

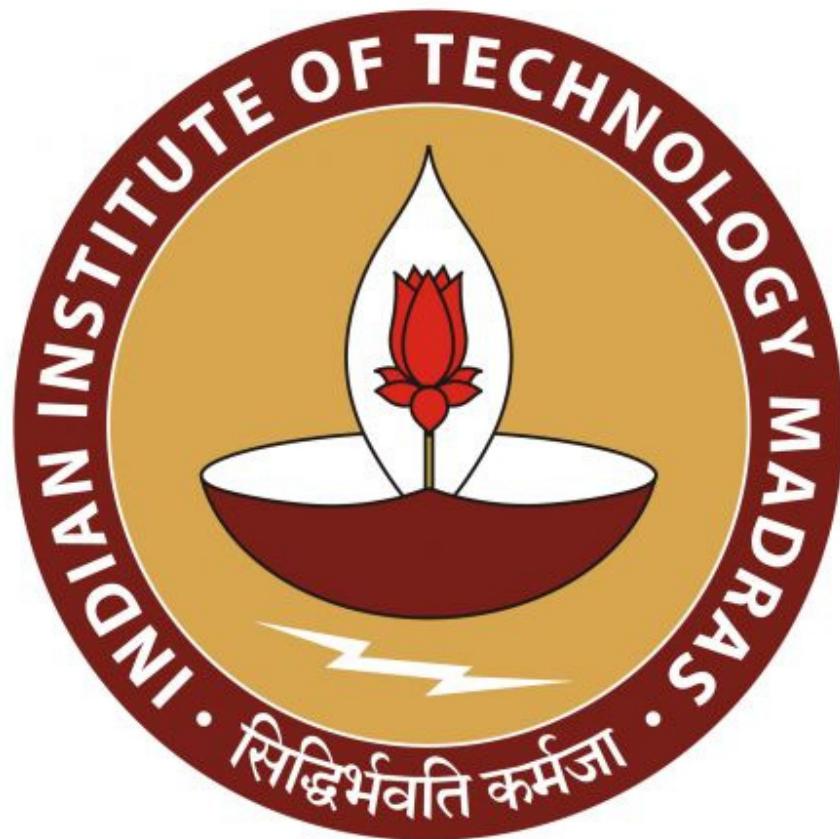
# Inventory, Purchase & Sale Analysis of Clothing Factory

## A final proposal report for the BDM capstone Project

Submitted by

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## Executive Summary :

Anmol Paridhan Lamba Hari Singh, a distinguished B2B factory nestled in the heart of Malpura, Kekri, Rajasthan, specializes in the production of an extensive array of unstitched clothing catering to both men and women. Boasting a repertoire of 162 varieties, the factory has established itself as a key player in the textile industry. This report undertakes a meticulous analysis of the factory's sales data, spanning the six-month period from April 2022 to November 2022, with a particular focus on critical aspects such as top-selling products, Sales and Purchase trends, Opening and Closing stock, Inventory management, suggestions for local sare shop and comprehensive ratio analysis.

To ensure the accuracy and depth of our analysis, the sales, purchase, and inventory data were meticulously gathered from the restaurant's Point of Sale (POS) system, capturing every transaction and item-level detail. The dataset, comprising 162+ rows of orders, payments, and product details, served as the foundation for our thorough data analysis. Employing a range of tools and techniques, the methodology used for data analysis and visualization is elucidated in the report, accompanied by various charts and tables that provide a visually impactful representation of the findings.

The outlined project objectives underscore our commitment to identifying the top-performing fabrics and implementing effective inventory management strategies. The report not only sheds light on the current state of affairs but also strives to provide actionable insights and recommendations that could prove instrumental in propelling Anmol Paridhan Lamba Hari Singh towards increased profitability and sustained growth. Moreover, the report delves into operational costs, offering additional suggestions on cost optimization to address a net loss of -15% and operational costs soaring up to 115%.

One such recommendation involves the optimization of the local sari shop, a proposition derived from customer interactions and an extensive market survey.

Building on the insights gained from data analysis and pivot tables, a detailed pattern and sales vs. purchase graph have been crafted, aiding in the identification of the most lucrative stocks and those contributing to losses. Clear problem objectives, encompassing trend analysis, inventory scrutiny, ratio assessment, sare shop sales, and marketing optimization, provide a holistic view of the challenges at hand. In line with this, a comprehensive review of the pricing strategy is advocated, emphasizing the need for adjustments to bridge the gap between product popularity and pricing, ultimately aiming for maximum revenue gain.

In conclusion, this report strives to not only unravel the complexities within the factory's operations but also to pave the way for strategic enhancements. Armed with these insights, Anmol Paridhan Lamba Hari Singh can embark on a path of informed decision-making, thereby optimizing its operations and ensuring sustained success in a dynamic market landscape.

## **Detailed Explanation of Analysis/Method :**

### **Inventory Management Analysis:**

I started the analytical procedure by carefully extracting and reviewing the stock data within the allotted period. This required carefully examining all of the rows and columns in the dataset to identify significant patterns that could offer insightful information. Then, in order to reveal trends and pinpoint the best-performing textiles, I methodically sorted the details and stock values from the opening and closing stock, putting them in ascending order. I created visual representations of the opening and closing stock data using graphical representation approaches to improve management comprehension. The goal of this strategy is to provide users a clear and intuitive knowledge of stock dynamics so they can make well-informed decisions for efficient inventory control.

### **Local Saree Shop Analysis:**

In the previous eight years, the local saree market has seen substantial changes due to the opening of three new stores, beginning in 2015 and continuing with additions in 2018 and 2023. A thorough investigation that included a large amount of market research and insights from customer interviews has shown important aspects influencing the choices of customers for alternative saree retailers. Remarkable results show that patrons go towards businesses with more staffs because they guarantee superior service. The 2023 shop is distinguished by its strong branding approach, which includes a distinctive logo and items with logos emblazoned on them, giving it a distinctive and identifiable character. A pleasant retail environment has also been produced by careful regulation and maintenance procedures that include temperature control elements like heating and air conditioning.

Furthermore, a larger selection of items at rival stores has been shown to exert a powerful influence on consumer decision-making. Gaining an understanding of these findings is essential to modifying tactics and guaranteeing that the neighborhood saree store maintains its competitive edge and customer-centered approach in this changing industry.

## **Purchase and Sales Analysis:**

Before starting the process of drawing out patterns and insights, I carefully examined the dataset and all of its characteristics in an effort to gain a thorough grasp. I tried to increase the breadth of insights and find any trends that would lead to recommendations that might be put into practise by using a pivot table.

Concatenation of sales and purchase data allowed for a more thorough analysis, which exposed several interesting patterns in the dataset. Among the fascinating revelations, one thing that stood out was the fact that things were being offered at a loss margin, and there were cases where credit transactions exceeded debit transactions. On the other hand, other items had higher margins and pricing, which was a sign of continued demand and profitability.

This thorough research emphasizes the necessity of addressing financial concerns while leveraging items with strong market demand and profit potential, laying the groundwork for strategic decision-making.

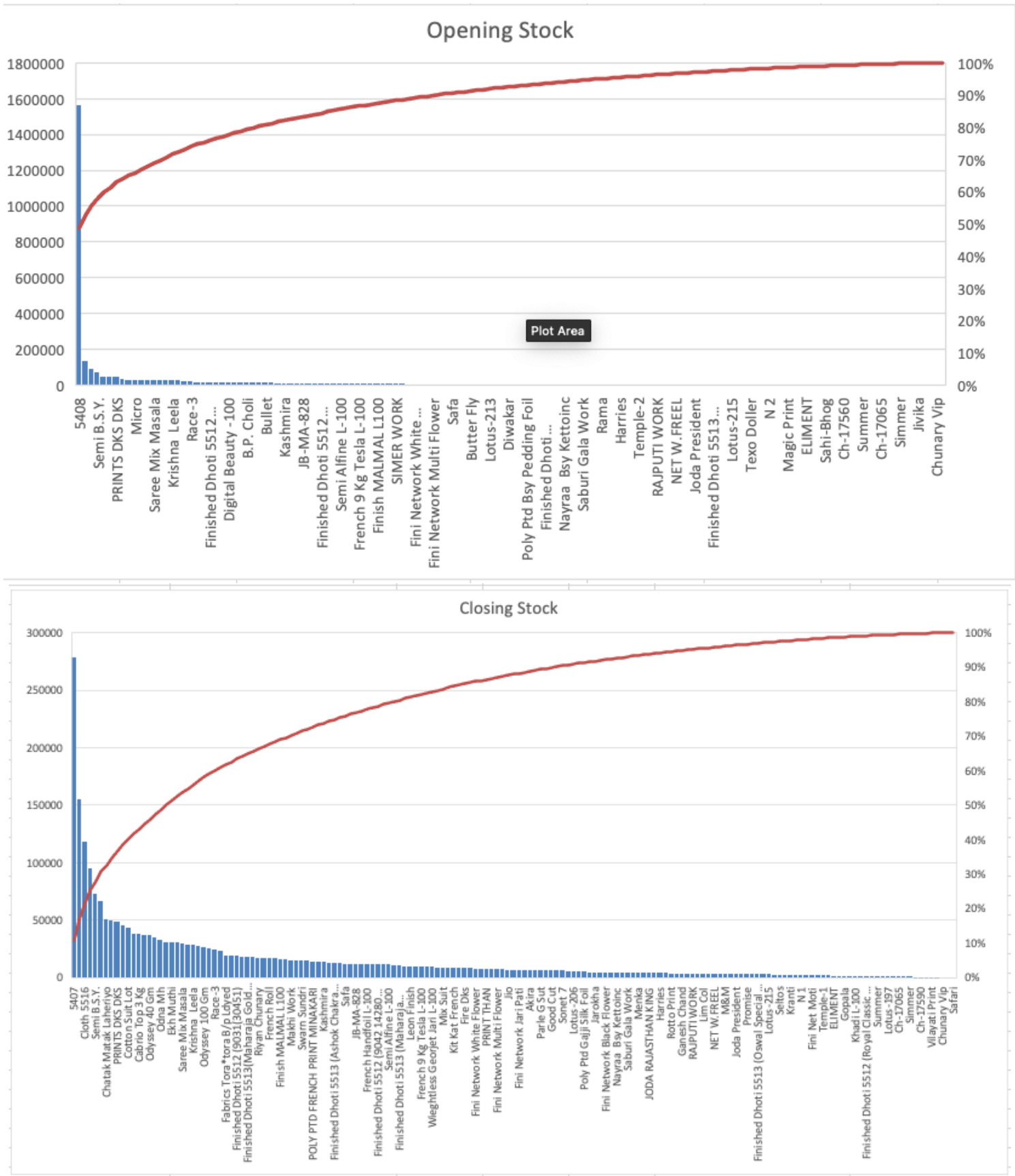
## **Ratio Analysis:**

The data for ratio analysis was systematically gathered subsequent to a thorough examination of the factory's sales, purchase, inventory, and balance sheet. Additionally, supplementary information crucial to the analysis was graciously provided by the factory manager in response to our specific request. This comprehensive approach ensures the integrity and accuracy of the ratio analysis, incorporating both intrinsic financial data and valuable managerial insights for a more robust and informed evaluation of the factory's performance metrics.

The textile factory specializing in unstitched fabrics presents concerning financial metrics, including a quick ratio of 0.84:1, a gross profit margin of -14.48%, a return on investment of -38%, and an operational cost at a high 115%. These indicators suggest potential liquidity challenges, production cost issues, significant investment losses, and elevated operational expenses. Addressing these areas is crucial for improving financial performance and ensuring competitiveness in the textile industry.

# Results and Findings :

## Objective 1: Inventory Management



The following graph is plotted to indicate the opening and the closing stock of the factory, The opening stock Indicates that Initially stocked fabric and closing stock indicates the last remaining fabrics.

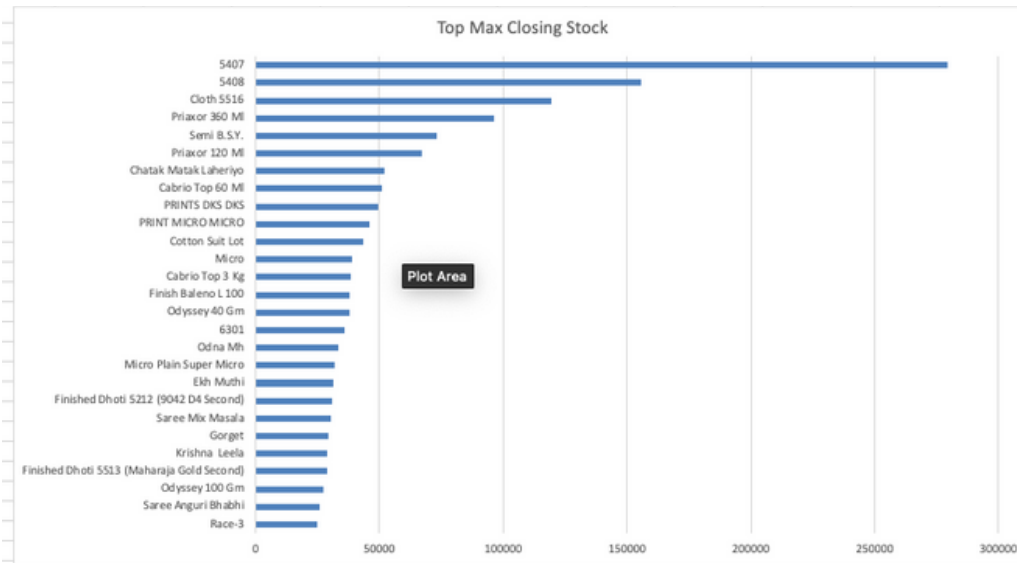
The declining bar graphs illustrate a consistent reduction in the closing stock quantities for each item. However, it is pertinent to recognize a noteworthy discrepancy – there are more items present in the closing stock compared to the opening stock. This discrepancy strongly suggests a significant issue, indicating that purchases have not been aligned with actual demand. The graph represents the relationship between different fabrics and their corresponding values.

Examining the opening stock graph provides insights into the initial inventory quantities. It's crucial to observe that the same material exhibits consistent high capacity both at the beginning and end of the inventory assessment. This observation underscores the importance of maintaining a stable supply of specific materials, emphasizing their sustained presence in the inventory throughout the evaluated period.

**Observations :**

**Products like :** 1. Feni Freigh 2. Chunary Vip 3. New Filafil 4. Vilayati Print 5.. Jivika 6. Ch-17590 and many more. Have not been sold from past 6 months

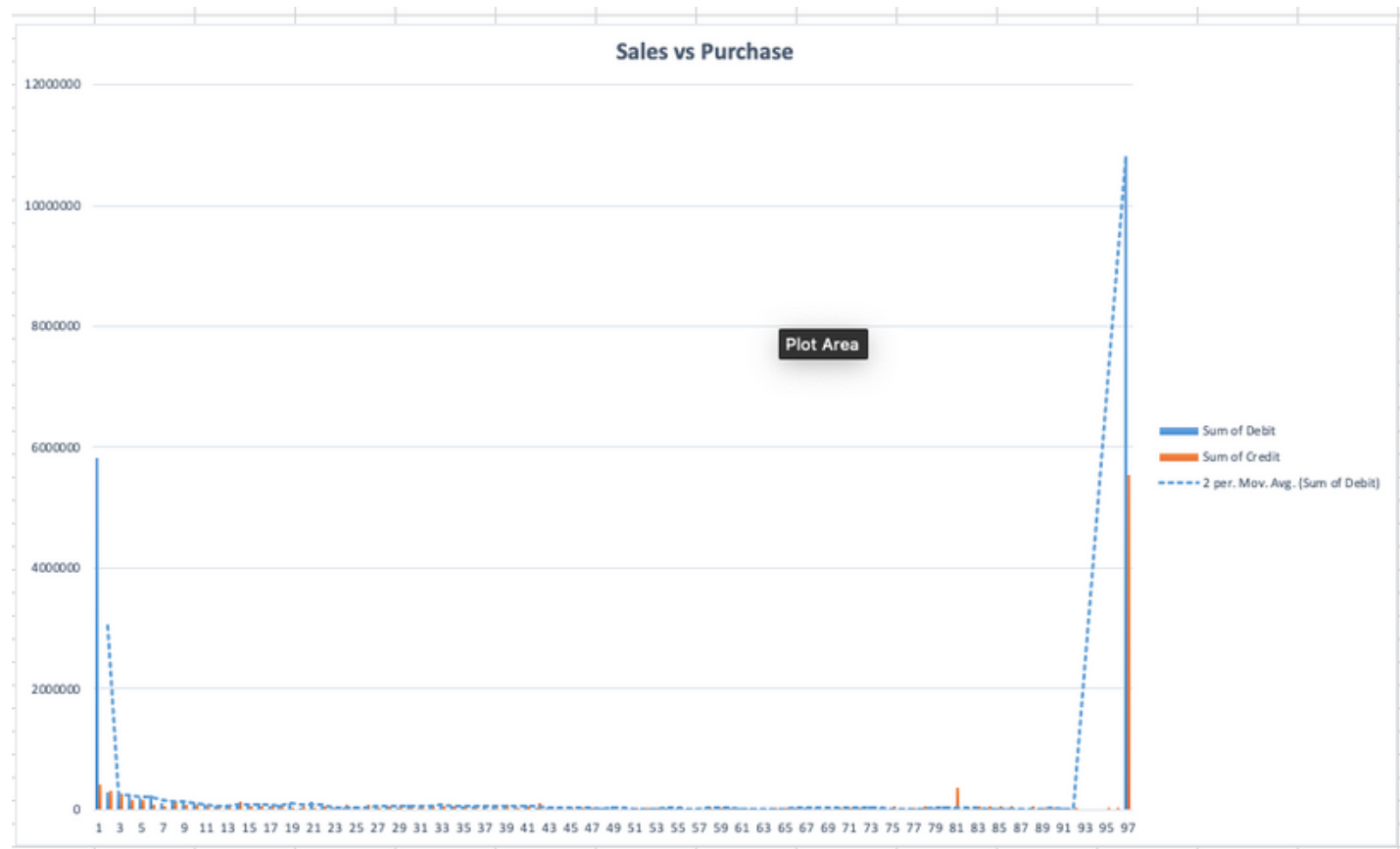
**The most sold item is :** 1. 5408 2. 5407 3.Cloth 5515



The identification of the Top Max Closing Stock holds significant implications within the inventory management framework. This designation signifies the fabric with the highest intrinsic value among all items in the inventory. The selection of this fabric as the top closing stock underscores its prominence, suggesting that it either boasts a high market demand, a substantial profit margin, or a combination of both. Recognizing and strategically managing the top-max closing stock is pivotal for optimizing revenue and ensuring that the most valuable fabric remains adequately stocked to meet consumer demand.

On the flip side, the Least Closing Stock designation illuminates fabrics with the least value in the inventory. These are materials that, for various reasons, might have lower demand or generate comparatively lower profits. Identifying the fabrics with the least closing stock is equally crucial as it informs inventory management decisions. It prompts consideration of whether to adjust procurement strategies, explore marketing initiatives for these fabrics, or potentially phase them out to make room for more lucrative products. By understanding the least closing stock, a business can align its inventory practices with market dynamics and profitability objectives.

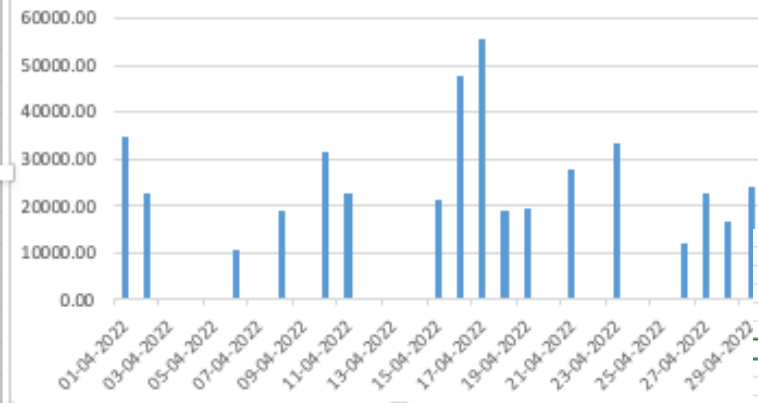
**Objective 2: Sales and Purchase**



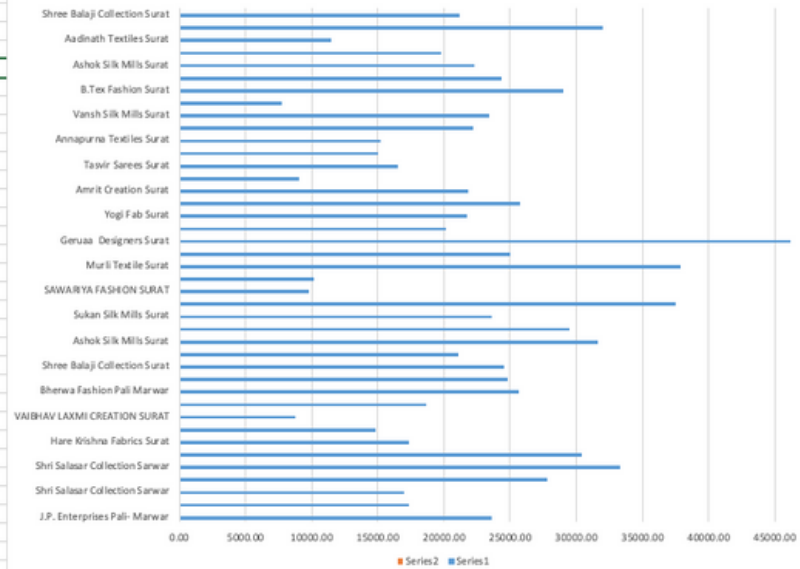
The graph, plotted against the cumulative sales (debit) and purchases (credit), unmistakably reveals overall profitability, with sales surpassing purchases. However, a closer look underscores that this profit is primarily attributed to specific high-impact fabrics, emphasizing the concentrated role of key materials in determining the factory's overall financial success. This insight underscores the importance of strategically managing and promoting the sale of these impactful fabrics to maximize profitability.



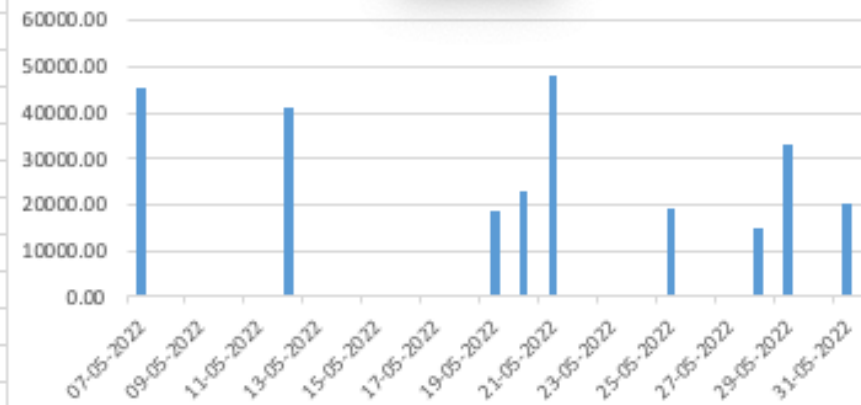
### April Sales



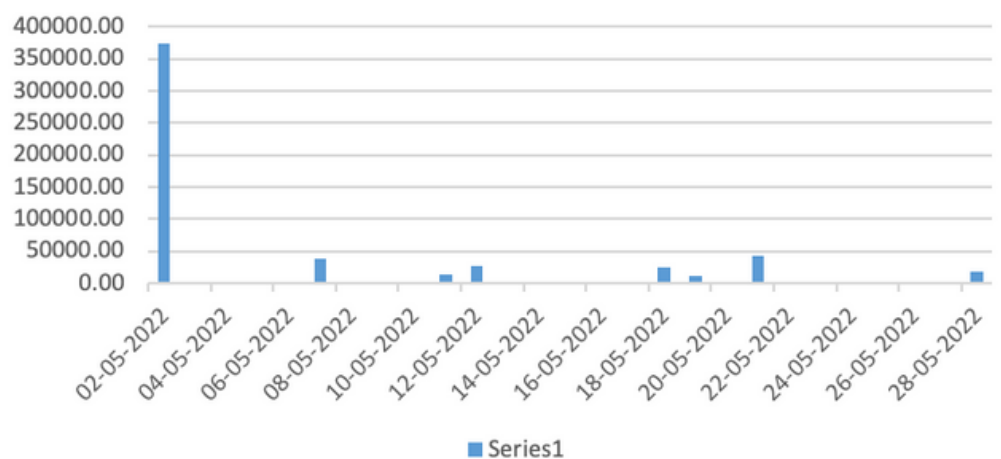
### April Purchase



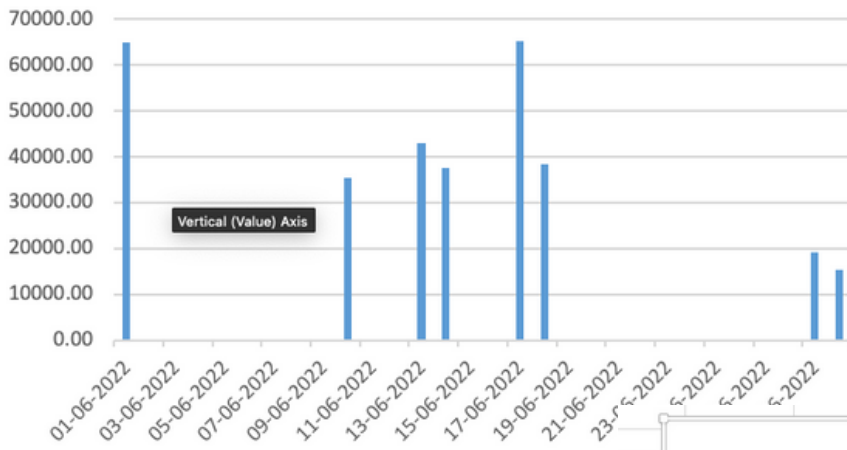
### May Sales Chart Area



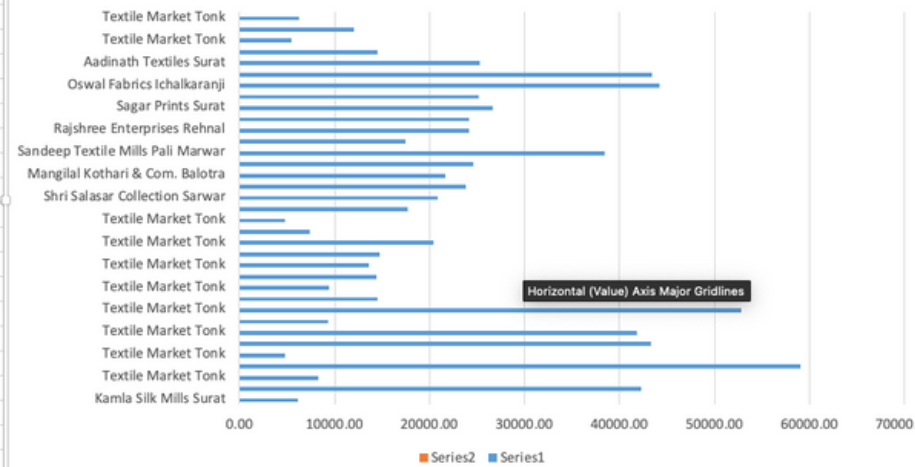
### May Purchase



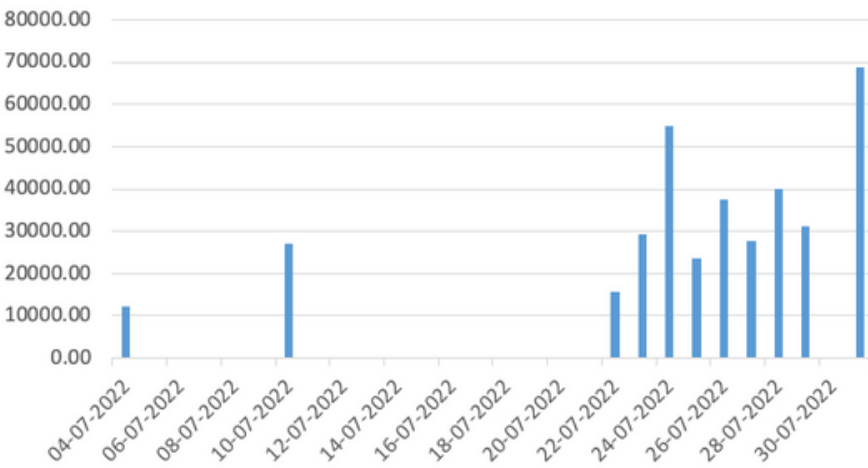
### June Sale



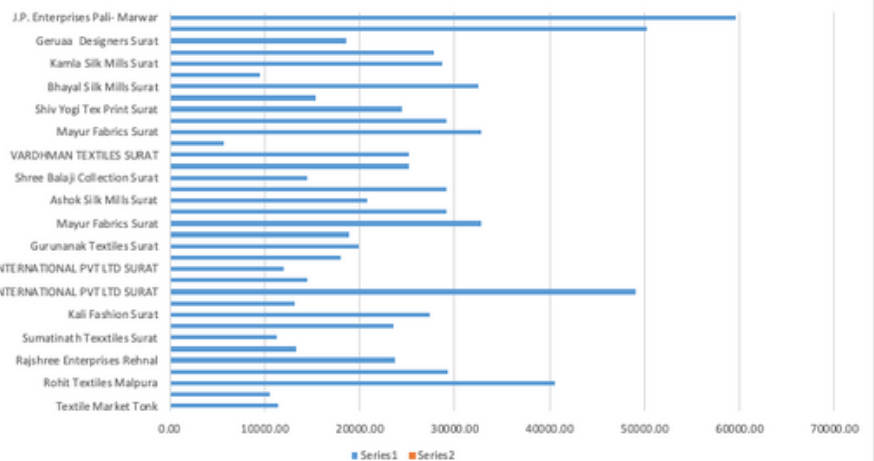
### June Purchase



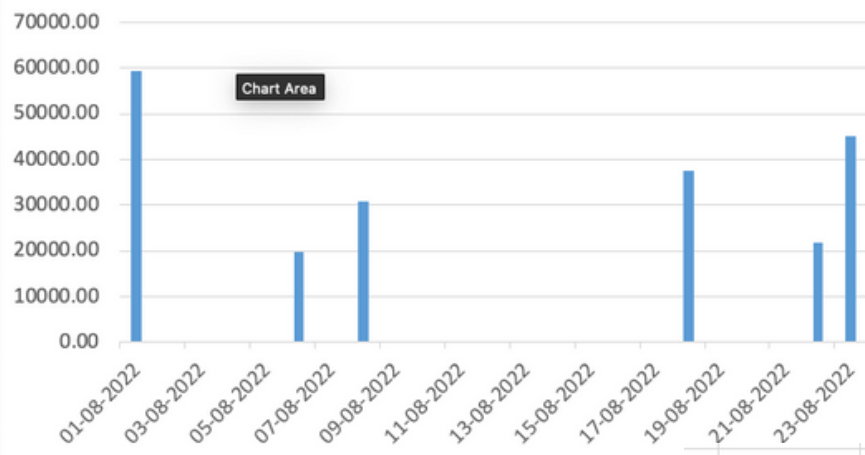
### July Sales



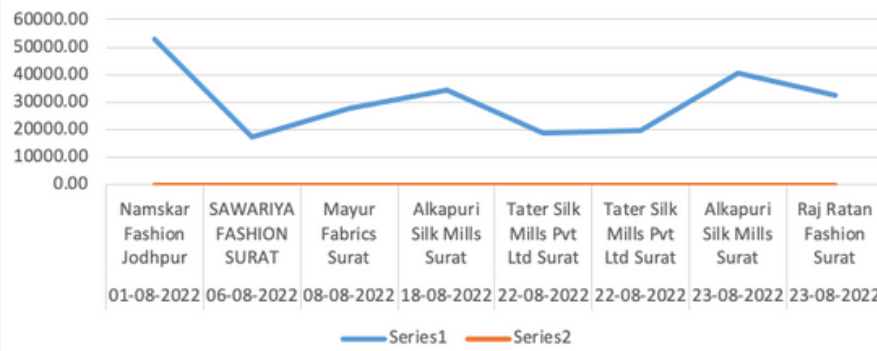
### July Purchase



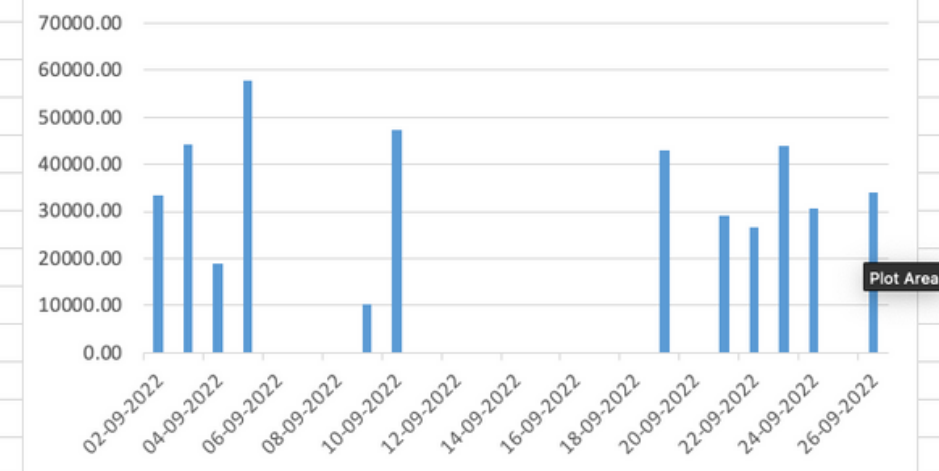
### Aug Sale



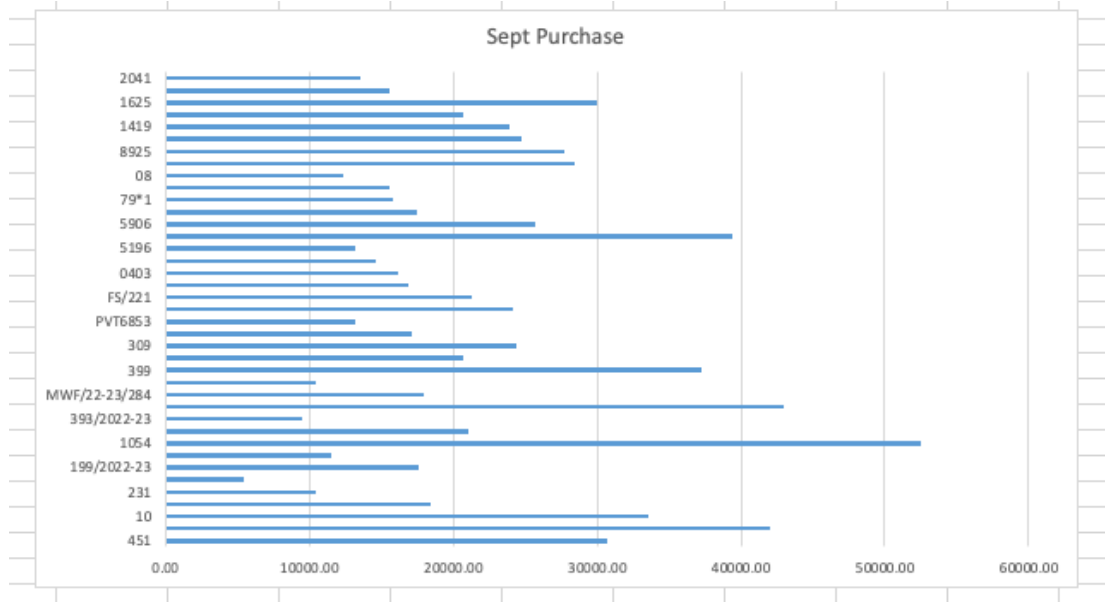
### August Purchase



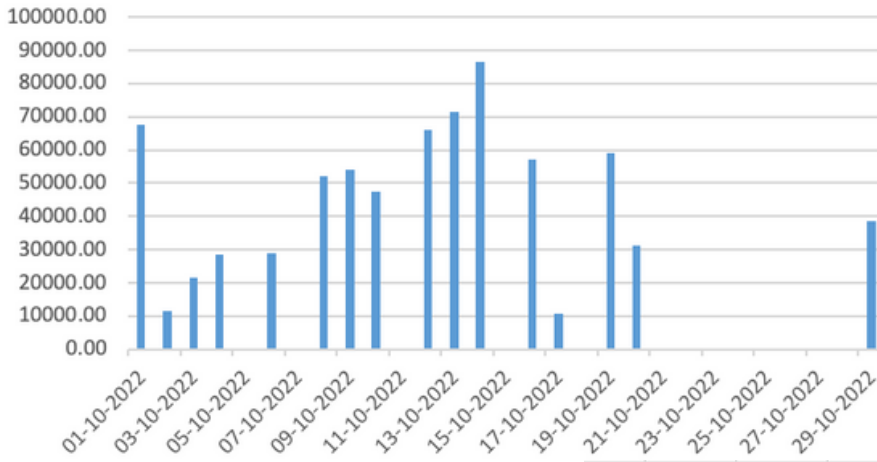
### Sep Sale



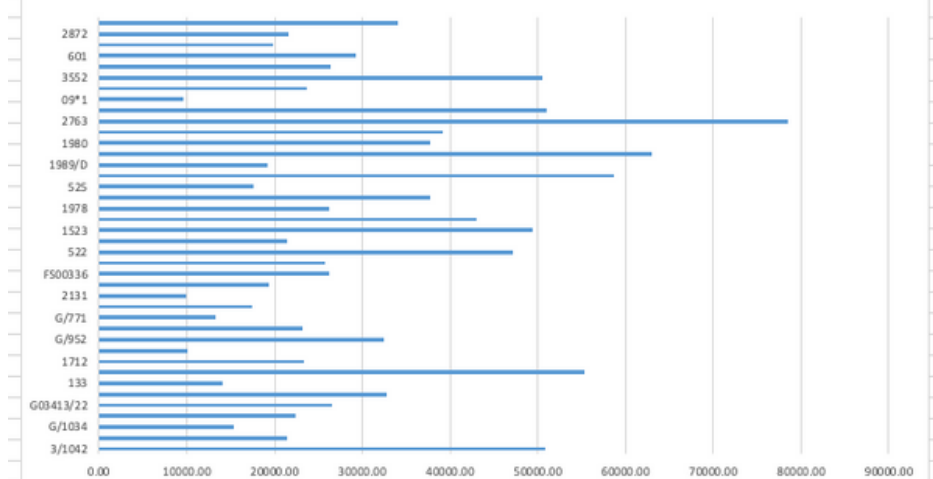
### Sept Purchase



## Oct Sales



## Oct Purchase



Row Labels	Count of Vch No. Sales	Sum of Debit	Sum of Credit	Count of Vch No.
Row Labels	Count of Vch No. Sales	Sum of Debit	Sum of Credit	Count of Vch No.
Textile Market Tonk	15	5813121.76	421107	22
Ashok Silk Mills Surat	12	282309	309347	12
Shri Salasar Collection Sarwar	10	257380.76	252407	10
Sumatnath Textiles Surat	8	200170	170694	9
Sagar Sangam Synthetics Bhilwara	8	195172	170090	8
Shree Balaji Collection Surat	6	236841	96564	6
SAWARIYA FASHION SURAT	5	98000	58531	5
Rajshree Enterprises Rethal	5	151024	127929	5
Kamla Silk Mills Surat	4	120244	86003	5
Tater Silk Mills Pvt Ltd Surat	4	97811	83744	4
SHRIE MAHALAXMI PRINTS SURAT	3	93981	59241	3
B Tex Fashion Surat	3	48547	85409	3
Kali Fashion Surat	3	76248	50591	3
K.K. TEXTILES KERRI	3	108280	134206	3
Bherav Prints Surat	3	83457	64734	3
Audnath Textiles Surat	3	102837	60708	3
Mayur Fabrics Surat	3	47297	93177	3
Nakoda Textile Mills Balotra	3	81149	73658	3
Gautam Handloom Panipat	2	119925	24150	2
Jamuna Handloom Industries Par	2	44056	55860	2
Ashwani Textiles Ludhiana	2	143761	21000	2
Amrit Creation Surat	2	48905	50200	2
Hare Krishna Fabrics Surat	2	44310	32205	2
Alkapuri Silk Mills Surat	2	25352	74885	2
VAIDHMAN TEXTILES SURAT	2	57432	50232	2
Orwal Fabrics Ichalkaranji	2	17329	87589	2
Ashapurna Textiles Surat	2	81009	30219	2
Shree Hari Textiles Ludhiana	2	61892	61480	2
J.P. Enterprises Pali-Manwar	2	43430	83180	2
Shyam Ji Dresses Delhi	2	93187	64050	2
Genuva Designers Surat	2	43495	64785	2
TIRUMALA SYNTHETICS SURAT	2	97017	53394	2
DIVYA FAB INTERNATIONAL PVT L	2	67816	61026	2
LADDU GOPAL CREATION SURAT	2	70550	58338	2
Rohit Textiles Malpura	2	62937	69807	2
Shiv Yogi Tex Print Surat	2	49116	39733	2
Viral Textiles Pvt Ltd Ahmedabad	2	48484	30292	2
Yogi Fab Surat	2	59136	45000	2
ROANSH FASHION SURAT	2	80526	93305	2
Salasar Fabrics Surat	2	37674	40010	2
Raj Ratan Fashion Surat	2	81592	53344	3
Namkar Fashion Jodhpur	2	34860	103393	2
Gandhar Gautam Textiles Jodhpur	1		17349	1
Meheta Jang Ramesh Kumar Pali	1		43785	1
Bherwa Fashion Pali Manwar	1		17505	1
Shefal Silk Mills Pvt Ltd Surat	1		8909	1
Rajkamal Fashion Surat	1		23451	1
Mayank Textiles Mills Balotra	1		7392	1
Anchal Synthetics Surat	1		17661	1
Manudhar Tex Com Balotra	1		22733	1
Kadim Fashion Surat	1		15624	1
Manglam Plus Ahmedabad	1		30402	1
V.L. Traders Panipat	1		23625	1
Manglam Corporation Ahmedabad	1		29035	1
Sagar Prints Surat	1		30174	1
Manglam Ahmedabad	1		30870	1
Gurumanak Textiles Surat	1		44100	1
Mangli Kothari & Co. Balotra	1		21664	1
Rohit Dhanwal Traders Surat	1		47250	1
Man Mandir Dresses Surat	1		43885	1
Shree Rupana Shirts New Delhi	1		17325	1
Maresh Weaving Factory Ludhiana	1		20492	1
C.K. TEXTILES SURAT	1		19533	1
Mahadeep Fabrics Pali	1		20213	1
Vishal Mills India Jaisal	1		24250	1
Mahtal Industries Balotra	1		52080	1
BASF INDIA LIMITED JAIPUR	1		34965	1
Sukan Silk Mills Surat	1		37363	1
Vanshika Garments Delhi	1		15750	1
KL Betra Hosiery Ludhiana	1		10238	1
Rahul Emporium Jodhpur	1		22575	1
Samar Samras Surat	1		11813	1
R.S. Textiles Ludhiana	1		21717	1
Kalptaru Creation Surat	1		11389	1
Patti Hosiery Factory Ludhiana	1		23888	1
Sandeep Textile Mills Pali Manwar	1		27893	1
Neha Enterprise Surat	1		15550	1

The graph not only illustrates the cumulative sales versus purchase dynamics but also provides valuable insights into the monthly pattern of the factory's sales and purchases. A notable observation is that the factory's purchasing capacity consistently exceeds its sales, indicating a continuous acquisition of new raw materials even during months with lower sales figures. While there is a month, like May, where sales outpace purchases, this pattern is largely reversed in most months, underscoring the quantity-centric nature of sales.

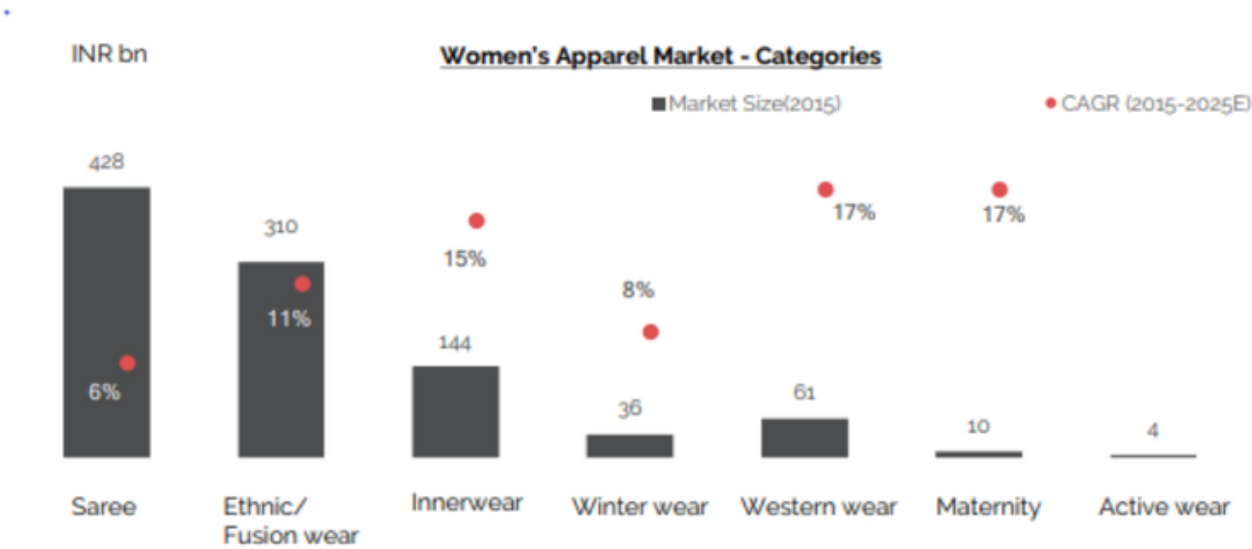
Upon meticulous examination of the inventory, sales, and purchase data, discernible patterns emerge, leading to reasonable assumptions. It becomes evident that there are only a select few items within the inventory that contribute significantly to profit generation. Conversely, the majority of items appear to function as stock inventory, with minimal sales impact or even some representing loss-making fabrics. This observation emphasizes the importance of identifying and prioritizing profit-making items while addressing the challenges posed by excess stock or non-profitable fabrics to enhance overall financial performance.

**Observations :**

The fabric from : 1. Textile Market Tonk 2. Ashok Silk Mills Surat 3.Shri Salasar Collection Sarwar sells the high quality fabric which is in the most demand and being sold the most to yield a very high return and profit margin.











Most of the items are being sold at the loss margin, and are being ordered in huge quantity.

**Objective 3: Sari Shop**



Create a section for the the trends and the new buy available up front visible

Increase the variety and the style such as Ethnic, Winterwear, Active wear.

 Decide to buy a saree for an occasion	 Discuss with friends and family	 Research for trends, pricing and options from sources	 Evaluate what you currently have and what you would want (Includes jewelry and accessories)
 Make a plan to visit the store/stores, and who to visit it with	 Describe to the vendor what you are looking for	 Try multiple sarees and get validation,	 Purchase a saree
 Choose matching blouse or get a blouse stitched	 Wear the saree	 Get validation for the saree (online/offline)	 Share the experience with others

source : <https://oviyum.com/2019/09/26/saree-buyology/>

Have a matching blouse and all the essentials that are needed with the saree wearing and other clothings.

Later we can ask them to recommend to the friend to get a discount on the next shopping

We can have female employee to better understand the demand and cater to it .

## Objective 4: Ratio Analysis

Principal Groups	1-Apr-22 to 8-Nov-22	Principal Ratios	1-Apr-22 to 8-Nov-22
<b>Working Capital</b>	15,01,776.52 Dr	<b>Current Ratio</b>	1.23 : 1
<i>(Current Assets-Current Liabilities)</i>		<i>(Current Assets : Current Liabilities)</i>	
<b>Cash-in-Hand</b>	61,75,807.26 Dr	<b>Quick Ratio</b>	0.84 : 1
<b>Bank Accounts</b>	11,97,756.85 Cr	<i>(Current Assets-Stock-in-Hand : Current Liabilities)</i>	
<b>Bank OD A/c</b>		<b>Debt/Equity Ratio</b>	0.11 : 1
<b>Sundry Debtors</b>	6,34,281.00 Cr	<i>(Loans (Liability) : Capital Account + Nett Profit)</i>	
<i>(due till today)</i>	<b>94,850.00 Dr</b>	<b>Gross Profit %</b>	(-)14.48 %
<b>Sundry Creditors</b>	66,87,716.18 Cr	<b>Nett Profit %</b>	(-)15.37 %
<i>(due till today)</i>	<b>67,62,631.18 Cr</b>	<b>Operating Cost %</b>	115.37 %
<b>Sales Accounts</b>	51,48,835.85 Cr	<i>(as percentage of Sales Accounts)</i>	
<b>Purchase Accounts</b>	52,46,708.41 Dr	<b>Recv. Turnover in days</b>	0.00 days
<b>Stock-in-Hand</b>	25,70,946.65 Dr	<i>(payment performance of Debtors)</i>	
<b>Nett Loss</b>	7,91,602.30 Dr	<b>Return on Investment %</b>	(-)37.98 %
<b>Wkg. Capital Turnover</b>	3.43	<i>(Nett Profit / Capital Account + Nett Profit )</i>	
<i>(Sales Accounts / Working Capital)</i>		<b>Return on Wkg. Capital %</b>	(-)52.71 %
<b>Inventory Turnover</b>	2.00	<i>(Nett Profit / Working Capital) %</i>	

Adapted advice are needed in light of the textile industry's quick ratio of 0.84:1, which suggests possible liquidity difficulties. To build trust, highlight the store's durability, create a unique brand with a recognisable emblem, expand the selection of products to include unstitched apparel lines, and maximise smart pricing. These steps are intended to alleviate specific liquidity issues brought to light by the quick ratio in the textile sector. They also want to improve perceived value, reduce reliance on inventories for assets, and draw in consumers during moments of strong demand.

With a current ratio of 1.23:1, the textile industry demonstrates a relatively sound ability to cover its short-term liabilities. However, a concerning return on investment of -37.98% indicates a substantial loss on invested capital. Strategic measures are warranted to improve profitability and ensure a more favorable return on investment.

# Interpretation of Results and Finding

## Objective 1: Inventory Management

### Recommendation :

To optimize inventory management, it is advisable for the company to scrutinize previous month sales data and identify patterns before initiating the procurement of raw materials. This strategic approach enables a proactive response to market demands, minimizing excess inventory and associated costs.

Additionally, a suggested initiative involves creating a Business-to-Consumer (B2C) business plan for surplus inventory. This proactive step not only mitigates inventory losses but also preserves profits. By strategically targeting different markets, the factory owner can retain and sell surplus products at more favorable margins rather than liquidating them at reduced costs, thereby maximizing profitability.

## Objective 2: Sales and Purchase

### Recommendation :

To address the issue of products sold at a loss, strategic measures should be implemented to reduce and mitigate these loss margins. Analyzing the data further revealed that the company, due to the specialized nature of its offerings, purchases a limited variety of commodities in limited quantities. To navigate the variation in profit margins across months, it is recommended to expand the network and establish specific targets on a weekly or monthly basis.

Moreover, there is an opportunity to enhance profitability by increasing the input of sales that yield high profits, even if these products are ordered in smaller quantities. This shift in approach could potentially optimize the company's revenue streams and contribute to sustained financial growth.

Reduce the purchase quantity of raw material that yield low or no profit from the factories.

Do not sell the fabric on no profit and use the B2C channel to yield the better earnings.



### **Objective 3: Sari Shop**

In order to effectively address the challenges observed and elevate the shop's overall appeal, a set of strategic recommendations is presented. First and foremost, leveraging social proof becomes imperative; emphasizing the shop's enduring presence in the market since 1993 serves as a compelling testament to trust and quality.

This historical legacy should be prominently featured on primary signage, harnessing its potential as a powerful marketing tactic. Simultaneously, a concerted effort towards brand building is advised. Establishing the shop as a distinct brand can be achieved through the creation of a recognizable logo, accompanied by strategic marketing initiatives that emphasize brand recognition. This approach fosters customer loyalty and trust, further strengthening the shop's market position.

Furthermore, diversifying the product range emerges as a key strategy to appeal to a broader demographic. The addition of unstitched clothing lines, tailored to both the elderly demographic and young male customers, promises to expand the shop's niche and attract a more diverse customer base. Lastly, optimizing discount strategies based on inventory levels and seasonal fluctuations is recommended. The introduction of discounts during peak buying periods can strategically attract customers, contributing to increased footfall and revenue.

Collectively, these recommendations aim to position the shop as a trusted and recognized brand, diversify its product offerings to meet diverse customer needs, and implement strategic marketing and discounting tactics. Such strategic initiatives are essential for ensuring the shop's competitiveness and sustained success in the evolving local market.

### **Objective 4: Ratio Analysis**

Recommendations :

Addressing the financial challenges in the textile factory specializing in unstitched fabrics requires targeted solutions. Key potential remedies include:

Others:

Top 4 Solutions for Financial Challenges in the Textile Factory:

### **1. Cost Efficiency Measures:**

Conduct a thorough analysis of production costs to identify inefficiencies and implement targeted cost-saving measures. Streamlining manufacturing processes, negotiating favorable terms with suppliers, and optimizing resource utilization can contribute to improving the gross profit margin.

### **2. Investment Restructuring:**

Evaluate the allocation of investments and consider redirecting resources to areas with higher potential returns. This involves a strategic review of the product portfolio, market trends, and potential growth sectors to reverse the negative return on investment.

### **3. Operational Optimization:**

Implement measures to enhance operational efficiency and reduce the operational cost, which is currently at a high 115%. This may involve process reengineering, adopting lean manufacturing principles, and optimizing workforce deployment to create a more sustainable and cost-effective operational model.

### **4. Liquidity Management:**

Develop strategies to improve liquidity, such as negotiating favorable terms with suppliers or optimizing inventory management practice

### **Some of the other recommendations are :**

In addition to the industry-specific recommendations tailored for the textile sector, there are several general strategies that can benefit fabric/textile manufacturing businesses. One key suggestion is to consider outsourcing non-core activities, such as cleaning services. By doing so, the company can concentrate its efforts and resources on the essential functions of fabric production. This streamlined approach not only enhances operational efficiency but also contributes to cost-effectiveness.

Another valuable strategy is the adoption of a direct-to-consumer (DTC) model. This involves selling products directly to customers through online platforms, bypassing intermediaries. This approach not only reduces costs associated with middlemen but also provides a direct and potentially more profitable connection with consumers. It's an efficient way to meet customer demands and manage distribution.

Effective marketing plays a crucial role in promoting a fabric manufacturing business. Utilizing cost-effective methods, such as social media and email marketing, can be instrumental in reaching the target audience without incurring substantial expenses. Leveraging digital platforms for brand promotion ensures a broader reach while maintaining financial prudence.

Regular assessment is essential for the continuous improvement of cost-reduction strategies. This involves consistently evaluating the effectiveness of implemented measures and making necessary adjustments. Regular reviews help adapt to changing market conditions, ensuring the sustainability of cost-cutting initiatives over time.

Lastly, the adoption of lean manufacturing principles is recommended. This entails eliminating waste, enhancing product quality, and streamlining production processes to reduce time and resources. By embracing lean manufacturing, fabric manufacturers can operate more efficiently and economically, contributing to overall sustainability and success in the competitive market. These simplified and practical approaches collectively aim to enhance efficiency and financial sustainability in the garment manufacturing sector.

