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Supply Chain Optimisation in Indian Sports Gear Manufacturing: A Study of Local and Export Markets

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Abstract:

This research examines supply chain challenges and optimisation strategies for small-to-medium Indian sports gear manufacturers in hubs like Meerut and Jalandhar. Through 15 interviews and 32 surveys, it identifies raw material delays (80% prevalence), logistics inefficiencies (40% high costs), low technology adoption (65% manual systems), and export barriers (50% delayed shipments). Pro- posed solutions include vendor management, infrastructure upgrades, cloud-based ERP, export training, and predictive analytics, potentially reducing delays by 40% and costs by 15–20%. The study supports India's manufacturing ambitions under Make in India.

1 Introduction

India's sports gear industry, centered in Meerut and Jalandhar, produces cricket equipment, gym gear, and athletic wear, leveraging skilled labor. However, sup- ply chain inefficiencies, such as raw material delays and high logistics costs, limit competitiveness against global rivals [1]. This study investigates these bottle- necks for small-to-medium enterprises (SMEs) serving local and export markets, proposing practical solutions.

1.1 Objectives

- Analyze the supply chain structure of Indian sports gear manufacturing.
- Identify logistics challenges in domestic and international markets.
- Assess digital technology adoption.
- Recommend strategies to minimize delays, enhance accuracy, and reduce costs.

1.2 Scope and Significance

The research targets SMEs, covering procurement, production, inventory, and distribution. Findings aim to boost industry competitiveness and inform policy- makers, aligning with initiatives like Make in India [5].

2 Literature Review

Global sports gear manufacturers use advanced technologies like IoT and automated forecasting, while Indian SMEs rely on manual processes, leading to inefficiencies [2]. Key issues include:

- **Raw Material Delays**: Unreliable suppliers delay leather and rubber de- liveries [7].
- **Logistics Challenges**: Congested roads and outdated warehousing inflate costs [6].
- **Technology Gaps**: Cost and training barriers hinder ERP adoption [3].
- **Export Hurdles**: Documentation and packaging issues cause shipment rejections [4].

Sport-specific supply chain research in India is scarce, making this study critical.

3 Methodology

A mixed-methods approach was employed, involving 15 structured interviews (5 manufacturers, 5 suppliers, 3 logistics providers, 2 exporters) and 32 surveys
(15 manufacturers, 10 suppliers, 7 logistics providers, 3 exporters) in Meerut and Jalandhar.

3.1 Data Collection

Interviews (30–45 minutes) explored delays, technology use, and export challenges. Surveys, with 20 multiple-choice and Likert-scale questions, achieved a 90% response rate.

3.2 Data Analysis

Thematic analysis categorized interview responses (e.g., "logistics bottlenecks"). Survey data was analyzed using Excel for descriptive statistics, generating frequency distributions and percentages.

3.3 Limitations

The 50-participant sample and focus on two hubs may not generalize nationally. Time constraints and potential withholding of sensitive data limited depth.

4 Findings

Analysis revealed four key challenges impacting supply chain efficiency.

4.1 Qualitative Insights

- **Raw Material Delays**: 80% of manufacturers/suppliers reported 2–3-week delays due to unreliable suppliers and poor transport networks.
- **Logistics Inefficiencies**: All logistics providers/exporters noted high costs and disorganized warehousing, exacerbated by congested rural roads.
- **Low Technology Use**: Only 35% used basic tools; none adopted ERP or GPS due to cost and lack of training.
- **Export Barriers**: 50% of exporters faced delays from complex documentation and non-compliant packaging.

4.2 Quantitative Results

Table 1: Frequency of Supply Chain Delays

Frequency	Percentage (%)
Always	20
Often	30
Rarely	40
Never	10

Table 2: Digital Tool Adoption

Status	Percentage (%)
Use Digital Tools	35
Manual Processes	65

Table 3: Logistics Costs Distribution

Cost Range (% of Total)	Respondents (%)
< 10	10
10–20	35
20–30	40
> 30	15

5 Recommendations

To address identified challenges, five strategies are proposed:

- **Strengthen Supplier Coordination**: Use vendor management systems and online portals to ensure reliable lead times, potentially reducing delays by 40%.
- **Upgrade Logistics**: Implement automated warehousing and collaborate on road improvements via MSME schemes, cutting delivery times by 20– 30%.

Table 4: Stockout Frequency

Frequency	Percentage (%)
Always	10
Often	30
Rarely	40
Never	20

Table 5: Export Delay Causes

Cause	Percentage (%)
Documentation	50
Packaging Issues	30
Other	20

- **Adopt Digital Tools**: Deploy cloud-based ERP (from $50/month) to halve inventory errors, leveraging Digital India subsidies.
- **Streamline Exports**: Train staff on compliance and partner with logistics firms to minimize shipment rejections.
- **Leverage Predictive Analytics**: Use AI tools like Google Analytics to im- prove forecasting, reducing stockouts by 30%.

6 Conclusion and Future Scope

The study underscores critical supply chain issues: 80% face raw material de- lays, 40% incur high logistics costs, 65% use manual systems, and 50% experi- ence export delays. Proposed solutions could cut delays by 40% and costs by 15–20%, boosting competitiveness. Future research should:

- Study other regions like Mumbai.
- Expand sample sizes.
- Pilot ERP implementations.
- Analyze specific export markets.
- Explore sustainable practices.

This research provides a foundation for enhancing India's sports gear industry.

References:

[1] Chopra, S., & Meindl, P. (2021). *Supply chain management: Strategy, planning, and operation* (7th ed.). New Delhi: Pearson Education.

[2] Gupta, R. (2022). Supply chain challenges in Indian manufacturing. *Journal of Industrial Management*, 15(3), 45–60.

[3] Kumar, S. (2023). Technology adoption in Indian MSMEs: Opportunities and barriers. *Indian Journal of Business Studies*, 12(4), 78–92.

[4] Mishra, N. (2024). Export compliance challenges in Indian manufacturing: A focus on sports goods. *Journal of Global Trade*, 9(1), 30–45.

[5] Rajput, S. (2022). Digital India and its impact on MSME supply chains. *Indian Economic Review*, 57(3), 89–104.

[6] Sethi, A., & Kumar, R. (2023). Warehousing inefficiencies in Indian manufac- turing clusters: A case study of Meerut. *Journal of Supply Chain Management*, 14(2), 66–80.

[7] Sharma, V. (2023). Inventory management issues in Indian sports manufac- turing. *Journal of Supply Chain Studies*, 8(1), 22–35.