Website Design
A/B Testing & Statistical Analysis

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Introduction

Objective: Identify the better performing website design.

Method: Hypothesis Testing

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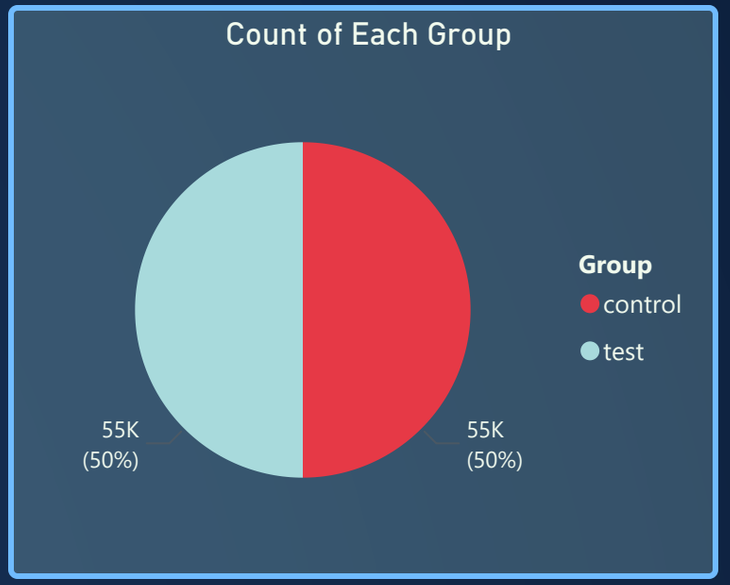
Data

user_id	group	clicks	views
2	control	0	7
3	control	0	7
4	control	0	3
5	control	0	3
6	control	0	5
7	control	0	8
8	control	0	14
10	control	0	3
11	control	0	8
12	control	0	20

Here is a glimpse of the original data.



There is an equal distribution of the 2 groups.

FAQs

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Q: How do you know when an insight in statistically significant?

A: Our assumptions are derived from the confidence interval, which in this instance is 95% (0.95). We employ a p-value in conjunction with the remaining 5%. A p-value less than 5% (0.05) allows us to determine that the result is statistically significant.

Q: How do you find the p-value?

A: There are complex math equations that can be used to find a p-value. To simplify the process, these calculations were performed within Python using statistic packages.

Q: How confident are you in the results?

A: These findings are not based on personal opinion, rather statistics. A 95% confidence interval was used, meaning these results would be true 95 out of 100 times if the test was repeated on different subjects.

Q: Is there a way to review your work?

A: Of course, I will attach a link to the bottom of this page for anyone who is interested to review.

Link To Documentation

Findings

Confidence Interval: 95%

To prove statistical significance, the p-value must be smaller than 0.05.

Breakdown

Views: When testing if there was any statistically significant difference in views, the p-value was 0.62 which is larger than 0.05.
Interpretation: There is no true difference in the amount of website views between each group's design.

Clicks: When testing if the control group generated more clicks than the test group, the p-value was 3.09e-33 which is much smaller than 0.05
Interpretation: The control group design results in more clicks, and this finding is statistically significant.

Views to Clicks Conversion Rate: When testing if the control group resulted in a higher conversion rate, the p-value was 1.18e-23 which is much smaller than 0.05.
Interpretation: The control group design results in a higher conversion from views to website clicks, when calculating how much better it performs, the result was 16.13%

Results Summary

Neither design was better at generating website views. However the control group resulted in a higher click rate and conversion from views to clicks. The control groups design resulted in a conversion rate that is 16.13% higher than the test group.

Recommendations

Based on my findings, I recommend staying with the current design. I also recommend that more data be collected that would provide more context and insight into each design and user interaction within the next test, for more detailed analysis.

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