Customer Churn Rate Analysis and Prediction for OC&Gym Gym Clubs Using Data from 2009 to 2019

Group four members:

Yitong Liu | 01625757

Faiz Fablillah | 01525542

Mingming Zhu | 01548939

Mukund Premkumar | 01605996

Isabella Li | 01547310

Presentation Outline (i)

- Summary

- Business problem overview

- Summary of Analysis Approach and hypothesis

- KPIs

- Results of hypothesis analysis

- Forecasting

- Summary of Findings

- Strengths/limitations

Summary

- Project objective – using data from 2009 until the end of 2019 analyze customer churn for OC&CGym gym club's membership across its entire operation.

- Available Data
  - Customers- birth year, gender, affluence, join date, subscription type, birthdate and when they left the gym
  - Visitation – customerid, date/time of visit, peak/offpeak

- From the provided dataset we were able to find several key insights to reduce customer churn. These actionable insights are in two forms.
  - Improved pricing strategy
  - Identification of periods of time where customers are likely to churn

- Developed a forecasting tool to aid management decisions using machine learning techniques
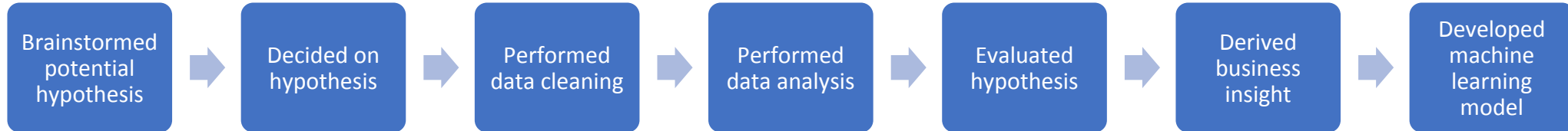
Business Problem

- The gym has been expanding significantly over the last 10 years but recently slowed expansion and to boost revenue the gym has increased prices.

- Increased price hike has not provided you with the required, profit/revenue increase.

- Customer churn has been been very high.

Summary of Analysis Approach and hypothesis

- Below is the high level approach that we took to analyze the data

Brainstormed potential hypothesis → Decided on hypothesis → Performed data cleaning → Performed data analysis → Evaluated hypothesis → Derived business insight → Developed machine learning model

First hypothesis was that the following attributes would be related to the customer churn rate.

- Gender
- Age of customer
- Subscription Type of customer
- How regularly a customer attended the gym
- At what times (peak vs non peak) a customer attends the gym

Second hypothesis was that there would be a strong seasonal effect to the revenue. We would also expect significant changes in churn rate around the time the pricing strategy was implemented.

KPIs

- Churn rate - (number of customers who left during the month)/(number of customers at the start of the month). If a customer was to join and leave in the same month then we also increase the numerator and denominator by 1 i.e.. they count as a churned customer.

- Standardized Revenue - Since the number of locations was constantly changing we standardized the revenue by dividing the total monthly revenue by the total number of stores that were open in that month. Here on we will refer to that as standardized revenue.

Results (A)

- **Results for Hypothesis 1**

  - Our first hypothesis assumed that several attributes would be related to churn. The below section explores what we found for each attribute.

Results for Hypothesis 1 (i)

Gender –The gym should take steps to help motivate women and keep them attending.

Comparison of Revenue and Churn rate for Different Genders

Findings

The graph compares the revenue and churn rates between males and females. We can see that both genders follow a very similar pattern but females have consistently had a higher churn rate and have contributed less towards revenue.

Suggestions/Limitations

Offer a free diet/training plan advice as a group session for all women once a month where they get advice specific to female body types. This could help them make more progress and hence gain motivation and not drop their gym subscription.

Results for Hypothesis 1 (ii)

Subscription - try and sell more standard packages

Comparison of Revenue and Churn rate for Different Subscription Types
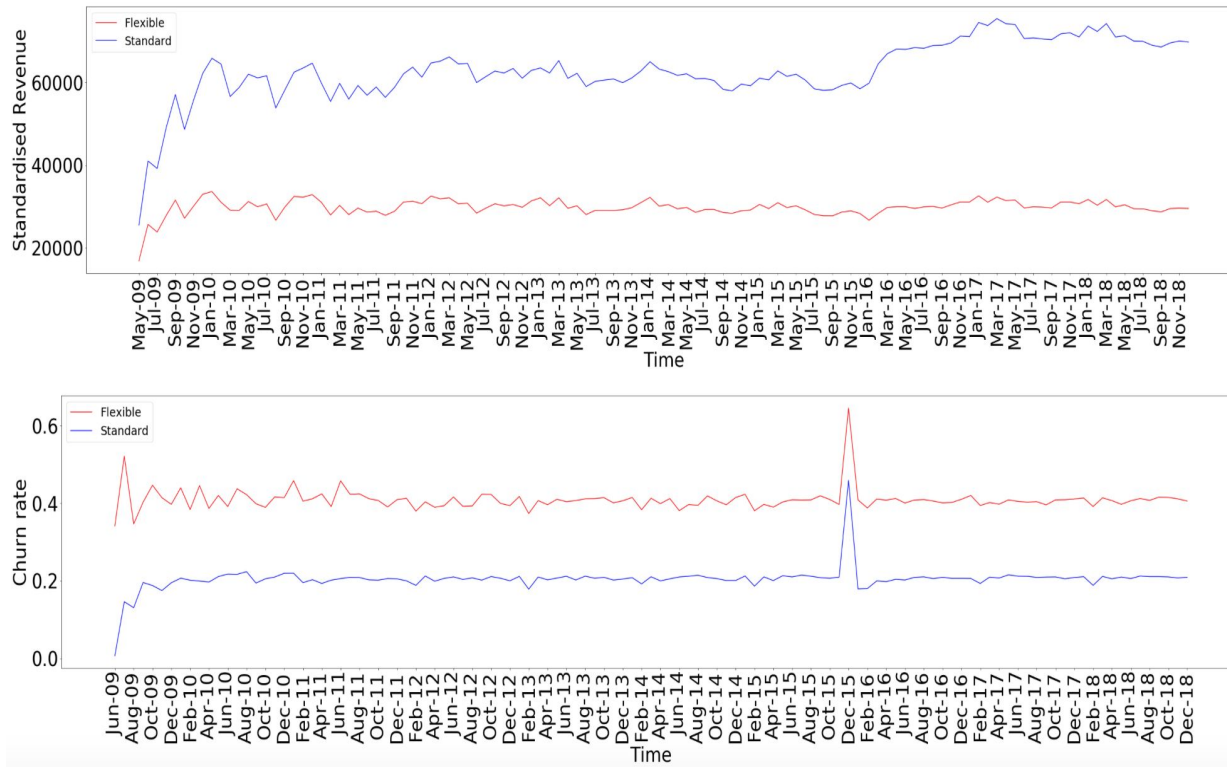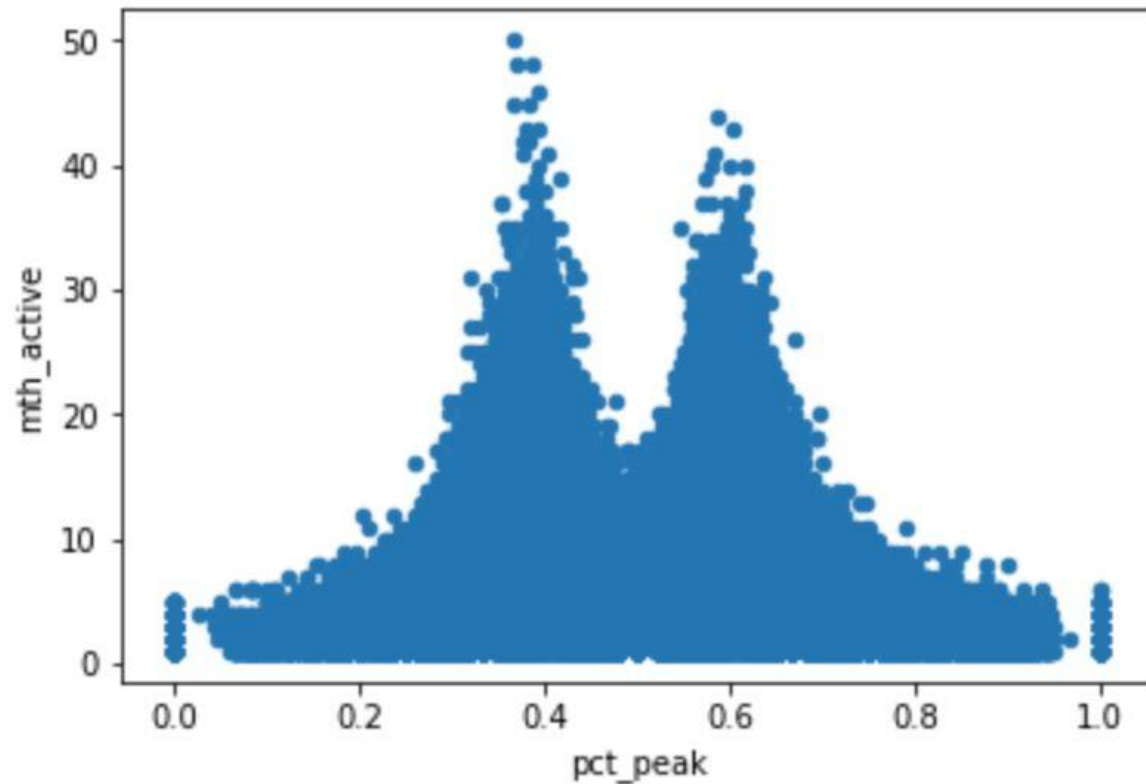
Findings

- Contribution to revenue has been greater from the standard gym package as opposed to the flexible package.

- Standardized revenue from the standard package took a more significant drop after the price hike but has since consistent grown and is now higher than before the price change.

- The churn rate from the standard customers is significantly lower.

Suggestions/Limitations

- Try and sell more standard packages, a strategy for this could be to alter the pricing strategy to waive the 6 pound joining fee for standard customers when they join.

At what times (peak vs non peak) a customer attends the gym
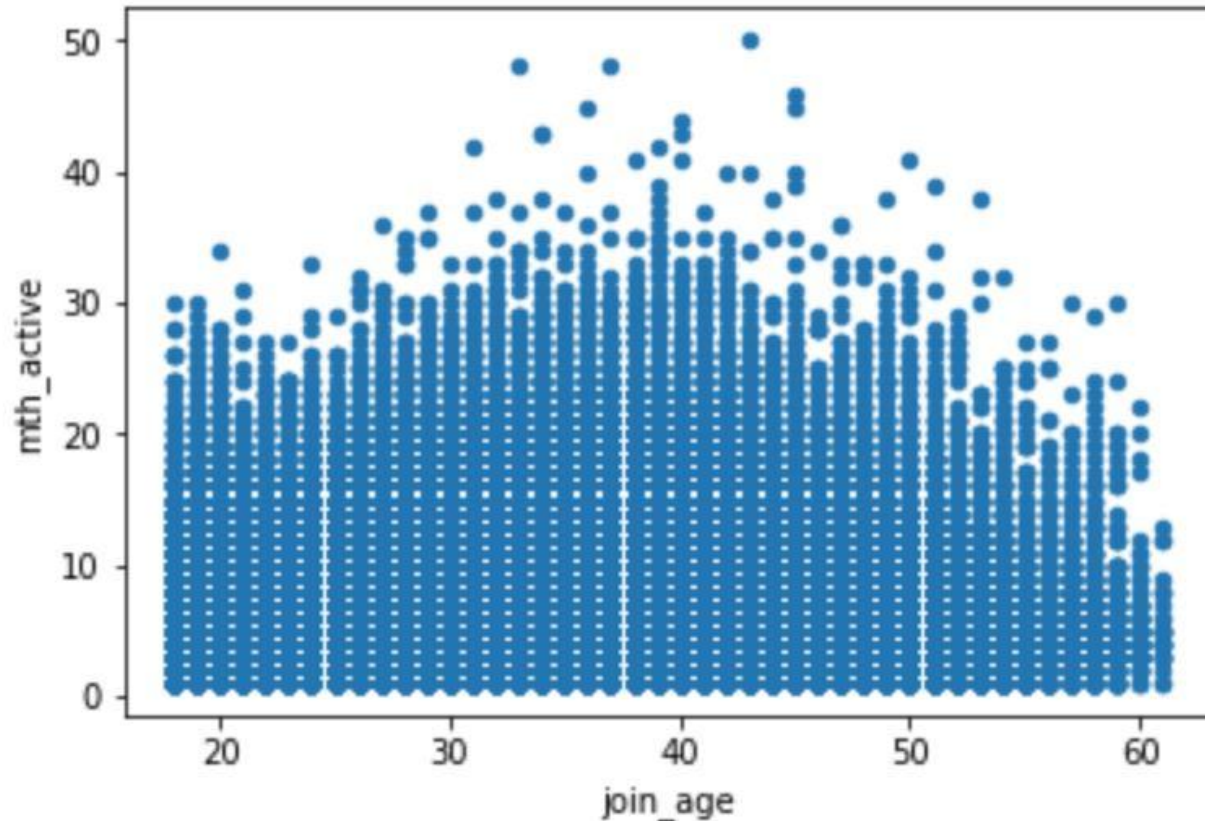

Findings

- The graph shows the average duration of gym membership for customers who visit primarily during peak hours as opposed to during non peak hours.

- bimodal distribution where people tend to stay withe the gym longer when their peak usage is approximately either 40% or 60%.

- Miniscule difference in duration and hence is not a significant factor in determining churn.

Age at time of joining

Findings

- The scatterplot here shows the distribution of the number of months people of different joining ages are active at the gym.

- Clear trend that people who join at around age 38 are more likely to stay longer.

- This average duration of gym membership reduces significantly as the age of the customer increases beyond 45 years.

Suggestions/Limitations

- The gym should try and educate older joiners on how the can maximise their results, prevent injury and hence stay motivated.

- This could be done through free workshops, induction sessions or training videos.

Regularly attending gym will decrease churn
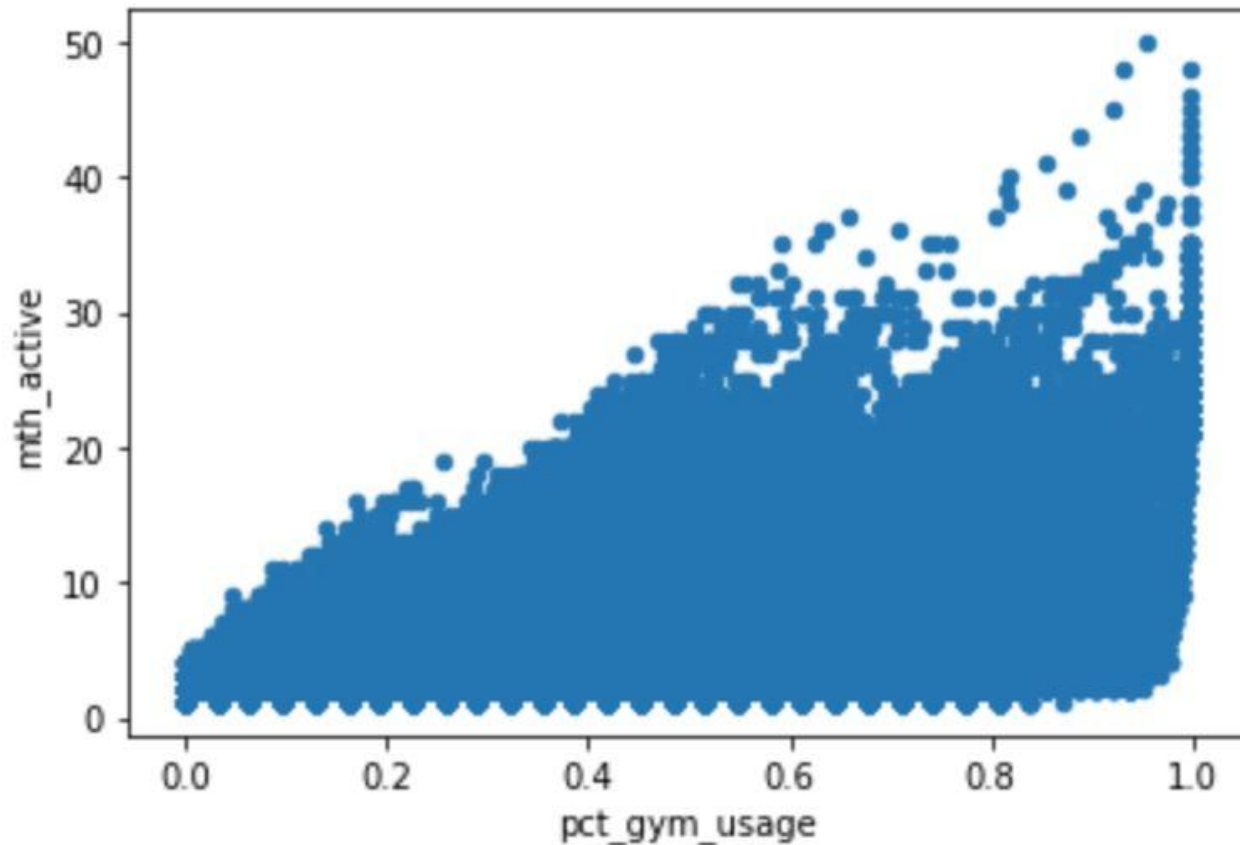
Findings

- The graph shows the relationship between the frequency of visits to a gym calculated as (total visits to the gym / total length of membership) and the average duration of gym memberships within the gym.
- We can see a strong trend where the average durations increases as gym usage increases.

Suggestions/Limitations

- To maintain a lower churn rate, gyms need to ensure that their members visit more often.
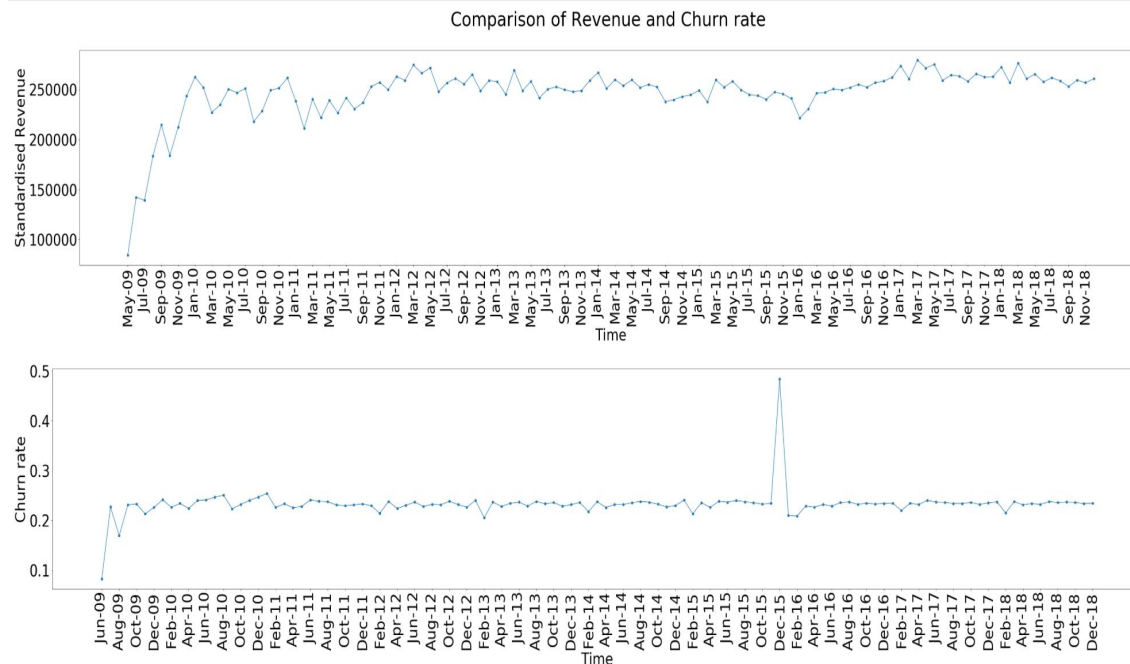- Music machines, fruit bowls, encouraging staff

Results (B)

- **Results for Hypothesis 2**

  - Our second hypothesis was that there would be a strong seasonal effect to the revenue and churn rate. Additionally revenue and churn rate would be negatively impacted by the price increase in 2016.

Results for Hypothesis 2 (i)

Seasonal effect shows revenue drop in February

Findings

- The graph shows the change in revenue and churn rate over time for all customers.
- There is a huge upward spike in churn rate right before Jan 2016,
- Significant drop in standardised revenue right after the spike.
- However, churn and revenue return to original amounts price change. Although the price hike impacted both churn and revenue, neither of them were impacted long term.
- looking at the seasonal impacts of the data, we can see that from about 2014 onwards, there is a significant decrease in revenue each year during February. Likely because people often take on new year resolutions or get given gym memberships as Christmas gifts but often give up soon.

Suggestions/Limitations

We suggest offering free diet/training information sessions during January in order to educate people so they see results from their training and choose to continue exercising.
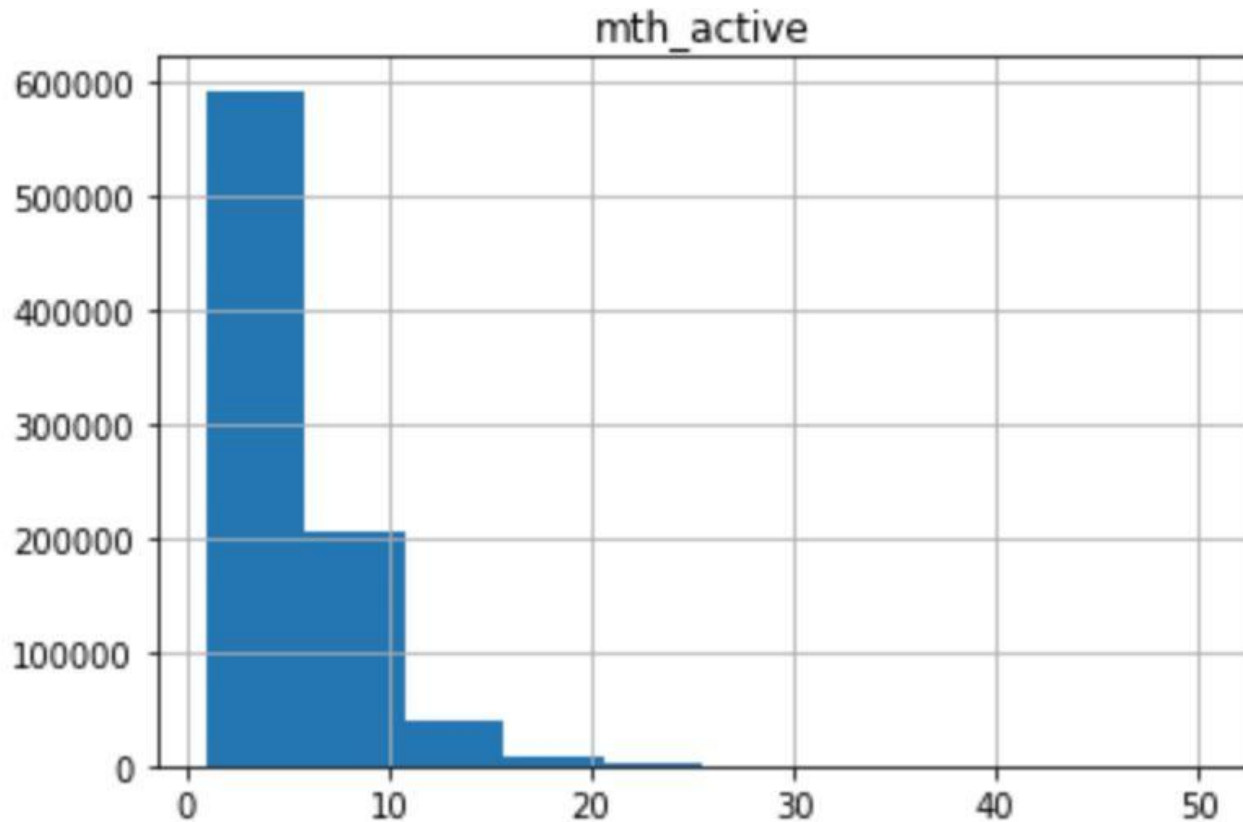
Results (C)

- **Additional Findings**

  - While exploring the data we discovered additional findings which were not a part of the original hypothesis..

Additional Findings (i)

Offer one year contracts at discounted rates

Findings

The graph shows the distribution of how long members continued their gym subscription. We can see that the majority of participants, quit within the first 5 months and very few stayed beyond 10.

Suggestions/Limitations

The gym could update their pricing strategy to include a yearly contract at a cheaper rate. This will force customers to stay with the gym for an entire year.

Additional Findings from Forecasting Tools

- We explored and built a tool can predict on a per location basis. We also built a model that would forecast the number of people who would quit OC&Gym within the next 1 and 3 months.

- Here we summarized the findings and their use cases respectively.

No	Findings	Use Cases
1	within the next one month or three months, **Kensington and Chelsea** is expected to have the most customers churn , with **Hammersmith** being the second while **Enfield** is reported to have the lowest number of customers churn;	Helping the company to allocate resources objectively by focusing on programs to improve overall clubs' performance at **Kensington and Chelsea** within the next one or three months
2	approximately **34706 customers** are predicted to churn within the **next one month**;	Helping the company to perform attractive programs that can arrest the churn within next one month.
3	approximately **46989 customers** are predicted to churn within the **next three months**;	Helping the company to perform attractive programs that can arrest the churn within next three months.

Summary of Findings

Pricing Strategy

- Firstly, to encourage members to stay longer, offer a 1 year subscription at a slightly lower cost since most leave within a year

- Secondly, to remove the joining fee of 6 pounds on the standard membership , to encourage gym members to take which generally has a lower churn rate.

Other churn reduction tecniques

Groups of customers within your business that are more likely to churn than others - specifically females, flexible members and member older than 45 were more likely to churn. In addition, there was a significant loss of revenue. Considering that a lot of members leave gym due to either injury or loss of motivation we have provided specific advice on how to target these groups.

Strengths/limitations

Strengths

We have almost explored most of the of the available attributes in the dataset, through many different forms of visualization and analysis.

Limitations

- A key limitation of our analysis is that we did not look at the combined effect of factors. For example we explored gender and age brackets separately, but not females within a certain age bracket. For further analysis we could use data sets.
  - Data relating to the gym industry beyond London to see if we can target those areas
  - Data relating to surveys of customer experience at the gym
  - Data regarding quality of coaches/trainers at the gym
  - Data regarding size/capacity of gym and availability of gym equipment
  - Competitor data to compare the performance of the two businesses

Thank you for listening, any questions?