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DSA210

Final Report

# Huda Beauty

## 

### **Motivation**

I chose to work on this project because I was interested in critically evaluating whether Huda Beauty, a brand known for promoting diversity and inclusivity, actually delivers on its claims of shade inclusivity. As someone who appreciates the brand’s public support for underrepresented communities, I wanted to investigate whether this inclusivity extends beyond marketing into the actual distribution of product shades—especially for deeper skin tones. This project allowed me to combine personal interest with technical analysis to explore inclusivity in a quantifiable way.

### **Data Source**

The data used in this project was manually collected from Huda Beauty's official website and Sephora . I compiled product information for foundations and concealers, focusing specifically on the shade names, undertones, and product categories. I categorized each shade based on the Fitzpatrick skin tone scale (Types I to VI) using the visual shade swatches and undertone descriptions provided. I also recorded each product’s overall rating as shown on the websites.

No customer comment data was used in this analysis. Although I did include numerical ratings ( star ratings out of 5), I did not use customer reviews or feedback in text form, as I was unsure how to transform qualitative comments into usable, structured data for analysis.

### **Data Analysis**

1. **Data Cleaning & Categorization**:  
   * Cleaned product and shade names.
   * Mapped each shade to one of the six Fitzpatrick types based on color and undertone.
2. **Exploratory Data Analysis (EDA)**:  
   * Counted how many shades in each product line belonged to each Fitzpatrick type.
   * Calculated percentages of shades per category to measure representation.
3. **Visualization**:  
   * Created bar plots to visually represent the distribution of shades across Fitzpatrick types.
   * Compared product lines (foundations vs. concealers) and their inclusivity levels.

### **Findings**

* The majority of Huda Beauty’s shades fall within Fitzpatrick Types III and IV, representing medium skin tones.
* Types V and VI (deeper skin tones) were noticeably underrepresented compared to lighter tones.
* Concealer lines were generally less inclusive than foundation lines in terms of range.
* Huda Beauty offers a better-than-average shade range compared to many competitors, but the distribution is not balanced across all skin tones, with deeper tones still underserved.

### **Limitations and Future Work**

**Limitations:**

* I did not analyze customer feedback from comments due to the difficulty of turning unstructured text into usable data.
* Mapping to Fitzpatrick types was done manually based on visual cues, which can introduce subjectivity.

**Future Work:**

* Expand the analysis to include other brands to conduct comparative studies of inclusivity.
* Learn how to perform sentiment analysis or text mining on customer reviews to incorporate qualitative feedback. And use NLP machine learning algorithms (not discussed in class)
* Study regional availability of inclusive shades, as accessibility often varies by market.