"GloBox" A/B Test –
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## 19/10/2023

GloBox

"GloBox" A/B Test Overview

The Growth team decides to run an A/B test that highlights key products in the food and drink category as a banner at the top of the website. The control group does not see the banner, and the test group sees it as shown below:

In this project we have to investigate a central question: Is placing the new banner on the main page of the site necessary to increase the company's revenue or not?
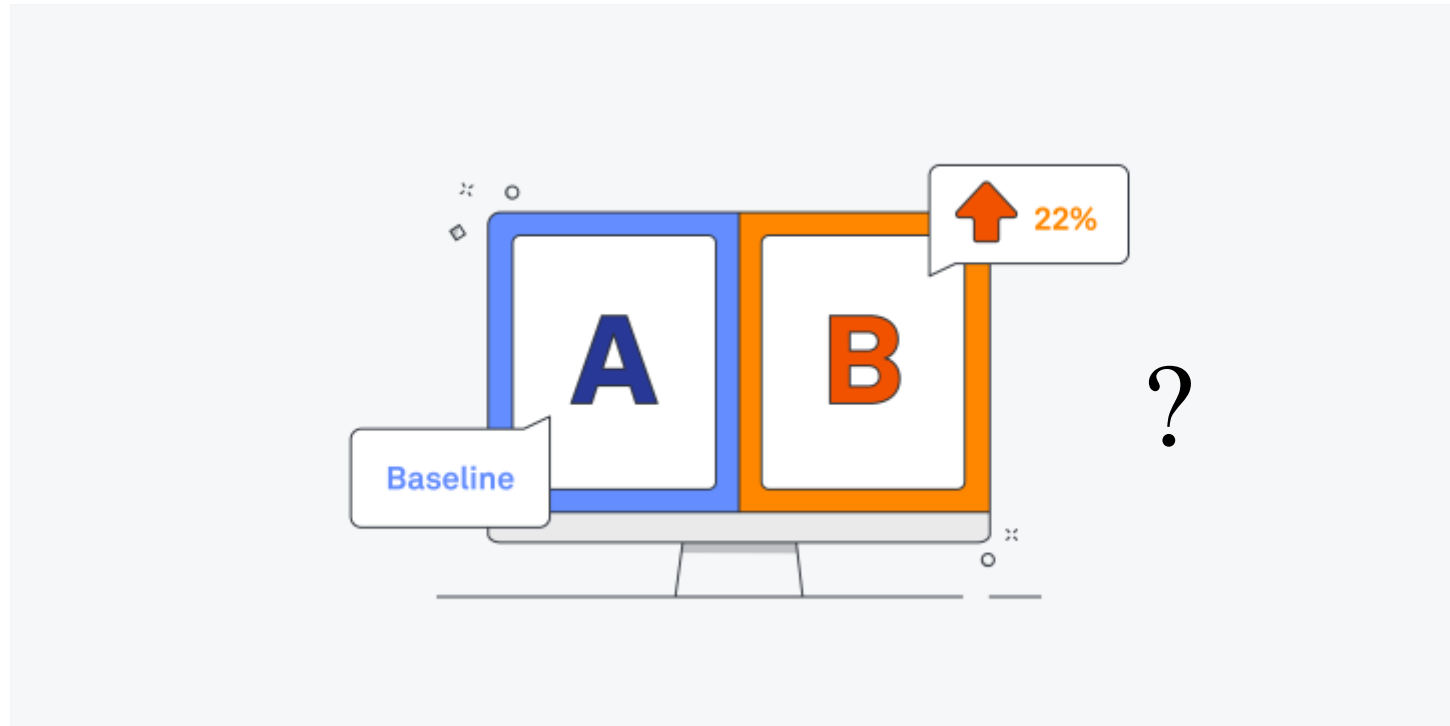
Since we are dealing with data for the purpose of drawing conclusions for the study, we will first want to understand the basic sample data of the experiment.

- The experiment started on 25/01/2023 and ended on 06/02/2023.
- User can make a purchase more than once on different dates.

	All	A (Control group)	B (Treatment group)
Size	48943	24343	24600
Conversion rate	4.278%	3.92%	4.63%
Average Amount Spent by user	3.383$	3.374$	3.39$

Important Test Metrics

During the experiment we will look at the two important metrics between the groups:
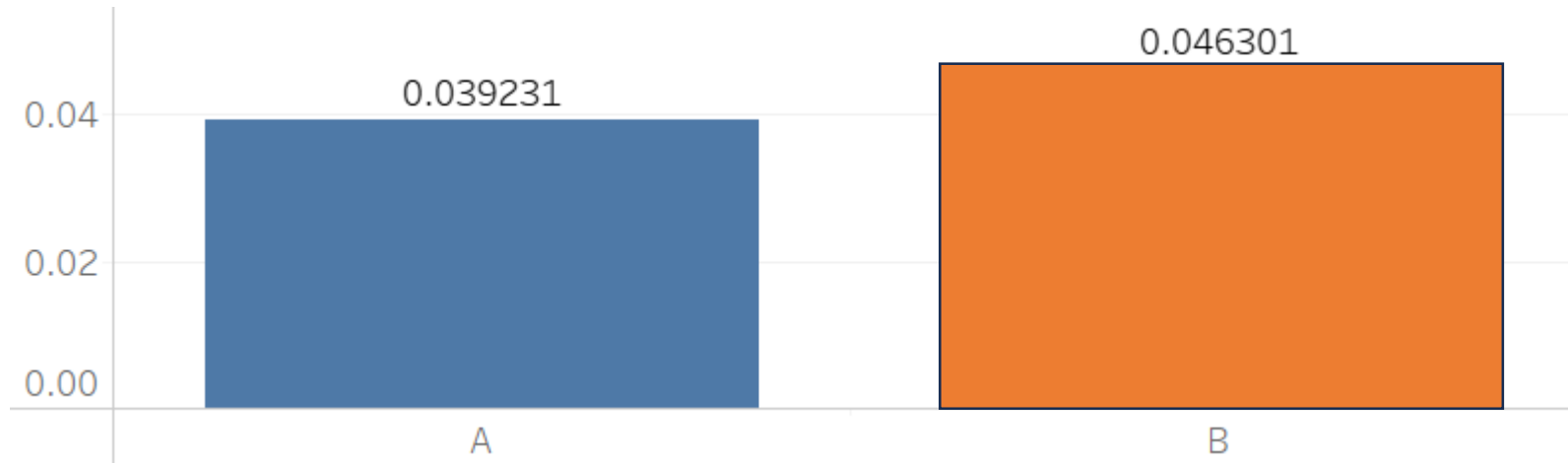
- Conversion rate

    Good start to getting more paying customers. Maybe we can draw them back to make more purchases later.

- Average amount spent per user

    To know if the main goal (increasing the revenue) is fulfilled in our sample.

Conversion Rate findings

Based on our analysis we found that:

We have sufficiently strong evidence to know that the probability our finding are due to chance is very low. So, we can confidently say that there is a real difference in the user conversion rate between the control group and the treatment group and we estimate that the difference is between 0.3% to 1%.

We've determined that in order to be reasonably confident (around 80% confidence) that our results are accurate, we need to collect a fairly large amount of data. Specifically, we need to gather 155,400 measurements for each group. This is the amount of data we need to make sure we can confidently say there's a real difference and reject the initial assumption that there's no difference between the two groups.
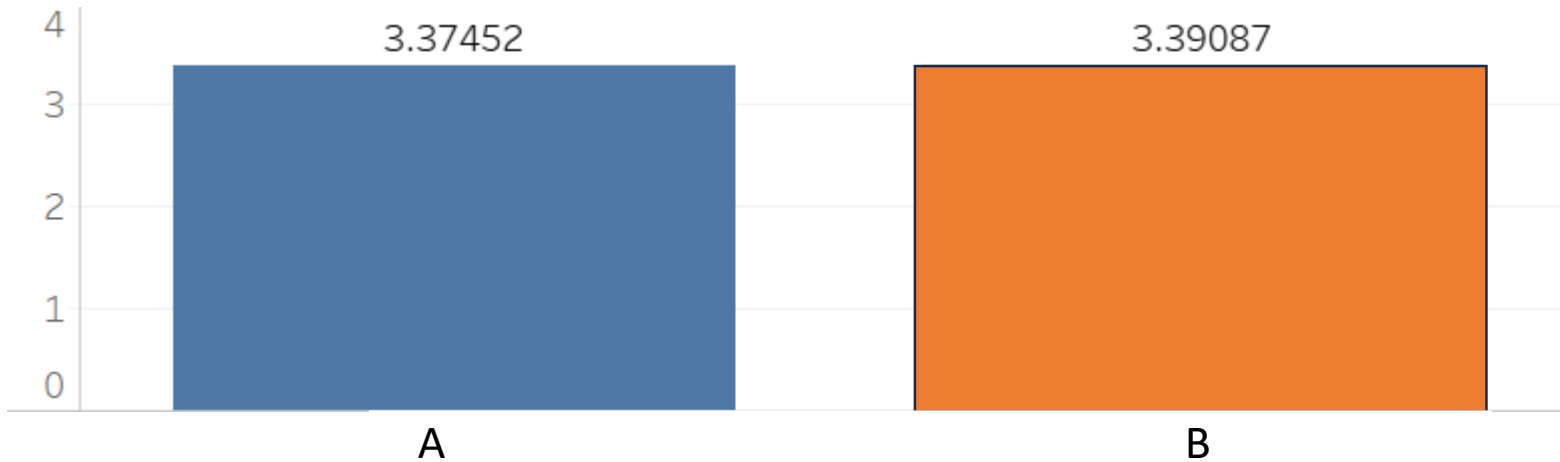
Conversion Rate Points for thinking

We noticed that there are different and more extreme relationships between the different types of users that need to be considered:

General Conversion Rate - 0.0463/0.0392 = 1.181

Positive extreme

Men - Conversion Rate 1.42

Australia - Conversion Rate 1.42

Mexico - Conversion Rate 1.51

Negative extreme

Turkey - Conversion Rate 0.875 -> -1.14

Average Amount Spent findings

	3.37452		3.39087

A   B

Based on our analysis we found that:

there's a good chance that the difference we observed in the average amount spent per user between the control and treatment groups is just due to chance, and not a real difference. So, we cannot say with confidence that there is a significant difference between the two groups in terms of average amount they spent.

We've determined that in order to be reasonably confident (around 80% confidence) that our results are accurate, we need to collect a fairly large amount of data. Specifically, we need to gather 38,721,958 measurements for each group. This is the amount of data we need to make sure we can confidently say there's a real difference and reject the initial assumption that there's no difference between the two groups.
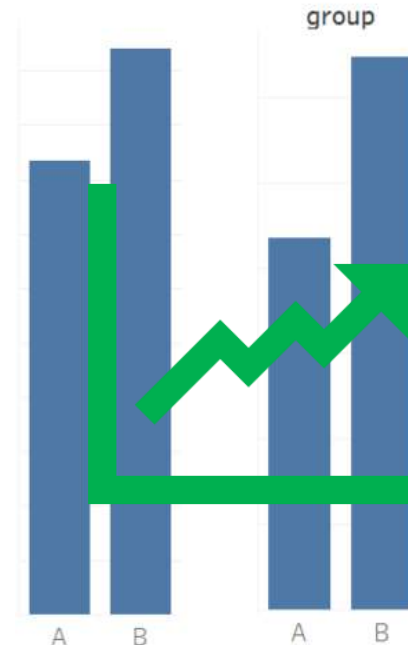
Average Amount Spent Points for thinking

We noticed that there are different and more extreme relationships between the different types of users that need to be considered:
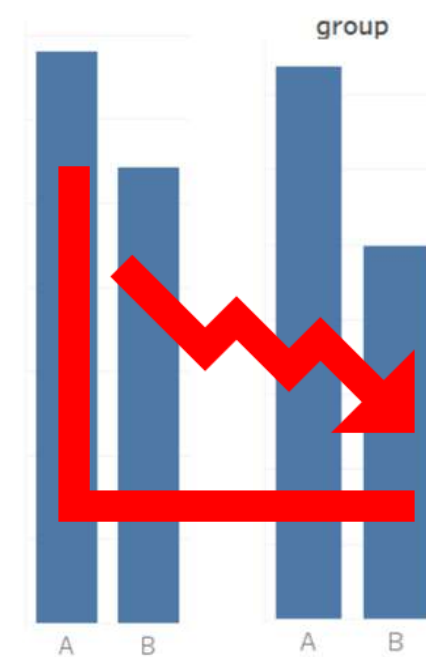
General Average Amount Spent 1.005

Australia - Average Amount Spent 1.25

Spain - Average Amount Spent 1.48

group

Germany - Average Amount Spent 0.79

Turkey - Average Amount Spent 0.675

-1.26 <-

->-1.48

group

Conclusion

Conversion rate - We have sufficiently strong evidence that there is a distinct advantage for the treatment group (B).

Average amount spent per user - Seems that in the treatment group is little higher but its not clear enough for the number of users sampled and the time of the experiment.

Recommendation:
Continue iterating

Considering the sample results and the data we collected, I would say that in light of the company's main goal, which is to increase revenue, it is worthwhile to examine the effect of the banner over a longer period and for a higher number of users for our test will be more powerful.

At the same time, we should pay attention to:

- the extreme finding about different types of users (gender and country) to lunch or not the banner for specific users

- expenses involved in existence of the banner: a banner is not typically an expensive feature to launch, in terms of engineering time or operational overhead but using the important space on the main page for it at the expense of other content that can be more profitable may be a wrong choice.