

# GloBox A/B Test Analysis

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## Abstract

**Recommendation:** Do not launch; rerun experiment

## Summary

This A/B test evaluated a landing page banner highlighting new food and drink product categories. An increase in the conversion rate of the treatment group (4.63%) was observed. However, no significant change in the amount spent per user between groups A or B was observed. Given the results of this experiment, I recommend not launching the banner at this time and rerunning the test for at least one month and with a larger sample size.

## Context

The growth team at GloBox ran this A/B test to determine if a banner highlighting the new food and drink product categories would lead to a lift in conversion rate, thus leading to a lift in revenue. This experiment was run on the mobile site only with group A being directed to the existing site and group B to the site displaying the food and drink banner. The test ran for 12 days (January 25-February 6, 2023) and had a total of 48,943 users. Group A consisted of 24,343 users while group B consisted of 24,600 users.

## Hypothesis Test Results

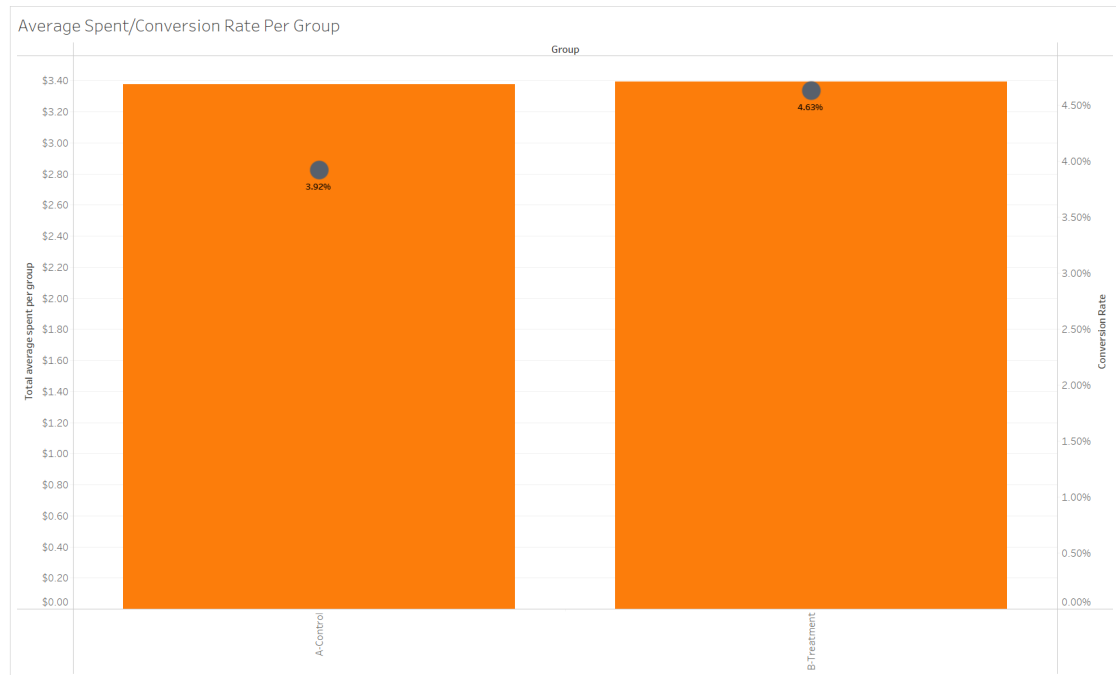
- The conversion rates in groups A and B were 3.92% and 4.63%, respectively.
- Our hypothesis test for difference in conversion rates resulted in a  $p\text{-value} = .0001 < 0.05$ , consistent with statistically significant results.
- Average amount spent per user was \$3.37 in group A and \$3.39 in group B. Hypothesis testing resulted in a  $p\text{-value} = 0.94 > 0.05$ , indicating no statistically significant evidence to support a difference in group A and group B spending.

## Confidence Intervals

- The lower and upper limit of the 95% confidence interval is .35% and 1.07%, respectively, for the conversion rates. This is a statistically significant result.
- The lower and upper limit of the 95% confidence interval is -\$0.44 and \$0.47, respectively, for the difference in average amount spent between groups. This is not a statistically significant result.

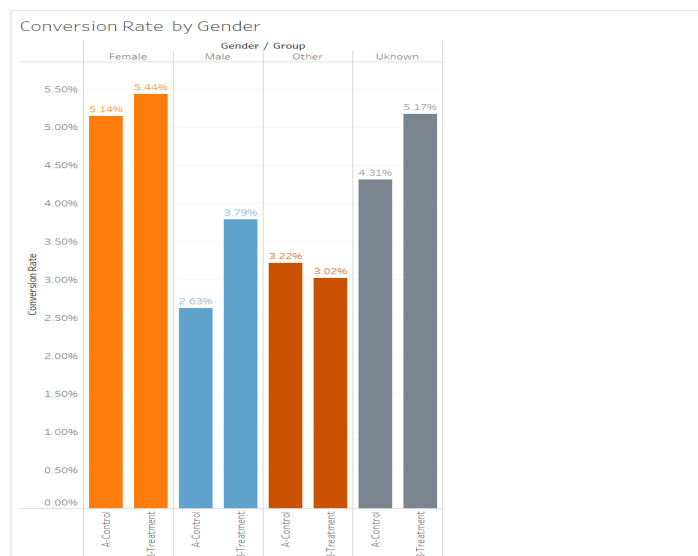
## Results Breakdown

- An 18% increase in the conversion rate was observed when comparing treatment group to control group.
- Average amount spent per user was relatively flat when comparing users of both groups A (\$3.37) and B (\$3.39).



## Results by Gender

- A lift in the conversion rate of female, male, and unknown groups was observed. The most significant increase in the conversion rate was seen in males (+44%), while the only decrease was in the 'other' group (-6%).



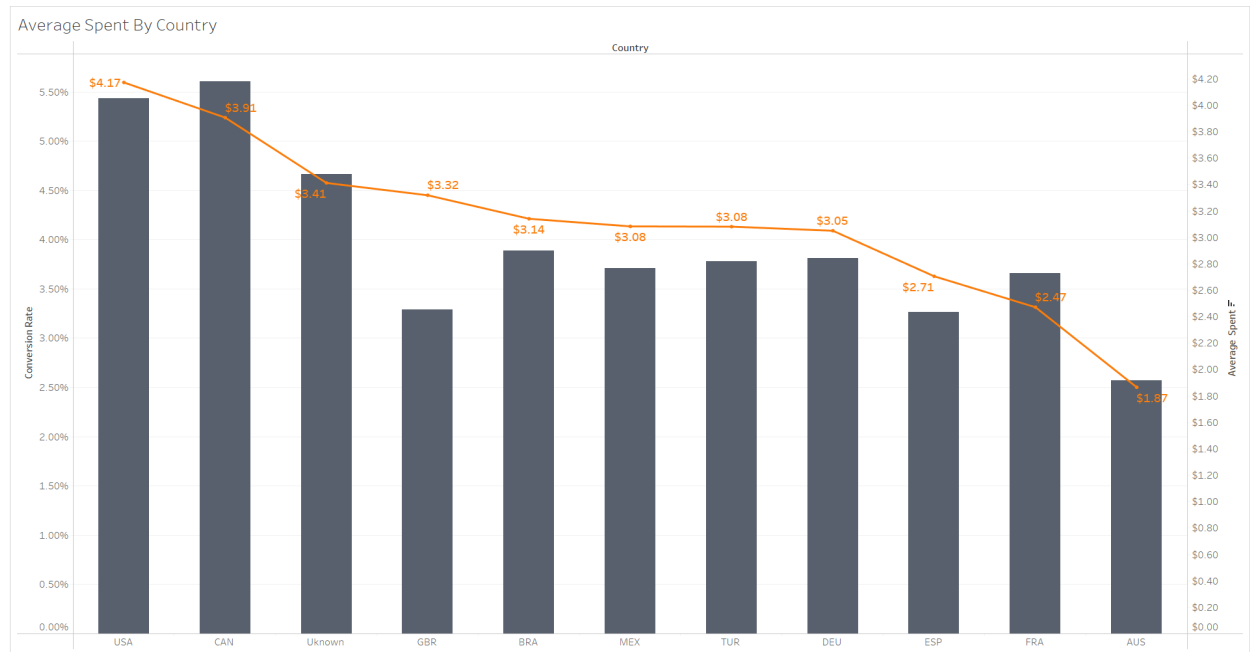
Results by Device

- A lift in conversion rate was observed in all devices, although the most significant lift was seen in android devices (27%). Again, spending is flat when comparing devices.



Results by Country

- North America experienced the greatest increase in conversion rates (20%).



## Recommendation

Although a significant increase in conversion rate between groups A and B was observed, there was no substantial change in the amount spent per user. We should continue iterating on this experiment and consider running the test for one month, thus increasing the sample size. Launching the banner at this time is not recommended until experiment is rerun.

## Appendix

SQL query used:

```
SELECT DISTINCT g.uid, u.country, u.gender, g.device, g.group,  
               CASE WHEN sum(a.spent) > 0 THEN 'yes'  
               ELSE 'no'  
               END AS converted,  
               COALESCE (SUM(a.spent), 0) AS total_spent  
FROM users as u  
JOIN groups AS g  
ON u.id=g.uid  
LEFT JOIN activity AS a  
ON g.uid=a.iud  
GROUP BY g.uid, u.country, u.gender, g.device, g.group  
ORDER BY g.uid;
```