



Capstone Project

Usage Funnels with Warby Parker

Alexander Voronin

Apr 9, 2019 - Jun 4, 2019

Table of Contents

Get familiar with Warby Parker

- Learnings
- Analyzing the Quiz funnel
- Analyzing the Home Try-On Funnel

Learnings

Learning	Action
<ul style="list-style-type: none">• During the quiz users drop off the most during questions 3 and 5• Majority of responders are looking for narrow fit glasses in either rectangular or square shape. The most popular colours are Tortoise and Black	<ul style="list-style-type: none">• Changing the questions might help to minimize the drop off rate• Increase the number of such glasses in stock to make sure the company doesn't run out of the most popular shapes
<ul style="list-style-type: none">• "Monocle" and "Olive" have the lowest sales among all models	<ul style="list-style-type: none">• Decrease the price for these models to help with sales
<ul style="list-style-type: none">• 79.25% of those who had 5 glasses to try on - convert and only 53.03% make a purchase after trying 3 glasses	<ul style="list-style-type: none">• Allow users to try on 5 glasses during the try on stage. This might have increase the try on to purchase rate from the current 66%

Quiz Funnel

- To help users find their perfect frame, Warby Parker uses a Style Quiz. To see users' responses to the quiz, we need to look at the "Survey" table
- Using the below query, we select all columns in the table and limit it to 10 rows. We can see three columns (question, user id and the users' responses)

```
SELECT *  
FROM survey  
LIMIT 10;
```

question	user_id	response
1. What are you looking for?	005e7f99-d48c-4fce	Women's Styles
2. What's your fit?	005e7f99-d48c-4fce	Medium
3. Which shapes do you like?	00a556ed-f13e-4c6	Round
4. Which colors do you like?	00a556ed-f13e-4c6	Two-Tone
1. What are you looking for?	00a556ed-f13e-4c6	I'm not sure. Let's skip it.
2. What's your fit?	00a556ed-f13e-4c6	Narrow
5. When was your last eye exam?	00a556ed-f13e-4c6	<1 Year
3. Which shapes do you like?	00bf9d63-0999-43a	Square
5. When was your last eye exam?	00bf9d63-0999-43a	<1 Year
2. What's your fit?	00bf9d63-0999-43a	Medium

Quiz Funnel

- Now that we know the structure of the table, we can analyze how users move from question to question
- We use a query count the total numbers of unique users and group those by questions

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

question	# of users	Completion Rate
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%

- **By comparing completion rates for each question as opposed to the previous one, we can see that users seem to drop off the most during questions 3 and 5**
- **Users find these questions to be the most difficult to answer. Changing the question structure might help**

Quiz Funnel

- We can also look at the most common results of the quiz per each question:

```
SELECT question, response,  
COUNT(user_id)  
FROM survey  
GROUP BY 2  
ORDER BY 1, 3 DESC;
```

question	response	COUNT(user_id)
1. What are you looking for?	Men's Styles	242
	Women's Styles	209
	I'm not sure. Let's skip it.	96
2. What's your fit?	Narrow	208
	Medium	132
	Wide	88
3. Which shapes do you like?	Rectangular	141
	Square	119
	Round	91
	No Preference	29
4. Which colors do you like?	Tortoise	117
	Black	112
	Crystal	69
	Neutral	36
	Two-Tone	27
5. When was your last eye exam?	<1 Year	141
	1-3 Years	56
	3+ Years	37
	Not Sure. Let's Skip It	36

Quiz Funnel

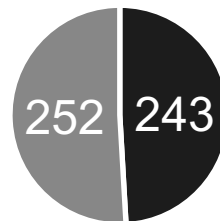
- Let's see what are the most common styles bought:

```
SELECT style, model_name, COUNT(user_id)
FROM purchase
GROUP BY 1
ORDER BY 3 DESC;
```

- ... and the most common models bought:

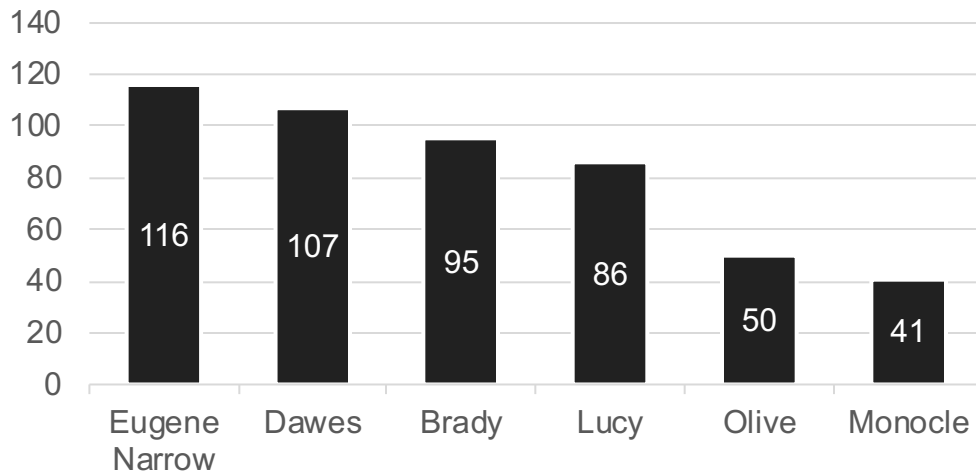
```
SELECT model_name, COUNT(user_id)
FROM purchase
GROUP BY 1
ORDER BY 2 DESC;
```

Sales by Style



■ Men's Style ■ Women's Style

Sales by Model



Home Try-On Funnel

- Warby Parker's purchase Funnel is: Take the Style Quiz → Home Try-On → Purchase
- Let's take a look at the three queries by using the below query:

```
SELECT *
FROM quiz
LIMIT 5;

SELECT *
FROM home_try_on
LIMIT 5;

SELECT *
FROM purchase
LIMIT 5;
```

quiz					
user_id	style	fit	shape	color	
4e8118dc-bb3d-49bf-85fc-cca8d83232ac	Women's Styles	Medium	Rectangular	Tortoise	
291f1cca-e507-48be-b063-002b14906468	Women's Styles	Narrow	Round	Black	
75122300-0736-4087-b6d8-c0c5373a1a04	Women's Styles	Wide	Rectangular	Two-Tone	
75bc6ebd-40cd-4e1d-a301-27ddd93b12e2	Women's Styles	Narrow	Square	Two-Tone	
ce965c4d-7a2b-4db6-9847-601747fa7812	Women's Styles	Wide	Rectangular	Black	
home_try_on					
user_id	number_of_pairs	address			
d8add87-3217-4429-9a01-d56d68111da7	5 pairs	145 New York 9a			
f52b07c8-abe4-4f4a-9d39-ba9fc9a184cc	5 pairs	383 Madison Ave			
8ba0d2d5-1a31-403e-9fa5-79540f8477f9	5 pairs	287 Pell St			
4e71850e-8bbf-4e6b-acc-49a7bb46c586	3 pairs	347 Madison Square N			
3bc8f97f-2336-4dab-bd86-e391609dab97	5 pairs	182 Cornelia St			
purchase					
user_id	product_id	style	model_name	color	price
00a9dd17-36c8-430c-9d76-df49d4197dcf	8	Women's Styles	Lucy	Jet Black	150
00e15fe0-c86f-4818-9c63-3422211baa97	7	Women's Styles	Lucy	Elderflower Crystal	150
017506f7-aba1-4b9d-8b7b-f4426e71b8ca	4	Men's Styles	Dawes	Jet Black	150
0176bfb3-9c51-4b1c-b593-87edab3c54cb	10	Women's Styles	Eugene Narrow	Rosewood Tortoise	95
01fdf106-f73c-4d3f-a036-2f3e2ab1ce06	8	Women's Styles	Lucy	Jet Black	150

- All three tables are share the "user_id" column.
We can use it connect the tree tables into one

Home Try-On Funnel

- We can use **LEFT JOIN** to combine the three tables based on the **"user_id" column**
- We'll also use **IS NOT NULL** to see if the user has completed a specific step. For example if the user hasn't completed the purchase(is_purchase) – we'll see a zero

```
SELECT DISTINCT quiz.user_id,  
               home_try_on.user_id IS NOT NULL AS  
               'is_home_try_on',  
               home_try_on.number_of_pairs,  
               purchase.user_id IS NOT NULL AS 'is_purchase'  
FROM quiz  
LEFT JOIN home_try_on  
      ON quiz.user_id = home_try_on.user_id  
LEFT JOIN purchase  
      ON quiz.user_id = purchase.user_id  
LIMIT 10;
```

user_id	is_home_try_on	number_of_pairs	is_purchase
4e8118dc-bb3d-49b1-9d3d-4a1b1b1b1b1b	1	3 pairs	0
291f1cca-e507-48b1-9d3d-4a1b1b1b1b1b	1	3 pairs	1
75122300-0736-4081-9d3d-4a1b1b1b1b1b	0		0
75bc6ebd-40cd-4e11-9d3d-4a1b1b1b1b1b	1	5 pairs	0
ce965c4d-7a2b-4db1-9d3d-4a1b1b1b1b1b	1	3 pairs	1
28867d12-27a6-4e61-9d3d-4a1b1b1b1b1b	1	5 pairs	1
5a7a7e13-fbcf-46e4-9d3d-4a1b1b1b1b1b	0		0
0143cb8b-bb81-4911-9d3d-4a1b1b1b1b1b	0		0
a4ccc1b3-cbb6-4491-9d3d-4a1b1b1b1b1b	1	5 pairs	0
b1dded76-cd60-4221-9d3d-4a1b1b1b1b1b	1	3 pairs	0

Home Try-On Funnel

- Now that we have created a combined table, we can use **WITH** to add some calculations based on it
- Let's see what is the overall conversion rate for the Home Try-On funnel:

```
SELECT COUNT(*) AS 'Total Users',  
SUM(is_home_try_on) AS 'num_home_try_on',  
SUM(is_purchase) AS 'num_purchase',  
1.0 * SUM(is_purchase) / COUNT(user_id) AS  
'overall_conv_rate'|  
FROM Funnels;
```

- Using the above query we can see: total number of users, users that completed Home Try On and purchased glasses. We calculate the overall conversion rate dividing total purchases by number of users

Total Users	num_home_try_on	num_purchase	overall_conv_rate	
1000	750	495	49.5%	
umber_of_pairs	Total Users	num_home_try	num_purchase	overall_conv_rate
	250	0	0	0
3 pairs	379	379	201	53%
5 pairs	371	371	294	79%

49.5% of those who start the quiz – purchase glasses

79.25% of those who had 5 glasses to try on - convert and only 53.03% make a purchase after trying 3 glasses

- We can also see the difference in conversion rates between customers who had 3 and 5 glasses during the Try-On stage if use **GROUP BY number_of_pairs**

```
SELECT number_of_pairs, COUNT(*) AS 'Total  
Users', SUM(is_home_try_on) AS 'num_home_try_on',  
SUM(is_purchase) AS 'num_purchase',  
1.0 * SUM(is_purchase) / COUNT(user_id) AS  
'overall_conv_rate'  
FROM Funnels  
GROUP BY number_of_pairs;
```

Home Try-On Funnel

- We can also compare conversions from quiz to home try on and home try on to purchase

```
SELECT COUNT(*) AS 'Total Users',  
SUM(is_home_try_on) AS 'num_home_try_on',  
SUM(is_purchase) AS 'num_purchase',  
1.0 * SUM(is_home_try_on) / COUNT(user_id) AS  
'browse_to_home_try_on',  
1.0 * SUM(is_purchase) / SUM(is_home_try_on) AS  
'home_try_on_to_purchase'  
FROM Funnels;
```

Total Users	num_home_try_on	num_purchase	browse_to_home	home_try_on_to_purchase
1000	750	495	75%	66%



75% of those who take the quiz – go to the Try On page

Out of those users – 66% purchase the glasses