Capstone Project:

MuscleHub A/B Test

Outline

Test Description

Janet, the manager of Muscle Hub Victoria believes that the gym's current fitness test intimidates prospective members so she has decided to setup an A/B test.

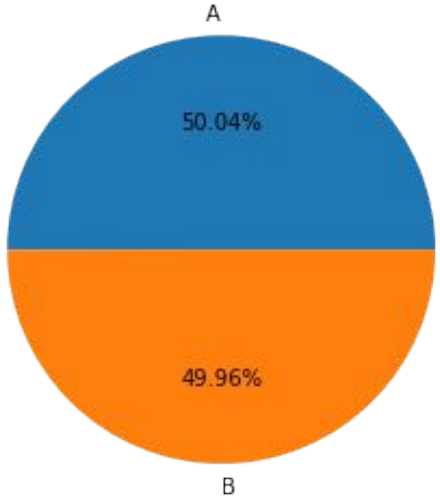
She assumes that visitors assigned to Group B will be more likely to eventually purchase a membership to MuscleHub.

SETUP

Visitors will randomly be assigned to one of two groups:

- **Group A** will still be asked to take a fitness test with a personal trainer
- **Group B** will skip the fitness test and proceed directly to the application

Below is a pie chart showing visitors split into each group.



Dataset Summary

The dataset used here is a combination of data gathered from the visitor, fitness test, application, and purchases tables starting on 7/17/2017.

The key fields identified were:

- Visitor first/last name
- Gender
- Email address
- Visit date
- Fitness test date *(when applicable)*
- Application date *(when applicable)*
- Purchase date *(when applicable)*

Hypothesis Testing (Overview)

Was Group B more likely to purchase a membership given that they did not have to take a fitness test?

To test our hypothesis, 3 different tests were completed.

All 3 tests were done using the Chi Square test. This method was chosen as it is ideal when comparing two or more categorical datasets.

Test # 1

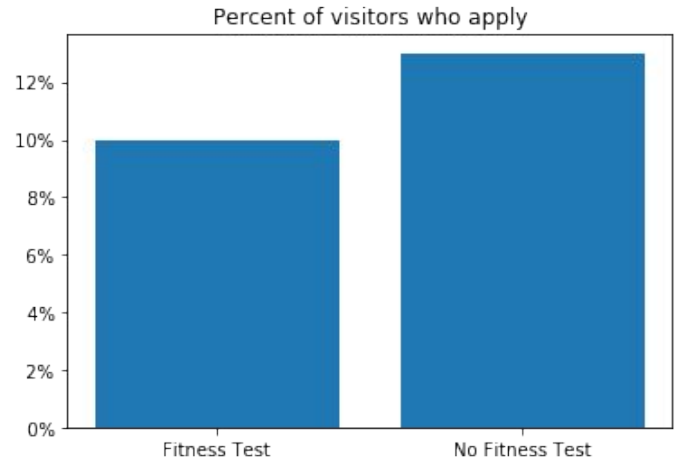
Who picks up an application?

RESULTS

Group A had a total of **2504** visitors. 250 of those visitors (**10%**) picked up an application.

Group B had a total of **2500** visitors. 325 of these visitors (**13%**) picked up an application.

The p-value calculated in the chi square test was **0.09%**. This means that it is very unlikely the results are due to just random chance.



Test # 2

Which applicants purchase a membership?

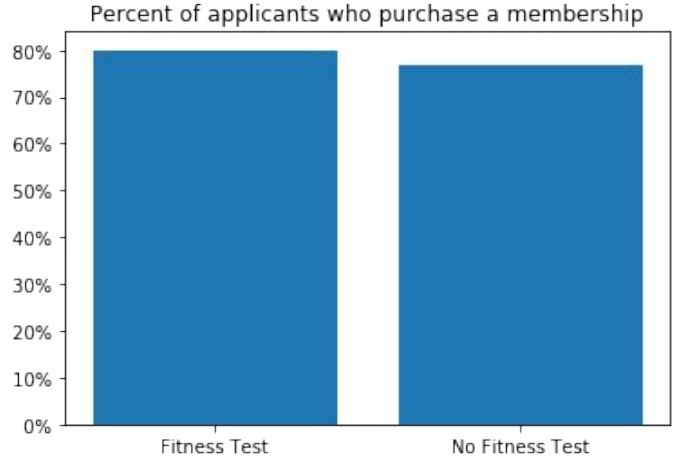
RESULTS

Considering ONLY the applicants:

Group A had a total of **250** applicants. 200 of those applicants (**80%**) purchased a membership.

Group B had a total of **2500** applicants. 250 of these applicants (**77%**) purchased a membership.

The p-value calculated in the chi square test was **43%**. This means that there is not much of a statistical difference and that the results were likely due to random chance.



Test # 3

Which visitors purchase a membership?

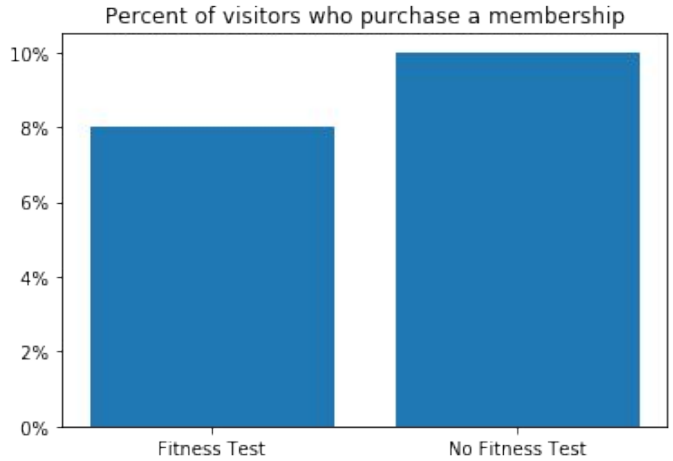
RESULTS

Considering ALL visitors:

Group A had a total of **2504** visitors. 200 of those visitors (**8%**) purchased a membership.

Group B had a total of **2500** visitors. 250 of these visitors (**10%**) purchased a membership.

The p-value calculated in the chi square test was **1.5%**. This means that there was a significant difference .



Qualitative Data

SUMMARY

Based on interviews conducted with several random visitors, 75% of them found MuscleHub's fitness test valuable and did not feel intimidated by having to complete it.

Visitors compared MuscleHub's fitness to nearby competitor LiftCity and found that LCs test was "too intense…" and that their personal trainers were immediately aggressive to sell them.

Generally visitors seemed not to mind having to take a fitness test however the data indicated that if they were given the test that they were less likely to apply and/or purchase a membership.

Conclusion...

Notes

- ➔ More applications were submitted when visitors were NOT tested
- ➔ More memberships were purchased when visitors were NOT tested

Recommendation...

Based on my analysis in this A/B test I would recommend Janet consider removing the mandatory fitness test or at least making it optional - some don't mind taking it it, but most people do and those visitors are less likely to apply and purchase a membership.