



SEPHORA

PREDICTING RATINGS

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PREDICTING SEPHORA PRODUCT RATINGS WITH MACHINE
LEARNING

DATA

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04

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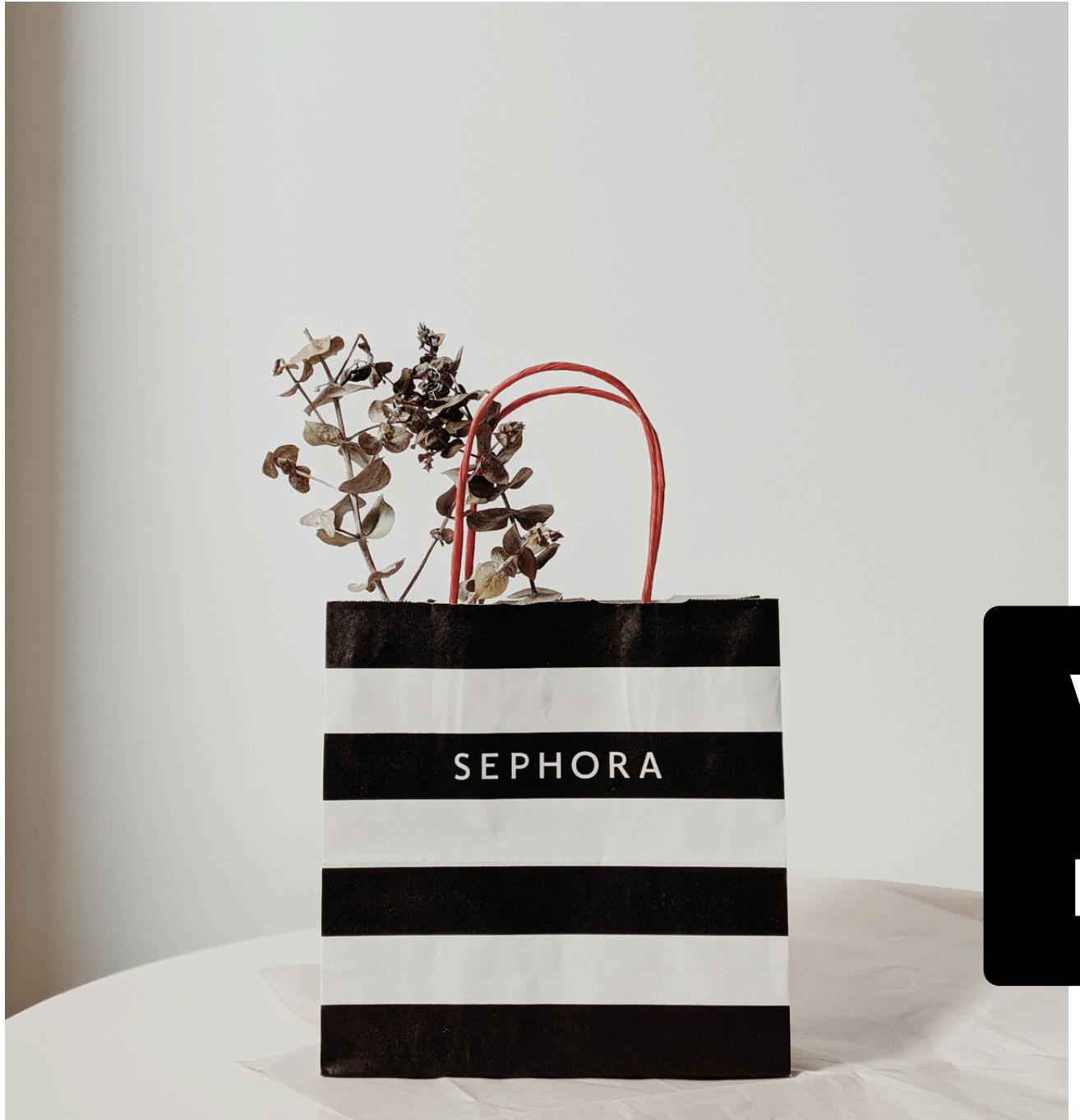
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INSIGHTS

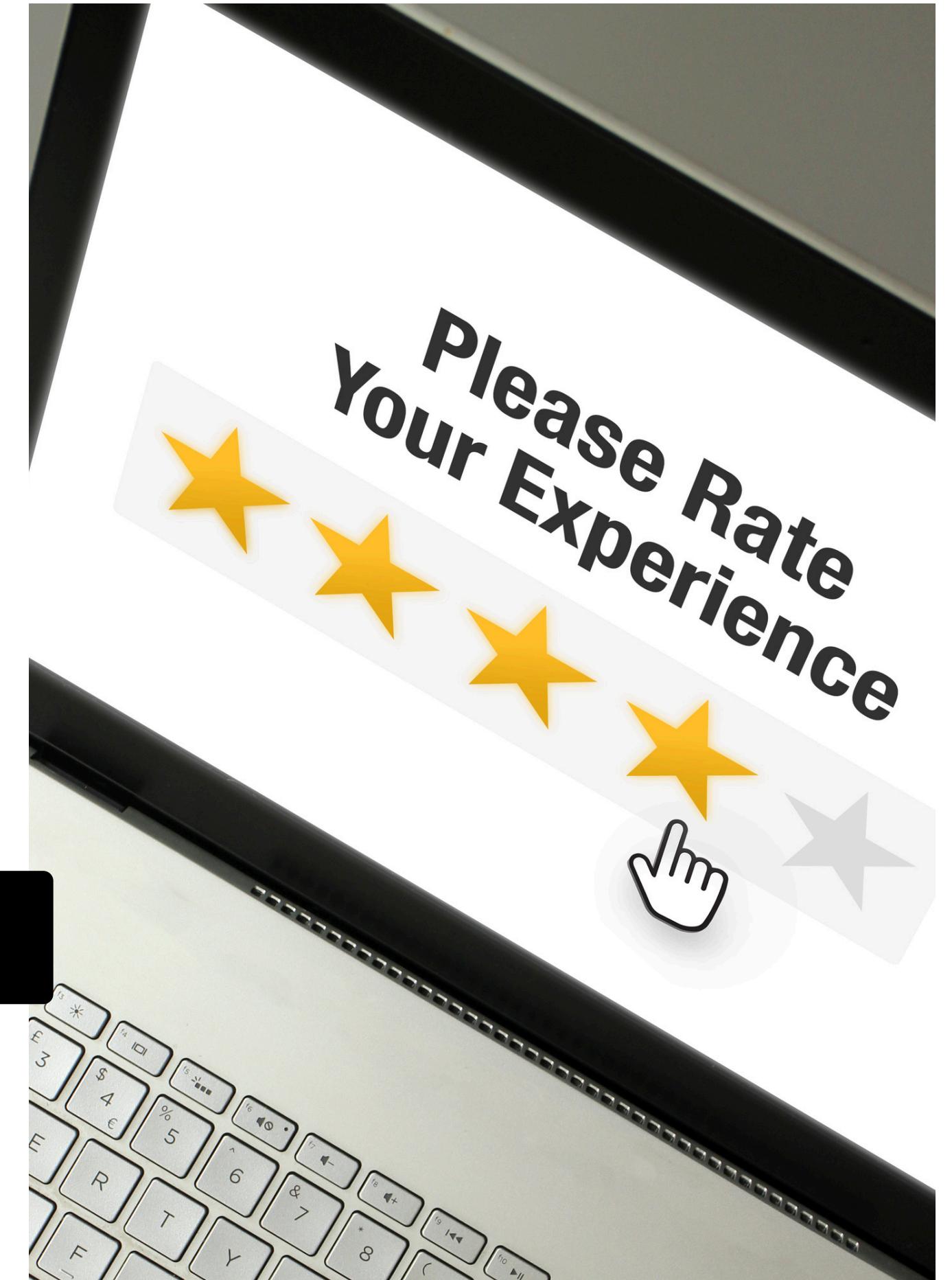
BUSINESS QUESTION



**What factors drive product
ratings on Sephora's website?**

DATA QUESTION

Which features (e.g., price, reviews, brand, category) are the strongest predictors of high vs. low product ratings?



DATASET OVERVIEW

The dataset contains 9,168 products from Sephora with 21 features including brand, category, price, number of reviews, and engagement flags such as “exclusive” or “online only.” This dataset provides a rich mix of numerical and categorical variables, giving insight into product performance and customer engagement.

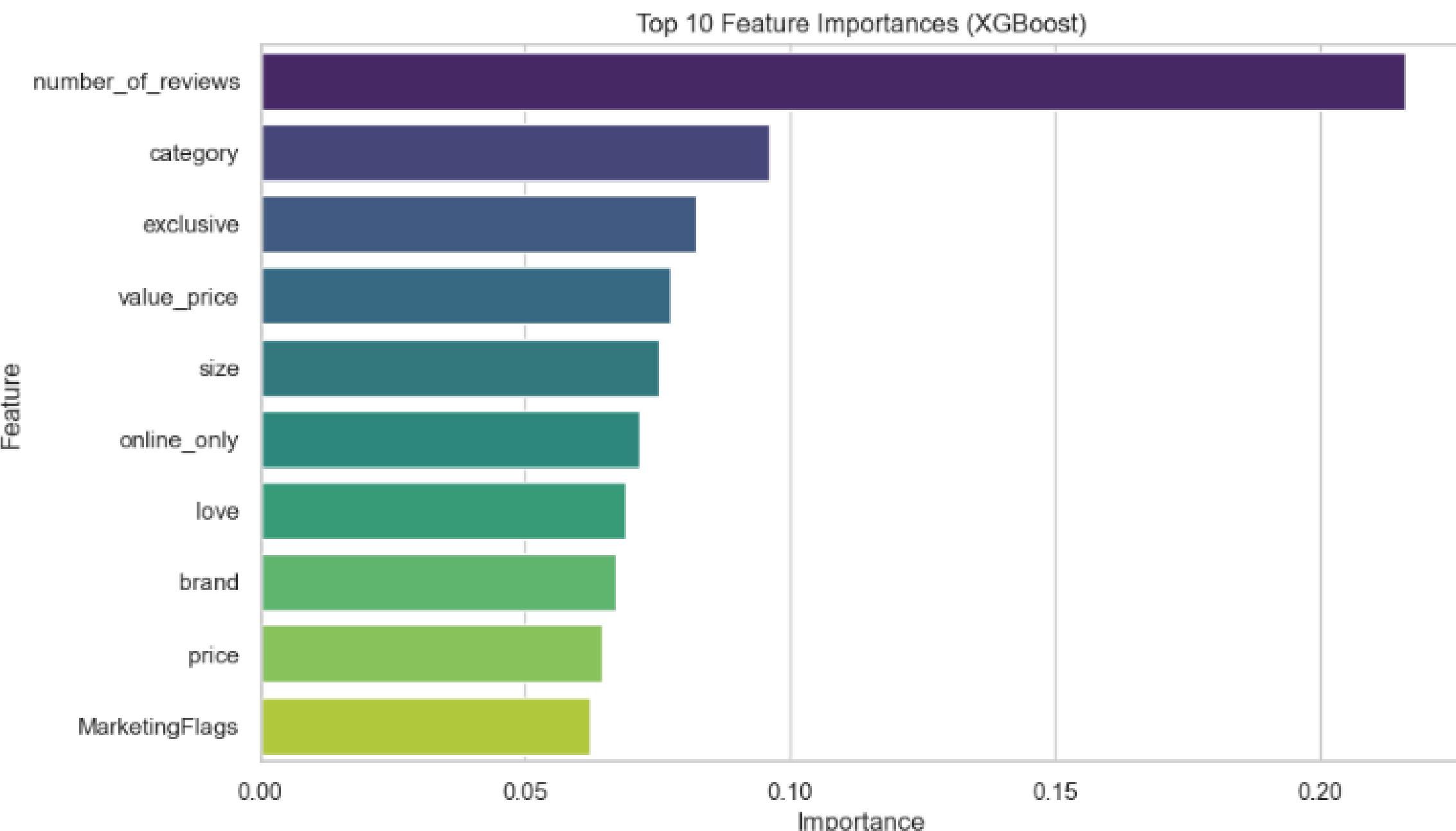
KEY FEATURES

The number of reviews, product category, and whether a product is exclusive are the top 3 features that most influence product ratings.

Product Rating: Sephora products are rated by customers, and we grouped these ratings into three categories for this analysis:

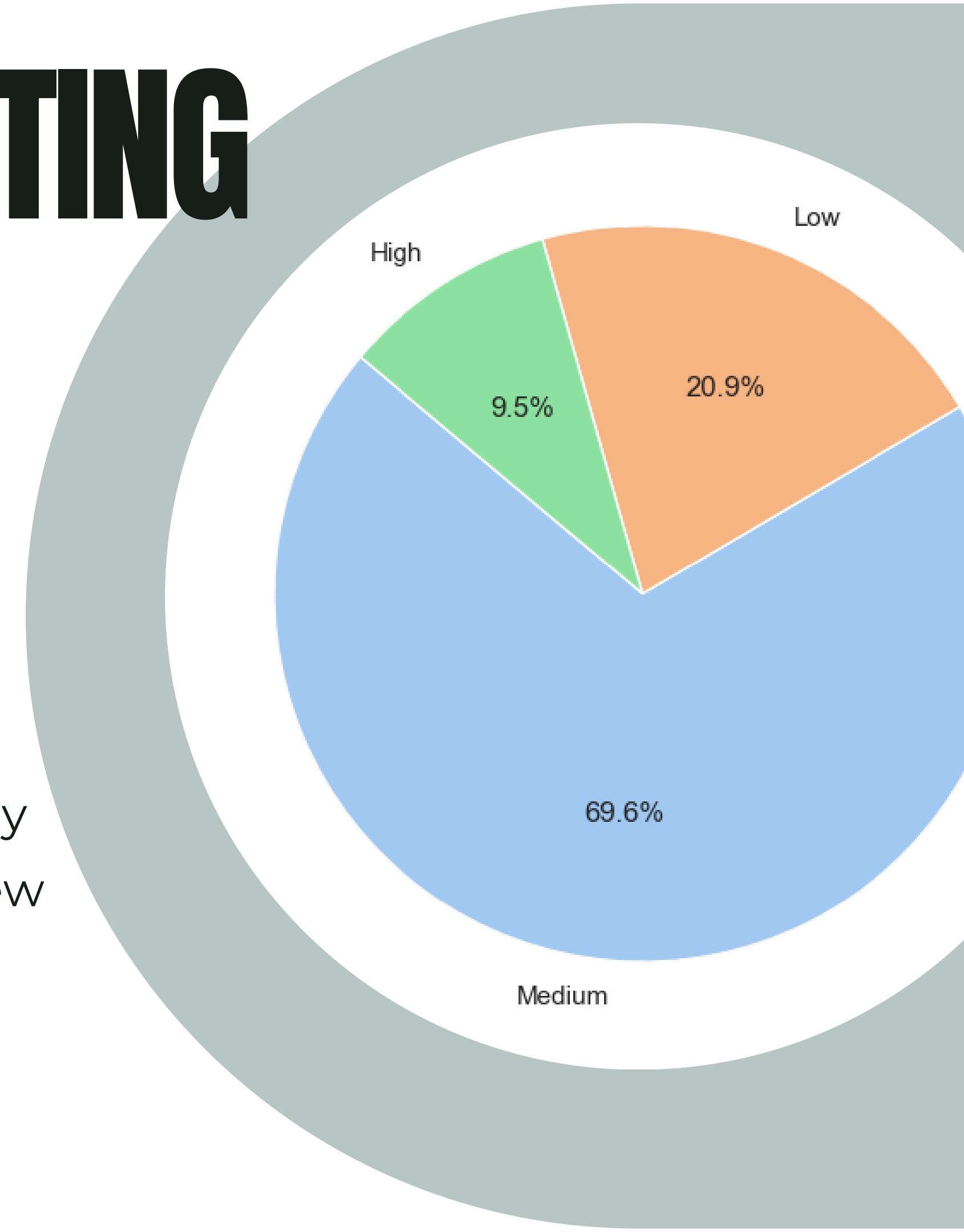
- **Low:** Products rated below 3.5
- **Medium:** Products rated between 3.5 and 4.5
- **High:** Products rated above 4.5

- **Number of Reviews:** How many customers have reviewed the product. Products with more reviews tend to have more reliable ratings.
- **Product Category:** The type of product, such as Fragrance, Makeup, or Haircare, etc. Certain categories tend to get higher or lower ratings on average.
- **Exclusive:** Whether a product is exclusive to Sephora or limited in availability. Exclusive products often receive more attention and engagement.

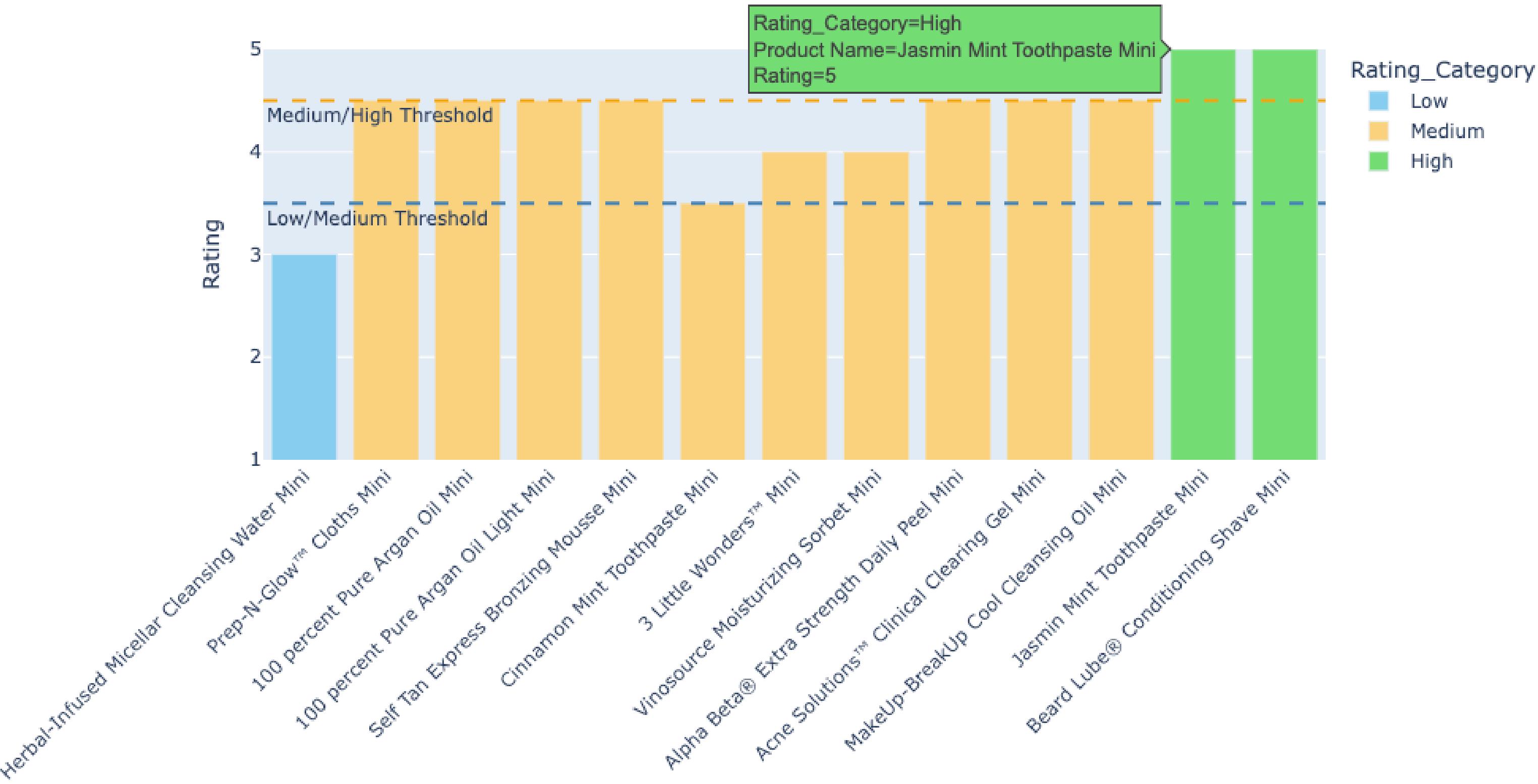


DISTRIBUTION OF RATING CATEGORIES

The distribution of product ratings shows that most items are rated Medium ($\approx 69.6\%$), followed by Low ($\approx 20.9\%$), with only a small portion rated High ($\approx 9.5\%$). This indicates that while the majority of products perform moderately well, relatively few achieve top ratings, highlighting the importance of understanding which features drive higher product scores.



Balanced Sample of Skincare Products (10 per Rating Category)



PREDICTING PRODUCT RATINGS

INSIGHTS & IMPLICATIONS



01

Products with more reviews and in popular categories tend to receive higher ratings.

02

Exclusive products often receive higher engagement

03

Sephora can focus marketing and inventory decisions on products predicted to perform poorly, improving overall customer satisfaction.



THANK
YOU