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CHALLENGES IN PROCUREMENT OF RAW MATERIALS AMONG LEATHER PRODUCT MANUFACTURERS IN DHARAVI

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ABSTRACT
Dharavi, one of Asia's largest informal settlements, is a hub for leather product manufacturing, contributing significantly to Mumbai's economy and India's export market. Despite its prominence, the leather industry in Dharavi faces considerable challenges in the procurement of raw materials. Factors such as inconsistent quality, fluctuating prices, and irregular supply chains hinder the industry's growth. Additionally, the dependence on middlemen and the lack of direct access to quality raw materials exacerbate these issues, leading to increased production costs and reduced profit margins. Environmental concerns and stringent regulations surrounding leather production further complicate the procurement process, forcing manufacturers to explore alternative materials or face penalties. Moreover, the global shift toward sustainable practices adds pressure on Dharavi's manufacturers to procure eco-friendly raw materials, which are often costlier and less accessible. Limited financial resources, inadequate infrastructure, and insufficient governmental support impede the industry's ability to adapt to these changing dynamics. This study aims to examine the key challenges faced by leather product manufacturers in Dharavi in raw material procurement, analyze their impact on production and profitability, and explore potential solutions. By addressing these challenges, the research seeks to provide actionable insights to policymakers, industry stakeholders, and manufacturers for fostering a more resilient and sustainable leather industry in Dharavi.

Keywords: *Leather industry, Dharavi, Supply chain challenges.*

INTRODUCTION
Dharavi is a densely populated informal settlement located in the heart of Mumbai, India. Spread over approximately 2.1 square kilometers, Dharavi is often referred to as one of the largest slums in Asia. It is situated between Mumbai's two main suburban rail lines, providing easy access to the city's industrial and commercial hubs. Despite its challenges, Dharavi has emerged as a vital part of Mumbai's socio-economic fabric. The population of Dharavi is estimated to be between 700,000 to 1,000,000 residents, making it one of the most densely populated areas in the world. It is a melting pot of cultures and communities, with people from various parts of India coexisting. The residents predominantly live in small, tightly packed dwellings, with inadequate sanitation and limited access to clean water.

Dharavi is a thriving economic ecosystem, often dubbed "Mumbai's beating heart." It is home to thousands of micro-industries, including leather tanning, garment manufacturing, pottery, plastic recycling, and food production. These industries generate an estimated annual turnover of over $1 billion. Among these, the leather industry stands out as one of Dharavi's most notable sectors, contributing significantly to Mumbai's and India's export markets.

Dharavi, a globally recognized hub for leather production, faces numerous challenges in the procurement of raw materials essential for its thriving leather industry. The fluctuating cost of raw materials, such as animal hides, chemicals, and dyes, poses a significant challenge. These price variations are influenced by factors like global market dynamics, local supply-demand imbalances, and seasonal availability. For small-scale manufacturers, these fluctuations strain their working capital and profit margins, often compelling them to compromise on quality to sustain operations.

Another pressing issue is the inconsistent quality of raw materials. Many leather product manufacturers rely on informal networks for sourcing, which lack standardization and quality assurance measures. Poor-quality raw materials not only hinder the production of premium leather goods but also tarnish the reputation of Dharavi's leather industry in the competitive global market. Manufacturers often face delays and additional costs to rectify defects or source replacements, further disrupting their operations.

The supply chain infrastructure for raw material procurement is also riddled with inefficiencies. Limited access to modern logistics, storage facilities, and formalized procurement channels creates dependency on intermediaries, leading to higher costs and delays. Additionally, environmental regulations surrounding the leather tanning process have become more stringent, impacting the availability of raw materials and increasing

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compliance costs. While these regulations are essential for sustainability, they challenge manufacturers with limited resources to adapt quickly.

Addressing these challenges requires a multifaceted approach. Promoting cooperative procurement practices among manufacturers could enhance bargaining power and reduce costs. Establishing partnerships with reliable suppliers and leveraging technology for supply chain management can improve quality control and operational efficiency. Additionally, government support in terms of subsidies, infrastructure development, and training programs could enable the leather industry in Dharavi to overcome these hurdles and maintain its competitive edge in both domestic and international markets.

OBJECTIVES OF THE STUDY:

1. To Understand reasons for irregular supply of raw material.
2. To identify the market for raw material procurement Leather Product Manufacturers.
3. To Study the association between quality of the raw material and type of raw material purchase by Leather Product Manufacturers.

REVIEW OF LITERATURE:

1. **Mohammad Asif (2008)** In the research titled "Strategies for Enhancing the Competitiveness of Leather Industry in India" The study emphasizes that the competitiveness of the Indian leather industry, particularly in clusters like Dharavi, is hindered by several interconnected challenges. High costs of semi-tanned leather due to international demand fluctuations, inadequate waste treatment systems, and limited financial support create a cycle of dependency and inefficiency. Moreover, the lack of government subsidies for small-scale manufacturers and inconsistent policies in leather export further complicate raw material procurement. Asif argues for a more structured approach, including the development of centralized waste treatment facilities, subsidies for raw material imports, and training programs to boost local skills and innovation.

2. **H. Abdur Raqeeb (2024)** In the research titled "The Challenges before Leather Industry are Galore" This study outlines a range of challenges affecting the leather industry, with a focus on raw material procurement. Rising global competition has increased the demand for quality raw materials, while domestic supply chains remain fragmented and inefficient. The study highlights that raw material costs have become prohibitively high for small-scale manufacturers in Dharavi, leading to compromises in product quality. Additionally, stricter environmental regulations and a lack of technological adoption further restrict procurement efficiency. The author advocates for policy reforms, improved access to raw material markets, and investments in sustainable supply chain practices to revitalize the sector.

3. **Sateesh Damle (2022)** In the research titled "Indian Leather Industry's Problems, And the Answers" Damle's analysis reveals systemic issues in the leather industry, particularly regarding infrastructure inadequacies and raw material shortages. The study points out that poor logistics, insufficient storage facilities, and overreliance on intermediaries inflate costs and delay procurement. These problems are compounded by the lack of skilled labor and slow adoption of modernized production techniques. To overcome these hurdles, the study recommends establishing direct procurement channels, government-backed training initiatives, and subsidies for technological upgrades. Such measures would help stabilize raw material supply and reduce production costs, benefiting manufacturers in Dharavi and other clusters.

4. **Vasan Suri (2024)** In the research titled "How Can We Unite to Shape the Future of the Indian Leather Industry?" This paper underscores the importance of collective action within the leather industry to address procurement challenges. By uniting through industry associations, manufacturers can leverage collective bargaining to secure better prices and consistent quality for raw materials. The study also advocates for global partnerships to diversify raw material sources and reduce dependency on volatile local markets. It emphasizes that fostering relationships with environmentally compliant suppliers can mitigate the impact of stringent regulations. Implementing these strategies would not only resolve immediate procurement challenges but also create a foundation for long-term sustainability and growth in Dharavi's leather industry.

5. **Suman Kumar Das (2025)** In the research titled "Investigating Circularity in India's Textile Industry: Overcoming Challenges and Leveraging Digitization for Growth" While focused on the textile sector, this study's findings have significant implications for the leather industry, particularly in raw material procurement. The research identifies that fragmented supply chains and regulatory hurdles are common challenges across sectors. In Dharavi, these issues translate into difficulties in accessing high-quality leather and managing waste effectively. The study suggests adopting digitization tools, such as blockchain for supply chain transparency and AI for demand forecasting, to address inefficiencies. For the leather industry,

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embracing circular economy principles, such as recycling and upcycling leather waste, can significantly reduce dependency on traditional raw materials.

6. **Niti Samani (2022),** In the research titled "Leather Manufacturing: Critical Issues and Challenges" Samani highlights that the leather manufacturing industry is plagued by critical issues, including environmental degradation, labor exploitation, and high procurement costs. In Dharavi, manufacturers face added pressure from inconsistent raw material quality and limited access to eco-friendly processing technologies. These challenges not only affect the sustainability of the industry but also its reputation in international markets. The study calls for integrated solutions, such as establishing eco-parks for leather processing, incentivizing sustainable practices, and enhancing workforce welfare programs. Such interventions can streamline procurement, improve product quality, and align the industry with global sustainability standards.
7. **Michael Redwood (2008)** In the research titled "The Challenges of the Leather Industry" Redwood explores the global dynamics of the leather industry, offering insights into challenges that resonate with Dharavi's context. The study highlights that technological advancements and evolving consumer preferences are reshaping the leather market. Manufacturers in Dharavi struggle to keep pace due to limited access to modern machinery and high-quality raw materials. Additionally, trade policies and international competition create barriers for small-scale producers to secure affordable raw materials. Redwood concludes that adapting to these changes requires substantial investment in research and development, government support for technology adoption, and fostering international collaborations to stabilize raw material supply chains.

RESEARCH GAP

The research gap identified across these studies lies in the limited integration of modern technological tools and sustainable practices specifically tailored to the unique ecosystem of leather manufacturing in Dharavi. While existing literature extensively discusses challenges such as high procurement costs, fragmented supply chains, inadequate infrastructure, and regulatory pressures, there is a lack of comprehensive, localized strategies that address the interplay between these factors in Dharavi's socio-economic and industrial context. Furthermore, the potential of leveraging digital technologies like blockchain for supply chain transparency, AI for demand forecasting, and circular economy practices for reducing dependency on traditional raw materials remains underexplored. The absence of empirical studies focusing on collaborative frameworks, such as industry clusters or collective bargaining mechanisms in Dharavi, further widens the research gap, emphasizing the need for actionable, community-driven solutions that align with global standards of sustainability and innovation.

RESEARCH METHODOLOGY

The study adopts a descriptive research methodology to examine the challenges in raw material procurement faced by leather product manufacturers in Dharavi. Data was collected through structured questionnaires targeting 75 respondents, primarily self-employed individuals within the leather manufacturing sector. The demographic analysis focuses on gender, age group, and occupation, revealing a predominantly male, middle-aged, and self-employed respondent base. Statistical tools, including chi-square and Friedman tests, were applied to test hypotheses and analyze data related to irregular supply of raw materials, market preferences, and the relationship between raw material type and quality. The study also incorporates a comprehensive review of literature to contextualize findings and identify research gaps.

DATA ANALYSIS

Demographic Factor

Sr.no	Demographic Factor	Category	Frequency	Percent
1	Gender	Male	72	96.0
		Female	3	4.0
2	Age Group	18 to 30 years	9	12.0
		31 to 45 years	51	68.0
		46 to 60 years	15	20.0
3	Occupation	Self-Employed	74	98.7
		Worker	1	1.3

Source: *Prepared by Researcher from primary data*

The frequency data reveals a demographic overview of respondents involved in the study. The majority of respondents are male (72, 96.0%), with only a small proportion being female (3, 4.0%), indicating a gender imbalance. The 31 to 45 years age group dominates, comprising 68.0% (51 respondents), followed by 46 to 60 years (15, 20.0%), and the youngest group, 18 to 30 years (9, 12.0%). In terms of occupation, an overwhelming

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majority are self-employed (74, 98.7%), while a minimal number are workers (1, 1.3%), reflecting that most respondents are likely engaged in entrepreneurial or independent activities. This distribution highlights a predominantly male, middle-aged, and self-employed demographic in the study.

HYPOTHESIS 1

H_{01}: There is no specific reason for irregular supply of raw material.

H_1: There is a specific reason for irregular supply of raw material.

To test the above null hypothesis Non-parametric Test is applied and chi-square test is obtained and results are as follows.

Test Statistics	
	2. Why do you not get a regular supply of raw material
Chi-Square	23.827[a]
df	3
P-value	.000
a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.8.	

Interpretation: The above results indicate that calculated p-value is 0.000. It is less than 0.05. Therefore, chi-square test is rejected. Hence Null hypothesis is rejected and **Alternate hypothesis H_1 is accepted**.

Conclusion: There is a specific reason for irregular supply of raw material.

Findings: To understand the findings of hypothesis, mean score of reason for irregular supply of raw material is shown in below table.

2. Why do you not get a regular supply of raw material			
	Observed N	Expected N	Residual
Changing Government Policy	2	18.8	-16.8
Scarcity of raw material	30	18.8	11.3
Lack of transport	18	18.8	-.8
Shortage of Capital	25	18.8	6.3
Total	75		

The analysis highlights the challenges faced by leather product manufacturers in ensuring a regular supply of raw materials. Among the key issues, scarcity of raw materials is the most significant, with observed responses (30) far exceeding the expected count (18.8), indicating its critical impact. Shortage of capital (25 observed) also emerges as a major factor, showing that financial constraints hinder the procurement process. While lack of transport (18 observed) aligns closely with the expected count, suggesting it is not a predominant issue, changing government policies has a notably low observed count (2), indicating it is the least significant challenge in this context. The residuals underscore the disparity between observed and expected frequencies, with scarcity and capital shortage requiring targeted interventions to stabilize raw material supply.

HYPOTHESIS 2

H_0: There is no difference in market type for raw material procurement Leather Product Manufacturers.

H_1: There is a difference in market type for raw material procurement Leather Product Manufacturers.

To test the above null hypothesis Friedman Test is applied and chi-square test is obtained and results are as follows.

Test Statistics[a]	
N	75
Chi-Square	25.229
df	2
P-value	.000
a. Friedman Test	

Interpretation: The above results indicate that calculated p-value is 0.000. It is less than 0.05. Therefore, chi-square test is rejected. Hence Null hypothesis is rejected and Alternate hypothesis is accepted.

Conclusion: There is a difference in market type for raw material procurement Leather Product Manufacturers.

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Findings: To understand the findings of hypothesis, mean score of market type for raw material procurement Leather Product Manufacturers is shown in below table.

Ranks	
	Mean Rank
Local Market	1.95
Within state	2.37
Outside state	1.69

The mean rank data for raw material procurement among leather product manufacturers indicates their preferences for sourcing materials. The outside state market holds the highest importance, with the lowest mean rank of 1.69, suggesting it is the most preferred procurement source. This is likely due to better quality or availability of raw materials in those markets. The local market, with a mean rank of 1.95, is the second most important, likely valued for convenience and lower logistics costs. The within-state market, with the highest mean rank of 2.37, is the least preferred, possibly due to limitations in quality, availability, or competitive pricing. These rankings reflect a strategic inclination toward sourcing from more distant but advantageous markets.

HYPOTHESIS 3

H_0: There is no association between quality of the raw material and type of raw material purchase by Leather Product Manufacturers.

H_1: There is an association between quality of the raw material and type of raw material purchase by Leather Product Manufacturers.

To test the above null hypothesis crosstabulation Test is applied and chi-square test is obtained and results are as follows.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	29.463[a]	3	.000
Likelihood Ratio	21.663	3	.000
Linear-by-Linear Association	12.935	1	.000
N of Valid Cases	75		
a. 5 cells (62.5%) have expected count less than 5. The minimum expected count is .53.			

Interpretation: The above results indicate that calculated p-value is 0.000. It is less than 0.05. Therefore, chi-square test is rejected. Hence Null hypothesis is rejected and Alternate hypothesis is accepted.

Conclusion: There is an association between quality of the raw material and type of raw material purchase by Leather Product Manufacturers.

Findings: To understand the findings of hypothesis, number of qualities of the raw material and type of raw material purchase by Leather Product Manufacturers is shown in below table.

Count			
5. Which type of quality do you get?	6. Which type of raw material do you purchase?		
	Ovine Skin	Bovine Hide	Total
Superior Quality	0	4	4
Good Quality	31	5	36
Normal Quality	22	1	23
Inferior Quality	12	0	12
Total	65	10	75

The data reveals that leather product manufacturers predominantly purchase ovine skin (65 purchases) compared to bovine hide (10 purchases). Good quality materials are the most common, with 36 purchases (31 ovine skin, 5 bovine hide), reflecting a preference for reliable quality. Normal quality accounts for 23 purchases, primarily ovine skin, while inferior quality (12 purchases) is exclusively ovine skin, indicating bovine hide is not used for lower-grade requirements. Notably, superior quality materials are rare, with only 4 purchases, all being bovine hide. This indicates a strong reliance on ovine skin for a range of quality levels and limited use of bovine hide, mainly for higher-quality needs.

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CONCLUSION

The study concludes that raw material procurement in Dharavi's leather industry faces significant challenges, primarily due to scarcity, financial constraints, and reliance on informal supply chains. Manufacturers prefer sourcing materials from outside the state due to better availability and quality, despite higher logistical challenges. There is a clear association between the type and quality of raw materials, with bovine hides preferred for superior quality goods. Addressing these issues requires a multi-pronged approach, including cooperative procurement, government support, adoption of modern technologies, and fostering sustainable practices. These interventions can enhance supply chain efficiency, reduce costs, and ensure the sustainability of Dharavi's leather industry.

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