Supply Chain Performance Analysis

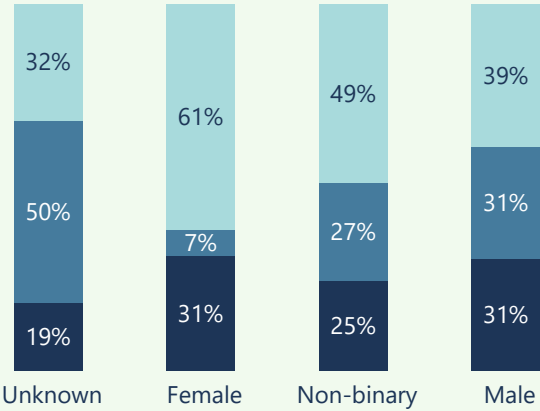## Sales

Products sold and revenue by Type

● Number of products ● Revenue
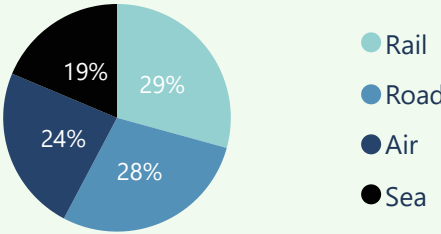
- skincare: 20.7K products, 242K revenue
- haircare: 13.6K products, 174K revenue
- cosmetics: 11.8K products, 162K revenue

Number of products (unit): 0K, 5K, 10K, 15K, 20K
Revenue ($): 100K, 150K, 200K, 250K, 300K
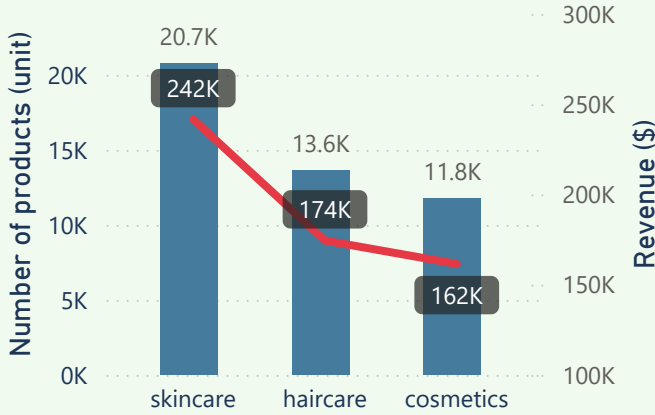
Product type by Customer demographic

● cosmetics ● haircare ● skincare

Demographic	skincare	haircare	cosmetics
Unknown	32%	50%	19%
Female	61%	7%	31%
Non-binary	49%	27%	25%
Male	39%	31%	31%

Transportation

Transportation modes inspection

● Rail ● Road ● Air ● Sea

- Rail: 29%
- Road: 28%
- Air: 24%
- Sea: 19%

Average shipping time and cost

● Shipping time (day) ● Shipping costs ($)

Carrier	Shipping time (day)	Shipping costs ($)
Carrier A	6.1	5.6
Carrier B	5.3	5.5
Carrier C	6.0	5.6

Routes inspection

● Route A ● Route B ● Route C

- Route A: 43%
- Route B: 40%
- Route C: 17%
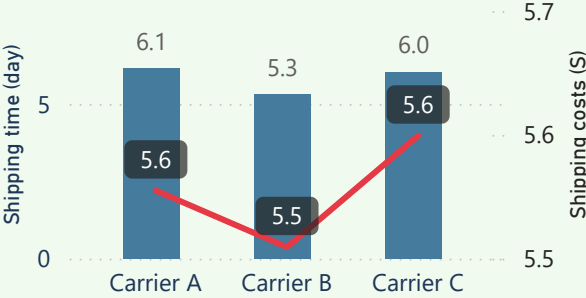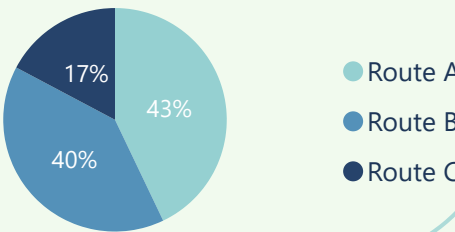
Manufacturing

Average manufacturing lead time

Type	Manufacturing time (day)
skincare	13.8
haircare	17.1
cosmetics	13.3
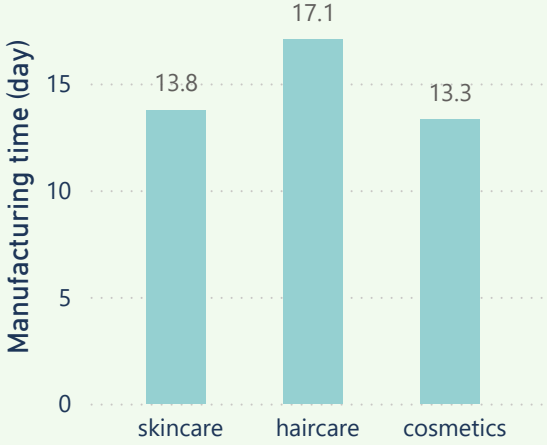
Average supplier's lead time

Supplier	Supplier's lead time (day)
Supplier 1	14.8
Supplier 4	15.2
Supplier 5	18.1
Supplier 2	18.5
Supplier 3	20.1
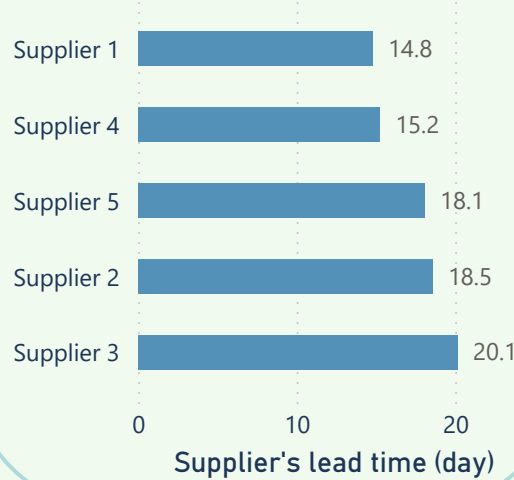
Lead time & Cost

Average lead time

Type	Lead time (day)
skincare	48.5
haircare	51.3
cosmetics	42.2

Average cost

Type	Cost ($)
skincare	6.2
haircare	7.3
cosmetics	7.7
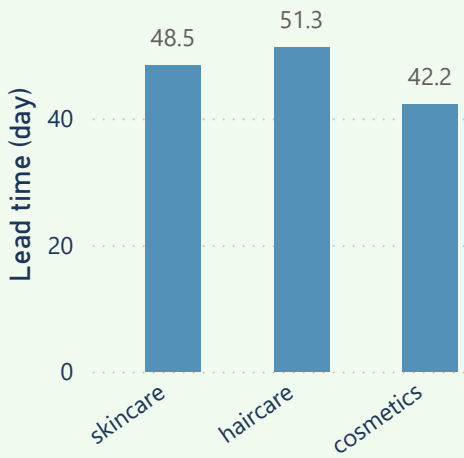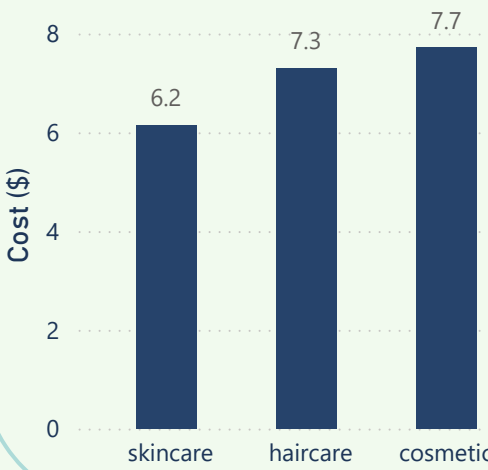
Insights

1. Sales
- **Skincare** leads in both units sold and revenue, significantly **outperforming** haircare and cosmetics.
- Despite **cosmetics** having the **lowest volume** sold, it maintains **competitive revenue**, implying **higher unit prices**.
- Customer Demographics show that **females are the largest buyers**, especially of **skincare**, suggesting targeted marketing can be focused here.

2. Transportation
- **Rail and Road are the most used** transportation modes, while Sea is least used.
- **Carrier B** performs the best with the **shortest average shipping time** and is the **most cost-effective carrier**, while Carrier A is the slowest.
- Route A is the most used, but further performance data would be needed to evaluate its efficiency.

3. Manufacturing
- **Haircare** products face the **longest average manufacturing lead time.**
- **Supplier 3** has the **longest lead time**, indicating a potential bottleneck.
- **Supplier 1** is the **most efficient**, possibly a better option for time-sensitive SKUs.

4. Lead time and Cost
- **Haircare** has the **longest average total lead time** and **moderate cost.**
- **Skincare**, despite high demand, has a slightly lower lead time and the lowest cost, making it the **most efficient product line**.
- **Cosmetics** have the **shortest lead time** but the **highest cost,** indicating a trade-off between speed and expense.

Summary & Recommendations
- **Focus on skincare:** It's the best-performing category across volume, revenue, and efficiency.
- **Review suppliers:** Long lead and manufacturing times suggest need for renegotiation or diversification.
- **Optimize carriers and routes:** Shift volume from Carrier A to B if service level agreements (SLAs) allow.
- **Investigate cosmetics costing:** With shortest lead time but highest unit cost, review production and sourcing strategies for potential savings.