Supply Chain Analysis

Transforming Data into Actionable Insights: A Dashboard Showcase

Business Analyst |Tableau & Excel

Amisha

https://github.com/Amishaagarg/Supply-Chain-Management-Dashboard.git

Supply Chain Performance and Optimization: The Need for Insight Key Points

1. What is the business issue?

- Current Challenge: Our supply chain faces inefficiencies in lead times, inconsistent supplier performance, high shipping costs, and product quality defects. These issues impact the overall efficiency, leading to delays, increased costs, and potential customer dissatisfaction.

2. Why is this problem important?

- Why It Matters: Supply chain inefficiencies directly affect customer satisfaction and profitability. Delays in product deliveries and rising costs from underperforming suppliers or expensive shipping options put pressure on profit margins and the ability to meet market demands on time.

3. How is solving it beneficial?

- Benefits of Solving: By optimizing the supply chain, we can streamline operations, reduce costs, and improve delivery times. This ultimately leads to increased profitability, better resource management, and improved customer satisfaction, making the company more competitive in the market.

Analysis Objectives

1. Which Product Type generates the highest revenue?

2. Are there any significant correlations between Lead times and Order quantities?

3. How do Shipping costs vary by Shipping carrier and Location?

4. Which suppliers have the most efficient manufacturing processes based on

5. Manufacturing lead time and Production volumes?

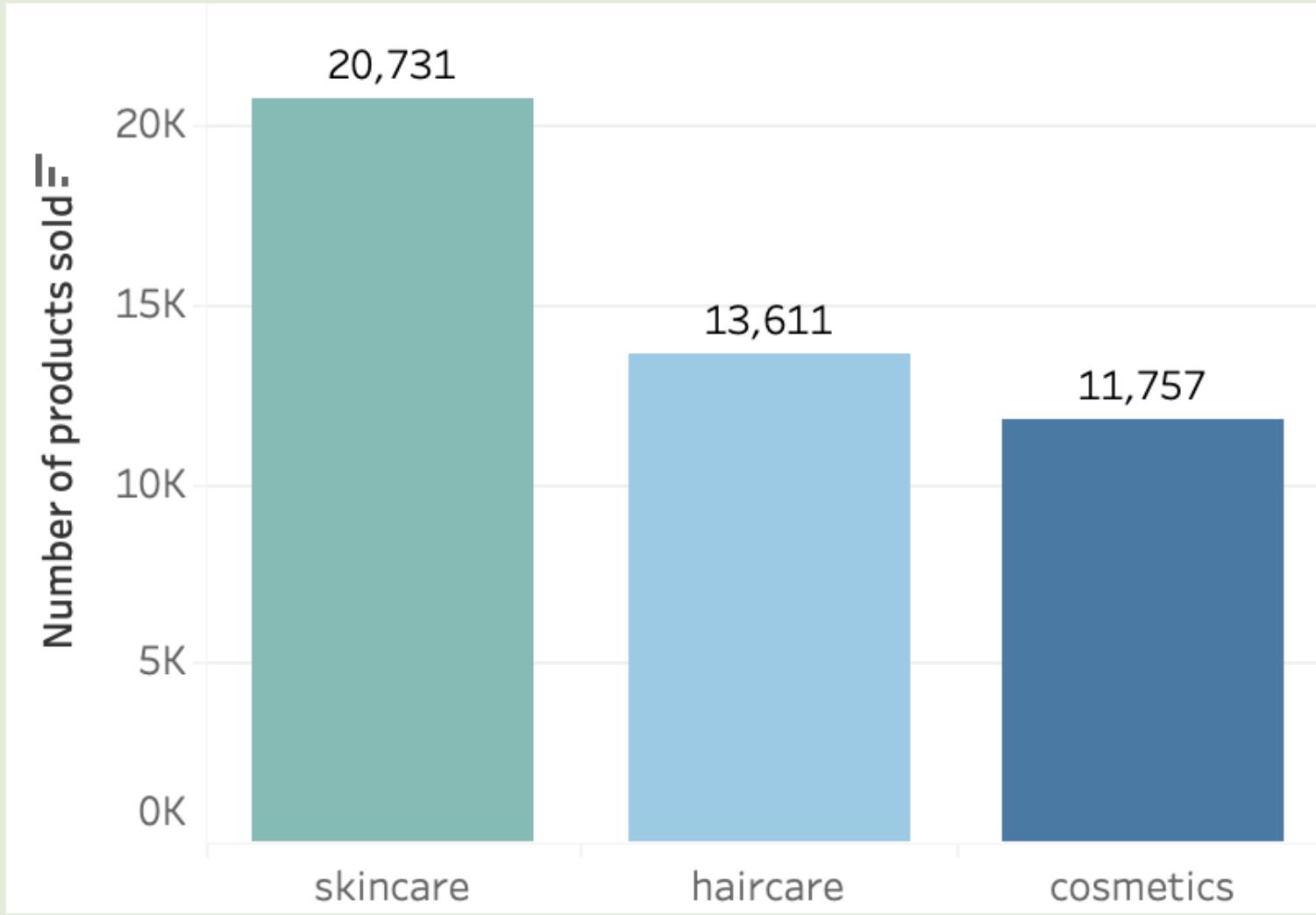6. What demographic group contributes the most to sales?
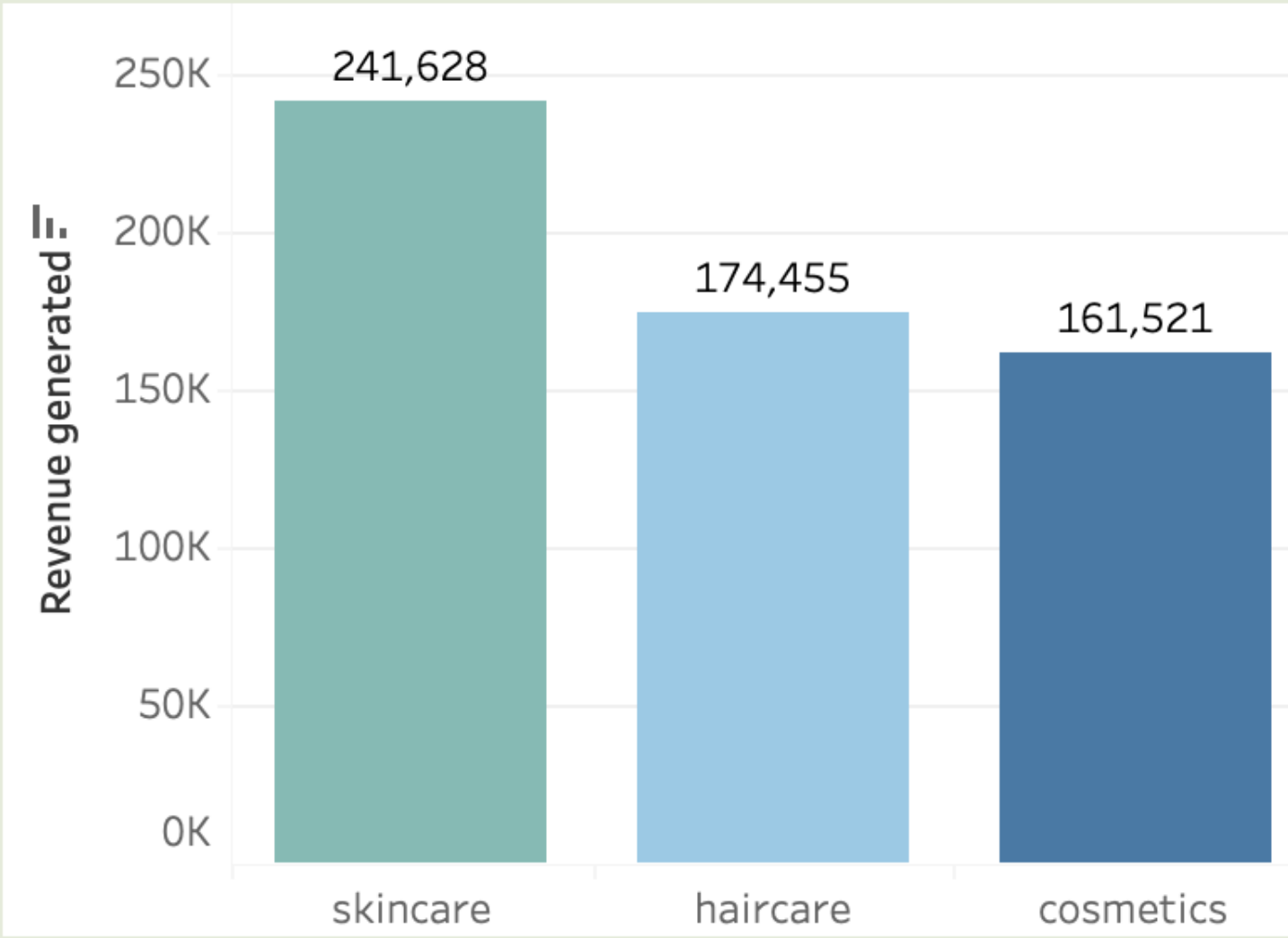
Product Performance Dashboard
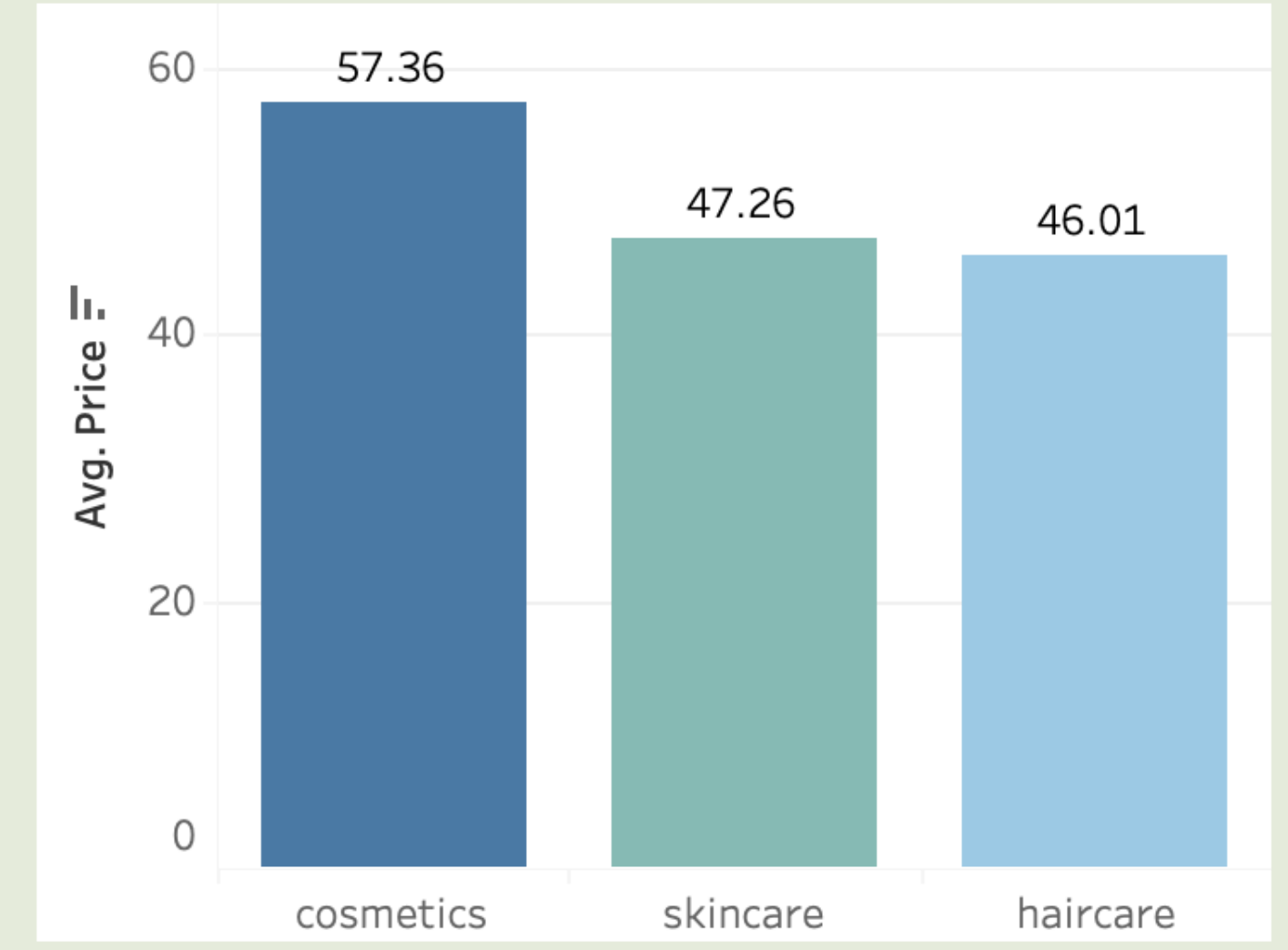
Product type

(All) ▾

Product Sales

Number of products sold

skincare	haircare	cosmetics
20,731	13,611	11,757

Revenue Analysis

Revenue generated

skincare	haircare	cosmetics
241,628	174,455	161,521

Price Distribution

Avg. Price

cosmetics	skincare	haircare
57.36	47.26	46.01

Stock Levels

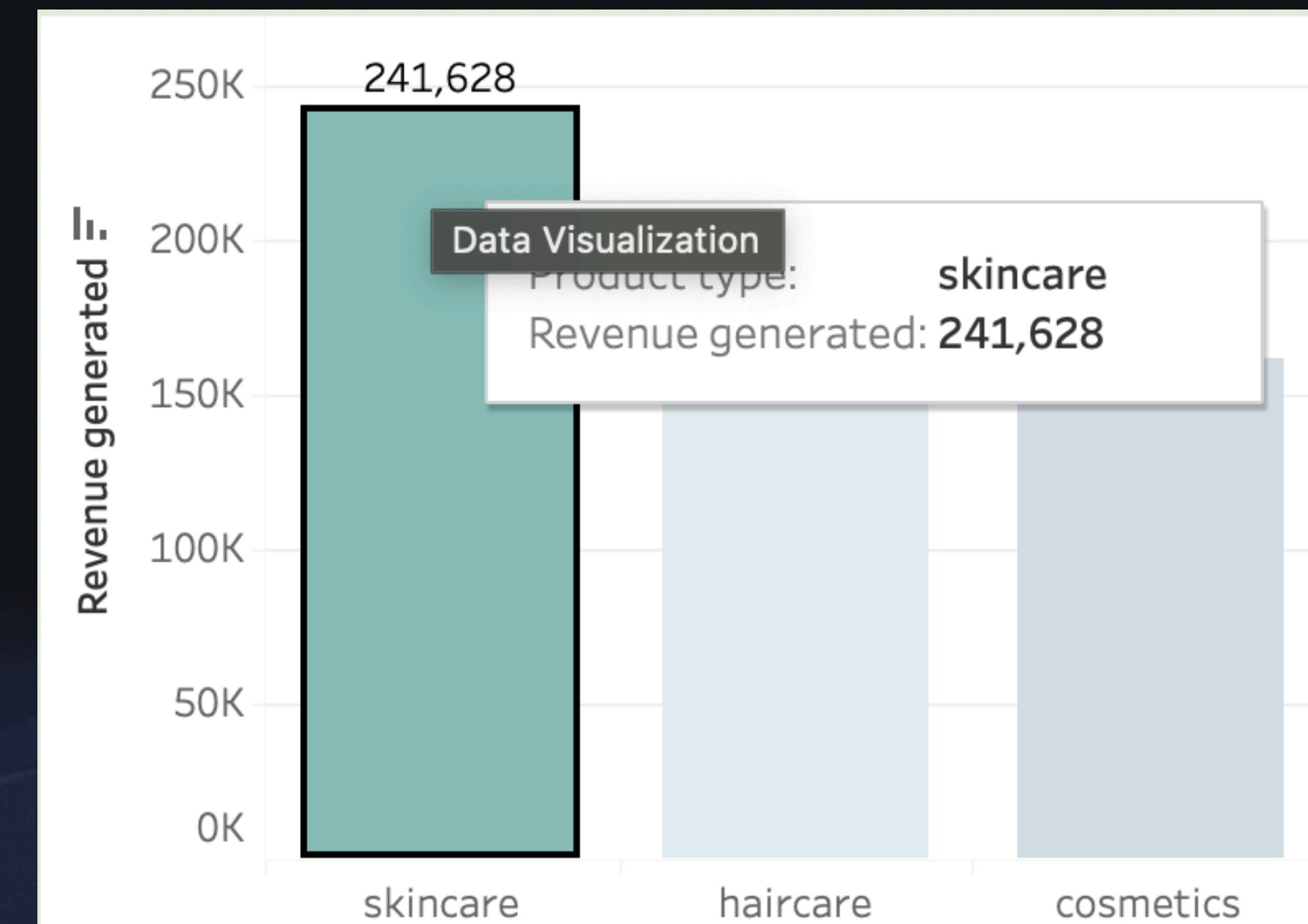| Stock levels	SKU0	SKU1	SKU2	SKU3	SKU4	SKU5	SKU6	SKU7	SKU8	SKU9	SKU10	SKU11	SKU12	SKU13	SKU14	SKU15	SKU16	SKU17	SKU
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Product Performance Dashboard - Revenue Insights

Content/Key Insights:

- 🧴 Skincare generates the highest revenue, amounting to ₹241,628, which makes up the largest share among all product categories.
- 🧼 Haircare and 💄Cosmetics follow with revenues of ₹174,455 and ₹161,521 respectively.
- The high revenue from Skincare products suggests strong demand and could indicate a profitable area for strategic focus or marketing efforts.
- Price differences between product types also contribute to revenue variations (e.g., Skincare products have a mid-range average price, but high volumes).
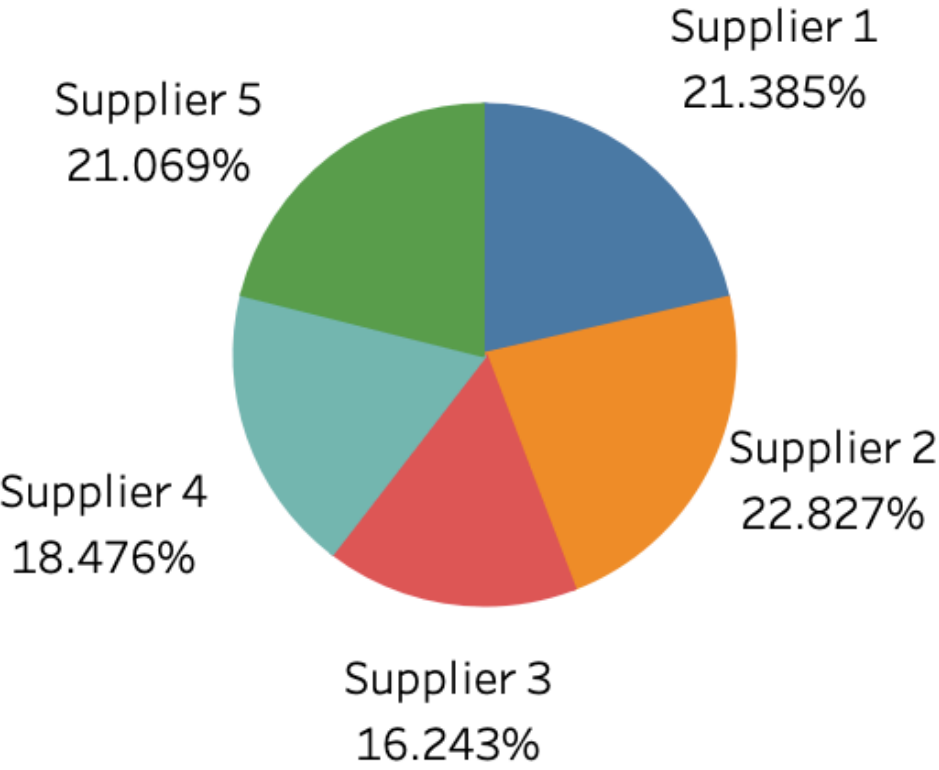
Suppy Chain Efficiency Dashboard
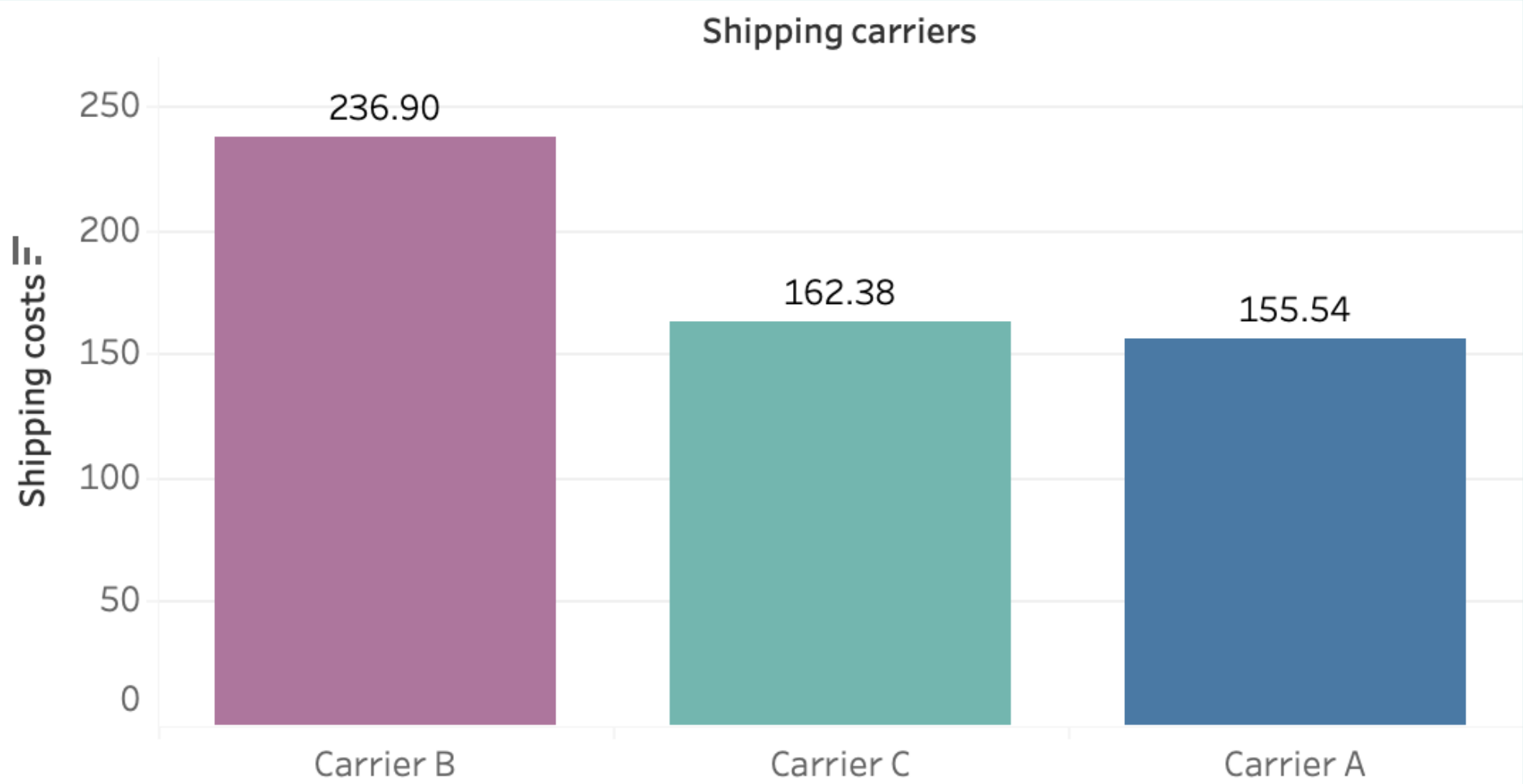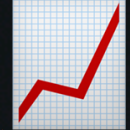
Lead times vs Order Quantities

Location

(All) ▼

Lead times (y-axis)
Order quantities (x-axis)

Data Visualization

1,458
Supplier 1

1,022
Supplier 2

842
Supplier 4

968
Supplier 5

632
Supplier 3
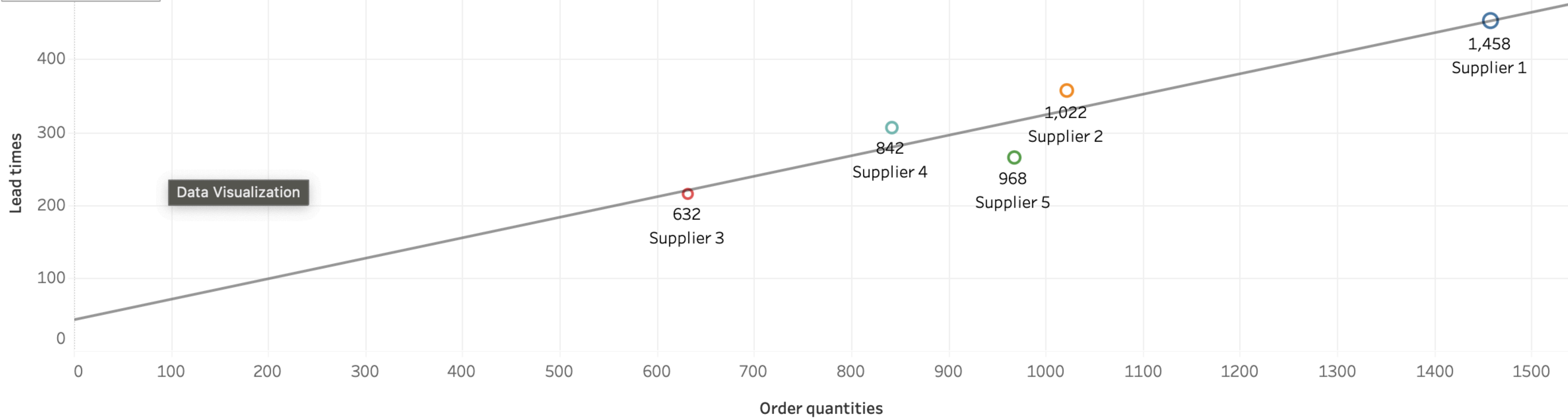
Defect rates by Suppliers

Supplier 1
21.385%

Supplier 2
22.827%

Supplier 3
16.243%

Supplier 4
18.476%

Supplier 5
21.069%

Shipping Costs by Carrier

Shipping carriers

236.90

162.38

155.54

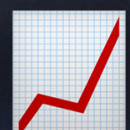Shipping costs (y-axis)

Carrier B

Carrier C

Carrier A

Supply Chain Efficiency Dashboard

- Lead Times and Order Quantities

Content/Key Insights:

- 📈 There is a positive correlation between lead times and order quantities, meaning that as order quantities increase, lead times tend to grow.
- 🚚 Suppliers with higher production volumes (Supplier 1, Supplier 2) generally experience longer lead times.
- ⚙️ Supplier efficiency varies: Supplier 3 stands out with both the shortest lead time (around 100 days) and lowest order quantity.
- 📈 Understanding this correlation helps in improving supply chain efficiency, as focusing on reducing lead times for large orders could have a significant impact.

Supply Chain Efficiency Dashboard

- Shipping Costs Analysis

Content/ Key Insights:

- Carrier B has the highest shipping costs, particularly in Bangalore 📈.

- Carrier A and Carrier C offer lower costs but show variability based on location 📉.

- Bangalore incurs higher shipping costs across all carriers, possibly due to its geographic distance from major hubs 📦.

Shipping Costs by Carrier

Shipping carriers

✓ Keep Only	⊘ Exclude
Data Visualization	

Shipping carriers: **Carrier B**
Shipping costs: **236.90**

236.90

155.54

Shipping costs

Carrier B   Carrier C   Carrier A

Supply Chain Efficiency Dashboard

- Supplier Efficiency

Context/ Key Insights

1. ⚙️ Efficient Suppliers:

- Supplier 3 and Supplier 4 with shorter lead times and higher order volumes indicate greater efficiency.

- Comparison to other suppliers, Supplier 1 shows longer lead times, indicating lower efficiency.

2. ⚠️ Defect Rates:

- Discuss defect rates as an additional measure of supplier performance, highlighting their impact on overall efficiency.

Powering Insights

📋 Supplier Data (Lead Times, Defect Rates)
🚚 Shipping Carrier Data (Costs)
🛒 Customer Data (Revenue, Orders)
📦 Product Data (Quantities)

Metric	Supplier 1	Supplier 2	Supplier 3
Lead time	200 Days	150 Days	100 Days
Defect Rate	21.38%	22.83%	16.24%
Order Quantities	1458	1022	632

• Lead Time: Fast delivery = happier customers ! ⏱️
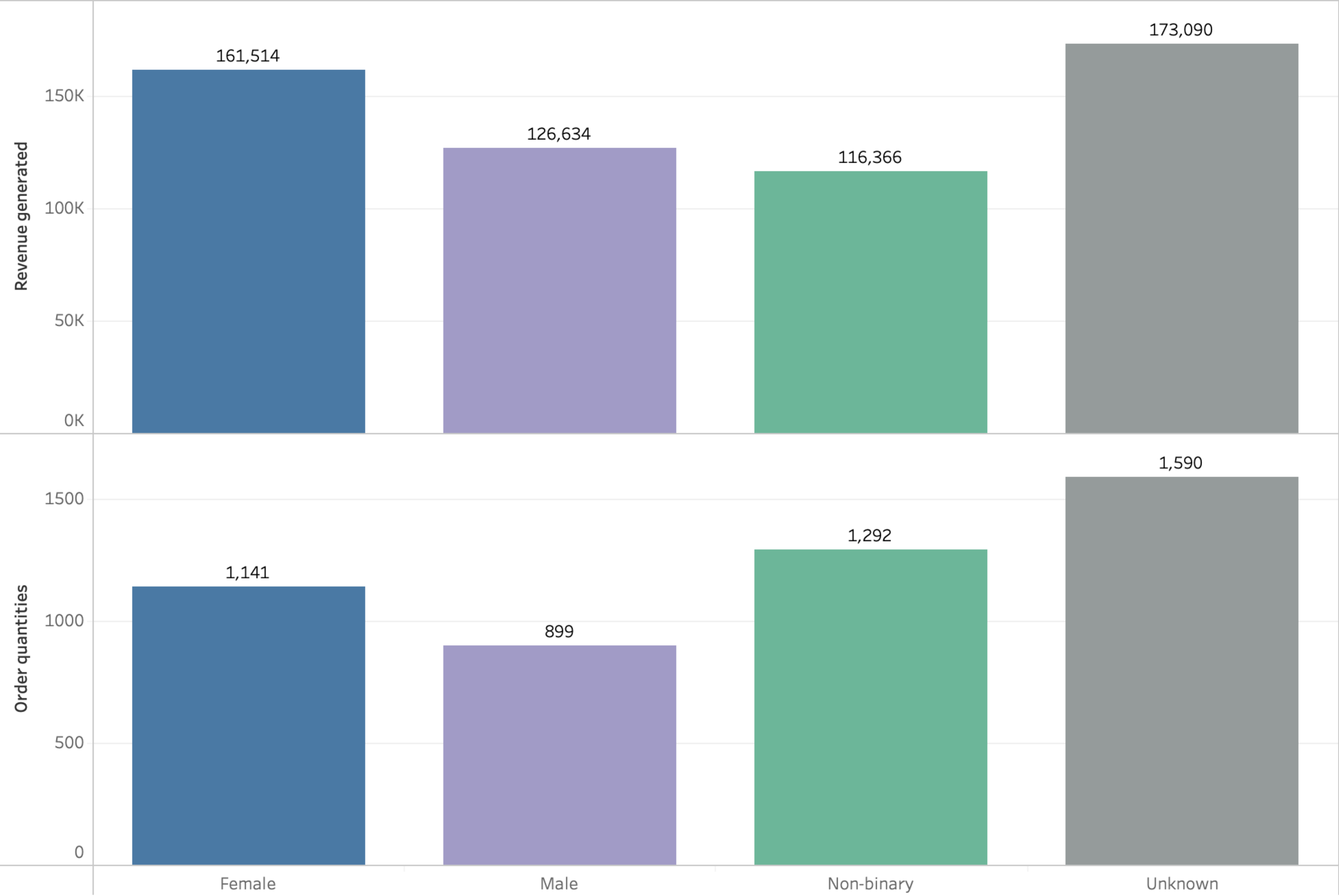
• Defect Rate: Higher defects = higher costs ! ⚠️

• Shipping Costs: Optimized shipping reduces expenses ! 🚚

Customer Demographics Dashboard

- Demographic Sales Contribution

Context/ Key Insights:

The Unknown demographic group generates the highest revenue and order quantities, followed by Female customers.

- Reasons for High Revenue from Unknown Group: Possible factors include incomplete data or lack of customer profile information.

- Opportunities for Growth: Targeting known demographic groups more effectively could unlock additional revenue.

Actionable Insights and Next Steps

Key Takeaways:

- 🚚 **Shipping Costs Dashboard**: Carrier B has the highest shipping costs, particularly in Bangalore, highlighting the need for negotiations or alternate carriers.

- ⚙️ **Supplier Efficiency Dashboard**: Suppliers with shorter lead times and higher order volumes (e.g., Supplier 3 and Supplier 4) demonstrate greater efficiency, while Supplier 1 shows longer lead times.

- 👥 **Customer Demographics Dashboard**: The Unknown demographic generates significant revenue, but Female customers lead in revenue contribution with ₹161,514.

Actionable Insights:

- 🧴 **Focus on Skincare Products**: Given their high revenue potential, consider enhancing marketing strategies around skincare.

- 🚚 **Optimize Supplier Relationships**: Prioritize suppliers with efficient manufacturing processes to improve lead times and reduce costs.

- 📋 **Improve Customer Data Collection**: Enhance efforts to gather complete customer profiles to better target marketing efforts and boost revenue from known demographics

Next Steps:

- **Further Data Exploration**: Investigate the most efficient suppliers to maximize performance and ensure timely deliveries.

- **Re-evaluate Shipping Carrier Contracts**: Consider alternative carriers or negotiate better terms based on shipping cost analysis.