codecademy

WARBY PARKER

Analyze Data with SQL

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Table of Contents

Style Quiz Survey Responses

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To help users find their perfect frame, Warby Parker has a Style Quiz. Questions, response counts, and completion rates are outlined below on a sample of 500 customers:

Question	Response Count	Next Question Completion	Overall Completion
1. What are you looking for?	500	-	100.0%
2. What's your fit?	475	95.0%	95.0%
3. Which shapes do you like?	380	80.0%	76.0%
4. Which colors do you like?	361	95.0%	72.2%
5. When was your last eye exam?	270	74.8%	54.0%

```
SELECT question, COUNT(DISTINCT user_id) AS response_count
FROM survey
GROUP BY 1
ORDER BY 1 ASC;

Next Question Completion calculated as the response count
of the current question divided by the total responses of
the previous question.

Overall Completion calculated as the total number of
customers who completed each question.
```

Conclusions:

- Questions 3 and 5 seem to be challenging for customers to answer, leading to a drastic drop in response rate compared to the other questions
- We are still able to get four important data points from 72.2% of customers responding to the survey, which can be used in future marketing or sales efforts
- We may want to explore new methods of understanding the shapes customers like in order to keep them moving through the quiz, or potentially moving that question lower in the quiz

Purchase Funnel Analysis

Purchase Funnel Analysis - Overall

Warby Parker's purchase funnel is: Style Quiz → Home Try-On → Purchase. We will be conducting an A/B test during the Home Try-On where 50% of users get 3 pairs to try, and 50% of users get 5 pairs to try. We will be evaluating the overall results of the purchase funnel, as well as the A/B testing.

Customer Count	Home Try-On %	Home Try-On to Purchase %	Overall Purchase %
1,000	75.0%	66.0%	49.5%

Conclusions:

- Based on the data, not all customers made it through the Style Quiz to the Home Try-On portion of the purchase funnel
- With 66.0% of customers opting to purchase after trying on frames at home, Warby Parker needs to find a way to get more customers to move to the Home Try-On portion of the purchase funnel

```
WITH funnels AS (
  SELECT DISTINCT q.user_id,
    h.user_id IS NOT NULL AS 'is_home_try_on',
    h.number_of_pairs,
    p.user_id IS NOT NULL AS 'is_purchase'
  FROM quiz q
  LEFT JOIN home_try_on h
    ON q.user_id = h.user_id
  LEFT JOIN purchase p
    ON p.user_id = q.user_id

SELECT COUNT(DISTINCT user_id) AS customer_count,
 100.0 * SUM(is_home_try_on) / COUNT(*) AS hto_rate,
 100.0 * SUM(is_purchase) / SUM(is_home_try_on) AS hto_to_purchase,
 100.0 * SUM(is_purchase) / COUNT(*) AS purchase_rate
FROM funnels;
```

Purchase Funnel Analysis – A/B Testing

The results of the previous slide showed us that the Home-Try On portion of the usage funnel is successful in pushing users to purchase frames most of the time. Now we will be evaluating the number of frames offered to customers to see whether there is a meaningful difference in results between customers who tried three pairs versus those who tried on five pairs.

Number of Pairs	Customer Count	Home Try-On to Purchase %
3 pairs	379	53.0%
5 Pairs	371	79.2%

Conclusions:

- While not all customers in each A/B test made it to the Home Try-On portion of the funnel, the difference is not material enough to affect the conclusions
- It is overwhelmingly apparent that the option to try on five pairs at home is the more effective strategy

```
WITH funnels AS (
  SELECT DISTINCT q.user_id,
    h.user_id IS NOT NULL AS 'is_home_try_on',
    h.number_of_pairs,
    p.user_id IS NOT NULL AS 'is_purchase'
  FROM quiz q
  LEFT JOIN home_try_on h
    ON q.user_id = h.user_id
  LEFT JOIN purchase p
    ON p.user_id = q.user_id

SELECT number_of_pairs, COUNT(DISTINCT user_id) AS customer_count,
 ROUND((100.0 * SUM(is_purchase) / COUNT(*)), 1) AS purchase_rate
FROM funnels
WHERE number_of_pairs IS NOT NULL
GROUP BY 1;
```

Purchase Funnel Analysis – Top Sellers

We're now going to identify the top sellers to see if any combinations are vastly more or less popular

Style	Model	Color	Sales	Percent
Men's Styles	Dawes	Driftwood Fade	63	12.7%
Women's Styles	Eugene Narrow	Rosewood Tortoise	62	12.5%
Women's Styles	Eugene Narrow	Rose Crystal	54	10.9%
Men's Styles	Brady	Layered Tortoise Matte	52	10.5%
Women's Styles	Olive	Pearled Tortoise	50	10.1%
Men's Styles	Dawes	Jet Black	44	8.9%
Women's Styles	Lucy	Elderflower Crystal	44	8.9%
Men's Styles	Brady	Sea Glass Gray	43	8.7%
Women's Styles	Lucy	Jet Black	42	8.5%
Men's Styles	Monocle	Endangered Tortoise	41	8.3%

```
SELECT style,
  model_name,
  color, COUNT(product_id) AS sales,
  ROUND(100.0 *(COUNT(product_id) / 495.0), 1) AS percent
FROM purchase
GROUP BY 1, 2, 3
ORDER BY 4 DESC;
```

Conclusions:

- The Eugene Narrow frames were by far the most popular of all styles, with the Dawes model a close second. Each of these should be one of the options provided to customers for a home try on.
- Although the Monocle was the least popular style of all available options, the sales were not an order of magnitude lower than any other styles, so we can infer that all available styles are still viable.