Warby Parker Marketing Funnel Analysis

Learn SQL from Scratch

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1. Familiarize with Survey Funnel

1. Familiarize with Survey Funnel

```sql
    --Quiz Funnel
select * from survey limit 10;
--how many ppl @ each question of survey
select question, count(distinct user_id)
from survey
group by 1;
```

Query Results

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.
2. What's your fit?	00a556ed-f13e-4c67-8704-27e3573684cd	Narrow
5. When was your last eye exam?	00a556ed-f13e-4c67-8704-27e3573684cd	<1 Year
3. Which shapes do you like?	00bf9d63-0999-43a3-9e5b-9c372e6890d2	Square
5. When was your last eye exam?	00bf9d63-0999-43a3-9e5b-9c372e6890d2	<1 Year
2. What's your fit?	00bf9d63-0999-43a3-9e5b-9c372e6890d2	Medium

question	count(distinct user_id)
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

What do the results from the survey customers take on Warby Parker's website look like? How many people answer each question on the survey or quit part of the way through?
- The survey data includes the question, particular user taking the survey, and their responses to each question.
- The second query shows the number of users completing each question. This completion rate is shown on the next slide.

1. Familiarize with Survey Funnel

Question	Count(distinct user_id)	Percent Completion
1. What are you looking for?	500	100.0%
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%

The completion rate is the number of distinct users completing a particular question divided by the number who completed the previous question. From this chart, Warby Parker can see which question loses the most participants and consider changing or removing this question from their survey in order to retain more customers on their website for longer.

The two questions losing the most participants are "3. Which shapes do you like?" and "5. When was your last eye exam?".

2. Familiarize with Home Try-On Funnel

2. Familiarize with Home Try-On Funnel

```
18    select * from quiz limit 5;
19    select * from home_try_on limit 5;
20    select * from purchase limit 5;
21
```

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

user_id	number_of_pairs	address
d8addd87-3217-4429-9a01-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-accc-49a7bb46c586	3 pairs	347 Madison Square N
3bc8f97f-2336-4dab-bd86-e391609dab97	5 pairs	182 Cornelia St

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

Next, observe the structure of the data from the quiz, home_try_on, and purchase tables.

From these tables, we can analyze the trends of customers who take the quiz, try on certain pairs of glasses, and choose to make a purchase.

3. Conversion Rate from Quiz > Home Try-On > Purchase

3. Conversion Rate from Quiz > Home Try-On > Purchase

```sql
14   select distinct q.user_id,
15   h.user_id is not null as 'is_home_try_on',
16   h.number_of_pairs,
17   p.user_id is not null as 'is_purchase'
18   from quiz q
19   left join home_try_on h
20   on q.user_id = h.user_id
21   left join purchase p
22   on p.user_id = q.user_id
23   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	Ø	0
75bc6ebd-40cd-4e1d-a301-27ddd93b12e2	1	5 pairs	0
ce965c4d-7a2b-4db6-9847-601747fa7812	1	3 pairs	1
28867d12-27a6-4e6a-a5fb-8bb5440117ae	1	5 pairs	1
5a7a7e13-fbcf-46e4-9093-79799649d6c5	0	Ø	0
0143cb8b-bb81-4916-9750-ce956c9f9bd9	0	Ø	0
a4ccc1b3-cbb6-449c-b7a5-03af42c97433	1	5 pairs	0
b1dded76-cd60-4222-82cb-f6d464104298	1	3 pairs	0

Consider the A/B test Warby Parker conducts by giving some customers three pairs to try on at home, while others get to try on five pairs. The code above creates the table to the right, which shows each distinct user, if they tried on glasses at home and how many, and if they then purchased a pair.

We will aggregate this table to see the findings of this table more clearly.

```sql
25   with results as (select distinct q.user_id,
26   h.user_id is not null as 'is_home_try_on',
27   h.number_of_pairs,
28   p.user_id is not null as 'is_purchase'
29   from quiz q
30   left join home_try_on h
31   on q.user_id = h.user_id
32   left join purchase p
33   on p.user_id = q.user_id
34                  )
35
36   SELECT is_purchase,
37     COUNT(DISTINCT CASE
38       WHEN number_of_pairs = '3 pairs' THEN user_id
39       END) AS '3 Pairs',
40     COUNT(distinct case when number_of_pairs='5
     pairs' then       user_id end) as '5 Pairs'
41   FROM results
42   group by 1;
43   |
44   select count(distinct user_id) from quiz;
45
```

is_purchase	3 Pairs	5 Pairs
0	178	77
1	201	294
count(distinct user_id)		
1000		

On the left is the code from the previous slide, used to create a temporary table to reference. In the table above, the number of customers who purchased a pair of glasses is clearly filtered by how many pairs of glasses they tried on at home.

Let's further discuss these findings on the next slide.

3. Conversion Rate from Quiz > Home Try-On > Purchase

is_purchase	3 Pairs	5 Pairs
0	178	77
1	201	294
count(distinct user_id)		
1000		

is_purchase	3 Pairs	5 Pairs	No. Customers who Purchased/Didn't
Didn't Purchase	178	77	255
Completed Purchase	201	294	495
No. Customers w/ 3 or 5 Pairs	379	371	750

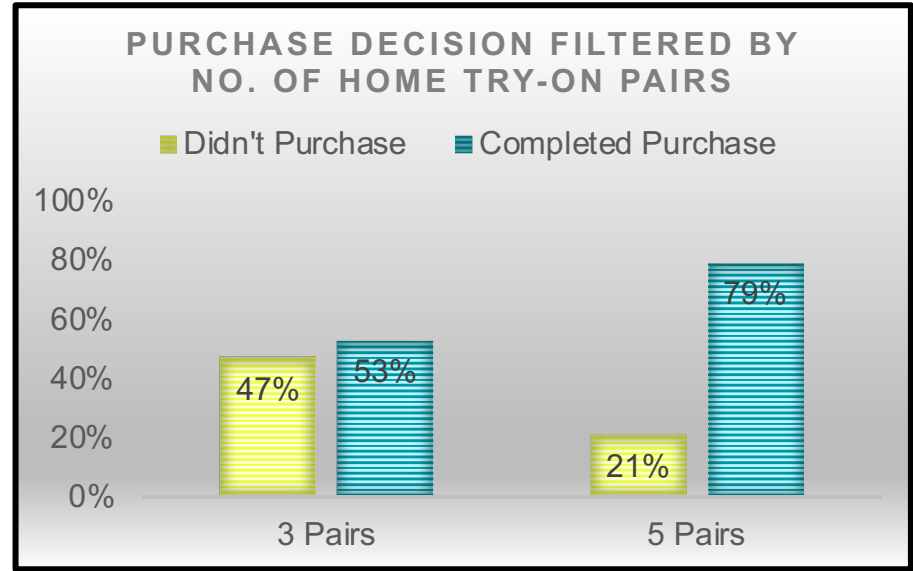|	3 Pairs	5 Pairs
Didn't Purchase	47%	21%
Completed Purchase	53%	79%
No. Customers w/ 3 or 5 Pairs	100%	100%

The first table, which was found from the code shown on the last slide, was copied into an excel document to show more clearly the number of customers who did or did not complete a purchase and who brought home five or three pairs of glasses to try on. These numbers are provided on the second table.

The third table below clarifies the important findings from this data: the percentages of customers who made a purchase after trying on either three or five pairs of Warby Parker's glasses at home.

3. Conversion Rate from Quiz > Home Try-On > Purchase

Here is a graphical representation of the data distilled on the previous slide. The graph makes it blatantly clear that those who brought home 5 pairs are much more likely to make a purchase than those who only tried on 3 pairs at home.

While the statistics are split pretty evenly for those who try on 3 pairs at home, those who try on 5 pairs are around 30% more likely to make a purchase!

PURCHASE DECISION FILTERED BY NO. OF HOME TRY-ON PAIRS

■ Didn't Purchase ■ Completed Purchase

	3 Pairs	5 Pairs
Didn't Purchase	47%	21%
Completed Purchase	53%	79%
No. Customers w/ 3 or 5 Pairs	100%	100%

4. Most Common Styles Purchased

4. Most Common Styles Purchased

```sql
84
85  select distinct model_name from purchase;
86
87  select distinct model_name, style, price from purchase
88  where style like 'Women%'
89  order by 1 asc
90  limit 20;
91
92  select distinct model_name, style, price from purchase
93  where style like 'Men%'
94  order by 1 asc
95  limit 20;
96
```

model_name
Lucy
Dawes
Eugene Narrow
Brady
Monocle
Olive

model_name	style	price
Eugene Narrow	Women's Styles	95
Lucy	Women's Styles	150
Olive	Women's Styles	95

model_name	style	price
Brady	Men's Styles	95
Dawes	Men's Styles	150
Monocle	Men's Styles	50

So far, we have looked at the initial survey that potential customers who land on the site take and then explored the results from those who took some pairs home to try on. Next, let's consider those who finally did make a purchase and see if there are any trends.

First, let's look at the distinct models that were purchased and filtered these by men's or women's styles.

4. Most Common Styles Purchased

```
97    select model_name, count(model_name), style, price from purchase
98    group by 1
99    order by 2 desc
100   limit 10;
```

model_name	count(model_name)	style	price
Eugene Narrow	116	Women's Styles	95
Dawes	107	Men's Styles	150
Brady	95	Men's Styles	95
Lucy	86	Women's Styles	150
Olive	50	Women's Styles	95
Monocle	41	Men's Styles	50

```
102   select style, avg(price)
103   from purchase
104   group by 1;
```

style	avg(price)
Men's Styles	111.625514403292
Women's Styles	113.769841269841

Here, the models that were most commonly purchased and their price are shown, as well as the average price of both men's and women's style.

The average price of glasses purchased for both men and women is around $110. Perhaps to increase sales, Warby Parker could consider this when pricing their products, though more research would need to be conducted to see if this is efficient.

4. Most Common Styles Purchased
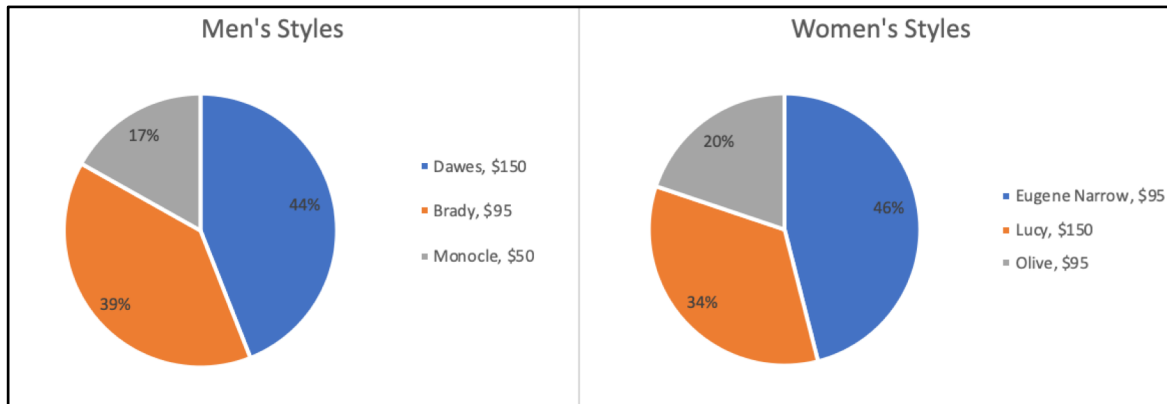
model_name	count(model_name)	style	price
Eugene Narrow	116	Women's Styles	95
Dawes	107	Men's Styles	150
Brady	95	Men's Styles	95
Lucy	86	Women's Styles	150
Olive	50	Women's Styles	95
Monocle	41	Men's Styles	50

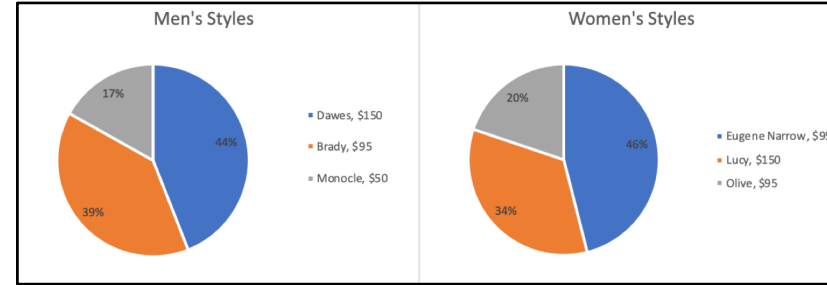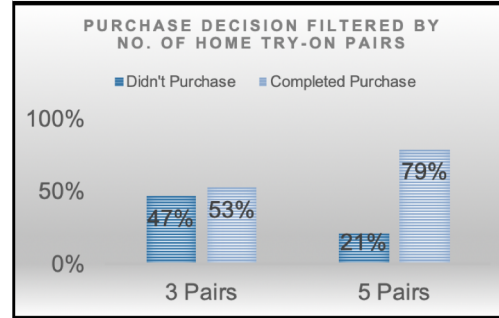| style	avg(price)
Men's Styles	111.625514403292
Women's Styles	113.769841269841

Presenting this data in a graph aids in visualizing the results. The majority of women prefer a $95 option, while the majority of men opt for the $150 pair.

While changes in most commonly purchased style could be due to customers valuing model of the glasses over price, the consumer's cost is always considered when making a purchase and therefore is a good factor to consider.

5. Final Comments

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Question	Count(distinct user_id)	Percent Completion
1. What are you looking for?	500	100.0%
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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%

PURCHASE DECISION FILTERED BY NO. OF HOME TRY-ON PAIRS

■ Didn't Purchase   ■ Completed Purchase

3 Pairs: 47% / 53%
5 Pairs: 21% / 79%

Men's Styles
- Dawes, $150 — 44%
- Brady, $95 — 39%
- Monocle, $50 — 17%

Women's Styles
- Eugene Narrow, $95 — 46%
- Lucy, $150 — 34%
- Olive, $95 — 20%

To summarize the findings from the exploration of the survey, quiz, home try-on, and purchase tables, three suggestions to Warby Parker's marketing funnel can be concluded.

1. Change or remove Question 3 and Question 5 from the initial survey, as they have the worst completion rate and lose the most customers' interest.
2. Give customers 5 pairs of glasses to try on at home because this dramatically increases likelihood of purchase.
3. Consider pricing models of glasses at a number where customer purchases and profits can be maximized.