



Predicting ratings of Moisturizers


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Overview

- Goal is to predict ratings of moisturizers listed on Sephora
- Reviews are important for companies as consumers base buying decision on reviews
- If a company can identify the features that make a highly rated product, they can create similar products

Intro to Data

- Scraped data from Sephora's moisturizer section
- Collected the pink underlined information
- Collected info on 399 products
- 129 brands
- 23 different formulations
- 4 different ingredient callouts



Tatcha
The Dewy Skin Cream Pumping & Hydrating Moisturizer

★★★★☆ 1.8K | Ask a Question | ♥ 153.6K

\$68.00 or 4 interest-free payments of \$17.00 Klarna. ⓘ

Size: 1.7 oz/ 50 mL

Standard size

1.7 oz/ 50 mL

Mini size

~~0.34 oz/ 10 mL~~

Value size

2.5 oz/ 75 mL **NEW**

About the Product

Item 2181006
ONLY AT SEPHORA

What it is: A rich cream that feeds skin with plumping hydration and antioxidant-packed Japanese purple rice for a dewy, healthy glow.

Skin Type: Normal and Dry

Skincare Concerns: Dryness, Dullness and Uneven Texture, and Loss of Firmness and Elasticity

Formulation: Rich Cream

Highlighted Ingredients:

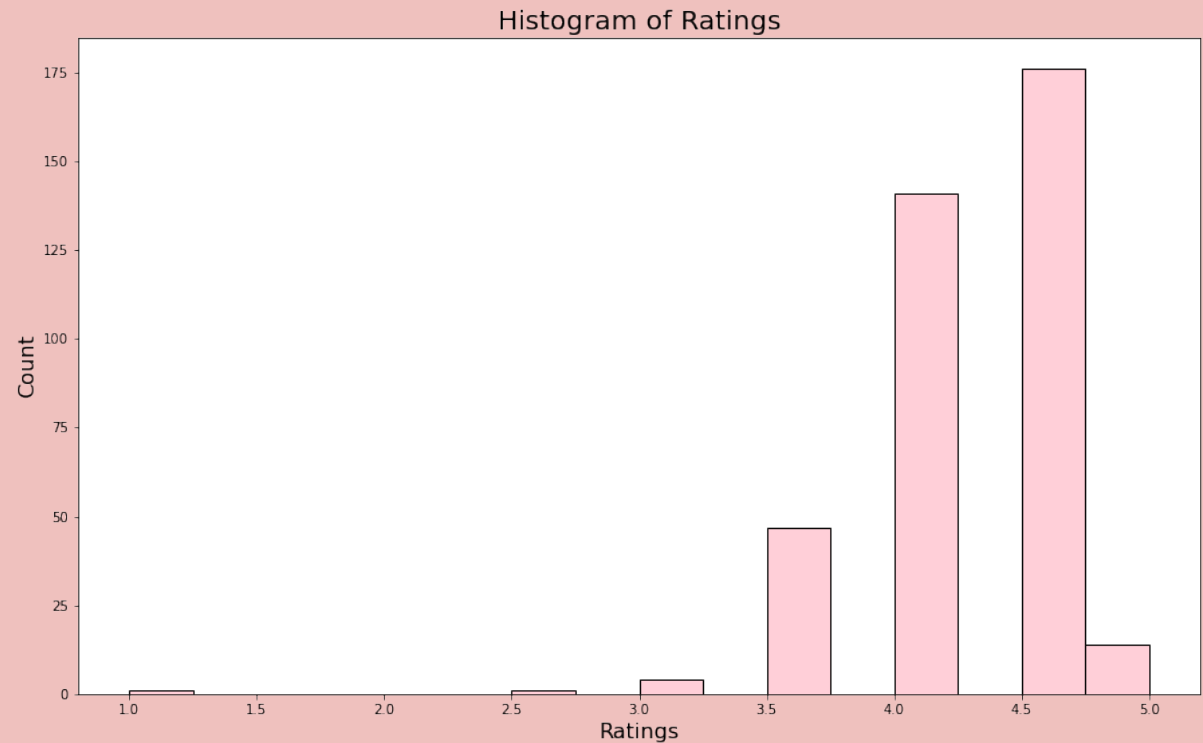
- Japanese Purple Rice: Packed with nutrients and known for its ability to survive any harsh environment, it has long been used to celebrate longevity and vitality; rich in anthocyanin, a strong antioxidant, it helps skin recover from and protect against stress, pollution, and UV damage for healthier-looking skin.
- Okinawa Algae Blend and Hyaluronic Acid: Captures water to help replenish skin's natural moisture reservoir, immediately leaving skin soft, comforted, and deeply nourished; helps to replenish ceramides to ensure optimum skin barrier function, aiding in the reduction of future moisture loss, for skin that is visibly smooth and plump with hydration.
- Botanical Extracts: From ginseng, wild thyme, and sweet marjoram; nourishes skin, enhancing its natural ability to retain and release moisture as needed, and imparts a dewy glow.

Ingredient Callouts: This product is cruelty-free, and gluten-free. It comes in recyclable packaging.

Clean at Sephora
Clean at Sephora is formulated without a list of over 50 ingredients, including sulfates (SLS and SLES), parabens, phthalates, and more. For the full list, check out the Ingredients tab.

Distribution of Ratings

- Ratings between 0-5 stars, but not evenly distributed
- No ratings between 1.5-2
- Mean of 4.18



Results of Basic Models

- Basic model (1) includes just price per ounce
- Basic model (2) includes price per ounce and all the dummies for brand, formulation, skin type, ingredient call-outs, and clean at Sephora
- Overfitting clearly a problem

R^2	Training Set	Testing Set
Model 1	0.00326	-0.0419
Model 2	0.570	-4.103E+21

Results of LASSO with Cross Validation

- Ran LASSO with CV on basic model (2) includes price per ounce and all the dummies for brand, formulation, skin type, ingredient call-outs, and clean at Sephora
- 36 variables remained, down from 165
- Overfitting still a problem
- Can't make model less complex, so need more data

R^2	Training Set	Testing Set
Model 2	0.342	-0.541

Future Work

- Add more data
- Suggestions?

