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Warby Parker Funnel Analysis

Learn SQL from Scratch

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The Quiz Funnel: The First Step In the Customer Experience

Tracking the Progression Through the Funnel

To help users find their perfect frame, Warby Parker has a Style Quiz that has five (below) questions. Although questions 3 and 5 have noticeably lower relative completion rates, in aggregate the quiz yields a respectable 54% composite completion rate (# finish/#start).

Question	Number of users completing this question	Percent Completing This Question
1. What are you looking for?	500	100%
2. What's your fit?	475	95%
3. Which shapes do you like?	380	80%
4. Which colors do you like?	361	95%
5. When was your last eye exam?	270	75%

```
SELECT question AS 'Question Number',
   COUNT(DISTINCT user_id) AS 'Number Completing This
Question'
FROM survey
GROUP BY 1;
```

The Quiz Funnel: A Deeper Look at Completion Rates

Analysis of the Responses to Each Question Provides Potential Insights

Question	Number Completing this question	Response Breakdown	Completion Rate	Possible Explanation for Completion Rate
1. What are you looking for?	500	• Men's Styles (242/48%) • Women's Styles (209/42%) • I'm not sure. Let's skip it. (49/10%)	100%	• Surprisingly high number of respondents answered not sure.
2. What's your fit?	475	• Narrow (208/44%) • Medium (132/28%) • Wide (88/19%) • I'm not sure. Let's skip it.(47/10%)	95%	• Although completion rate is high, 10% of respondents (47) are uncertain about fit. (Is a fit guide provided?)
3. Which shapes do you like?	380	• Rectangular (141/37%) • Square (119/31%) • Round (91/24%) • No Preference (29/8%)	80%	• Uncertainty about most flattering shape for customer's facial shape. (Is a facial style guide provided?)
4. Which colors do you like?	361	• Tortoise (117/32%) • Black (112/31%) • Crystal (69/19%) • Neutral (36/10%) • Two-Tone (27/7%)	95%	• Nearly 65% of respondents answered Black or Tortoise. The completion rate may be "overstated" by customer inertia toward traditional colors. (Is there potential demand for non-neutral colors such as red or blue?)
5. When was your last eye exam?	270	• < 1 Year (141/52%) • 1-3 Years (56/21%) • 3+ Years (37/14%) • Not Sure. Let's skip it, (36/13%)	75%	• No eye exam within last 4 years may discourage some users. (Are suggestions/referrals provided for facilitating an eye exam?)

```
SELECT response, COUNT(response)
AS 'Question 1 Response Distb'
FROM survey
WHERE question LIKE '1.%'
GROUP BY 1
ORDER BY 2 DESC;
SELECT response, COUNT(response)
AS 'Question 2 Response Distb'
FROM survey
WHERE question LIKE '2.%'
GROUP BY 1
ORDER BY 2 DESC;
SELECT response, COUNT(response)
AS 'Question 3 Response Distb'
FROM survey
WHERE question LIKE '3.%'
GROUP BY 1
ORDER BY 2 DESC;
SELECT response, COUNT(response)
AS 'Question 4 Response Distb'
FROM survey
WHERE question LIKE '4.%'
GROUP BY 1
ORDER BY 2 DESC;
SELECT response, COUNT(response)
AS 'Question 5 Response Distb'
FROM survey
WHERE question LIKE '5.%'
GROUP BY 1
ORDER BY 2 DESC;
```

The Purchase Funnel

The Purchase Funnel: Tracking the Customer Progression Quiz > Home Try On > Purchase

Takeaways:

- Given that Home Try On is free and convenient, and product pricing is very competitive, why is conversion rate at only 75%? Does range of style, colors, or price points need to be broadened?
- At 66%, Purchase conversion appears healthy, but can it be improved upon? Deeper analysis/comparison of both those who did Purchase, and especially those who did not, could be valuable here.

Question	Number of distinct customers recorded at this step	Conversion Rate
1. Style Quiz	1000	100%
2. Home Try-On	750	75%
3. Purchase	495	66%

```
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 as 'q'
LEFT JOIN home_try_on as 'h'
ON h.user_id=q.user_id
LEFT JOIN purchase as '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
home conversion', 1.0 * SUM(is_purchase) /
SUM(is_home_try_on) AS 'home to purchase conversion'
FROM funnels;
```

The Home Try-On Conversions: 3 Pairs vs. 5 Pairs

Customers who received 5 pairs for Home Try-On have markedly higher Purchase Conversion Rates!

	3 Pairs	5 Pairs	Combined
Number of Customers with Home Try-On	379	371	750
Purchases	201	294	495
Conversion Rate	53.0%	79.2%	66%

Recommend Next Steps

1. Confirm this large purchase conversion rate differential holds up across other A/B test groups.
2. Estimate incremental revenue when higher conversion rate applied to entire customer funnel.
3. Identify costs (added sample pair inventory, loss/breakage, etc.) associated with a full-scale conversion to 5-pair Try-on policy.

```
WITH funnels3 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 as 'q'
LEFT JOIN home_try_on as 'h'
ON h.user_id=q.user_id
LEFT JOIN purchase as 'p'
ON p.user_id=q.user_id
WHERE h.number_of_pairs = '3 pairs')
SELECT SUM(is_home_try_on) AS 'Number with 3 pairs for try on',
SUM(is_purchase) AS 'Number that purchased', 1.0 * SUM(is_purchase)
/ SUM(is_home_try_on) AS '3 pair purchase conversion'
FROM funnels3;

WITH funnels5 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 as 'q'
LEFT JOIN home_try_on as 'h'
ON h.user_id=q.user_id
LEFT JOIN purchase as 'p'
ON p.user_id=q.user_id
WHERE h.number_of_pairs = '5 pairs')
SELECT SUM(is_home_try_on) AS 'Number with 5 pairs for try on',
SUM(is_purchase) AS 'Number that purchased', 1.0 * SUM(is_purchase)
/ SUM(is_home_try_on) AS '5 pair purchase conversion'
FROM funnels5;
```

The Purchase Funnel: A look at those who did NOT convert Quiz to Home Try On

- Recall that there were 250 out of 1000 quiz respondents who didn't move to Home Try-On.
- Were these respondents looking for something notably different than those who converted to Home Try-On?

Question	Completed Home Try-On % Response Breakdowns (750 Total Respondents)	NO Home Try-On % Response Breakdowns (250 Total Respondents)	Possible Explanation for Completion Rate
1. What are you looking for?	• Women's Styles (48%) • Men's Styles (43%) • I'm not sure. Let's skip it. (9%)	• Women's Styles (43%) • Men's Styles (45%) • I'm not sure. Let's skip it. (12%)	• No major differences across groups
2. What's your fit?	• I'm not sure. Let's skip it.(9%) • Narrow (31%) • Medium (40%) • Wide (20%)	• I'm not sure. Let's skip it.(10%) • **Narrow (42%)** • Medium (28%) • Wide (19%)	• Notable difference in drop out group for those seeking Narrow fit. Is Narrow product offering different than Medium and Wide offerings **?**
3. Which shapes do you like?	• No Preference (9%) • **Rectangular (38%)** • Round (19%) • Square (33%)	• No Preference (10%) • **Rectangular (44%)** • Round (16%) • Square (30%)	• Moderate difference in drop-out group for those seeking Rectangular fit. How robust is Rectangular product selection versus others?
4. Which colors do you like?	• Black (29%) • Crystal (22%) • Neutral (11%) • Tortoise (28%) • Two-Tone (10%)	• Black (24%) • Crystal (18%) • Neutral (14%) • Tortoise (32%) • Two-Tone (12%)	• No major differences across groups

```
WITH quizdrop AS (
SELECT *
FROM quiz AS q
LEFT JOIN home_try_on as h
ON q.user_id = h.user_id
WHERE h.user_id IS NULL)
SELECT quizdrop.style,
COUNT(quizdrop.style)
FROM quizdrop
GROUP BY quizdrop.style;
WITH quizdrop AS (
SELECT *
FROM quiz AS q
LEFT JOIN home_try_on as h
ON q.user_id = h.user_id
WHERE h.user_id IS NULL)
SELECT quizdrop.fit,
COUNT(quizdrop.fit)
FROM quizdrop
GROUP BY quizdrop.fit;
WITH quizdrop AS (
SELECT *
FROM quiz AS q
LEFT JOIN home_try_on as h
ON q.user_id = h.user_id
WHERE h.user_id IS  NULL)
SELECT quizdrop.shape,
COUNT(quizdrop.shape)
FROM quizdrop
GROUP BY quizdrop.shape;
WITH quizdrop AS (
SELECT *
FROM quiz AS q
LEFT JOIN home_try_on as h
ON q.user_id = h.user_id
WHERE h.user_id IS NULL)
SELECT quizdrop.color,
COUNT(quizdrop.color)
FROM quizdrop
GROUP BY quizdrop.color;
```

Purchases Analysis

Understanding the Purchases: What's Selling? Purchases Ranked by Model Name

- Eugene Narrow (116)
- Dawes (107)
- Brady (95)
- Lucy (86)
- Olive (50)
- Monocle (41)

Takeaways:

- There may be an statistical interrelationship (dependency) between model and model. Separate analysis can refute/confirm this.
- Olive and Monocle disadvantaged because they are each offered in only 1 color.

Product ID	Model Name	Color	Number Purchased
3	Dawes	Driftwood Fade	63
10	Eugene Narrow	Rosewood Tortoise	62
9	Eugene Narrow	Rose Crystal	54
1	Brady	Layered Tortoise Matte	52
6	Olive	Pearled Tortoise	50
4	Dawes	Jet Black	44
7	Lucy	Elderflower Crystal	44
2	Brady	Sea Glass Gray	43
8	Lucy	Jet Black	42
5	Monocle	Endangered Tortoise	41
TOTAL			**495**

```
SELECT product_id, model_name, color,
COUNT(user_id) AS 'Number Purchased'
FROM purchase
GROUP BY product_id
ORDER BY COUNT(user_id) DESC;
```

Understanding the Purchases: What's Selling? Purchases Ranked by Color

- Because Black is the only color off across more than 1 model (Dawes, Lucy), there may be an statistical interrelationship between color and model. Separate statistical analysis can refute/confirm this. (e.g. Is Driftwood Fade the second most popular color because customers love the color independent of the model, or because of the Driftwood/Dawes combination?)

Color	Number of Models Offered in this Color	Number Purchased
Jet Black	2	86
Driftwood Fade	1	63
Rosewood Tortoise	1	62
Rose Crystal	1	54
Layered Tortoise Matte	1	52
Pearled Tortoise	1	50
Elderflower Crystal	1	44
Sea Glass Gray	1	43
Endangered Tortoise	1	41
TOTAL		**495**

```
SELECT color,  COUNT(user_id) AS
'Number Purchased'
FROM purchase
GROUP BY color
ORDER BY COUNT(user_id) DESC;
```

Understanding the Purchases: What's Selling? Purchases Ranked by Unit Price and Style

- The $95 price point was clearly the most popular (53%). However, as with color, this might be due to the fact the $95 price is tied to the Lucy and Dawes models. Separate statistical analysis can refute/confirm this.
- 53% of Purchases were women's models; note that this is somewhat different from the quiz, were only 42% claimed to be looking for women's styles. Alternatively, why did the men's % of purchase mix (40%) fall below the % of those who came looking for men's (48%)?

Unit Price	Number of Models Offered at this Price	Number Purchased
$95	2 (Lucy, Dawes)	261
$150	3 (Brady, Eugene Narrow, Olive)	193
$50	1 (Monocle)	41
TOTAL		**495**

Style	Models Offered	Number Purchased
Women's	Eugene Narrow, Lucy, Olive	252
Men's	Brady, Dawes, Monocle	243
TOTAL		**495**

```
SELECT price AS 'Unit Price',
COUNT(user_id) AS 'Number Purchased'
FROM purchase
GROUP BY price
ORDER BY COUNT(user_id) DESC;

SELECT DISTINCT(model_name), price
from purchase;
```

```
SELECT style,  COUNT(user_id) AS
'Number Purchased'
FROM purchase
GROUP BY style
ORDER BY COUNT(user_id) DESC;

SELECT DISTINCT(style), model_name
from purchase
ORDER BY style, model_name;
```

Concluions

Key Takeaways

- Profound difference in Purchase Conversion Rate for 5-Pair (79%) vs 3-Pair (53%) Warrants Immediate Action
  - •Confirm this differential holds up across different/larger sample
  - •Quantify the incremental revenues from a higher Purchase conversion rate versus the incremental Try On program costs (sample units, breakage, shipping, etc.)

- Those taking the Style Quiz but NOT opting for Home Try On (versus those that Did Home Try On) show tendency toward the following:
  - •Narrow styles (42% vs 31%)
  - •Square styles (44% vs 38%)

  Are we confident that both these product offers are as compelling as the other product types?

- Purchase Highlights Include:
  - •Most Popular Model/Color Combos: Dawes (Driftwood Fade, 13% total), Eugene Narrow (Rosewood Tortoise, 13% total)
  - •Most Popular Price Point: $95 (53% total); Despite the fact only 2 models (Lucy, Dawes are at this price point)
  - •Most Popular Style: Women's (51% total); Compares with the fact that only 42% who took Style Quiz specified Women's Styles as their focus.
  - •There may be a statistical dependency between Model, Color, and Price that obscures some underlying trends; separate statistical analysis can refute/confirm this.