

Analysis of Beauty Products

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Data Visualization

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Section 1. Introduction

This visualization project analyzes a beauty product dataset from 2024 to uncover insights across brands, gender segments, pricing, ratings, reviews, cruelty-free status, and country of origin. Using Tableau, various charts were created to compare product distribution based, highlight top-rated brands, examine ethical trends in the market.

Section 2. Data Description

- ▶ Domain: Beauty Brands
- ▶ Data File Desc: The dataset is an Excel .xlsx file extracted from Kaggle Datasets.
- ▶ Number of rows: 14
- ▶ Number of columns/attributes: 15000
- ▶ Data source: Kaggle Datasets
- ▶ Data source link:  [Top Beauty & Cosmetics Products Worldwide 2024](#)

Section 3. Data Cleaning Strategies

- ▶ Dataset was mostly clean and didn't need any additional cleaning.
- ▶ Some transformations were made to data including adding of new columns for broader representation of data.
- ▶ Additionally utilized Calculated Fields feature in Tableau for critical analysis of data.
 - Added new column joining Brand and Product name for better visualization.
 - Added column continent for broader geographical representation of data.
 - Created some new fields using Calculated Fields feature in Tabluau for critical analysis of data.

Section 4. Clean Dataset

The dataset contains beauty and cosmetics product information including product name, brand, brand-product, category, price, rating, number of reviews, gender, cruelty-free status, country of origin, continent of origin, and other product attributes.

Sample:

most_used_beauty_cosme... ▾ 21 fields 15000 rows 100 → rows ⚙ v

Table Details >	Product Name	Brand Product	Brand	Category	Usage Frequency	Price USD	Rating
	Ultra Face Mask	Drunk Elephant Ultra Face M...	Drunk Elephant	Blush	Weekly	67.850	1.400
	Ultra Lipstick	Laura Mercier Ultra Lipstick	Laura Mercier	Makeup Remover	Occasional	116.430	4.200
	Ultra Serum	Natasha Denona Ultra Serum	Natasha Denona	Highlighter	Daily	90.840	1.600
	Divine Serum	Ilia Beauty Divine Serum	Ilia Beauty	Face Mask	Occasional	55.170	3.200
	Super Foundation	Charlotte Tilbury Super Foun...	Charlotte Tilbury	Highlighter	Occasional	140.560	1.700
	Super Eye Shadow	Danessa Myricks Super Eye ...	Danessa Myricks	Foundation	Weekly	135.820	3.200

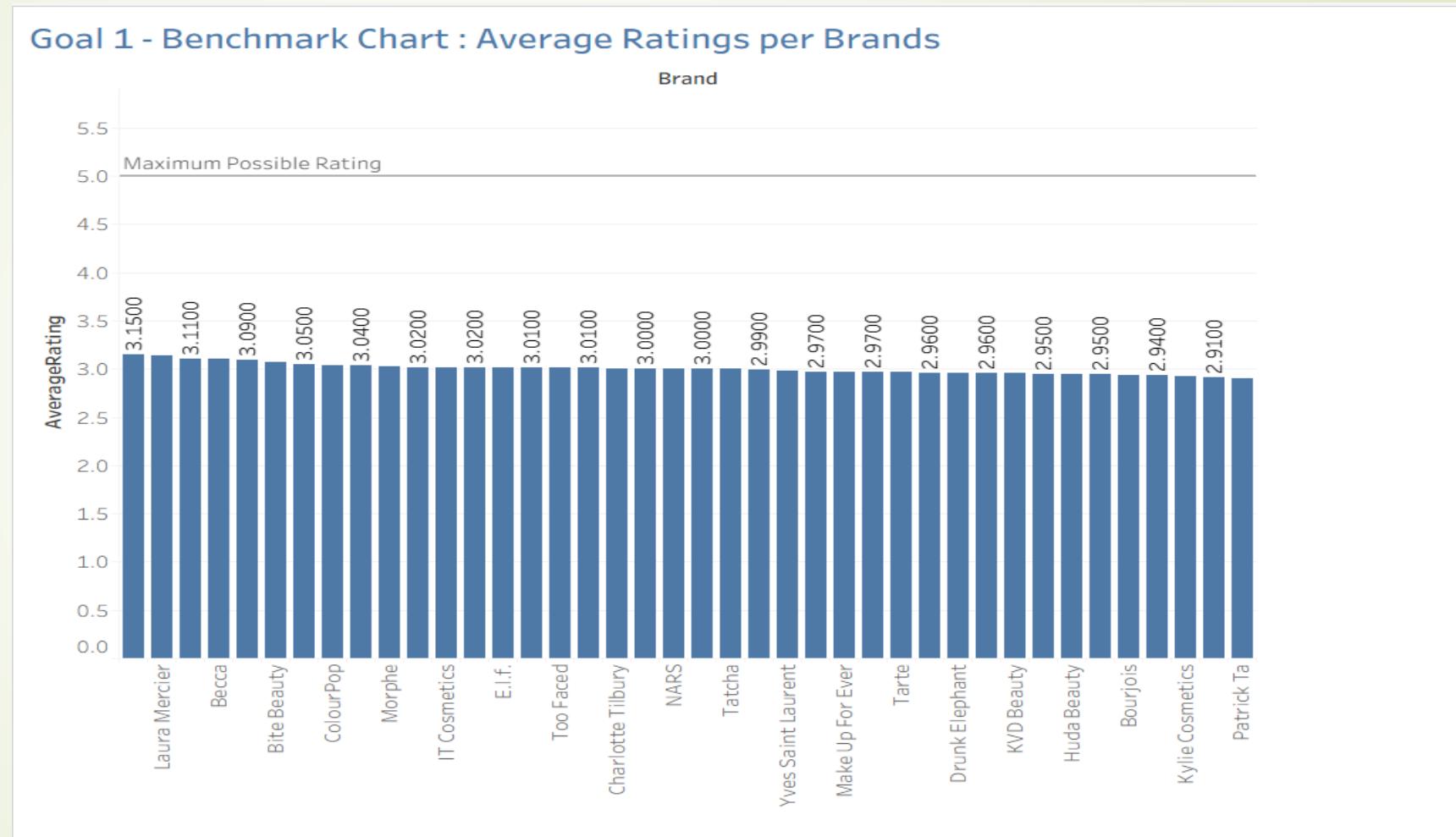
Section 5. Visualization Tools

Tableau was used for this visualization project because it allows for intuitive data exploration, interactive dashboard creation, and powerful visual analytics, making it easy to transform complex product data into clear, insightful, and visually engaging representations.

- ▶ Github Link Tableau Project:
[KamanaGrows/Data Visualization Beauty Products: Data Visualization Using Tableau](#)
- ▶ Tableau Link: [KamanaGrows/Data Visualization Beauty Products: Data Visualization Using Tableau](#)

Section 6. Visualizations and Stories

- ▶ Goal 1: Average Ratings per Brands
- ▶ Chart: Benchmark Chart



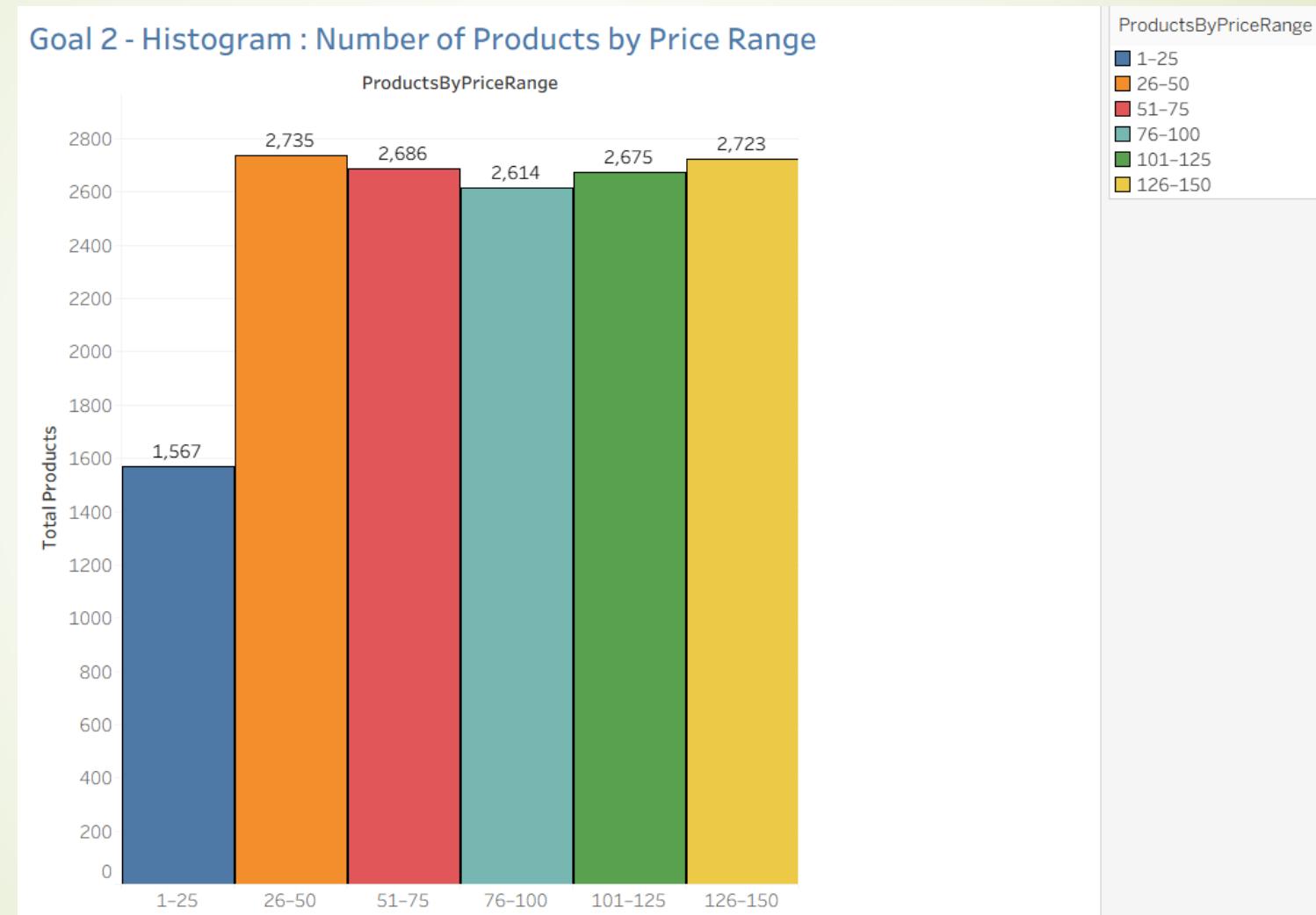
Section 6. Visualizations and Stories (Contd.)

Story 1: Goal 1 Analysis

Benchmark chart displays the average ratings among various products for each beauty brand. The result shows that average rating for all the brands is around 3, with Milk Makeup being the highest at 3.15. The bar for each brand is well below the bench line rating of 5, suggesting that even for these top selling brands which although have several high-rate products, also seem to have quite of bit of products with very low rating bringing their average down.

Section 6. Visualizations and Stories (Contd.)

- **Goal 2: Number of Products by Price Range**
- **Chart: Histogram**



Section 6. Visualizations and Stories (Contd.)

Story 2: Goal 2 Analysis

Histogram chart displays total products with different price ranges from \$1 to \$150. The chart clearly indicates that there are fewest numbers of products under \$25 indicating lower affordability of these top beauty products. Rest of the products are distributed evenly across the graph. It can also be noted that none of the brands have a product above \$150.

Section 6. Visualizations and Stories (Contd.)

- ▶ Goal 3: Most Reviewed Brand Names
- ▶ Chart: TreeMap



Section 6. Visualizations and Stories (Contd.)

Story 3: Goal 3 Analysis

TreeMap displays data based on the highest number of reviews received by the brands. NARS is seen to be the most reviewed at 2,089,857 while Pat McGrath Labs is found to be lowest reviewed with almost 500K below NARS at 1,587,193. The chart shows there aren't significant differences between brands based on reviews.

Section 6. Visualizations and Stories (Contd.)

- Goal 4: Number of Products by Each Brand
- Chart: Bar Chart



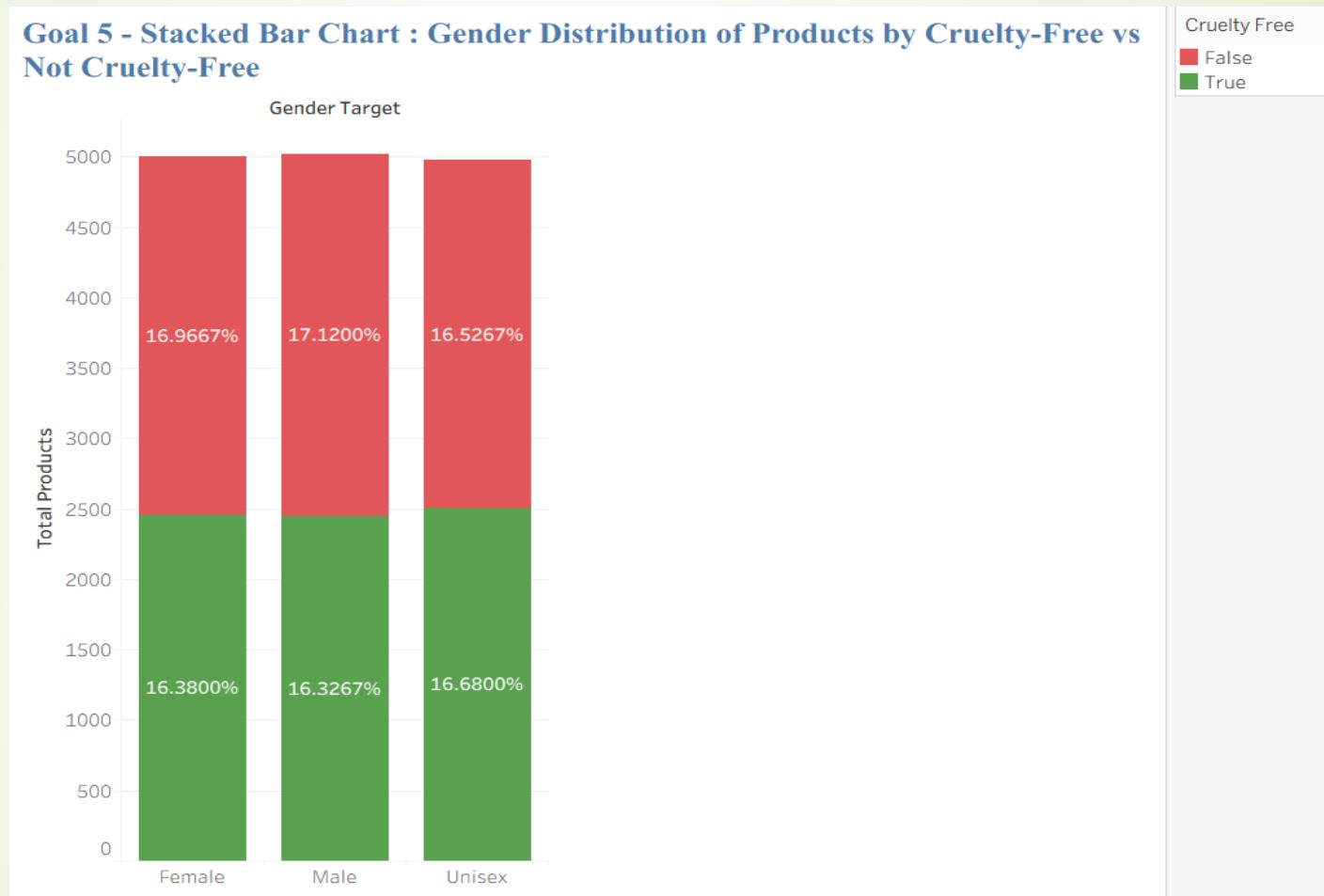
Section 6. Visualizations and Stories (Contd.)

Story 4: Goal 4 Analysis

Bar Chart reflects the total products by each brand. Based on the data Milk Makeup possesses the highest number of products at 426, while ColourPop being lowest at 328.

Section 6. Visualizations and Stories (Contd.)

- ▶ **Goal 5: Gender Distribution of Products by Cruelty-Free vs Not Cruelty-Free**
- ▶ **Chart: Stacked Bar Chart**



Section 6. Visualizations and Stories (Contd.)

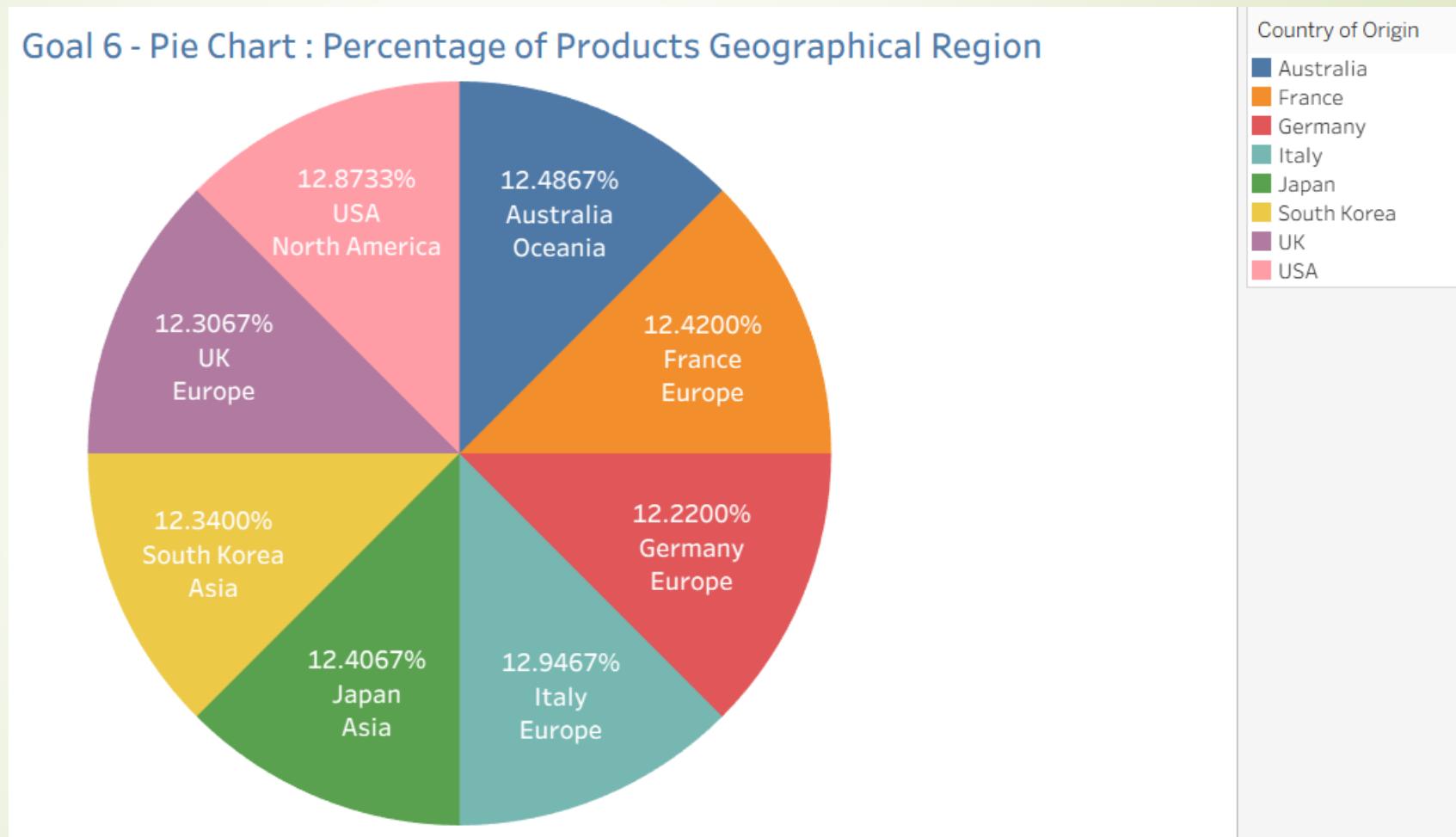
Story 5: Goal 5 Analysis

Stacked Bar Chart shows the distribution of Products by Gender and Cruelty indicators. The chart clearly depicts that the products are evenly distributed between genders including the unisex products, debunking the general perception that beauty products are mostly made for female only.

Additionally, the distribution below illustrates the balance between cruelty-free and non-cruelty-free products across Male, Female, and Unisex categories.

Section 6. Visualizations and Stories (Contd.)

- ▶ **Goal 6:**
Percentage of Products Origin by Country
- ▶ **Chart: Pie Chart**



Section 6. Visualizations and Stories (Contd.)

Story 6: Goal 6 Analysis

Pie chart depicts the name of the countries where these top beauty product brands originated from. The top brands come from only the handful number of countries in the world, with 3 coming from Europe, 2 Coming from Asia, and 1 each from North America and Australia.

The chart also illustrates that the products are evenly distributed between the countries of origin.

Section 7. Conclusions

Overall, the analysis reveals that while leading beauty brands maintain moderate average ratings (around 3 out of 5), none achieve near-perfect customer satisfaction, suggesting room for product quality improvement. Product pricing is largely concentrated between \$25 and \$150, with very limited lower-cost options and no ultra-premium products above \$150. Review volumes across brands are relatively comparable, indicating competitive brand visibility and customer engagement. Product distribution is fairly balanced across brands and genders, including unisex offerings, and cruelty-free status is proportionally represented across segments. Finally, the brands originate from a small group of countries, with a strong presence from Europe, showing a geographically concentrated yet evenly distributed global market presence.