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Funnels with Warby Parker

Learn SQL from Scratch Capstone Project

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8/28/2018

Example Table of Contents

1. Get familiar with Warby Parker

1.1 Survey Table

The *survey* table of Warby Parker's system contains quiz responses from users regarding the *Style Quiz* provided

- The *survey* table contains three columns: question, user_id, and responses
- The *survey* table, while useful, doesn't provide much use to us unless we're checking for a specific user_id's responses. From a customer service perspective, this is incredibly useful
- Code used shown at right. Sample of output shown below

question	user_id	responses
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

```
/*Question 1 Code*/

select *
from survey
limit 10;
```

2. The Quiz Funnel

2.1 Quiz Funnel Overview

A funnel is an overview of how far a user gets through a system. In Warby Parker's case, we're interested in how far users got into the quiz funnel

- Question 1 response amount: 500 responses (100% of responses)
- Question 2 response amount: 475 responses (95% of responses)
- Question 3 response amount: 380 responses (76% of responses)
- Question 4 response amount: 361 responses (72% of responses)
- Question 5 response amount: 270 responses (54% of responses)

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

```
/* Question 2 & 3 code*/

select question as 'Question', count(*) as 'Number of
       Responses'
from survey
group by question;
```

2.2 Quiz Funnel Insights (Question 4)

- Questions three and four have similar completion percentages within the funnel. This might be due to the nature of the questions, as picking a favorite color from a list could be too much to think of for some of the respondents, Respondents may also be predisposed to have difficulty selecting colors/shapes they “like”, rather than their “favorite” color/shape
- Question five may have the lowest completion rate due to it being the last question, and also due to it being a specific question related to an event that may not have high priority in the responder’s mind

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

3.1 A/B Testing with Home Try-On Funnel

A/B testing involves determining changes in conversion based on a change of a variable from setting A to setting B.

- For Warby Parker, the variable of interest is number of pairs of glasses given to a customer to try at home, between three and five pairs
- First we check through the various tables we'll be pulling from to understand their schema and properties

```
/* Question 5 Quiz table code*/

select *
from quiz
limit 5;

/* Question 5 Home Try-On table code*/

select *
from home_try_on
limit 5;

/* Question 5 Purchase table code*/

select *
from purchase
limit 5;
```

3.2 *Quiz*, *Home Try-On*, and *Purchase* samples

Quiz table

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

Home Try-On table

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

Purchase table

user_id	product_id	style	model_name	color_price	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

3.3 A/B Testing with Home Try-On Funnel (cont'd)

Based on this information, we can develop a combined table that contains all information we'll need to conduct the A/B testing. We'd like to organize the data in a way where we can see the following attributes with ease:

- *User ID*
- *Whether they completed a home try-on*
- *Number of pairs they received*
- *Whether they purchased a pair*
- An example of this table is shown below

user_id	is_home_try_on	number_of_pairs	is_purchase
4e8118dc-bb3d-49bf-85fc-cca8d83232ac	True	3 pairs	False
291f1cca-e507-48be-b063-002b14906468	True	3 pairs	True
75122300-0736-4087-b6d8-c0c5373a1a04	False	Null	False
75bc6ebd-40cd-4e1d-a301-27ddd93b12e2	True	5 pairs	False

```
/*Question 6 code*/

select a.user_id,
       case
       when b.number_of_pairs >= 0 then 'True'
       else 'False'
       end as 'is_home_try_on',
       b.number_of_pairs,
       case
       when c.price >= 0 then 'True'
       else 'False'
       end as 'is_purchase'
from quiz as a
left join home_try_on as b
            on a.user_id = b.user_id
left join purchase as c
            on a.user_id = c.user_id
limit 10;
```

3.4 A/B Testing with Home Try-On Funnel (cont'd)

We want to modify the code listed on the previous slide to sum up the new attributes by amount purchased and not purchased, and then group these results by the number of pairs tried on

- Null is included for completeness. To remove Null results if needed, I'd include the commented code at the bottom of the code block (purple font)
- **3 pair** try-ons had a **purchase rate of 53%** and a **non-purchase rate of 47%** (Purchase Rate = [201/(201 + 178)]; Non-Purchase Rate = [178/(201 + 178)]
- **5 pair** try-ons had a **purchase rate of 79%** and a **non-purchase rate of 21%** (Purchase Rate = [294/(294 + 77)]; Non-Purchase Rate = [77/(294 + 77)]

number_of_pairs	amount_purchased	amount_not_purchased
Null	0	250
3 pairs	201	178
5 pairs	294	77

```
/*Question 7 code*/

with purchasing_table as (select a.user_id,
       case
       when b.number_of_pairs >= 0 then 'True'
       else 'False'
       end as 'is_home_try_on',
       b.number_of_pairs,
       case
       when c.price >= 0 then 'True'
       else 'False'
       end as 'is_purchase'
from quiz as a
left join home_try_on as b
             on a.user_id = b.user_id
left join purchase as c
             on a.user_id = c.user_id)
select number_of_pairs,
                                                sum(case
when is_purchase = 'True' then 1 else 0
                                                end) as
amount_purchased,
       sum(case when is_purchase = 'False' then 1 else
                                                  0 end) as
amount_not_purchased
from purchasing_table
group by number_of_pairs;
/*having number_of_pairs is not Null;*/
```

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

Based on the actual data pulled, it appears that sending a Home Try-On kit of 5 pairs of glasses as opposed to 3 pairs of glasses provides a noticeable lift in purchase %

4. Additional Insights

4.1 Additional Insights: Style Quiz Results

Style Quiz results are important to review to understand how potential customers like their products to work, feel, and function

Choice (Style)	Response Amount
Women's Style	469
Men's Style	432
I'm not sure. Let's skip it	99

Choice (Fit)	Response Amount
Narrow	408
Medium	305
Wide	198
I'm not sure. Let's skip it	89

```
/* Generic code for pulling search results by style
quiz answers*/

Select style as 'Choice', count(style) as 'Response
Amount'

from quiz
Group by 1;

/*Replace style with any of the following:
             Fit
             Shape
             Color */
```

Choice (Shape)	Response Amount
Rectangular	397
Square	326
Round	180
No Preference	97

4.2 Additional Insights: Purchase Patterns

Understanding what's being purchased most by customers is important to maximizing sales. Below is a data pull for the most sold glasses from the *purchase* table.

- Product 3 was the highest selling product despite its high price point. This suggests that people are willing to pay higher for another attribute of the product (potentially the Brand, Color, or Style)
- Products 9 and 10 are both Eugene Narrow, suggesting this is a popular model that should be further pushed to increase sales

model_name	product_id	price	Sales
Dawes	3	150	63
Eugene Narrow	10	95	62
Eugene Narrow	9	95	54
Brady	1	95	52
Olive	6	95	50

```
/* Sales made by product type/model */

select model_name, product_id, price,
count(product_id) as 'Sales'
from purchase
group by product_id
order by Sales desc;
```

End of Presentation