

MuscleHub Visitor Conversion Study



Investigating how a mandatory fitness test before application affects rates of membership among visitors to MuscleHub gym.

MuscleHub Multivariate Test

MuscleHub conducted a multivariate test to determine if visitors being asked to take a fitness test before filling out an application affects the rate at which visitors eventually purchase memberships.

Janet, the manager of MuscleHub, initiated the study because she believed that visitors were more likely to sign up if they were not asked to take a fitness test.

Visitors were randomly assigned to one of two groups:

- Group A: (control) visitors were asked to take the fitness test
- Group B: (experimental) visitors were asked to skip to the application.

Exploratory Data Analysis

The data was collected between 5-1-17 and 9-9-17.

The experiment ran from 7-1-17 through 9-9-17.

During the experiment there were a total of 5004 visits.

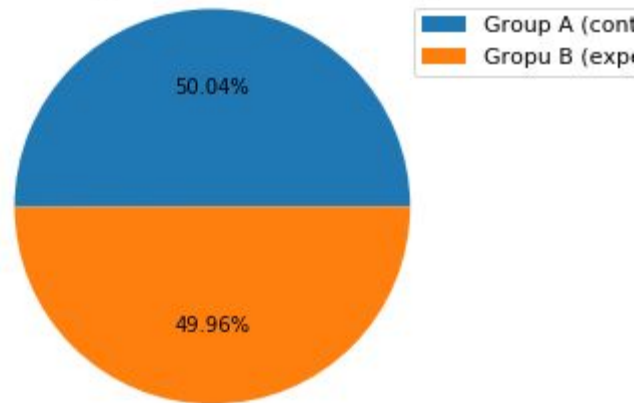
Exploratory Data Analysis - A/B Split

The visitors were divided nearly equally.

2504 visitors in group A (control)

2500 visitors in group B (experimental)

Relative Experimental Group Size



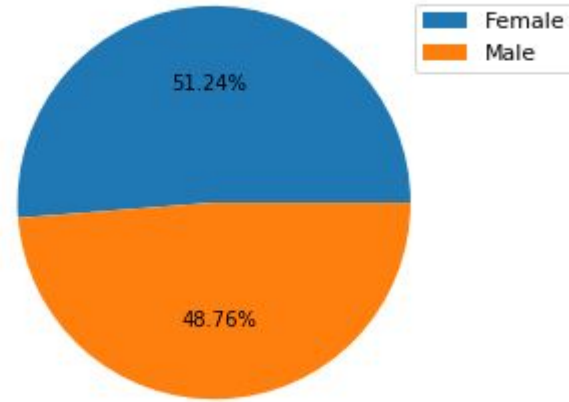
Exploratory Data Analysis - Gender Split

There were more female than male visitors.

2564 female visitors

2440 male visitors

Gender Makeup of Total Population



Exploratory Data Analysis - Gender Split

There were disproportionately more females in group B.

Group A:

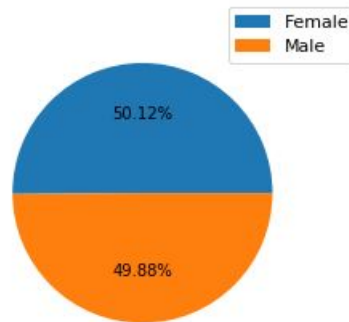
50.1% female

Group B:

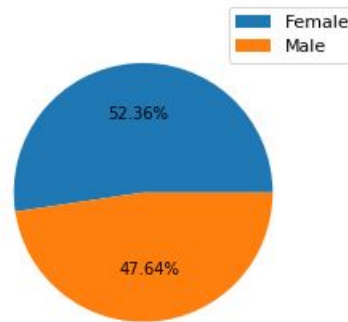
52.4% female

The p-value from a Chi-squared test was approximately 0.119, which indicates that we cannot reject the null hypothesis, the difference is not likely significant.

Gender Makeup of Group A



Gender Makeup of Group B



Exploratory Data Analysis - Limitations

I would like to have additional information with the data including, the age and address of visitors. Assuming this information is for more than one site, I would also like to have the location of the gym visited.

I would like to have information for the time before the study to determine a baseline conversion rate and consider the sample size we should be using.

I would like to compare the data against the same time period for previous years as I suspect that gym membership conversion rates vary throughout the year.

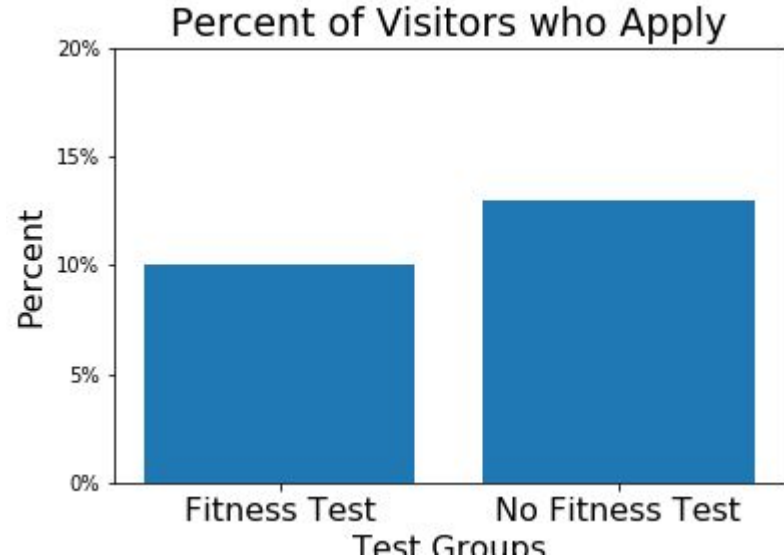
Results: Visitors that Apply

Visitors that were not asked to perform a fitness tests were more likely to apply.

10% of visitors in group A applied.

13% of visitors in group B applied.

As this data was categorical I applied a Chi-squared test and found that the P-value was approximately 0.000965, indicating that the difference was likely significant.

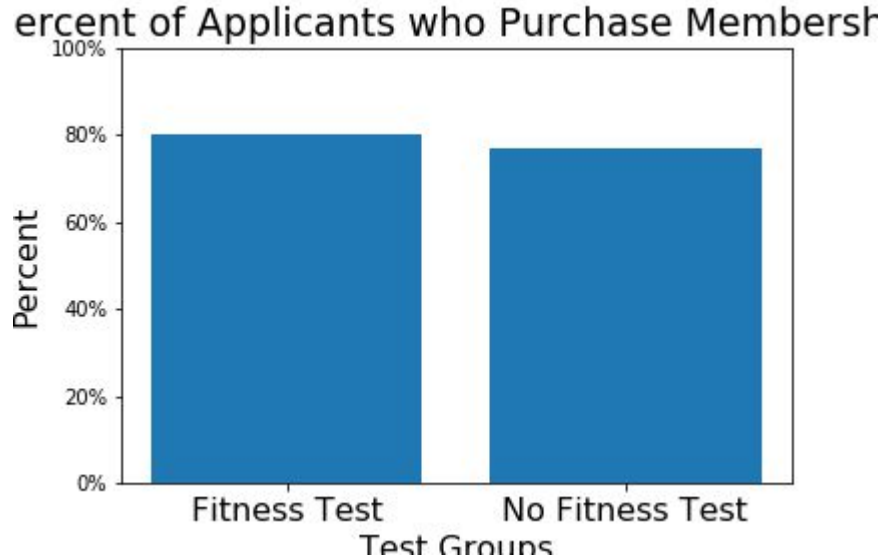


Results: Applicants that Purchase

Applicants that were asked to perform a fitness test were slightly more likely to purchase membership.

80% of applicants in group A purchased.
77% of applicants in group B purchased.

As this data was categorical I applied a Chi-squared test and found that the P-value was approximately 0.433, indicating that the difference was likely not significant.



Results: Visitors that Purchase

Overall visitors that were not asked to perform a fitness test were more likely to purchase membership.

8.0% of visitors from group A purchased.
10.0% of visitors from group B purchased.

As this data was categorical I applied a Chi-squared test and found that the P-value was approximately 0.0147, indicating that the difference was likely significant.



Summary of Qualitative Data

The qualitative data seemed to mostly (three out of four) show a negative sentiment toward the fitness test or similarly a positive sentiment to the lack of a fitness test.

The analysis of data supports the sentiment expressed in the interviews.

Jesse's interview raised a new issue, cleanliness, which might be worth considering for further investigation.

Qualitative Data - Problems in Data

The qualitative data seem to suggest that there may have been errors in our data collection.

There is no record of a person named Cora nor Sonny visiting MuscleHub during the A/B test period.

And it is unlikely that the Shirley that was interviewed (did not do fitness test and joined) was correctly recorded as the only Shirley that joined performed a fitness test and had a '1970' in her email address which is suspect for a 22 year-old.

Recommendation

The results of this multivariate test suggest that Janet's hypothesis was correct.

The gym should change their policy, skipping the fitness test when a prospective member visits the gym.

Further Recommendations

Continue to observe the members that joined and determine if there is a difference in how long members of each group maintain membership.

Look into why there is such a low conversion rate for the gym as a whole.

Put a credit card payment line on the application to prevent loss from the application step to the membership step and make month to month payment easier.

Keep better records.

Consider what niche MuscleHub should fill and better serve those clients.