Analysis of Warby Parker's Usage Funnel

Analyzing Marketing Funnels with SQL

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Data provided by codecademy

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sourced from https://www.warbyparker.com/quiz

1. Overview

Project Overview

The purpose of this project is to analyze different marketing funnels at Warby Parker. The focus will be placed on calculating conversion rates. Throughout the process, I also identify different key insights and conclude with recommendations based on analyses conducted.

Company Background:

Warby Parker is an eyewear company that offers affordable, stylish glasses (prescription and non-prescription) to customers conveniently online and in-store.

A free at-home try-on program is offered which allows customers to try five frames at home for free before they make a purchase.

Warby Parker's Funnel illustrates the customer journey from taking a quiz to making a purchase.

Four Tables given in this project:

Style Quiz Funnel:

- survey (1,986 records)

Home Try-On Funnel:

- quiz (1,000 records)
- home_try_on (750)
- purchase (495)

2. Style Quiz Funnel Analysis

Style Quiz Funnel – Survey Results

question	Num_responses	Change_num_responses_bw_Qs	%_change_bw_Qs
1. What are you looking for?	500.0	0.0	Ø
2. What's your fit?	475.0	-25.0	95.0
3. Which shapes do you like?	380.0	-95.0	80.0
4. Which colors do you like?	361.0	-19.0	95.0
5. When was your last eye exam?	270.0	-91.0	74.792243767313

The percent change between each question shows the point where a users 'gives up' in the survey.

Key Findings:
Question 2 and 4 have high completion rates.

But Question 3 and 5 have lower rates indicating that these questions take more thought in answering or the answer may be unknown.

Recommendation:
Question 3 indicates a virtual try-on would help users decide better.

```
-- SQL code (partial)
WITH percent_change_table AS (
SELECT
question,
CAST(COUNT(DISTINCT user_id) AS REAL) as Num_responses,
CAST(COUNT(DISTINCT user_id) AS REAL)-LAG(CAST(COUNT(DISTINCT user_id)
AS REAL),1,(CAST(COUNT(DISTINCT user_id) AS REAL))) OVER (
ORDER BY question
) AS 'Change_num_responses_bw_Qs'
FROM survey
GROUP BY question
ORDER BY question
)
SELECT
question,
num_responses,
Change_num_responses_bw_Qs,
100+100*(Change_num_responses_bw_Qs/LAG(Num_responses) OVER (ORDER BY
question)) AS '%_change_bw_Qs',
100*(num_responses/500) AS 'Total_%_responded_per_Q'
FROM percent_change_table;
```

3. Purchase Funnel Analysis

Overall Purchase Funnel – Conversion Rates

total_num_customers	num_home_try_on	num_purchase_made	home_try_on_%	funnel_purchase_%
1000	750	495	75.0	66.0

Warby Parker's purchase funnel is:
Take the Style Quiz → Home Try-On → Purchase the Perfect Pair of Glasses

Prior to calculating the percent changes, a new table was created using LEFT JOINS and CASE statements join the three tables given.

user_id	is_home_try_on	number_of_pairs	is_purchase
l-49bf-85fc-cca8d83232ac	1	3 pairs	0
48be-b063-002b14906468	1	3 pairs	1
-4087-b6d8-c0c5373a1a04	0	Ø	0
d-4e1d-a301-27ddd93b12e2	1	5 pairs	0
b-4db6-9847-601747fa7812	1	3 pairs	1
-4e6a-a5fb-8bb5440117ae	1	5 pairs	1
46e4-9093-79799649d6c5	0	Ø	0

Key Findings:
Overall conversion rates show that of the 1,000 users who completed the style quiz survey, 75% of them opted to try on glasses sent to their home.

Of the 750 users who had been sent glasses to try on at home, 66% of them made a purchase.

```sql
-- SQL code (partial)
WITH purchase_funnel AS (
SELECT
DISTINCT q.user_id,
CASE
WHEN hto.user_id IS NOT NULL THEN True
ELSE False
END AS 'is_home_try_on',
number_of_pairs,
CASE
WHEN p.user_id IS NOT NULL Then True
ELSE False
END AS 'is_purchase'
FROM quiz as q
LEFT JOIN home_try_on as hto
ON q.user_id = hto.user_id
LEFT JOIN purchase as p
ON hto.user_id = p.user_id)
SELECT
COUNT(DISTINCT user_id) AS 'total_num_customers',
SUM(is_home_try_on) AS 'num_home_try_on',
SUM(is_purchase) AS 'num_purchase_made',
100*CAST(SUM(is_home_try_on) AS REAL)/COUNT(DISTINCT user_id)
AS 'home_try_on_%',
100*CAST(SUM(is_purchase) AS REAL)/SUM(is_home_try_on) AS
'funnel_purchase_%'
FROM purchase_funnel;
```

4. A/B Test Results

A/B Test during Home Try-On stage

number_of_pairs	total_num_customers	num_home_try_on	num_purchase_made	home_try_on_%	overall_purchase_%
Ø	250	0	0	0.0	0.0
3 pairs	379	379	201	100.0	53.0343007915567
5 pairs	371	371	294	100.0	79.2452830188679

The A/B Test consists of 50% of users receiving **3** pairs to try on at home and the other 50% receiving **5** pairs.

Results:
The conversion rate (funnel) shows that of the users who received 5 pairs to try-on at home, 80% of them made a purchase after.

While the users who received only 3 pairs to try-on at home, of those, only 53% of them made a purchase.

Recommendation:
Based on the A/B test findings, it is recommended to send users 5 pairs of glasses to try-on at home.

```sql
-- SQL code (partial)
WITH purchase_funnel AS (
SELECT
DISTINCT q.user_id,
CASE … END AS 'is_home_try_on',
number_of_pairs,
CASE … END AS 'is_purchase'
FROM quiz as q
LEFT JOIN home_try_on as hto …
LEFT JOIN purchase as p …)
SELECT
number_of_pairs,
COUNT(DISTINCT user_id) AS 'total_num_customers',
SUM(is_home_try_on) AS 'num_home_try_on',
SUM(is_purchase) AS 'num_purchase_made',
100*CAST(SUM(is_home_try_on) AS REAL)/COUNT(DISTINCT
user_id) AS 'home_try_on_%',
100*CAST(SUM(is_purchase) AS REAL)/COUNT(DISTINCT
user_id) AS 'overall_purchase_%'
FROM purchase_funnel
GROUP BY number_of_pairs;
```

5. Purchase Analysis

5.1 Purchase Analysis – Top Sellers

style	model_name	quantity_purchased
Women's Styles	Eugene Narrow	116
Men's Styles	Dawes	107
Men's Styles	Brady	95
Women's Styles	Lucy	86
Women's Styles	Olive	50
Men's Styles	Monocle	41

model_name	quantity_purchased	color
Dawes	63	Driftwood Fade
Eugene Narrow	62	Rosewood Tortoise
Eugene Narrow	54	Rose Crystal
Brady	52	Layered Tortoise Matte
Olive	50	Pearled Tortoise
Dawes	44	Jet Black
Lucy	44	Elderflower Crystal
Brady	43	Sea Glass Gray
Lucy	42	Jet Black
Monocle	41	Endangered Tortoise

```sql
/*What is the most popular model purchased?*/
SELECT style, model_name, COUNT(model_name) as
'quantity_purchased'
FROM purchase
GROUP BY model_name
ORDER BY COUNT(model_name) DESC;

/*What is the most most popular model purchased with
color in mind?*/
SELECT style, model_name, COUNT(model_name) as
'quantity_purchased', color
FROM purchase
GROUP BY model_name, color
ORDER BY COUNT(model_name) DESC;
```

Key Findings:

In Women's Style the most popular models were *Eugene Narrow* and *Lucy*.

In Men's Style the most popular models were *Dawes* and *Brady*.

Most Popular Color per Popular Model:

- *Eugene Narrow* in color: Rosewood Tortoise
- *Lucy* in color: Elderflower Crystal

- *Dawes* in Driftwood Fade
- *Brady* in Layered Tortoise Matte

5.2 Purchase Analysis – Sales Revenue

style	model_name	color	quantity_purchased	price	revenue	percent_revenue
Men's Styles	Dawes	Driftwood Fade	63	150	9450	17.0
Men's Styles	Dawes	Jet Black	44	150	6600	12.0
Women's Styles	Lucy	Elderflower Crystal	44	150	6600	12.0
Women's Styles	Eugene Narrow	Rosewood Tortoise	62	95	5890	11.0
Women's Styles	Lucy	Jet Black	42	150	6300	11.0
Men's Styles	Brady	Layered Tortoise Matte	52	95	4940	9.0
Women's Styles	Eugene Narrow	Rose Crystal	54	95	5130	9.0
Women's Styles	Olive	Pearled Tortoise	50	95	4750	9.0
Men's Styles	Brady	Sea Glass Gray	43	95	4085	7.0
Men's Styles	Monocle	Endangered Tortoise	41	50	2050	4.0

Key Findings:
The men's *Dawes* model priced in the higher range at $150 generates $16,050 (30%) of total revenue. Driftwood Fade is the most popular color of this model.

The women's *Lucy* model priced in the higher range at $150 generates $12,900 (23%) of total revenue.

A popular, more affordable model is in the women's *Eugene Narrow* priced at $95, generating $11,020 (20%) of total revenue.

```
/*What is total revenue of all purchases*/
SELECT SUM(price) AS 'Total_Revenue'
FROM purchase;
/*total sales revenue generated $55,795*/

/* Which purchase brings in the most Sale Revenue?
SELECT style, model_name, color, COUNT(model_name) as
'quantity_purchased', price, SUM(price) AS 'revenue',
ROUND(100*(CAST(SUM(price) AS REAL))/55795) AS
'percent_revenue'
FROM purchase
GROUP BY model_name, color
ORDER BY percent_revenue DESC;
```

6. Recommendations

Recommendations

Style Quiz – survey:
To increase the number of users in filling out the survey questions entirely it is recommended to provide a virtual try-on that would help users answer question 3 better.

People have a better idea of what frames are suited for them if they have visual indicators.

A/B Test:
Based on the A/B test results, it is recommended to send users 5 pairs of glasses to try-on at home by default.

Sending more pairs gives users more options to compare the best glasses to purchase.

Popular Models & Colors:

It is recommended to feature images of the most popular models & color combination on the home page of their website and social media postings.

This would include the *Eugene Narrow*, *Lucy*, *Dawes*, and *Brady models*. Tortoise was overall a popular color purchased. Therefore, the default color to show for different models should be Tortoise first, followed by the next popular color(s).

There is a popular model in the more affordable price range – the women's Eugene Narrow at $95/pair. Based on this, it is recommended to feature different price points as a filter for users with emphasis on showing the most popular models per price range.