Musclehub A/B Test Results

Brian Goss
Codecademy Data Analytics Capstone 4/18

Overview

Question: Does the fitness test intimidate prospective members?

Test: Perform an A/B test on our visitors, sorting them into two groups, where group A continues to get a fitness test with a personal trainer while group B skips the fitness test before getting a membership application.

Result: Two statistically significant results were found:

(1) Visitors who skipped the fitness test turned in more applications than those who continued to get the fitness test.
(2) Visitors who skipped the fitness test were more likely to eventually purchase a membership.

Dataset summary

Four tables used for analysis:

visits contains information about potential gym customers who have visited MuscleHub

fitness_tests contains information about potential customers in "Group A", who were given a fitness test

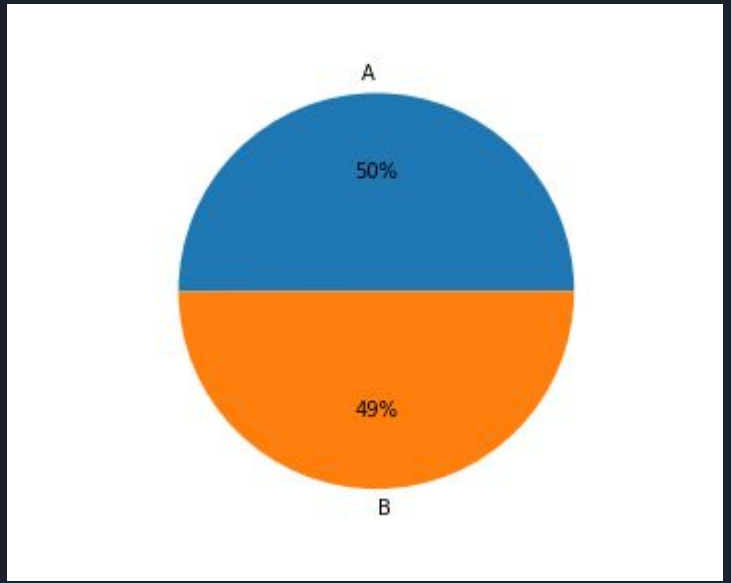
applications contains information about any potential customers who filled out an application

purchases contains information about customers who purchased a membership to MuscleHub.

Dataset summary

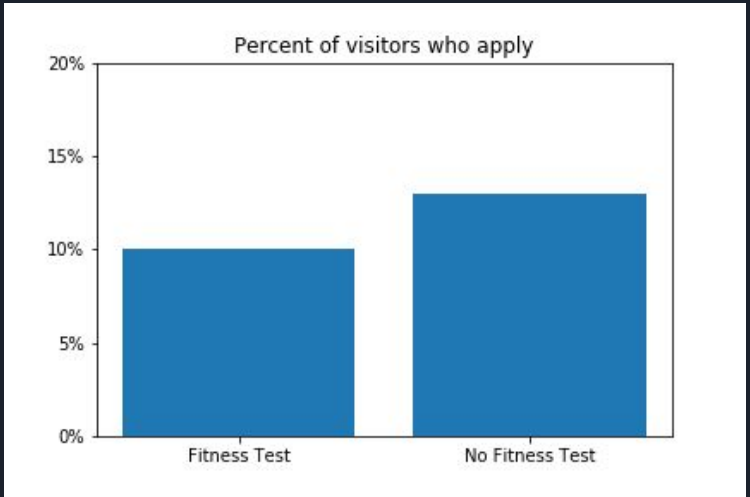
Group A: 2504 visitors

Group B: 2500 visitors



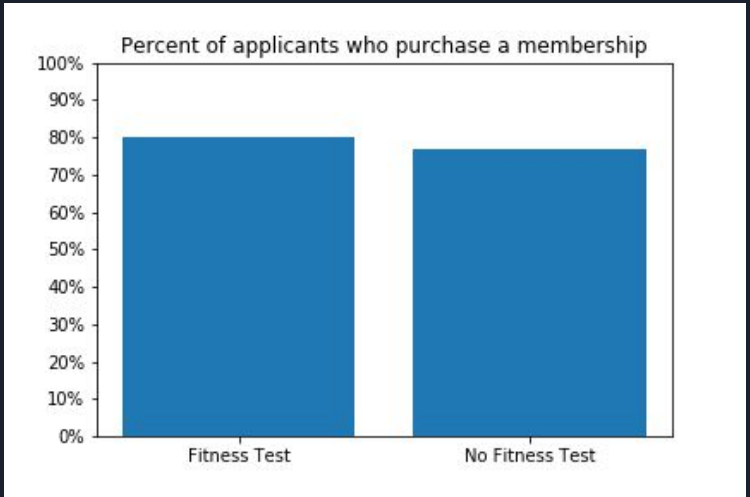
Test results - Percent of visitors who apply

Test Group	Application	No Application	Total	Percent with Application
A	250	2254	2504	9.98%
B	325	2175	2500	13.00%



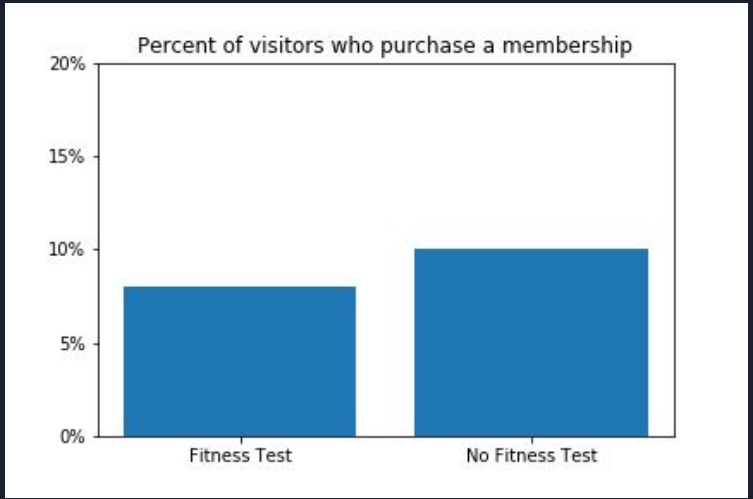
Test results - Percent of applicants who purchase a membership

Test Group	Member	Not Member	Total	Percent who Purchased
A	200	50	250	80.00%
B	250	75	325	76.92%



Test results - Percent of visitors who purchase a membership

Test Group	Member	Not Member	Total	Percent who Purchased
A	200	2304	2504	7.99%
B	250	2250	2500	10.00%



Test results - statistical analysis

The three tests tell us that statistically significant differences were observed between the two groups for (1) the number of visitors who applied for membership and (2) the number of visitors who purchased a membership. There was not a significant difference in the dataset between the groups in terms of applicants who later purchased memberships.

For these results a chi square contingency test was used to determine a p-value and thereby see whether or not to reject the null hypothesis.

A chi square test was used because we had two categorical datasets that we wanted to compare for each hypothesis.

Qualitative data summary

The data analysis shows a greater application and purchase percentage for visitors who did not receive the fitness testing. This result is borne out by interviews with test participants, namely:

> I took the MuscleHub fitness test because my coworker Laura recommended it. Regretted it.
> - Sonny "Dad Bod", 26, Brooklyn

> I saw an ad for MuscleHub on BookFace and thought I'd check it out! The people there were suuuuuper friendly and the whole sign-up process took a matter of minutes. I tried to sign up for LiftCity last year, but the fitness test was way too intense. This is my first gym membership EVER, and MuscleHub made me feel welcome.
> - Shirley, 22, Williamsburg

Summary

The quantitative and qualitative data generated by this A/B test points towards a recommendation that **MuscleHub increase its application rate and membership purchasing rate by not giving visitors an introductory fitness test.**