

Constraints Faced by Handloom Micro-Entrepreneurial Units in Assam, India: A Scale-wise Assessment

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Abstract

The handloom sector in Assam holds deep cultural importance and offers significant employment opportunities. Despite this potential, handloom micro-entrepreneurial units continue to face multiple structural and institutional challenges that affect their performance and long-term sustainability. This paper examines the nature and pattern of constraints experienced by handloom micro-entrepreneurial units across Assam, classified into four categories based on the number of looms operated. The study is based on primary data collected from 252 registered handloom micro-entrepreneurial units across eight districts of Assam. A multi-stage sampling technique was used for data collection. The analysis focuses on eleven major categories of constraints. The findings show that these constraints are widespread across all categories of handloom units. However, their intensity and nature differ according to the scale of operation. Smaller units are more vulnerable to difficulties in yarn procurement, financial constraints, and dependence on intermediaries for market access. On the other hand, larger units face stronger competitive pressure from mechanised products and greater challenges in securing skilled labour. The paper argues that a uniform policy approach may not be effective in addressing these challenges. Instead, targeted and scale-specific interventions are needed. The study recommends differentiated policy measures to strengthen marketing capacity, improve institutional support, enhance financial access, and promote sustainable growth in the handloom sector of Assam.

Keywords: handloom, micro-entrepreneurial unit, constraints, scale-based analysis, Assam.

1. Introduction

The handloom sector occupies a position of exceptional importance in Assam's rural economy. It is deeply connected with the state's culture, tradition, and livelihood structure. Assam has 12.49 lakh looms and 12.84 lakh handloom workers, the highest in India (4th All India Handloom Census 2019–20). This makes handloom the second-largest source of employment in the state after agriculture. The sector is especially important for rural women, as weaving remains a major livelihood activity for many households.

Assam's handloom industry is known for its distinctive traditional products. These include *Mekhela Sadar*, *Riha*, *Gamosa*, *Mafler* and other traditional dresses etc. Many of these products hold strong cultural and ritual significance in Assamese society. The state produces nearly 85 percent of the world's Muga silk and 62 percent of India's Eri silk (Central Silk Board, 2023). This highlights the importance of this sector not only within India but also in the global textile landscape.

Despite this strong production base and cultural significance, most handloom units in Assam function as micro-enterprises within the informal economy. These enterprises often operate with limited capital. Their access to markets remains weak. Many depend on traditional marketing networks and informal intermediaries. Institutional support is often inadequate. As a result, economic growth and long-term sustainability remain uncertain.

In Assam, weaving is more than an occupation. It is a traditional skill passed down across generations. It is closely linked with identity, culture, and social life. For many households, weaving represents both livelihood and heritage. However, this cultural strength has not translated into economic security for most producers. Many continue to face serious structural and market-related challenges.

The structural conditions that generate this gap have attracted increasing scholarly attention. Das (2008), in an early systematic study of handloom units in Sualkuchi, Assam, identified outdated technology, irregular raw material supply, and weak marketing practices as primary structural barriers. The study argues that sustainable sectoral development requires simultaneous progress across technology, skill development, and institutional marketing support. Dev et al. (2008), drawing on field evidence from Andhra Pradesh, demonstrated that raw material costs constitute the largest share of production expenditure in handloom enterprises, and that yarn price instability and scarcity disproportionately affect smaller units and cooperatives. They further showed that competition from power loom producers poses a structural threat that is most acute for units producing low-value, undifferentiated goods without distinct brand identities.

The labour and skill dimensions of this problem have been examined alongside raw material constraints. Baruah and Saha (2024), in a stochastic frontier analysis of handloom micro-enterprises in Assam, found that labour is the single most productive factor in determining output levels, making labour shortages the primary bottleneck for sectoral productivity. Their study also identified clear scale-based efficiency differences, with single-loom enterprises facing significantly greater performance limitations than larger units. Hazarika (2020), in a study of handloom units among the Singpho community in Tinsukia district of Assam, identified a closely interconnected set of constraints. These included high yarn prices, inability to purchase raw materials in bulk due to small operational scale, dependence on local traders offering below-market prices, absence of proper marketing channels, competition from machine-made substitutes, and limited awareness of government support schemes. The study also found that financial constraints directly prevented weavers from accessing higher-value yarns such as Muga and silk. This reinforced a cycle of low-value production and narrow profit margins.

Market access and distribution represent another well-documented dimension of constraint. Dharmendaran (2016), in a study of weavers in Karur, Tamil Nadu, found widespread financial hardship linked to high raw material costs, weak marketing capacity, and extremely low awareness of government support schemes. The study revealed that many weavers had never participated in trade fairs or government assistance programmes, highlighting a persistent gap between policy design and its effective delivery to grassroots producers. Thanzauba et al. (2022) similarly identified weak marketing systems, poor promotional capacity, and structural dependence on middlemen as barriers that prevent the sector from converting its inherent strengths. The study also includes eco-friendly production and cultural distinctiveness into competitive market advantage. Wani and Palker (2023) further confirmed, through a review of marketing strategies among traditional small and medium enterprises, that structured promotional capacity is a significant determinant of long-term enterprise survival and growth.

The role of intermediaries as a structural constraint has received particular attention in recent Assam-specific literature. Faruque and Guha (2023) found that master weavers consistently outperform independent weavers in marketing outcomes, primarily due to advantages in operational scale, access to hired labour, and stronger market linkages. Their study identified education, business experience, working hours, storage capacity, and proximity to markets as key determinants of marketing performance and these factors vary systematically with enterprise scale. In a subsequent study, Faruque and Guha (2024) examined marketing channel choice and found that credit constraints, limited market information, and high transaction costs systematically push smaller producers towards trader-dominated channels even when direct or retailer channels offer demonstrably better economic returns. Poor road connectivity and physical distance from urban markets further entrench intermediary dependence by raising the effective cost of direct selling. This reveals that intermediary dependence is not primarily a preference but a structural outcome of resource limitations.

Financial exclusion and weak institutional support compound these constraints further. Across the literature, access to formal credit is restricted by the absence of acceptable collateral, complex loan procedures, limited financial literacy, and the lack of formal financial records that are common among informal micro-enterprises (Das, 2008; Hazarika, 2020; Faruque and Guha, 2024). Financial exclusion functions not as an isolated barrier but as a structural multiplier: units unable to access credit cannot purchase adequate raw materials, diversify their product range, invest in promotional activities, or reduce their dependence on intermediaries. The absence of accessible branding and certification mechanisms, such as the Handloom Mark and Silk Mark further weakens the market position of authentic handloom producers by preventing effective quality communication to consumers who cannot independently assess product authenticity.

These studies establish that constraints in the handloom sector are multi-dimensional and interconnected. However, the existing literature contains a significant analytical limitation. Studies have largely examined individual constraint categories in isolation, within geographically or community-specific contexts, without providing a comprehensive framework that addresses the full range of operational, market, and institutional constraints simultaneously. More importantly, with the partial exception of Baruah and Saha (2024) and Faruque and Guha (2023, 2024), no study has systematically examined how the complete set of constraints varies in nature and intensity across handloom enterprises of different operational scales. This is a significant gap, because the challenges confronting a single-loom household enterprise are structurally different from those facing a unit operating more than ten looms. Smaller units are disproportionately exposed to financial exclusion, procurement vulnerability, and intermediary dependence, while larger units face stronger competitive pressure from mechanised production and greater difficulty securing skilled labour at scale. A uniform policy response that fails to account for these differences risks being simultaneously under-targeted for smaller units and inadequately designed for larger ones.

This paper addresses that gap directly. It presents a comprehensive, scale-sensitive analysis of eleven major constraint categories affecting 252 registered handloom micro-entrepreneurial units across eight districts of Assam, classified into four categories based on the number of looms operated. The study is guided by two research questions. First, what are the major constraints affecting the operational and marketing performance of handloom micro-entrepreneurial units in Assam; and second, how do these constraints vary in nature and intensity across different scales of operation?

2. Methodology

Primary data were collected from 252 registered handloom micro-entrepreneurial units across eight districts of Assam using a multi-stage sampling technique. In the first stage, all districts of Assam were ranked according to the number of registered handloom weavers recorded in the Handloom Weavers Information System, maintained by the Office of the Development Commissioner (Handloom), Ministry of Textiles, Government of India. Based on this ranking, the districts were divided into four quartiles. Two districts were purposively selected from each quartile. These included Kamrup and Sivasagar from the first quartile, Dhemaji and Lakhimpur from the second, Darrang and Cachar from the third, and Karbi Anglong and Dima Hasao from the fourth. This selection helped ensure geographical as well as cultural representation across major weaving regions in Assam. The sample covered the Brahmaputra valley, the Barak valley, and the hill districts.

In the second stage, lists of registered handloom micro-entrepreneurial units were collected from the respective District Handloom and Textile Offices and District Industries and Commerce Centres (DICC). Since registration on the Udyam portal is mandatory for micro-enterprises, this provided a reliable and verifiable sampling frame. The total number of registered units across the selected districts was 678. The sample size of 252 was calculated using Taro Yamane's (1967) formula at a 95 percent confidence level: $n = N / (1 + N(e^2))$ where $N = 678$ and $e = 0.05$. Proportionate stratified sampling was then used to allocate the sample across districts according to each district's share in the total population.

District-wise distribution showed that Kamrup contributed the largest share, with 87 sampled units. This was followed by Lakhimpur with 46 units, Dhemaji with 41, Sivasagar with 24, Cachar with 20, Darrang with 18, Dima Hasao with 10, and Karbi Anglong with 6 units.

For analysis, the sampled units were grouped into four loom-based categories.

Table 1
Categories of Handloom units

Categories	No of Working Looms	No of Units	Percentage of Units
Category I	1-2 looms	51	20.23
Category II	3-5 looms	94	37.30
Category III	6-10 looms	53	21.04
Category IV	More than 10 looms	54	21.43

Source: Primary Data

Data were collected through a structured interview schedule. Information on constraints was gathered using both closed-ended and open-ended questions. The analysis focused on eleven major constraint domains and was presented through descriptive and qualitative interpretation.

3. Constraints Faced by Handloom Micro-Entrepreneurial Units

The constraints faced by the sampled units are grouped into eleven categories. Each category is examined in terms of its nature, underlying mechanisms, and varying impact across different scale categories.

1. Yarn-related constraint

Yarn availability, quality, and pricing emerged as the most critical operational constraints across the sampled units. The continuous rise in yarn prices, especially for Muga silk, has significantly increased

production costs. This has reduced the profit margins of smaller units, as they lack the purchasing power to buy yarn in bulk or negotiate better prices with suppliers.

A clear structural imbalance is visible in the premium product segment. Large and established brands increasingly procure Muga yarn to produce high-value products for national and international markets. These products are positioned as heritage luxury goods. Smaller units, however, are largely excluded from this segment because their local consumers cannot afford such high-priced products. As a result, a dual market structure has emerged. Larger and better-resourced units dominate the premium segment, while smaller units remain confined to low-value product lines with narrow margins.

Quality-related issues further worsen the problem. Yarn supplied through institutional channels, particularly NHDC, is often reported to be thicker than required for fine weaving. This affects the texture, design quality, and overall finish of the final products. Institutional supply limitations also reduce product variety. NHDC supplies only Tasar silk. Producers must depend on open market sources for other yarn varieties such as Mulberry, Muga, and Eri. These sources are less reliable, more price volatile, and less accessible, especially in geographically remote districts.

The absence of a standardised pricing policy across yarn supply sources creates additional uncertainty in production planning. Smaller units with limited financial reserves are affected the most. This constraint is particularly severe for Category I and II units, as they cannot maintain sufficient yarn inventories and remain highly vulnerable to supply disruptions. Das (2008) also identified inconsistent yarn supply as a major challenge for Assamese handloom units. The present study confirms that this issue continues and has become more serious in the premium silk segment.

2. Constraint related to skilled-labour

The shortage of skilled handloom weavers is a major human capital constraint across all scale categories. However, its effects vary by scale. Many Category III and IV units depend on workers from outside Assam, especially from Cooch Behar district in West Bengal. This dependence creates uncertainty in production. Migrant workers often return to their native places during festivals, harvest periods, or family emergencies, and their return is uncertain. This disrupts production schedules and creates instability in output.

Within Assam, the availability of skilled weavers is steadily declining. Younger generations show less interest in handloom weaving as a primary occupation. They prefer other livelihood options that offer more stable income and involve less physical effort. This generational shift threatens not only the current labour supply but also the long-term survival of specialised weaving skills. Intricate design techniques require years of learning and practice. These skills cannot be easily mechanised or quickly transferred.

For smaller Category I and II units, which rely mainly on family labour, this constraint limits production expansion. Even when market demand exists, the shortage of skilled labour prevents them from increasing output. Baruah and Saha (2024) found that labour is the most effective factor in increasing output in handloom micro-enterprises. This highlights the seriousness of the labour constraint for sectoral productivity and growth.

3. Competition from Low-Cost Power loom Products

Handloom micro-entrepreneurial units across all scale categories face growing competition from machine-made and power loom products. These products imitate traditional Assamese designs but are sold at much lower prices. Power loom producers benefit from economies of scale, which allow them to reduce

production costs significantly. On the other hand, authentic handloom production involves higher labour and raw material costs.

This competitive pressure has increased in recent years. Power loom technology has become more advanced and can now replicate the visual appearance of traditional handloom designs more effectively. As a result, ordinary consumers often find it difficult to distinguish between genuine handloom and imitation products without specialised knowledge.

Consumer behaviour further intensifies this challenge. A growing section of consumers prioritises affordability over authenticity and craftsmanship. This is especially common for products purchased for occasional use, gifting, or social media display. Such consumers are often unwilling to pay the premium required for genuine handloom products. This trend affects smaller units more severely, as they operate mainly in the mid-price segment where competition from power loom products is strongest.

Thanzauva et al. (2022) also pointed out the absence of effective regulatory mechanisms to distinguish genuine handloom products from power loom imitations. The present study confirms this structural weakness. Machine-made products directly compete with authentic handloom goods in the same retail spaces and online markets. This weakens both the price advantage and the cultural value that handloom products should ideally command.

4. Lack of consumer awareness and information asymmetry

Limited consumer awareness is another major constraint across all unit categories. Most consumers are unable to identify the difference between handloom and machine-made products through simple visual inspection. As a result, they often fail to recognise differences in craftsmanship, durability, and cultural significance.

This creates a clear information asymmetry in the market. Producers possess much greater knowledge about product quality than consumers. Consequently, genuine handloom products are often undervalued in the market.

A direct outcome of this information gap is aggressive price bargaining. Consumers often hesitate to pay prices that reflect actual production costs and the cultural value of authentic handloom products. This reduces producer margins and creates a distorted incentive structure. Products with superior craftsmanship, which should attract higher prices, are instead penalised because quality cannot be easily communicated or verified.

This issue is particularly severe for Category I and II units operating in local and regional markets. These units usually lack access to formal certification systems or established branded retail channels. As a result, they struggle to communicate authenticity to consumers.

Dharmendaran (2016) similarly found that consumer resistance to paying fair prices significantly affects weaver income. This suggests that the problem is not isolated but widespread and persistent across the sector.

5. Exploitation by intermediaries

Dependence on intermediaries, including middlemen, traders, and commission agents, is a structural feature of the handloom distribution system in Assam. This arrangement disadvantages producers across all scale categories, though the impact is more severe for smaller units.

Intermediaries purchase products directly from producers at relatively low prices and resell them at much higher margins. As a result, they capture a disproportionate share of the value created through production.

The distribution analysis of the present study shows that units that use mixed marketing channels involving intermediaries. This reflects the deep structural dependence on such channels.

Category I and II units are particularly vulnerable. These units have limited market exposure, poor access to market information, and very few alternative selling channels. Their bargaining power remains weak, leaving them dependent on intermediary-controlled transactions.

Faruque and Guha (2024) found that handloom micro-entrepreneurs often prefer trader channels despite lower economic efficiency. This is mainly because credit limitations, lack of information, and high transaction costs make direct market participation difficult. The present study supports and extends this finding. Intermediary dependence is not simply a matter of preference. It is a structural outcome of broader resource constraints faced by smaller units. This dependency often continues even as enterprises grow, unless they develop stronger market access capabilities.

Table 2: Marketing Channel Choice across Unit Categories (Percentage of Units)

Category I (1-2 Looms)	54.90	45.10
Category II (3-5 Looms)	15.96	84.04
Category III (6-10 Looms)	5.67	94.33
Category IV (>10 Looms)	5.55	94.45

Source: Computed from primary survey

The table 2 shows that Category I units still rely substantially on direct selling, accounting for 54.90 per cent. On the other hand, Categories III and IV are overwhelmingly dependent on mixed channels involving intermediaries, with dependence exceeding 94 per cent. It indicates that intermediary dependence is not simply a voluntary market choice, but a structural outcome associated with enterprise scale.

6. Insufficient Promotional Practices

Weak promotional activity is another important constraint affecting market reach and demand generation across all unit categories. Some units have started using social media platforms such as WhatsApp, Facebook, and Instagram for promotion. However, these efforts remain irregular and unplanned. Their reach is also limited.

Digital promotion is rarely supported by professional product photography, consistent communication, or strategic targeting of consumer groups. As a result, its effectiveness in attracting new customers remains limited.

The promotional data from the study reveal an interesting pattern. Category III units show the lowest promotional adoption rate at only 28.30 per cent. This is even lower than Category I units, where the rate is 54.91 per cent. This suggests that promotional challenges are especially severe during the transitional growth stage. At this stage, enterprises have moved beyond simple relationship-based selling but have not yet accumulated sufficient resources to invest systematically in promotion.

Traditional promotional channels such as trade fairs, exhibitions, and local expos provide some visibility. However, these are temporary and geographically limited. They cannot ensure continuous engagement with consumers or stable demand generation.

Wani and Palker (2023) observed that firms with structured promotional practices are more likely to sustain their businesses. This makes inadequate promotion a serious concern for long-term enterprise survival.

Table 3: Adoption and Types of Promotional Strategy across Unit Categories (Percentage of Units)

Category	Adopted (%)	Not Adopted (%)	Advertisement (%)	Exhibition (%)	Discount (%)
Category I	54.91	45.09	78.57	28.57	-
Category II	53.19	46.81	80.00	22.00	30.00
Category III	28.30	71.70	80.00	-	26.67
Category IV	50.00	50.00	68.08	-	53.19

Source: Computed from Primary Data

Note: Advertisement includes social media and informal publicity. Exhibition refers to trade fairs and government-supported events. Discount includes seasonal price reductions.

The table 3 presents adoption rates, non-adoption rates, and the distribution of specific promotional strategies such as advertisement, exhibition participation, and discount use. Despite being mid-sized enterprises, only 28.30 per cent of Category III units adopt promotional strategies.

7. Weak institutional and government support

Although several government support schemes exist for the handloom sector, their implementation and reach remain inadequate across the study area. The absence of a comprehensive and effectively implemented handloom policy creates uncertainty for producers. This uncertainty affects important decision areas such as pricing, marketing support, and access to subsidies.

Existing support measures, such as yarn supply through yarn cards and financial assistance for weaving shed construction, are often inconsistent. The quantity supplied is frequently inadequate, and delivery is not always timely. These irregularities disrupt production planning and reduce producers' confidence in institutional support systems.

Financial assistance for infrastructure development exists in principle, but access is uneven in practice. Support for weaving sheds and equipment subsidies varies considerably across districts and across unit sizes. Smaller and geographically remote units, especially those located in Karbi Anglong and Dima Hasao, reported weaker institutional connections and lower access to such support.

As a result, government interventions that are intended to reduce inequalities in the sector may unintentionally reinforce them. Units with better institutional access benefit more, while smaller and peripheral producers remain comparatively disadvantaged. Faruque and Guha (2024) explicitly identified credit constraints as a key driver of inefficient marketing channel choices among handloom micro-entrepreneurs, confirming the far-reaching and interconnected nature of financial exclusion in this sector.

8. Limited access to finance

Limited access to finance is a persistent and widespread constraint affecting both operational efficiency and growth potential across all unit categories. However, the burden is most severe for Category I and II units.

Most units operate with very limited working capital. This restricts their ability to purchase sufficient raw materials, maintain inventory, improve product quality, or survive periods of low seasonal demand without resorting to distress sales.

Access to formal credit from banks and financial institutions remains difficult for several reasons. These include lack of acceptable collateral, lengthy and complex loan procedures, limited financial literacy, and

the absence of formal financial records, which are common among informal micro-enterprises.

The shortage of working capital creates a chain reaction across multiple operational areas. Units unable to purchase adequate raw materials cannot diversify into higher-value silk products. Units lacking financial resources cannot invest in promotional activities or expand their customer base. Similarly, units with weak cash flow cannot reduce dependence on intermediaries by exploring direct selling opportunities in distant markets.

Therefore, financial exclusion is not simply an isolated constraint. It acts as a structural multiplier that intensifies several other limitations simultaneously. Faruque and Guha (2024) also identified credit constraints as a major factor influencing inefficient marketing channel choices among handloom micro-entrepreneurs. This confirms the wider and interconnected nature of financial exclusion.

9. Limited product diversification

Product diversification remains limited across most of the sampled units. This restricts their ability to respond to changing market demand and access higher-value consumer segments.

Production is generally concentrated on a narrow range of traditional products. Variation in design, fabric type, and product format remains limited. The study findings show that only 11.77 per cent of Category I units produce more than two product types. This increases to 48.15 per cent among Category IV units. However, even among the largest units, diversification remains incomplete when compared with the 72 handloom product types identified by the Assam Government Marketing Corporation.

Several factors contribute to this limitation. Restricted access to quality raw materials, weak design innovation capacity, and limited awareness of changing fashion trends and urban consumer preferences all reduce the ability of producers to diversify.

This constraint is especially significant for smaller units, which often continue producing only familiar traditional items. Table 4 presents the proportion of units producing one product, two products, or more than two product types across different categories. The findings show that 88 per cent of Category I units produce only one or two product types. In contrast, nearly half of Category IV units produce more than two products

Table 4: Distribution of Units by Number of Product Types across Categories (Percentage of Units)

Category	Single Product (%)	Two Products (%)	More than Two Products (%)
Category I (1-2 Looms)	39.22	49.01	11.77
Category II (3-5 Looms)	26.60	30.85	42.55
Category III (6-10 Looms)	26.42	32.07	41.51
Category IV (>10 Looms)	22.22	29.63	48.15

Source: Computed from primary survey

Baruah and Saha (2024), however, observed that excessive product diversity may reduce technical efficiency. This suggests that the relationship between diversification and performance is not

straightforward. Therefore, diversification should be strategic and market-driven rather than excessive or unplanned.

10. Seasonal demand volatility

Demand for handloom products is highly seasonal. Sales increase during wedding seasons, festivals, especially Bihu, and government-organised exhibitions. During the rest of the year, demand remains significantly lower.

This seasonal demand pattern creates considerable uncertainty in both income and production planning. Micro-entrepreneurial units often lack the financial reserves, storage capacity, and market diversification needed to sustain stable operations during off-season periods.

The time lag analysis of the present study shows that 24.07 per cent of Category IV units take more than one month to sell their products. This reflects the long and irregular sales cycles that often characterise larger producers operating in wider regional and national markets.

This burden falls more heavily on smaller units, which have weaker financial capacity. Without strong direct customer relationships or access to formal retail channels that could smooth seasonal fluctuations, these units remain highly vulnerable to income instability and production interruptions. This threatens both short-term survival and long-term sustainability.

Table 5: Time Lag of Product Sale across Unit Categories (Percentage of Units)

Category	Within a Week (%)	Within a Month (%)	More than a Month (%)
Category I (1-2 Looms)	39.22	49.02	11.76
Category II (3-5 Looms)	26.60	60.64	12.76
Category III (6-10 Looms)	13.21	73.58	13.21
Category IV (>10 Looms)	9.26	66.67	24.07

Source: Computed from primary survey

Table 5 presents the proportion of units that sell their products within a week, within a month, or after more than one month, across different categories. It shows that larger units, particularly Category IV, experience the longest sales cycles. Around 24 per cent of these units take more than one month to sell their products.

During low-demand periods, reduced sales create cash flow shortages. This becomes especially problematic because producers need to invest in raw materials and production preparation for upcoming peak-demand seasons. The result is a cyclical liquidity pressure.

11. Lack of branding and product certification

The absence of systematic branding and product certification creates a major structural weakness in the handloom market. It reduces consumer trust, limits the possibility of premium pricing, and weakens the competitiveness of authentic handloom products against machine-made imitations.

Certification mechanisms such as the Handloom Mark and Silk Mark act as reliable indicators of authenticity and quality. These certifications help consumers distinguish genuine handwoven products from power loom alternatives. However, access to certification is uneven.

Smaller and geographically remote producers face greater barriers. These include limited awareness of certification procedures, application-related costs, and physical distance from certification offices or relevant government institutions.

Without certification, producers struggle to communicate product authenticity to consumers who lack the technical knowledge to assess quality independently. This reinforces the information asymmetry. It also prevents producers from justifying premium prices and weakens their market position.

This problem is particularly severe for Category I and II units operating in competitive local markets, where price remains the primary factor influencing consumer decisions. Larger and established enterprises may rely on brand reputation as a substitute for formal certification, but smaller units do not yet possess such reputational strength.

12. Policy Recommendations

The constraints identified in this study require a differentiated policy response. The policy measures should address the specific vulnerabilities faced by units at different scales of operation. Policy interventions must address the structural interconnectedness of constraints rather than treating each in isolation

1. Yarn supply reform

Yarn supplied by NHDC should be expanded beyond Tasar silk. The quality specifications of supplied yarn should also match the requirements of fine weaving. A standardised pricing framework for yarn across institutional and open market sources would help reduce price fluctuations. This would improve production planning, especially for smaller units.

State-supported bulk procurement cooperatives should also be introduced. These should be linked with institutional credit mechanisms. Such an arrangement would allow Category I and II units to access competitive raw material prices that are currently available mainly to larger producers.

2. Skill Development

State-sponsored apprenticeship programmes should be introduced to connect younger individuals with master weavers. Wage support and stipends should be provided under these programmes. This would encourage young people to enter the handloom workforce and create a structured mechanism for intergenerational skill transfer.

Formal skill certification for handloom weavers should also be developed and linked with the National Skills Qualifications Framework. This would formally recognise weaving skills, improve the market value of skilled labour, and enhance labour mobility within the sector.

3. Regulatory Protection

Mandatory point-of-sale labelling should be introduced to clearly distinguish handloom products from power loom products. Strict and enforceable penalties should be imposed for false representation. Such a measure would restore market differentiation and protect the price premium of authentic handloom products.

The regulatory capacity of state textile departments should also be strengthened. Regular market inspections and effective enforcement of labelling compliance would create a meaningful deterrent against the fraudulent sale of power loom imitations as genuine handloom products.

4. Access to certification

Access to Handloom Mark and Silk Mark certifications should be simplified and subsidised.. Certification services should also be integrated with District Handloom and Textile Office support systems. These measures would extend branding and authenticity protection to smaller and remote units that are currently excluded due to procedural and geographic barriers. Targeted awareness campaigns should also be conducted. These would help address the knowledge gap regarding the benefits of certification among uncertified producers.

5. Financial inclusion

Dedicated credit products should be developed specifically for handloom micro-enterprises. These should include simplified collateral requirements, such as loom-based collateral or group lending models. Repayment schedules should also be flexible and aligned with seasonal demand cycles. Such measures would help address financial exclusion, which currently intensifies several other operational constraints. Handloom enterprises should also be mandatorily linked with priority sector lending programmes of regional rural banks and microfinance institutions. This would expand formal credit access for currently excluded producers, particularly in hill districts where banking infrastructure remains limited.

6. Institutional Support

District-level handloom resource centres should be established to provide integrated support services. These centres should offer assistance in design development, marketing access, exhibition participation, digital promotion training, and certification support. This would extend institutional support to units that currently remain outside the effective reach of state-level schemes.

Performance-linked monitoring of scheme implementation should also be introduced at the district level. Transparent reporting of coverage across different unit categories would improve accountability and reduce the current inequality in institutional access, where already well-connected larger units receive disproportionate benefits.

7. Digital Marketing

Structured digital marketing training programmes should be developed, especially for Category I and II units. These programmes should cover product photography, social media management, and registration on online marketplaces such as Amazon Karigar and Government e-Marketplace. Such interventions would help address the promotional capacity gap faced by smaller producers.

These programmes should also be linked with smartphone and data access subsidies. This would reduce infrastructure-related barriers that currently prevent digital marketing adoption among producers in remote districts.

13. Conclusion

The eleven constraint categories examined in this study collectively reveal a sector operating under persistent structural disadvantage. Each individual constraint imposes a measurable burden on handloom micro-entrepreneurial units in Assam. However, these challenges form an interconnected structural cycle that continuously reproduces itself across enterprise generations.

Financial exclusion restricts access to raw materials. Limited access to raw materials reduces opportunities for product diversification. Limited diversification weakens market positioning. Weak market positioning increases dependence on intermediaries. Dependence on intermediaries reduces returns. Lower returns prevent investment in promotion, certification, and quality improvement. In turn, the absence of promotion, certification, and effective quality signalling further weakens market positioning. The cycle then repeats.

Each constraint reinforces several others at the same time. This is why addressing only one issue in isolation is unlikely to produce lasting improvement. For example, providing yarn subsidies without improving credit access, or expanding certification without strengthening promotional capacity, may produce only limited results.

A second major pattern emerging from the analysis is that constraints vary systematically according to enterprise scale. This variation is not accidental. It is structurally determined. Smaller Category I and II units are disproportionately affected by financial exclusion, vulnerability in raw material procurement, consumer information asymmetry, and dependence on intermediaries. These are essentially resource-poverty constraints. They arise because smaller enterprises lack the capital, market access, and bargaining power needed to enter more efficient marketing channels or higher-value product segments. Category III and IV units face a different set of structural pressures. These include stronger competition from mechanised production, greater dependence on inter-state migrant labour and its associated instability, longer and less predictable sales cycles, and higher investment requirements for promotion and certification in wider regional and national markets.

These are fundamentally scale-transition constraints. They emerge not from extreme resource scarcity, but from the organisational and market challenges associated with expanding beyond local, relationship-based business models without yet reaching the institutional strength of formally established enterprises. This scale-based differentiation has an important policy implication. A uniform policy response that treats all handloom micro-entrepreneurial units as a single homogeneous group is unlikely to be effective. Effective policy must therefore be scale-sensitive. Policy instruments should be differentiated according to the specific constraint profile of each enterprise category.

Cultural embeddedness has undoubtedly helped sustain Assam's handloom sector over time. The deep integration of weaving into Assamese identity, ritual life, and household traditions has preserved craft knowledge, maintained productive participation, and created authentic cultural value that machine-made products cannot fully replicate. However, cultural embeddedness alone does not ensure market resilience. The gap between the cultural value of Assam's handloom tradition and the economic returns received by most producers is neither natural nor inevitable. It is the outcome of institutional failures, market imperfections, and policy frameworks that have not adequately recognised the structural diversity within the sector. Bridging this gap between cultural value and market value, and between productive potential and economic sustainability, requires deliberate and coordinated institutional intervention.

Future research should build on the descriptive foundation of this study by adopting longitudinal approaches that examine how constraints evolve as enterprises move through different growth stages. Qualitative and participatory methods would also provide deeper insight into the decision-making experiences of producers, particularly women weavers, who constitute the majority of the workforce but remain insufficiently explored in existing literature.

Comparative studies across other handloom-intensive states would further help determine whether the scale-based constraint patterns identified in this study are specific to Assam or reflect broader structural features of India's handloom economy. Such regional evidence would strengthen the basis for more context-sensitive policy design at both state and national levels.

14. AI Use Disclosure

During the preparation of this manuscript, AI-assisted language tools were used for language refinement and improvement of clarity. The authors reviewed, revised, and takes full responsibility for the final con-

ent.

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