

Capstone Project

Funnels with Warby Parker

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Table of Contents

1. Get familiar with Warby Parker
2. What is the Quiz Funnel
3. A/B Testing with Home Try-On Funnel

1. Get familiar with Warby Parker (1/2)

[Warby Parker](#) is a lifestyle brand offering designer eyewear at a revolutionary price while leading the way for socially conscious businesses.

Usually customers visit the website, answer an onboarding quiz and based on their answers receive a customized set of samples to try at home. After trying on those samples at home, they decide which glasses to purchase.

In this Capstone Project, we will analyze different Warby Parker's marketing funnels in order to calculate conversion rates.

1. Get familiar with Warby Parker (2/2)

For this project, the data is organized in the following tables:

Quiz Funnel:

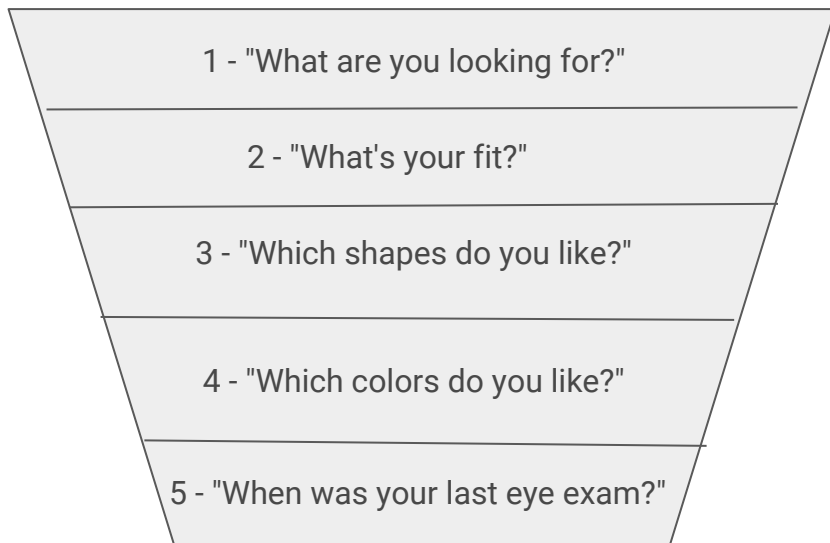
- Survey

Home Try-On Funnel:

- Quiz
- Home_try_on
- Purchase

2. What is the Quiz Funnel

To help users find their perfect frame, Warby Parker has a [Style Quiz](#) with the following questions/steps:



All the data around this is stored on the table `survey`

2.1 Structure of Table 'survey'

By running an exploratory query (SELECT * FROM survey LIMIT 10), we can identify the table survey has the following columns

- **question (Text):** describes the specific question (or stage in the funnel) answered is described
- **user_id (Text):** unique ID of the user answering the survey
- **response (text):** response to the user 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

2.1 Analyzing quiz funnel drop-off (2 / 2)

With some help from GSheets, we can then analyze the answer with lowest completion rate

The question with lowest completion rate seems to be question number 5 (When was your last eye exam?) with a rate of 75% (vs second lowest of 80%).

Probably this low rate is due to the fact the users don't have information available right away and end up not proceeding. It would be interesting to experiment moving this question to the "Try at home" or purchase stage and see if we see an increase in completion rate as well as a low increase in returns.

question	COUNT(DISTINCT user_id)	Completion Rate (Calculated using GSheets)
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%

3. A/B Testing with Home Try-On Funnel

As the next step, we analyzed the overall funnel by focusing on the following tables

- Quiz
- Home_try_on
- Purchase

An important remark on the fact that during the Home Try-On stage (table Home_try_on), an A/B test was conducted:

- 50% of the users will get **3** pairs to try on
- 50% of the users will get **5** pairs to try on

3.1 Exploring tables from Home Try-on Funnel

We started by analyzing the schema of the existing tables (headers below) and we can quickly identify that `user_id` is the key we can use to “stitch” all these tables together,

Quiz:

<code>user_id</code>	<code>style</code>	<code>fit</code>	<code>shape</code>	<code>color</code>
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Home Try On:

<code>user_id</code>	<code>number_of_pairs</code>	<code>address</code>
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purchase:

<code>user_id</code>	<code>product_id</code>	<code>style</code>	<code>model_name</code>	<code>color</code>	<code>price</code>
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```
SELECT * FROM quiz  
LIMIT 10;
```

```
SELECT * FROM home_try_on  
LIMIT 10;
```

```
SELECT * FROM purchase  
LIMIT 10;
```

3.2 Stitching tables from Home Try-on Funnel

After the first analysis, it's time to stitch the tables using the query highlighted on the right. A sample of 4 entries of that query are available below

```
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 q.user_id=h.user_id  
LEFT JOIN purchase as p ON q.user_id=p.user_id  
LIMIT 10;
```

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		0
75bc6ebd-40cd-4e1d-a301-27ddd93b12e2	1	5 pairs	0

3.3 Looking into the overall conversion rate

Now that all tables are stitched, we started by building the overall conversion rates.

The conversion (as we suspected) from try_at_home to purchase is the lowest

COUNT (*)	num_is_home_try_on	num_purchase	% browse home_try_on	% try_at_home to purchase
1000	750	495	75.0	49.5

```
WITH funnels AS (SELECT DISTINCT q.user_id
AS 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
q.user_id=h.user_id
LEFT JOIN purchase as p ON
q.user_id=p.user_id)
SELECT COUNT(*), sum(is_home_try_on) as
'num_is_home_try_on', sum(is_purchase) as
'num_purchase',100.0 * SUM(is_home_try_on)
/ COUNT(user_id) as '% browse home_try_on',
100.0 * SUM(is_purchase) /
COUNT(is_home_try_on)
as '% try_at_home to purchase' FROM
funnels;
```

3.4 Looking conversion rates of the A/B test

As a next step, we looked into the results of the A/B to see what number of pairs (3 or 5) has better conversion rate.

From the numbers it seems clear that the group with 5 pairs converts better than the one with 3 pairs. This might be related with the fact that customers have more pairs to choose from they therefore are more likely to buy.

It would be interesting to run an experiment between 5 and 7 pairs and see if the conversion increases or decreases with a higher number of pairs

number_pairs	COUNT(*)	% home_try_on to purchase
3 pairs	379	53.0343007915567
5 pairs	371	79.2452830188679

```
WITH funnels AS (SELECT DISTINCT q.user_id
AS user_id,
h.user_id IS NOT NULL AS 'is_home_try_on',
h.number_of_pairs as number_pairs,
p.user_id IS NOT NULL AS 'is_purchase'
FROM quiz as q
LEFT JOIN home_try_on as h ON
q.user_id=h.user_id
LEFT JOIN purchase as p ON
q.user_id=p.user_id)
SELECT number_pairs, COUNT(*),
100.0 * SUM(is_purchase) /
COUNT(is_home_try_on)
as '% home_try_on to purchase' FROM funnels
WHERE number_pairs IS NOT NULL
GROUP BY 1;
```

3.5 Analyzing average order value and total revenue

As a final step, we analyzed the revenue impact of the of the A/B test.

The total revenue is higher for 5 pairs than for 3 pairs. On the other hand, the average order value is higher for 3 pairs even though their sample is slightly bigger (379 vs 371).

number_pairs	COUNT (*)	% browse to purchase	SUM (price)	AVG(price)
3 pairs	379	53.0343007915567	22765	113.25870646766 2
5 pairs	371	79.2452830188679	33030	112.34693877551

```
WITH funnels AS (SELECT DISTINCT q.user_id
AS user_id,
h.user_id IS NOT NULL AS 'is_home_try_on',
h.number_of_pairs as number_pairs,
p.user_id IS NOT NULL AS 'is_purchase',
p.price as price
FROM quiz as q
LEFT JOIN home_try_on as h ON
q.user_id=h.user_id
LEFT JOIN purchase as p ON
q.user_id=p.user_id)
SELECT number_pairs, COUNT(*),
100.0 * SUM(is_purchase) /
COUNT(is_home_try_on)
as '% browse to purchase', SUM(price),
AVG(price) FROM funnels
WHERE number_pairs IS NOT NULL
GROUP BY 1;
```