



# *Supply Chain* **PROJECT**

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OUR TEAM

# DATA CLEANING

- NO MISSING VALUES FOUND ( NULL VALUES ).
- NO DUPLICATES FOUND.
- CREATED CALCULATED FIELD (RISK SCORE).
- CREATED CALCULATED FIELD (EOQ).
- PUT ORDER QUANTITIES COLUMN BESIDES EOQ COLUMN.

A screenshot of a formula bar. It shows a red 'X' button, a green checkmark button, a dropdown arrow, and the formula  $=\text{ROUND}(\text{SQRT}((2*\text{X2}*\text{E2})/(0.2*\text{E2})),0)$ .

A screenshot of a formula bar. It shows a dropdown arrow and the formula  $= (\text{U2} / \text{MAX}(\text{H2},1)) + (\text{P2} / \text{MAX}(\text{J2},1)) + ((\text{S2}+\text{M2})/2)$ .

# EXCEL FILE AFTER CLEANING

Y	Z	AA	AB
Risk Score	Risk Score(perct.)	EOQ(economic order quantity)	Order quantities(Repeated)
0.941820247	94%	43	96
2.522459974	252%	71	37
0.756770971	76%	38	88
1.280012353	128%	50	59
4.624387175	462%	96	56
1.179130134	118%	49	66
0.675169196	68%	37	58
4.030324374	403%	90	11
2.541872063	254%	71	15
4.985887437	499%	100	83
4.033104578	403%	90	80
0.638286436	64%	36	60
2.015413012	202%	63	85
2.741200577	274%	74	48
4.649400223	465%	96	78
0.643853992	64%	36	69

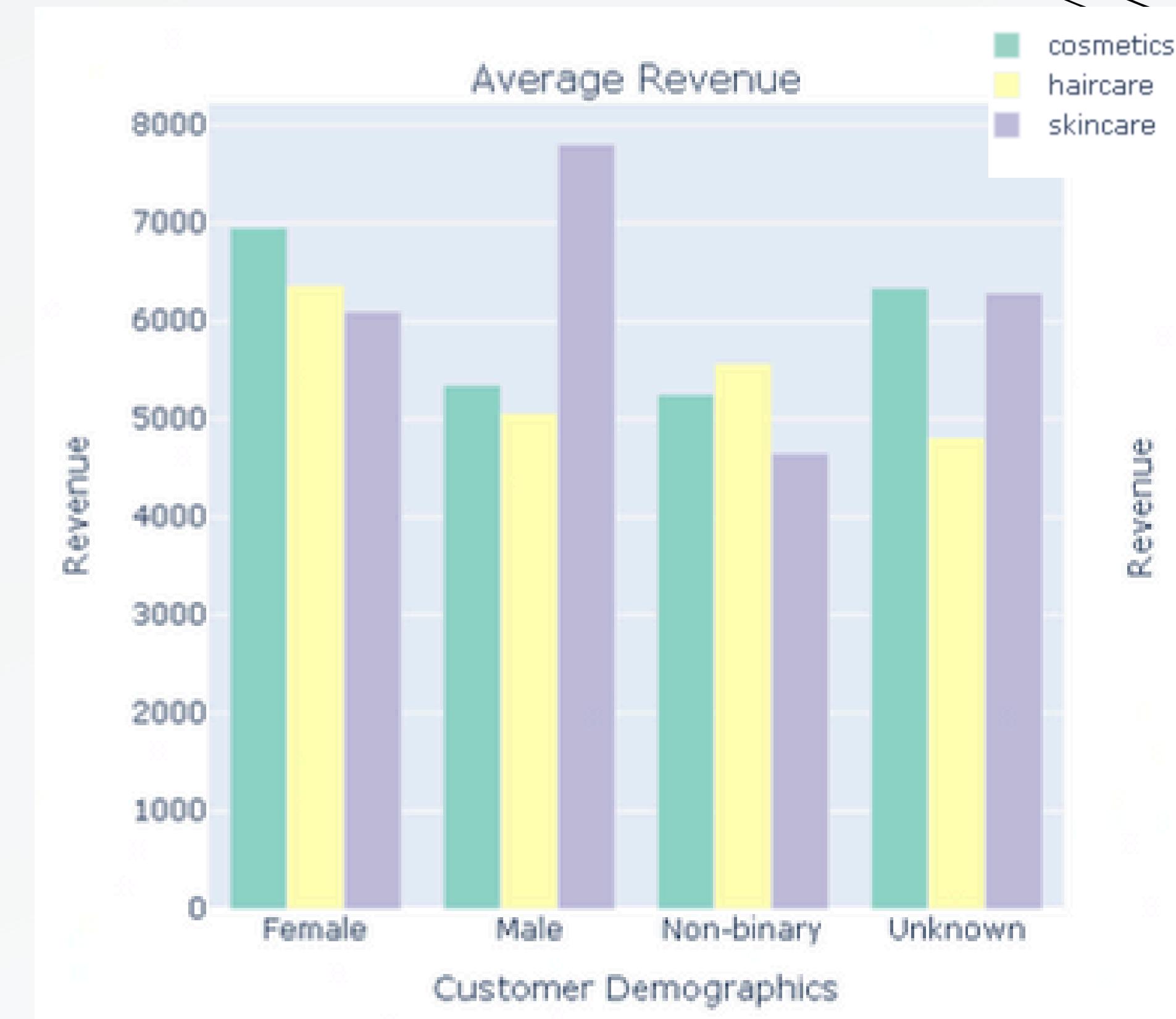
# REVENUE ANALYSIS BY CUSTOMER DEMOGRAPHICS AND PRODUCT TYPE

## INSIGHTS

### REVENUE DISTRIBUTION:

THE AVERAGE REVENUE IS HIGHEST FOR FEMALE CUSTOMERS ACROSS ALL PRODUCT TYPES, INDICATING A STRONG PREFERENCE OR HIGHER SPENDING AMONG THIS DEMOGRAPHIC.

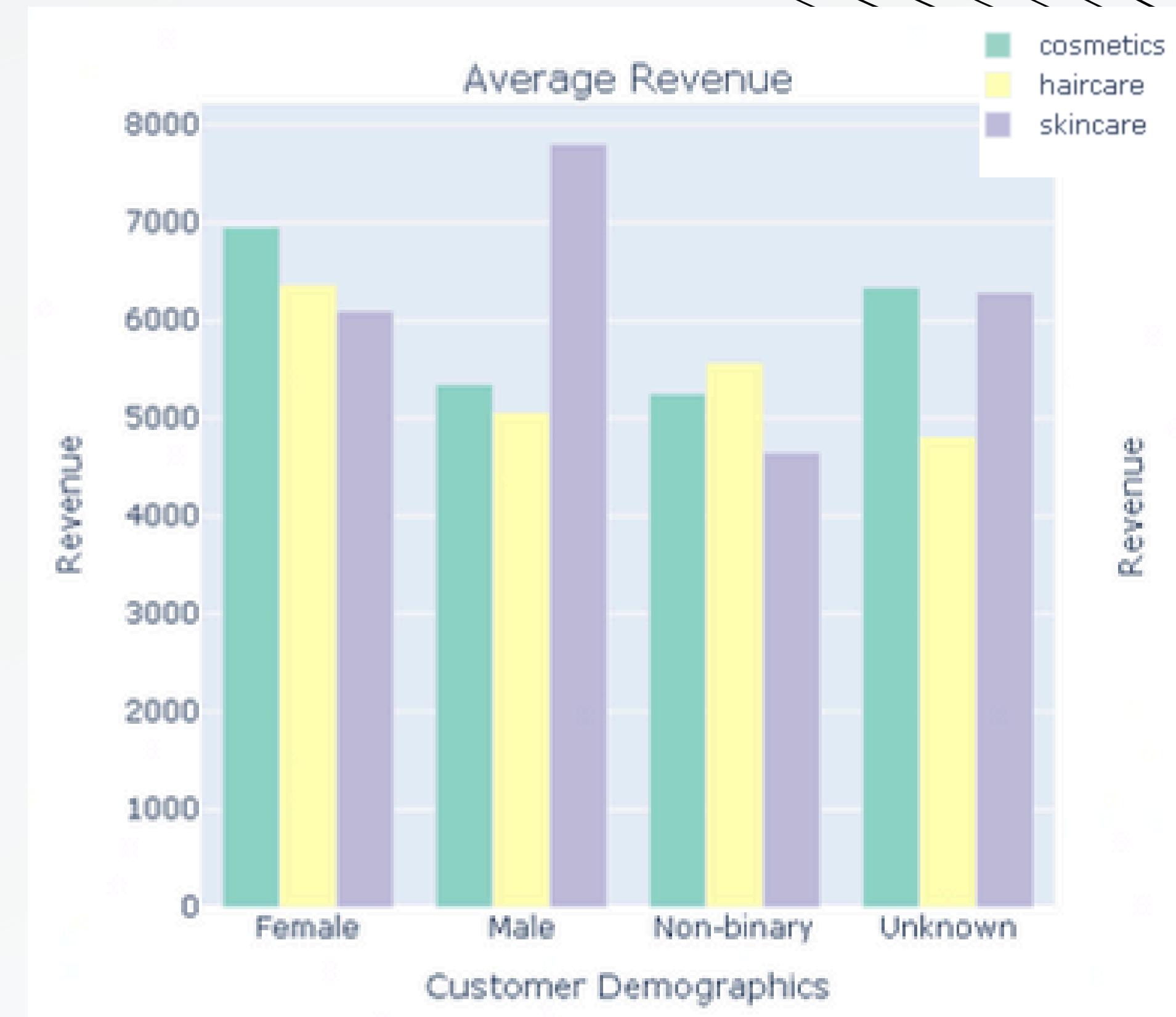
THE TOTAL REVENUE FOR EACH DEMOGRAPHIC SHOWS HOW MUCH EACH GROUP CONTRIBUTES OVERALL, WITH NOTICEABLE PATTERNS ACROSS GENDERS.



# INSIGHTS

## PRODUCT PREFERENCE:

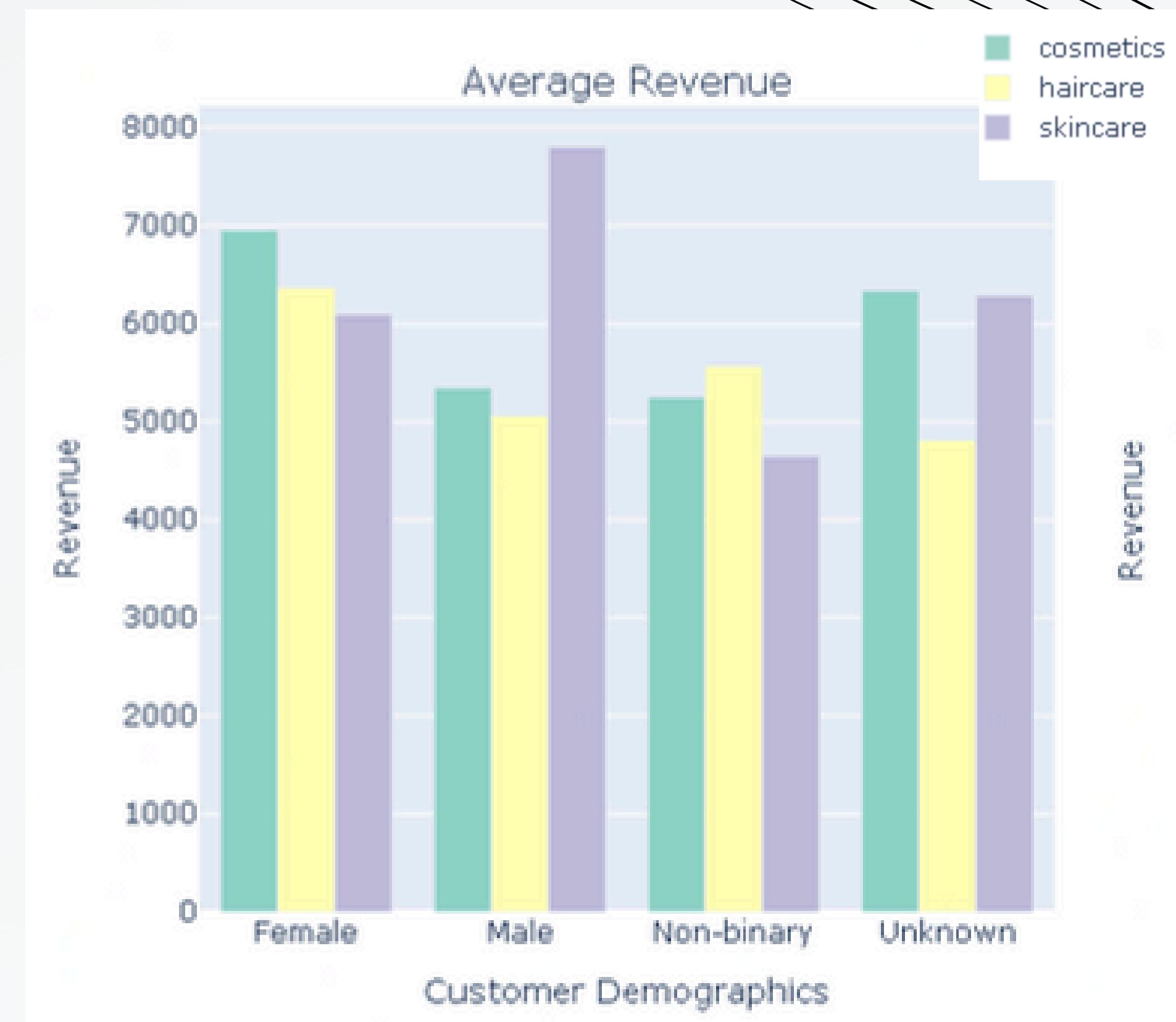
- DIFFERENT PRODUCT TYPES (COSMETICS, HAIRCARE, SKINCARE) MAY SHOW VARYING LEVELS OF POPULARITY AMONG DEMOGRAPHICS. FOR INSTANCE, IF SKINCARE HAS A LOWER TOTAL REVENUE COMPARED TO COSMETICS, IT MAY SUGGEST LESS INTEREST OR MARKET SATURATION.



## QUESTIONS

### 1. WHAT FACTORS CONTRIBUTE TO THE HIGHER AVERAGE REVENUE AMONG FEMALE CUSTOMERS?

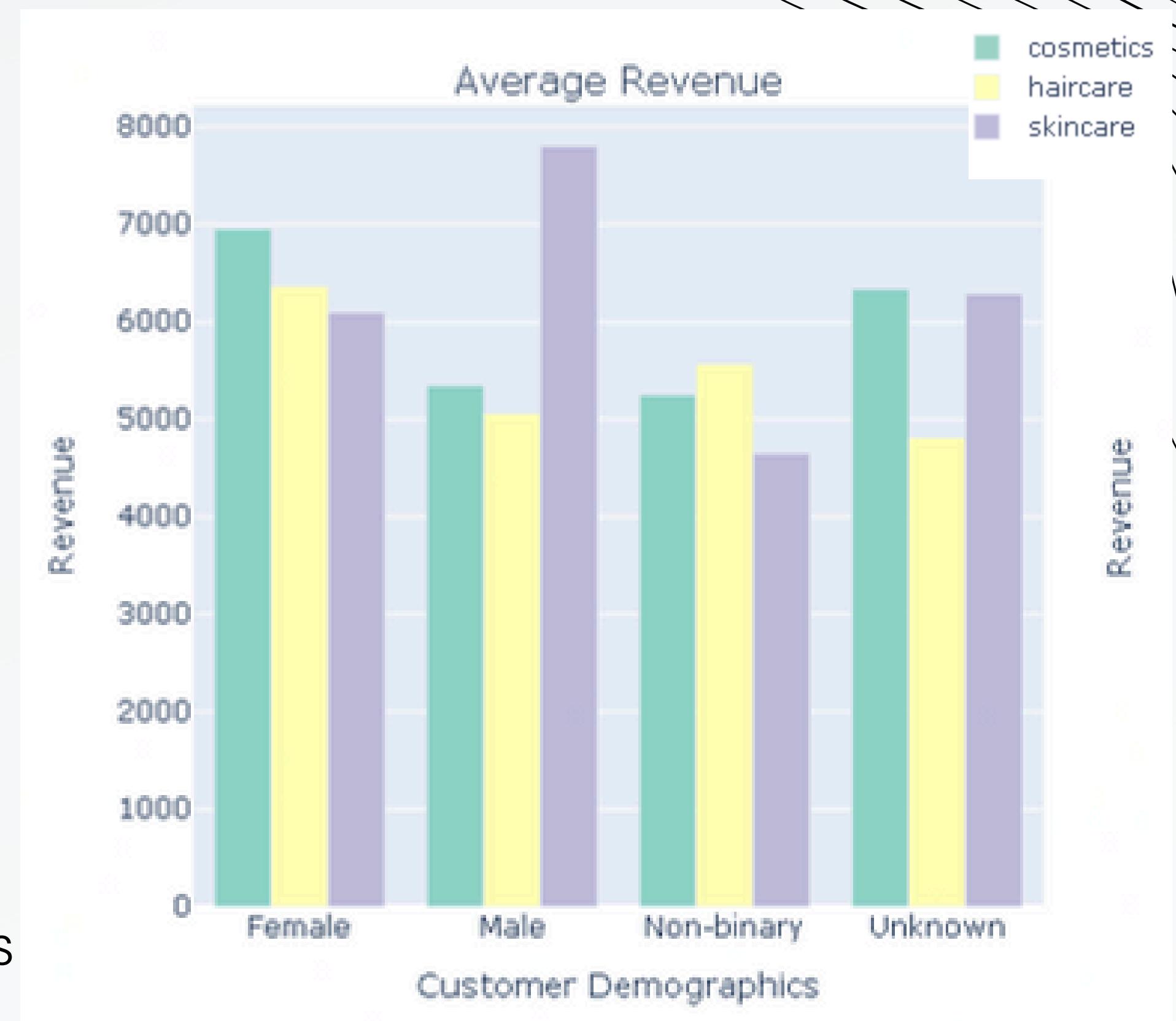
- POTENTIAL FACTORS INCLUDE:
  - TARGET MARKETING CAMPAIGNS THAT RESONATE MORE WITH FEMALE CUSTOMERS.
  - A WIDER VARIETY OF PRODUCTS SPECIFICALLY DESIGNED FOR WOMEN, LEADING TO HIGHER ENGAGEMENT.
  - SOCIAL AND CULTURAL FACTORS THAT ENCOURAGE SPENDING ON COSMETICS AND SKINCARE AMONG WOMEN.



## QUESTIONS

### 2. WHICH PRODUCT TYPE IS UNDERPERFORMING, AND WHAT COULD BE THE REASONS?

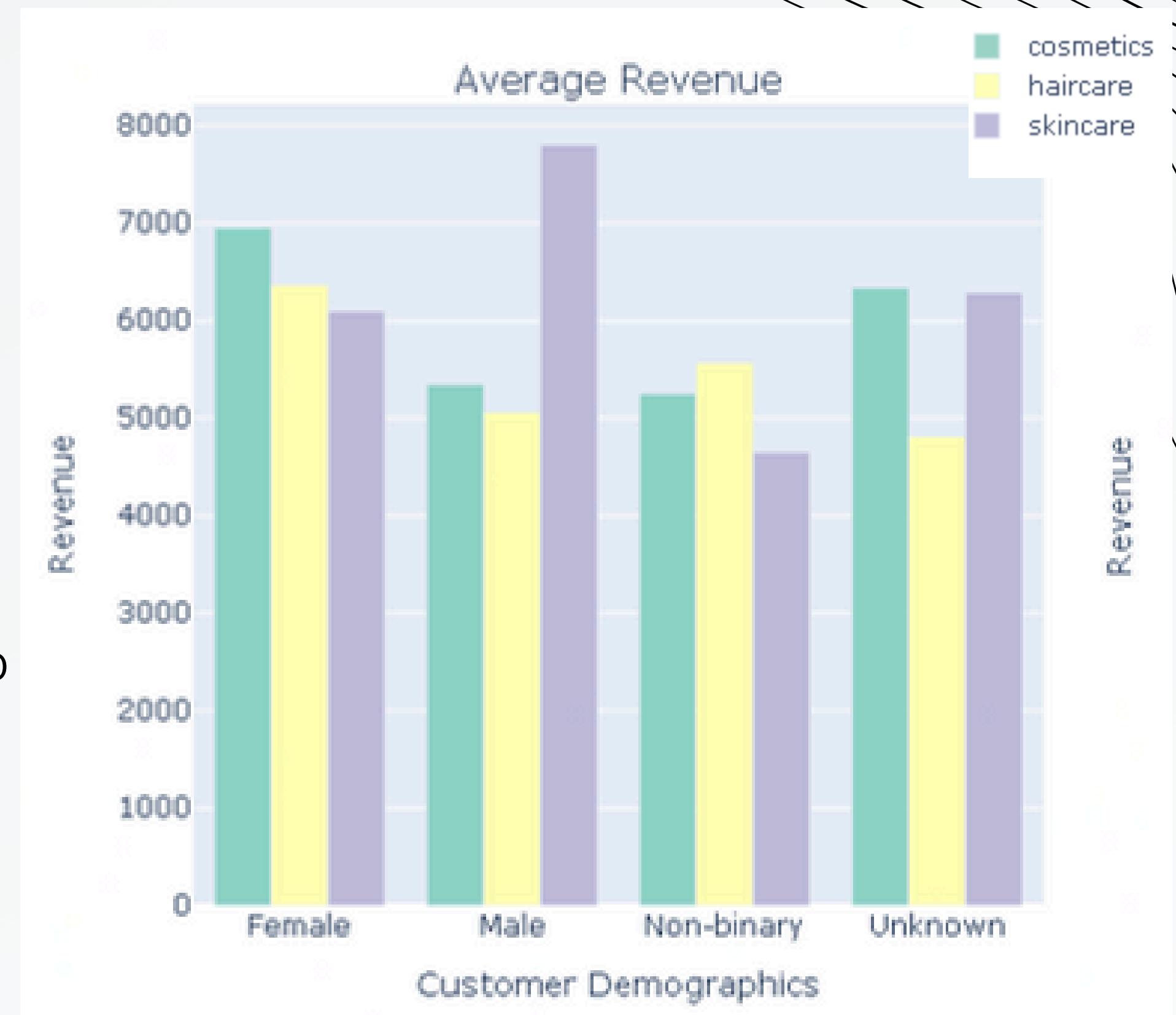
- FROM THE GRAPH:
- IF SKINCARE HAS LOWER TOTAL REVENUE COMPARED TO COSMETICS, IT MAY BE UNDERPERFORMING. REASONS COULD INCLUDE:
  - MARKET SATURATION IN SKINCARE PRODUCTS.
  - LACK OF AWARENESS OR PERCEIVED NECESSITY AMONG CERTAIN DEMOGRAPHICS.
  - LIMITED PRODUCT OFFERINGS THAT DO NOT CATER TO DIVERSE SKIN TYPES OR CONCERNs.



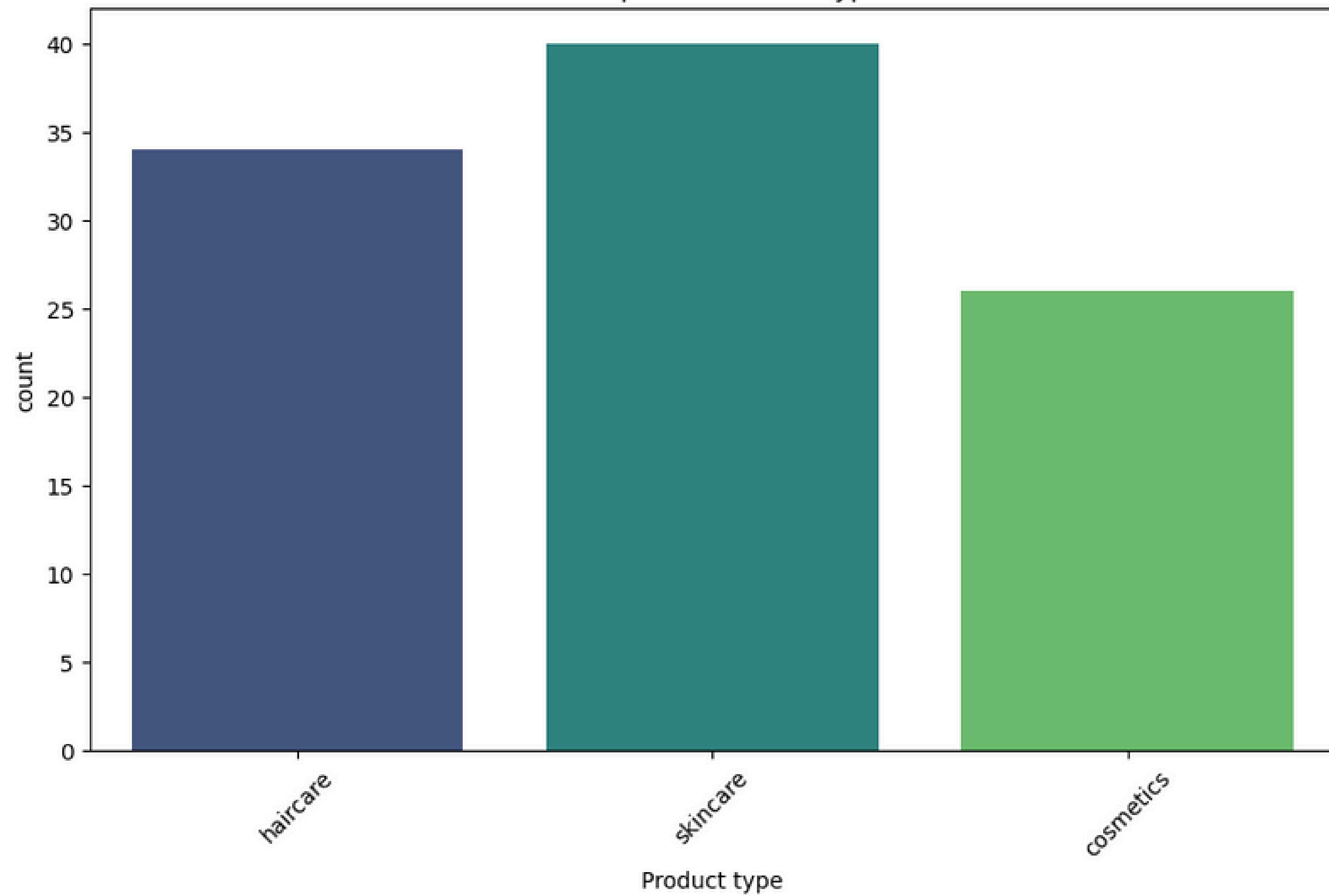
## QUESTIONS

### 3. WHAT MARKETING STRATEGIES CAN BE EMPLOYED TO BOOST REVENUE AMONG LESS REPRESENTED DEMOGRAPHICS?

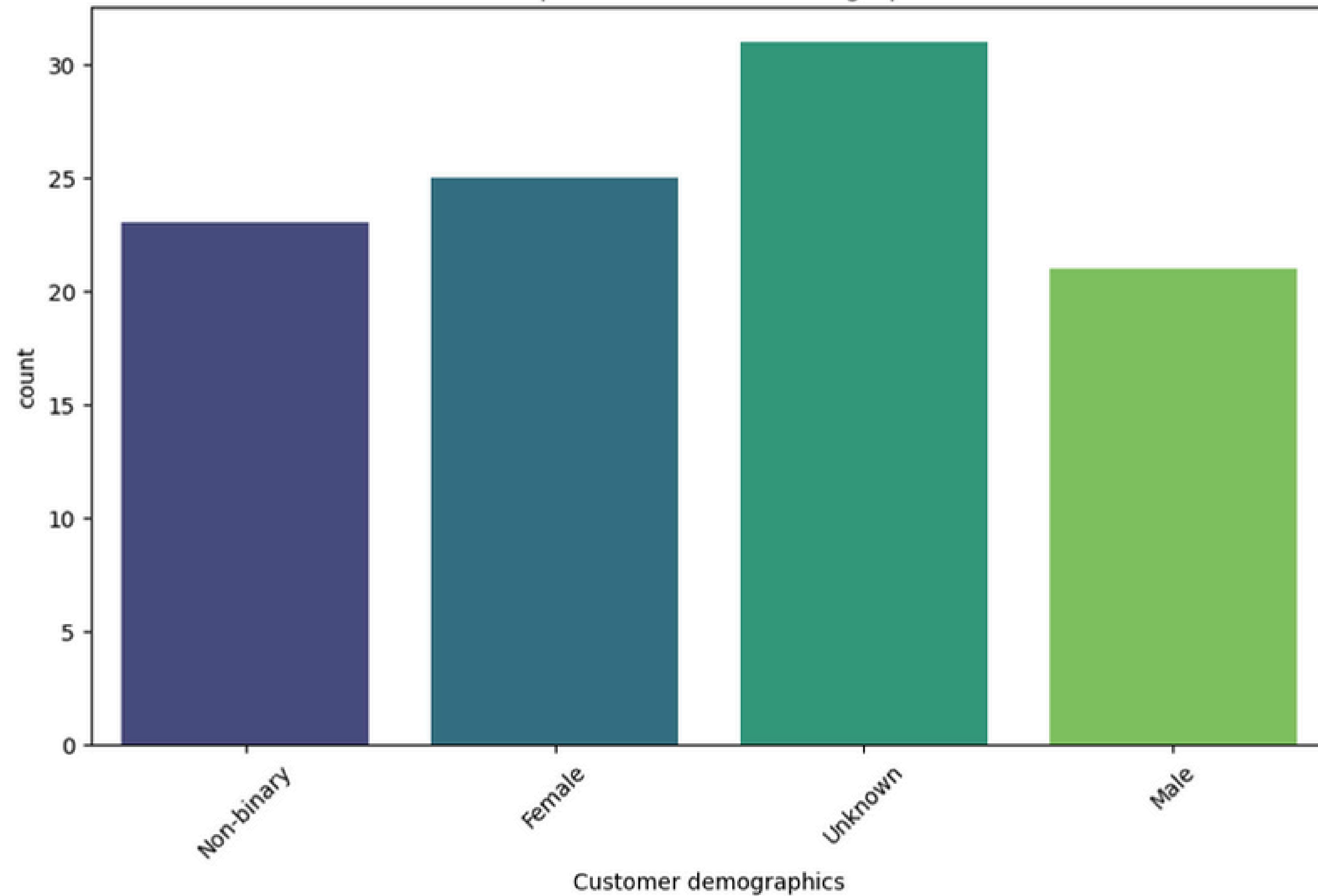
- STRATEGIES COULD INCLUDE:
- TAILORED ADVERTISING THAT REFLECTS THE VALUES AND PREFERENCES OF NON-BINARY AND MALE CUSTOMERS.
- COLLABORATIONS WITH INFLUENCERS FROM THESE DEMOGRAPHICS TO BUILD TRUST AND DRIVE INTEREST.
- PRODUCT DEVELOPMENT THAT ADDRESSES SPECIFIC NEEDS OR CONCERNs OF UNDERREPRESENTED GROUPS.



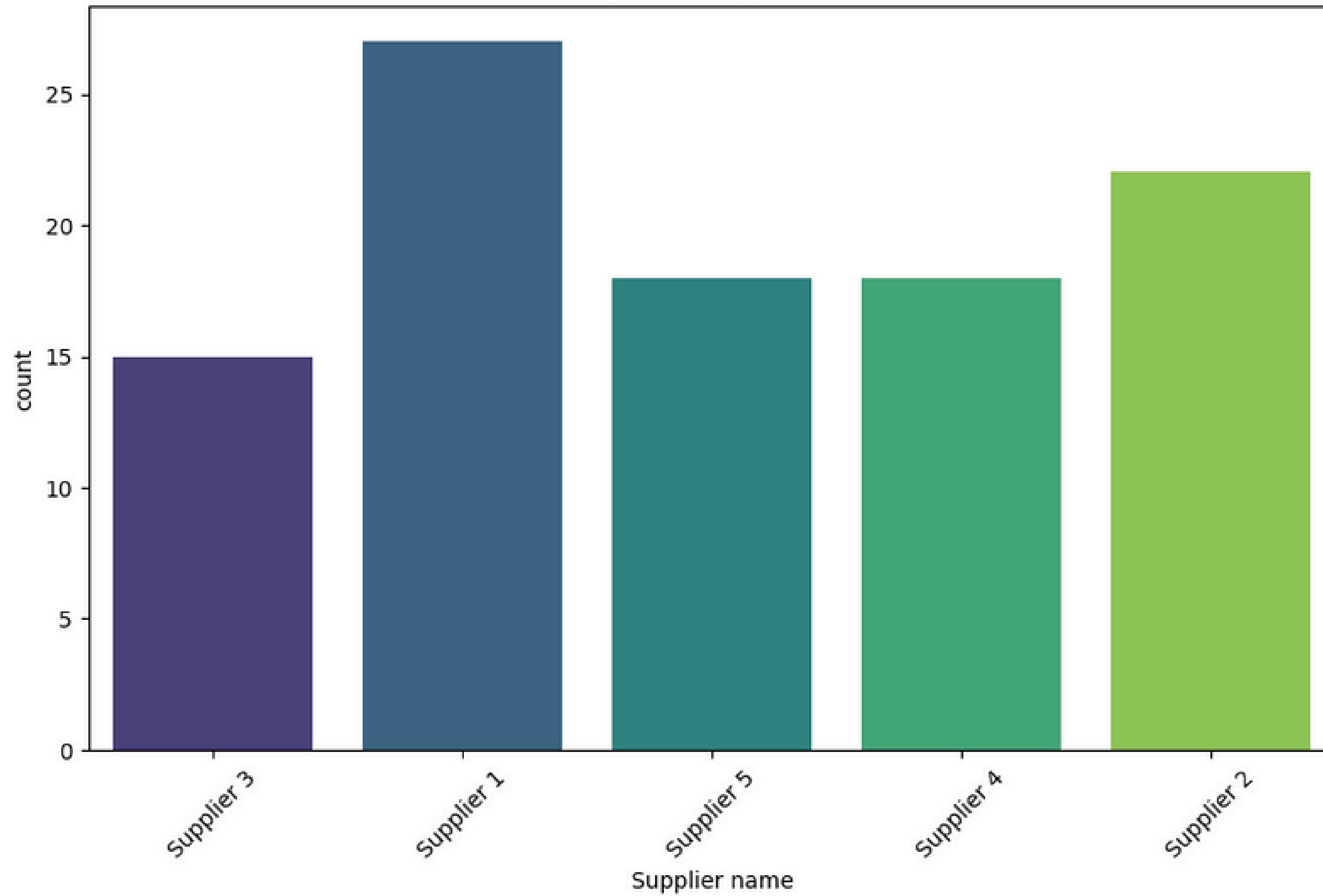
### Countplot of Product type



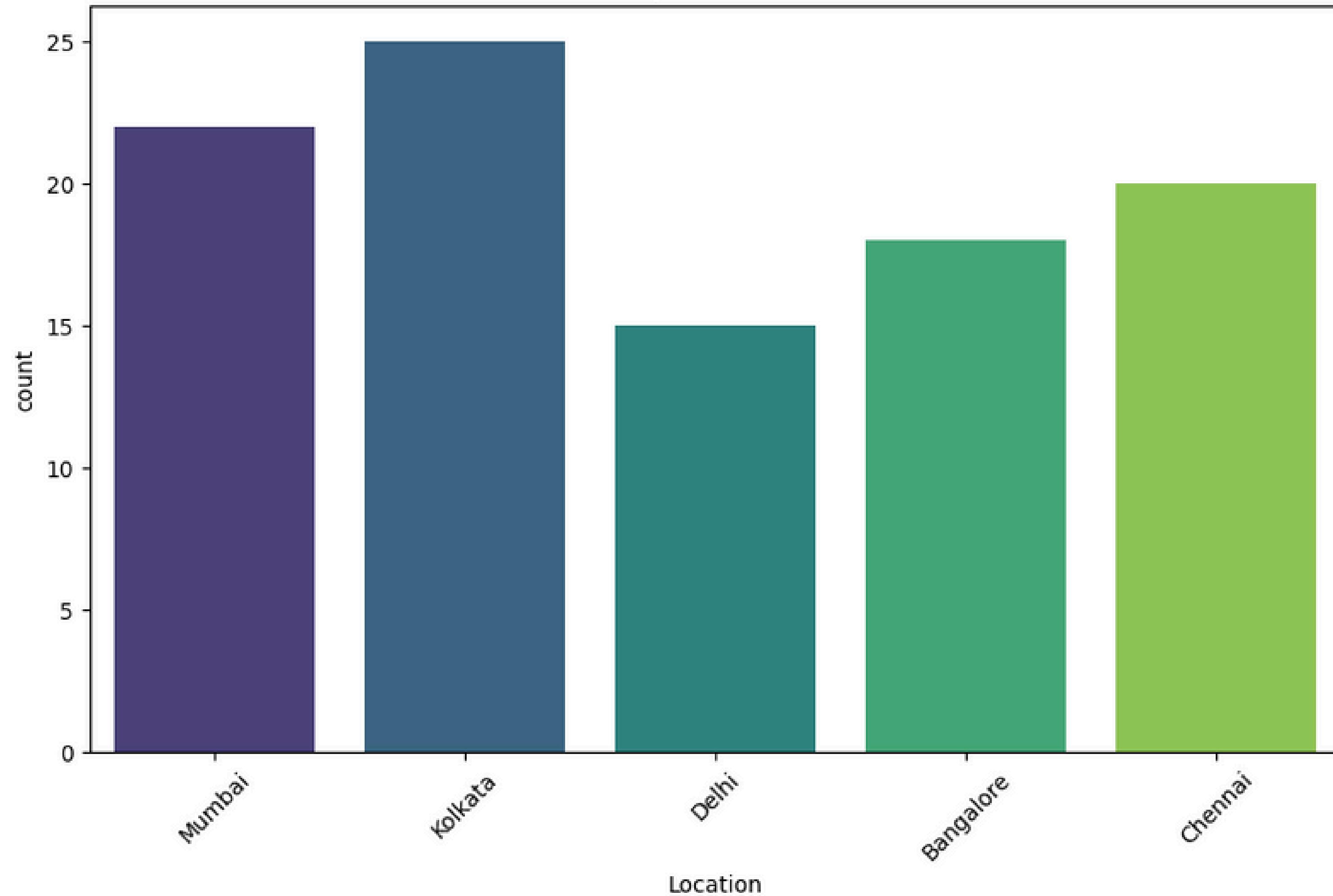
### Countplot of Customer demographics



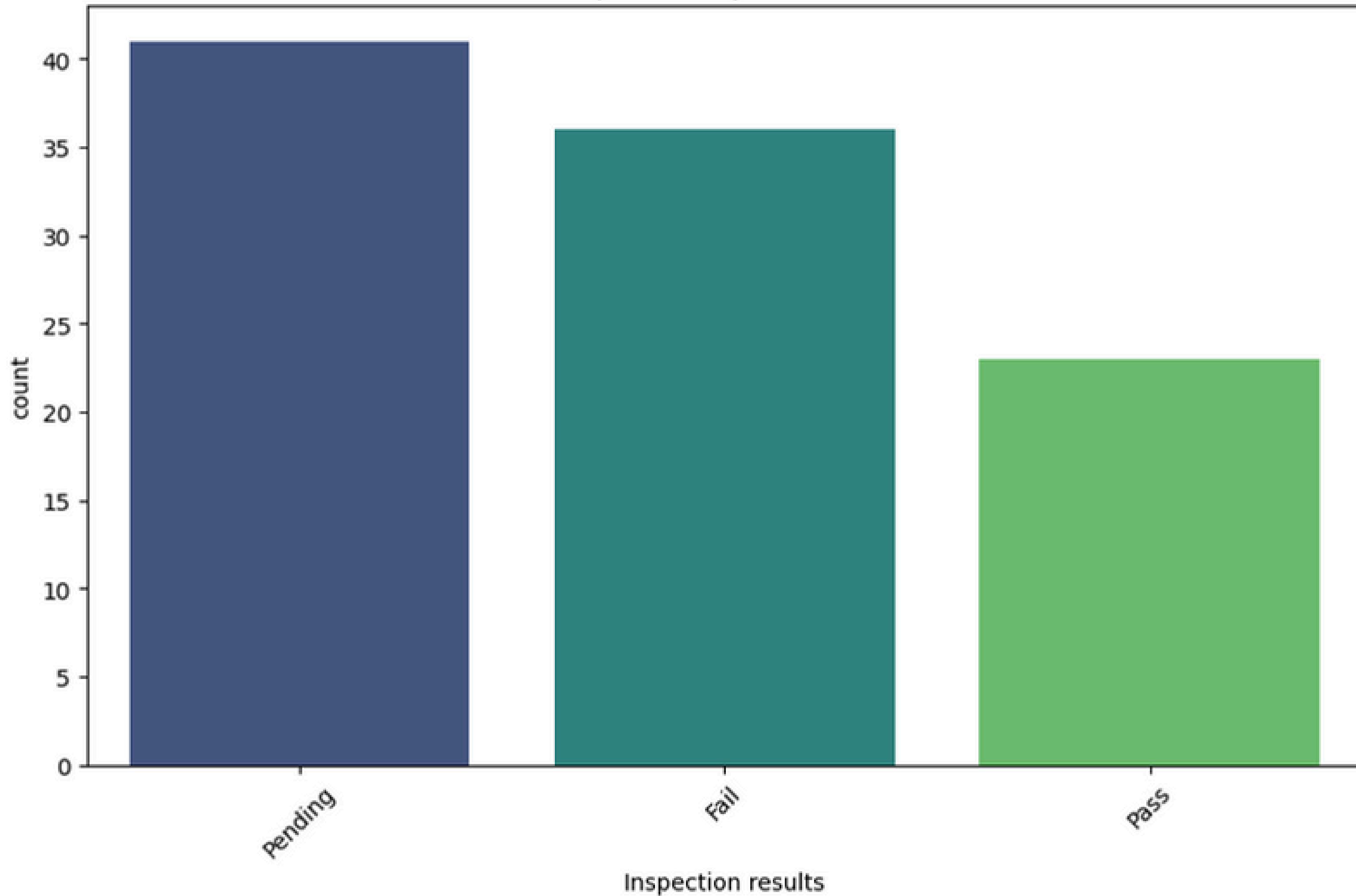
### Countplot of Supplier name



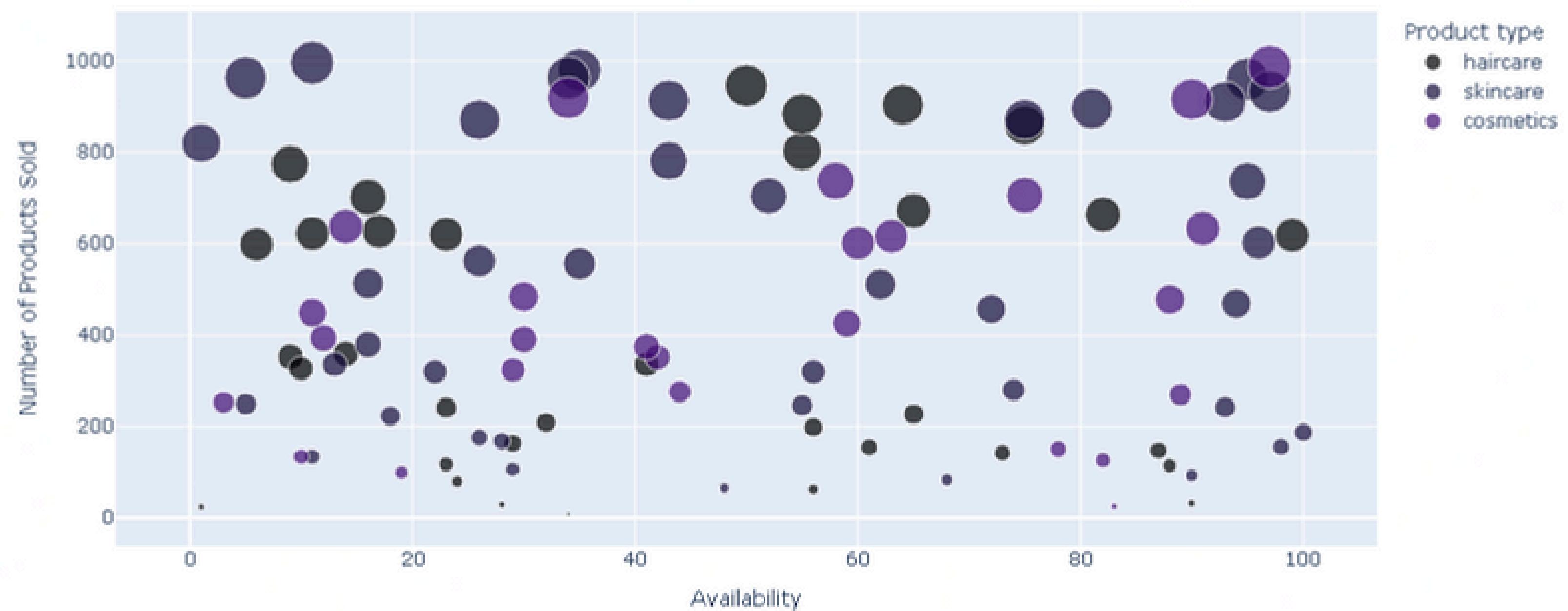
### Countplot of Location



### Countplot of Inspection results



## Availability vs Number of Products Sold by Product Type



### PRODUCT TYPE PERFORMANCE:

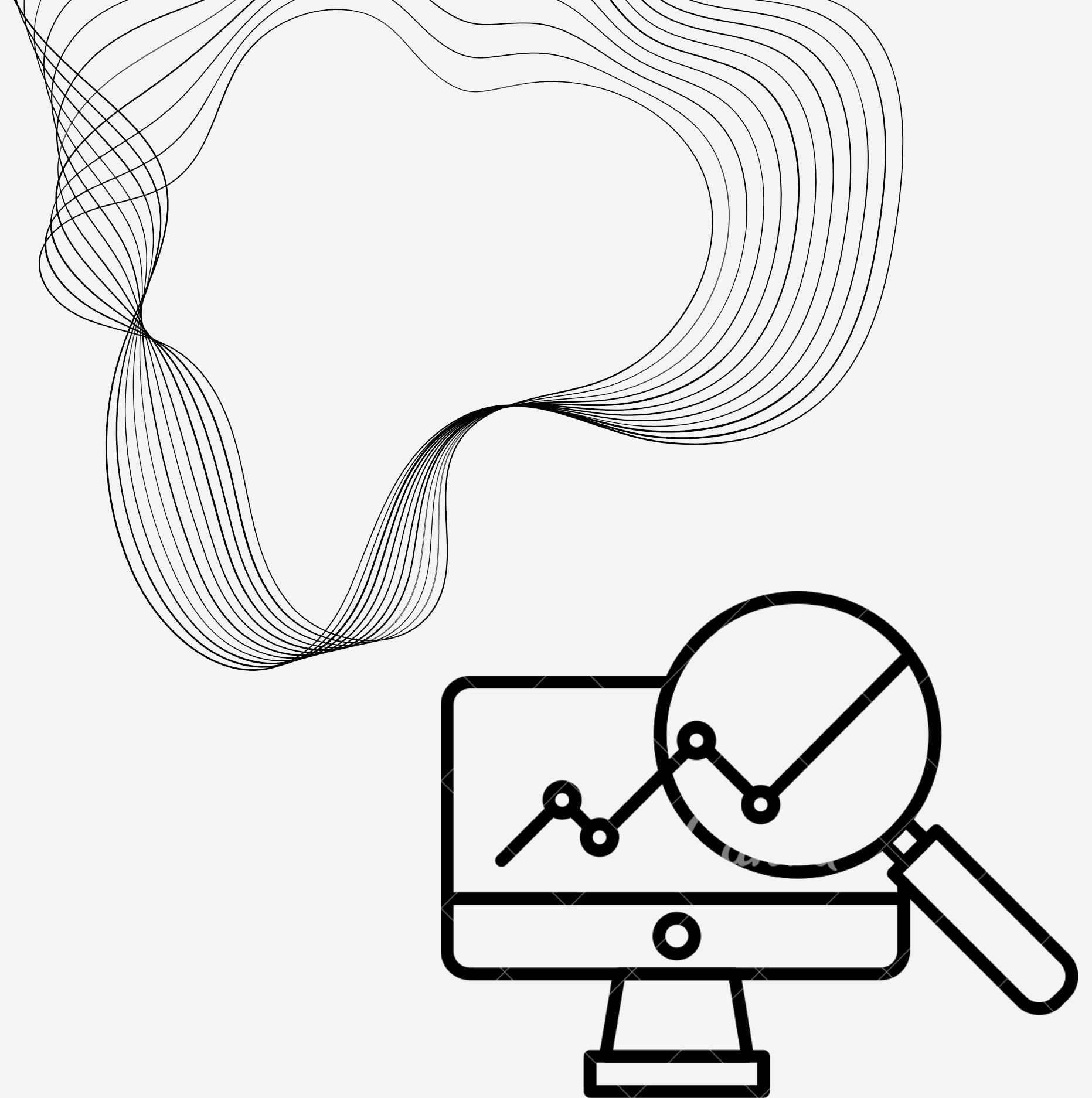
DIFFERENT PRODUCT TYPES MAY SHOW VARYING TRENDS. FOR EXAMPLE, IF COSMETICS CONSISTENTLY SHOW HIGHER SALES AT LOWER AVAILABILITY LEVELS, THIS MAY INDICATE STRONG CONSUMER DEMAND DESPITE LIMITED STOCK.

## Defect Rates by Product Type

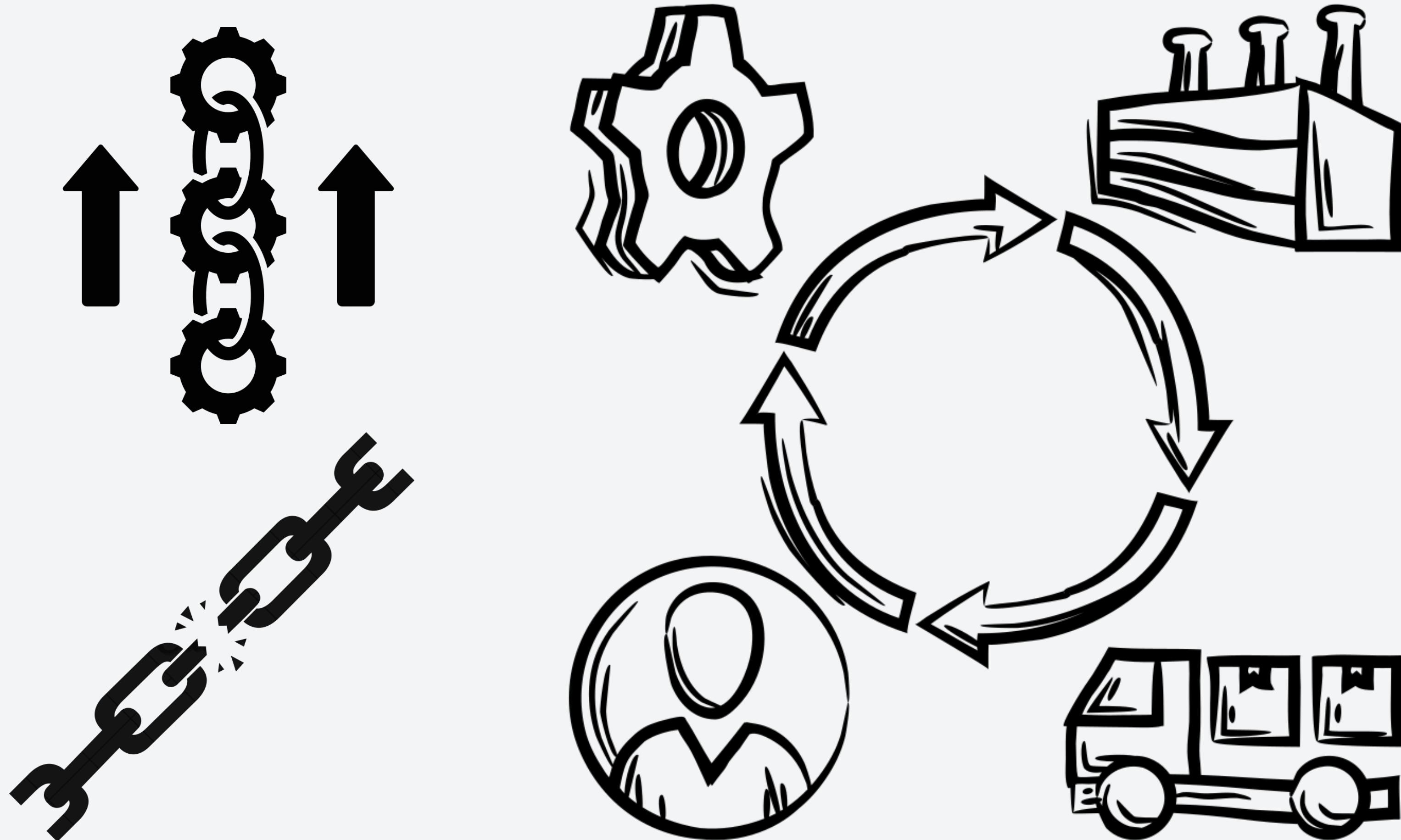


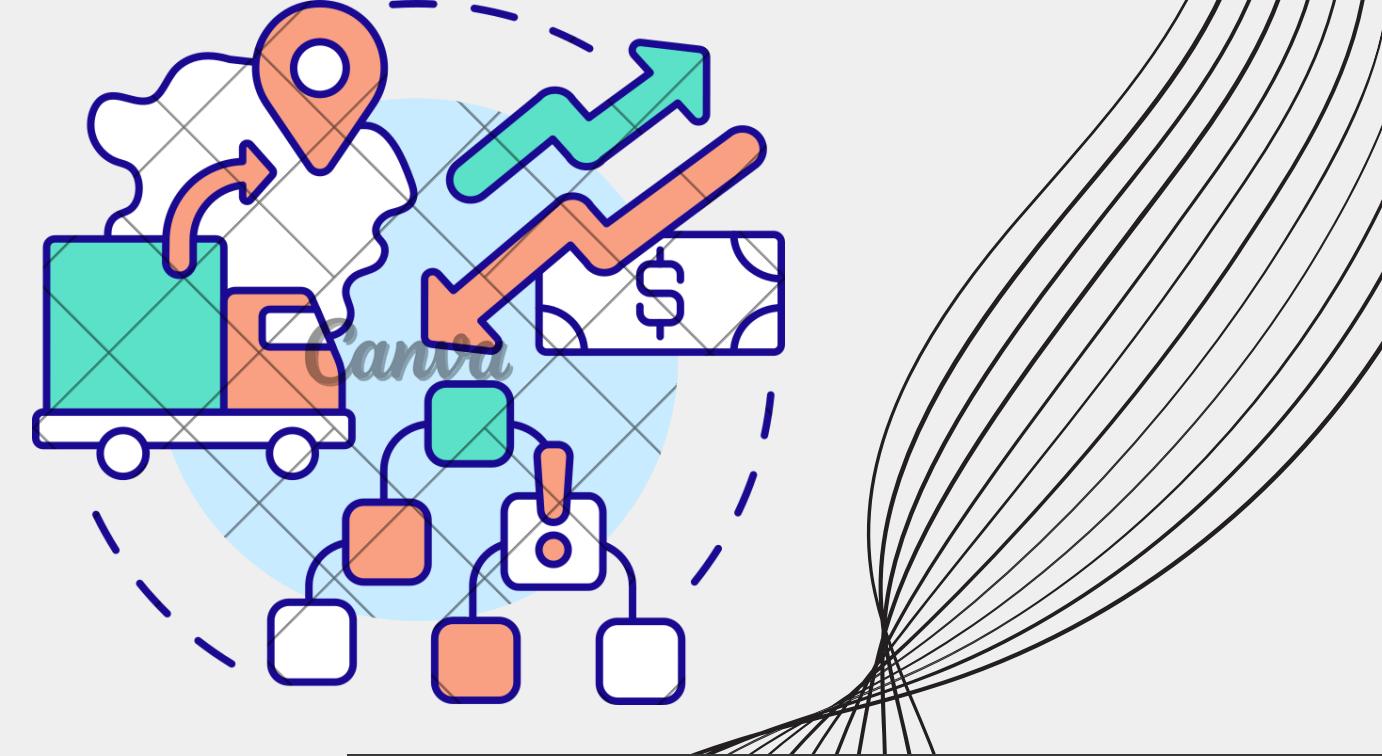
# QUESTIONS

EOQ  
TURN OVER  
HIGHEST RISK  
TRANSPORTATION  
BEST ROUTES



# DATA INSIGHTS





# STATISTICS INFORMATION

	Column	Mean	Median	Mode
0	Price	49.462461	51.239830	1.699976
1	Availability	48.400000	43.500000	11.000000
2	Number of products sold	460.990000	392.500000	134.000000
3	Revenue generated	5776.048187	6006.352023	1061.618523
4	Stock levels	47.770000	47.500000	5.000000

# EOQ

```
COMPARISON_COLUMNS = DF[['SKU', 'EOQ(ECONOMIC ORDER QUANTITY)', 'ORDER QUANTITIES']]  
COMPARISON_COLUMNS.HEAD()
```

SKU

EOQ(ECONOMIC ORDER QUANTITY)

ORDER QUANTITIES

1.	SKU0
2.	SKU1
3.	SKU2
4.	SKU3
5.	SKU4

43
71
38
50
96

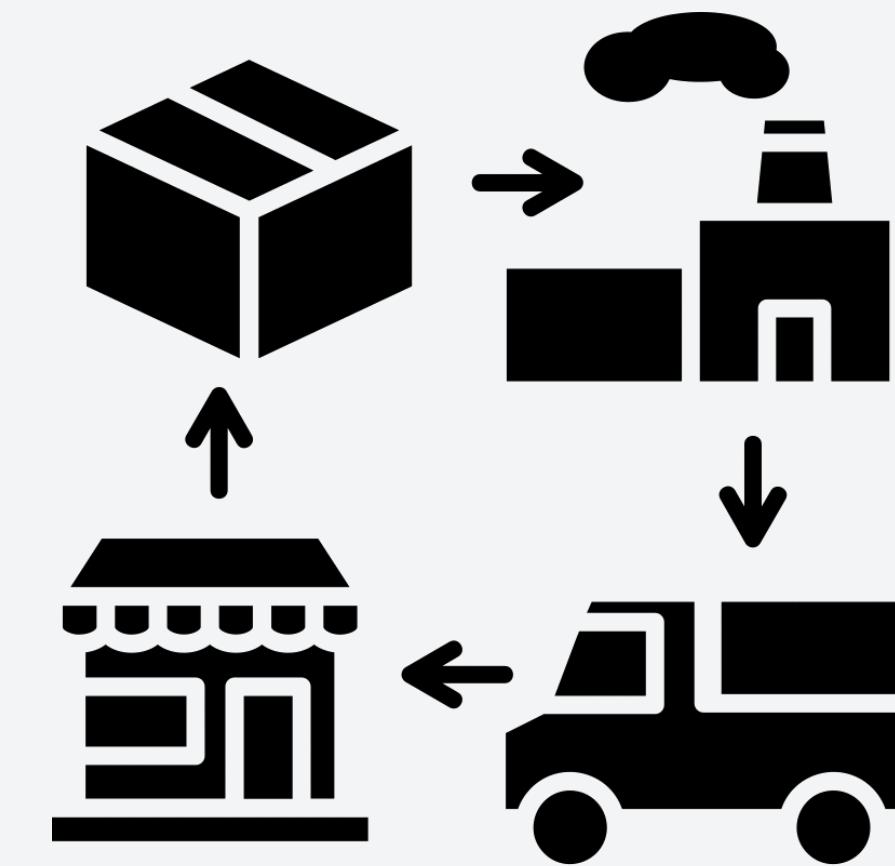
96
37
88
59
56



## Comparison of EOQ and Order Quantities for Top 10 SKUs



# TURNOVER

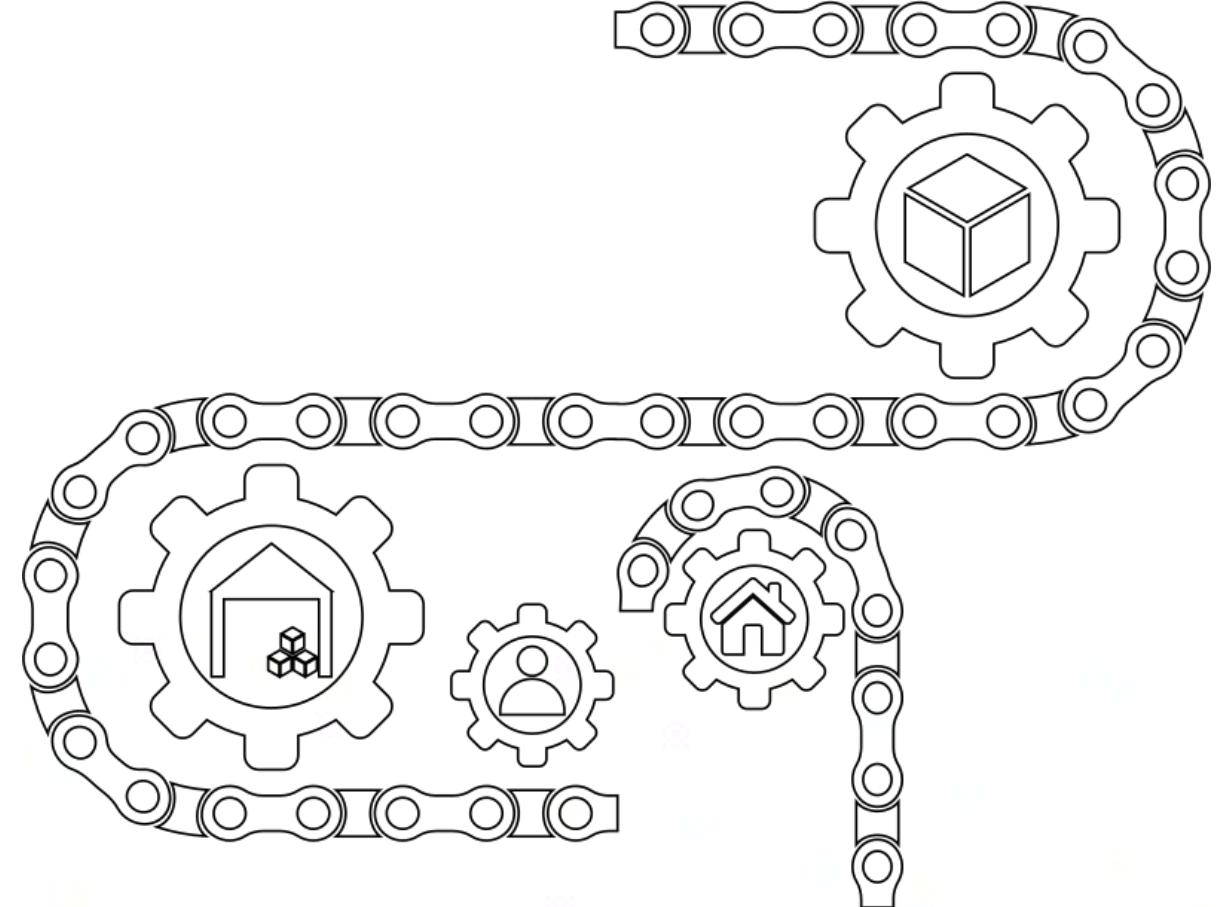


→ Inventory turnover rate by product type:

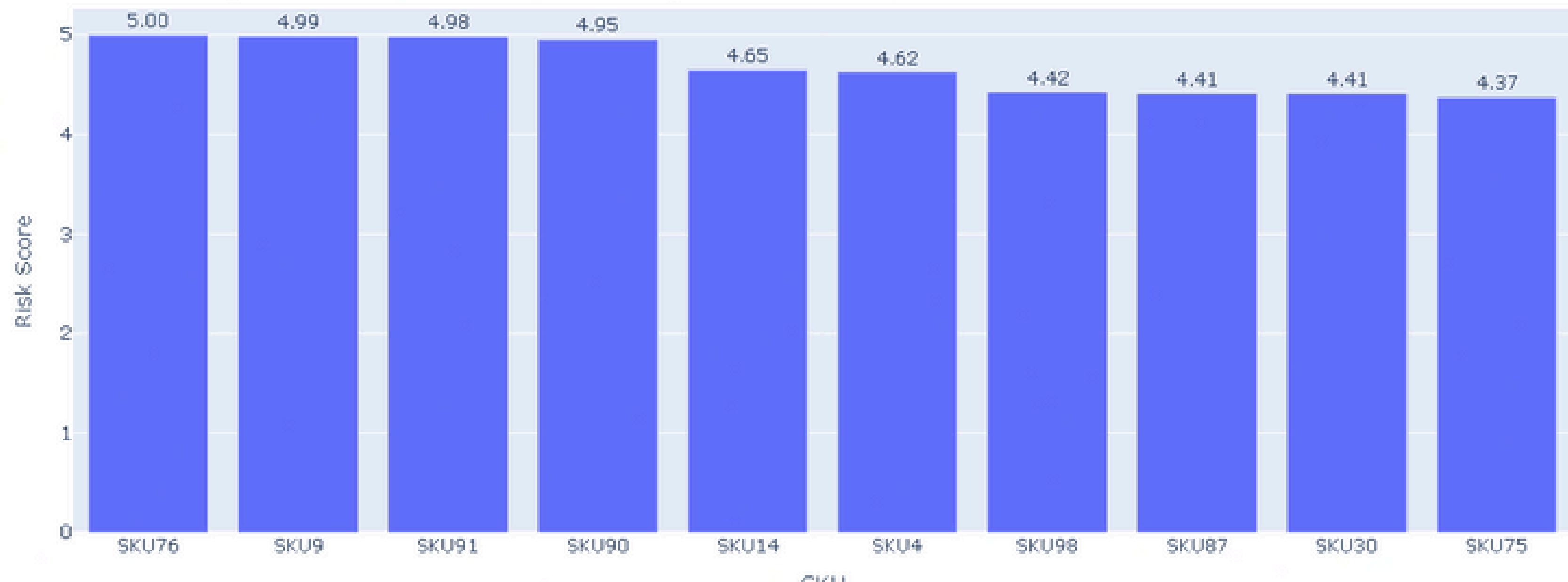
Inventory turnover rate

Product type	
cosmetics	16.593001
haircare	inf
skincare	45.416858

# HIGHEST RISK

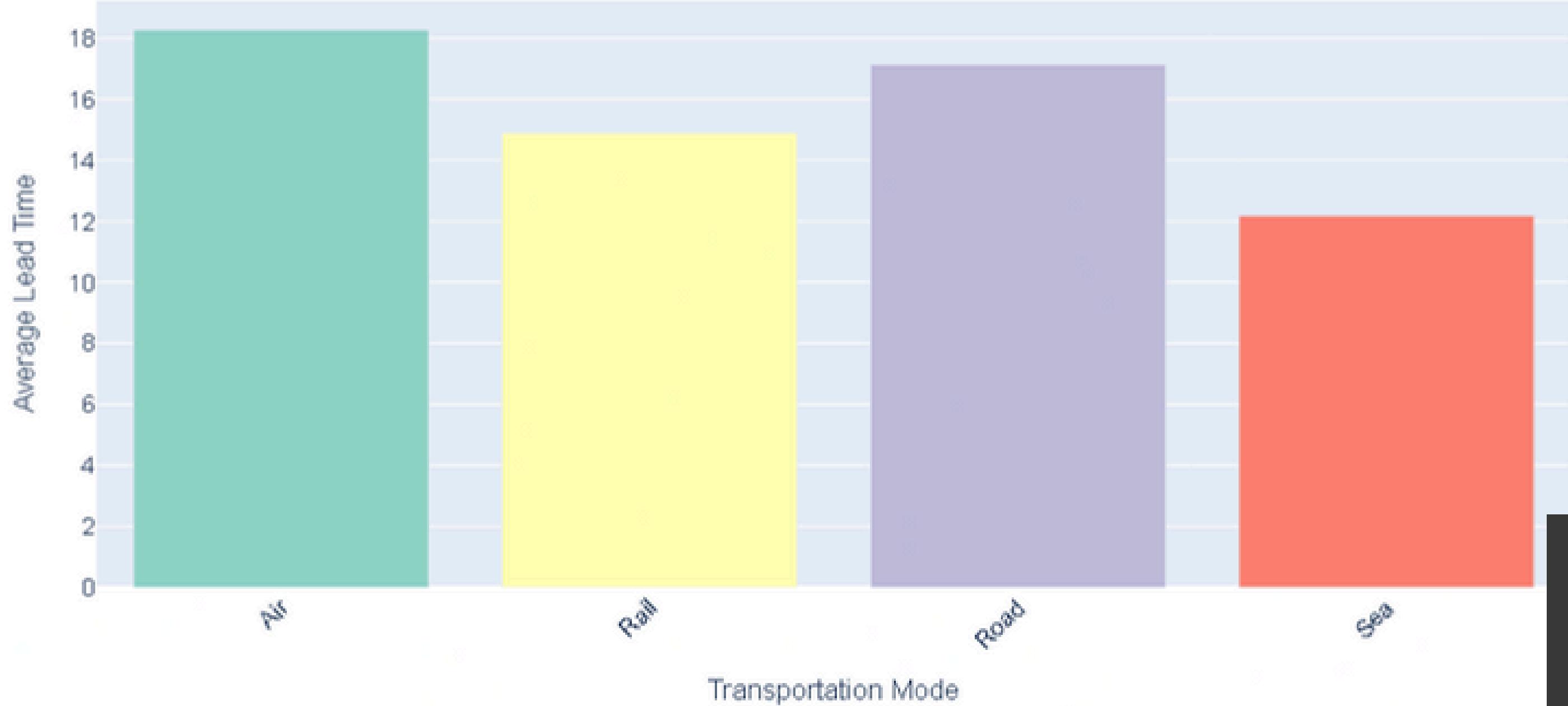


Top 10 Highest-Risk Data



# BEST TRANSPORTATION

Average Lead Times by Transportation Mode

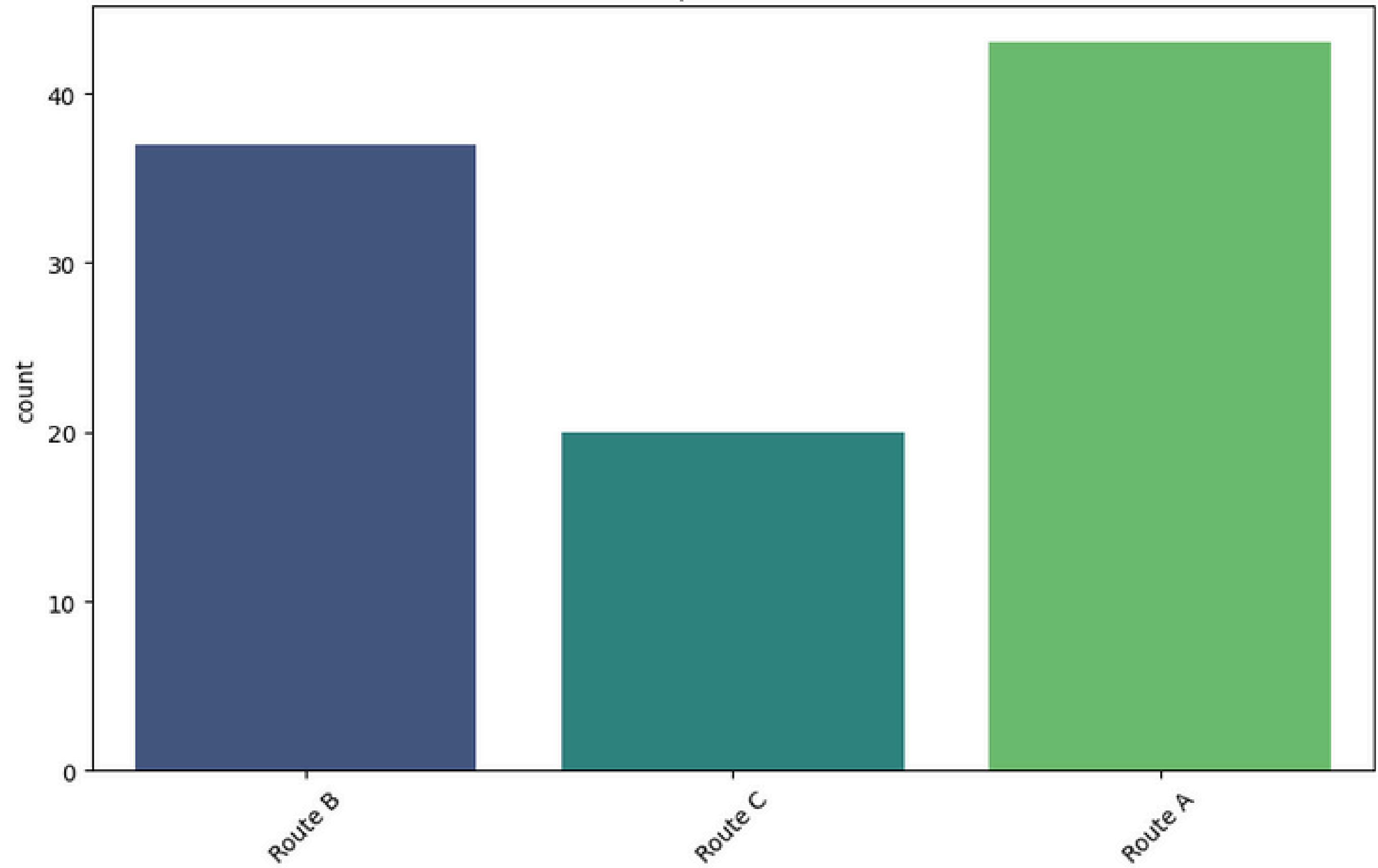


Transportation modes	Lead times
Sea	12.176471

# BEST ROUTES



Countplot of Routes



# BEST ROUTES

Defect rates	Transportation modes	Routes	Costs	Risk Score
4.746649	Rail	Route A	254.776159	1.280012
3.145580	Air	Route A	923.440632	4.624387
2.779194	Road	Route A	235.461237	1.179130
1.000911	Sea	Route A	134.369097	0.675169
0.021170	Air	Route A	126.723033	0.638286



# OUR TEAM



Abanoub  
Atta



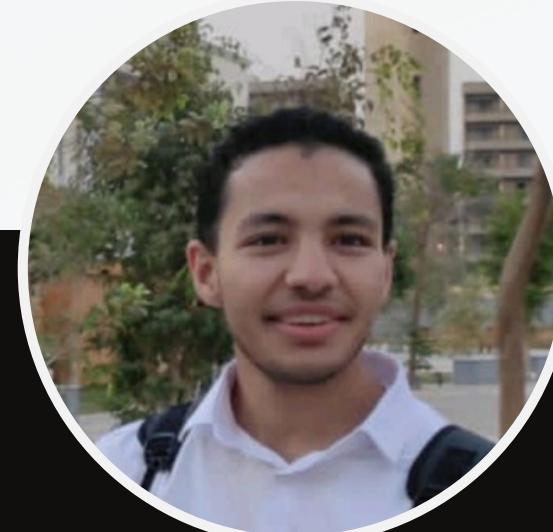
Abdelrahman  
Emad



MAHMOUD M  
SAAD



Muhammad  
Amr



Abelrahman  
elsaid



Eyad

Thanks  
FOR  
Waicting

