Executive Summary: Statistical Analysis of Rides by Device Type

Using statistical methods to analyze and interpret data

Project Overview

At this stage in the project, the TikTok Data Team is exploring the relationship between number of rides and device type to see if there is a statistically significant difference in the mean number of rides between iPhone and Android users.

Key Insights

- Based on averages, it appears that drivers who use an iPhone device to interact with the application have a higher number of drives, with iPhone users having an average of 68, while Android users have an average of 66.
- The results show however that there is no difference in the mean number of drives between iPhone and Android users. Furthermore, there are almost 2X as many iPhone user than Android which might have suggested otherwise.
- It would be interesting to study further the root cause as to why there is no difference?
  - How does the interface appear to Android and iPhone users?
  - Are there other factors that truly influence the number of drives?

Details

Initial results show that iPhone users on average drive more than Android users.

A two sample t-test was conducted and resulted in a t-score of 1.46 and a p-value of 0.14335.

	device	num_drives (avg)
0	Android	66.231838
1	iPhone	67.859078

A p-value of 0.1433 means there is a 14.33% probability that there would be an observed mean difference at least as extreme, or more, than the observed data under the assumption the null hypothesis were true.

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tstat|1.4635232068852353
pvalue|0.1433519726802059
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0.1433 > 0.05, fail to reject the null hypothesis

Next Steps

The team suggests more statistical analysis is needed in exploring which factors give more significant insight into number of drives.

As a step further, these factors can then be compared by device to uncover whether improvements can be made in our app that would increase our retention rate.