

# SUPPLY CHAIN ANALYSIS

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## SUPPLY CHAIN & PRODUCT PERFORMANCE ANALYSIS

### Project Overview :

- This project analyzes the supply chain and product performance. The dataset contains key information related to product sales, customer demographics, stock levels, shipping costs, lead times, and supplier details. The analysis aimed to provide insights into product performance, improve supply chain efficiency, and better understand customer behavior through interactive Tableau dashboards.

### Objectives :

- Analyze Product Performance
- Assess Supply Chain Efficiency
- Understand Customer Demographics.

### Tools Used :

- Excel, Tableau



## ANALYSIS OBJECTIVES:

- Which Product Type generates the highest revenue?
- Are there any significant correlations between Lead times and Order quantities?
- How do Shipping costs vary by Shipping carrier and Location?
- What demographic group contributes the most to sales?
- Which suppliers have the most efficient manufacturing processes based on Manufacturing lead time and Production volumes?



## Product Performance Insights:



- The Price Distribution chart shows that Cosmetic products fall within the highest price range compared to other product types, indicating that they are positioned as premium items in the makeup product line, which may suggest a higher perceived value.



- The Product Sales chart shows that Skin Care products have the highest sales compared to other categories, indicating strong demand and customer preference in this segment, potentially driven by increasing awareness of skincare routines and the perceived long-term benefits of using these products.



- The Revenue Analysis chart shows that Skin Care products generate the highest revenue compared to other categories, highlighting their significant contribution to overall sales. This suggests that Skin Care not only has strong sales volume but also has greater customer demand, making it a key revenue driver.

### Overall Review :

- The high revenue from Skin Care products suggests strong demand and indicates a profitable area for strategic focus or potential marketing efforts. Additionally, the price difference between product types contributes to the variation in revenue, with lower-priced products relying on high sales volume and higher-priced products potentially driving revenue through premium positioning.

## Product Performance Dashboard

### Price Distribution



### Product Sales



Product type

skincare

haircare

cosmetics

Stock levels

0.0

10K

### Revenue Analysis

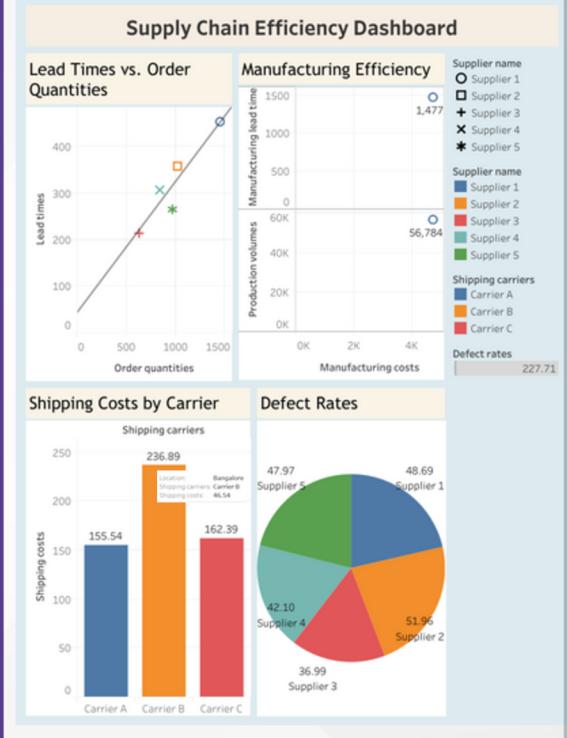


### Stock Levels

SKU	Stock levels
SKU0	58.0
SKU1	53.0
SKU2	1.0
SKU3	23.0
SKU4	5.0
SKU5	90.0
SKU6	11.0
SKU7	93.0
SKU8	5.0

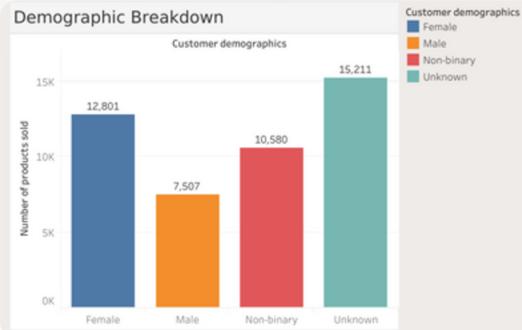
# SUPPLY CHAIN EFFICIENCY INSIGHTS:

- The analysis of the Lead Times vs. Order Quantities chart reveals a positive correlation between lead time and order quantity, as higher lead times correspond to larger order quantities. Suppliers 1 and 2 exhibit the longest lead times and highest order quantities, indicating that fulfilling larger orders typically takes more time. On the other hand, Supplier 3 stands out with the shortest lead time and lower order quantities, positioning it as the quickest supplier to process smaller orders relative to the other suppliers.
- This Manufacturing Efficiency chart compares Manufacturing Lead Time and Production Volumes across suppliers, highlighting the efficiency of each supplier. Supplier 1 has the highest manufacturing lead time and production volumes, while Supplier 5 shows lower figures in both categories.
- The analysis of the Shipping Costs by Carrier chart reveals that Carrier B consistently has the highest shipping costs compared to the other carriers. Additionally, Bangalore stands out with the highest shipping costs among all locations in the dataset.
- The analysis of the Defect Rates chart shows the defect rates by supplier. Supplier 2 has the highest defect rate at 51.96%, indicating potential quality control issues or inefficiencies in their production processes. On the other hand, Supplier 3 has the lowest defect rate at 36.99%, suggesting better manufacturing standards or stricter quality checks compared to other suppliers.

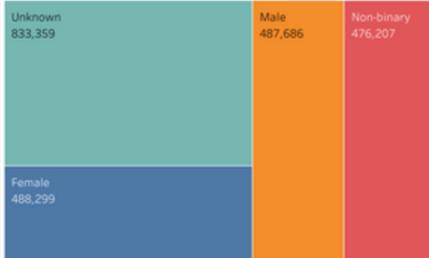


# CUSTOMER DEMOGRAPHICS

- The analysis of the demographics breakdown reveals that the "Unknown" demographic has the highest number of products sold at 15,211, followed by female customers at 12,801. This may be attributed to incomplete details of the customers, leading to a higher count for the "Unknown" category.



Revenue by Demographics



## ABOUT 36.46%

of total revenue "Unknown" category holds the highest revenue, indicating that a significant portion of the customer demographic data might be missing or not categorized properly. This makes the Female group, with 21.36%, the next largest identified category in terms of revenue,



## KEY INSIGHTS:

- **Product Performance Dashboard:** Skin care products lead in both product sales and revenue, with mid-range prices proving to be the most successful, offering the best balance between affordability and profitability.
- **Supply Chain Efficiency Dashboard:** Supplier 2 needs to improve its quality control to reduce its high defect rate of 51.96%, while Supplier 3 with a low defect rate of 36.99% highlights its strong quality standards and reliability
- **Customer Demographics Dashboard:** The "Unknown" category, with the highest number of products sold and revenue, suggests missing or improperly categorized customer data. Despite this, female customers, with lower revenue but identifiable demographics, come next in importance

## ACTIONABLE INSIGHTS:

- Fix data gaps in the "Unknown" category and target marketing efforts on the Female group, which makes up 21.36% of revenue.



- Expand the Skin Care line in mid-range segments to maximize strong demand and revenue, and improve targeted marketing with accurate customer data.

- Prioritize smaller orders with Supplier 3 for faster fulfillment and lower defect rates, while negotiating better shipping rates with Carrier B and focusing on quality improvements with Supplier 2.

## CONCLUSION:

- Actionable insight is to focus on leveraging the strong customer demand and high revenue from skin care products for strategic business efforts. Additionally, addressing and improving the incomplete or misclassified customer data in the "Unknown" category can enable a more comprehensive understanding of the customer base.



# THANK YOU

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