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A Study on the Financial Bootstrapping Techniques Utilized by MSMEs in Uttar Pradesh

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Abstract
Micro, Small and Medium Enterprises (MSMEs) faces major problem in acquisition of formal finance due to insufficient collateral, long procedural problem and many more. To overcome with these problems, MSMEs now moving towards the financial bootstrapping with low-cost, innovating financing paths that may reduce their dependency on the external capital. This research paper is going to understand and examine the various types of bootstrapping techniques which is used by the MSMEs of Uttar Pradesh, with the determinants like policy implementation, perceived effectiveness. In this study mixed-approach has been followed with structured questionnaire collecting data from 300 registered and unregistered MSMEs at both urban and rural district of Uttar Pradesh along with 20 in-depth interviews with owners and managers of MSMEs. the study maps the prevalence of internal, external, operational and entrepreneurial bootstrapping methods. The Finding indicated that there a more reliance on internal funding and trade credit by MSMEs, use of formal credit is minimal and also there is as significant regional variation related to the size of the firm, sector and owner's education. The study suggests that there is a need to strengthen the financing of MSMEs via tailor credit product and policies, need for financial literacy, along with availability of immediate platform that can help MSMEs in bootstrapping practices.
Keywords: MSMEs, financial bootstrapping, alternative finance, trade credit, informal finance

1. Introduction

Micro, Small and Medium Enterprises (MSMEs) are the major source for economic development and contributes to GDP, employment, boosts exports of Uttar Pradesh and India. Most populous state of India is Uttar Pradesh, possess large number of MSME sector in manufacturing sector, services and cottage industries. Despite of all these advantages, MSMEs faces difficulty in accessing the formal finance, collateral requirement, constrain in accessing funds for many small enterprises, delay in processing times. Consequently, entrepreneurs deploy a set of pragmatic, low-cost strategies collectively termed financial bootstrapping to meet working capital and investment needs (Winborg & Landström, 2001). Financial bootstrapping is a techniques used by the entrepreneurs to start and grow their business and to minimize reliance on the external finance. Retained earnings and owner's capital are the major source of financial bootstrapping technique. This can help in negotiating extended supplier credit, to operational measures such as delaying payments, barter arrangements, and sharing resources. This technique is more important for MSMEs operating where formal financing is costlier, limited and non- accessible. Understanding which bootstrapping techniques are used in UP, why they are chosen, and with what effects is essential for designing financial products and policies that strengthen, rather than undermine, MSME resilience. This research paper investigates the techniques of financial bootstrapping use by MSMEs in Uttar Pradesh. Also it classifies the methods of bootstrapping used by enterprises, examine the criteria to choose these technique, evaluates the perceived outcome and trade-offs and propose the policy recommendations that will support MSME.

2. Literature Review

According to Bhide (1992) in his paper, "*Bootstrap Finance: The Art of Start-ups"* explained that bootstrapping refers to the practice of starting and managing a business with minimal external financial support. Entrepreneurs rely on personal savings, internally generated funds, and creative cost-saving strategies to sustain operations. The study highlighted that many successful start-ups grow initially without formal external funding, emphasizing resourcefulness and financial discipline.

According to Winborg and Landström (2001) in their paper titled "*Financial Bootstrapping in Small Businesses: Examining Small Business Manager's Resource Acquisition Behaviours",* provided a systematic classification of financial bootstrapping techniques used by small firms. Their study categorized bootstrapping methods into several groups such as owner-related financing, delaying payments, minimizing capital investment, and securing resources without direct monetary transactions. The authors concluded that financial bootstrapping is a common strategy among small businesses facing financial constraints.

According to Ebben and Johnson (2006) in their paper titled "Bootstrapping in Small Firms: An Empirical Analysis of Change over Time" further developed the taxonomy of bootstrapping strategies and analysed how these strategies evolve over time in small firms. The study identified categories such as internal financing (retained earnings), ownership financing (founder loans and sweat equity), operational strategies (delaying supplier payments and reducing inventory), and external informal sources like trade credit. The findings suggested that firms often shift their bootstrapping strategies as they grow and gain access to formal financial institutions.

Storey (1994) in the paper titled "Understanding the Small Business Sector" examined the relationship between firm characteristics and financial strategies in small businesses. The study found that smaller and younger firms are more likely to rely on bootstrapping methods because they face greater challenges in accessing formal financial institutions. Limited credit history, lack of collateral, and perceived riskiness often push these firms toward alternative financing methods.

Brush et al. (2006) in their paper titled "Growth-Oriented Women Entrepreneurs and Their Businesses" emphasized the role of entrepreneurial human capital in financial decision-making. Their study highlighted that entrepreneurs with higher levels of education, managerial skills, and prior business experience are better able to utilize bootstrapping techniques effectively. Such entrepreneurs can creatively mobilize resources and manage financial constraints during the early stages of business development.

Beck et al. (2005) paper titled "Financial and Legal Constraints to Firm Growth: Does Firm Size Matter?" analysed how institutional and financial environments affect firms' access to finance. Their research found that in countries with weak financial systems or stringent banking regulations, small firms tend to depend more on informal financing and bootstrapping techniques. Limited access to credit from formal institutions significantly increases the importance of alternative financial strategies.

Love et al. (2007) paper named "Trade Credit and Bank Credit: Evidence from Recent Financial Crises" examined the role of trade credit in developing economies and found that firms often rely heavily on supplier credit when access to bank financing is limited. The study suggested that trade credit acts as an alternative financing mechanism, particularly during periods of financial constraints or economic instability.

Rangarajan and Srivastava (2017) in paper titled "Financing Challenges of MSMEs in India "investigated the financing patterns of MSMEs in India. Their findings indicated that many MSMEs depend on internal funds, supplier credit, and informal borrowing from family or friends due to difficulties in obtaining bank loans. While these methods help firms survive in the early stages, they may restrict long-term growth due to limited financial capacity. Kaur and Kaur (2019) in paper titled "Financial Constraints and Alternative Financing among Indian MSMEs" explored the use of alternative financing mechanisms by MSMEs in India. The study revealed that bootstrapping techniques such as delaying payments, using personal savings, and obtaining informal loans are widely practiced among small businesses. The authors also noted that the extent of reliance on these strategies varies across industries and regions.

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Research Gap

Although several studies have examined MSME financing and bootstrapping strategies at national and international levels, limited empirical research specifically focuses on **micro-level evidence in Uttar Pradesh**. Existing literature largely discusses general financing patterns without systematically classifying bootstrapping techniques across sectors or measuring their prevalence at the regional level. Furthermore, there is insufficient research linking the choice of bootstrapping methods to firm performance outcomes within the MSME sector of Uttar Pradesh. Therefore, the present study aims to fill this gap by examining the types, extent, and impact of bootstrapping techniques used by MSMEs in the region.

3. Research Objectives

- To identify the range of financial bootstrapping techniques of MSMEs in Uttar Pradesh.
- To evaluate the effectiveness and trade-offs of bootstrapping techniques for the growth and perpetually of the MSMEs.
- To analyse determinants owner education, firm age, access to formal finance that predict reliance on bootstrapping.
- To propose suggestion and recommendation policy to enhance MSMEs financing while acknowledging bootstrapping realities.

4. Research Methodology

4.1 Research Design: In this research study the mixed-method approach has been followed that is both survey as well as depth interview has been used.

4.2 Population and Sampling: Both registered and unregistered MSMEs of Uttar Pradesh has been used as population for this study. A total number of 300 MSMEs has been selected with the help of stratified random sampling by bifurcation between manufacturing enterprises, Service enterprises and agro-processing and with size of firm that is Micro, Small and Medium Enterprises. Also there are 20 in-depth interview of managers and owners has been conducted for the qualitative sample data.

4.3 Data Collection Instruments: Data has been collected through structured questionnaire consisting demographic profile, current financing, specific bootstrapping techniques, performance indicators and other perceptions of effectiveness. Also there are some semi structured interview has been conducted to explore about the choices of the finance arrangement, experiences with suppliers or banks and informal arrangement of funds etc.

4.4 Data Collection Procedure: The data has been collected in the period of 10 weeks via google form and enumerators in the field. The consent of confidentially has been assured and interviews was taken as per the permission grant by the respondents.

4.5 Data Analysis: To analyse the collected data the descriptive statistics has been used in the form of cross tabulation and chi-square test to know the association between firm characteristics and bootstrapping use along with logistic regression has been used.

5. Conceptual Framework: The framework posits that institutional factors (bank branch density, ease of accessing formal credit, regulatory environment) and firm attributes (size, age, owner education) influence the selection of bootstrapping techniques, which in turn affect short-term liquidity resilience and long-term growth capacity.

6. Results and Discussion

6.1 Demographic Profile

Table 1: Distribution of Enterprises by Size

Enterprise Category	Number of Firms	Percentage
Micro Enterprises	83	55%
Small Enterprises	52	35%
Medium Enterprises	15	10%
Total	**150**	**100%**

Source: Author's Compilation

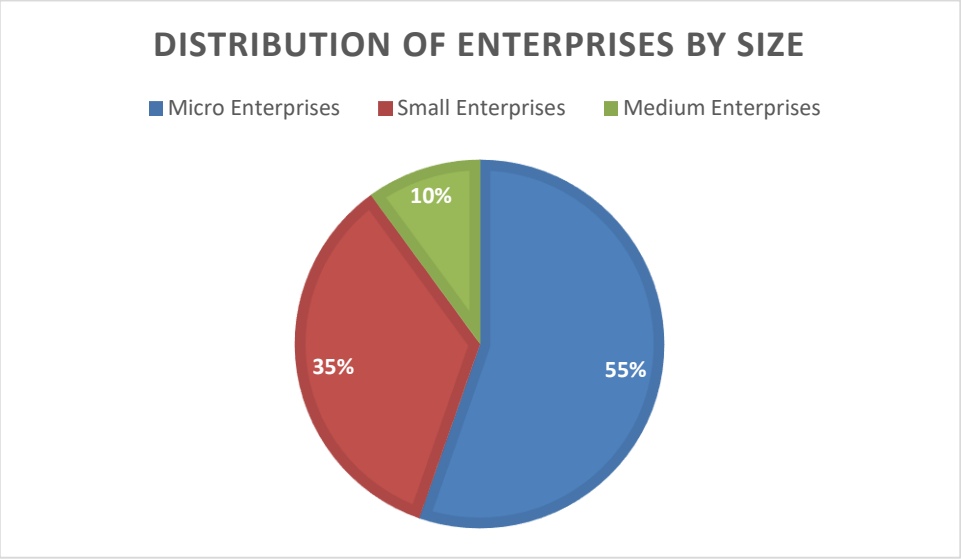

Figure:01 Distribution of Enterprises by Size

Analysis: This distribution shows the distribution of the enterprises in this dataset micro enterprises covers the majority section of the data that is 55%, followed by small enterprises for 35% and medium enterprises of 10%. This pattern shows that the micro units continuously dominates the other sector of MSMEs due to low capital requirement and easy establishment process. These enterprises play an important role in employment generation and supporting local economy, especially in rural areas and small towns, while small and medium enterprises operate at a larger level with more organized business structures.

Table 2: Sector-wise Distribution of Enterprises

Sector	Number of Firms	Percentage
Manufacturing	60	40%
Services	45	30%
Agro-processing	23	15%
Handicrafts	22	15%
Total	**150**	**100%**

Source: Author's Compilation

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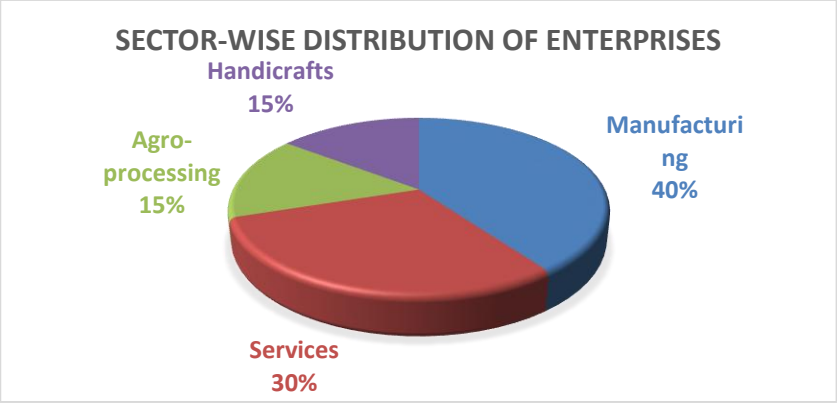

Figure 02: Sector-wise Distribution of Enterprises

Analysis: This dataset shows the sector-wise distribution of enterprises and indicates that the large portion of MSMEs are engaged in the process of production as 40% of the dataset indicates manufacturing sector from the MSMEs. The service sector shows the 30% of dataset that includes service businesses such as repair work, retail services, transportation and other service-oriented enterprises. Also the Agro-processing units represent 15% of the dataset, shows the viability of agriculture-related sector in the region, whereas the handicraft units show 15% of data, that highlights the traditional role and small-scale craft-based industries. This distribution provides a balanced representation of different types of MSME activities within the study.

Table 3: Firm Characteristics and Access to Finance

Variable	Number of Firms	Percentage
Firms with Access to Formal Bank Loans	41	27%
Firms without Formal Bank Loans	109	73%
Total Firms	**150**	**100%**
Average Firm Age	**8 Years**	—

Source: Author's Compilation

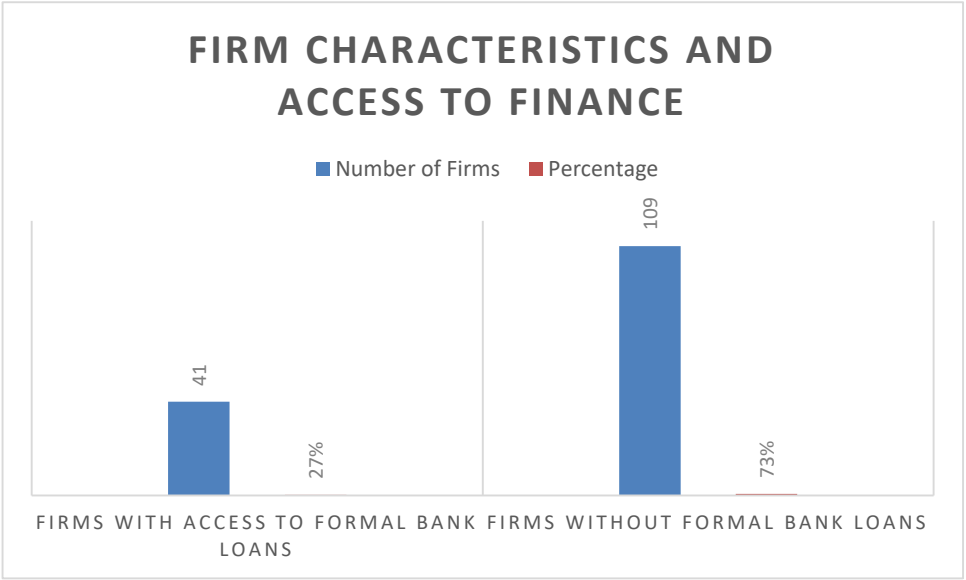

Figure 03: Firm Characteristics and Access to Finance

Analysis: In the collected dataset, the average firm age is 8 years that suggests most of the participating firms have crossed the start-up stage and attained operational stability. However, there are only 27% of the MSMEs are there who possess the access to formal finance such as bank loans, that highlights promising financial exclusion despite policy initiatives such as Priority Sector Lending norms, Mudra loans, CGTMSE and others. But this low portion of formal finance make us understand why bootstrapping strategies are still central way for MSME survival and growth.

Interpretation:

The analysis reflect the structural realities of the MSME in Uttar Pradesh. There is significant dominance of micro enterprises that reflects the major reliance on internal or informal finances. As these units needs very low finances that can be acquired through lack of collateral, documentation and credit score. The sectoral mix also influences financing behaviour, as manufacturing firms generally require more working capital and fixed assets compared to service-sector enterprises.

6.2 Prevalence of Bootstrapping Techniques

Table 4: Bootstrapping Techniques Used by MSMEs

Bootstrapping Technique	Number of Firms	Percentage
Personal Savings	117	78%
Reinvested Profits	93	62%
Trade Credit	89	59%
Loans from Family and Friends	68	45%
Delayed Payments to Suppliers	57	38%
Barter Exchange	30	20%
Sweat Equity	27	18%
Shared Resources	23	15%
Informal Factoring	18	12%

Note: Multiple responses were allowed; therefore, the total exceeds the sample size of 150.

Source: Author's Compilation

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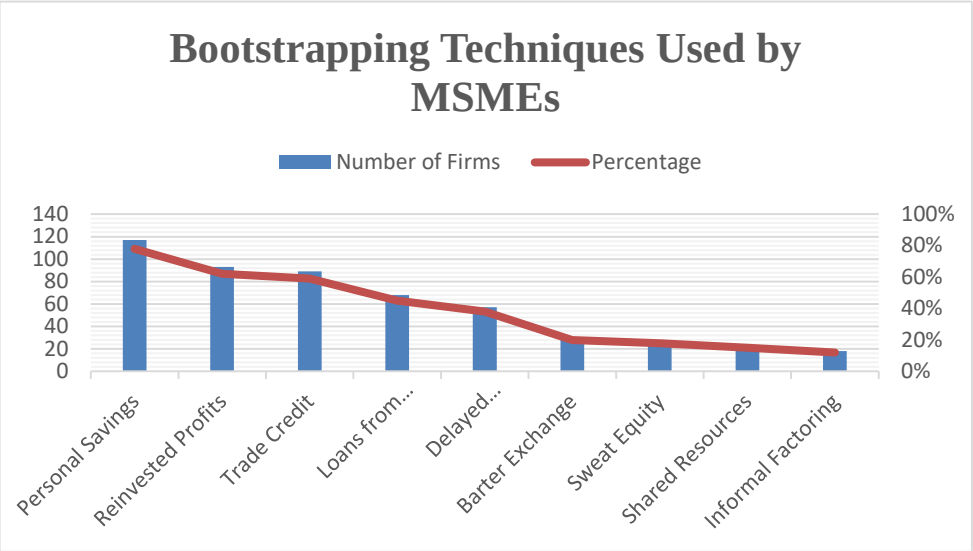

Figure 04: Bootstrapping Techniques Used by MSMEs

Analysis: This dataset depicts the various types of bootstrapping techniques used by MSMEs in Uttar Pradesh. The result shows a strong dependence on internal financing, where personal saving scores 78% of MSMEs reliance, followed by 62% on reinvested profits. Among external informal sources, trade credit (59%) and loans from family and friends (45%) are prominent. Techniques such as delayed payments (38%), barter exchange (20%), sweat equity (18%), shared resources (15%), and informal factoring (12%) show lower but impactful usage.

Interpretation:

The findings align with the previous research that depicts the entrepreneurs are facing credit constrained environment and also it combines with the multiple bootstrapping techniques with lower costing. Personal saving still remains the most common source for making start-ups and for financing due to its low perceived risk. There is a higher level of usage of trade credit in the business built the strong relationship between the entrepreneur and suppliers.

Moreover, the relatively lower use of techniques such as factoring and shared resource pooling suggests limited awareness or availability of structured informal financial intermediaries in the region. Bootstrapping emerges not merely as a last resort but also as a strategic financial behaviour aimed at reducing external dependency, maintaining ownership control, and avoiding interest-bearing debt.

6.3 Predictors of High Bootstrapping Reliance

Table 5: Logistic Regression Results for Determinants of Bootstrapping Adoption

Variable	Coefficient (β)	Standard Error	Odds Ratio (Exp β)	p-value
Micro Enterprises (vs. Medium)	1.03	0.32	2.80	0.006
No Prior Banking Relationship	1.16	0.29	3.20	0.001
Owner Education	-0.51	0.21	0.60	0.018
Constant	-0.74	0.35	—	0.034

Source: Author's Compilation

The logistic regression model identifies three statistically significant predictors:

- **Micro enterprises** are **2.8 times more likely** than medium enterprises to adopt five or more bootstrapping practices ($p < .01$).
- Firms lacking prior **banking relationships** are **3.2 times more likely** to rely heavily on bootstrapping ($p < .001$).
- **Owner education** is negatively associated with high bootstrapping usage (OR = **0.6**, $p < .05$).

Discussion:

These findings demonstrate that **firm size, institutional familiarity, and human capital** significantly shape financial behaviour. Micro firms tend to face the highest financing constraints, compelling them to multiply bootstrapping strategies simply to stabilize cash flows. The importance of prior banking relationships indicates that once a firm enters the formal financial ecosystem, reliance on informal mechanisms decreases.

The influence of owner education is particularly noteworthy. Educated entrepreneurs may possess better financial literacy, access broader networks, or prepare more accurate documentation—factors that enhance bankability. Conversely, lower education levels may reinforce dependence on easily accessible informal mechanisms.

The results support the **credit rationing theory** (Stiglitz & Weiss, 1981), which argues that small and opaque firms face higher credit constraints, thereby shifting toward informal alternatives.

6.4 Sectoral Patterns of Bootstrapping Behaviour

Distinct sector-specific financing behaviours emerge from the analysis:

- **Manufacturing MSMEs** exhibit higher dependence on **supplier credit**, particularly in cluster-based industries such as leather goods and textile manufacturing.
- **Service-sector firms** rely more heavily on **personal savings and reinvested earnings**, with limited access to trade credit due to the intangible nature of their inputs.
- **Agro-processing units** adopt **seasonally aligned bootstrapping** techniques due to cyclical fluctuations in raw material availability.
- **Handicraft enterprises** frequently utilize **sweat equity** and family-based labour support, reflecting traditional community-driven production models.

Discussion:

Sectoral patterns reflect both operational needs and the embeddedness of firms within local industrial ecosystems. Manufacturing clusters enjoy stronger supply chain networks that naturally facilitate trade credit. In contrast, service-sector firms operate with fewer suppliers, and their capital-light model reduces the scope for supplier financing. These findings align with resource-based theory, which emphasizes that firms leverage available networks and resources unique to their sectoral and geographical context.

6.5 Perceived Effectiveness and Trade-offs: Qualitative Themes

Qualitative interviews reveal nuanced insights into bootstrapping behaviour:

- **Speed and Flexibility**

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Entrepreneurs value bootstrapping due to its immediacy and freedom from bureaucratic delays. This makes it particularly attractive for small firms managing uncertain cash flows.

- **Cost Considerations and Relationship Strain**
  While internal capital is considered "cost-free," reliance on delayed supplier payments can damage long-term relationships. This demonstrates an inherent tension between short-term liquidity and long-term trust.
- **Growth Constraints**
  Many firms feel trapped in a cycle of reinvesting limited profits, leaving insufficient funds for scaling or modernization. Over-reliance on reinvestment thus becomes a bottleneck to growth.
- **Risk and Vulnerability**
  Dependence on informal sources—especially personal savings and unstructured loans—heightens exposure to financial shocks, especially in times of seasonal downturns or market disruptions.
- **Role of Social Capital**
  Firms embedded in strong local networks can negotiate more favourable trade credit terms, illustrating how relational capital operates as a financial asset.

Discussion: These themes highlight the dual nature of bootstrapping: it enables survival and flexibility but can also generate long-term structural vulnerabilities. While bootstrapping strengthens autonomy, it weakens scalability. The discussion reinforces the need for institutional mechanisms that can balance entrepreneurial freedom with access to affordable and reliable formal credit.

6.6 Integrated Discussion

Synthesizing quantitative and qualitative findings reveals a coherent narrative:

1. **Bootstrapping is not merely an emergency strategy** but an entrenched financing norm among MSMEs.
2. **Credit constraints remain a central driver**, especially for micro firms with limited collateral.
3. **Sectoral contexts significantly shape financial behaviour**, proving that financing is embedded within production systems.
4. **Human capital and banking relationships act as gateways** that gradually shift firms from informal to formal financing channels.
5. **Bootstrapping supports immediate survival but constrains long-term expansion**, making it essential to complement informal practices with inclusive financial policies and innovative credit mechanisms.

7. Discussion

7.1 Interpretation of Findings

The illustrative findings align with extant literature: smaller and younger MSMEs rely heavily on owner funds and informal credit channels (Winborg & Landström, 2001; Beck et al., 2005). The prominence of trade credit in UP's manufacturing clusters reflects established supplier-buyer relationships that substitute for bank credit—consistent with theories of relational finance.

Owner education's negative association with heavy bootstrapping suggests that human capital enhances access to formal information and networks (Brush et al., 2006). The qualitative insights demonstrate that while bootstrapping offers immediate liquidity and operational flexibility, it may hinder long-term investment and scalability.

7.2 Policy and Managerial Implications

- **For policymakers:** Recognize bootstrapping as a complement, not merely a symptom, of constrained finance. Design credit lines and guarantee schemes that acknowledge MSMEs' existing informal arrangements e.g., loan products that formalize and leverage supplier credit histories.
- **For financial institutions:** Develop simplified, collateral-lite products (digital KYC, cash-flow based lending) that can be underwritten using transaction data and trade credit histories.
- **For MSMEs and support agencies:** Invest in financial literacy programs and encourage record-keeping so informal arrangements can feed into formal credit assessments.

8. Recommendations

Based on the findings and discussion, the following recommendations aim to strengthen MSME financial resilience, reduce overreliance on informal bootstrapping, and improve access to formal credit channels in Uttar Pradesh.

1. Formalize Trade Credit Data

Recommendation:

Encourage industry associations, supplier networks, and digital platforms to systematically record, verify, and share trade-credit histories that banks can use as part of credit underwriting.

Elaboration: Trade credit is one of the most widely used bootstrapping mechanisms among MSMEs, yet the information is rarely documented in a standardized form. By formalizing these records—such as payment timelines, credit terms, and supplier ratings—firms can build a verifiable credit profile even without collateral. Supply-chain platforms, GST-linked digital invoices, and industry associations can play a key role in certifying such data. This would enable banks and NBFCs to include trade-credit performance in credit scoring models, thereby bridging the information asymmetry that often leads to the exclusion of small enterprises from formal lending.

2. Hybrid Financing Products

Recommendation: Develop tailored financial products that combine small, short-tenure working-capital loans with invoice discounting or micro-factoring options to help MSMEs transition from informal bootstrapping to structured finance.

Elaboration:MSMEs often face highly irregular cash flows, making them rely on informal credit loops. Hybrid financial instruments can address this mismatch by offering flexible, low-ticket financing tied to actual business cash cycles. For instance, combining invoice discounting with a small overdraft facility can reduce dependence on supplier payment deferrals while also providing liquidity for day-to-day operations. Such products are particularly useful for firms with limited collateral but regular billing activity, enabling them to gradually build repayment histories and qualify for larger loans over time.

3. Cluster-Level Interventions

Recommendation: Implement cluster-based financing initiatives such as collective credit guarantees, group insurance mechanisms, and pooled working-capital facilities in manufacturing hubs like the Kanpur leather cluster or the Agra footwear cluster.

Elaboration: Clusters enable economies of scale and create natural networks of trust. By leveraging these structures, policymakers can introduce joint credit guarantee schemes where risk is shared among cluster participants and institutional partners. Collective financial training, bulk procurement financing, and shared equipment centres can dramatically reduce costs for individual firms. Cluster-level interventions also align with global best practices such as Japan's Keiretsu networks or Italy's industrial districts, where localized support ecosystems improve competitiveness and financial inclusion simultaneously.

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4. Financial Literacy and Bookkeeping Training

Recommendation: State MSME departments, entrepreneurship development institutes, and district-level industry centres should run structured training programs focusing on record keeping, cash-flow management, GST compliance, and basic financial planning.

Elaboration: Many micro and small firms still operate with minimal documentation, which excludes them from formal lending. Training modules focusing on simple bookkeeping tools (Excel templates, mobile apps, digital ledger systems like Khaata Book) can significantly improve financial transparency. Better records not only increase creditworthiness but also help entrepreneurs make informed decisions regarding pricing, procurement, and cost management. Enhanced financial literacy can reduce dependence on inefficient and risky bootstrapping techniques, especially informal borrowing.

5. Encourage Fintech Solutions

Recommendation: Promote fintech platforms that use alternative datasets—such as GST filings, UPI transactions, digital payment histories, and supplier payments—to underwrite micro-loans.

Elaboration: Fintech companies have the ability to analyze real-time business data through AI and machine learning, making them particularly suited to lend to micro enterprises with limited credit histories. Encouraging partnerships between fintech firms, banks, and government agencies can broaden access to microcredit at competitive rates. Government support may include regulatory sandboxes, incentives for digital on boarding of MSMEs, and integration with national platforms like OCEN (Open Credit Enablement Network). Fintech-based underwriting can help MSMEs graduate from informal financial ecosystems, lowering dependence on high-cost bootstrapping tactics.

6. Policy Nudges for Supplier Payment Transparency

Recommendation: Introduce and enforce standardized supplier contracts, transparent credit terms, and timely payment codes (similar to global "Prompt Payment Codes") to prevent misuse of payment deferrals and strengthen supply-chain health.

Elaboration: While delaying supplier payments is a common bootstrapping tactic, excessive reliance can damage relationships, disrupt supply chains, and create systemic liquidity stress. Policy interventions can include mandatory disclosure of payment terms, incentivizing early payments through tax credits, or developing a transparent dispute resolution mechanism for delayed payments. Establishing standardized contracts and encouraging formal invoice terms will help create predictable cash cycles for both suppliers and buyers, reducing the need for informal financial adjustments.

9. Limitations and Future Research

9.1 Limitations

- This paper reports an empirical design and illustrative findings but does not substitute for primary data collection. Actual findings require implementing the described mixed-methods study.
- Regional heterogeneity within UP means results from the selected districts may not generalize across the entire state.
- Self-reporting in surveys can introduce recall bias about financing amounts and terms.

9.2 Future Research Directions

- Conduct the proposed mixed-methods field study and publish quantitative findings.
- Analyse the transition pathways from bootstrapping to formal finance: which interventions successfully enable uptake of bank credit?
- Evaluate the role of digital payment footprints (UPI, GST filings) in reducing reliance on bootstrapping by enabling cash-flow based lending.

10. Conclusion

Financial bootstrapping remains a pragmatic and pervasive strategy for MSMEs in Uttar Pradesh to manage liquidity and survive in an environment where formal finance is often difficult to secure. Techniques—ranging from owner savings and retained earnings to supplier credit and informal barter—deliver speed and autonomy but can also constrain long-term growth and expose entrepreneurs to personal risk. Policy and financial sector responses should therefore aim to **complement** these practices: formalize reliable informal signals (trade-credit histories), design flexible credit instruments, and build capacity so MSMEs can transition progressively toward more formalized and scalable financing. Strengthening these linkages will help unlock the productive potential of UP's MSMEs and contribute to inclusive regional development.

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