g., “digital exclusion,” “pricing asymmetry”).

Selective Coding: Identifying core categories that align with research questions and business model components

The coding process followed three stages as shown in figure 7:

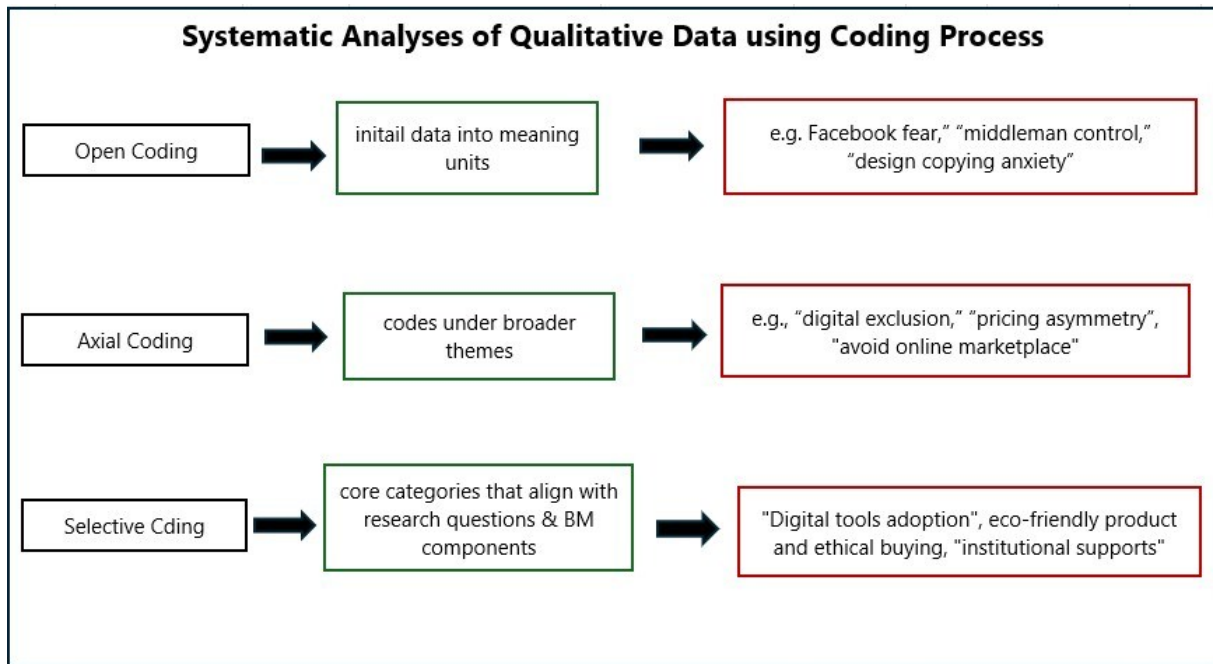


Figure 10: Systematic Analysis of Qualitative Data

3.5.2 Use of AI

Tools (ChatGPT)

To support efficiency and visualization, I incorporated AI tools in three limited and transparent ways:

1. **Translation Support:** Bengali interview transcripts were translated into English with AI assistance. Each translation was manually verified and corrected to preserve contextual meaning.
2. **Code Organization & Visualization:** After manual coding, AI tools were used to generate preliminary visualizations such as *code clouds*, *code maps*, and *matrices*. These visualizations facilitated pattern recognition but were always refined and validated manually.
3. **Draft Structuring:** AI supported the formatting of large volumes of qualitative data into thematic structures. However, interpretation and categorization were strictly researcher-driven.

To ensure methodological integrity, AI outputs were cross-checked with raw transcripts and field notes. Adjustments were made whenever AI-generated groups did not align with context-specific

insights. This ensured that the researcher retained full control and responsibility for the final coding, categorization, and interpretation. Thus, AI was a supportive tool, not a decisive analytical mechanism. The validity of findings rests on the researcher's systematic coding, triangulation of data sources, and iterative verification.

3.5.3 Visual Mapping and Comparative Analysis

Codes were visualized as code clouds (frequent themes by cluster), matrix queries (e.g., digital use vs. market access) and theme trees (main categories and subthemes). This facilitated cross-cluster comparisons, stakeholder-specific contrasts and integration of narrative and numeric data.

3.5.4 Triangulation

Data triangulation was ensured across stakeholders (owners, artisans, experts, customers), methods (interviews, FGDs, numeric forms) and three clusters (Jamdani, Banarasi, Tangail). Thematic saturation was achieved when no new codes emerged after the 50th interview.

3.6 Trustworthiness and Research Ethics

3.6.1 Qualitative Research

In place of traditional quantitative validity, qualitative rigor was ensured using Lincoln and Guba's (Lincoln, Y. S., & Guba, 1985) four criteria: credibility, transferability, dependability, and confirmability. In terms of credibility issue, the researcher emphasized prolonged engagement with field sites (almost 3 months in different time frames), and peer debriefing with field assistants and translators, and a thorough checking by six-member team (RA's) to validate interpretations. Regarding thick description of context, respondents, and social norms, the study conducted a comparative analysis across three distinct clusters. Detailed documentation of coding decisions, use of audit trails such as field notes, code logs, researcher memos applied to analyze data. Finally, the study maintained reflexive journal recording positionality and bias, and external code review by an academic peer (PhD graduates of similar fields).

3.6.2 Ethical Safeguards

The study has addressed certain ethical concerns to protect participants and their commercial entities. The items include informed consent (verbal or thumbprint for those lacking literacy), redaction of names, locations, and identifying information, safeguarded storage of audio recordings and transcripts, participation is voluntary, and removal incurs no penalties. Particular attention was paid during interviews with women, youth, or at-risk artisans. Local research assistants were engaged to provide language and cultural accessibility.

3.7 Methodological Limitations

Despite careful design, several limitations are acknowledged such as *sampling Bias, translation loss, Contextual Generalizability and Technological Disparity*. First, snowball sampling may have resulted in an over-representation of respondents affiliated with NGOs. Second, Certain cultural subtleties may have been overlooked throughout the translation process, despite repeated verification. Third, the results are confined to three clusters and may not be applicable to other trades or nations. Finally, the accelerated digital transformation may surpass analyses conducted during field research. However, the depth of engagement, multi-stakeholder diversity, and triangulated tools mitigate many risks and enhance the reliability of insights.

3.8 Chapter Summary

This chapter delineated the study design employed to investigate and reconfigure business structures within Bangladesh's handloom sector. Data was obtained from 60 participants across three weaving clusters utilizing a qualitative case study technique and processed through thematic content analysis. The research emphasized ethical engagement, cross-method triangulation, and theoretical foundation to guarantee the reliability of results. The subsequent chapter delineates the data analysis, encompassing both qualitative themes and quantitative patterns derived from fieldwork, establishing the empirical basis for the suggested business model framework.

Chapter 4: Data Analysis

This chapter presents the qualitative analysis of empirical data collected from 60 in-depth interviews and two focus group discussions (FGDs) across three major handloom clusters in Bangladesh: Jamdani (Narayanganj), Banarasi (Mirpur, Dhaka), and Tangail Tant (Tangail). Using the 63-code thematic framework developed through Mayring’s qualitative content analysis (2002), the study uncovers the lived experiences of artisans, SME owners, digital sellers, policymakers, and customers. The goal of this chapter is to identify operational barriers, financial constraints, and emergent opportunities for BMI in the traditional handloom sector. Thematic findings are organized cluster-wise to capture contextual nuances, supported by quotes and summaries drawn directly from the interviews. Focus group insights are incorporated to triangulate and expand upon the individual narratives.

4.1 Industry Decline: Statistical Overview

National-level statistics confirm the declining trajectory of the handloom industry:

- **Operational looms:** Decreased from ~1.05 million in 2003 to **183,512 in 2022** (BHB, 2023).
- **Weaver households:** Declined from ~1.2 million to **312,216 households** in the same period (Rahman & Alam, 2019).
- **Employment:** The number of active weavers has reduced by more than 70% over two decades.
- **Income levels:** Average monthly earnings of weavers remain below BDT 6,000 (approx. USD 55), far less than the living wage in Bangladesh (Siddiquee & Hossain, 2018).

These statistics corroborate interview findings where participants repeatedly cited **low wages, lack of modernization, and generational exit** as critical challenges.

4.2 Overview of Analytical Method

The qualitative analysis followed a three-stage coding process:

1. *Open Coding*: Initial meaning units were identified using grounded theory principles. Common expressions such as “*beparider upor nirvor kora lage*” (we depend on traders) or “*digital bepar amra bujhi na*” (I don’t understand digital things) were coded under broader categories like financial fragility or digital exclusion.
2. *Axial Coding*: Similar codes were grouped into subthemes and categories to identify relational patterns, such as how the lack of financial independence reinforces market disconnection.
3. *Selective Coding*: The most representative and interconnected categories were distilled into six overarching themes—Financial fragility, technological backwardness, market disconnection, digital exclusion, institutional gaps, cultural erosion and aspirational Change.

These themes were cross-referenced using qualitative matrix queries, linked with stakeholder types, and examined across geographical clusters. FGD insights were used to validate recurring tensions or to reveal stakeholder divergence.

4.3 Cluster-Wise Thematic Analysis

The study finds almost all weavers reported between 10 and 35 years of experience and over 70% had no formal business training in the Jamdani cluster. On the other hand, most of the respondents in Banarasi were second- or third-generation weavers, with craft knowledge inherited through family lines. Except for two participants in Tangail, all were above the age of 40, and over half the respondents had completed secondary education. The average age of participants was above the age of 35, and except for one all other respondents had completed the bachelor’s degree.

4.3.1 Jamdani Cluster (Narayanganj)

The Jamdani weaving tradition is among the most prestigious in Bangladesh, recognized by UNESCO as an Intangible Cultural Heritage of Humanity, centered in Rupganj, Narayanganj. The cluster features a dense network of home-based looms, master weaver workshops, and trader-led microenterprises. Despite its cultural status, artisans in this cluster face complex challenges across financial, technological, and market dimensions (Ruma et al., 20.21). Digital exclusion is highest

among the three clusters. Dependence on middlemen limits weavers bargaining power. Survey results show 74% of Jamdani weavers earn below minimum living wages. Jamdani requires phased interventions beginning with digital literacy and market linkage creation.

a. Respondent Profile Summary

From this cluster, 17 respondents were interviewed:

1. 4 individual artisans (01_RJA, 03_RJA, 07_RJA, & 09_RJA)
2. 5 master weavers/owners (02_RJO, 04_RJO, 06_RJO, 08_RJO, & 10_RJO)
3. 2 wholesalers and two retailers (11_RJW, 12_RJW, 05_RJR & 13_RJR)
4. 1 digital retailer (46_DBEX), 1 policy expert and 4 customers (50_RCUJ, 51_RCUJ, 52_RCUJ, 53_RCUJ) in this cluster

Most weavers reported between 10 and 35 years of experience, and over 70% had no formal business training. None of the weavers had a registered trade license, and only 1 respondent had ever received a government loan.

b. Dominant Themes and Subthemes

1. Financial Fragility

The most frequently coded theme in the Jamdani cluster was dependency on advance payments from traders, categorized under “informal capital access” and “low pricing power.”

“The Mahajan gives us advance money. If we don’t take it, we can’t buy yarn. But then he sets the price, not us.” – 03_RJA

Multiple artisans shared experiences of being unable to break away from these debt cycles. Even when market demand increases (such as during Eid or wedding seasons), they cannot negotiate prices due to previous credit obligations.

2. Technological Backwardness

None of the interviewed weavers had access to semi-automated looms or design software. All designs were created manually using thick paper, or image card or oral instructions passed down through generations.

“My father taught me how to count threads. That is still how I make patterns. I have never seen a computer doing this work.” –07_RJA

This stagnation limits production efficiency, quality consistency, and design innovation.

3. Market Disconnection

A persistent theme was the lack of direct access to customers. All weavers and SME owners sold to a middleman who either collected the finished goods or arranged bulk orders.

“I don’t know who wears my saree. Sometimes I hear it’s sold in Dhaka for 5,000 takas, but I get only 1,200 takas.” – 02_RJO

This disconnection creates an emotional and economic distance between producer and consumer. There is no feedback loop, no opportunity for custom orders, and no scope for artisans to build brand recognition.

4. Digital Exclusion

Two respondents (08_RJO & 05_RJR) reported using Facebook to share pictures of sarees. The rest have no online selling experience. Most expressed fear of online fraud, embarrassment over poor photo quality, or confusion over logistics.

“We don’t know how to take photos or deal with delivery. If someone doesn’t pay, how do we catch them?” – 02_RJO

Even those interested in digital tools said they lacked training or trusted guidance.

5. Institutional Gaps

All 15 respondents had either never received government support or were unaware of any ongoing programs. Those who had heard of NGOs said the training was irrelevant or poorly timed.

“They came and gave us some ideas about machine weaving or install the semi-power looms. But we do not use machines, so it was not useful.” – 07_RJA

The disconnection between institutional offerings and field needs was reinforced in the FGD, where experts admitted that project durations and follow-up were limited.

6. Cultural Erosion and Aspirational Change

A worrying but consistent theme was the youth's disinterest in continuing the Jamdani tradition. Many respondents stated that their children had moved to Dhaka or taken up delivery jobs for ride-sharing apps.

“My son says, ‘Why should I sit all day and weave when I can earn faster by driving a bike in the city?’” –04_RJO

These indications a generational crisis in knowledge transfer, threatening the sustainability of this heritage craft.

c. Emerging Opportunities

Despite these constraints, some sparks of innovation emerged:

1. The only female artisan (08_RJA) had begun exploring direct sales through relatives in Dhaka.
2. One weaver (09_RJA) had a younger brother who occasionally uploaded saree images to Facebook, though with limited success.
3. All four SME owners expressed interest in learning digital skills if training and logistics could be handled in local dialects.

d. Visual Analysis: Jamdani Thematic Radar

The following diagram summarizes the thematic intensity based on the frequency of coded responses across six core areas. It illustrates how digital exclusion triggers institutional gaps and market disconnection, which in turn lead to technological backwardness and financial fragility, ultimately contributing to cultural erosion.

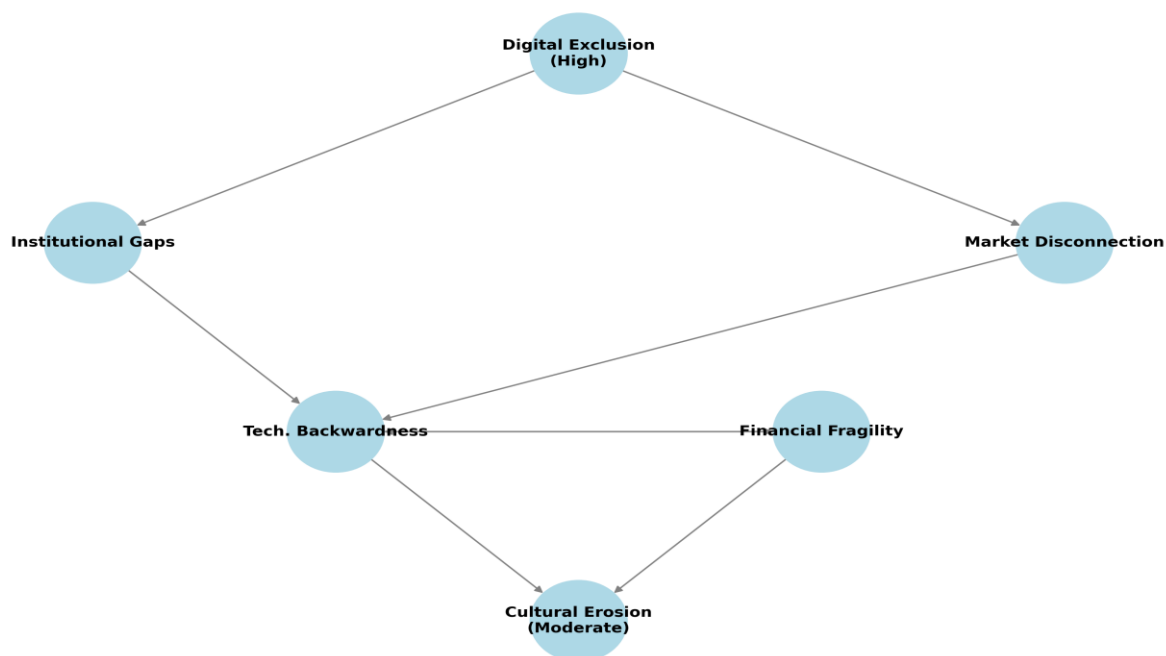


Figure 11: Jamdani Thematic Rader

4.2.2. Banarasi Cluster (Mirpur, Dhaka)

Primarily banarasi consists of migrant artisans with weaving traditions rooted in Benares, India. The Banarasi handloom cluster in Mirpur, Dhaka, exemplifies a distinctive convergence of traditional craftsmanship and urban vulnerability. In contrast to the rural regions of Tangail and Narayanganj, the region contains a high density of handloom homes functioning within crowded urban environments, frequently under informal tenancy agreements and lacking formal business registration. Despite its location in the capital, the cluster has a paradox of indistinctness: adjacent to urban markets while lacking institutional backing and direct consumer access. The interview data indicates the sector is profoundly devoted to tradition yet progressively detached from both policy acknowledgment and technology prospects. Business operations remain highly traditional with middlemen dominance. Only 18% surveyed Banarasi artisans reported using digital channels.

a. Respondent Profile Summary

From the Banarasi cluster, twelve participants, three customers and one online retailer from Dhaka were interviewed:

1. 6 individual weavers and artisans (14_RBA, 15_RBA, 24_BRA, 16_RBO, 17RBO, 23_RBO)
2. 5 retailing owners/wholesalers (18_RBW, 19_RBW & 20_RBW and 21_RBR, 22_RBR & 25_RBR)
3. 1 online boutique owner (47_DBEX) and three customers (54_RCUB, 55_RCUB & 56_RCUB)

Most respondents were second- or third-generation weavers, with craft knowledge inherited through family lines. Only one business owner (19_RBO) had any formal interaction with government programs, and none reported affiliation with any digital marketplace.

b. Dominant Themes and Subthemes

1. Financial Fragility and Urban Displacement

Although living in the city, most Banarasi weavers are financially marginalized, often paying high rents for both residence and workshop spaces. None had access to institutional credit, and most worked under verbal contracts with buyers, who dictated payment timelines and designs.

“We live in rented rooms and weave on rented looms. If we don’t deliver on time, we lose the space and the customer.” –14_RBA

There was a strong sense of precarity, worsened by COVID-19, which shut down operations for months without any relief.

2. Technological Backwardness and Lack of Infrastructure

Mirpur’s weavers still use manual throw-shuttle looms, many of which were second-hand purchases from India or adapted locally. Few had the space or ventilation needed for proper dyeing or finishing. Respondents reported frequent power cuts and poor lighting, impacting productivity.

“Our looms are old and tight. We don’t have space for anything new.” – 24_RBA

The urban setting ironically limits innovation due to space constraints and high utility costs.

3. Market Disconnection and Buyer Dependence

Most weavers produce sarees on commission from boutique owners or traders who visit the area weekly. There is no direct access to exhibitions, showrooms, or customers despite their proximity to Dhaka’s fashion hubs.

“They take our work and sell it in Gulshan. We don’t even know the name of the store.” – 16_RBO

Artisans feel structurally invisible and strategically powerless.

4. Digital Exclusion in an Urban Context

Despite being in a tech-saturated urban space, digital adoption among Banarasi weavers is shockingly low. Smartphones are used for communication, but not for business. Only one respondent (16_RBO) had a basic Facebook account, used mainly for browsing.

“Our work is not for Facebook. We don’t know how to take pictures that sell.” – 23_RBO

Digital mistrust was amplified by fear of fraud, low confidence in packaging/delivery, and the belief that “weaving is not for the internet.”

5. Institutional Gaps and Policy Disregard

Unlike Jamdani or Tangail, Banarasi weaving lacks any official heritage status or dedicated support from the Bangladesh Handloom Board. As a result, respondents reported feeling abandoned by the state and invisible in sectoral policy.

“We are not even registered. There is no Banarasi line in their list.” – 17_RBO

Attempts to access NGO support were also limited, with many respondents unaware of ongoing programs or afraid of eviction if their status became too visible.

6. Cultural Identity and Design Integrity

Despite structural hardships, artisans showed strong pride in their craft and spoke emotionally about maintaining Banarasi design integrity.

“We came from India, but our weaving stayed here. We still use the same patterns our fathers used.” – 15_RBA

Several respondents expressed fear that market demands were pushing them toward “lighter,” “faster,” or “simplified” designs that dilute Banarasi authenticity.

7. Female Involvement and Hidden Labor

Women in Banarasi households were often involved in preparation, finishing, and design tracing, but were not counted as “official weavers.” Their labor was unpaid and invisible, though essential to meeting deadlines.

“My wife winds the thread, and my daughter draws the pattern. But only I go to the buyer.” – 14_RBO

This gender division of labor remains under-acknowledged in both practice and policy.

d. Emerging Opportunities

Despite challenges, some SMEs saw room for change:

1. The boutique owner (47_DBEX) expressed interest in a shared showroom space for Banarasi goods.
2. Two weavers had relatives working in mobile phone shops, who occasionally helped them explore YouTube and digital catalogs.
3. Some respondents showed interest in learning photography and cataloging if offered locally.

These indicate a latent desire for visibility and upgrade, if the tools match their skill and language levels.

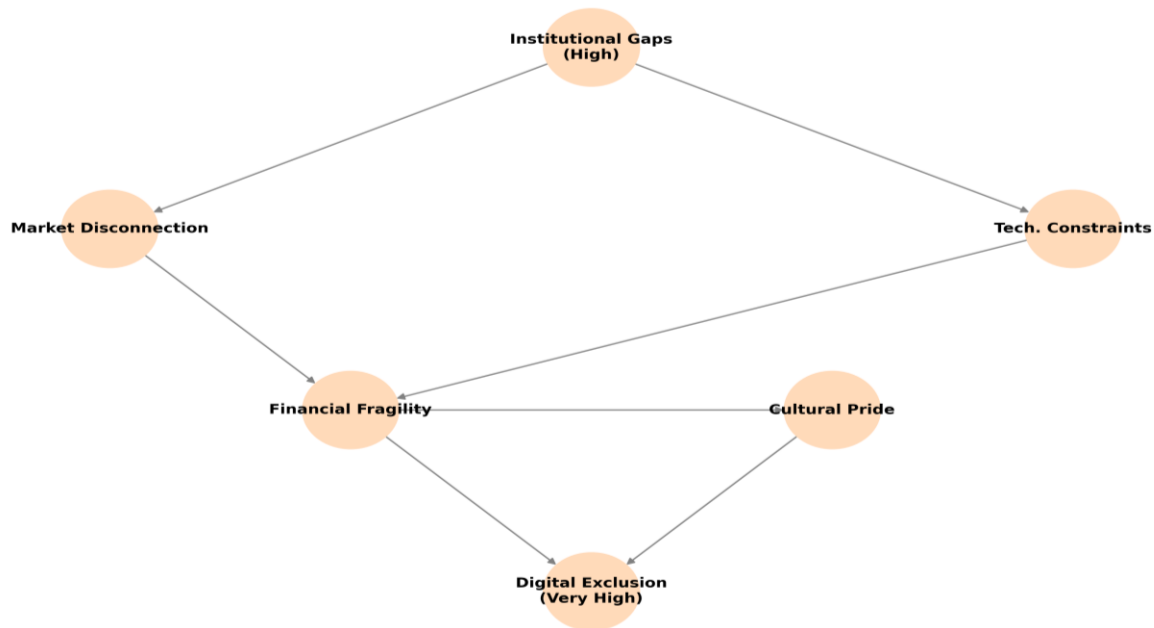


Figure 12: Banarasi Thematic Rader

e. Visual

Analysis: Banarasi Thematic Radar

The Banarasi Thematic Radar visually represents the layered challenges faced by handloom artisans in Mirpur, Dhaka. At the core is a high level of institutional gaps, which give rise to market disconnection and technological constraints. These systemic issues lead to financial fragility, which coexists with strong but under-leveraged cultural pride. Ultimately, this combination results in very high digital exclusion, limiting artisans' access to modern tools and markets. The diagram highlights how cultural strength alone cannot overcome structural exclusion without institutional and technological support.

4.2.3. Tangail Tant Cluster (Tangail District)

The Tangail handloom cluster, situated in the central area of Tangail, is one of Bangladesh's most esteemed centers for traditional weaving. Tangail is renowned for its production of lightweight, everyday cotton sarees and scarves, with its weaving community being family-operated, inclusive of women, and more responsive to modern trends compared to other regions.

Tangail weavers, despite encountering institutional constraints, have a notable degree of digital openness, generational continuity, and burgeoning entrepreneurial tendencies, particularly among younger artisans. This part examines the theme patterns arising from 13 interviews inside the cluster, utilizing the identical 62-code analytical approach.

a. Respondent Profile Summary

The total respondents included 11 participants from Tangail Taat cluster and two from other expert areas:

1. 9 weavers/artisans (26_RTA, 33_RTA to 36_RTA and 27_RTO, 28_RTO, 31_RTO, 32_RTO)
2. One wholesaler (29_RTW) and one retailer (30_RTR)
3. 1 digital marketer (48_DBEX) for Tangail saree operating from Dhaka
4. 1 expert from a regional handloom institute (43_ACEX) and 4 customers (57_R CUT, 58_R CUT, 59_R CUT, 60_R CUT)

Except two participants, all were above the age of 40, and over half the respondents had completed secondary education, unlike in the Jamdani and Banarasi clusters.

b. Dominant Themes and Subthemes

1. Digital Openness and Youth Engagement

The Tangail cluster stands out for its youth-led digital experimentation. Several weavers reported using Facebook to display their products and communicate with customers. Two artisans have created WhatsApp-based customer groups and received pre-orders.

“When I make a post my designs to social media and I often receive responses from customers. Sometimes they order, and sometimes they just ask the price. But I am learning.” – 26_RTA

Smartphone use is widespread, and while e-commerce is still emerging, interest in mobile photography, storytelling, and brand building is significantly higher here than in other clusters.

2. Financial Independence and Micro-Enterprise Culture

Unlike Jamdani or Banarasi, Tangail artisans rely less on middlemen. Several respondents reported selling directly to local customers, especially during festivals and market days. Some also deliver sarees to relatives living in Dhaka.

“Here weavers don’t like to work on an advance payment. we make it and sell it directly at Tangail Bazaar or send sarees or three-pieces to Dhaka through couriers” – 33_RTA

This autonomy has led to better cash flow management and the confidence to innovate with designs and customer outreach.

3. Technological Gaps Remain

Despite digital enthusiasm, most looms remain manually operated, and artisans lack formal design software or production planning tools.

“I saw someone using a design app once, but it looked very complicated. I still draw my designs by hand.” – 34_RTA

Artisans rely on oral transmission or hand-drawn patterns passed through families. While some are willing to learn, no structured training on tech adoption has been introduced in this cluster.

4. Pricing Asymmetry and Lack of Branding

Though more autonomous than other clusters, Tangail artisans still face pricing issues when dealing with urban resellers. Several respondents noted that their products are sold at three to five times the price in Dhaka or online boutiques.

“They buy my saree at 900 taka and sell it for 2,500 taka. I cannot say anything because I don’t go to Dhaka.” – 31_RTO

The lack of branding and formal labeling means products are genericized, and artisan identity remains invisible in the final market.

5. Cultural Continuity and Women’s Role

Tangail shows stronger cultural continuity than other clusters. Younger generations, including daughters, are being trained in weaving and finishing.

“My daughter is learning slowly. She helps with threads and sometimes tries designs.” – 28_RTO

Female artisans also reported decision-making roles in design and color selection, even if men dominate customer-facing roles.

6. Institutional Access and NGO Collaboration

Several respondents mentioned recent collaborations with NGOs and training centers. While some programs were limited, they provided exposure to new techniques and awareness about digital marketing.

“They gave us training on photography and selling online. I am still practicing.” – 32_RTO

This engagement, though preliminary, marks Tangail as a potential pilot cluster for cooperative digital selling platforms and inclusive entrepreneurship models.

c. Key Opportunities Identified

1. Shared photography and catalog services could help streamline digital sales
2. Community-based labeling and branding to ensure price control and artisan visibility
3. Design mentorship programs with local youth to modernize patterns while maintaining tradition
4. Cooperative delivery systems to reduce logistics barriers for Facebook and WhatsApp sellers

d. Visual Analysis: Tangail Thematic Radar

The Tangail Thematic Radar diagram reveals a more balanced ecosystem compared to other clusters. At the top, Digital Openness (Medium–High) suggests moderate integration of digital tools among weavers. This fosters both Financial Resilience and Cultural Continuity, indicating that artisans can sustain traditional practices while engaging in market dynamics. However, the presence of Institutional Links alongside Tech Gaps implies that while support structures exist,

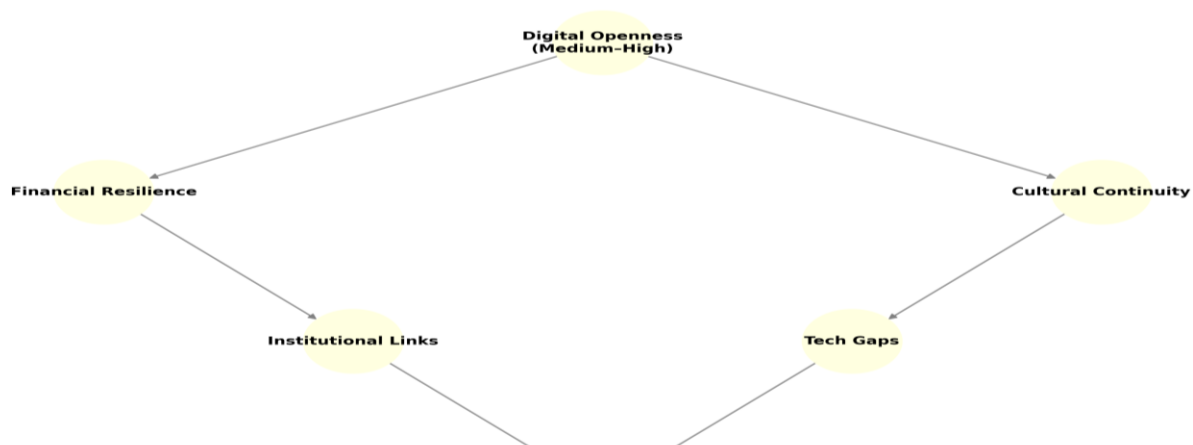


Figure 13: Tangail Thematic Radar

they are not fully equipped to bridge modern technological needs. At the base, Pricing Asymmetry (Moderate) reflects ongoing issues with fair compensation and value distribution across the supply chain. Overall, Tangail shows promising adaptability but still faces structural inefficiencies.

4.4 Cross-Cluster Thematic Synthesis

This section brings together the qualitative findings from the three weaving clusters—Jamdani, Banarasi, and Tangail—using the 62-code thematic framework. By examining patterns across clusters, this synthesis identifies both shared challenges that affect the handloom sector systemically and context-specific opportunities that can inform the design of a flexible, cluster-sensitive business model framework. Here is the thematic rader-visual analysis of three clusters. The diagram is showing challenge intensity comparisons across the clusters. It provides step-by-step narrative explanations beneath each figure such as- digital exclusion in Jamdani leads to market disconnection, in contrast Tangail shows moderate digital adoption, reducing this gap.

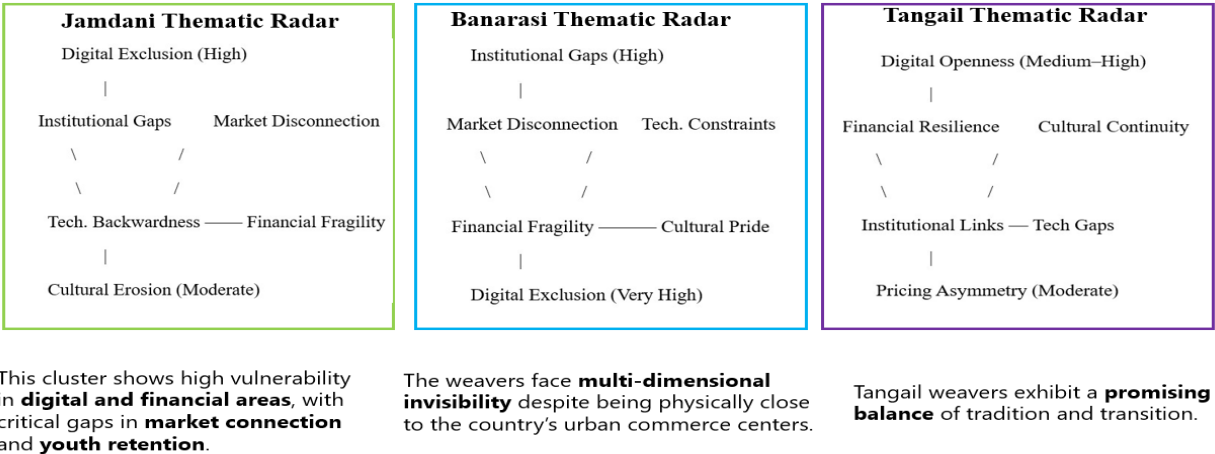


Figure 14: Cross-Cluster Thematic Synthesis

4.4.1 Common Themes Across All Clusters

Despite differences in geography, product type, and institutional access, several themes were consistently observed across the three clusters:

A. Financial Fragility

In all clusters, weavers and SME owners lack access to formal credit. Most are reliant on cash advances from wholesalers or informal lenders. This limits their ability to invest in materials, technology, or workforce expansion.

1. *Jamdani*: 93% rely on advance payments (e.g., 04_RJA, 01_RJO)
2. *Banarasi*: Rent and high urban costs amplify credit dependency
3. *Tangail*: Slightly more self-financed, but still struggles with liquidity during lean seasons

B. Lack of Direct Market Access

Artisans across all clusters have little or no interaction with final consumers. They often don't know where their products are sold or under what brand names. This weakens their ability to control pricing or build customer relationships.

1. *Banarasi*: Completely dependent on boutique owners (15_RBA16_, RBO)
2. *Jamdani*: Weavers are unaware of buyer identity or retail pricing
3. *Tangail*: Some direct market sales, but no brand equity or feedback channels

C. Technological Backwardness

Manual looms, paper-based patterning, and zero exposure to design software were reported in every cluster. While a willingness to innovate was present, especially among Tangail youth, there is a clear technology-use gap across the sector.

1. No artisan in any cluster uses CAD, product tagging, or e-inventory tools
2. All clusters lack access to modern looms or fiber tracking systems
3. Tangail had the most openness to learning, but not the resources

D. Digital Exclusion

Digital exclusion is one of the strongest cross-cutting challenges. Even in urban settings like Banarasi, digital marketing, content creation, and e-commerce use are minimal. Digital fear, logistical confusion, and content skills were common barriers.

Table 6: The Status of Digital Tools Usage

Cluster	Facebook Use	WhatsApp Use	Product Photos Taken	Online Selling
Jamdani	Low (only 1 case)	Rare	Poor quality	None

Cluster	Facebook Use	WhatsApp Use	Product Photos Taken	Online Selling
Banarasi	Low–none	None	Non-existent	None
Tangail	Moderate rising	Active in 3 cases	Practiced regularly	Emerging

E. Institutional Weakness

Government and NGO interventions are reported to be infrequent, disconnected, or irrelevant. Respondents across clusters viewed support programs as inaccessible or poorly aligned.

1. *Jamdani*: No artisan had direct contact with the Bangladesh Handloom Board
2. *Banarasi*: Not recognized in official sectoral data
3. *Tangail*: Some recent NGO efforts, but short-term or incomplete

F. Cultural Erosion

Across all clusters, the youth's disinterest in weaving was reported. Children prefer jobs in ridesharing, retail, or work in informal service. There is a perception that weaving is outdated and unrewarding.

1. *Banarasi*: Youth consider weaving “dirty” or “low class”
2. *Jamdani*: Sons and daughters prefer delivery work
3. *Tangail*: Better retention, especially among daughters, but still fragile

4.4.2 Comparative Summary of Cluster Strengths and Gaps

The comparative analysis of the Jamdani, Banarasi, and Tangail handloom clusters (shown in table 7) paints a vivid picture of both shared struggles and unique trajectories. Across all three, *financial access* remains a serious hurdle, with Jamdani and Banarasi artisans facing particularly weak support. Tangail fares slightly better, showing moderate access to financial resources that could help cushion operational risks. *Market access* continues to be largely dictated by middlemen in Jamdani and Banarasi, limiting weavers’ earnings and direct relationships with buyers. In contrast, Tangail reveals a more promising scenario, where alongside the influence of intermediaries, some artisans have begun establishing direct market ties.

Table 7: The Strengths and Gaps Summaries of All Three Clusters

Theme	Jamdani	Banarasi	Tangail
Financial Access	Very Weak	Very Weak	Moderate
Market Access	Middleman dominated	Middleman dominated	Mixed (some direct)
Digital Tool Use	Very Low	Very Low	Medium
Technology Access	Manual-only	Manual-only	Manual-only
Institutional Support	Weak	Non-existent	Moderate
Youth Engagement	Low	Low	Moderate
Female Participation	Low	Hidden	Visible, active
Innovation Willingness	Cautious	Skeptical	High (youth-led)

Digital engagement and technology adoption further highlight disparities. While Jamdani and Banarasi continue to operate with minimal use of digital tools and rely solely on manual processes, Tangail artisans demonstrate a modest embrace of digital platforms, indicating the early stages of modernization. *Institutional support* tells a similar story: virtually absent in Banarasi, weak in Jamdani, yet moderate in Tangail—suggesting slightly better policy or program outreach there.

Looking at the human side of these communities, youth and female involvement sharply differentiate the clusters. *Youth engagement* is notably low in Jamdani and Banarasi, reflecting a generational gap that threatens continuity. Meanwhile, Tangail sees more young people actively participating, which not only sustains but also revitalizes the craft. *Female participation* follows this encouraging pattern in Tangail, where women are visibly and actively involved, compared to their hidden or minimal roles in the other two clusters. Perhaps the most telling is the willingness

to innovate while Jamdani artisans tend to be cautious and Banarasi weavers remain skeptical, Tangail stands out with a high level of innovation, largely propelled by its younger artisans.

Overall, the Tangail cluster emerges as a comparatively more dynamic ecosystem—balancing tradition with a cautious yet evident openness to change. This blend of moderate institutional support, stronger youth and female participation, and a growing appetite for innovation suggests a community better positioned to adapt and thrive in a shifting market landscape.

4.4.3 Cluster-wise code frequency

When comparing the top recurring issues across the three handloom clusters—Jamdani, Banarasi, and Tangail—a common thread emerges: all struggle with significant structural and skill gaps, though the extent varies. Jamdani shows the highest concentration of challenges overall, with particularly frequent references to heavy dependence on informal capital, lack of institutional engagement, and strong middleman pricing control. Artisans here not only operate largely outside formal financial systems but also face powerful intermediaries dictating prices, which limits their earning potential and bargaining power.

In essence, while each cluster tells its own nuanced story, they collectively paint a picture of traditional sectors grappling to adapt, with Jamdani showing the densest concentration of persistent challenges, Banarasi slightly less but with critical skill gaps, and Tangail hinting at slow progress that could serve as a model for more integrated development efforts.

Table 8: Cluster-wise Code Frequency (Top 10 Themes)

Code Description	Jamdani	Banarasi	Tangail
Informal capital dependency	15	12	7
Middleman pricing control	14	10	6
No direct customer contact	14	11	6

Code Description	Jamdani	Banarasi	Tangail
No digital photography skills	13	12	4
No design training	11	10	5
No branding	10	11	8
Fear of fraud in online selling	9	9	3
Youth disinterest	9	8	5
No packaging knowledge	8	10	4
Lack of institutional engagement	15	12	6

Banarasi weavers share many of these same obstacles. While slightly less pronounced than in Jamdani, they too are heavily reliant on informal funding sources and suffer from a lack of direct customer relationships, which keeps them tethered to middlemen. Interestingly, Banarasi artisans recorded the highest counts for gaps in packaging knowledge, suggesting a pressing need for skills that could help add value and improve market presentation.

Tangail artisans, by comparison, appear to encounter these barriers less frequently, though not insignificantly. For instance, their reliance on informal capital, middleman control, and lack of institutional support are still evident but at notably lower frequencies. This points to a slightly more diversified or evolving ecosystem, perhaps where some artisans are beginning to break out of traditional molds.

What stands out across all clusters is the near-universal shortage of modern business capabilities. Low counts in digital photography skills, design training, and branding were common, underscoring a widespread need for capacity building. Additionally, fear of fraud in online

transactions and a general disinterest among youth remain substantial concerns—highlighting both technological trust issues and a worrying gap in generational succession.

4.4.4 Code Matrix by Respondent types

The code matrix presented in this study is a thematic condensation of primary data collected from interviews and focus group discussions, categorizing stakeholder perspectives into structured analytical dimensions. It captures how different respondent groups—artisans, intermediaries, boutique sellers, and consumers—prioritized distinct concerns. It categorizes challenges based on respondent types. For example, artisans emphasized pricing constraints, while digital vendors stressed visibility and brand communication. Besides, this matrix helps align the business model components (e.g., key partners, channels, and customer relationships) to the grounded realities of different actors. Such as, artisans predominantly highlighted issues related to low bargaining power and lack of direct market visibility, while boutique sellers emphasized the importance of product traceability and narrative authenticity to appeal to higher-value urban and international segments.

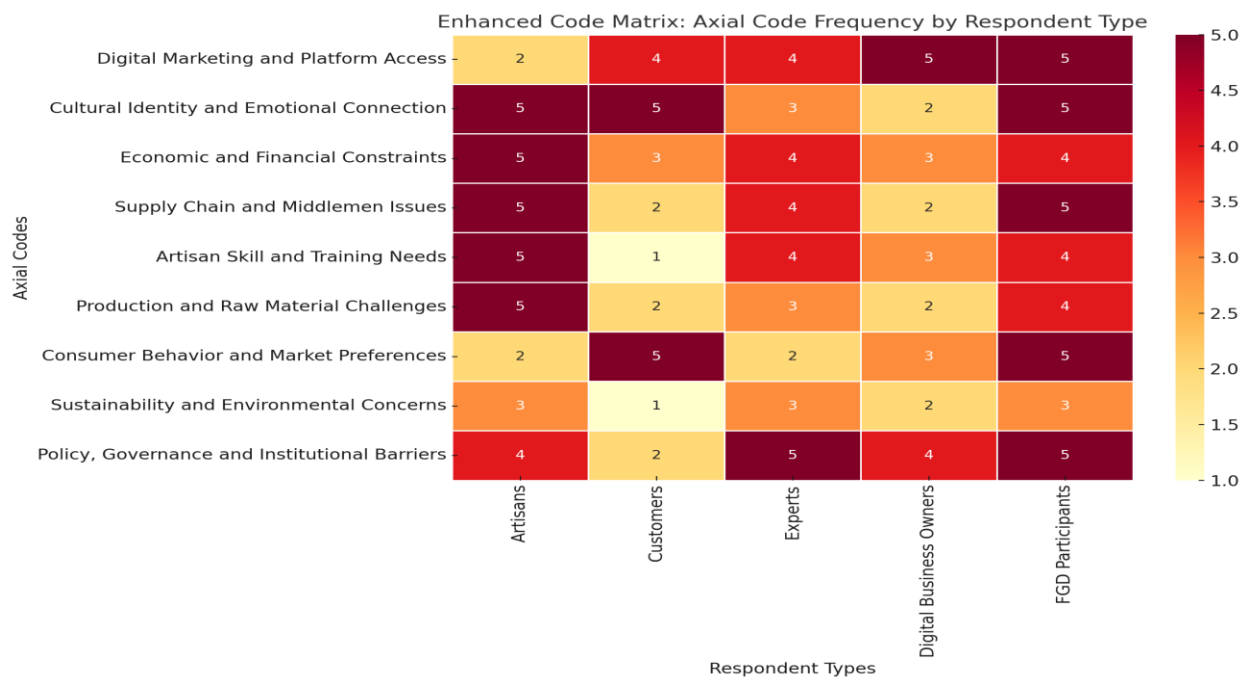


Figure 15: Code Matrix by Respondent types

This multi-actor matrix follows established qualitative coding practices,(Mayring, 2000), using axial coding to connect subthemes like pricing, digital readiness, and cultural preservation under broader categories relevant to business model design. The significance of the code matrix extends beyond descriptive mapping; it directly informs the architecture of the proposed business model. For example, recognizing artisans' concerns about market access led to integrating social commerce platforms that enable direct-to-consumer interactions (Kaplan & Haenlein, 2010). Likewise, the emphasis by boutique sellers on traceability justified embedding digital storytelling and QR-based provenance markers, aligning with Boons and Lüdeke-Freund's (2013) framework of cultural sustainability in business models. Thus, the matrix serves as a critical empirical foundation that bridges the raw data to the final strategic design of the PCBM, validating how the conclusions of this thesis are grounded in the lived realities and articulated needs of sectoral stakeholders.

Analysis Enhanced Code Maps

The Enhanced Code Map describes the relationships between selective, axial, and open codes, showcasing thematic clusters. "Digital Marketing and Platform Access" links to "Digital Empowerment and Global Reach," highlighting the transformative potential of digital tools. "Cultural Identity and Emotional Connection" ties to "Jamdani Tradition" and "Cultural Presentation," emphasizing heritage preservation. "Supply Chain and Middlemen Issues" connects to "Middlemen policy" and "Systemic Reform," pointing to inefficiencies in the value chain. Sustainability themes, though less prominent in the matrix, appear in the map through "Eco-friendly" and "Sustainable Production," suggesting emerging awareness

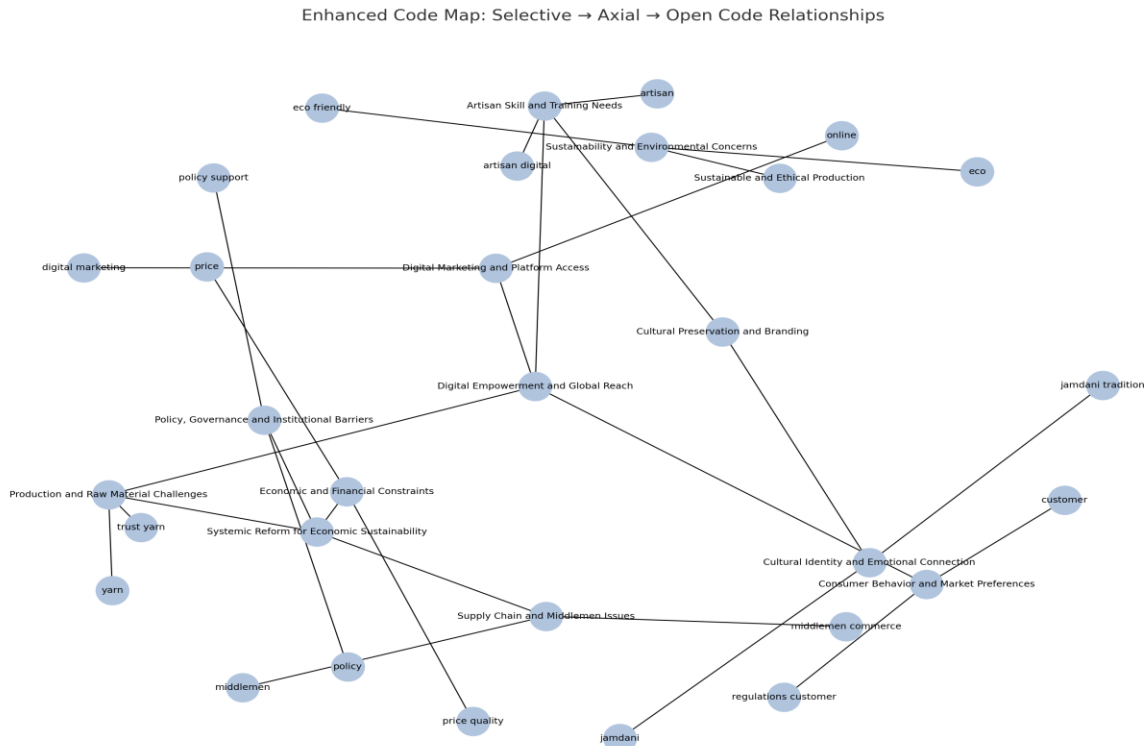


Figure 16: Enhanced Code Map by Respondent types

. The map reveals a complex interplay of economic, cultural, and systemic factors shaping the artisan sector.

4.4.5 Narrative Insights Across Clusters

On digital access:

“I want to post photos but don’t know what to say or how to send parcels.”–36_RTA

“We don’t trust online payments. If the customer doesn’t pay, we lose everything.”–02_RJA

On pricing transparency:

“They buy for 1,200 taka and sell for 3,500. That is our loss and their gain.”–14_RBA

“If we could talk to the customer, maybe we could get a better price.” – 28_RTO

On youth transition:

“My son wants a shop job, not to weave like me.”–23_RBO

“Weaving is hard, dirty, and invisible. My children want respect.” –07_RJA

On institutional support:

“They come, take photos, and go. Then nothing happens.”–26_RTA
“We want training, but not with machines. Teach us to sell, not to sew.”–04_RJO

4.4.6 Strategic Implications for Model Design

From this comparative analysis, several strategic priorities emerge for the business model framework:

1. *Financial De-linking*: Reduce dependence on intermediaries by enabling micro-capital and community cooperatives.
2. *Customer Engagement*: Enable storytelling, co-creation, and labeling mechanisms to connect producers to end-users.
3. *Digital Enablement*: Develop low-cost, mobile-first training modules in local dialects focused on photography, packaging, and Facebook commerce.
4. *Youth Activation*: Promote weaving as creative entrepreneurship with urban relevance.
5. *Cluster-Customized Models*: Adapt business interventions to match cluster-specific readiness.

4.5 Triangulated Insights from FGDs and Experts

This section enriches the cluster-based thematic analysis by triangulating it with insights derived from two Focus Group Discussions (FGDs) and six expert interviews. Participants included master weavers, wholesalers, digital retailers, government officers, trainers, and NGO leaders. These voices offer system-level perspectives on institutional barriers, digital adoption readiness, consumer behavior, and the feasibility of a new business model.

4.5.1 Institutional Disconnection and Policy Inertia

A prominent theme emerging from the focus group discussions and expert interviews was the disparity between policy intent and its execution. Although government organizations have historically endorsed the power-loom and export sectors, traditional handloom clusters continue to be underfunded, underappreciated, and misinterpreted.

“Handloom is often confused with cottage garments or tailoring. Policymakers do not differentiate between traditional weaving and semi-industrial units.” – 37_INEX (Research Officer, Bangladesh Handloom Board)

FGD participants repeatedly emphasized that even when training or subsidies were offered, they were either not cluster-specific or delivered in ways that artisans could not absorb.

“They gave us a design course with software in English. We didn’t even understand the buttons.”
– FGD02 participant (Tangail weaver 31_RTO)

4.5.2 Misalignment Between Digital Strategy and Artisan Capacity

Several digital experts pointed out a fundamental mismatch between digital development programs and artisan needs. Current interventions often assume that digital inclusion means simply opening a Facebook page or creating an online shop. Digital business involves a complex combination of visual branding, trust-building, customer service, and logistics areas where artisans need structured support.

“You can’t tell a 55-year-old weaver to ‘just go online.’ They need simplified tools, in Bangla, with photo examples—not just words.” – RDI02 (Digital retail trainer)

Both FGDs highlighted how artisans who wanted to adopt digital tools were limited by fear, lack of skills, or previous bad experiences with delivery or customer complaints.

“I posted online once, and the customer didn’t pay after receiving. Now I don’t trust online selling.” – FGD02 participant, Banarasi Master Weaver (17_RBO)

4.5.3 Cooperative and Cluster-Based Solutions

Several participants in FGD01 and FGD02 advocated cluster-level digital and branding cooperatives, allowing weavers to share access to photography and cataloging services, packaging and delivery arrangement, common branding or design labels, and community-based digital facilitators.

“If one person from the village is trained to do the photography and posting, then others can pay him a small amount. This way it becomes local.” – FGD01 participant (46_DBEX)

Experts agreed that shared business service models, especially cooperatively managed ones, could help overcome the scale barriers faced by individual artisans.

4.5.4 Digital Platforms and the Role of Intermediaries

The expert interviews revealed a complex perspective on the function of intermediaries. Although some field respondents perceived middlemen as predatory, certain experts highlighted that not all intermediaries are detrimental; many provide crucial services such as market access, loans, or logistics.

“The challenge is not to eliminate intermediaries but to change their role. Make them brand agents or logistics partners, not price controllers.” – 41_INEX (Policy Maker)

Participants in the focus group discussion endorsed this hybrid model, wherein digital and physical channels coexist. A weaver may publish a product on Facebook, utilize a reputable local courier for delivery, and provide cash-on-delivery to establish trust.

“We can mix online promotion with offline delivery. We just need coordination.” – FGD02 participant (Tangail SME owner, 27_RTO)

4.5.5 Artisan Visibility and Customer Relationship Gaps

Both focus groups emphasized that artisans remain invisible to consumers. Products sold under boutique names or anonymous Facebook pages often omit the story, identity, and cultural relevance of the weaver.

“They are not just sellers of fabric. They are artists, philosophers, and cultural historians. The customer must meet the artisan—digitally, if not in person.” – 38_INEX (Research Officer, Handloom branding and market promotion)

FGD insights supported the idea of a “Meet the Maker” digital campaign, featuring short videos or story cards about each artisan, to be added to every product listing.

This aligns with consumer expectations of authenticity, traceability, and emotional resonance, as previously discussed in Chapter 2.

4.5.6 The Missing Link: Design Mediation

Both FGDs, in was the gap between ‘artisan capabilities and contemporary design demands’ identified as a prominent theme. Many weavers desire to refresh patterns yet lack customer feedback.

“We make what we know. But sometimes customers want modern things. We don’t know how to choose those styles.” – FGD01 participant (Jamdani weaver 04_RJO)

Experts advocated for the establishment of design mediation systems; wherein local youngsters are educated as design translators. They would collect market information and convert it into motifs or color palettes for the artists to implement.

“These young people can become design mediators—like social workers for aesthetics.” – 42_ACEX (Handloom Training Center)

4.5.7 Gendered Labor and Invisible Contribution

FGDs also highlighted the undervalued role of women in handloom households. While men operate the loom, women prepare yarn, wind bobbins, and handle finishing, but their labor is unpaid and undocumented.

“My wife helps with everything, but her name is not on the receipt, the wage, or the design.” – FGD02 participant (Banarasi weaver 16_RBO)

Experts emphasized the importance of recognizing women as co-producers, both in cooperative structures and brand storytelling.

4.5.8 Demand for Customized and Ethical Products

Both focus group discussions affirmed that urban and diaspora consumers are progressively demanding ethical, traceable items. Boutique proprietors and platform vendors affirmed that

buyers frequently ask about the item's creator, the dyes employed, and the duration of the weaving process.

“If we say the weaver’s name and show her picture, we can charge more. The customer feels proud to buy it.” – FGD01 participant (13_RJR)

This corresponds with the worldwide emergence of ethical fashion, co-creation, and value provenance, strengthening the need for incorporating storytelling into business structures.

4.5.9 Summary Table: FGD Insights Mapped to Core Themes

Table 9: FGD Insights Mapped to Core Themes

Theme	Key FGD/Expert Insight
Financial Fragility	Advance payment is prevalent; apprehension regarding internet fraud impedes pre-order systems.
Market Disconnection	Absence of artisan branding; consumers unaware about the product's creator
Digital Exclusion	Facebook utilized passively; worry regarding scams, insufficient delivering capability
Institutional Gaps	Training lacks specificity for clusters, resulting in inadequate post-training engagement.
Cultural Erosion	Young individuals exhibit hesitance to engage in craftsmanship; yet some are amenable if perceived as digital creative endeavors.
Technological Gaps	Lack of access to digital design tools; interest in structured design templates

4.5.10 Strategic Synthesis

The triangulated insights confirm and expand on previous findings, pointing to three key design implications for the business model:

1. **Cluster-level infrastructure:** Business support systems must be collectively owned or community-managed to reduce individual burden and build trust.
2. **Mediated digital transition:** Digital adoption should be guided by facilitators trained in both tech and craft, ideally recruited from within the community.
3. **Branding through identity:** Artisans must be visible, named, and narrativized in the product journey to unlock the emotional and ethical value that modern consumers seek.

4.6 Chapter Summary from Qualitative analysis

This chapter provided a comprehensive qualitative analysis of the traditional handloom industry in Bangladesh using a case study approach grounded in 60 in-depth interviews and two multi-stakeholders focus group discussions. The analysis was framed through a 62-code thematic framework derived from open, axial, and selective coding, enabling both cluster-specific insights and cross-sectoral synthesis.

Three major handloom clusters—Jamdani (Narayanganj), Banarasi (Mirpur, Dhaka), and Tangail Tant (Tangail)—were examined individually to highlight variations in infrastructure, institutional support, digital readiness, and market engagement. Although these clusters differ in location, heritage recognition, and demography, several overlapping patterns and structural constraints emerged across the entire dataset.

4.6.1 Six Core Themes Identified Across Clusters

Thematic analysis revealed six dominant challenges that affect all stakeholder groups in varying degrees:

1. **Financial Fragility:** A critical dependency on advance payments from middlemen restricts liquidity, investment, and price negotiation across all clusters.
2. **Technological Backwardness:** Artisans rely on outdated looms and paper-based designs. Digital design tools, automation, or production tracking are virtually non-existent.

3. **Market Disconnection:** Producers are deeply separated from final consumers. Products are sold without artisan branding or feedback, resulting in zero market intelligence.
4. **Digital Exclusion:** Despite increasing smartphone penetration, most artisans lack the skills, trust, or guidance to engage in digital commerce or marketing.
5. **Institutional Gaps:** State and NGO interventions are either generic, short-term, or poorly aligned with artisan realities. Most weavers remain unaware of government support programs.
6. **Cultural Erosion:** Younger generations are exiting the handloom trade in search of faster income and urban mobility. Weaving is increasingly seen as laborious, undervalued, and incompatible with modern aspirations.

4.6.2 Cluster-Specific Variations

The analysis also revealed nuanced variations across clusters: for example, *In case Jamdani*, despite its UNESCO-recognized status, this cluster is heavily dependent on middlemen, with very low digital engagement and growing youth apathy. Institutional visibility is high in theory but weak in execution. *Banarasi* is urban-centric yet invisible, this cluster suffers from marginalization, lack of legal recognition, and intense space/rent pressures. Digital exclusion is as prevalent here as in rural areas, and institutional neglect is acute. *Tangail*, cluster shows the most promise, with emerging youth involvement, higher education levels, and a growing willingness to explore digital tools. While infrastructure gaps remain, its ecosystem is more adaptive and ready for pilot innovation models.

4.6.3 Reinforcing Insights from FGDs and Expert Interviews

The triangulated data from FGDs and expert interviews confirmed many of the cluster-level findings while also providing systemic critiques and strategic insight. First, there is a widespread mismatch between training programs and artisan needs, with digital literacy efforts often too complex or misaligned. Second, artisans lack visibility in both policy and product branding. This invisibility limits their ability to build direct market relationships or gain consumer loyalty. Third, the most promising strategy involves collective infrastructure—cooperatively managed digital, design, and distribution services that enable artisan empowerment without overwhelming

individual weavers. Finally, experts advocated for design mediation, cooperative branding, and local digital facilitators to bridge the gap between tradition and innovation.

4.6.4 Emerging Opportunities for Innovation

Despite the constraints, the data reveals several openings for sustainable business model innovation:

1. **Social commerce via mobile apps:** Facebook and WhatsApp are gaining slow but real traction among youth and women-led weaving units, especially in Tangail.
2. **Community-based branding:** There is an interest in forming labels or collectives that certify authenticity, ensure fair pricing, and build artisan identity.
3. **Digital storytelling:** Customers show a strong desire to know the origin of products, offering potential for “Meet the Maker” campaigns and co-branded digital narratives.
4. **Hybrid sales models:** Combining physical visibility (pop-up stalls, festivals) with online presence (digital catalogs, messaging orders) can ease the transition into e-commerce.

4.6.5 Foundations for the Business Model Framework

The insights in this chapter provide the empirical basis for developing the *pattern-changing business model framework* in Chapter 6. In particular, the following priorities have emerged such as, rebuilding market access through storytelling, co-creation, and branding, digitally enabling weavers without displacing their cultural identity, recognizing informal labor, especially female contribution, in cost and revenue models, and designing for resilience, not just scale—building business logic that fits the lives of weavers.

4.7 Transition to Quantitative Insights

While this chapter focuses on narrative and thematic analysis, this section will present structured quantitative summaries derived from the respondent business data, workspace usage, and digital tool adoption forms. These will include the discussion of demographics and business metrics, cross-cluster digital tool comparison, descriptive charts and matrix tables, and a triangulated summary linking codes to numeric patterns. Together, these insights offer a robust foundation for the discussion of research results in Chapter 5 and the construction of the business model framework in Chapter 6.

4.7.1 Case study analysis from a Quantitative lens

While this study adopts a qualitative case study methodology as its primary mode of inquiry, the integration of quantitative data plays a vital complementary role. These quantitative analyses include descriptive statistics and structured summaries based on respondent demographics, handloom business metrics, and digital adoption trends across the three focal clusters: *Jamdani (Narayanganj)*, *Banarasi (Mirpur, Dhaka)*, and *Tangail Tant (Tangail District)*.

The purpose of this section is threefold-1) To quantify cluster-level diversity in terms of enterprise size, digital tool adoption, and production capacity 2) To support qualitative themes with numerical observations and validate patterns seen in interviews and FGDs 3) To inform the subsequent business model framework by identifying data-driven entry points for transformation.

The data presented here were gathered from structured forms completed by 60 respondents and processed into categorized tables and charts for clarity.

4.7.2 Respondent Demographics and Business Profile Summary

i. Demographic Distribution

A review of respondent profiles shows considerable diversity across age, education, gender, and experience levels. The table below presents a summary of key demographic variables.

Table 10: Respondents Demographic Summary by Cluster

Variable	Jamdani	Banarasi	Tangail	Cross-Cluster Roles (Experts/Retailers)	Total
Total Respondents	15	12	13	20	60
Female Respondents	2	1	4	3	10
Respondents under 40	5	4	7	8	24
Secondary education or higher	6	4	8	14	32

Variable	Jamdani	Banarasi	Tangail	Cross-Cluster Roles (Experts/Retailers)	Total
Experience (≥ 15 years)	9	7	6	6	28

Tangail showed the highest proportion of youth and female participation, whereas Jamdani respondents had the longest average years of experience. Experts and digital actors were more educated and often urban-based.

ii. Business Operations and Workspace

Respondents were asked to provide data on the number of workers employed, active handlooms, workspace area (in square meters), and how much physical space was available per person. This information helps assess operational density, potential for scaling, and health/safety standards in production. The average workspace per person across these samples ranged from 4.3 to 6.7 m², with Tangail and Jamdani offering better conditions than Banarasi, where space was a constraint due to urban rental limitations.

Table 11: Monthly Production and Sales Range by Cluster

Cluster	Production Units per Month (avg.)	Estimated Monthly Sales (BDT)	Estimated Monthly Sales (USD)	Custom Orders (%)
Jamdani	12–25	60,000–130,000	600 - 1000	7%
Banarasi	10–18	50,000–110,000	500 - 800	10%
Tangail	15–35	30,000–70,000	300 - 500	25%

Observation: Tangail’s higher custom order percentage and sales indicate better market responsiveness and consumer proximity.

iii. Digital Tool Usage Patterns

One of the core objectives of this research was to assess the extent of digital engagement among traditional handloom SMEs in Bangladesh. The digital economy, particularly mobile banking, social media marketing, and e-commerce platforms—offers immense potential for enhancing artisan visibility, improving customer access, and reducing middleman dependency. However, the use of digital tools across the handloom sector remains uneven, influenced by age, location, education, infrastructure, and confidence. Here is the table of Digital Tool Usage by Cluster (%), reconstructed from respondents provided data:

Table 12: Percentage of Digital Tools Usage by Cluster

Cluster	Smartphone	SNS (Facebook, etc.)	Online Market Use	E-payment (bKash/Nagad)
Benarasi	66.7%	58.3%	16.7%	83.3%
Jamdani	61.5%	61.5%	23.1%	53.8%
Tangail	63.6%	45.5%	18.2%	54.5%
Online Retailers	100.0%	100.0%	100.0%	100.0%

This section presents a cross-cluster comparison of digital practices using four key metrics such as- 1) Smartphone ownership/use 2) Social Networking Services (SNS) usage (Facebook, WhatsApp, etc.) 3) Online marketplace or digital selling 4) E-payment systems (bKash, Nagad, Rocket). The data was reconstructed from field responses, verified transcripts, and the structured digital tools inventory collected from 49 relevant respondents across Jamdani, Banarasi, Tangail clusters, and online sellers.

iv. Device Access and Smartphone Usage

Smartphone access is a foundational prerequisite for digital transformation. Ownership was common across all clusters, with 63–67% of respondents using smartphones regularly for communication. However, this access did not always translate into business use.

“I use a smartphone mainly to call or watch videos. Selling things online? That I don’t know yet.”
– 35_RTA (Tangail)

While ownership is near universal among online retailers, rural artisans tend to use smartphones for passive functions such as calls, music, or watching religious content, not business.

v. SNS (Social Media) Use

Social Networking Services (SNS) like Facebook and WhatsApp are increasingly used for informal commerce in Bangladesh. Across the clusters, 58–62% reported having used SNS, though many were not active in posting products or engaging with customers. Jamdani artisans showed relatively higher engagement with Facebook due to interest in visual design promotion. Tangail’s SNS use was lower than expected, largely due to reliance on word-of-mouth and family networks for sales.

“My daughter posts some photos on Facebook, but I don’t know how it works.” – 06_RJO (Jamdani)

Even among SNS users, consistent branding, professional photography, and response management were often missing.

vi. Online Marketplace Adoption

Selling through online platforms such as personal Facebook pages, boutique partner sites, or third-party e-commerce services was limited across all three artisan clusters. Only 16.7–23.1% of respondents engaged in online sales, and even those did so irregularly.

“I tried uploading sarees once but didn’t get any orders. Then I stopped.” – 24_RBA (Banarasi)

Online retailers, by contrast, operated structured workflows using mobile apps, integrated payments, order tracking, and pre-set courier arrangements. The contrast demonstrates the barriers to sustained digital commerce for traditional artisans.

vii. E-payment and Mobile Transactions

Digital financial tools, particularly *bKash* and *Nagad*, were the most widely adopted among the four digital indicators. Across Jamdani, Banarasi, and Tangail, 54–83% of respondents accepted mobile payments, primarily for bulk orders and urban clients.

The relatively high usage in Banarasi reflects proximity to Dhaka and higher reliance on boutique payments, which are often made digitally. However, respondents expressed confusion over verifying transaction details, withdrawing funds securely and dealing with fraud or non-payments.

“Sometimes they say they paid by bKash, but I didn’t get the SMS. I don’t know how to check it.”
– 33_RTA (one respondent from Tangail)

This suggests a need for financial literacy and transaction verification tools tailored for low-literacy users.

viii. Barriers to Digital Adoption

The study identified several barriers limiting digital expansion:

Table 13: Challenges Faced by Three Clusters

Barrier	Reported By
Fear of fraud / unpaid online orders	Jamdani, Tangail
Lack of trust in digital photos	Banarasi, Tangail
No courier service in the village	Tangail
Inability to write or type in Bangla	Jamdani, older weavers
No guidance on platform logistics	All clusters
Unfamiliarity with Facebook business tools	Jamdani, Banarasi

Even those who had attempted digital selling were often dissuaded by early failures, unmet expectations, or technical difficulties.

“The customer asked me to send it urgently. I didn’t know which courier to use, so I gave up.” – 26_RTA (one respondent from Tangail)

ix. Willingness to Adopt Digital Practices

Despite the barriers, many respondents showed strong willingness to adopt digital tools if training was offered in simple Bengali, delivery systems were explained or supported, photos and messaging could be handled by a local intermediary, payment and fraud issues were managed by a cooperative platform.

“If someone in our area manages the Facebook part, we are ready to pay him 100 taka per order.”
– RJO04 (Jamdani)

This opens a strategic opportunity for community-based digital facilitators—local youth trained to support artisans in digital tasks, like micro-franchise models.

x. Implications for Business Model Innovation

The findings in this section suggest that digital transformation in the handloom sector must be facilitated, not forced, focus on building confidence, not just providing tools, leverage existing devices (smartphones) for low-cost adoption, and use visual, localized, mobile-first strategies.

These insights feed directly into the framework design proposed in Chapter 6, where the digital business component includes guided support, simplified onboarding, and shared services.

xi. Market Practices and Customer Relations

Beyond production capacity and digital adoption, the market behavior of handloom SMEs in Bangladesh provides essential insight into how value is created, captured, and communicated—or not—within the handloom ecosystem. This section explores four critical areas which are sales channels, customer interaction and loyalty, customization and responsiveness, branding, labeling, and product identity. Each dimension was analyzed using both structured respondent data and qualitative insights from interviews, triangulated across the three clusters.

xii. Sales Channel Distribution

Respondents were asked to indicate their primary sales channels. The results indicate a continued dominance of middlemen (wholesalers or boutique buyers), with limited direct sales or digital transactions.

Table 14: Cluster-Wise Distribution Performance

Sales Channel	Jamdani	Banarasi	Tangail	Overall
Middlemen/Wholesalers	86.7%	91.7%	61.5%	80.0%
Boutique Retailer	26.7%	41.7%	23.1%	30.0%
Direct to Customers	13.3%	8.3%	38.5%	20.0%
Online (Facebook/WhatsApp)	6.7%	0%	15.4%	7.5%

“We have never sold directly. Always the buyer comes with yarn or order and takes everything.”
– 23_RBO (one respondent from Banarasi)

Tangail had the highest percentage of direct selling, partly due to local bazaars and small-scale urban outreach via family networks.

xiii. Customer Relationship and Feedback

Most respondents had no direct contact with end consumers. This creates a disconnect between production and perception, with weavers unable to respond to trends or learn from buyer feedback.

Table 15: Customer Relationship Performance

Cluster	Customer Contact (%)	Repeat Customers (%)
Jamdani	13.3%	6.7%
Banarasi	8.3%	0%
Tangail	38.5%	23.1%

“They buy, resell, and never tell us who the buyer is. Sometimes we only know from the photo on Instagram later.” – 06_RJA (one respondent from Jamdani)

FGDs confirmed that the lack of market feedback contributes to repetitive designs, inability to price appropriately, and stagnation in styling.

xiv Customization and Responsiveness

The ability to offer customized or made-to-order products reflects a weaver’s adaptability and consumer-centric thinking. Yet most artisans said they could only fulfill such orders if guided by trusted middlemen or known repeat clients.

Customization in Tangail often involved local college or boutique orders, where young customers suggested colors or minor design edits. Artisans found this rewarding but risky without upfront payments.

“One lady wanted a pink-orange mix. I did it, and she bought three more. That gave me hope.” – 34_RTA (one senior artisan from Tangail)

xv. Branding and Product Labeling

Only 5 of the 60 respondents had ever used any form of branding, labeling, or packaging. Most products were sold unpackaged, untagged, and without weaver identification.

Table 16: Brand and Product Label Performances

Cluster	Brand or Label Usage (%)
Jamdani	6.7%
Banarasi	0%
Tangail	15.4%

Even among those using branding, it was informal—a handwritten tag, a sticker, or a family name. None used QR codes, story cards, or cooperative branding.

“I have a sticker with my name. If they remove it, I can’t do anything.” – 28_RTO (one master weaver from Tangail)

Consumers, especially online buyers, often have no way to trace the product’s origin, reducing transparency, emotional connection, and ethical appeal.

xvi. Pricing Power and Negotiation

Artisans across all clusters reported having limited or no control over pricing. Prices were typically set by traders, who accounted for market demand, transportation, and personal profit.

Table 17: Price Negotiation

Cluster	Sets Own Price (%)	Price negotiating (%)
Jamdani	13.3%	33.3%
Banarasi	8.3%	25.0%
Tangail	30.8%	46.2%

Tangail’s flexibility came from proximity to local buyers and informal groups who allowed artisans to quote initial rates.

“If I sell in Tangail bazaar, I can say 1,200 takas. If they ask for less, I reduce it a bit. But the price starts with me.” – 31_RTO

In contrast, Banarasi weavers often hand over goods without knowing the selling price.

xvii. Summary Table: Market Behavior Indicators by Cluster

In the table below, Tangail shows higher market responsiveness and autonomy, while Jamdani and Banarasi are more embedded in traditional hierarchies with limited customer interaction.

Table 18: Summary of Market Behavior by Clusters

Indicator	Jamdani	Banarasi	Tangail
Dominant Sales Channel	Middlemen	Middlemen	Mixed
Customer Contact	Low	Very Low	Moderate
Customization Capability	Low	Very Low	Moderate
Pricing Power	Weak	Very Weak	Medium
Branding or Labeling Used	Rare	None	Emerging
Feedback-Driven Design	Rare	None	Present

xviii. Strategic Insights

The data suggests a critical need to shift from product-centric to customer-centric thinking in the handloom sector. To do this, artisans must be supported in understanding buyer profiles and behavior, experimenting with co-creation and pre-orders, using branding to build identity and traceability, gaining real-time feedback on designs and quality. These changes are not merely operational; they reshape the business model from isolation to interaction, from reaction to responsiveness.

4.7.3 Cross-Cluster Synthesis and Visual Charts

This section provides a comprehensive overview of the comparative preparedness, advantages, and limitations of the three examined handloom clusters: Jamdani, Banarasi, and Tangail. Utilizing both qualitative and quantitative analysis, it elucidates the position of each cluster about the six strategic business model dimensions such as Financial Access, Technological Readiness, Market Connectivity, Digital Engagement, Customer Responsiveness, and Institutional and Policy Linkage.

Readiness Rating Scale

Each cluster was assessed across the six dimensions using a 3-point readiness scale: First, High (●): Demonstrates active capacity and interest in transformation, second, Medium (●): Shows potential but faces implementation gaps, and third, Low (●): Lacks key infrastructure, skills, or institutional visibility

Table 19: Cluster Readiness Matrix for Business Model Transformation

Dimension	Jamdani	Banarasi	Tangail
Financial Access	● Low	● Low	● Medium
Technological Readiness	● Low	● Low	● Low
Market Connectivity	● Low	● Low	● Medium
Digital Engagement	● Low	● Low	● Medium

Dimension	Jamdani	Banarasi	Tangail
Customer Responsiveness	● Low	● Low	● Medium
Institutional Linkage	● Low	● Low	● Medium

Tangail shows moderate progress across several domains, making it a strong candidate for pilot business model testing. Jamdani, despite heritage status, is severely constrained by financial and digital gaps. Banarasi, though urban, is institutionally invisible and poorly connected to innovation pathways.

ii. Comparative Chart: Key Indicator Scores

Table 20: Cluster-Wise Key Indicator Score

Cluster	Primary Strength	Major Constraints
Jamdani	Cultural recognition, deep craftsmanship	Low digital trust, middleman dominance, generational exit
Banarasi	Proximity to urban markets	Space constraints, policy neglect, no customer linkage
Tangail	Youth engagement, direct buyer contact	Low branding, weak institutional strategy, limited tech

iii: Business Integration through Digital Engagement

While digital access is moderate across clusters, digital confidence and business integration remain low. Tangail is the most balanced across indicators, though still far from optimal.

Table 21: Digital Engagement by Cluster

Indicator	Jamdani	Banarasi	Tangail
Smartphone Use	61.5%	66.7%	63.6%

Indicator	Jamdani	Banarasi	Tangail
E-payment Usage	53.8%	83.3%	54.5%
SNS/Online Engagement	61.5%	58.3%	45.5%
Direct Sales to Customer (D2C)	13.3%	8.3%	38.5%
Offers Customization	26.7%	16.7%	38.5%
Product Labeling or Branding	6.7%	0%	15.4%

iv. Visual Summary: Heatmap of Transformation Potential

The heatmap (shown table) illustrates the *relative adaptability potential* of the three studied clusters—Jamdani, Banarasi, and Tangail—across six critical business model components: financial, market, digital, branding, design, and institutional dimensions.

Table 22: Heatmap-Business Model Adaptability Potential

Cluster	Financial	Market	Digital	Branding	Design	Institutional
Jamdani	●	●	●	●	●	●
Banarasi	●	●	●	●	●	●
Tangail	●	●	●	●	●	●

- *Jamdani* and *Banarasi* are marked almost entirely in red, indicating a very low adaptability potential. Both clusters face significant structural and capability constraints across all areas, especially in financial access, market positioning, and digital integration. Jamdani shows a slight relative advantage in design (yellow), suggesting at least a moderate openness or existing capacity in that domain.
- *Tangail*, by contrast, is represented consistently in yellow across all six dimensions, highlighting a *moderate adaptability potential*. While still facing challenges, Tangail's artisans and businesses demonstrate comparatively better readiness or existing practices in

financial dealings, market access, digital exploration, branding, design innovation, and institutional engagement.

This heatmap highlights the differential adaptability potential of each cluster for components of the proposed business model to be developed in Chapter 6.

v. Strategic Priorities by Cluster

Table 23: Overview of Strategic Priorities

Cluster	Strategic Priorities
Jamdani	Build digital trust through facilitators, introduce identity branding, and youth outreach
Banarasi	Legal recognition, space innovation, NGO-market matchmaking
Tangail	Formal branding systems, cooperative e-commerce training, digital storytelling

4.7.4 Integration with Qualitative Findings (Quant–Qual Triangulation)

This part provides a consistent analysis of the findings from Chapter 4, connecting thematic narratives (qualitative) with descriptive indicators (quantitative). Utilizing a triangulated perspective, it validates the dependability of observed patterns, enhances the significance of statistical data, and elucidates the relationship between the lived experiences of weavers and SMEs and the quantifiable business practices they disclose.

i. Overview of Triangulation Strategy

Triangulation in this study was conducted using three intersecting lenses:

1. Data triangulation – using multiple data types (interviews, FGDs, business data forms)
2. Method triangulation – integrating qualitative thematic analysis with quantitative summaries
3. Stakeholder triangulation – comparing insights across artisans, owners, retailers, experts, and customers

This process improves credibility and depth while surfacing contradictions and confirming consistency.

ii. Key Correlations Between Themes and Metrics

The following table maps selected high-frequency codes for their corresponding quantitative indicators. The aim is to assess how narrative intensity aligns with observable metrics, validating the strength of emerging patterns.

Table 24: Triangulation Matrix-Themes and Supporting Metrics

Theme/Code Category	Qualitative (Codebook) Indicator	Quantitative Evidence
Financial Fragility	“Advance dependency”, “Low pricing power”	80% rely on middlemen; <20% set own price; avg. sale <2,000 BDT
Digital Exclusion	“Fear of fraud”, “Low digital skills”	SNS usage: ~55%; Online selling: <8%; Smartphone: 62%
Market Disconnection	“No buyer contact”, “No branding”	Direct customer sales <20%; Customization <30%; Label use <10%
Tech Backwardness	“Manual design”, “Old looms”	0% use CAD or design tools; 100% manual loom use
Institutional Weakness	“No follow-up”, “No awareness of support”	Only 2/60 accessed public loans or SME support
Customer Expectations	“Buyers want modern”, “Ethical concern”	38% Tangail users report repeat buyers; 4 reported feedback loops

iii. Representative Triangulated Narratives

Code: “Fear of fraud” + **Metric:** Only 7.5% use online selling
“They once sent an order and never paid. I lost trust. Digital selling sounds risky.” – 35_RTA (Tangail)

Code: “Advance dependency” + **Metric:** 86.7% (Jamdani) sell through middlemen
“If we don’t take their money, we can’t buy yarn. But then, we have no say in pricing.” – 02_RJO (Jamdani)

Code: “No feedback loop” + **Metric:** <10% report buyer follow-up
“They sell my work under their brand. I don’t even know who bought it.” – 18_RBA (Banarasi)

Code: “Desire for identity” + **Metric:** 15.4% label use in Tangail
“Now I put my name with each piece. Some buyers ask for me again.” – 29_RTO (Tangail)

These correlations strengthen the claim that qualitative pain points mirror measurable gaps, validating the empirical foundation for model innovation.

iv. Contradictions and Anomalies

While most patterns aligned, a few areas of contradiction or uncertainty emerged: such as several respondents claimed they were “interested” in digital marketing yet showed no active digital use. This reflects aspirational bias or external influence during interviews. Tangail respondents scored higher in direct sales but still showed low customization rates. This may stem from logistical issues or low product diversity.

“They ask what color I have, not what color I can make.” – 28_RTA (Tangail)

Such gaps reveal potential readiness that is not yet realized due to operational constraints.

v. Cluster-Level Triangulated Profiles

Table 25: Cluster-Level Triangulation

Cluster	Qualitative Theme Density	Quantitative Support
Jamdani	High on “tradition loss”, “digital fear”, “pricing asymmetry”	Lowest online selling (6.7%); low customer contact (13.3%)
Banarasi	High on “urban neglect”, “hidden labor”, “no institutional link”	Lowest customization (16.7%); 0% brand identity
Tangail	High on “youth engagement”, “desire to learn”	Highest SNS use (45.5%), repeat buyers (23.1%), highest customization (38.5%)

These profiles support the strategic segmentation proposed in the business model design, where each cluster may require a different digital, market, and training pathway.

vi. Synthesis for Model Development

The triangulated analysis reveals that financial constraints, digital hesitancy, and institutional invisibility are not only narrative issues but quantifiable disadvantages. Tangail, with moderate scores in many categories, is best positioned to pilot hybrid business models that combine storytelling, digital selling, and customization. The gaps are not only technical but relational weavers feel disconnected from customers, institutions, and the broader value chain. This justifies the need for a PCBM that addresses: *Emotional disconnection* (e.g., between artisan and buyer), *Operational inefficiency* (e.g. lack of branding, informal pricing), and *Strategic invisibility* (e.g., no traceability, no market feedback).

4.8 Overall Chapter Summary from Quant–Qual analysis

Chapter 4 has presented a comprehensive two-part data analysis of the traditional handloom sector in Bangladesh using a multi-cluster, mixed-method case study approach. By integrating thematic narratives with quantitative business data, this chapter has illuminated the multi-dimensional challenges and fragmented operational environments faced by handloom SMEs across Jamdani, Banarasi, and Tangail clusters. Using a 63-code framework applied to 60 interviews and two FGDs, six major themes were identified, such as financial fragility, technological backwardness, market disconnection, digital exclusion, institutional gaps, and cultural erosion. These themes vary in concentration across the three clusters, with Tangail showing the most potential for business model innovation due to better youth involvement and localized buyer access. Visual summaries (radar charts, readiness matrices, heatmaps) showed that Tangail leads modestly in youth-led digital adoption and customer engagement, while Jamdani and Banarasi remain structurally constrained.

Quantitative synthesis has structured business data revealed patterns consistent with qualitative themes including smartphone ownership, Direct customer sales, branding and labeling, and pricing autonomy. Although many respondents use smartphones but hardly, they use it for online selling, the direct reach to customers is one fourth of the total customer segment. Value. That means almost products go to market and consumers via middlemen engagement. However, the data shows the product visibility and weaver identity are non-existent. Lastly, the price negotiation power is very limited in both clusters Jamdani and Banarasi, the weavers sold at price which often determined by Mahajan or middlemen.

Through quant–qual integration the narrative themes such as “fear of digital fraud” directly align with low online selling rates. Again, the code “advance payment dependency” matches metrics showing 80% reliance on middlemen. However, the Tangail’s customization codes correlate with higher direct buyer interaction. This triangulation underscores the importance of redesigning the business model not as a one-size-fits-all solution, but as a modular, context-responsive framework that accommodates cultural, technological, and market realities. The comparative analyses of all three clusters, the study recommended some strategic focus that summarize in the below table.

Table 26: Comparative Strategic Summary

Cluster	Transformation Readiness	Recommended Strategy Focus
Jamdani	Low–Moderate	Build digital trust; youth-centered storytelling and identity branding
Banarasi	Low	Institutional recognition, local logistics, and digital intermediaries
Tangail	Moderate	Co-creation platform; training for labeling and design innovation

Finally, the data presented in this chapter provides empirical ground for developing the PCBM Framework in Chapter 6. Specifically, the findings support redesigning value chains to reduce middleman dependency, building digital facilitation at the community level, shifting from product focus to customer relationship orientation and embedding cultural identity into branding and storytelling.

Chapter 5: Research Results

This chapter presents the core research findings in alignment with the three objectives outlined in Chapter 1. Drawing on the triangulated data from 60 in-depth interviews, two focus group discussions (FGDs), and structured business metrics collected across the three handloom clusters—*Jamdani (Narayanganj)*, *Banarasi (Mirpur, Dhaka)*, and *Tangail (Tangail District)*—and highlight their strategic differences, readiness levels, and potential pathways toward adopting the **Pattern-Changing Business Model (PCBM)**. The purpose of this chapter is to synthesize the data analysis presented in Chapter 4 and map the key results to the strategic themes, stakeholder insights, and operational gaps that will inform the final business model framework. Findings are presented sequentially for each research objective, supported by both narrative themes and quantitative patterns.

5.1 Response to Sub Research Objective 1

Objective: *To identify the key structural, financial, technological, and institutional challenges faced by the handloom sector toward sustainable growth.*

The results indicate that handloom SMEs operate within a context marked by systemic vulnerability, infrastructure deficits, and strategic invisibility. These challenges are not isolated incidents but intersecting constraints that limit agency, innovation, and competitiveness.

5.1.1 Financial Fragility: Cash Dependency and Middleman Control

Across all three clusters, the most frequently cited constraint was financial fragility. Artisans and SME owners operate with little to no access to formal banking or SME finance. 80% of respondents rely on cash advances or informal loans from middlemen. None of the interviewed artisans in Jamdani or Banarasi had access to a business bank account. Several weavers reported selling sarees below cost to repay informal debts.

“If we don’t take advance payment, we can’t buy yarn. But that means we must agree to any price they offer.” – 02_RJO (Jamdani)

This dependency creates a cycle of economic subordination where the artisan loses control over pricing, production timing, and product design.

5.1.2 Technological Constraints: Manual Production and Design Inertia

All respondents across the three clusters reported using fully manual looms, with no access to semi-automated or digitally assisted technologies. None used computer-aided design (CAD) tools, and most patterns were created using graph paper or from memory. 100% of respondents use traditional looms. 0% reported using digital inventory or design software. 92% had no exposure to any technological innovation in weaving

“We still count threads by hand. My son laughs at me when he sees me draw with chalk.” – 18_RBO (Banarasi)

This technological stagnation reduces production efficiency, limits design variation, and hampers scalability.

5.1.3 Market Disconnection: No Consumer Linkage or Branding

Most artisans sell their products through middlemen or boutique owners, with no direct contact with the end customer. This market disconnection prevents learning from buyer preferences and eliminates feedback loops essential for business improvement. Only 20% of respondents interacted with a customer directly. Less than 10% had received feedback on design, color, or fabric from a consumer. Branding was non-existent in Banarasi and minimal in Jamdani and Tangail.

“We make, they take, they sell. I don’t even know who wears my sarees.” – 28_RTA (Tangail)

This invisibility in the value chain means artisans cannot position their products meaningfully or differentiate themselves in crowded marketplaces.

5.1.4 Digital Exclusion: Access Without Integration

While smartphone penetration was moderately high (62–67%), digital tools are rarely used for business functions. Artisans described smartphones as tools for calls, entertainment, or browsing, not as commercial enablers. 45-60% use SNS (Facebook, WhatsApp) for business purposes, <8% across all clusters use for Online selling activity, only 3 weavers used bKash/Nagad to receive payment directly from customers.

“I want to post pictures, but I don’t know what to write or how to pack.” – 04_RJO (Jamdani)

Even where the desire to learn existed, the absence of locally relevant training or guided onboarding created inertia. Digital inclusion remained technical but not strategic.

5.1.5 Institutional Gaps: Policy Absence and Training Misalignment

Institutional and policy support for the handloom sector is fragmented, urban-centric, and often misaligned with the needs of traditional clusters. Only 2 respondents out of 60 reported receiving any form of state-provided business support, Training offered by NGOs was often not language- or craft-specific, leading to poor uptake. Banarasi weavers were not recognized in official government handloom registers.

“They came to give training on power-looms. But we don’t have power-looms. So, we left after one day.” – 17_RBA (Banarasi)

Lack of trust, continuity, and tailored delivery make most institutional interventions ineffective or inaccessible.

5.1.6 Cultural Erosion: Intergenerational Exit and Identity Crisis

Artisans across all clusters voiced concern that the younger generation was not interested in weaving. The reasons include low income and prestige, physical strain, perceived incompatibility with modern, urban lifestyles.

“My son delivers food for a courier company. He says it’s better than sitting here all day.” – 36_RTA (Tangail)

This trend represents not just a labor loss but a threat to cultural continuity, especially for heritage crafts like Jamdani and Banarasi.

5.1.7 Cluster-Specific Constraint Comparison

Table 27: Cluster-Specific Challenges Comparison

Cluster	Top Challenge	Root Cause
Jamdani	Digital fear and market dependency	Lack of training and confidence, traditional power hierarchies
Banarasi	Institutional invisibility and space scarcity	Urban migration, non-recognition, tenancy risks
Tangail	Branding and platform limitations	No packaging tools, inconsistent design advice

Despite these variations, the overall pattern confirms that the sector operates in an informal, under-resourced, and disconnected environment, where artisans are producers but not entrepreneurs.

5.2 Response to Sub Research Objective 2

Objective: *To analyze existing business practices and assess their effectiveness in responding to consumer needs and market conditions*

In Bangladesh, the current business practices of handloom SMEs are largely depicted by low-value production, limited strategic planning, and poor responsiveness to market shifts. Across all clusters, enterprises operate without formal structures, customer-oriented feedback systems, or brand identities. The business practices that control are inherited, fragmented, and often reinforced by unequal power relationships within supply chains.

5.2.1 Business Practice Typology by Cluster

Based on data analysis, three predominant business models emerged across the clusters:

Table 28: Business Practice Typology

Cluster	Business Practice Type	Description
Jamdani	Commission-based advance model	Master Weaver receives raw materials and cash upfront; fulfills fixed orders
Banarasi	Verbal contract, spot-payment model	Informal arrangements with local traders or boutique owners; no written terms
Tangail	Mixed direct-retail and bulk model	Combines local bazaar sales, boutique connections, and occasional Facebook leads

“We don’t plan the year. We just wait for someone to give us an order.” – 33_RTO (Banarasi)

These models reflect survival-based tactics rather than innovation-led strategies. None of the clusters employed formal business planning, documented pricing models, or cost-benefit tracking mechanisms.

5.2.2 Marketing and Customer Strategy: Product-First Logic

Handloom SMEs overwhelmingly follow a product-first approach, producing what they know or have been taught rather than what the market currently demands. The disconnect between production and buyer preferences is acute, particularly in Banarasi and Jamdani

Table 29: Behavior and Expectations of Consumers

Practice Area	Common Behavior	Consumer Expectation
Product Design	Traditional motifs, few changes	Seasonal colors, co-design, comfort, and reuse
Order Flexibility	Fixed minimums, bulk logic	Customization, low MOQ, unique stories
Packaging/Presentation	Minimal, often no packaging	Labeling, presentation, origin traceability
Customer Follow-up	Rare, no database or repeat outreach	Relationship, loyalty, post-sale care

“They buy and vanish. We don’t even know if they liked it or not.” – 03_RJO (Jamdani)

This lack of responsiveness limits brand recall and customer retention.

5.2.3 Use of Digital and Informal Channels

Digital tools, though available, are not systematized in business practices. Even in Tangail, where Facebook was used more often, the process remained unprofessional and inconsistent.

Table 30: Summaries of Constraints Reported in the Digital and Informal Channels

Function	Adoption (%)	Challenges Reported
Facebook Posting	~30%	No visual standard, weak captions
WhatsApp Ordering	<15%	No pricing catalog, delayed responses
Mobile Payments (bKash)	53–83%	Fear of chargebacks, poor confirmation process
Google/YouTube Learning	~5%	Language barrier, no access to reliable content

“I tried YouTube to learn new motifs but couldn’t follow the instructions.” – 35_RTA (Tangail)

The disconnect between available technology and usable formats hinders integration into daily business behavior.

5.2.4 Branding and Identity Practices

Among all respondents, only five had used any form of branding. Of those, three were from Tangail and two from online retailers. In most cases, branding was a sticker or handwritten label rather than a curated identity or story-based approach.

Table 31: Branding and Identity Practice

Branding Element	% of Respondents Using It
Name label	8.3%
Story card	0%
Co-branding	0%
QR code	0%

“I use a tag with my name, but the boutique removes it before selling.” – 29_RTO

This undermines artisan visibility and disconnects the product from the maker, weakening the emotional and ethical value increasingly valued by consumers.

5.2.5 Pricing Strategy and Revenue Logic

Most respondents lacked clear revenue tracking. Prices were set:

1. Based on material cost and time estimation
2. Without accounting for labor cost, margin, packaging, or marketing
3. Subject to renegotiation by traders, often post-delivery

Table 32: Pricing Strategy

Pricing Logic Type	% of SMEs Applying It
Cost + Arbitrary Profit Margin	~40%
Middleman-dictated Price	~45%
Customer-quoted (negotiation)	~15%

This lack of pricing autonomy weakens financial planning and makes savings or reinvestment nearly impossible.

5.2.6 Cluster Performance Scorecard (Business Functioning)

Based on several criteria, here the study revealed clusters performances. These criteria are digital selling, customer retentions, labeling/branding, order customization and pricing (shown in table 33).

Table 33: Summaries of the Cluster Performance Scorecard

Cluster	Digital Selling	Customer Retention	Labeling/Branding	Order Customization	Pricing Control
Jamdani	● Very Low	● Very Low	● None	● Limited	● None
Banarasi	● None	● None	● None	● None	● None
Tangail	● Moderate	● Moderate	● Emerging	● Moderate	● Limited

Despite Tangail's relative advantage, no cluster achieved a full **green (●)** score in any area of modern business practice.

5.2.7 Customer-Centered Gaps

Interviewed customers and digital retailers highlighted the mismatch between artisan practices and consumer preferences:

"We love handloom, but it's hard to reorder or get what we liked before." –14_RJC (Customer interview)

"They weave amazing things, but if you ask them for a price list or a care guide, they can't provide it." –50_DBEX (Online retailer)

These responses confirm that existing handloom business models are under-prepared to engage with urban, digital, or global buyers, especially those interested in traceable, customizable, and ethically made products.

The findings confirm that the current business practices of handloom SMEs are largely reactive, based on tradition and survival, disconnected from contemporary consumer trends, unstructured, lacking in branding, design feedback, or price control. The absence of business systems, customer insight mechanisms, and strategic digital use renders these SMEs vulnerable to market volatility and cultural displacement. These limitations reinforce the urgency of a redesigned, pattern-changing business model that addresses not only infrastructure but logic and behavior.

5.3 Response to Sub Research Objective 3

Objective: *Addressing SRO 3: Readiness and Capacity for Pattern-Changing Adoption*

This objective seeks to understand whether handloom SMEs and stakeholders possess the necessary behavioral, organizational, and contextual readiness to adopt a new business model framework that integrates sustainability, digital engagement, and collaborative strategies. Adoption capacity is influenced by several factors, including digital literacy, entrepreneurial mindset, institutional support, and openness to participatory models.

5.3.1 Findings from Fieldwork

The data from Chapter Four reveals a high degree of variation in readiness across the three clusters studied.

- In *Tangail*, several young weavers demonstrated enthusiasm for integrating digital tools, such as Tangail's strengths such as, Tangail artisans use Facebook, Instagram, and small e-commerce platforms to sell directly, reducing dependence on middlemen. Younger family members actively support digital marketing and ensuring generational continuity. Tangail has experimented with shared branding and storytelling, which makes their products more visible to urban and international buyers. The study argues that these practices can be transferred to Jamdani and Banarasi clusters with tailored interventions, such as training artisans in digital literacy, creating cooperative branding platforms and establishing shared logistics to reduce costs.
- In *Jamdani*, the situation is more mixed. Some households show interest in digitalization and customer interaction, especially among younger, more educated family members.

However, older artisans often resist changes due to concerns over quality control, tradition loss, or lack of trust in online platforms.

- In *Banarasi*, readiness is considerably lower. Most enterprises lack internet access, digital familiarity, and show resistance to departing from familiar wholesale contracts. Many artisans in this cluster expressed **risk aversion** and skepticism regarding co-creation, fearing loss of control or customer exploitation.

These findings suggest that transformative model adoption is feasible but must be modular and phased, tailored to the contextual realities of each cluster.

5.3.2 Factors Affecting Readiness

From both interviews and FGDs, the following critical enablers and barriers were identified:

- Enablers:
 - Presence of youth with basic digital skills
 - Exposure to NGOs or design students
 - Availability of smartphones and mobile banking tools
 - Artisan pride in cultural storytelling
- Barriers:
 - Low digital confidence and lack of training
 - Gendered division of labor that limits women's visibility
 - Fear of technology replacing tradition
 - Institutional absence of cluster-specific transformation support

These results align with Weiner's (2009) theory of organizational readiness for change, which emphasizes both collective motivation and collective capability as prerequisites for successful transformation. Furthermore, the diffusion dynamics observed mirror Rogers' (2003) innovation adoption curve, wherein early adopters in Tangail are paving a path not yet embraced by others.

5.4 Summary of Current Gaps in Existing Business Models

Based on the comprehensive analysis of qualitative and quantitative data from 60 respondents across three clusters, this section outlines the emerging requirements for a new business model framework for traditional handloom SMEs in Bangladesh. The goal is not merely to digitize or modernize operations but to redefine how artisans create, deliver, and capture value, with cultural

identity, customer collaboration, and digital inclusivity at the core. Across Jamdani, Banarasi, and Tangail, the following structural and strategic voids define the limitations of existing business models:

Table 34: Current Gaps in Existing Business Practices according to BMC

Business Model Element	Current Status	Observed Gap
Value Proposition	Product-centric, tradition-based	No articulation of ethics, provenance, or design value
Customer Segment	Unknown; mediated by middlemen	No direct consumer interaction or data
Channels	Offline, face-to-face, limited SNS	No multi-channel integration or visibility
Customer Relationships	One-time, anonymous	No branding, loyalty building, or aftercare
Revenue Stream	Trader-led; fixed payment	No price differentiation or recurring revenue
Key Resources	Looms, family labor, cultural skill	Unmonetized assets like storytelling or technique
Key Activities	Weaving, delivery	No marketing, co-design, digital engagement
Key Partners	Wholesalers, boutique buyers	No coop, digital facilitators, or platform allies
Cost Structure	Yarn + labor (informal)	No documentation or profit/loss analysis

This misalignment between production logic and consumer logic necessitates a pattern shift—away from inherited, inward-facing models and toward responsive, community-anchored, digitally enabled models.

5.4.1 Key Features Required in the New Business Model

The data points to six strategic components that the new framework must address:

A. Identity-Based Value Proposition

Consumers increasingly seek authentic, traceable, and ethical products. The business model must enable artisans to embed their personal stories, cultural motifs, and process transparency into product design and marketing.

“Buyers pay more when they know who made it and why.” – 48_DBEX (Online retailer)

B. Hybrid Customer Channels

Artisans must be supported in managing both offline (bazaar, festival, boutique) and online (Facebook, WhatsApp, marketplace) sales. This demands simplified content creation, mobile-first interfaces, and community logistics.

“We can’t maintain websites. But we can post photos if someone teaches us how.” – 36_RTA (Tangail)

C. Co-Creation and Customization

Weavers must shift from static production to interactive co-design models where customers can suggest colors, motifs, or product adjustments. This increases emotional value and price flexibility.

“When they choose the pattern, they treat it like their own.” – 06_RJO (Jamdani)

D. Shared Branding and Storytelling

Few artisans can independently build a brand. The new model should facilitate cluster-level branding or cooperative storytelling, where individual identities feed into a collective narrative of trust, craftsmanship, and heritage.

“If ten of us use one name, we can become known together.” – FGD01 participant

E. Digital Facilitation Ecosystem

Artisans require trusted intermediaries—young community members trained as digital facilitators—to help with posting, messaging, photography, packaging, and transaction management.

“My daughter uses bKash and can help me. But she needs training too.” – 37_RTA (Tangail)

F. Resilient Financial and Pricing Systems

The model must support documentation of costs and profits, group financing or cooperative savings and pricing strategies linked to uniqueness, time, and story. This helps artisans shift from dependency to informed entrepreneurship.

5.4.2 Cluster-Specific Adaptation Needs

Table 35: Cluster-Wise Business Model Shifts

Cluster	Priority Business Model Shifts
Jamdani	Build digital confidence; co-create labels; engage youth in photography and story uploads
Banarasi	Legal identity support; basic mobile training; market exposure through cooperative brand
Tangail	Advance co-creation systems; community logistics; design mentorship for modern motifs

These pathways reflect the differentiated starting points and suggest that the new model must be modular, allowing phased onboarding by capability and cluster.

5.4.3 Stakeholder Roles in the New Model

Table 36: Stakeholder Roles in the New Model

Stakeholder	New Role in the Model
Artisan/SME	Co-designer, storyteller, digital collaborator
Digital Facilitator	Content manager, trainer, transaction handler
NGO/Policy Agency	Cluster platform builder, training implementer
Marketplace	Partner, not controller; supports traceability and fair payment
Customer	Co-creator, feedback source, community member

This rebalancing shifts artisans from being passive producers to active co-creators within a collaborative business ecosystem.

5.4.4 Transition to the Business Model Framework (Chapter 6)

The findings outlined here feed directly into the construction of the *PCBM Framework*, which will be introduced and explained in Chapter 6. The framework is rooted in the Business Model Canvas (Osterwalder & Pigneur, 2010), adapted for informal artisan contexts, informed by the Resource-Based View, hybrid organizing theory, and co-creation logic, grounded in real field challenges and readiness metrics.

“We don’t need a big company. We need a way to sell with our name, our hands, and our design.”

18_RBO

This quote captures the spirit of the framework: transformation without displacement—a redesign that empowers tradition.

5.5 Chapter Summary

This chapter presented the findings of the research in relation to the three core objectives that guided the study. Drawing on the rich empirical data from 60 interviews, two focus group discussions, and structured business profile and digital tool usage data, it systematically responded to each objective using a combination of thematic insights and descriptive analytics.

These elements will be operationalized into the **PCBM Framework** in Chapter 6, using the Business Model Canvas and relevant theory adapted to the context of informal, heritage-based microenterprises.

5.5.1 Implications for Business Model Redesign

This chapter highlights a key insight: transformation must start from within the artisan ecosystem, not be imposed from above. Artisans are not just service providers or heritage holders, they are entrepreneurs with distinct capacities, constraints, and aspirations. A successful model must respect tradition while enabling innovation, facilitate access without disempowering agency, encourage digital engagement without alienating low-literacy users, rebuild trust, visibility, and value within a fractured value chain.

5.5.2 Transition to Chapter 6: Business Model Framework and Discussion

Having mapped the structural gaps and emerging needs across clusters, Chapter 6 will now construct the proposed *business model framework*, grounded in theory and field data. This next chapter will:

1. Present the revised Business Model Canvas adapted for the handloom sector
2. Visualize the framework and its components
3. Discuss its adaptability to different clusters and future potential
4. Reflect on the broader implications for inclusive business model innovation

5.5.3 Implications for the Pattern-Changing Business Model

The data suggests that the proposed PCBM must be adaptive and layered. For digitally curious clusters like Tangail, co-creation platforms and digital branding training can be piloted immediately. To Jamdani, a hybrid strategy mixing tradition and tech facilitation is more appropriate. In Banarasi, groundwork must first be laid through trust-building, institutional incentives, and storytelling workshops. The business model must not be imposed uniformly but must evolve based on contextual capacity and readiness, thereby avoiding failure due to premature or misaligned interventions.

Chapter 6: Discussion and Business Model Development

Building on the research findings from Chapters 4 and 5, this chapter develops and argues for a design of a PCBM for Bangladesh's traditional handloom sector. This chapter connects the lived experiences of artisans to a larger discourse on strategic, institutional, and digital change. It is based on empirical data from three clusters—Jamdani, Banarasi, and Tangail—and expert respondents is influenced by theoretical frameworks from business model innovation.

There are three sections to the chapter. It begins by going over the theoretical frameworks discussed in Chapter 2 again and examining how the results support, contradict, or expand upon them. Second, it outlines the fundamental ideas that underpin the new model and summarizes the justification for breaking with existing business methods. Finally, it offers an updated business model that is intended to overcome the limitations, make use of cultural resources, and conform to inclusive, digital-first, and co-creation-based company growth logics.

6.1 Theoretical Re-Engagement

This research was guided by five interrelated theoretical frameworks that together provide a robust lens for understanding and redesigning business models in informal, artisan-based sectors.

6.1.1 Business Model Canvas (Osterwalder & Pigneur, 2010)

Business Model Canvas (BMC) offers a systematic tool to map and innovate the way a business creates, delivers, and captures value. However, in the context of traditional handloom SMEs in Bangladesh, the BMC must be significantly localized and contextualized.

The study advances Osterwalder and Pigneur's (2010) Business Model Canvas by adapting it to informal, heritage-based economies. While the original BMC emphasizes profit-driven activities, the PCBM framework reorients the canvas to integrate:

- **Cultural Centrality:** Recognizing heritage value as a strategic differentiator.
- **Social Empowerment:** Positioning livelihoods, gender inclusion, and community trust as essential elements of value creation.
- **Digital Engagement:** Expanding channels to include social media, cooperative e-commerce, and storytelling.

This adaptation contributes to the literature by demonstrating how the BMC can evolve in non-industrial, culturally embedded contexts.

Table 37: Summaries of Key Deviations Derived from Observed

BMC Element	Traditional Logic	Observed in Field
Value Proposition	Functional product, aesthetic tradition	Cultural identity, customization, story as value
Customer Segments	Often undefined	Mostly indirect via middlemen, no segmentation
Channels	Physical, informal	Emerging social media, weak digital integration
Customer Relationships	Transactional, anonymous	Aspiration for connection, trust, and feedback loops
Revenue Streams	Bulk-based, fixed pricing	Price controlled by trader; no recurring or premium pathways
Key Activities	Weaving, selling through traders	No digital marketing, CRM, packaging, or innovation activities
Key Resources	Cultural skills, family labor	Underutilized—no monetization of identity or intellectual capital
Cost Structure	Material + labor (untracked)	Informal; no documentation or business planning

In this situation, the BMC must represent cultural significance, community resources, and collaborative digital facilitation—elements that do not appear in its typical format.

6.1.2 Resource-Based View (Barney, 1991)

The RBV argues that firms gain advantage from resources that are valuable, rare, inimitable, and non-substitutable (VRIN) (Barney, 1991). This study identifies the cultural heritage, artisan identity, and weaving skills of Bangladeshi clusters as VRIN resources.

- These assets cannot be replicated by mechanized textile production.

- When combined with digital enablers, they provide a unique competitive edge in global markets.

Thus, PCBM operates RBV in an artisanal context by linking intangible cultural resources with modern market mechanisms.

6.1.3 Hybrid Organizing and Social Entrepreneurship (Battilana & Dorado, 2010)

Hybrid organizing suggests that organizations can simultaneously pursue social and economic goals (Battilana & Lee, 2014). The PCBM demonstrates how handloom cooperatives can integrate cultural preservation with economic survival:

- By sharing digital platforms, artisans reduce individual costs while expanding market reach.
- By storytelling and customization, artisans preserve cultural authenticity while meeting consumer demand.

Thus, this study extends hybrid organizing theory to the domain of informal, artisanal economies, which remains underexplored in the literature.

6.1.4 Value Co-Creation Theory (Prahalad & Ramaswamy, 2004)

The value co-creation theory emphasizes interactive relationships between producers and consumers, where value is jointly generated through feedback, customization, and shared experiences. This study found that emerging consumer demand for traceability, ethical sourcing, and “meet the maker” narratives, a latent willingness among artisans (especially in Tangail) to engage in co-design and storytelling, a lack of infrastructure for operationalizing co-creation (digital tools, packaging, messaging). Thus, co-creation must be designed into the business model logic itself, not as an add-on, but as a core delivery mechanism for economic and emotional value.

6.1.5 Constructivist Learning for Artisan Adoption (Piaget’s (1973)

For new business models to be adopted effectively by artisans, especially those with limited formal education, learning must be deeply participatory and contextually grounded. Piaget’s (1973) constructivist theory posits that learners build new knowledge on the foundation of prior experiences and cognitive frameworks. This means artisans will more readily adopt digital tools, social media strategies, and direct marketing approaches when these are linked to familiar practices and when they can see tangible, culturally resonant benefits.

In practice, this implies that implementing the proposed model requires workshops and pilot initiatives where artisans learn through doing, sharing, and reflecting. Such participatory environments honor existing knowledge systems while incrementally building new competencies. This learning process not only facilitates technical adoption but also fosters trust and ownership, which are critical for sustainable transformation in tightly knit rural communities.

6.2 Validation for a Pattern-Changing Business Model

This study explored a 'pattern-changing' framework that goes beyond Chesbrough's (2010) concept of business model innovation. It embeds co-creation (Prahalad & Ramaswamy, 2004), social commerce (Kaplan & Haenlein, 2010; Zhang et al., 2021), and cultural sustainability (Boons & Lüdeke-Freund, 2013) into its design. Unlike Chesbrough's technology-focused innovation, this approach restructures the traditional handloom sector by prioritizing artisan identity and participatory digital channels. Field evidence from Tangail shows artisans actively engaging in WhatsApp-based co-design and direct-to-consumer experiments, validating the model's relevance. Piaget's (1973) constructivist learning also justifies staged capacity building, allowing artisans to adopt digital practices while preserving traditional competencies. Based on the synthesis of findings and theoretical re-engagement, this section outlines why a fundamental redesign is needed and what principles must guide that change.

6.2.1 Why the Existing Business Model Must Change

The handloom industry's current business model fails to meet the demands of modern consumers (ethical, digital, fast yet meaningful), weavers (fair pricing, dignity, independence) and institutions (policy alignment, formalization, data-driven intervention). Key failures include 1) Invisible artisans, anonymous products 2) Exploitative intermediaries, pricing asymmetry 3) Underutilized cultural capital 4) Fear and confusion around digital selling 5) Fragmented support systems.

“They tell us to be modern, but no one shows us how. We are not against change. We just don't want to be lost.” – FGD01 participant (Jamdani master weaver)

This statement encapsulates the dilemma of dignity and digitalization—how to transform without erasing identity.

Below the figure shows the comparison between the old business model and the new business model.

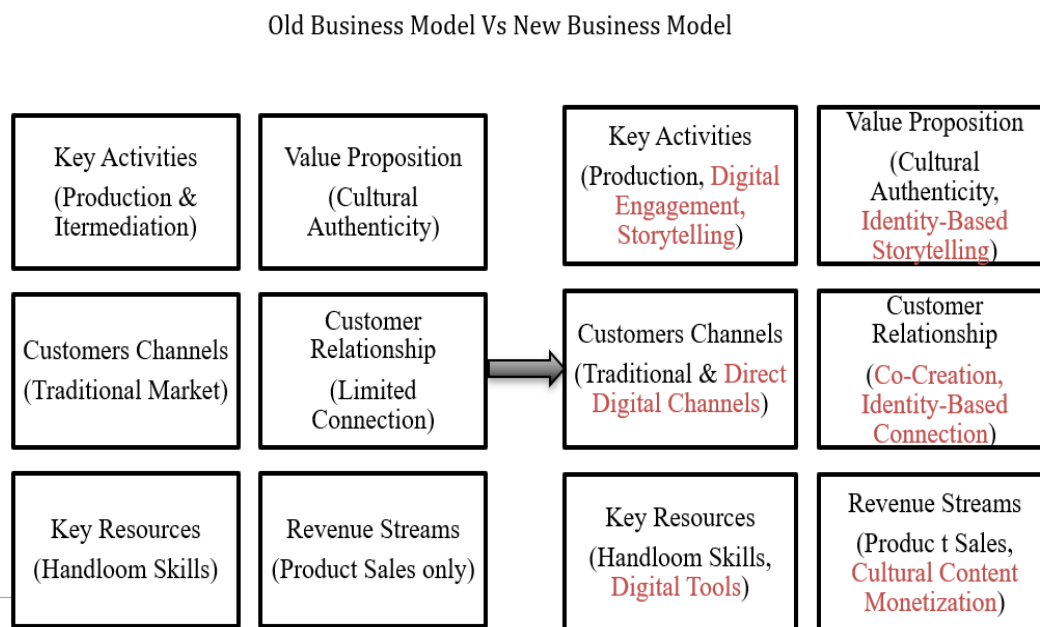


Figure 17: Comparison between old business models and new business models

6.2.2 What Makes a Model “Pattern-Changing”

In this study, a “pattern-changing” business model considered five elements including empower, integrate, democratize, invert, encourage, and modularize (shown in Table 38). The PCBM highlights empowerment of artisans/weavers through co-creation and co-owned their markets. It integrates artisans/weavers’ cultural identities, helps to access digital tools through community facilitations.

Table 38: Pattern Changing Elements

Elements	Interpretation
Empower	Artisans as co-creators and co-owners of their market journey
Integrate	cultural identity as a strategic advantage
Democratization	access to digital tools through community facilitation
Invert	The supply chain by connecting the producer to the consumer directly

Encourage	sustainable, slow-fashion production logics
Modularize	engagement—offering steps for different levels of readiness

The extended model also emphasizes a direct supply channel that connects the handloom producers / artisans to consumers. Besides, the sustainable and slow-fashion logics are core to redesign the model which is not considered in the previous BM. This concept uses networks of shared capacity and localized resilience to scale outward rather than centralize.

6.2.3 Principles Guiding the New Model

Below we explain some elements as guiding principles for the new model. These are.

Cultural Centrality

The model must not merely preserve craft but position it as a strategic differentiator. It does more than safeguard traditional crafts—it must actively leverage them as strategic assets that differentiate handloom products in global markets. Rather than treating cultural heritage as a static legacy, it should be reimagined as a dynamic driver of value creation, embedded in branding, storytelling, and customer experience. Cultural capital becomes not just a social asset but a competitive one, especially in markets demanding authenticity and sustainability.

Inclusive Innovation:

Introduce change through locally facilitated digital, design, and branding support—not external imposition. Innovation should emerge from within the Artisan communities, using contextual design thinking and local enablers (e.g., NGOs, cooperatives, community organizations). The emphasis is on empowering artisans with digital literacy, branding insights, and design tools, ensuring that modernization enhances—rather than replaces—traditional knowledge. External support should act as a facilitator, not a disruptor.

Artisans should interact with the end-buyer through storytelling, feedback, and co-creation mechanisms. Shared branding, logistics, and digital content reduce the burden on individual artisans.

Consumer Connection:

Building direct emotional and participatory ties between artisans and consumers transforms the transaction into a shared experience. Through storytelling, product journey narration, live interactions, and digital platforms, consumers become co-creators and cultural allies. These interactions not only boost product value but also strengthen artisan dignity, product loyalty, and trust.

Cooperative Structure:

The model advocates for a shared-services ecosystem where branding, logistics, digital promotion, and online selling platforms are managed collectively. This cooperative infrastructure distributes operational overheads, enhances visibility, and fosters collaboration. Such structures also enable bulk procurement, training, and digital capacity building, allowing artisans to focus on core competencies.

Phased Adaptability:

The model must accommodate different clusters' readiness and customize onboarding steps accordingly. It must be flexible enough to accommodate regional diversity, digital maturity, and socio-economic readiness. Onboarding should be phased, with tailored interventions based on cluster-level assessments (e.g., digital readiness, market access, organizational capacity). This approach respects local rhythms and prevents alienation, ensuring that transformation is inclusive and sustainable.

6.3 The Proposed Business Model Design

Digital engagement, identity-based storytelling, and co-creation are core to the proposed Pattern-Changing Business Model (PCBM). For example, integrating Facebook storytelling and cluster WhatsApp groups responds directly to observed gaps in market access and trust. By involving customers in selecting motifs or colors, the model shifts from transactional sales to participatory branding, reflecting Prahalad & Ramaswamy's (2004) theory. This reduces market disconnect and enhances artisan dignity.

6.3.1 Pattern-Changing Business Model

The study findings call for an essentially new model of business design—one that is not simply an improvement on current practices, but a reconfiguration of the business logic that drives

handloom-based SMEs in Bangladesh. This section introduces a proposed business model structure grounded in the Business Model Canvas (BMC), enriched with cultural, digital, and cooperative dimensions adapted to informal artisan economies. The model is named “Pattern-Changing” to represent both its goal of transformation and its alignment with the craft metaphor at the heart of weaving: a new pattern for a sustainable enterprise. With each component reinterpreted via the prisms of traditional SMEs, cultural creation, and digital empowerment, the following image depicts the updated and context-adapted Business Model Canvas.

This PCBM proposes a systematic transformation of traditional handloom businesses by integrating cultural heritage, digital innovation, and hybrid organizational strategies. Drawing from the *Business Model Canvas* (Osterwalder & Pigneur, 2010) and synthesizing insights from *Resource-Based View* (Barney, 1991), *Hybrid Organizing* (Battilana & Dorado, 2010), and *Co-Creation Theory* (Prahalad & Ramaswamy, 2004), the model addresses the challenges of sustainability, income inequality, and cultural erosion in artisanal communities. Its architecture is organized into two more interdependent layers, each contributing to a holistic value chain that bridges tradition and modernity.

6.3.2 Key Elements of the PCBM

Each element is described below with examples of how it addresses specific constraints identified in the research.

1. Key Partners

Current Gaps: The data shows the weavers are overreliance on wholesalers and isolated support from government authority and non-governmental organizations.

Model Strategy:

1. Build partnerships with local digital facilitators, cooperatives, platform intermediaries (e.g., Facebook shops), and logistics enablers
2. Create multi-stakeholder ecosystems including NGOs, artisan groups, and retail partners with fair-trade credentials

Example: A youth-led cooperative in Tangail provides packaging, cataloging, and Facebook management for 10 weavers.

2. Key Activities

Current Gaps: Weaving-only logic; no formal marketing, customer feedback, or storytelling

Model Strategy:

1. Include photography, caption writing, price tagging, story crafting, and customer service as core activities
2. Train selected artisans in “business functions” beyond production

Example: Weekly photo uploads and messaging by a facilitator based on the weaver’s latest design and story.

3. Key Resources

Current Gaps: Cultural capital is unrecognized; no design archives or brand assets

Model Strategy:

1. Treat ancestral designs, community trust, and artisan knowledge as core assets
2. Digitize traditional motifs and register weaver profiles under community labels

Example: A community brand with sub-labels linked to artisan families and signature styles (e.g., “Ghosh Jamdani Line”).

4. Value Proposition

Current Gaps: Product-only focus; no customer-facing narrative

Model Strategy:

1. Offer culturally rooted, ethically made, traceable products
2. Embed stories of weavers, designs, and materials into every item (e.g., QR code, printed card, online bio)

Example: “This saree was woven by Roksana Begum of Mirpur. Her pattern is based on her grandmother’s 1960 design.

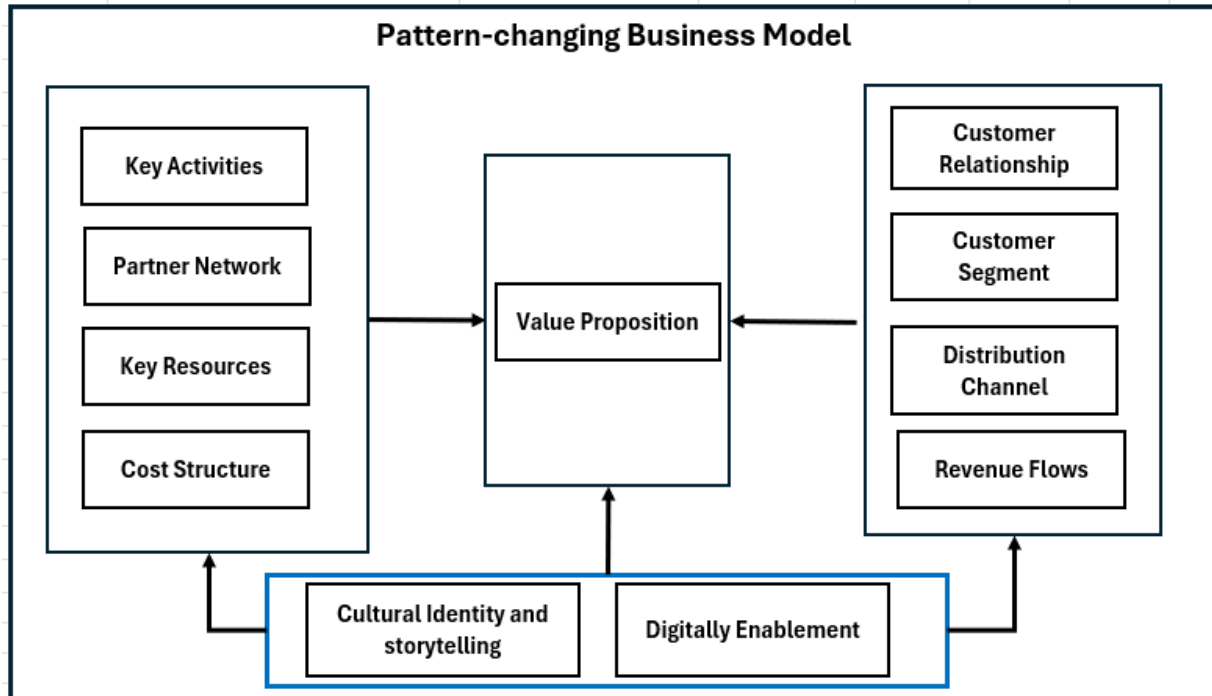


Figure 18: Pattern Changing Business Model for Handloom SMEs

5. Customer Relationships

Current Gaps: No direct communication or retention strategies

Model Strategy:

1. Use social commerce, WhatsApp groups, and feedback loops to maintain buyer contact
2. Offer customization, pre-orders, and acknowledgment for loyal buyers

Example: A Facebook group titled “Woven by Tangail Women” where customers can vote on upcoming colors or pre-book pieces.

6. Channels

Current Gaps: Dependent on boutiques and traders; no hybrid selling

Model Strategy:

1. Blend physical (bazaars, pop-ups, fairs) and digital (Facebook, WhatsApp, partner websites) channels
2. Use shared courier services and pre-negotiated rates to streamline logistics

Example: A pop-up booth at Dhaka Art Summit complements a week-long WhatsApp campaign tied to Women's Day.

7. Customer Segments

Current Gaps: Undefined customer profiles; assumptions made by traders

Model Strategy:

1. Define and engage with three strategic segments:
 1. Urban middle-class buyers seeking ethical fashion
 2. Diaspora buyers' nostalgic heritage products
 3. Boutique owners looking for unique designs

Example: A Jamdani cooperative segments Instagram content into domestic and diaspora themes.

8. Cost Structure

Current Gaps: No cost documentation; labor often unpaid or undercounted

Model Strategy:

1. Introduce basic costing sheets (materials + labor + service fees)
2. Include budgeting for digital facilitation, packaging, and delivery

Example: A simplified price calculator template for SMEs maintained by the community facilitator.

9. Revenue Streams

Current Gaps: One-time, middleman-controlled sales

Model Strategy:

1. Enable tiered pricing (custom, limited edition, co-branded)
2. Explore subscription or pre-order models for frequent buyers
3. Share revenue from digital platform collaboration with brand contributors

Example: A monthly “heritage box” of accessories curated by Tangail’s youth design team, sold online with advance payment.

6.3.3 Cross-Cutting Enablers

A. Cultural Identity & Storytelling Layer: Embedded across the entire model is a narrative layer where the artisan’s name, inspiration, and story accompany every product and promotion.

B. Digital Enablement Layer: Supported by community-based digital facilitators, this layer enables content creation, online selling, customer interaction, and digital payments.

6. 4 Transformational Logic of the new model

This business model is not only about income, but also about dignity, visibility, and agency. It proposes a reorientation of value chains that honors the past while shaping a viable and inclusive future. The decision to propose a new business model stems from the limitations observed in existing operational patterns within the Bangladeshi handloom sector, which are characterized by multi-tiered intermediation, low transparency, and minimal consumer engagement. The “old” model largely replicates a conventional supply chain logic where artisans function as passive producers, selling to wholesalers who then control pricing, marketing, and consumer reach. This structure perpetuates low bargaining power for artisans and weakens the transmission of cultural narratives associated with handloom products (Kaplinsky, 2000; Gereffi, 1999).

In contrast, the proposed Pattern-Changing Business Model (PCBM) introduces new strategic elements such as direct-to-consumer digital channels, identity-based storytelling, and participatory co-creation. The “bottom box” encapsulates these additions, depicting mechanisms like social commerce and artisan-led storytelling platforms that fundamentally shift how value is created and delivered. By repositioning artisans as co-creators of brand narratives—where they directly showcase weaving processes or respond to customer motif preferences via platforms like Facebook or WhatsApp—the model operationalizes Prahalad and Ramaswamy’s (2004) theory of co-creation. Moreover, by embedding cultural sustainability within the business design (Boons & Lüdeke-Freund, 2013), the new model ensures that heritage is not merely marketed as a static artifact but actively constructed in partnership with consumers. This holistic restructuring justifies the necessity of a new business model, transcending incremental improvements to reconfigure the entire value logic of the sector (Chesbrough, 2010).

Table 39: Summary of Old Versus Pattern-Changing Logics

From (Old Logic)	To (Pattern-Changing Logic)
Product → Customer	Commodity to co-creation
Anonymous → Branded	Invisible to acknowledged
Isolated → Connected	Manual-only to hybrid digital

From (Old Logic)	To (Pattern-Changing Logic)
Disempowered → Negotiator	Trader-driven to story-driven
Passive → Participatory	Supply-led to market-aware

6.5 Justifying the Pattern Changing Approach

The value of handloom textiles, when compared to machine-made products, extends far beyond production speed or cost. Handloom weaving embodies deep cultural heritage, artisanal uniqueness, and environmental sustainability that mechanized production often lacks. As highlighted by UNESCO (2013), crafts like Jamdani represent intangible cultural assets that are intricately tied to community identity. While machine-made textiles dominate mass markets through speed and uniformity, handloom products offer personalized detailing, low-carbon production, and inclusive employment for rural artisans, particularly women. This model aligns with the principles of cultural sustainability (Boons & Lüdeke-Freund, 2013) and inclusive innovation (Prahalad & Ramaswamy, 2004), supporting value creation not only economically but socially and symbolically. In global markets where consumers increasingly seek authenticity, ethical production, and traceable narratives (Kapferer, 2012; Zhang et al., 2021), handloom gains strategic relevance as a high-value niche product, rather than a low-cost mass alternative. Thus, instead of replacing handmade with mechanized systems, the proposed Pattern-Changing Business Model leverages handloom’s unique attributes to reposition traditional craftsmanship within contemporary digital and branding ecosystems.

6.6 Model Operationalization Across Clusters

While PCBM design provides unified architecture, its successful implementation requires cluster-specific customization. Each cluster—Jamdani (Narayanganj), Banarasi (Mirpur, Dhaka), and Tangail Tant (Tangail)—has distinct strengths, weaknesses, digital readiness levels, and market access patterns. This section offers practical operational pathways tailored to each context, enabling a phased, realistic, and grounded adoption strategy.

6.6.1 Jamdani Cluster: From high cultural value to low readiness

Profile Summary:

1. **Strengths:** Recognized as UNESCO Intangible Cultural Heritage; intricate craftsmanship; established domestic demand.
2. **Weaknesses:** Low digital confidence, dependence on traders, youth disinterest due to unattractive income prospects, no branding or pricing autonomy.
3. **Readiness Level:** Moderate (strong product, weak market control), less than 15% of artisans reported online engagement.
4. **Low Income:** 74% of weavers earn below subsistence levels.

Model Adaptation Strategies:

Table 40: Model Adaptation Strategies in Jamdani Cluster

Business Model Area	Operational Focus in Jamdani Cluster
Value Proposition	Highlight heritage in branding (e.g., “UNESCO Woven”)
Channels	Use Facebook storytelling and design drops curated weekly
Key Partners	Partner with heritage retailers and government design bodies
Customer Relationships	Feature “Meet the Weaver” cards and behind-the-loom reels
Digital Enablement	Recruit and train female youth as cluster-based digital agents
Costing & Pricing	Introducing fair wage calculations for complex designs
Story Layer	Trace lineages of pattern origin and intergenerational stories

Pilot Idea: A seasonal storytelling campaign on Facebook, featuring a single family’s design evolution across generations, combined with a QR-linked catalogue in Bengali and English.

6.6.2 Banarasi Cluster: Tradition-heavy and digitally lagging

The Banarasi cluster in Mirpur, Dhaka, while rich in cultural heritage, faces significant challenges:

1. **Ageing Workforce:** Majority of weavers are over 45 years old.
2. **Low Digital Presence:** Only 18% of artisans reported using online sales channels.

3. **Dependence on Middlemen:** Artisans largely rely on wholesalers and intermediaries, reducing profit margins.

Limited Innovation: the *readiness level* is low–Moderate (urban logistics, weak identity and coordination). Artisans’ express hesitation toward modernization due to cultural and financial constraints.

Banarasi requires targeted interventions—digital literacy programs, cooperative branding, and institutional support—to break dependency cycles.

Model Adaptation Strategies:

Table 41: Business-Model Adaptation Strategies in Banarasi Cluster

Business Model Area	Operational Focus in Banarasi Cluster
Key Partners	Formal registration drive with Handloom Board or NGO support
Key Resources	Digitize and archive Banarasi design motifs unique to Mirpur
Customer Segments	Target ethical urban buyers and designers via pop-ups
Channels	WhatsApp and boutique co-branded physical catalog
Customer Relationships	Follow-up via boutique WhatsApp groups, sticker QR feedback
Branding	Develop cooperative label: “Dhaka Banarasi Circle”
Revenue Streams	Shared space showroom on rotation model with profit-sharing

Pilot Idea: Register 25 Banarasi SMEs into a single cooperative with NGO assistance and a popup micro-gallery at Dhaka’s New Market or Art Summit.

6.6.3 Tangail Cluster: A relatively advanced cluster

The **Tangail cluster** demonstrates higher readiness for innovation and market responsiveness compared to Banarasi and Jamdani. Findings show:

1. **Digital Adoption:** Readiness level is high. 62% of artisans already use Facebook or Instagram to connect with consumers.
2. **Youth Engagement:** Younger family members often handle digital marketing, enabling generational continuity.
3. **Cluster Branding:** Cooperative efforts have helped Tangail sarees gain recognition in Dhaka’s urban markets.
4. **Market Linkage:** Artisans increasingly bypass middlemen, selling directly to urban and overseas buyers.

Tangail offers a viable context for piloting the PCBM framework, as it already embodies elements of digital engagement, consumer connection, and cooperative structures.

Model Adaptation Strategies:

Table 42: Model Adaptation Strategies in Tangail Cluster

Business Model Area	Operational Focus in Tangail Cluster
Value Proposition	Emphasize daily luxury, cotton comfort, and personalization
Co-creation	Enable digital mock-ups via mobile tools and WhatsApp preview
Digital Enablement	Appoint cluster design mediators for trend translation
Branding	Introduce “Woven by Tangail Women” as digital label
Customer Relationships	Use repeat buyer WhatsApp channels and festival-based campaigns
Channels	Facebook Shop-in-Shop with local courier partnerships
Revenue Streams	Launch quarterly “design drop” bundles for early-bird customers

Pilot Idea: Monthly design contest where youth submit ideas, selected winners are co-woven by senior artisans, and buyers get tagged story cards.

Summary Table: Cluster Readiness and Action Priorities

Table 43: Summary Table Cluster Readiness and Action Priorities

Cluster	Readiness	Strategic Priority	Key Pilot Intervention
Jamdani	Moderate	Digital storytelling, branding, and youth reengagement	Intergenerational story-based campaign
Banarasi	Low	Legal identity, boutique access, infrastructure	Cooperative registration + micro-gallery
Tangail	High	Product design innovation, co-creation tools	Design mentorship + social commerce bundles

This model does not assume equal transformation speed. Instead, it offers modular pathways suited to real constraints and aspirations, ensuring inclusivity and scalability.

6.6.4 Cluster Synergies and Shared Infrastructure Opportunities

Although each cluster requires tailored strategies, shared infrastructure can reduce duplication, lower costs, and foster inter-cluster learning:

Table 44: The Overview of Shared Research

Shared Resource	Description	Operational Base
Digital Content Hub	Localized training + template library	Managed by facilitators
Cooperative Logistics Platform	Shared courier integration for artisan groups	Operated under NGO–SME MOU
Artisan Database and Registry	Photo, story, and design log for each artisan	Digitally maintained by Coop
Seasonal Market Reports	Color and design trend digest for weavers	Curated by cluster mentors

These structures promote digital inclusion, collective branding, cost-sharing, enhancing system resilience and self-governance.

6.6.5 Comparative Cluster Strategies

Table 45: Comparative Strategies and Transferability

Dimension	Tangail (Readiness)	(High Banarasi (Medium-Low Readiness)	Jamdani (Low Readiness)	Transferable Lessons
Digital Adoption	Strong use of Facebook/Instagram for sales	Very limited (18%)	Minimal (15%)	Introducing cluster-level social media shops for Banarasi & Jamdani
Youth Involvement	Active engagement in marketing & branding	Weak; aging workforce	Very weak	Training programs targeting artisan youth in Banarasi & Jamdani
Cluster Branding	Tangail sarees marketed as a regional identity	Limited cooperative branding	No organized branding	Shared branding initiatives across all clusters
Market Linkage	Direct-to-consumer through online platforms	Dependent on wholesalers	Dependent on middlemen	E-commerce partnerships for Banarasi & Jamdani
Institutional Support	Moderate support (some NGO involvement)	Weak institutional linkages	Weak institutional linkages	Strengthen support via Bangladesh Handloom Board and NGOs
Innovation Readiness	High (customization & storytelling)	Low	Very low	Phased digital adoption with training and cooperative support



6.7 Transferability of Tangail Strategies

The findings reveal that Tangail's success factors can be systematically transferred to Banarasi and Jamdani:

1. **Digital Literacy Training:** Tangail's digital adoption can serve as a model. Training programs could empower Banarasi and Jamdani artisans to set up cluster-based online platforms.
2. **Youth Engagement Programs:** Encouraging younger generations to manage digital sales channels can replicate Tangail's continuity mechanism.
3. **Cooperative Branding:** Tangail sarees benefit from branding as a regional identity. Banarasi and Jamdani can adopt similar cooperative branding strategies to strengthen consumer recognition.
4. **Direct Market Linkages:** Facilitating e-commerce and fair-trade platforms can help artisans bypass exploitative middlemen.
5. **Phased Adaptability:** While Tangail may leapfrog into advanced stages of PCBM, Banarasi and Jamdani must begin with small-scale, low-cost interventions.

6.8 Alignment with Research Objectives

- **SRO 1:** The findings identify key structural, financial, technological, and institutional challenges across clusters.
- **SRO 2:** The comparative analysis assesses the effectiveness of existing practices (e.g., Tangail's digital adoption vs. Banarasi/Jamdani's stagnation).
- **SRO 3:** The results provide the empirical foundation for developing the pattern-changing business model (PCBM), which integrates sustainability, digital engagement, and cultural centrality.

6.9 Users and Stakeholders of PCBM

The proposed Pattern-Changing Business Model (PCBM) is designed to be adopted and operationalized by multiple stakeholders across the handloom ecosystem, each fulfilling

complementary roles that ensure its sustainability and scalability. At the core are the artisans and small-scale SME owners, who will employ the model to reposition themselves as co-creators and brand narrators rather than passive producers. Through social commerce platforms, digital storytelling, and a cluster-level digital registry, these primary users can engage directly with end-consumers, secure greater pricing autonomy, and embed their cultural heritage within market transactions. Supporting them are cluster coordinators and cooperatives, who will manage shared co-creation booths, oversee authenticity systems, and facilitate logistics across weaver communities. Equally central are digitally literate youth facilitators within clusters, who act as intermediaries bridging artisans with technology by running e-commerce interfaces, curating online content, and supporting consumer engagement. The role of government agencies and NGOs—such as the Bangladesh Handloom Board or local cooperatives—is to provide capacity-building, regulatory support, and initial pilot funding, thereby embedding the framework within institutional contexts. Finally, consumers themselves participate as active users of PCBM by engaging in co-design processes, validating artisan narratives, and reinforcing cultural identity through purchasing and storytelling practices. In this way, PCBM distributes ownership and use across the entire value chain, balancing artisan empowerment, consumer participation, and institutional support.

6.10 Academic and Practical Contributions

This section describes the research's scholarly and applied relevance. This study advances theory, methodology, and application in three interrelated domains: inclusive digital transformation, cultural and informal economies, and business model innovation (BMI) by creating a framework for a pattern-changing business model for Bangladesh's traditional handloom sector.

6.10.1 Theoretical Contributions

A. Contributions to Resource-Based View

The research reaffirms the relevance of the Resource-Based View (Barney, 1991) in identifying intangible assets, e.g., heritage patterns, generational skills—as sources of competitive advantage. However, it also shows that competitive value cannot be realized without enabling structures such as digital access, branding, and market visibility.

B. Expanding the Scope of Co-Creation Theory

By applying value co-creation (Prahalad & Ramaswamy, 2004) to the handloom sector, the research shows how even informal, low-tech enterprises can co-create value with consumers through custom design feedback, artisan storytelling and social media engagement and product narrative loops. This moves co-creation from high-tech service industries into craft, heritage, and rural livelihoods. The study contributes to democratizing co-creation by showing how relational value can be generated through low-cost, high-trust mechanisms.

6.10.2 Methodological Contributions

This research makes a methodological contribution by developing and applying a qualitative-dominant mixed-methods design that is specifically tailored to the study of informal, culturally embedded industries such as the handloom sector of Bangladesh. While existing business model innovation studies often rely on quantitative surveys or case narratives from formalized industries (Chesbrough, 2010; Zott & Amit, 2010), this thesis adapts and extends **Mayring's (2000) qualitative content analysis** to systematically code semi-structured interview data from artisans, intermediaries, policy actors, and consumers, producing a 63-code framework. The integration of this framework with cluster-level quantitative indicators (e.g., digital adoption rates, income levels, readiness indices) represents a novel triangulation strategy that grounds theoretical constructions in both lived experiences and measurable variables. By linking qualitative codes to quantitative outcomes, the research advances a methodological pathway for studying socio-economic transformation in informal sectors, where purely statistical models fail to capture cultural complexity and where purely qualitative approaches risk remaining anecdotal. Furthermore, the study operationalizes constructivist epistemology (Piaget, 1973) in its methodological choices, framing artisans not only as research subjects but as active knowledge contributors through co-creation workshops and feedback validation. This participatory approach enriches the credibility and transferability of findings (Lincoln & Guba, 1985) and provides a replicable methodological template for examining business model change in other heritage-based industries in both the Global South and North.

6.10.3 Practical Contributions

A. Practical Business Model for Artisan Enterprises

The Pattern-Changing Business Model is actionable, designed to be Visual (easy to understand and adapt), Flexible (modular, allowing phased onboarding) and Grounded (based on real production, financial, and storytelling constraints). It offers weavers, NGOs, and small brand collaborators a blueprint to digitally integrate, co-create, and build market presence. Considering the impact of this model, it enables artisan SMEs to shift from invisible laborers to visible cultural entrepreneurs.

B. Operational Tools for Digital Enablement

The study defines several operational enablers- 1) Localized training materials for digital use 2) Templates for costing, tagging, and storytelling 3) Cluster-level branding and QR-linked artisan registries 4) Platform design guidelines for cooperative digital selling. These tools can be implemented by NGOs, cooperatives, or micro-platforms, improving digital readiness and ethical traceability. As impact, it reduces dependence on exploitative intermediaries while building digital skills and confidence.

C. Policy Implications and Institutional Recommendations

The study offers actionable insights for the Bangladesh Handloom Board to revise the cluster support strategy, SME Foundation and the Ministry of Commerce to offer artisan-specific programs and development partners to design digital inclusion frameworks in the craft sectors. It enables a shift from fragmented interventions to system-level strategies for cultural microenterprises.

D. Replicability in Other Global South Contexts

While focused on Bangladesh, the findings and framework can be adapted for: Indian Khadi and Kutch weaving clusters; Peruvian Andean crafts; Nigerian Adire textile communities, and Indonesian Toraja handweaving groups. Concerning its impact, it contributes to South-South learning and the global discourse on inclusive business models for marginalized producers.

6.10.4. Summary

This research makes multi-layered contributions including theoretical, methodological and practical. In the theoretical lens, the study attempts to expand key models to suit cultural and

informal enterprise contexts. Likely, in the methodological lens, it demonstrates how to conduct deep, triangulated qualitative research in under-represented sectors. Finally, from practical perspective, it Offers scalable, modular tools to transform artisan enterprises into digitally empowered, market-responsive, culturally grounded businesses. These contributions reinforce the claim that sustainable transformation in the handloom sector is not only possible but necessary, and that it can be ethically designed, locally led, and globally informed.

6.11 Risks, Limitations, and Adaptability

While the Pattern-Changing Business Model offers a transformative pathway for traditional handloom SMEs in Bangladesh, its practical adoption may face several risks, contextual limitations, and adaptability constraints. This section critically reflects on these challenges and provides recommendations for mitigating risks and ensuring contextual relevance across clusters and beyond.

6.11.1 Potential Risks in Implementation

A. Digital Tension and Technological Overload

Risk: Artisans with limited digital literacy may feel overwhelmed or discouraged when expected to adopt multiple platforms or tools rapidly.

“I started posting, but it became too confusing to reply, pack, and follow-up.” – 36_RTA (Tangail)

Mitigation:

1. Phase in technology use through guided facilitation
2. Focus first on one tool (e.g., WhatsApp) with a single function (e.g., photo sharing)
3. Train local digital assistants to provide backend support

B. Cultural Resistance and Role Identity Crisis

Risk: Some artisans may resist transformation if it’s perceived as threatening to traditional roles, rhythms, or hierarchies within families or workshops.

“We are not marketers. We are weavers. If we become like shopkeepers, we lose our craft.” – FGD participant (Jamdani)

Mitigation:

1. Emphasize that new tasks (e.g., storytelling) are part of preserving, not replacing, heritage
2. Use community role models and youth-led digital services to reduce pressure on senior artisans

C. Gendered Labor and Visibility Barriers

Risk: Women, despite contributing significantly to preparation, design, and finishing, may be left out of digital or branding initiatives.

“My wife helps with everything but never attends the training or appears in branding.” – 19_RBO (Banarasi)

Mitigation:

1. Ensure equal representation in story credits and cooperative branding
2. Include women in digital training sessions and brand committees
3. Introducing family-brand storytelling, highlighting intergenerational or spousal collaboration

D. Institutional Resistance and Bureaucratic Lag

Risk: Government bodies or NGOs may be slow to recognize, register, or fund informal groups working under cooperative or narrative-centric models.

Mitigation:

1. Partner with pilot-friendly NGOs or private CSR arms for initial model testing
2. Use data from this research to advocate for updated support frameworks at the Handloom Board and SME Foundation

E. Market Volatility and Trend Dependency

Risk: Over-reliance on seasonal trends or social media algorithms could undermine financial stability.

“I got 20 orders in March, then nothing in April. The Facebook reach just stopped.” – Online seller (48_DBEX)

Mitigation:

3. Diversify customer channels (offline + online + subscription/pre-order)
4. Build customer communities rather than depending on viral exposure
5. Develop inventory buffers and plan for peak/festival demand cycles

6.11.2 Methodological Limitations of the Study

A. Geographical Scope

The research focuses on three clusters and may not fully represent:

1. Smaller or emerging clusters in Sylhet, Rajshahi, Cumilla and other hilly areas or coastal areas.
2. Diaspora-run microenterprises or handloom-adjacent sectors (e.g., embroidery, dyeing)

Implication: Findings are rich but context-specific; broader applicability requires local adaptation.

B. Lack of Longitudinal Data

The research captures a snapshot in time, but:

1. It does not track behavioral changes over 6–12 months post-implementation
2. It cannot predict how artisans will respond to evolving tech or policy changes

Recommendation: Follow-up studies and action-research pilots can assess durability and adaptability.

C. Digital and Business Knowledge Gaps

Some weavers, particularly elderly or isolated ones, may not have fully understood business model concepts during interviews.

Implication: Narratives may understate potential or misinterpret risk.

Solution: Supplement future research with visual tools, scenario boards, and participatory modeling sessions.

6.11.3 Adaptability and Transferability

The model's core strength lies in its modular and phased design, allowing for:

Table 46: Adaptability and Transferability in PCBM

Element	Adaptable Features
Digital Tools	Choose platform based on readiness (e.g., WhatsApp vs. Facebook)
Branding	Cooperative vs. individual identity; cluster-themed designs

Element	Adaptable Features
Channels	Online-only, hybrid, or pop-up-based
Facilitation Model	NGO-trained, community youth-led, or family-supported
Revenue Streams	Subscription, custom-order, fair pricing models

These elements allow tailoring based on literacy, location, gender norms, tech access, and institutional environment.

6.11.4 Boundary Conditions and Cautions

This model may not be suitable for some other highly commercialized, power-loom-dominant clusters with low heritage orientation. Moreover, the model may not fit for sectors without traceable artisan identity (e.g., export dye houses) or even conflict-prone areas where digital access is severely limited or monitored. In such cases, simplified value-chain or cooperative income-sharing models may be more relevant than full co-creation or branding frameworks.

The Pattern-Changing Business Model is not without its limitations, but its design principles are adaptable, inclusive, and participatory. The risks identified here are real but manageable when implementation is phased and community-led, institutions listen before prescribing and the model elements are modular and responsive. By acknowledging these boundaries, practitioners and researchers can deploy this model responsibly, ensuring it strengthens rather than destabilizes the cultural and economic fabric of Bangladesh's handloom communities.

Chapter 7: Conclusion and Future Research

This study begun journey to develop a *pattern-changing business model (PCBM) framework* for the Bangladesh handloom industry, with the central objective of enhancing the sector's affordability, resistance, and sustainability. Despite the deep cultural heritage and historical roots, the handloom sector remains structurally weak, technologically inactive, and economically downgraded. Through an exploratory case study research, combining in-depth qualitative interviews and focus group discussions with quantitative analysis, this study has systematically exposed the multifaceted challenges faced by the industry and formulated a robust, context-sensitive business model framework. The research has been guided by the *Major Research Objective (MRO)*: to develop a new business model framework that responds to the existing barriers while leveraging emerging opportunities. This concluding chapter synthesizes the key research findings and demonstrates how the MRO and its associated subsidiary objectives have been fulfilled, while also reflecting on the theoretical and practical implications of the study.

The study started by examining the fundamental issues constraining the development of the handloom sector. These included infrastructural shortages, limited market access, low digital literacy, limited access to capital, weak institutional support, and generational gap in Handloom weaving knowledge. These findings were deeply rooted in the qualitative data obtained through extensive fieldwork, reflecting the lived realities of weavers, master artisans, SME owners, and policy stakeholders across three major handloom clusters in Bangladesh. By systematically categorizing these challenges through thematic content analysis and coding structures (open, axial, and selective codes), the research provided a granular understanding of the ecosystem's dysfunctions.

7.1 Response to the Research Objectives

In direct response to the MRO, this study developed a Pattern-Changing Business Model Framework (PCBM) that is innovative, inclusive, and empirically grounded. The model integrates five foundational layers—Cultural Capital & Artisanal Knowledge, Family-Based Labor Networks, Cluster Infrastructure, Policy & Institutional Landscape, and Digital Enablers—with

core operational dimensions such as value co-creation, platform-based sales channels, capacity-building partnerships, and sustainable production models. The model reflects a shift from linear supply chain thinking to a value ecosystem approach, where stakeholders are empowered to co-create products, markets, and knowledge. Through visual modeling and rigorous discussion, it was shown how this new framework can regenerate the sector by enabling digital visibility, expanding access to global niche markets, and fostering institutional partnerships that support artisan entrepreneurship.

This thesis fulfills the first subsidiary objective by identifying sector-specific challenges through empirical qualitative research, validated by a broader quantitative dataset. The second *subsidiary objective*, concerning the evaluation of existing models and their inadequacies, has been achieved through literature review triangulated with stakeholder feedback and business analysis. Most importantly, *the third subsidiary objective*, which proposes a new business model integrating digital marketing, e-commerce, and sustainable production, has been fulfilled through the formulation of the PCBM framework. This directly contributes to achieving the MRO, as the model offers a strategic, actionable, and scalable response to the sector's stagnation.

The PCBM model's development and validation involved the integration of stakeholder perspectives, including weavers, policymakers, designers, and retailers, confirming its feasibility and adaptability. Its design was also informed by global best practices from similar artisanal industries, adjusted for the socio-economic realities of rural Bangladesh. Thus, the model not only responds to current gaps but also serves as a future-oriented strategic roadmap for handloom revitalization in both domestic and global markets.

In conclusion, the study provides a substantial contribution to understanding and restructuring the business logic of the handloom sector in Bangladesh. It successfully delivers on the *major research objective* by developing and validating a pattern-changing business model framework that addresses entrenched challenges and leverages modern capabilities for inclusive, sustainable growth. Future research may extend this framework to other traditional sectors, explore its implementation at scale, and assess its long-term socio-economic impacts.

7.2 Contributions to Knowledge

This research operationalizes co-creation and hybrid organizing in vulnerable craft economies, advancing business model innovation theory. Unlike most BMI work focused on high-capital industries (Teece, 2010; Chesbrough, 2010), this thesis shows how narrative-driven, digitally enabled frameworks can transform sectors rich in cultural capital but lacking formal support. It contributes a novel paradigm balancing heritage preservation with digital adaptation.

The research also makes several academic and practical contributions. Theoretically, the discussion on business model innovation for traditional industries advances by contextualizing digital transformation within a hybrid organizational and co-creation framework. Practically, it provides a replicable and scalable model that can inform government policy, industry practice, NGO programming, and academic curricula on cultural entrepreneurship. The research has further opened pathways for digital empowerment, ethical branding, and sustainable livelihood generation within the handloom community.

7.2.1 Theoretical Contributions

Following this, the study evaluated existing business model typologies in the handloom sector and critically assessed their limitations using the lens of three interrelated theories—Resource-Based View (Barney, 1991, 1996)), Hybrid Organizing (Battilana, J., & Dorado, 2010), and Co-Creation Theory (Prahalad, C. K., & Ramaswamy, 2004) in addition to (Alexander Osterwalder & Yves Pigneur, 2010; Osterwalder et al., 2005) Business Model Canvas. This multi-theoretical framework enabled a comprehensive mapping of both tangible and intangible resources, hybrid governance mechanisms, and co-creative value generation pathways. It also exposed a significant gap in current practices: the absence of a business model that harmonizes traditional artisanal value with contemporary digital, economic, and sustainability-driven imperatives.

This study adds a few new ideas to the domains of inclusive entrepreneurship, business model innovation, and cultural enterprise transformation. It is important because it advances current theories intellectually and creates a useful, cluster-sensitive framework for a field that has hitherto received little attention. The key contributions are highlighted in the following table.

Table 47: Study Contribution to Existing Knowledge

Theoretical Contributions	Details	Contribution
Extension of the Business Model Canvas (BMC)	Integrates cultural storytelling and artisan identity into value proposition, community-based branding, and digital facilitation into key resources and partners, narrative-driven customer engagement as a new form of relationship building, tiered and traceable revenue streams tailored to informal and semi-formal market conditions	Revised BMC suitable for informal, micro-enterprise, and culturally grounded SMEs in the Global South
Advancing the Resource-Based View (RBV)	Ancestral weaving knowledge, local trust networks, and cultural aesthetics as VRIN resources activated through digital branding, storytelling, and ethical market positioning	Repositions intangible cultural assets as monetizable strategic resources in resource-constrained economies
Operationalizing Hybrid Organizing	Hybrid models sustained by business structures embedding social and cultural goals into pricing, branding, and customer interaction	Demonstrates a business-led hybrid organizing strategy for small-scale artisan sectors
Extending Co-Creation Theory into Informal Economies	Applies co-creation logic to craft-based, informal enterprises using mobile communication, feedback loops, and participatory design	Introduces low-tech, high-trust co-creation pathways between artisans and consumers

7.2.2 Methodological Contributions

This study presents several methodological advancements that contribute meaningfully to qualitative research on informal economies and traditional industries. First, the research employs

multi-cluster, comparative case study design, focusing on three geographically and culturally distinct handloom clusters: Jamdani, Banarasi, and Tangail. This approach uncovers variations in technological readiness, resource endowment, institutional support, and adaptation potential among the clusters. In contrast to conventional single-case studies often used in qualitative SME research, this comparative design offers a more comprehensive analytical base and enhances the external validity of the findings. It provides a replicable framework for analyzing geographically dispersed informal sectors in similar socio-economic contexts.

Secondly, the study adopts a triangulated mixed-method logic to strengthen analytical rigor. While the research is grounded in qualitative fieldwork, it incorporates structured respondent data, such as the number of looms, workers, and approximate revenue; digital usage summaries; and a range of visual tools, including matrix tables and radar charts. These visualizations, along with schematic representations of business model components, contribute to a more transparent and robust analysis, especially in contexts where reliable secondary data is scarce. This integration of visual and quantitative elements within a predominantly qualitative framework demonstrates a rigorous, grounded, and adaptable approach to business model research in low-data environments.

Moreover, the study introduces a participatory and narrative-informed analytical perspective that distinguishes it from formal, economically deterministic models. Rather than viewing handloom businesses solely through economic output or production efficiency, the research foregrounds participant voices, indigenous knowledge systems, and story-based value creation narratives. It emphasizes cultural metaphors and local idioms, thus aligning the research process with participatory development values. By incorporating narrative ethnography into business model research, the study enriches methodological literature and highlights the importance of context-specific, human-centered inquiry.

7.2.3 Feasibility, real-world implementation, future tests

To evaluate the feasibility of the Pattern-Changing Business Model (PCBM) in Bangladesh's socio-economic landscape, this study proposes a phased implementation roadmap, with pilot testing centered in the Tangail cluster. The selection is strategically justified by Tangail's relatively

higher digital literacy, boutique integration, and legal identity coverage (Chapter 4.7), all of which lower the threshold for introducing hybrid offline-online branding initiatives.

In the first phase, cluster facilitators will conduct participatory digital literacy workshops, guided by Piaget, (1973)'s constructivist principle of building new cognitive structures on familiar cultural bases. These workshops will introduce artisans to co-creation channels (e.g., motif selection portals) and storytelling platforms like Instagram Reels that highlight live weaving processes, reinforcing Boons, F., & Lüdeke-Freund, (2013) model of culturally embedded sustainability.

The final output visualization (see Figure 7.3) illustrates a multi-tier ecosystem: artisans directly interacting with end-consumers via social commerce apps, supported by local co-creation booths that allow for buyer-customized designs, and a cluster-level digital registry ensuring brand authenticity and traceability. This output model is intended to provide not only a commercial advantage but also to institutionalize cultural narratives within global market streams.

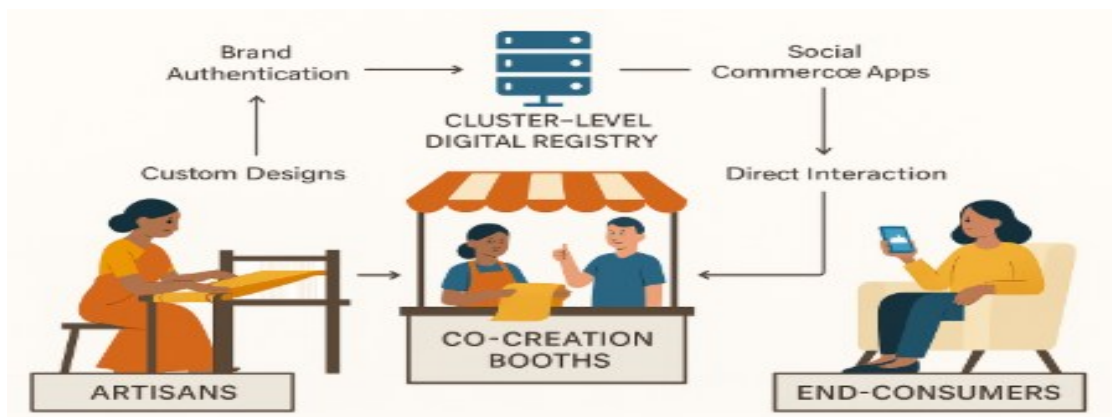


Figure 19: Proposed Multi-Tier Ecosystem

The most notable practical contribution of this research is the development of a Pattern-Changing Business Model Framework, specifically tailored for the handloom sector in Bangladesh. The model is adaptable to the unique conditions of the Jamdani, Banarasi, and Tangail clusters, and its modular design allows phased implementation based on each cluster's readiness level. Importantly, the model is grounded in real-world constraints and opportunities derived from field-based data, not from abstract assumptions. It empowers weavers by recognizing them as entrepreneurs and co-creators in the value chain, rather than mere producers. As such, this model

offers a concrete, actionable tool for NGOs, policymakers, and artisan cooperatives aiming to enhance market resilience while preserving cultural identity.

In addition to the overarching framework, the study generated a suite of operational tools designed for use by rural SMEs and support organizations. These include a visual business model canvas tailored to the needs of informal artisan enterprises, cluster readiness matrices to assess implementation capacity, diagnostic tools for identifying business gaps, and template guides for branding, pricing, and digital engagement. The study also outlines platform design principles that can inform the development of ethical, culturally sensitive online marketplaces for artisanal goods. These practitioner-oriented outputs serve as ready-to-implement tools for immediate piloting and adaptation in the Bangladeshi context and potentially in similar traditional industries across the Global South.

Furthermore, the study offers concrete policy and institutional implications. The findings can assist the Bangladesh Handloom Board in tailoring programs that directly address the constraints identified by artisans and entrepreneurs. They also offer strategic insights for the SME Foundation and the Ministry of Commerce regarding the formalization of artisan groups and their integration into national enterprise frameworks. Additionally, donor agencies and NGOs can use the study's insights to design programs that support co-creation, digital branding, and skills training in a way that respects and enhances local capacities. In this way, the research bridges the gap between policy and practice, offering a grounded basis for reform in funding allocation, cooperative registration, and training design.

7.2.4 Broader Societal Impact

Beyond its methodological and practical innovations, this study makes a significant contribution to the broader societal discourse on inclusive development, gender justice, and cultural sustainability. It advances a gender-sensitive approach to business model design by acknowledging the critical—yet often unpaid or underrecognized—role of women and family labor in the handloom sector. It also champions cultural dignity and economic justice by challenging mainstream development narratives that view tradition as a constraint. Instead, the study redefines tradition as a dynamic source of innovation and resilience. By repositioning handloom artisans as strategic actors in the cultural economy, rather than passive laborers, the study elevates the value

of aesthetic knowledge, informal labor, and intergenerational artisanal wisdom. In doing so, it contributes to the reshaping of development paradigms, advocating for a future where cultural heritage and economic modernization are not mutually exclusive but mutually reinforcing.

7.2.5 Contribution to Knowledge Science

This study contributes to the emerging interdisciplinary field of knowledge science, focusing on how knowledge is created, structured, and applied to solve real-world problems, particularly those involving complex, culturally embedded systems. It bridges traditional craftsmanship and modern business model theory, presenting new insights into understanding artisanal knowledge as economic knowledge.

A. Reframing Artisan Practice as Knowledge Work

In knowledge science, productive knowledge is commonly associated with formal education, institutional R&D, or codified processes. This research challenges this view by demonstrating how handloom artisans in Bangladesh engage in highly nuanced, tacit knowledge practices involving material science, geometric and pattern logic, workflow optimization, and emotional intelligence.

Contribution: The study expands the taxonomy of knowledge to include cultural, embodied, and intergenerational forms that are often overlooked in mainstream knowledge economies.

B. Knowledge Translation into Business Logic

The Pattern-Changing Business Model Framework acts as a knowledge translation tool, transforming tacit and relational knowledge into monetizable components such as brand stories, pricing strategies, customer interaction scripts, and visual product narratives. This reflects the transdisciplinary essence of knowledge science, applying sociocultural insights to create scalable, economic innovations.

C. Participatory Knowledge Structuring

The study emphasizes bottom-up knowledge co-construction through interviews, focus group discussions, and iterative field validation. Instead of imposing pre-defined models, it builds conceptual categories based on field insights, treats artisan experience as data, theory, and design input, and applies participatory epistemology.

Contribution: This approach demonstrates how knowledge science can support inclusive systems design rooted in lived experience and community wisdom.

D. Cross-Domain Knowledge Integration

This research integrates knowledge from entrepreneurship and management, anthropology and cultural studies, ICT and digital enablement, and feminist economics and informal labor. Such synthesis represents the epistemological pluralism central to knowledge science, proving that complex development challenges require multi-domain thinking and boundary-crossing frameworks.

This study shows how knowledge science can help reconfigure traditional, informal economic systems into intentional, sustainable, and dignity-affirming enterprises. It builds tools that allow invisible knowledge to become a strategic advantage, offering a replicable pathway for transforming other traditional sectors through systemic knowledge innovation.

7.2.6 Summary of Findings

The research demonstrated that:

- The handloom industry is in decline, with the number of operational looms decreasing from over 1 million in 2003 to fewer than 200,000 in 2022 (BHB, 2023).
- Cluster readiness varies significantly: Tangail exhibits high digital adoption, Banarasi remains tradition-bound, and Jamdani faces critical exclusion.
- The proposed PCBM framework offers a structured approach for inclusive modernization, adaptable to different cluster contexts.

7.3 Limitations of the Study

While this study encountered many limitations although it makes important theoretical, methodological, and practical contributions to the field of business model innovation for the handloom sector. These limitations arise from the study's contextual boundaries, methodological scope, temporal framing, and assumptions embedded in both the data collection and analysis processes. Knowing these boundaries, it gives an avenue to enhance the transparency and integrity of future research and guides directions in this area.

Contextual and Geographic Boundaries

The research was conducted across three major handloom clusters in Bangladesh—Jamdani in Narayanganj, Banarasi in Mirpur, and Tangail Tant in Tangail. While these clusters are representative of significant centers of handloom activity, they do not encapsulate the full diversity of the country’s artisanal landscape. Regions such as Rajshahi, Pabna, and Sylhet have distinct cultural heritages, weaving techniques, and logistical setups that are not covered in this study. Therefore, the generalizability of the findings may be limited when applied to these lesser-studied areas. Future studies should expand the scope to include additional clusters to validate and refine the proposed framework in broader settings.

Temporal Constraints

This research is based on a cross-sectional design, capturing data at a single point in time. While this design facilitated in-depth fieldwork and data synthesis, it did not allow tracking the evolution of artisan practices or business model adaptations over time. As a result, the long-term sustainability, scalability, and adaptability of the proposed business model framework remain untested. Longitudinal studies that follow artisan groups across multiple seasons or years would provide deeper insights into how interventions, especially those involving digital tools or branding strategies, perform over time.

Digital and Business Literacy Gaps

Despite efforts to simplify concepts and employ participatory methods, the idea of a “business model” remained abstract for some respondents. This was especially evident among elderly artisans or those with limited formal education and exposure to business language. These cognitive gaps may have influenced the depth and clarity of responses related to business adaptation or future aspirations. In future research, the inclusion of visual aids, mock business simulations, or interactive scenario-building workshops could help bridge these comprehension gaps and generate richer data.

Gendered Visibility and Participation

Although women’s participation was encouraged throughout the study, especially in the Tangail cluster, their representation was limited in the Banarasi and Jamdani field sites due to prevailing

socio-cultural restrictions and workshop dynamics. This gender imbalance may result in the underrepresentation of female perspectives, particularly in areas such as household labor contributions, informal leadership roles, and entrepreneurial aspirations. Future research should prioritize gender-sensitive design by focusing on women-led weaving households, female designers, and apprentices to ensure a more inclusive understanding of the sector.

Language and Translation Fidelity

All interviews and focus group discussions were conducted in Bengali and later translated into English for analysis and reporting. While great care was taken to maintain fidelity in translation, there remains a risk that certain idiomatic expressions, cultural metaphors, or emotional nuances were diluted or lost in translation. This limitation highlights the importance of incorporating bilingual storytelling, ethnographic visuals, or dual-language publications in future knowledge dissemination efforts to preserve the richness of participant narratives.

Scope of Theoretical Testing

The business model framework proposed in this study is grounded in empirical fieldwork and supported by established theoretical frameworks, such as Resource-Based View, Hybrid Organizing, and Co-Creation Theory. However, it has not been empirically piloted in a real-world setting, such as through implementation with NGOs or cooperatives. As such, the framework remains a prototype rather than a fully validated system. Collaborations with implementation partners to pilot the model in selected clusters would be instrumental in assessing its practical feasibility and refining its components.

Platform and Technology Dependence

Several components of the proposed models such as digital storytelling, online marketing, and mobile-based payments—presuppose access to reliable internet infrastructure, affordable mobile data, and trust in digital platforms. In rural and underdeveloped areas, where such infrastructure may be lacking or poorly maintained, these aspects of the model may be difficult to implement. To address this limitation, future studies should explore hybrid or offline alternatives, such as physical catalogues, community-based storytelling, or cooperative logistics arrangements.

Supply-Side Emphasis

This study's primary focus was on producers, artisans, and intermediaries within the supply chain, with relatively less emphasis placed on the perspectives of end customers, particularly those from international or diaspora markets. As a result, the proposed model reflects supply-side aspirations more than it does demand-side expectations. Future research should incorporate buyer-side data through consumer ethnographies, retail platform analytics, or surveys with domestic and global customers to create a more balanced and market-responsive business model.

Institutional Alignment and Feasibility

Although the study offers clear recommendations for institutional engagement—particularly with the Bangladesh Handloom Board, SME Foundation, and Ministry of Commerce—practical uptake of these ideas may face bureaucratic resistance, limited funding, or political constraints. Institutional inertia and fragmented mandates often pose significant challenges to cross-sector implementation. Addressing these limitations may require the formation of public-private partnerships or pilot initiatives facilitated by donor agencies and academic institutions.

Sector-Specific Generalizability

The research framework developed in this study is deeply embedded in the unique cultural, aesthetic, and production logic of the handloom textile sector. While some conceptual elements may be adaptable to other traditional industries such as basketry, pottery, or needlework, each sector would require substantial re-contextualization. Thus, the framework cannot be directly generalized across all artisanal industries without careful adaptation. Comparative studies and cross-sector trials would be essential for testing its flexibility and expanding its applicability to a wider range of informal and creative industries.

In conclusion, this research is rich but bounded. It offers depth in design, creativity in framework development, and originality in theory-practice linkage. However, it remains a foundation rather than a conclusion, a prototype rather than a solution. The limitations discussed here are not flaws, but invitations for others to build, adapt, critique, and collaborate in refining what could become a movement for business model justice in artisan economies.

7.4 Recommendations for Future Research

This study has established a foundational approach to reimagining the handloom sector in Bangladesh through a participatory, digitally enabled, and identity-driven business model framework. However, as previously acknowledged, the domain of inclusive business model innovation, particularly in culturally embedded informal sectors, remains in its developmental phase. There is substantial scope for further research to expand upon the theoretical, methodological, and practical insights generated by this work. While this study conceptualized the PCBM, its validation requires future empirical testing. The following research directions are proposed to guide future scholarly and applied inquiry.

7.4.1 Pilot Implementation of Tangail Cluster

To validate the practical feasibility and impact of the proposed Pattern-Changing Business Model (PCBM), a pilot implementation is recommended in a selected sub-cluster of Tangail, which has already demonstrated higher digital readiness and market responsiveness among the studied clusters. The pilot phase will allow for real-world testing of the model's strategic components, such as co-creation booths, digital identity branding, and direct-to-consumer (D2C) engagement via social commerce. The objectives to operationalize the PCBM framework in a real-world handloom context are to evaluate the socio-economic impact on participating artisans, to measure consumer response to the storytelling and branding components, to assess digital adoption behavior and learning progression among stakeholders and to refine the model based on field feedback before national scaling.

7.4.2 Longitudinal Impact Studies

While this study offers a cross-sectional snapshot of the behavior, constraints, and readiness of handloom SMEs, it does not provide insight into how these dynamics evolve over time. A longitudinal action research study is envisioned to test economic impacts (e.g., artisan margin improvements) and cultural metrics (e.g., preservation of indigenous motifs over time), aligning with Lincoln and Guba's (1985) framework of naturalistic validation. Key areas of focus could include shifts in pricing power, customer loyalty, digital confidence, and intergenerational engagement within weaving families. Equally important would be measuring intangible outcomes,

such as changes in emotional well-being, community pride, and perceived agency among artisans. Such studies would generate robust evidence on the long-term sustainability and behavioral durability of model-driven interventions.

7.4.3 Quantitative Validation of Business Model Metrics

Although this thesis relies primarily on qualitative and descriptive data, future research can introduce quantitative rigor by evaluating specific business performance indicators. This may include assessing the financial impact of branding initiatives, measuring changes in sales volumes, or quantifying user engagement with digital content, such as social media shares or e-commerce interactions. Employing regression models, randomized field trials, and comparative control groups would lend statistical validity to the framework and support scalable, data-driven implementation strategies. Such approaches would strengthen the empirical foundations of business model design in informal economies.

7.4.4 Participatory Action Research and Co-Creation Pilots

Building on the participatory spirit of this study, future research could adopt Participatory Action Research (PAR) methodologies by involving artisans not merely as respondents but as co-researchers and co-designers. This would entail collaborative prototyping of business models, iterative testing of mobile applications for design and sales feedback, and the development of shared logistics or storytelling hubs governed by community members. Tools such as design thinking workshops and visual co-creation sessions would facilitate this deeper engagement. These approaches promote user ownership, iterative learning, and cultural alignment in innovation processes, making interventions more durable and meaningful.

7.4.5 Gender-Centered Business Model Studies

Although women's labor is central to the handloom economy, it is often underrecognized in both scholarly research and institutional planning. Future studies should explicitly focus on documenting the hidden roles women play in areas such as design finishing, customer communication, and household production coordination. There is also a need to explore the potential of women-led micro-enterprises, including cooperatives exclusively run by female artisans. Furthermore, gendered experiences of digital inclusion—such as access to training, use

of mobile devices, and engagement with online platforms—warrant specific attention. Applying feminist economics, care economy theories, and intersectional frameworks will enrich understanding and foster gender-transformative innovation in artisan-based business models.

7.4.6 Research on Platform Design and Digital Infrastructure

The proposed framework calls for trust-based, mobile-first digital platforms that enhance the visibility and sales potential of artisans. Future research can contribute by exploring human-centered UX design tailored to low-literacy users, developing ethical AI tools for functions such as image tagging, automated storytelling, and dynamic pricing, and examining governance mechanisms that balance community input with algorithmic management. Approaches such as digital ethnography, algorithm audits, and platform studies can provide critical insights into inclusive technology development. These studies would ensure that the emerging field of cultural micro-commerce is designed with equity and usability at its core.

7.4.7 Cross-Sector and Cross-Country Applications

One of the broader ambitions of this research is to test the adaptability of the pattern-changing business model across sectors and geographies. Future research can investigate its application in related artisanal domains such as embroidery, basketry, ceramics, and natural dyeing. Comparative studies in Global South contexts—rural India, Indonesia, Peru, or Kenya—can reveal the universal and context-specific components of such a model. Urban informal creative economies, including street art and folk music merchandising, also offer fertile ground for adaptation. Knowledge transfer models and comparative case study designs will help evaluate the model’s scalability and relevance beyond the handloom sector.

7.4.8 Interdisciplinary Knowledge Science Extensions

Further research is encouraged in the domain of knowledge science, especially in mapping the flows of tacit, aesthetic, and intergenerational knowledge within the handloom value chain. Studies could employ social network analysis to trace how design and pricing decisions circulate among artisans, intermediaries, and buyers. The development of new typologies of knowledge, including sensory, emotional, and embodied knowledge, would enhance our understanding of how informal knowledge systems contribute to formal business model innovation. Such interdisciplinary inquiry

would further legitimize and institutionalize artisan knowledge within academic and economic frameworks.

7.4.9 Policy Innovation and Institutional Experimentation

Finally, this research highlights the misalignment between institutional support structures and the lived realities of handloom artisans. Future studies can explore how tools derived from business model innovation influence policymakers' understanding and decision-making. Behavioral insights generated from this study could be used to design pilot programs aimed at reforming institutional support systems, such as training schemes, cooperative registration procedures, and funding allocation mechanisms. Researchers could also contribute to the development of new evaluation metrics that go beyond GDP to include indicators of cultural resilience, labor dignity, and community empowerment. Target institutions might include the Bangladesh Handloom Board, the SME Foundation, the Ministry of Culture, and international agencies such as UNDP and ILO. In sum, the future of business model research in heritage-based sectors lies not merely in refining financial frameworks but in deepening the human, cultural, and relational dimensions of value creation. As the global economic landscape evolves toward more inclusive, ethical, and sustainability-oriented paradigms, the questions raised by this research will become increasingly relevant. These questions hold significance not only for the handloom artisans of Bangladesh but also for scholars and practitioners engaged in knowledge science, entrepreneurship, development studies, and policy design across the Global South and beyond.

Appendices

Bibliography

- Ahmed, S., & Nathan, D. (2014). Weaving livelihoods: Women and the handloom industry in South Asia. *Economic & Political Weekly*, 49(10), 58–67.
- Alexander Osterwalder & Yves Pigneur. (2010). *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. John Wiley and Sons, Inc.
- Amit & Zott. (2008). The fit of Business Model: The fit between product market strategy and business model: Implications for firm performance. *Strategic Management Journal*, 29(1), 1–26.
- Amit, R. H., & Zott, C. (2012). Business Model Innovation: Creating Value in Times of Change. *SSRN Electronic Journal*, 3. <https://doi.org/10.2139/ssrn.1701660>
- Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99–120. <https://doi.org/10.1177/014920639101700108>
- Barney, J. B. (1996). Resource-Based Theory of the Firm. *Organization Science*, 7(5). <https://doi.org/http://dx.doi.org/10.1287/orsc.7.5.469>
- Battilana, J., & Dorado, S. (2010). Building sustainable hybrid organizations. *Academy of Management Journal*, 53(6), 1419–1440.
- Begum, H. A. (2017). Challenges and opportunities of the handloom sector in Bangladesh. *Asian Journal of Social Sciences*.
- Bhattacharya, R., & Sen, S. (2018). *Pride and Prejudice: The Condition of Handloom Weavers in West Bengal*. May, 1–30. https://cse.azimpremjiuniversity.edu.in/wp-content/uploads/2018/05/Bhattacharya_Sen_Handlooms_WB.pdf
- Bhavani, T. A., & Reji, E. M. (2015). Handmade in India: A study of handicraft clusters. *Indian Council for Research on International Economic Relations*.
- BHB. (n.d.). *Annual Report 2022-2023*.
- Boons, F., & Lüdeke-Freund, F. (2013). Business models for sustainable innovation: State-of-the-art and steps towards a research agenda. *Journal of Cleaner Production*, 45, 9–19.

- Bortamuly, A. B., & Goswami, K. (2015). Determinants of the adoption of modern technology in the handloom industry in Assam. *Technological Forecasting and Social Change*, 90, 400–409. <https://doi.org/https://doi.org/10.1016/j.techfore.2014.04.018>
- Chakrabarti, A. (2011). Colonial textile policies and the decline of the Indian handloom industry. *Indian Economic History Review*, 48(1), 1–27.
- Chakraborty, S. (2021). Handloom industry and women empowerment: A case study of rural Bangladesh. *Journal of Gender Studies*.
- Chesbrough, H. (2010). Business model innovation: Opportunities and barriers. *Long Range Planning*.
- Das, C., Roy, M., & Mondal, P. (2016). Handloom Cluster of India: A Case Study Santipur Handloom Cluster. *International Journal of Humanities and Social Science Invention*, 5(1), 27–35. www.ijhssi.org
- Das, R. (2021). The last loom: Tradition and survival in Bangladesh's handloom industry. *South Asia Journal of Culture and Development*, 4(1), 23–39.
- Das, S. (2020). Sustainability in the handloom sector: A review of practices and policies. *Journal of Sustainable Development*.
- Denzin, Norman K Lincoln, Y. S. (2017). *The SAGE Handbook of Qualitative Research - Fifth Edition* (5th ed.). SAGE Publications, Inc.
- Hazarika, B., Bezbaruah, M. P., & Goswami, K. (2016). Adoption of modern weaving technology in the handloom micro-enterprises in Assam: A Double Hurdle approach. *Technological Forecasting and Social Change*, 102, 344–356. <https://doi.org/https://doi.org/10.1016/j.techfore.2015.08.009>
- Islam, M. K., & Hossain, M. E. (2012). an Analysis of Present Scenario of Handloom Weaving Industry in Bangladesh. *Number*, 03(September), 1.
- Islam, M. M., & Ahmed, S. (2019). Artisans and their survival strategies in the changing textile economy. *Journal of South Asian Studies*, 35(4), 415–432.
- Islam, M. S. (2015). Handloom industry in Bangladesh: A case study of Tangail district. *Journal of Business and Technology*.
- Kaplan, Andreas M; & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, 53(1), 59–68.

- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications, Inc.
- Lüdeke-Freund, F., & Dembek, K. (2017). Sustainable business model research and practice: Emerging field or passing fancy? *Journal of Cleaner Production*, 168, 1668–1678. <https://doi.org/https://doi.org/10.1016/j.jclepro.2017.08.093>
- Mamidipudi, A., & Bijker, W. E. (2018). Innovation in Indian handloom weaving. *Technology and Culture*, 59(3), 509–545. <https://doi.org/10.1353/tech.2018.0058>
- Mason, K., & Spring, M. (2011). The sites and practices of business models. *Industrial Marketing Management*, 40(6), 1032–1041.
- Mayring, P. (2000). Qualitative Content Analysis. *FORUM: QUALITATIVE SOCIAL RESEARCH*, 1(2).
- Mishra, S. S., & Das Mohapatra, A. K. (2020). Sustainability of Handloom : A Review. *Online-Elementary Education Online*, 19(3), 1923–1940. <https://doi.org/10.13140/RG.2.2.26296.47361>
- Mottaleb, K. A., & Sonobe, T. (2013). What determines the performance of small enterprises in developing countries? Evidence from the handloom industry in Bangladesh. *International Journal of Business and Globalisation*, 10(1), 39–55. <https://doi.org/10.1504/IJBG.2013.051802>
- Murray, A., Skene, K., & Haynes, K. (2017). The Circular Economy: An Interdisciplinary Exploration of the Concept and Application in a Global Context. *Journal of Business Ethics*, 140(3), 369–380. <https://doi.org/10.1007/s10551-015-2693-2>
- Niinimäki, K., & Hassi, L. (2011). Emerging design strategies in sustainable production and consumption of textiles and clothing. *Journal of Cleaner Production*, 19(16), 1876–1883. <https://doi.org/10.1016/J.JCLEPRO.2011.04.020>
- Nipa, N. J. (2021). Historical analysis of Bangladesh Handloom: Glorious past and Catastrophic present. *Textile Focus*, part 2, 5–9. <https://textilefocus.com/historical-analysis-bangladesh-handloom-glorious-past-catastrophic-present/>
- Nipa, N. J. (2022). *Handloom Industry-Bangladesh 's largest Cottage Industry*. 23–25.
- Osterwalder, A., Pigneur, Y., & Tucci, C. L. (2005). Clarifying Business Models: Origins, Present, and Future of the Concept. *Communications of the Association for Information Systems*, 16(July). <https://doi.org/10.17705/1cais.01601>

- Piaget, J. (1973). *To understand is to invent: The future of education*. Grossman Publishers.
- Prahalad, C. K., & Ramaswamy, V. (2004). Co-creating unique value with customers. *Strategy & Leadership*, 32(3), 4–9.
- Rahman, M. M. (2013). Prospects of Handloom Industries in Pabna, Bangladesh. *Type: Double Blind Peer Reviewed International Research Journal Publisher: Global Journals Inc*, 13(5).
- Roy, A. (2020). Weaving decline: The youth exodus from traditional crafts in Bangladesh. *Journal of Cultural Economy*, 13(4), 495–510.
- Roy, T. (2002). Acceptance of innovations in early twentieth-century Indian weaving. *Economic History Review*, 55(3), 507–532. <https://doi.org/10.1111/1468-0289.00230>
- Ruma, N. H., Mahmood, M. S., Ahmed, T., Kim, E., & Kohda, Y. (2021). The Contribution of Social Entrepreneurs to Empower The Handloom Jamdani Community: A Case Study of Jamdani Ville in Bangladesh. *Journal of Rural Development*, 39(4), 486–503. <https://doi.org/10.25175/JRD/2020/V39/I4/146790>
- Ruma, N. H., Mahmood, M. S., & Kim, E. (2019). Empowering the Handloom Jamdani Weavers through Social Integration: A Case of Jamdani Ville. *Proceedings of Sydney International Business Research Conference 2019, March*, 58–58.
- Saunders, M., Lewis, P., & Thornhill, A. (2016). Research Methods For Business Students. In *Research Methods For Business Students* (Seventh ed). Pearson, Edinburgh gate, Harlow, Essex CM20 2JE, England.
- Saunders, M. N. K. (2012). Choosing Research Participants. In G. Symon & C. Cassell (Eds.), *QUALITATIVE ORGANIZATIONAL RESEARCH: Core Methods And Current Challenges* (pp. 35–52). London: SAGE Publications Ltd.
- Teece, D. J. (2010). Business models, business strategy, and innovation. *Long Range Planning*.
- Wernerfelt, B. (1984). A Resource-Based View of the Firm. *Strategic Management Journal*, 5(2), 171–180. <http://onlinelibrary.wiley.com/doi/10.1002/smj.4250050207/abstract>
- Woodside, A. G. (2010). *Case Study Research: Theory, methods and Practice*. Emerald.
- Yin, R. K. (2017). Designing Case Studies. In *Case Study Research and Applications: Design and Methods* (6th ed., p. 414). SAGE Publications, Inc. <https://doi.org/10.1097/FCH.0b013e31822dda9e>

- Zhang, M., Guo, L., Hu, M., & Liu, W. (2021). Influence of customer engagement with company social networks on stickiness: Mediating effect of customer value creation. *Journal of Information Management*, 56.
- Zott, C., & Amit, R. (2010). Business model design: An activity system perspective. *Long Range Planning*.
- Zott, C., & Amit, R. (2007). Business model design and the performance of entrepreneurial firms. *Organization Science*, 18(2), 181–199. <https://doi.org/10.1287/orsc.1060.0232>
- Zott, C., Amit, R., and Massa, L. (2011). The business model: Recent developments and future research. *Journal of Management*, 37(4), 1019–1042.

Appendix II: Publications

1. Scholarly Journals

1.RUMA, Nilima Haque ^{1*}, Md Sultan Mahmood ¹, Toufiq Ahmed ², Eunyoung Kim ¹, Youji Kohda “The Contribution of Social Entrepreneurs to Empower The Handloom Jamdani Community: A Case Study of Jamdani Ville in Bangladesh”. Journal of Rural Development, Volume 39, Issue 4, pp. 486-503, October-December 2020. DOI: 10.25175/jrd/2020/v39/i4/146790.

2. Conference Presentations

1.RUMA, Nilima Haque., Md Sultan Mahmood, and Eunyoung Kim (2019). Poster Presentation on Occupational Safety and Health (OSH) Compliance in SMEs of Bangladesh. Social Tech-2019: The 3rd International Conference on Healthcare, SDGs and Social Business, Fukuoka, Japan, November 19-21, 2019.

2.RUMA, Nilima Haque., Mahmood, Md Sultan., Kim, Eunyoung., 2019. Empowering the Handloom Jamdani Weavers through Social Integration: A Case of Jamdani Ville, Proceedings of Sydney International Business Research Conference 2019. Australian Academy of Business Leadership, Sydney, Australia, ISBN [978-0-6481678-4-6](#), pp. 58–58. (Referred).

3.RUMA, Nilima Haque., Mahmood, M. S., & Kim, E. (2019). The Role of Image Sharing and User’s Interactions on social media to Promote Handloom Fashion Industry. In *HCI International 2019–Late Breaking Posters: 21st HCI International Conference, HCII 2019, Orlando, FL, USA, July 26–31, 2019, Proceedings 21* (pp. 315-322). Springer International Publishing.

3. Book Chapter

RUMA, Nilima Haque., Kim.E. (2021). Chapter 05. Types of Innovation. In E. Kim (Ed.), *Topics on Creating Innovations for Graduate Students*. Hakuei Publishing Company.

Appendix III. Interview questionnaires for Artisans/Assistant Artisans/Trainees

Title: A Pattern-Changing Business Model Framework for Handloom Sector: A Case Study of Bangladesh

শিরোনাম: বাংলাদেশের হ্যান্ডলুম খাতের জন্য একটি প্যাটার্ন পরিবর্তনকারী ব্যবসায়িক মডেল ফ্রেমওয়ার্ক: একটি কেস স্টাডি

ইনফরমড কনসেন্ট বিবৃতি | Informed Consent Statement

আমরা নিশ্চিত করি যে সাক্ষাৎকারটি আনুষ্ঠানিকভাবে পরিচালিত হয়েছে।

We ensure that the interview has been conducted formally.

এবং এটি উত্তরদাতাদের তাদের উত্তর ব্যাখ্যা করতে দেয়।

And it allows the respondents to elaborate on their answers.

পুঙ্খানুপুঙ্খ অন্তর্দৃষ্টি সংগ্রহের জন্য প্রয়োজনীয় প্রতিক্রিয়াগুলির গভীরে তদন্ত করুন।

Investigate responses deeply to collect detailed insights.

আমরা উত্তরদাতাদের সম্মতি, অস্বস্তি এবং ব্যক্তিগত তথ্যের বিষয়ে সতর্কতার সাথে ব্যবস্থা নিই।

We carefully address consent, discomfort, and the confidentiality of personal information.

আমরা সুনির্দিষ্ট তথ্য বিশ্লেষণের জন্য সাক্ষাৎকারটি রেকর্ড করি (উত্তরদাতার অনুমোদনে)।

We record the interview (with the respondent's permission) for accurate analysis.

সেকশন ১: ডেমোগ্রাফিক প্রশ্ন | Section 1: Demographic Questions

বাংলা (Bengali) English Translation

নাম	Name
বয়স	Age
শিক্ষাগত যোগ্যতা	Education
কাজের ধরন	Work Category
অভিজ্ঞতা	Years of Experience
প্রশিক্ষণে অংশগ্রহণ	Number of Trainings Received
সময়কাল	Duration of Training

বাংলা (Bengali)	English Translation
প্রশিক্ষণ প্রতিষ্ঠান	Internal or External Training Institution
দৈনিক কর্মঘণ্টা	Daily Working Hours
অতিরিক্ত কর্মঘণ্টা	Overtime Hours
মাসিক আয়	Monthly Income
উৎসবভাতা	Festival Bonus
শ্রম আইন সম্পর্কে ধারণা	Awareness of Labor Law
স্বাস্থ্যসেবা সহায়তা	Access to Health Care Facilities

সেকশন ২: তাঁত প্রতিষ্ঠানের ব্যবসা সংক্রান্ত তথ্য | Section 2: Business-Related Information of the Handloom Unit

বাংলা (Bengali)	English Translation
তাঁত / ব্যবসা প্রতিষ্ঠানের নাম	Name of the Handloom/Business Unit
নিবন্ধিত প্রতিষ্ঠান - হ্যাঁ / না	Registered Organization – Yes / No
তাঁত প্রতিষ্ঠানের বয়সকাল	Age of the Handloom Unit
মোট তাঁত সংখ্যা	Total Number of Looms
উৎপাদনযোগ্য তাঁত সংখ্যা	Number of Active Looms
তাঁত পণ্যের ধরন	Type of Handloom Products
কর্মরত সদস্য সংখ্যা	Number of Working Members
ঋণ / আর্থিক প্রতিষ্ঠানের বিনিয়োগ	Loan/Investment from Financial Institutions
মোট মাসিক উৎপাদন	Total Monthly Production
ব্যবহৃত কাঁচামাল	Types of Raw Materials Used
পণ্য বিক্রয় মাধ্যম	Sales Channels – Wholesale / Retail / Direct
অনলাইন বিক্রি – হ্যাঁ / না	Online Sales – Yes / No

সেকশন ৩: গবেষণা বিষয়ভিত্তিক প্রশ্ন | Section 3: Thematic Research Questions

৩.১ হ্যান্ডলুম এসএমই দ্বারা সম্মুখীন চ্যালেঞ্জ ও বাধা | 3.1 Challenges and Barriers Faced by Handloom SMEs

১. সাধারণ চ্যালেঞ্জ | General Challenges

- আপনার দৈনন্দিন কাজে সবচেয়ে কঠিন চ্যালেঞ্জগুলো কী কী?

What are the most difficult challenges you face in your daily work?

- এই চ্যালেঞ্জগুলি আপনার লক্ষ্যমাত্রা পূরণে কীভাবে প্রভাব ফেলে?

How do these challenges affect your ability to meet production goals?

২. কাঁচামাল প্রাপ্তি | Access to Raw Materials

- কাঁচামাল সংগ্রহে কী ধরনের সমস্যা দেখা দেয়?

Do you face any problems in sourcing raw materials? If yes, what are they?

- কিভাবে এসব সমস্যা উৎপাদনের ধারাবাহিকতা ও গুণমানকে প্রভাবিত করে?

How do these problems affect your ability to maintain consistent production quality?

৩. দক্ষতা ও প্রশিক্ষণ | Skills and Training

- আপনার কাজ উন্নয়নের জন্য প্রশিক্ষণ কীভাবে সাহায্য করতে পারে বলে মনে করেন?

Do you think you have access to the necessary training to improve your work? What further training would help?

- নতুন দক্ষতা শেখা বা কৌশল গ্রহণে কি চ্যালেঞ্জ আছে?

Are there challenges in learning new skills or adopting new methods?

৪. আর্থিক বাধা | Financial Barriers

- ব্যবসা চালাতে কি অর্থনৈতিক সীমাবদ্ধতা আছে?

Does your company face any financial constraints, like limited access to credit or high production costs?

- এই আর্থিক চ্যালেঞ্জ ব্যবসা প্রসারে কীভাবে প্রভাব ফেলে?

How do these challenges affect your ability to grow or expand the business?

৫. বাজার প্রতিযোগিতা | Market Competition

- সস্তা উৎপাদিত পণ্যের সাথে কিভাবে প্রতিযোগিতা করছেন?

How does your company compete with cheap, mass-produced textile goods?

- হস্তচালিত পণ্যের গ্রাহক খুঁজে পেতে কী চ্যালেঞ্জ আছে?

What are the challenges in finding customers who value and buy your handmade products?

৩.২ বর্তমান ব্যবসায়িক মডেল বিশ্লেষণ | 3.2 Analysis of Existing Business Models

৬. বর্তমান ব্যবসা অনুশীলন | Current Practices

- বর্তমানে পণ্য বিক্রির প্রক্রিয়া কী?

How does your company currently sell its products?

- কিভাবে পণ্যের প্রচার বা মার্কেটিং করেন?

How do you promote or market your products?

৭. মডেলের কার্যকারিতা | Effectiveness

- ব্যবসা গ্রাহকের চাহিদা মেটাচ্ছে কি?

Do you think the current business approach meets customer needs?

- কোন দিকগুলো ভালো কাজ করছে, আর কোথায় উন্নতির দরকার?

Which parts work well and which could be improved?

৮. গ্রাহক পছন্দ | Customer Preferences

গ্রাহকদের কাছ থেকে পণ্যের কেমন প্রতিক্রিয়া পান?

What kind of feedback do you receive from customers (quality, price, design)?

এই পছন্দগুলো পণ্য উৎপাদনে কীভাবে প্রভাব ফেলে?

How do customer preferences influence your product offerings?

৯. স্টেকহোল্ডার সহযোগিতা | Stakeholder Cooperation

আপনি কি অন্য ব্যবসার সাথে কাজ করেন?

Do you collaborate with other handloom businesses for production or sales?

সরকার/সংগঠন কী সহায়তা দেয়?

What kind of support do you receive from the government or industry associations?

৩.৩ নতুন ব্যবসায়িক মডেল প্রস্তাব | 3.3 Proposing a New Business Model

১০. ডিজিটাল মার্কেটিং ও ই-কমার্স | Digital Marketing & E-Commerce

আপনি কি অনলাইন বিক্রি করেন বা করতে চান?

Have you considered using the internet or social media to sell your products?

আপনি কীভাবে মনে করেন এটি ব্যবসার প্রসার ঘটাতে পারে?

How do you think online platforms can help you reach more customers?

১১. টেকসই পদ্ধতি | Sustainability Practices

আপনি পরিবেশ বান্ধব কাঁচামাল ব্যবহার করেন কি?

Do you use eco-friendly materials or avoid harmful dyes?

কর্মীদের স্বাস্থ্য নিরাপত্তা পদ্ধতি ব্যবহার করেন কি?

Do you practice occupational safety and welfare standards?

১২. প্রযুক্তির ব্যবহার | Technology Adoption

আপনি নতুন প্রযুক্তি ব্যবহার সম্পর্কে জানেন?

Are you aware of any tools or technologies that can improve production or sales?

প্রযুক্তি গ্রহণে কোনো বাধা আছে কি?

What are the challenges to adopting modern technology?

১৩. প্রক্রিয়া উদ্ভাবন | Innovation in Process

উৎপাদন পদ্ধতিতে কী পরিবর্তন আনতে চান?

What changes would you like to bring to improve efficiency and quality?

এসব পরিবর্তনে কী ধরনের সহায়তা দরকার?

What support (financial, technical, training) do you need to implement these?

১৪. নতুন গ্রাহক আকর্ষণ | Customer Engagement

আপনার মার্কেটিং কৌশল কী?

What strategies do you use for marketing your products?

স্থানীয় ও আন্তর্জাতিকভাবে পৌঁছানোর নতুন উপায় কী হতে পারে?

What new approaches can help you reach customers locally and internationally?

১৫. ভবিষ্যৎ সম্ভাবনা | Future Prospects

তাঁত খাতকে আরও প্রতিযোগিতামূলক করতে কী করা উচিত?

What should be done to make the handloom sector more competitive?

আপনি কিভাবে মনে করেন ডিজিটাল ও টেকসই পদ্ধতি সাহায্য করতে পারে?

How do you think digital marketing and sustainability can improve the sector?

আপনার পেশাগত এবং সামাজিক উন্নয়নে তাঁত খাত কীভাবে সহায়তা করতে পারে?

How do you expect the handloom sector to support your professional and social growth?

৩.৪ উপসংহার | 3.4 Concluding Remarks

আপনি কি আরও কিছু শেয়ার করতে চান?

Do you want to share anything else about your work in the handloom sector?

বাংলাদেশে শ্রমিকদের ব্যবসা পরিবেশ উন্নয়নে আপনার সুপারিশ কী?

What suggestions do you have for improving the business environment for handloom workers in Bangladesh?

Appendix IV. In-Depth Interview Questionnaires for Customer & Consumers

Title: A pattern-changing Business Model framework for Handloom Sector: A case study of Bangladesh

Note for the Interviewer:

We ensure that the interview is conducted formally.

And it allows the respondents to explain their answers.

Investigate deeper into responses where necessary to gather thorough insights.

We take careful measures concerning respondents' consent, discomfort, and personal information.

We record the interview (with the respondent's approval) for precise data analysis.

Section 1 Demographic Information

Name –

Age-

Highest Education

Profession-

Monthly income –

Most favorite handloom product-

Yearly Buying amount (Approx.) -

Section 2: Research Aim and Objective related questions

2.1 Understanding Customer Preferences and Challenges

Awareness and Interest in Handloom Products

Q1.1 How familiar are you with handloom products, and what draws you to purchase or consider them?

Q1.2 How often do you buy handloom products, and for what reasons (e.g., quality, craftsmanship, cultural value)?

Perceived Value

Q2.1 What do you consider the most valuable aspects of handloom products (e.g., design, quality, tradition)?

Q2.2 Do you feel that handloom products offer good value for money? Why or why not?

Challenges in Purchasing

Q3.1 What challenges or barriers do you face when trying to purchase handloom products (e.g., availability, price, variety)?

Q3.2 How do you think the buying process for handloom products could be improved?

Comparison with Mass-Produced Textiles

Q4.1 How do handloom products compare to mass-produced textiles in terms of quality, price, and design?

Q4.2 What would make you choose handloom over mass-produced products or vice versa?

2.2 Exploring Consumer Behavior and Buying Decisions

Purchase Channels

Q5.1 Where do you usually buy handloom products (e.g., local markets, online, boutique shops)?

Q5.2 Do you prefer purchasing handloom products in-person or online? Why?

Digital Engagement

Q6.1 Have you seen handloom products marketed online, such as on social media or e-commerce platforms? If yes, how does this influence your buying decisions?

Q6.2 How likely are you to buy handloom products online if more options were available?

Impact of Brand and Storytelling

Q7.1 How important is the story behind the product (e.g., how it was made, who made it) when deciding to buy handloom items?

Q7.2 Would you be more inclined to buy handloom products if you knew more about the artisans and the production process?

Loyalty to Handloom Brands

Q8.1 Are there specific handloom brands or artisans you prefer? If so, what makes them stand out?

Q8.2 What factors would increase your loyalty to a particular handloom brand or product?

2.3 Evaluating Sustainability and Ethical Considerations

Sustainability Awareness

Q9.1 How important are eco-friendly materials, workers' health safety and other ethical production practices when buying handloom products?

Q9.2 Would you be willing to pay more for handloom products that are produced sustainably?

Ethical Consumerism

Q10.1 How important is it to you that handloom products support local artisans and promote fair trade?

Q10.2 Do you seek out brands or sellers that prioritize ethical production when purchasing handloom products?

2.4 Expectations and Opportunities for Improvement

Design and Innovation

Q11.1 What types of designs or features would you like to see more of in handloom products?

Q11.2 How can handloom products be made more appealing to modern consumers without losing their traditional value?

Product Range and Customization

Q12.1 Are you satisfied with the current variety of handloom products (e.g., clothing, home decor)? What other product types would you like to see?

Q12.2 Would you be interested in customized or made-to-order handloom products?

Pricing and Affordability

Q13.1 How do you perceive the pricing of handloom products compared to other alternatives in the market?

Q13.2 What price range do you consider fair for handloom products, given their craftsmanship and quality?

2. 5: Proposing a New Business Model for Handloom Products

Digital Shopping Experience

Q14.1 How would an online shopping platform specifically for handloom products enhance your buying experience?

Q14.2 What features (e.g., detailed product descriptions, artisan profiles, sustainability labels) would you expect from such a platform?

Customer Support and Engagement

Q15.1 How important is customer support when purchasing handloom products, whether online or in-store?

Q15.2 Would you appreciate more direct communication with the artisans or handloom brands through social media or other digital channels?

Marketing and Promotion

Q16.1 What types of marketing or promotions would encourage you to buy more handloom products (e.g., discounts, limited editions, storytelling)?

Q16.2 How effective do you think social media or influencer marketing could be in raising awareness about handloom products?

2.6: Overall Suggestions for Improvement

Future Trends and Preferences

Q17.1 What do you think would make handloom products more attractive to future consumers?

Q17.2 What role do you think digital marketing, e-commerce, and sustainability will play in shaping the future of the handloom industry?

General Feedback

Q18. Do you have any suggestions or recommendations on how the handloom sector in Bangladesh could improve to better meet your needs as a customer?

Conclusion: Is there anything else you'd like to add about your experience with handloom products?

Appendix V. In-Depth Interview Questionnaire for Industry Experts/Academia/Policy Makers

Title: A Pattern-Changing Business Model Framework for the Handloom Sector: A Case Study of Bangladesh

শিরোনাম: বাংলাদেশের হ্যান্ডলুম খাতের জন্য একটি প্যাটার্ন পরিবর্তনকারী ব্যবসায়িক মডেল ফ্রেমওয়ার্ক: একটি কেস স্টাডি

Note for the Interviewer

সাক্ষাৎকার গ্রহণকারীর জন্য নির্দেশনা

We ensure that the interview is conducted in an informal manner.

আমরা নিশ্চিত করি যে সাক্ষাৎকারটি অনানুষ্ঠানিকভাবে পরিচালিত হয়েছে।

And it allows the respondents to explain their answers.

এটি উত্তরদাতাদের তাদের উত্তর ব্যাখ্যা করার সুযোগ দেয়।

Investigate deeper into responses where necessary to gather thorough insights.
প্রয়োজন অনুযায়ী আরও গভীরে অনুসন্ধান করে অন্তর্দৃষ্টিগুলো সংগ্রহ করুন।

We take careful measures concerning respondents' consent, discomforts, and personal information.

উত্তরদাতাদের সম্মতি, অস্বস্তি এবং ব্যক্তিগত তথ্য সম্পর্কে সতর্কভাবে ব্যবস্থা নেওয়া হয়।

We record the interview (with the respondent's approval) for precise data analysis.
সুনির্দিষ্ট তথ্য বিশ্লেষণের জন্য সাক্ষাৎকার রেকর্ড করা হয় (উত্তরদাতার সম্মতিতে)

Section 1: Demographic Questions

সেকশন ১: জনসংখ্যাগত তথ্য

English

বাংলা

Name

নাম

Age

বয়স

Highest Education সর্বোচ্চ শিক্ষাগত যোগ্যতা

Profession

পেশা

Area of Expertise বিশেষজ্ঞ ক্ষেত্র

Section 2: Research Aim and Objective-Related Questions

সেকশন ২: গবেষণার উদ্দেশ্য ও লক্ষ্যভিত্তিক প্রশ্নাবলী

2.1 Understanding the Challenges and Barriers

২.১ চ্যালেঞ্জ এবং বাধা বোঝা

1. Operational Challenges | কার্যক্রমসংক্রান্ত চ্যালেঞ্জ

Q1. What are the most pressing operational challenges?

প্রশ্ন ১: আপনার মতে, বাংলাদেশের হ্যান্ডলুম খাতের সবচেয়ে জরুরি কার্যকরী চ্যালেঞ্জগুলো কী কী?

Q2. How do outdated technology or lack of skilled labor affect output?

প্রশ্ন ২: পুরোনো প্রযুক্তি, অবকাঠামো ঘাটতি বা দক্ষ শ্রমিকের অভাব কীভাবে উৎপাদন ও গুণগত মানকে প্রভাবিত করে?

2. Financial and Regulatory Barriers | আর্থিক ও নীতিগত বাধা

Q1. How significant are funding or capital constraints?

প্রশ্ন ১: হ্যান্ডলুম এসএমই-এর বৃদ্ধিতে মূলধনের অভাব বা বিনিয়োগ অপ্রাপ্তির ভূমিকা কতটা গুরুত্বপূর্ণ?

Q2. Are there policy-level issues needing reform?

প্রশ্ন ২: এই খাতের বিকাশে সহায়তার জন্য কোনো নীতিগত চ্যালেঞ্জ বা আইনগত সংস্কারের প্রয়োজন আছে কি?

3. Market Access and Competition | বাজারে প্রবেশাধিকার ও প্রতিযোগিতা

Q1. What market barriers do SMEs face (local to international)?

প্রশ্ন ১: স্থানীয়, জাতীয় ও আন্তর্জাতিক বাজারে প্রবেশে হ্যান্ডলুম এসএমইগুলো কী কী প্রতিবন্ধকতার সম্মুখীন হয়?

Q2. How do they compete with mass-produced textiles?

প্রশ্ন ২: তারা কীভাবে সস্তা, ব্যাপকভাবে উৎপাদিত টেক্সটাইল পণ্যের সাথে প্রতিযোগিতা করে এবং নিজেদের আলাদা করে তোলে?

4. Cultural and Social Challenges | সাংস্কৃতিক ও সামাজিক চ্যালেঞ্জ

Q1. How do changing tastes impact the sector?

প্রশ্ন ১: ভোক্তাদের পরিবর্তিত রুচি বা ঐতিহ্যবাহী কারুশিল্পের আকর্ষণ হ্রাস কীভাবে এই খাতকে প্রভাবিত করে?

Q2. What role can communities play in preservation?

প্রশ্ন ২: স্থানীয় সম্প্রদায় কীভাবে হ্যান্ডলুম খাতের টিকে থাকা ও টেকসইতায় ভূমিকা রাখতে পারে?

2.2 Analyzing Existing Business Models

২.২ বিদ্যমান ব্যবসায়িক মডেল বিশ্লেষণ করা

5. Current Business Models | বিদ্যমান ব্যবসা মডেল

Q1. What are the dominant models in use?

প্রশ্ন ১: বর্তমানে বাংলাদেশের হ্যান্ডলুম এসএমই-দের মধ্যে প্রচলিত প্রধান ব্যবসায়িক মডেলগুলো কী কী?

Q2. Are they effective in meeting market needs?

প্রশ্ন ২: এই মডেলগুলো কি পণ্যের বৈচিত্র্য, গ্রাহক জড়িততা ও লাভজনকতার দিক থেকে বাজার চাহিদা পূরণে কার্যকর?

6. Strengths and Weaknesses | শক্তি ও দুর্বলতা

Q1. What are the strengths of these models?

প্রশ্ন ১: হ্যান্ডলুম খাতে বিদ্যমান ব্যবসায়িক মডেলগুলোর কোন দিকগুলো ইতিবাচক?

Q2. What are the gaps in innovation or sustainability?

প্রশ্ন ২: এই মডেলগুলো উদ্ভাবন, টেকসইতা বা বাজার অভিযোজনের দিক থেকে কী ঘাটতি রাখে?

7. Collaboration and Networking | সহযোগিতা ও নেটওয়ার্কিং

Q1. Is collaboration among stakeholders important?

প্রশ্ন ১: প্রযোজক, সরবরাহকারী, ও খুচরা বিক্রেতাদের মধ্যে সহযোগিতা কতটা গুরুত্বপূর্ণ?

Q2. Role of associations or cooperatives?

প্রশ্ন ২: এই খাতে শিল্প সমিতি, সমবায় বা নেটওয়ার্কগুলো কী ধরনের সহায়তা প্রদান করে?

8. Adoption of Modern Tools | আধুনিক টুল গ্রহণ

Q1. Are digital tools (e-commerce, social media) being used?

প্রশ্ন ১: ই-কমার্স বা সামাজিক যোগাযোগ মাধ্যমের মতো ডিজিটাল টুলগুলো বর্তমানে কী পরিমাণে ব্যবহৃত হচ্ছে?

Q2. What barriers hinder tool adoption?

প্রশ্ন ২: এই প্রযুক্তিগুলো গ্রহণে কী ধরনের বাধা আছে এবং কিভাবে তা অতিক্রম করা যায়?

2.3 Proposing a New Business Model Framework

২.৩ নতুন ব্যবসা মডেল ফ্রেমওয়ার্ক প্রস্তাব

9. Digital Marketing and E-commerce Integration | ডিজিটাল মার্কেটিং ও ই-কমার্স সংযুক্তি

Q1. How can these help expand markets?

প্রশ্ন ১: ডিজিটাল মার্কেটিং ও ই-কমার্স কীভাবে হ্যান্ডলুম খাতের বাজার সম্প্রসারণে সহায়তা করতে পারে?

Q2. Role of social media, branding, platforms?

প্রশ্ন ২: সামাজিক মাধ্যম, অনলাইন মার্কেটপ্লেস এবং ডিজিটাল ব্র্যান্ডিং কীভাবে বিক্রয় ও গ্রাহক অংশগ্রহণ বাড়াতে পারে?

10. Sustainability and Ethics | টেকসইতা ও নৈতিক উৎপাদন

Q1. What sustainable practices can be introduced?

প্রশ্ন ১: পরিবেশ ও সামাজিক প্রভাব বৃদ্ধির জন্য হ্যান্ডলুম খাতে কী কী টেকসই উৎপাদন পদ্ধতি অন্তর্ভুক্ত করা যেতে পারে?

Q2. How can tradition and sustainability be balanced?

প্রশ্ন ২: ঐতিহ্যবাহী কারুশিল্পের সঙ্গে কীভাবে পরিবেশবান্ধবতা বা বর্জ্য হ্রাসের মতো আধুনিক টেকসই পদ্ধতির সমন্বয় করা যেতে পারে?

11. Government and Policy Support | সরকার ও নীতিনির্ধারকদের ভূমিকা

Q1. What should be govt's role in supporting this transition?

প্রশ্ন ১: একটি প্রতিযোগিতামূলক ও টেকসই ব্যবসা মডেলে রূপান্তরে সরকারের ভূমিকা কী হওয়া উচিত?

Q2. What policy reforms are necessary?

প্রশ্ন ২: আপনার মতে, কী কী নীতিগত সংস্কার এই খাতের উপর ইতিবাচক প্রভাব ফেলতে পারে?

12. International Market and Export Potential | আন্তর্জাতিক বাজার ও রপ্তানির সম্ভাবনা

Q1. What global opportunities are there?

প্রশ্ন ১: বাংলাদেশের হ্যান্ডলুম খাতের জন্য আন্তর্জাতিক বাজারে সম্প্রসারণের কী সম্ভাবনা আছে?

Q2. How to position for global demand?

প্রশ্ন ২: বিশ্বব্যাপী চাহিদা বিশেষ করে নৈতিক ও হস্তনির্মিত পণ্যের ক্ষেত্রে, হ্যান্ডলুম ব্যবসাপ্রাঙ্গণ কীভাবে নিজেদের উপস্থাপন করতে পারে?

13. Innovation and Future Growth | উদ্ভাবন ও ভবিষ্যৎ প্রবৃদ্ধি

Q1. What innovations can drive the sector forward?

প্রশ্ন ১: ব্যবসা মডেল বা প্রযুক্তিগত দিক থেকে কী কী উদ্ভাবন এই খাতের ভবিষ্যৎ প্রবৃদ্ধিকে ত্বরান্বিত করতে পারে?

Q2. How to integrate tools, sustainability & networks?

প্রশ্ন ২: ডিজিটাল টুল, টেকসই পদ্ধতি ও অংশীদারিত্ব কীভাবে একটি প্রতিযোগিতামূলক ও স্থিতিস্থাপক ব্যবসা মডেল তৈরি করতে পারে?

Closing Questions | উপসংহারমূলক প্রশ্নাবলী

14. Suggestions and Recommendations | প্রস্তাব ও সুপারিশ

Q1. Any additional insights to improve competitiveness?

প্রশ্ন ১: বাংলাদেশের হ্যান্ডলুম এসএমই-র প্রতিযোগিতা সক্ষমতা বৃদ্ধির জন্য আপনার কোনো অতিরিক্ত মতামত বা সুপারিশ আছে কি?

Q2. Any case examples of successful models?

প্রশ্ন ২: আপনি কি এমন কোনো সফল ব্যবসায়িক মডেলের উদাহরণ দিতে পারেন যা এই গবেষণার জন্য প্রাসঙ্গিক হতে পারে?

Appendix VI. Questionnaire for Owner/Producer/Wholesaler/Retailer

Title: A Pattern-Changing Business Model Framework for the Handloom Sector: A Case Study of Bangladesh

শিরোনাম: বাংলাদেশের হ্যান্ডলুম খাতের জন্য একটি প্যাটার্ন পরিবর্তনকারী ব্যবসায়িক মডেল ফ্রেমওয়ার্ক: একটি কেস স্টাডি

নির্দেশনা | Instructions

আমরা নিশ্চিত করি যে সাক্ষাৎকারটি আনুষ্ঠানিকভাবে পরিচালিত হয়েছে।

We ensure that the interview is conducted formally.

এটি উত্তরদাতাদের তাদের উত্তর ব্যাখ্যা করতে দেয়।

It allows the respondents to explain their answers.

প্রয়োজনীয় প্রতিক্রিয়াগুলির গভীরে তদন্ত করুন।

Probe deeply into the responses for insightful answers.

আমরা উত্তরদাতাদের সম্মতি, অস্বস্তি এবং ব্যক্তিগত তথ্যের বিষয়ে সতর্ক থাকি।

We ensure confidentiality and respect participants' consent and comfort.

সুনির্দিষ্ট তথ্য বিশ্লেষণের জন্য সাক্ষাৎকারটি রেকর্ড করা হয় (উত্তরদাতার অনুমতিতে)।

The interview is recorded for precise analysis (with the respondent's approval).

সেকশন ১: ডেমোগ্রাফিক প্রশ্ন | Section 1: Demographic Questions

বাংলা (Bengali)	English Translation
নাম	Name
বয়স	Age
শিক্ষাগত যোগ্যতা	Educational Qualification
কাজের ধরন	Type of Work

বাংলা (Bengali)	English Translation
তঁত বুননের অভিজ্ঞতা	Experience in Weaving
প্রশিক্ষণে অংশগ্রহণ	Training Attended
সময়কাল	Duration of Training
প্রশিক্ষণ প্রতিষ্ঠান	Training Institution
দৈনিক কর্মঘণ্টা	Daily Working Hours
অতিরিক্ত কর্মঘণ্টা (হ্যাঁ / না)	Overtime (Yes / No)
অতিরিক্ত ঘণ্টা	Overtime Hours
মাসিক আয়	Monthly Income
উৎসবভাতা (হ্যাঁ / না)	Festival Bonus (Yes / No)
শ্রম আইন সম্পর্কে ধারণা	Knowledge of Labor Law
স্বাস্থ্যসেবা সহায়তা	Health Care Facility

সেকশন ২: তঁত প্রতিষ্ঠানের ব্যবসা সংক্রান্ত তথ্য | Section 2: Business Information of Handloom Enterprise

বাংলা	English Translation
তঁত / ব্যবসা প্রতিষ্ঠানের নাম	Name of Handloom / Business

বাংলা

English Translation

ব্যবসার ধরন – একক / অংশীদার / যৌথ Nature of Business – Sole / Partnership / Joint

নিবন্ধিত প্রতিষ্ঠান – হ্যাঁ / না Registered – Yes / No

ব্যবসার বয়সকাল Age of Business

মোট তাঁত সংখ্যা Total Number of Looms

উৎপাদনযোগ্য তাঁত সংখ্যা Number of Active Looms

তাঁত পণ্যের ধরন Type of Handloom Products

আনুমানিক মূলধন Estimated Capital

কর্মরত সদস্য সংখ্যা Number of Working Members

ঋণ / বিনিয়োগ Loan / Investment from Financial Institutions

মোট মাসিক উৎপাদন Total Monthly Production

আনুমানিক মাসিক আয় Estimated Monthly Income

আনুমানিক মাসিক ব্যয় Estimated Monthly Expenditure

বাৎসরিক বৃদ্ধি (%) Annual Growth (%)

ব্যবহৃত কাঁচামাল Raw Materials Used

কাঁচামালের উৎস – স্থানীয় / আমদানিকৃত Source of Materials – Local / Imported

বাংলা

English Translation

বিক্রয় মাধ্যম – পাইকারি/খুচরা/সরাসরি

Sales Method – Wholesale / Retail / Direct

অনলাইন বিক্রি – হ্যাঁ / না

Online Sales – Yes / No

সরকারি সহায়তা / প্রশিক্ষণ

Government Support or Training – Yes / No

বেসরকারি সহায়তা / কল্যাণ

NGO/Private Collaboration – Yes / No

সেকশন ৩: গবেষণা বিষয়ভিত্তিক প্রশ্ন | Section 3: Thematic Research Questions

৩.১ মূল চ্যালেঞ্জ ও বাধা | 3.1 Key Challenges and Barriers

১. ব্যবসা অপারেশন | Business Operation

আপনার প্রতিষ্ঠান কী কী সমস্যার সম্মুখীন হয়?

What operational problems does your business mainly face?

কাঁচামাল ক্রয়, পণ্যের গুণগত মান ইত্যাদিতে কী সমস্যা রয়েছে?

What are the issues in raw material purchase, maintaining quality, etc.?

পাইকারি / খুচরা বিক্রেতা হিসেবে আপনি কি চ্যালেঞ্জের মুখোমুখি হন?

As a wholesaler/retailer, what challenges do you face in product sourcing and quality control?

২. আর্থিক সীমাবদ্ধতা | Financial Constraints

ঋণের অপ্রাপ্যতা বা মূলধনের স্বল্পতা কতটা প্রতিবন্ধক?

How do limited capital or unavailability of credit affect business growth?

কোন খরচগুলো নিয়মিত বহন করা কঠিন?

Which operational costs are difficult to manage (e.g., labor, materials, logistics)?

৩. মার্কেট এক্সেস | Market Access

স্থানীয় বা আন্তর্জাতিক বাজারে প্রবেশে কী সমস্যা হয়?

What challenges do you face in accessing local and global markets?

সস্তা পণ্যের সঙ্গে প্রতিযোগিতায় কীভাবে টিকে থাকেন?

How do you survive in competition with cheaper ready-made garments?

৪. দক্ষতা ও কর্মশক্তি | Skills and Workforce

দক্ষ কর্মী খুঁজতে ও প্রশিক্ষণ দিতে কী চ্যালেঞ্জ আছে?

What are the barriers in finding and training skilled workers?

শ্রমিক/বিক্রয়কর্মীদের স্বাস্থ্য ও নিরাপত্তা নিশ্চিত করেন কিভাবে?

How do you ensure worker health, safety, and workplace wellbeing?

৫. প্রযুক্তি ও উদ্ভাবন | Technology and Innovation

আপনি সোশ্যাল মিডিয়া বা ই-কমার্স সম্পর্কে কতটা জানেন?

How familiar are you with tools like Facebook, YouTube, Daraz, etc.?

ডিজিটাল প্ল্যাটফর্মের অভাব আপনার ব্যবসাকে কিভাবে প্রভাবিত করছে?

How does the lack of digital access hinder your business expansion?

৩.২ বিদ্যমান ব্যবসায়িক মডেল বিশ্লেষণ | 3.2 Analysis of Existing Business Models

৬. বর্তমান ব্যবসা অনুশীলন | Current Business Practices

আপনার ব্যবসা কিভাবে পরিচালিত হয় তা ব্যাখ্যা করুন।

Please describe how your business operates (production, sales, delivery).

গ্রাহক ও সরবরাহকারীদের সাথে সম্পর্ক কিভাবে তৈরি করেন?

How do you maintain relationships with customers, suppliers, retailers?

৭. কার্যকারিতা | Effectiveness of Current Model

বর্তমান মডেল কি আপনার এবং গ্রাহকের চাহিদা পূরণ করে?

Does your current model meet your and your customers' needs?

কোন দিকগুলো ভালো এবং কোন দিক উন্নয়নের প্রয়োজন?

What are the strengths and weaknesses of your current approach?

৮. গ্রাহক ও বিক্রয় | Customer Engagement & Sales

কিভাবে গ্রাহকদের আকৃষ্ট করছেন ও ধরে রাখছেন?

How do you attract and retain customers?

স্থানীয় বাজার/মেলা/প্রদর্শনীর গুরুত্ব কেমন?

What role do markets/fairs/exhibitions play in your sales?

৯. সহযোগিতা ও অংশীদারিত্ব | Collaboration and Partnership

আপনি কি অন্যান্য প্রতিষ্ঠানের সাথে কাজ করেন?

Do you collaborate with other handloom businesses?

সরকার/প্রতিষ্ঠানের কাছ থেকে আপনি কী ধরনের সহায়তা পান?

What kind of support do you receive from government or associations?

কোনো প্রশিক্ষণ পেয়েছেন কি যা ব্যবসায়িক উন্নয়নে ভূমিকা রেখেছে?

Have you received any training that helped in your business growth?

৩.৩ নতুন ব্যবসা মডেল অন্বেষণ | 3.3 Exploring a New Business Model

১০. ডিজিটাল মার্কেটিং ও ই-কমার্স | Digital Marketing & E-commerce

আপনি কি ডিজিটাল টুল ব্যবহার করেন?

Do you use tools like social media, online ads, or e-commerce platforms?

ডিজিটাল মাধ্যম কীভাবে ব্যবসায় সাহায্য করতে পারে বলে মনে করেন?

How do you think these tools can help grow your business?

১১. টেকসইতা অনুশীলন | Sustainability Practices

টেকসই পদ্ধতি কতটা গুরুত্বপূর্ণ?

How important are practices like eco-materials or waste reduction?

আপনি এখন পর্যন্ত কি উদ্যোগ নিয়েছেন?

What steps have you taken to make your business more sustainable?

১২. ভবিষ্যতের পরিকল্পনা | Future Growth & Adaptation

আপনি ভবিষ্যতে কী পরিবর্তন দেখতে চান?

What changes do you want to see in your business in the coming years?

অনলাইন বিক্রয় ও প্রযুক্তির কী সম্ভাবনা দেখছেন?

What potential do you see in adopting online sales or digital marketing?

১৩. সরকারী সহায়তা | Government & Institutional Support

সরকার বা অন্যান্য প্রতিষ্ঠান থেকে কী সহায়তা প্রয়োজন?

What kind of support do you need (finance, training, policy reform)?

নীতিমালা বা প্রোগ্রাম কীভাবে আরও কার্যকর হতে পারে?

How can existing policies/programs be improved for handloom businesses?

১৪. পেশাগত দক্ষতা প্রশিক্ষণ | Skills Development Training

কী ধরনের প্রশিক্ষণ তাঁতিদের জন্য উপযোগী হবে?

What training can enhance professional skills for handloom workers?

আপনি সরকারি/বেসরকারি প্রতিষ্ঠান থেকে কী আশা করেন?

What support do you expect for working capital, quality, and marketing?

১৫. উদ্ভাবন | Innovation and New Ideas

কোন নতুন ধারণা হ্যান্ডলুম খাতকে এগিয়ে নিতে পারে?

What innovations can make the sector more competitive?

আপনি আপনার মডেলে ডিজিটাল ও ই-কমার্স একীভূতকরণকে কিভাবে দেখেন?

How do you view integrating digital marketing and e-commerce into your current model?

৩.৪ উপসংহার | 3.4 Conclusion

আমরা কিছু বাদ দিয়েছি কিনা আপনি কি কিছু যোগ করতে চান?

Would you like to add anything we might have missed?

বাংলাদেশের হ্যান্ডলুম খাতের উন্নয়নে আপনার কি সুপারিশ আছে?

Do you have any specific suggestions to improve Bangladesh's handloom sector?

Appendix VII. Consent Form

To participate in an in-depth interview for a Doctoral Research Study

Title: Pattern-changing Business Model framework for Handloom Industry: A case study of Bangladesh

A brief detail of the research

This study is being conducted by Ruma Nilima Haque and Kim Eunyong, School of Knowledge Science, Japan Advanced Institute of Science and Technology, Japan. We request that you participate in a doctoral research study. The aim of the study focuses on the pattern-changing business model (BM) and its application by examining the current business model of handloom enterprises, their customers, stakeholders, and the whole supply network. Besides, the subsidiary objectives are 1. Identify the key challenges and barriers that the handloom enterprises face in Bangladesh 2. To analyze existing business models in the handloom sector and assess their effectiveness in addressing market needs. 3. To propose a new business model framework that integrates digital marketing, e-commerce, and sustainable production practices to enhance the competitiveness of Bangladesh's handloom sector.

We purposively selected you as a respondent in an expert category for this study. By responding to the interview, you will provide your insights/valuable information regarding the current challenges, business practices, and prospects of the handloom sector. In addition, we consider your perception of the current business practices in the handloom sector to help us reveal a new business model framework. Generally, to what extent is BM inevitable to protect the cultural heritage of the handloom sector and its communities, and how can a new BM retain the customer value proposition? In addition, how to develop a set of standards for improving the environmental and social performances of the handloom SMEs.

Voluntary Participation

The study seeks voluntary participation from you. The researcher will interview for a maximum of an hour. The type of interview follows a semi-structured questionnaire and an in-depth discussion of those questions. The duration of the conversation will span 30 to 40 minutes. However, you can choose not to participate and withdraw your consent for voluntary participation at any time.

Risks and Discomforts

It is to be guaranteed that there are no known risks associated with this study. The interview protocol considers personal discomforts as a high priority.

The advantages of this research

We will not provide you with any material benefits for your active cooperation in the data collection of this academic research. It may help us to understand the business model (BM) challenges and their application by examining the current business practices of the handloom makers, artisans, sellers, customers, and the whole supply network. After the completion of the final paper, a summary of the results will be provided to the beneficiaries. Please let me know your email ID at the end of the interview protocol if you are interested in receiving it.

Safety of Confidentiality

The research follows strict data analysis ethics to keep your responses and personal information confidential. The study will use the data and information provided by you only for academic purposes. The research results and discussion follow a strict approach to conceal personal identity. Finally, we assure you no personal information will be disclosed that harms your social life.

Contact Information

If you have any queries or concerns about this research or any problem you face related to data or information sharing, don't hesitate to contact Ruma Nilima Haque at the Graduate School of Knowledge Science, Japan Advanced Institute of Science and Technology, Japan. Email: ruma18@jaist.ac.jp. Moreover, if you have any doubts or concerns about your rights as a research participant, please contact the supervisor and chief examining committee of this study Kim Eunyoung, Professor at the Graduate School of Knowledge Science, Japan Advanced Institute of Science and Technology, 1-1 Asahidai, Nomi-shi, Ishikawa 923-1292, Japan. Phone: +81-761-51-1752 Fax: +81-751-51-1149 Email: kim@jaist.ac.jp.

Agreement Form

I have read this agreement form and allowed him to ask questions and research-related queries.

Participant's Name:

Profession:

Area of Expertness:

Contact Address:

Mobile Number:

Signature& Date:

A copy of this agreement form is given to you.

Appendix VIII. Interview Guidelines

Title: Pattern-changing Business Model framework for Handloom Industry: A case study of Bangladesh

1. Introduction

Data Collection through Interview must be **credible and ethical** in research locations. An interviewer should be a good listener and consider flexibility during conducting interview. A guideline with some key tips mentioned below that adapted from *J. Mason. (2002)*. So, researchers must follow these guidelines to understand the key responsibilities to be performed during interview.

2. RA duties during Interview sessions

To conduct a successful interview, the Principal Investigator/Research Assistants (RA) should follow several guidelines,

- RA must identify **key participants** in the situation whose knowledge and opinions may provide important insights regarding the research questions.
- RA will **politely request respondents** to share his/her opinions while interviewing respondents. These questions are designed to allow respondents to flexibly share their opinions regarding research questions.
- RA should **cautiously select the interview setting** in which he/she conducts the IDI. Although interviews hold at specific research settings, the RA may seek a place (private, neutral, and distraction-free interview location if possible) to increase the comfort of the interviewee and the likelihood of attaining high-quality information.
- RA should **develop a means for recording the interview data**. However, RA takes handwritten notes with bullet-points below each question, but all interviews will be audiotaped with respondent consent. If any respondent won't allow voice recording then RA must take note by handwriting.
- RA can record the interview with **multiple small audio clips** (Suppose one-hour interview can record two or three times with each 20 minutes using split files name).
- RA must **follow legal and ethical requirements** for all research involving people. Interviewees should not be tricked and misled by any form of mental, physical, or emotional misconduct.
- RA assures all respondents have the **rights to postpone the interview** at any time if they feel discomfort and they can ask any question regarding their concerns after the end of interview.

3. Three Important Tasks to be considered:

In line with Saunders et. al (2016), the interview guide set three important tasks that must be followed and accomplished by PI and RA should be concerning research ethics. These are;

- First, RA should ensure that he/she attains the **consent of the interviewee** to proceed with the interview and clarify issues of anonymity and confidentiality.
- Second, RA should review **the purpose of the interview** with the interviewees, the **approximate amount of time** needed for the interview, and how and when the respondent **may expect to receive results** of the research of which this interview is a part.

- Finally, RA must remember time spent **talking to the interviewees**, would be better spent **listening to the interviewee**. In other words, RA should **limit his/her comments** as much as possible to allow more time for the interviewee to offer his perspectives.

4. Tasks to be done:

The RA implemented some actions carefully to prepare data collections.

- Read and review the research content that the study wanted to explore.
- Split all research questions into researchable sub-questions if needed.
- Keep a record immediately of the topics for each sub-question. Write next to the related interview questions.
- Followed with the Cross-reference interview topics with each research question to ensure that nothing is overlooked.

5. Interview Format

5.1 Interview Structure:

Please follow the sequential order of interview topics that gather data from respondents during interview sessions. We designed a structured questionnaire with a few sections with the sub-sections, and these must be covered while interviewing respondents.

- a) Section I: Demographic Profiles of the interviewees.
- b) Section II: Related to enterprise / handloom unit business data and information. (products quantities and sales value), resources, and energy consumptions, and so on.
- c) Section III: Core IDI questions related to research objectives and questions.

5.2 Protocol (RA):

Explain briefly below three important privacy issues to respondents:

- a. How do you ensure the procedures of data collections?
- b. How do you maintain personal data protection?
- c. How does the report present the respondents and their companies?

6. Identify minimum information:

Checking each respondent provides all demographic information (Section I), business data and a response to research key topics (Section III). And for Section II, at least two enterprise data from each case handloom type must be ensured.

7. Confirm appropriateness and adequacy of research protocol and conduct interview.

Reference

1. J. Mason. (2002). Qualitative research (2nd ed.). Thousand Oaks, CA: Sage.
2. Hancock, D. R., & Algozzine, B. (2006). Selecting a Design. In Doing case study research: a practical guide for beginning researcher (pp. 31–38). Teachers College Press, 1234 Amsterdam Avenue, New York, NY 10027
3. Saunders, M., Lewis, P., & Thornhill, A. (2016). Research Methods for Business Students. In Research Methods for Business Students (Seventh ed). Pearson, Edinburgh gate, Harlow, Essex CM20 2JE, England.

Appendix IX. Observation Guidelines

Title: Pattern-changing Business Model framework for Handloom Industry: A case study of Bangladesh

1. Introduction

The study employs direct observation at research settings (especially weavers/artisans/trainees/wholesalers/retailers) to understand the facts and justify them by objective evidence. The observations provide answers to questions being investigated. We developed an observation guide and conducted the observation in a setting chosen to maximize the usefulness of the data that were gathered.

The observations must be recorded systematically for later review and analysis. As an RA, you must make a series of visits to the case handloom units, retailers' shops and marketplaces, go through all processes in designs/materials selection/weaving processes, and other related facilities (yarn coloring, printing, or boutique) within weavers' premises or closer to weavers. RA must talk to people to confirm that the things you observed are okay to understand. However, for meaningful observation, RA must cherish his / her skills and persistence. To do so, RA considers five factors when conducting observations.

2. The Five Factors

- First, RA must identify what must be observed to shed light on possible answers to the research questions. You have the research objectives and questions, moreover RA has already received detailed interview content where all areas are covered in interview questions. So, keep in mind while sorting out the facts and phenomena to be observed.
- Second, create an observation checklist—a list of features to be addressed during a particular observation. As RA knows, the research is on business model innovation, so all facts related to the interview questionnaires should be observed and note down with the detail scenarios. The list often includes the time/date/location of the observation, names/positions of people being observed, specific activities and events related to the research questions, and initial impressions and interpretations of the activities and events under observation.

- Third, RA must gain access to the research setting and anticipate that participants in the setting may be suspicious of the study's goals. RA must be prepared to explain why, how, and for whom the investigation is conducted. Toward that end, RA should seek the trust of the participants and strive to be as unobtrusive as possible.
- Fourth, the RAs must recognize his or her personal role and biases related to the research. Unlike other forms of research in which the researcher attempts to maintain distance from the setting and activities, case study researchers are usually immersed in their work. As a result, if not recognized and addressed, RA's inherent biases and predispositions may prejudice their activities and interpretations of the study's findings. For case study research, RA must actively attempt to identify and mitigate the effects of their biases and prejudices to ensure the impartiality of their observation notes and memo writing.
- Fifth RAs must follow all ethical and legal requirements when conducting direct observation. Individuals who are observed have the right to end an observation and should be debriefed after the research has ended to ensure that no mental, physical, or psychological injury has occurred. When conducting observations, RA must be careful not to violate legal or ethical protections.

3. Hints for Writing Observation Notes

- 1.1 Please write the notes right away. Don't put it off because the more time that passes, the harder it will be to recall important details and complete the task.
- 1.2 Talk about an observation after you record it, not before, because the conversation may cloud the recollection of what occurred.
- 1.3 Work in a location free from distractions.
- 1.4 Assign sufficient time to complete the task in one session; when in doubt, allocate more time rather than less.
- 1.5 Start with notes and an outline reflecting key parts of the observation and fill in details as you complete the task.
- 1.6 Try to capture the events in the same order in which they occurred.
- 1.7 Let your notes reflect what you are thinking and write your thoughts down on paper; if it helps, "talk through" what happened as you prepare your notes.

1.8 If you notice something is missing as you are writing or after you have finished, just add it to your notes; if you notice something that should be deleted or changed, just do it.

1.9 Keep in mind that the benefits of careful note taking can pay big dividends later in your study.

4. Example of Observation Guiding Questions

2.1 Participant(s) and setting(s)?

2.2 Individual conducting the observation?

2.3 Role of the observer (participant, nonparticipant, other)?

2.4 Time, place, and length of observation?

2.5 Descriptive observations? (individuals, setting descriptors)?

2.6 Reflections (experiences, hypotheses, guidance)?

Appendix X. Guidelines for Data Transcription

Title: Pattern-changing Business Model framework for Handloom Industry: A case study of Bangladesh

Introduction

Researcher Assistants follow a couple of steps, including general and specific rules, to transfer data from the audio to text form. After that, all data will be transcribed in English and validated by both the local supervisor and the principal investigator.

1. General Rules

- ✓ Listen to each interview carefully at least two to three times and identify the tones of respondents to understand the emphasis on his feedback.
- ✓ When transcribing interviews and group interviews, you need to be able to distinguish between the interviewer and the respondents or interviewees, suppose ‘Research Assistant (1RA) and Respondents (Use code First Respondent (1R), Jamdani (J), Weaver (W) / handloom owner, Such as ‘1RJW’ or 1RJHO
- ✓ Each interview you transcribe should be written form either handwriting or word file as a separate spreadsheet following the template.
- ✓ Save a file name that maintains confidentiality and preserves it strictly. The file name should follow the sequences with abbreviation like (Respondent Serial No., Handloom type & category of respondent _ Research Assistant code) more specifically 1RJO_1RA. For

Experts and Govt. Authority interviews must follow 1RINEX_7RA or 1RACEX_6RA. The serial number will begin based on whom interview you conduct first.

{{Product Type Name - Jamdani (J), Tangile Tant (T), Banarashi (B), Khadi (K) and Monipuri (M). Designation – Handloom Owner/Maker (HO), Weaver (W) for Artisan (A), Worker (W), Retailing Owner (RO), Wholesale owner (WO), Academic Expert (ACEX), Industry Expert (INEX) or Policy Maker Expert (POEX) etc.}}

2. *Specific Rules*

- ✓ First write in the local language line by lines what Interviewees have said and explained.
- ✓ Please try to give an ‘indication’ of the tone of the respondents in which it was said. Such as the respondent uses non-verbal communication, such as ‘umm’, ‘ahh’
- ✓ Use intensive mood while listening to the audio records.
- ✓ Please concentrate on the complete transcription of each clip without any break. RAs’ full concentration helps to finish one audio clip without interruption.
- ✓ Use the ‘time stamp’ for each statement, like one answer starts from ‘00:45 to 01:30’ minutes.
- ✓ Used the ‘slow tempo’ to write the whole statements clearly and rewind to check.

3. *Transcribe Rules*

- ✓ The transcripts are randomly checked by the Research Professor; therefore, a two-tier validation is required by the local supervisor of data collection and the principal investigator.
- ✓ For English transcription, please use plain sentences with familiar words, transfer or write all translated data to Excel format. Please check all word spelling and sentence formation. Finally, confirm translation with two-tier validation before analysis.
- ✓ Principal Investigator analyzes all transcripts through qualitative software; therefore, do not leave transcripts incomplete.

Notes:

If you have any queries or concerns about these rules of transcription, please get in touch with Ruma Nilima Haque at the Graduate School of Knowledge Science, Japan Advanced Institute of Science and Technology, Japan. Email: ruma18@jaist.ac.jp.

Appendix XI. Invitation Letter for the Respondents

Date: 22.10.2024

Name:

Designation

Bangladesh Handloom Board

Subject: Invitation to Participate in an In-Depth Interview for PhD Research Project

Dear Sir/Madam

I hope you are well.

I am writing on behalf of Nilima Haque Ruma, a PhD candidate at Japan Advanced Institute of Science and Technology, Ishikawa, Japan. She is researching the development of a pattern-changing business model framework for the handloom industry in Bangladesh. The study aims to address the existing challenges and capitalize on emerging opportunities to ensure sustainable growth of this vital industry.

The primary objectives of the research include:

1. Identifying the key challenges and barriers faced by handloom SMEs in Bangladesh.
2. Analyzing existing business models within the handloom sector and assessing their effectiveness in meeting market needs.
3. Proposing a new business model framework that integrates digital marketing, e-commerce, and sustainable production practices to enhance the sector's competitiveness.

We want to invite you to participate in an in-depth interview to share your perspectives on the current state of the handloom sector. Your participation will help in shaping a model that could significantly impact the future of the handloom industry in Bangladesh.

The interview will be conducted at a time and place convenient for you, and we assure you that all the information provided will be treated with the utmost confidentiality and used solely for academic purposes. The interview is expected to take approximately 45 minutes.

We would be honored by your participation and look forward to your positive response. Please feel free to contact me at mohanc783@gmail.com or ruma18@jaist.ac.jp if you have any questions or require.

Thank you very much for considering this request, and I look forward to your support.

Sincerely,
Mohan Chakraborty
MS in Anthropology
Comilla University
mohanc783@gmail.com