A/B Test For GoBlox
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This analysis is for GoBlox, in which an A/B Test is conducted, with A being the control group and B being the treatment group. We will test if the changes in the application lead to a significant impact on the treatment group, compelling the company to make this change in the application. The results and analysis will be presented, and ultimately, a recommendation will be given based on our analysis of whether the change is worth it.

The analysis has been conducted on a total of 48,943 individuals, divided into the control group (A) with 24,343 individuals and the treatment group (B) with 24,600 individuals. The tests are carried out on two types of devices, iPhone and Android. It has also been conducted in various countries in the Americas and European continents. This experiment has been conducted over a period of two months.

In simpler terms, a conversion rate represents the rate at which visitors or users are converted into customers, subscribers, leads, or any other predefined action that is considered valuable to the business. In our analysis, we have found the following conversion rates:

Conversion rate for Group B: 0.0463
Conversion rate for Group A: 0.0392

The control group's conversion rate is 0.0392, which means that 3.92% of the users or visitors converted.

The treatment group's conversion rate is 0.0463, which means that 4.63% of the users or visitors converted.

This indicates that the treatment group had a somewhat significant conversion rate compared to the control group. However, there is not a very large difference noticed between the two groups.

I have found a p-value of 0.0001. In this specific case, it indicates that the observed results are extremely unlikely if the null hypothesis were true. Therefore, the research has strong evidence to reject the null hypothesis and support the alternative hypothesis in this situation. This means that we do not have enough evidence to say

that the changes made to the application are sufficient to admit that this will generate a significant increase compared to the previous version of the app.

Analyzing the data between devices, I observed that the average expenses occurred in individuals who used iPhones more compared to those who used Android devices. This happened in both the control and treatment groups. Similarly, regarding gender, it was found that in both groups, females had a higher average compared to males and others. Another important point to consider is that North America had the highest concentration of customers using the application. After considering all these results, we found that the average expenses between both groups were slightly higher in the Treatment Group (B) at 3.39 compared to the Control Group (A) at 3.37.

After collecting all the statistical data, we have transferred everything to Tableau to visually represent the findings. Following the A/B test, it can be said that the change is not conclusive, and the difference is not significant enough to conclude that it is worth making the change in the application. Perhaps more tests should be conducted or a different change should be tried in the application to reevaluate the change. Currently, the conversion rate was higher with the treatment group, but it was minimal. For this reason, in conclusion, the change is not very significant to deserve implementing it. The company should try other changes and conduct this test again to pursue the desired outcome. Thank you for your attention, and if you have any questions or inquiries, please don't hesitate to let me know.
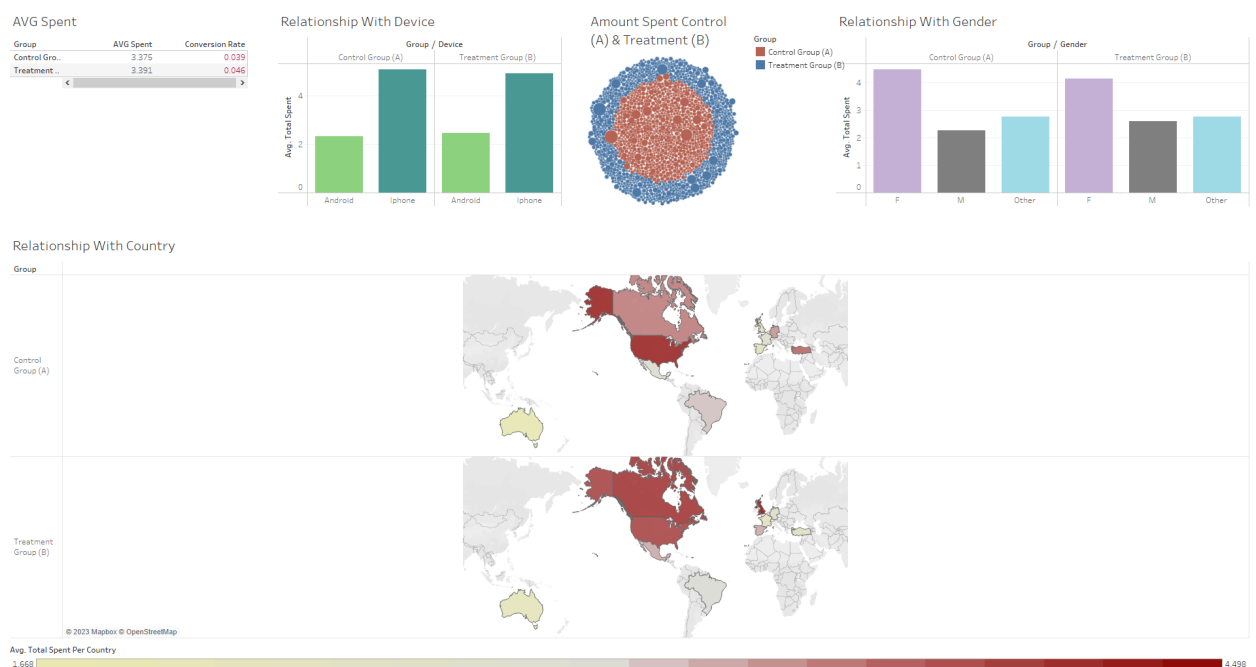
- Code used for data cleaning

```sql
1  SELECT u.id AS id,
2         u.country,
3         u.gender,
4         g.device,
5         g.group,
6         CASE WHEN SUM(a.spent) > 0 THEN 'converted'
7              ELSE 'not converted'
8              END AS spent_status,
9         COALESCE(SUM(a.spent), 0) AS total_spent
10 FROM users AS u
11 JOIN groups AS g
12 ON u.id = g.uid
13 LEFT JOIN activity AS a
14 ON g.uid = a.uid
15 GROUP BY u.id, u.country, u.gender, g.device, g.group;
16
17
```

For further visual data and analysis, you can refer to my slide for better understanding.

LINKS

Spreadsheet:
https://docs.google.com/spreadsheets/d/1-kpwAXnm2eZLz7lYfgtdfa0qDonovg63pAsYJ_jfm5M/edit?usp=sharing

Tableu:
https://public.tableau.com/views/Project1_16886920589990/Dashboard1?:language=en-US&publish=yes&:display_count=n&:origin=viz_share_link