MUSCLEHUB A/B TEST ON FITNESS TEST

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INTRODUCTION

Existing steps to purchase a membership:

1. Take a fitness test with a personal trainer
2. Fill an application with the gym
3. Send in payment for first month's membership

The A/B Test

Objective :
To determine if visitors are more likely to purchase a membership if the fitness test is skipped.

Group A : Visitors take the fitness test as usual
Group B : Visitors skip the fitness test and proceed directly to application

Hypothesis:
Visitors assigned to Group B are more likely to purchase a membership

The Dataset

- Only included data on and after 2017-07-01, which is when the A/B Test started

- Total of 5004 visitors in Group A and B

- The pie chart shows that the sample sizes of Group A and Group B are approximately the same

Percentage of Visitors in Groups A and B

A

50.04%

49.96%

B
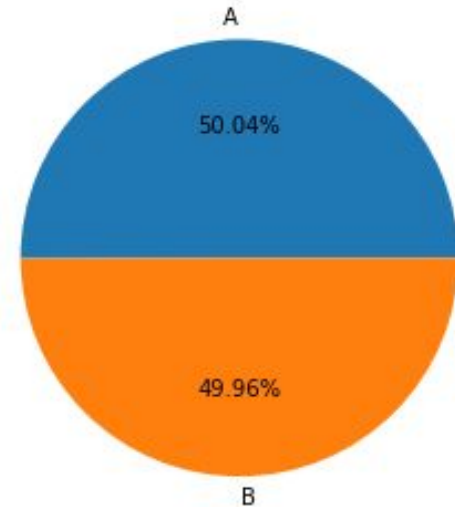
The Hypothesis Tests

- Chi2 Test is used to analyse the data because;

  - The data is categorical

  - The data has two or more categorical datasets

- Three Chi2 Tests are performed:
  - Visitors who submitted an application in Group A and Group B
  - Applicants who purchased a membership in Group A and Group B
 - Visitors who purchased a membership in Group A and Group B

Hypothesis Test 1 (visitors who applied)

- The bar chart shows that 9.98% of visitors in Group A applied while that of Group B is 13%

- Chi2 Test returns a p-value of 0.00096

- Since p-value < 0.05, the result is significant

- Visitors in Group B are more likely to submit an application

Percentage of Visitors Who Applied in Each Test Group
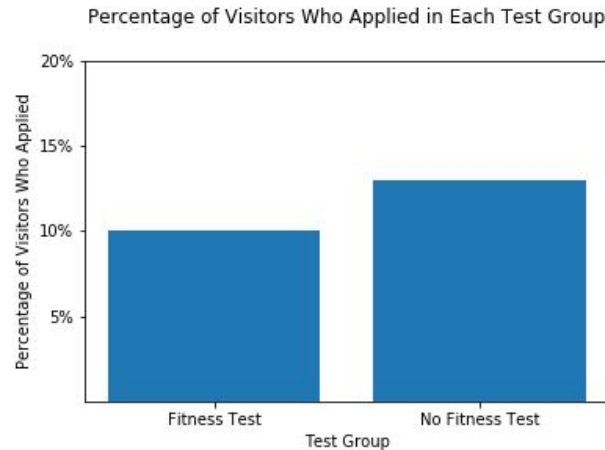
Hypothesis Test 2 (applicants who purchased)

- The bar chart shows that 80% of visitors in Group A applied while that of Group B is 76.92%

- Chi2 Test returns a p-value of 0.43

- Since p-value > 0.05, the result is not significant

- There is no significant difference in whether applicants in Group A or Group B are more likely to purchase a membership

Percentage of Applicants Who Purchased in Each Test Group
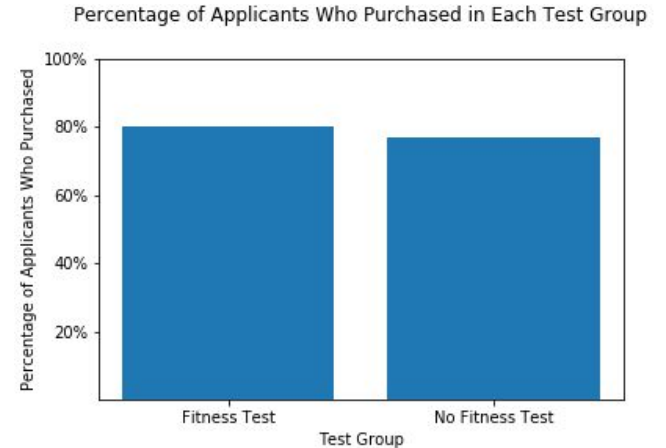
Hypothesis Test 3 (visitors who purchased)

- The bar chart shows that 7.99% of visitors in Group A purchased while that of Group B is 10%

- Chi2 Test returns a p-value of 0.015

- Since p-value < 0.05, the result is significant

- Visitors in Group B are more likely to purchase a membership

Percentage of Visitors Who Purchased in Each Test Group
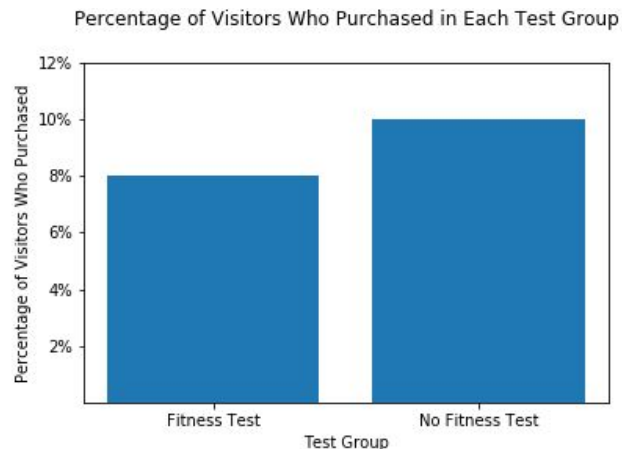
Hypothesis Tests Summary

- Visitors in Group B are more likely to submit an application

- Once picking up an application, there is no difference in whether the applicants in Group A or Group B are more likely to purchase a membership

- Visitors in Group B are more likely to eventually purchasing a membership

Conclusion

- All hypothesis tests consistently suggest that visitors in Group B have a higher probability in purchasing a membership

- Hence, the hypothesis of this A/B Test, which states that visitors assigned to Group B are more likely to purchase a membership, is accepted

- In conclusion, it is recommended that the fitness test is removed and let the visitors submit an application directly.

THANK YOU