

MuscleHub A/B Test Capstone Project Submission Date: July 16, 2019

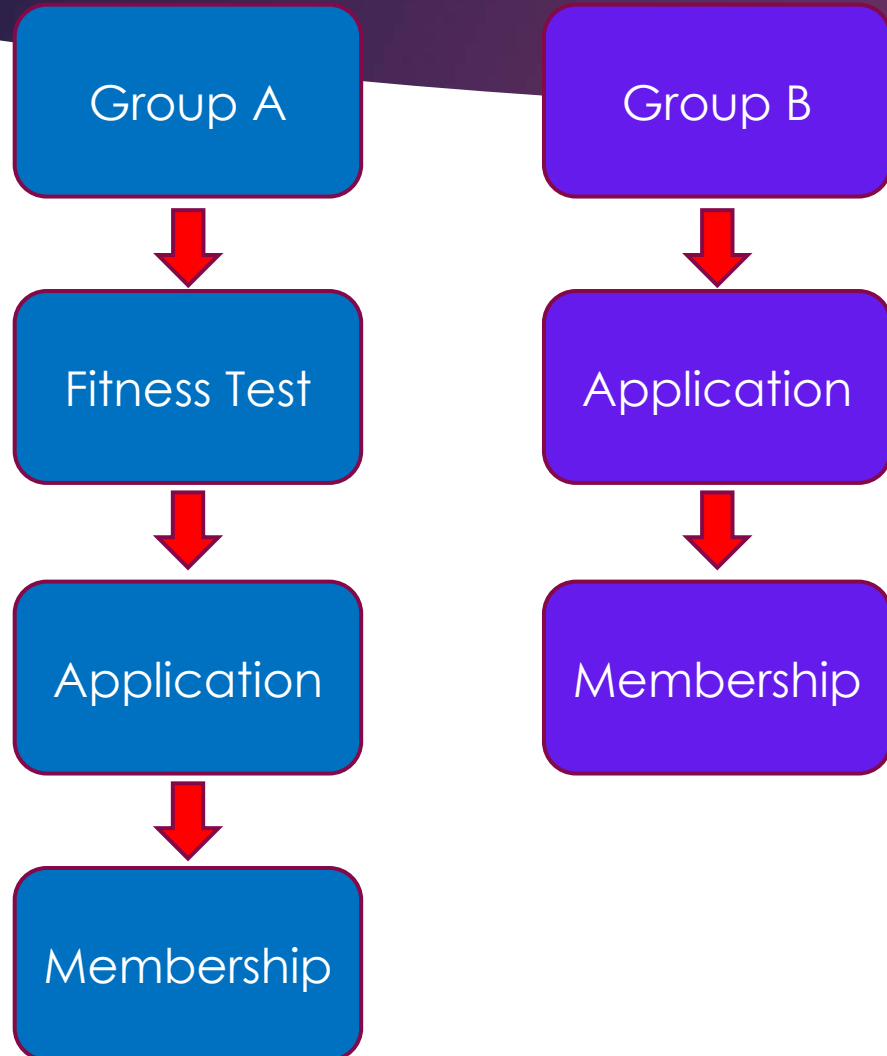
BY

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INTRODUCTION TO DATA ANALYSIS PRO INTENSIVE

APRIL 30, 2019 COHORT

The A/B Test

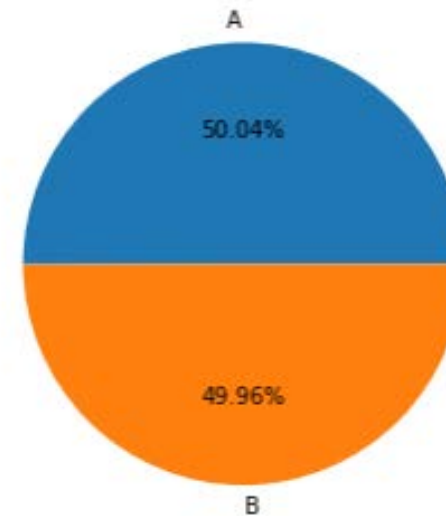


In this A/b test, visitors to the popular MuscleHub gym were randomly assigned to one of two groups:

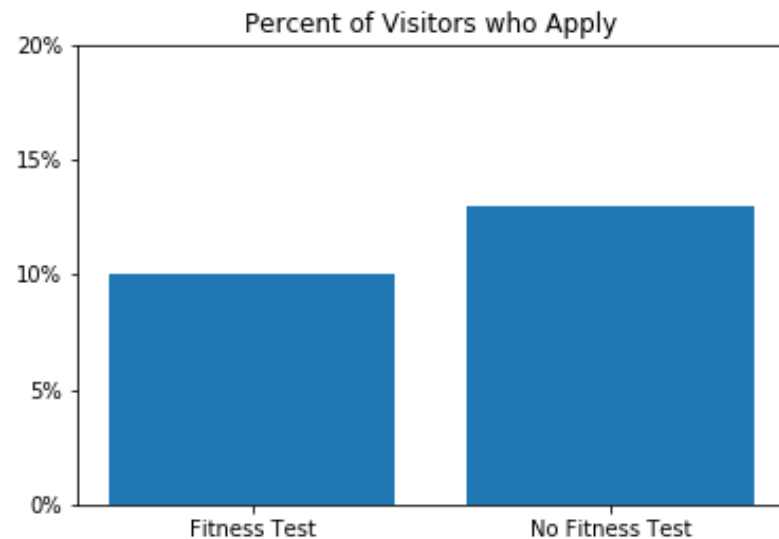
- ▶ Group A were asked to take an introductory fitness test with a personal trainer, before filling out an application form and eventually subscribing.
- ▶ Visitors in Group B skipped the fitness test entirely and proceeded directly to the application process.

Summary of Datasets and Results of Hypothesis Testing

- ▶ Per the accompanying pie chart, there are a total of 5004 visitors included in our A/b Testing, with about half in group A and the other half in group B.
- ▶ **NOTE:** As will be shown in the following slides, one group may be performing better than its counterpart, but we need to prove if this difference is of any statistical significance.
- ▶ A Chi-Square test was required to determine if there was a significant difference between two categorical datasets, as measured by the resulting p-value.



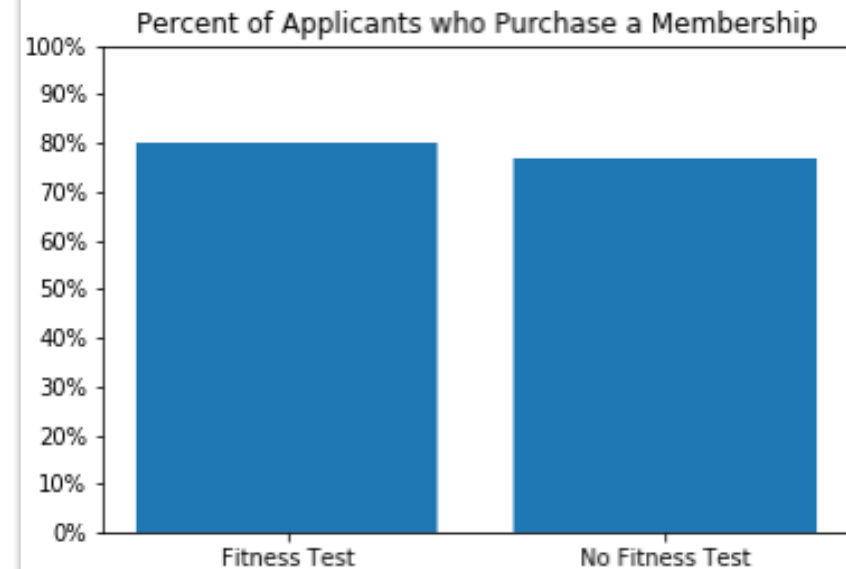
Summary of Datasets and Results of Hypothesis Testing (cont'd)



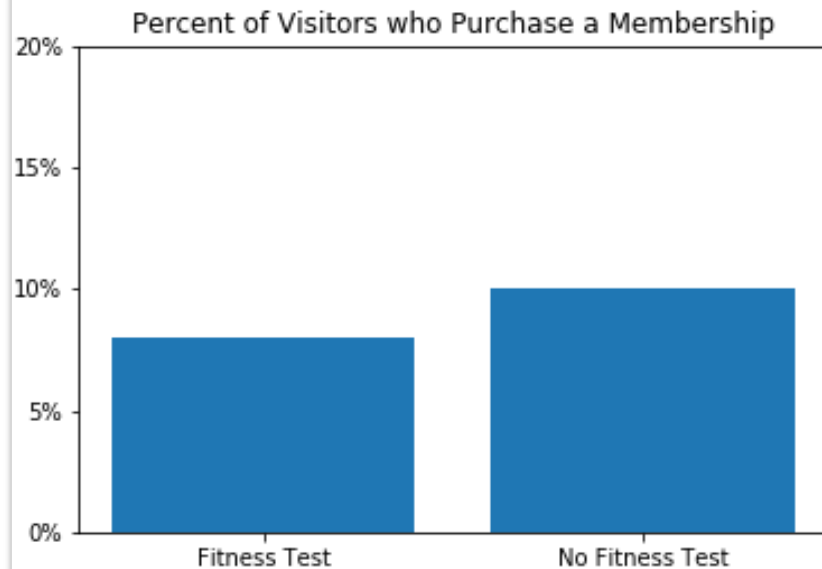
- ▶ In our first dataset, we found that 10% of visitors in Group A filled out an application form, whereas 13% in Group B did the same.
- ▶ The Chi-Square test resulted in a p-value of 0.096%. The null hypothesis was rejected, indicating there was a significant difference between the two datasets.

Summary of Datasets and Results of Hypothesis Testing (cont'd)

- ▶ Of those visitors who filled out an application form, the purchase rate of memberships to MuscleHub are 80% and 76.9% for Groups A and B, respectively.
- ▶ In this dataset, the Chi-Square test resulted in a p-value of about 43.3%. Because of the high p-value, the null hypothesis was not rejected, therefore indicating no statistical difference between the two datasets.



Summary of Datasets and Results of Hypothesis Testing (FINAL)



- ▶ In the final dataset, we observe that the overall purchase rate for MuscleHub memberships by visitors is 8% and 10%, respectively, for Groups A and B.
- ▶ With the raw data from our research, we ran the Chi-Square test and determined a p-value of approximately 1.47%. The null hypothesis was rejected, indicating there was a significant difference between the two datasets.

Summary of The Qualitative Data



The visitor testimonials provided to us provide some meaningful insights:



While *some* may enjoy the introductory fitness test, *most* potential customers find it intimidating, and react to it negatively.



Visitors generally prefer the casual setting and ease of signing up at MuscleHub over the intensity of major gym competitor, LiftCity.



Visitors are more inclined to fill out an application to MuscleHub knowing there is no mandatory fitness test (when compared to the mandatory test at LiftCity).

Recommendations for MuscleHub

In our testing, we've shown that the group without the mandatory fitness test has a higher conversion rate from visitor to member.

The introductory fitness test intimidates prospective members, who are likely looking for a more casual, relaxed fitness experience as opposed to the environment at our competitor.

Because some visitors may enjoy the fitness test, it is recommended that MuscleHub make the fitness test optional to them. If visitors elect to sign up from the onset, we should work to have them sign up as quickly and conveniently as possible, with no mention of the fitness test. For the indecisive visitor who's hesitant to fill out an application form, we should suggest the introductory fitness test. If they have a positive experience, this could lead to a membership opportunity.

In this way, MuscleHub as a brand can focus on being "The Pressure-Free Gym," where visitors come for our welcoming atmosphere, but stay for our devotion to helping you reach your personal fitness goals.