MuscleHub A/B Test

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A/B Test Description

Currently, MuscleHub new member subscription process is to:

1. Visitors take a fitness test.
2. They receive an application form.
3. They pay for the first month's membership.

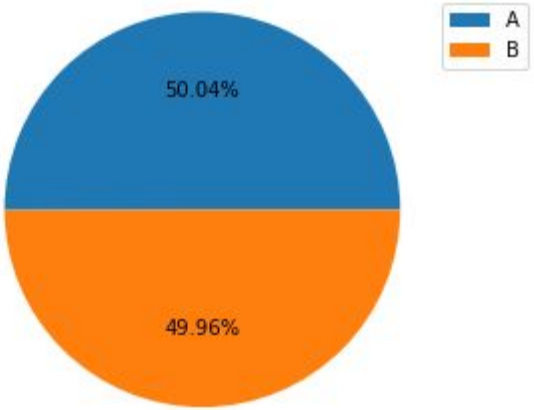
MuscleHub's manager Janet is concerned that the fitness test is intimidation visitors to the gym and deterring them from becoming paying members. An A/B test was conducted to compare subscription rates between new clients that received a fitness test and those that skipped the fitness test and were given the application form directly.

Summary of Data Set

MuscleHub provided 4 SQL tables: they contained information for clients that visited; clients that participated in the fitness test; clients that received an application; and clients that purchased a subscription to the gym. The 4 tables were combined into one using to give a complete analysis of the data comparing the subscription rates of visitors given the fitness test first and application second versus visitors that were given the application directly.

Additionally, we received a small survey of 4 interviews about the fitness test. 3 out of 4 clients interviewed enjoyed the fitness test but noted the test was difficult. That said, the sample size of interviews is too small to warrant any real conclusions from the interviews.

Beginning on 07/01/2017, new visitors were randomly divided into group A that received a fitness evaluation and group B that did not. Of the 5004 new clients, it was a near even split between A and B groups.



Hypothesis Testing

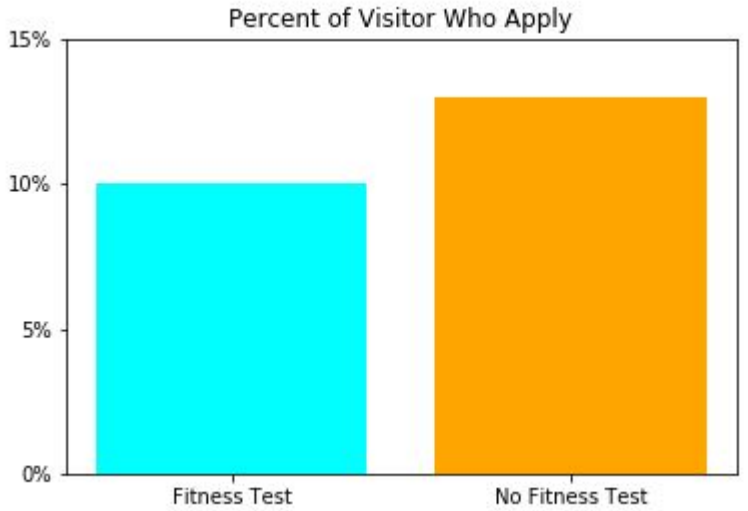
Since there are the two independent data sets (A & B groups), a Chi Square test was performed to test the null hypothesis of “there is no difference in probability between A & B test groups becoming a subscribing gym member” and evaluating the probability value (PVAL) of the null hypothesis.

The Chi Square test was evaluated on three data sets:

- Visitors who apply
- Applicants who purchase a membership
- Visitors who purchase a membership

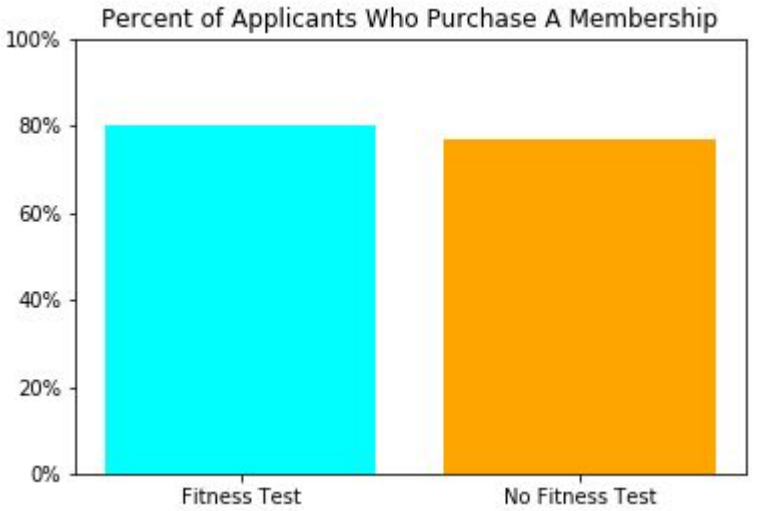
Visitors who apply

Between visitors who received the fitness test and visitors who did not receive a fitness test, there was significant difference whom applied. With a PVAL of 0.00096, the null hypothesis is proven incorrect. Visitors who did not receive a fitness test more often apply for membership.



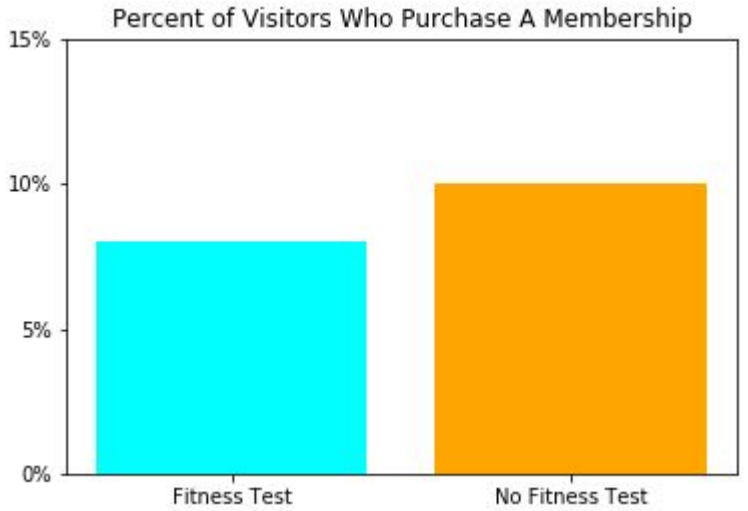
Applicants who purchase a membership

Between applicants who purchase a membership, there was no significant difference between A & B groups. With a PVAL of 0.43259, the null hypothesis is proven correct and there is no probability difference.



Visitors who purchase a membership

Between visitors who received the fitness test and visitors who did not receive a fitness test, there was significant difference whom purchased a membership. With a PVAL of 0.01472, the null hypothesis is proven incorrect. Visitors who did not receive a fitness test more often purchase a membership.



Summary & Recommendation

Analysis confirms the suspension that the fitness test is causing a decline in new membership. Visitors who did not receive the fitness test are more likely to become paying members. The fitness test should be changed to be offered to only paying members. This would have the dual benefits of not causing visitors to deterred from becoming paying members and it would occupy less time performing the fitness test for visitors who would eventually not become paying members.