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SQL Funnel Project

Warby Parker Marketing Analysis

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Introduction

Warby Parker is a transformative lifestyle brand with a lofty objective: to offer designer eyewear at a revolutionary price while leading the way for socially conscious businesses. Founded in 2010 and named after two characters in an early Jack Kerouac journal, Warby Parker believes in creative thinking, smart design, and doing good in the world. For every pair of eyeglasses and sunglasses sold, a pair is distributed to someone in need.

In this project, I will analyze funnel data over multiple tables covering Warby Parker consumers. I will then highlight any insights found that could be used to enhance consumers' chances of purchase.

The data being worked with was produced as part of a collaboration between Codecademy and Warby Parker and has been created specifically for this project.

1. Quiz Funnel Analysis

1.1 Inspecting the Quiz Table

- This quiz distributed by Warby Parker consists of five questions, which ask potential consumers what features they would like in a future pair of glasses.
- Features include men or women’s styles, fit, shape, and color.
- The last question asks when an individual last took an eye exam.

question	user_id	response
1. What are you looking for?	005e7f99-d48c-4fce-b605-10506c85aaf7	Women's Styles
2. What's your fit?	005e7f99-d48c-4fce-b605-10506c85aaf7	Medium
3. Which shapes do you like?	00a556ed-f13e-4c67-8704-27e3573684cd	Round

1.2 Quiz Funnel Insights

- After running a count of each question, we can see that there is an expected decline in answers as the questions go on.
- Notable drops in answer counts can be observed in questions three (15.0% drop) and five (20.2%).
- While the reason behind Question Three's drop in answer count is ambiguous, Question Five is asking something relatively different from the rest. Many may not remember the last time they were at an appointment with their eye doctor.

question	count	percentage
1. What are you looking for?	500	100%
2. What's your fit?	475	95.0%
3. Which shapes do you like?	380	80.0%
4. Which colors do you like?	361	95.0%
5. When was your last eye exam?	270	74.8%

2. Purchase Funnel Analysis

2.1 Combining Tables Before Analysis

- There are three tables that needed to be combined for purchase funnel analysis. Table 1, not to be confused with the survey table used in the last analysis, holds information entered by consumers who are considering a try-at-home experience.

- Table 2 has information regarding individuals who tried various pairs of glasses, and Table 3 records purchase data.

Table 1: quiz	Table 2: home_try_on	Table 3: purchase
user_id	user_id	user_id
style	number_of_pairs	product_id
fit	address	style
shape		model_name
color		color
		price

2.1 (cont.) Combining Tables Before Analysis

- Using multiple LEFT JOIN functions, we can combine three tables into one, with the first five rows of data listed below.

user_id	is_home_try_on	number_of_pairs	is_purchase
4e8118dc-bb3d-49bf-85fc-cca8d83232ac	1	3 pairs	0
291f1cca-e507-48be-b063-002b14906468	1	3 pairs	1
75122300-0736-4087-b6d8-c0c5373a1a04	0	null	0
75bc6ebd-40cd-4e1d-a301-27ddd93b12e2	1	5 pairs	0
ce965c4d-7a2b-4db6-9847-601747fa7812	1	3 pairs	1

```
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
LIMIT 10;
```

2.2 Purchase Funnel Insights

- After taking a look at the new table, we can further modify and produce funnel counts from taking the quiz to trying glasses on to purchasing.
- 25% of quiz takers did not try on glasses, while two thirds of people who tried glasses on purchased them.
- The drop in counts after the quiz may be attributed to lack of interest after initial exploration, although there could be other factors at play.
- People who tried glasses but did not purchase are likely to have been unsatisfied with their potential product.

```
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(*) AS 'num_quiz',
  SUM(is_home_try_on) AS 'num_try_on',
  SUM(is_purchase) AS 'num_purchase',
  1.0 * SUM(is_home_try_on) / COUNT(user_id)
 AS 'quiz_to_try_on',
  1.0 * SUM(is_purchase) / SUM(is_home_try_o
n) AS 'try_on_to_purchase'
FROM funnels
LIMIT 10;
```

num_quiz	num_try_on	num_purchase	quiz_to_try_on	try_on_to_purchase
1000	750	495	0.75	0.66

2.2 (cont.) Purchase Funnel Insights

- After analyzing purchase funnel data, we can dive deeper and start categorizing which types of purchases were made.
- In looking at the number of pairs tried by consumers, there is a considerably larger try-to-purchase rate for those who tried five pairs.
- The more pairs an individual tries, the more likely he or she is to find a pair worth purchasing.

```
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,
  SUM(is_home_try_on) AS 'num_try_on',
  SUM(is_purchase) AS 'num_purchase',
  ROUND(1.0 * SUM(is_purchase) / SUM(is_ho
me_try_on), 4) AS 'try_on_to_purchase'
FROM funnels
WHERE number_of_pairs NOT NULL
GROUP BY number_of_pairs
LIMIT 10;
```

number_of_pairs	num_try_on	num_purchase	try_on_to_purchase
3 pairs	379	201	0.5303
5 pairs	371	294	0.7925

3. Additional Analysis

3.1 Quiz Questions Insights

- Most survey takers prefer a narrow fit to a wide one.
- Square and rectangular shaped glasses are much more popular choices than round.
- Tortoise, black, and crystal were the top three colors chosen.

Fit Choice	
count	fit
198	Wide
408	Narrow
305	Medium
89	I'm not sure. Let's skip it.

Shape Choice	
count	shape
326	Square
180	Round
397	Rectangular
97	No Preference

Color Choice	
count	color
104	Two-Tone
292	Tortoise
114	Neutral
210	Crystal
280	Black

3.2 Purchase Insights

- Approximately even split between Women's Styles (51%) and Men's Styles (49%).
- Most popular Men's style is Dawes (44.0% of Men's Styles purchases), while most popular Women's style is Eugene Narrow (46.0% of Women's Styles purchases).
- Most popular colors are Jet Black, Driftwood Fade, and Rosewood Tortoise.
- Most popular Men's Style combination is "Dawes - Driftwood Fade", while most popular Women's Style is "Eugene Narrow - Rosewood Tortoise".

Popular Purchase Combinations			
count	style	model_name	color
63	Men's Styles	Dawes	Driftwood Fade
62	Women's Styles	Eugene Narrow	Rosewood Tortoise
54	Women's Styles	Eugene Narrow	Rose Crystal
52	Men's Styles	Brady	Layered Tortoise Matte
50	Women's Styles	Olive	Pearled Tortoise
44	Men's Styles	Dawes	Jet Black
44	Women's Styles	Lucy	Elderflower Crystal
43	Men's Styles	Brady	Sea Glass Gray
42	Women's Styles	Lucy	Jet Black
41	Men's Styles	Monocle	Endangered Tortoise

Conclusion

Throughout this project, we learned many things about Warby Parker's product options and its consumers' preferences. Actionable insights we covered include:

- Drops in Questions 3 and 5 of the survey may mean that those questions should be evaluated. In addition, the 25% drop in those who try glasses from those who took the initial survey is a significant drop, which perhaps indicates a need for quiz revision.

- The more pairs of glasses that were tried, the more likely it is that consumers will purchase Warby Parker glasses. Suggesting more pairs, including popular style-color combinations (found in previous slide) may produce better purchase rates.

Thank you for taking the time to view this presentation. I appreciate your feedback, so feel free to email me with questions and comments at stephen.ellingson1@gmail.com!