

# Usage Funnels with Warby Parker

Analyze Data with SQL

Ahmad Ammash

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# 1. Quiz Funnel

# 1.1 Overview of the Quiz

The 5-question survey developed by Warby Parker enables customers to efficiently and conveniently find the frame that exactly matches preferences. The survey is formed of the five questions below:

1. What are you looking for?
2. What's your fit?
3. Which shapes do you like?
4. Which colors do you like?
5. When was your last eye exam?

The responses of 500 customers to the survey were recorded in a dataset. The first few rows of this dataset are presented below. The dataset's columns present the question, the customer's unique ID, and their response to that specific question.

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
4. Which colors do you like?	00a556ed-f13e-4c67-8704-27e3573684cd	Two-Tone
1. What are you looking for?	00a556ed-f13e-4c67-8704-27e3573684cd	I'm not sure. Let's skip it.

## 1.2 What is the number of responses for each question?

The query below was used to determine the number of responses to each of the five survey questions. Excel was used to calculate the percentage of respondents who answered each of the subsequent questions. The results show that all 500 respondents answered the first question about the style they were looking for. Furthermore, almost all respondents answered the question about the frame size that best fits them. However, significantly less respondents answered the questions about their favorite frame shapes and colors. Lastly, only about half of the respondents answered the question about their last eye exam.

Question	Number of Responses
1. What are you looking for?	500
2. What's your fit?	475
3. Which shapes do you like?	380
4. Which colors do you like?	361
5. When was your last eye exam?	270

```
SELECT
question,
COUNT(DISTINCT user_id) AS nb_responses
FROM survey
GROUP BY question;
```

## 1.3 Which questions have a lower completion rate?

Building on the output from the previous step, Microsoft Excel was used to calculate the percentage of customers who responded to each of the five consecutive questions. The results show that the third and fifth questions have the lowest completion rates of 80% or below. On the other hand, the remaining questions all have a completion rate of at least 95%. The two questions with the lowest completion rates ask about a respondent's last eye exam and their favorite frame shapes.

The low completion rate of question 5 could be justified by the fact that many people either do not remember when their last eye exam was or have never done one. On the other hand, participants might not have understood what question 3 asked and thus did not know what to respond.

Question	Number of Responses	Percent Responded
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	74.79%

## **2. Purchase Funnel**

## 2.1 Overview of the Purchase Funnel and the A/B Test

The Purchase Funnel at Warby Parker consists of three stages:

1. Take the Style Quiz.
2. Home Try-On
3. Purchase the Perfect Pair of Glasses

Warby Parker performed an A/B tests on customers at the Home Try-On phase to determine whether giving them 3 versus 5 pairs to try on makes a significant difference to their purchase rate. Half the respondents were given 3 pairs to try at home while the other half was given 5 pairs.



## 2.2 Creating the Funnel Table

A table was created by joining three tables providing information on each of the three phases (Style Quiz, Home Try-On, and Purchase). The first few rows are shown 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

```
WITH CTE 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 = h.user_id  
)  
  
SELECT * FROM CTE  
LIMIT 5;
```

## 2.3 What are the Overall Conversion Rates?

The results show that 75% of the people who completed the Style Quiz went on to try pairs of glasses at home. Also, 49.5% of them ended up purchasing a pair.

Total Users	Percentage Try-On	Percentage Purchased
1000	75%	49.5%

```
SELECT
COUNT(*) AS total_users,
100.0*SUM(is_home_try_on)/CO
UNT(*) AS perc_home_try_on,
100.0*SUM(is_purchase)/COUNT
(*) AS perc_purchase
FROM CTE
```

## 2.4 How do the conversion rates between the different stages of the funnel compare?

Furthermore, 66% of the customers who tried pairs of glasses at home went on to make a purchase.

Quiz to Home Try-On	Home Try-On to Purchase
75%	66%

```
SELECT
100.0*SUM(is_home_try_on)/COUNT(
*) AS quiz_to_home_try,
100.0*SUM(is_purchase)/SUM(is_ho
me_try_on) AS
home_try_on_to_purchase
FROM CTE;
```

## 2.5 How do the purchase rates differ between the customers who had 3 versus 5 pairs to try at home?

The results show that the customers who tried 5 pairs at home rather than 3 were much more likely to end up making a purchase. 79.24% of the people who tried 5 pairs at home purchased a pair of glasses while only about half of those who tried 3 pairs did so. This means that giving customers more pairs to try at home to give them more flexibility and choices would be a good business decision by Warby Parker.

Purchase Rate for 3 Pairs	Purchase Rate for 5 Pairs
53.03%	79.24%

```
SELECT
100.0*SUM(CASE WHEN number_of_pairs =
'3 pairs' THEN is_purchase
END)/SUM(CASE WHEN number_of_pairs = '3
pairs' THEN is_home_try_on END) AS
'3_total_conversion_rate',

100.0*SUM(CASE WHEN number_of_pairs =
'5 pairs' THEN is_purchase
END)/SUM(CASE WHEN number_of_pairs = '5
pairs' THEN is_home_try_on END) AS
'5_total_conversion_rate'
FROM CTE;
```

## 2.6 What are the most common results of the style quiz?

Question: Style		Question: Shape	
Response	Number of Responses	Response	Number of Responses
I'm not sure. Let's skip it.	99	No Preference	97
Men's Styles	432	Rectangular	397
Women's Styles	469	Round	180
		Square	326
Question: Fit		Question: Color	
Response	Number of Responses	Response	Number of Responses
I'm not sure. Let's skip it.	89	Black	280
Medium	305	Crystal	210
Narrow	408	Neutral	114
Wide	198	Tortoise	292
		Two-Tone	104

```
SELECT
style,
COUNT(*) AS nb_responses
FROM quiz
GROUP BY style;

SELECT
fit,
COUNT(*) AS nb_responses
FROM quiz
GROUP BY fit;

SELECT
shape,
COUNT(*) AS nb_responses
FROM quiz
GROUP BY shape;

SELECT
color,
COUNT(*) AS nb_responses
FROM quiz
GROUP BY color;
```

## 2.6 What are the most common results of the style quiz? (continued)

The results (on the previous slide) show that about 10% of the respondents have no specific preference for frame style. Apart from that, the split between Men's and Women's styles is almost even.

The results also show the narrow fit is the most popular among the respondents as around 40% of them chose it as their preference. Also, around 30% of the customers preferred a medium fit. The wide fit is the least popular with only 20% of the respondents preferring it. The remaining respondents did not state a specific preference for fit.

The rectangular- and square-shaped frames are significantly more popular than the round ones as they are preferred by more than 70% of the respondents. Less than 20% of the customers indicated they would choose a round-shaped frame. Less than 10% of the respondents did not state a clear preference for frame shape.

Lastly, tortoise, black, and crystal are the three most popular frame colors among the respondents, respectively, with each being preferred by more than 20% of the customers. In contrast, only around 10% of the respondents favor a two-tone color.

## 2.7 What are the most common types of purchase made? (continued)

Style	Model Name	Color	Number of Purchases
Men's Styles	Brady	Layered Tortoise Matte	52
Men's Styles	Brady	Sea Glass Grey	43
Men's Styles	Dawes	Driftwood Fade	63
Men's Styles	Dawes	Jet Black	44
Men's Styles	Monocle	Endangered Tortoise	41
Women's Styles	Eugene Narrow	Rose Crystal	54
Women's Styles	Eugene Narrow	Rosewood Tortoise	62
Women's Styles	Lucy	Elderflower Crystal	44
Women's Styles	Lucy	Jet Black	42
Women's Styles	Olive	Pearled Tortoise	50

```
SELECT
style,
model_name,
color,
COUNT(*) AS nb_purchases
FROM purchase
GROUP BY 1,2,3;
```

The results show that in the Men's category, the Dawes model with the Driftwood Fade color is the most popular. The Eugene Narrow model in the Rosewood Tortoise color is the most popular in the Women's category.

# Key Points

1. Almost half the customers who took the Style Quiz ended up making a purchase. Also, there was a 66% chance that a person who tried glasses at home proceeded to buy a pair.
2. Giving customers flexibility by allowing them to try more glasses at home significantly increased their chances of making a purchase. 53% of the customers who tried 3 pairs at home made a purchase while 79% of those who tried 5 pairs at home did so.
3. Customers had a clear preference for rectangular- and square-shaped frames with a narrow fit and a tortoise, crystal, or black color.
4. The Brady and Eugene Narrow with Tortoise colors were the most popular frames among men and women, respectively.