

Cosmetics: Ratings, Pricing, Branding and Toxic Ingredients

By Alahnah, Sara & Raven

Overall Questions



- What brands contain the most toxic chemicals out of the selected brands, and how much do they differ in amounts of toxic products?
- What are the top common toxic chemicals included in the ingredients of cosmetic products?
- Ulta vs. Sephora: Do they share any price trends?
- What are the most popular cosmetic products?
- Are there any notable differences in the attributes (price, ingredients) of the top 10 most popular products from different brands?

Questions to answer..

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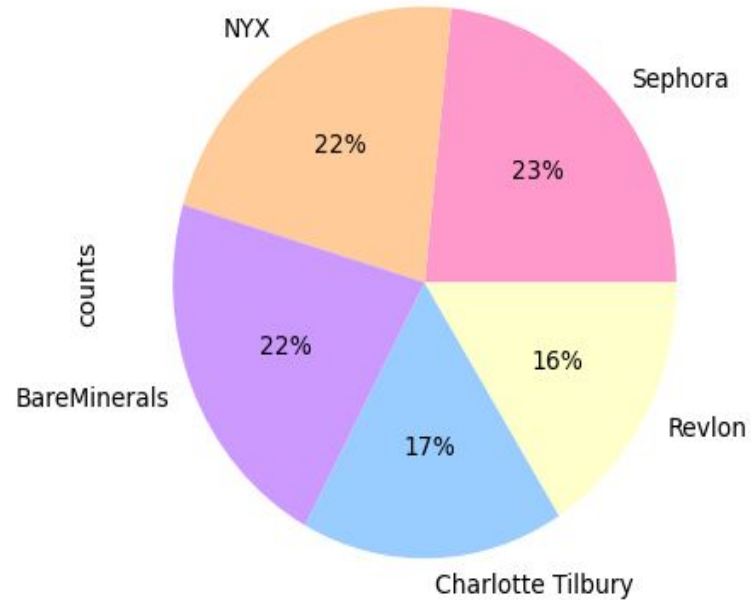


Top 5 Brands

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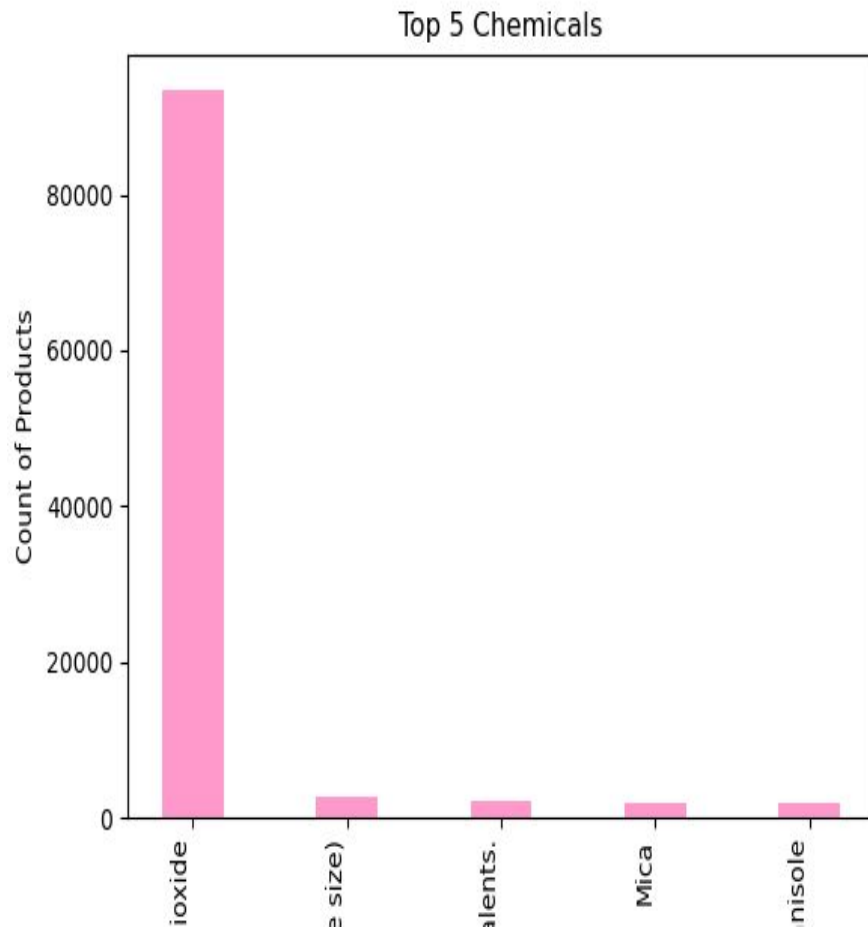
- Sephora, Nyx, and BareMinerals were similar in results
- Sephora, Nyx, and BareMinerals had more than 3000 products that contained Toxic ingredients
- All included brands had more than 2,250 products with toxic ingredients

Top 5 Brands with the Most Toxic Ingredients



Top 5 Chemicals

- Titanium dioxide
- Silica, crystalline (airborne particles of respirable size)
- Retinol/retinyl esters, when in daily dosages in excess of 10,000 IU, or 3,000 retinol equivalents
- Mica
- Butylated hydroxyanisole

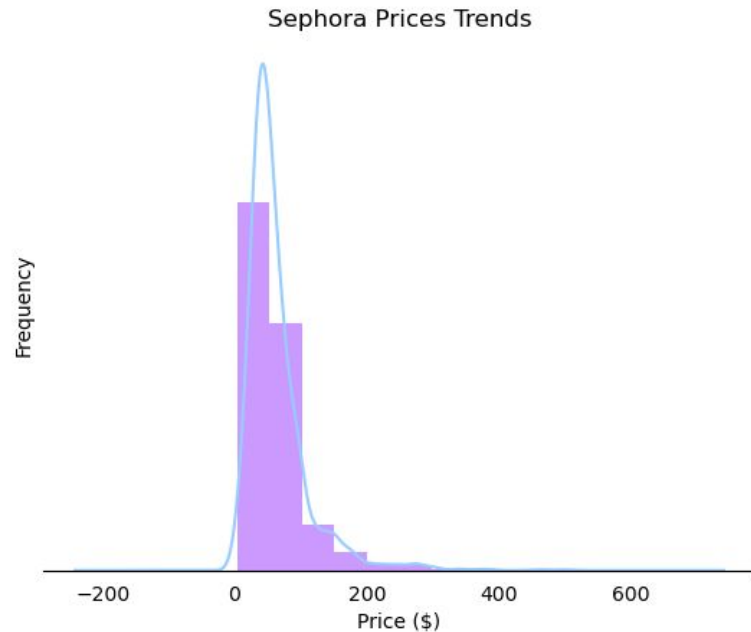
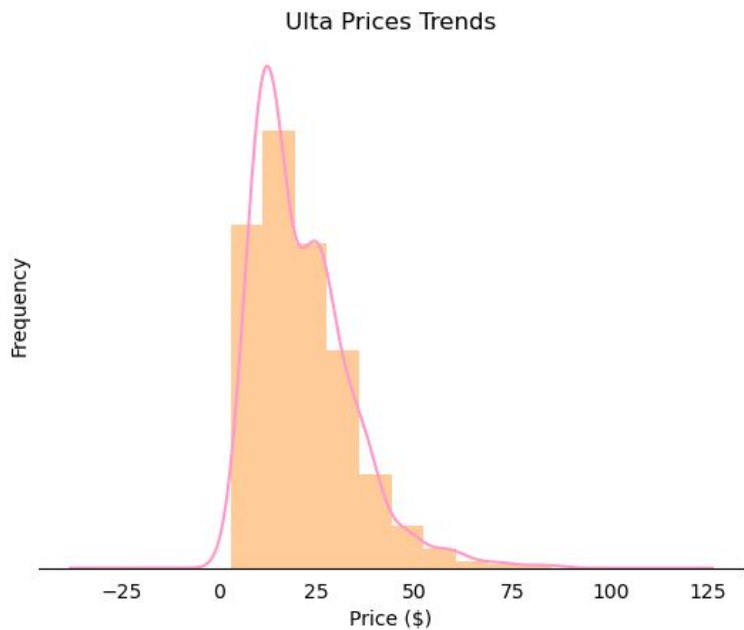


Questions to answer..

- Ulta vs. Sephora: Do they share any price trends?
- Data based on skincare products

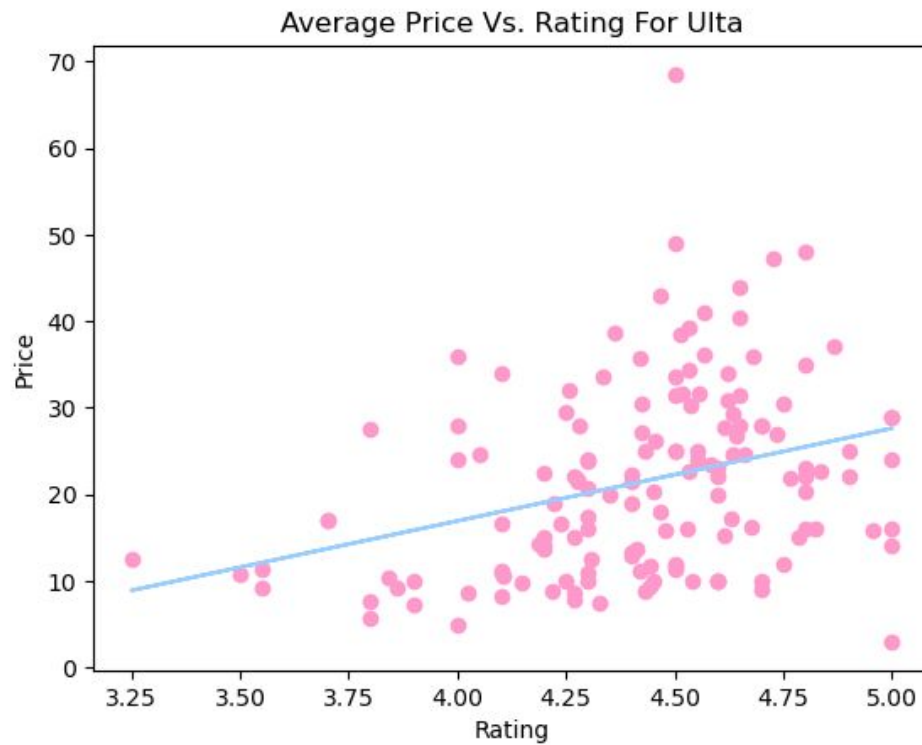


Quick Analysis



- Both right skewed
- Both have one peak
- Ulta average price: \$21, Sephora average price: \$63

- **Ulta visibly more affordable**
- **A moderate correlation of price compared to ratings**
- **Ulta carries a wider variety of products**
- **When it comes to value Ulta beats Sephora**



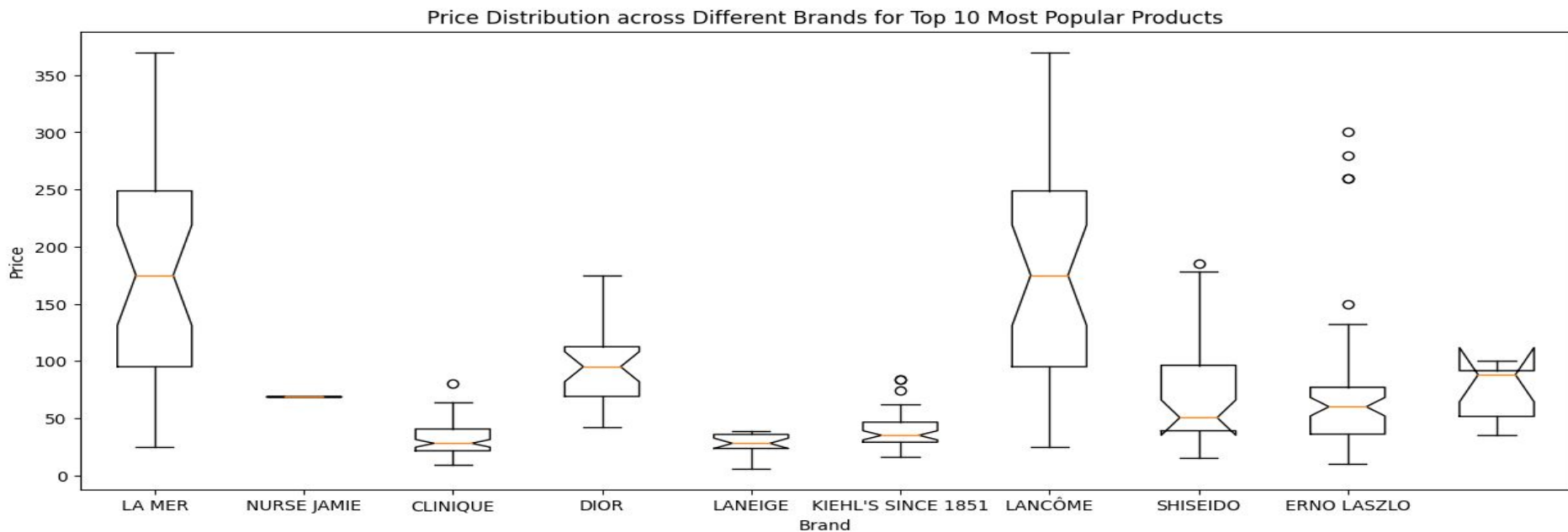
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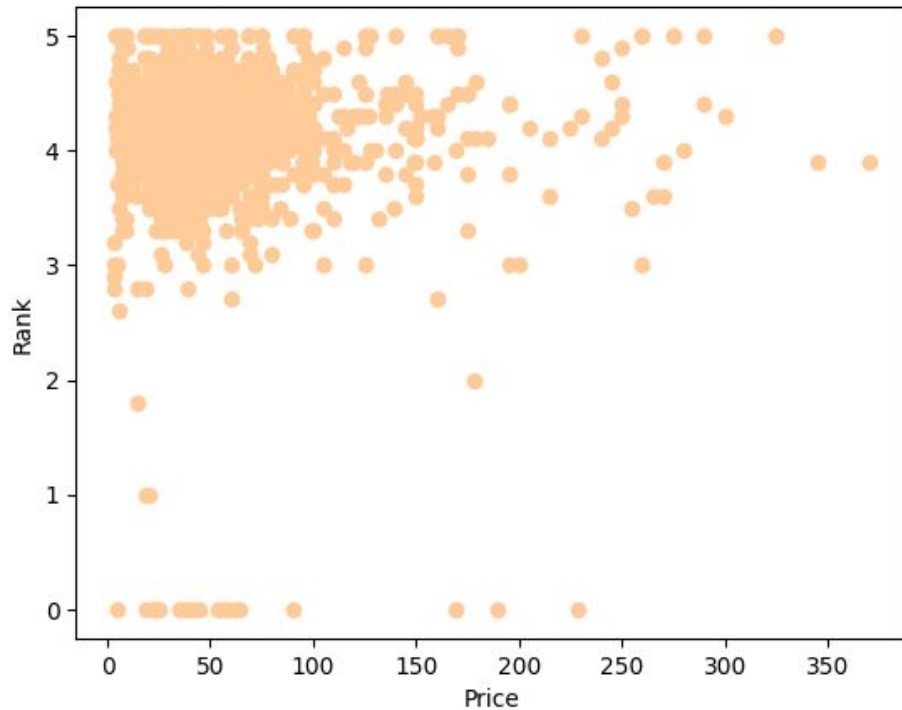
- What are the most popular cosmetic products?
- Are there any notable differences in the attributes (price, ingredients) of the top 10 most popular products from different brands?

Box plot:

- Comparing the price distribution across different brands for the top 10 most popular products.
- This visual allows you to identify any notable differences in pricing between brands.
- We can see that Brands(L) has the widest price range, indicating a significant variation in prices for their popular products.
- The median prices for Brand (S)and Brand (D)are also higher compared to other brands, indicating potentially higher-priced products in their popular range.



Correlation between Price and Ranks



scatter plot

- Showcasing the correlation between Price and Rank
- These products have consistently received high ratings and positive feedback from customers, indicating their popularity in the market.
- This information can be useful for decision-making processes such as product development, marketing strategies, and inventory management. By understanding which products are most popular, companies can focus their efforts on enhancing customer satisfaction and maximizing sales.
- It is important to note that customer ratings may vary based on various factors, including individual preferences and experiences.
- Correlation Coefficient:
 -0.025214717679718862

Most Common Ingredients by Brand



Most common ingredients by brands.

- The word cloud represents the most common ingredients used by different brands for their top 10 most popular products.
- ingredients that appear more frequently in the dataset will have a larger size in the word cloud, while ingredients that are less common will have a smaller size.

Quick Analysis

- In my dataset, among the top 10 most popular products based on rank, the brand "La Mer" has the highest average price of \$184
- The most common ingredient used by all brands is "extract," while the main ingredients across brands include niacinamide and dipotassium.

In Conclusion..

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Final Analysis:

Out of the top 5 brands previously mentioned, the top 3 had similar product counts and out of the extensive list of common toxic chemicals, Titanium Dioxide was by far the most used. When comparing sales between Sephora and Ulta, it is clear that Ulta has on average, the cheaper, more affordable products, by a difference of at least \$40. Out of the brands, La Mer had on average the most expensive pricing, at an average total of \$184. And the most common ingredients used were extracts.

Final Thoughts:

- Cosmetics as a topic is difficult to analyze
 - Requires extensive cleaning
 - Search had to be more broad than narrow
 - Most data was not prepared for in-depth research and had links to other websites listed inside of data

Questions?

THANK YOU!