

Identifying demand in New York to start 'Gym/Fitness' centers

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Background

- With the rise in obesity rate and various diseases related to lack of body fitness, every American has now understood the importance of Gym and fitness centers
- People are finding some time from their busy schedule and are visiting the nearest 'Gym/fitness' center to maintain their body fitness
- Hence the demand for such types of fitness centers is rapidly growing and there is a huge potential to enter in Health and Fitness business

Business Interest

- Popular fitness brand in America is seeking the opportunity to expand its business, by opening 'Gym/Fitness' centers in various neighbourhoods of America
- Core need is to acquire knowledge about potential demand in various neighbourhoods of America through geolocation data analysis
- High-demand neighbourhoods will be appropriate targets to start the business in emerging markets

Business Objective

- Identify best neighbourhoods in New York city to open 'Gym/Fitness' center
- With high market potential to start the business
- With sufficiently high demand from local residents
- Thereby achieving higher Return On Investment (ROI)

Data acquisition

- The New York City neighbourhood data are available on the link https://geo.nyu.edu/catalog/nyu_2451_34572
- Neighbourhood data consists of 5 boroughs and 306 neighbourhoods with latitudes and longitudes
- Venue data for top 100 venues within a radius of 500 meters of every neighbourhood in neighbourhood data is obtained from Foursquare API by providing necessary credentials
- Venue data consists of venues with latitude, longitudes and venue category

Data processing and feature creation

- Venues in all neighbourhoods are regrouped together based on venue categories and new feature categories are created
- Feature categories are designed based on business ideas and some assumptions the way business works
- Occurrence of each feature category is created by creating dummy variables for all feature categories
- Neighbourhood level penetration for all feature categories is calculated by averaging/aggregating venue level dummy variables at neighbourhoods
- Final data contains penetration of all feature categories for all neighbourhoods listed in neighbourhood data

Assumptions behind feature creation

- **Boutique –**
 - Existence of boutique emphasizes the more localization and residential type of neighbourhood
 - Since the people have tendency to visit nearby 'Gym/Fitness' center, highly residential neighbourhood has greater potential
- **Arcade –**
 - Arcades are the constructions where people meet or gather for completely different purpose other than for 'Gym/Fitness' centers
 - This place represents non-native type of the neighbourhood, and perceived as much specialised area of neighbourhood, for example, one can resemble, commercialized area
 - Hence has low potential for 'Gym/Fitness' centers
- **Cafeteria –**
 - It is the prominent meeting, gathering or discussion area for small group of family as well as business people
 - Its existence is scattered across native-residential as well as diverse-commercial zones and hence the area surrounded by Cafeteria keeps high potential for the growth of 'Gym/Fitness' centers

Assumptions behind feature creation continued...

- **Food & Wine –**
 - Its existence also is scattered across native-residential as well as diverse-commercial area
 - Although, it brings little bit more residential flavour due to family dine out or local street food requirements
- **Super market & traditional Grocery –**
 - Super market owners recently started experimenting by opening 'Gym/Fitness' center in market premises and they are successful to keep people attracted by increasing their engagement levels
 - Penetration of traditional grocery stores indicates localization of neighbourhood and increases the demand for fitness in residential area
 - Business potential for 'Gym/Fitness' center has been swamped in the area of Super market
- **Health –**
 - In the residential area where people are more conscious towards health and particularly following their health habits or diets, these area are keeping more potential for 'Gym/Fitness' centers
 - Hence, the area where services like, 'Gluten-free Restaurant', 'Health & Beauty Service', 'Health Food Store', 'Spa', 'Weight Loss Center', 'Yoga Studio' are found, are good prospects for 'Gym/Fitness' center

Assumptions behind feature creation continued...

- **Recreation –**

- These are the places, where generally people come for enjoyment, fun, rest or entertainment purpose
- While they are here, they are in complete resting mood
- The purpose they seek is completely different than 'Gym/Fitness' centers can offer
- Hence the area where recreational places are situated, are not suitable for 'Gym/Fitness' centers

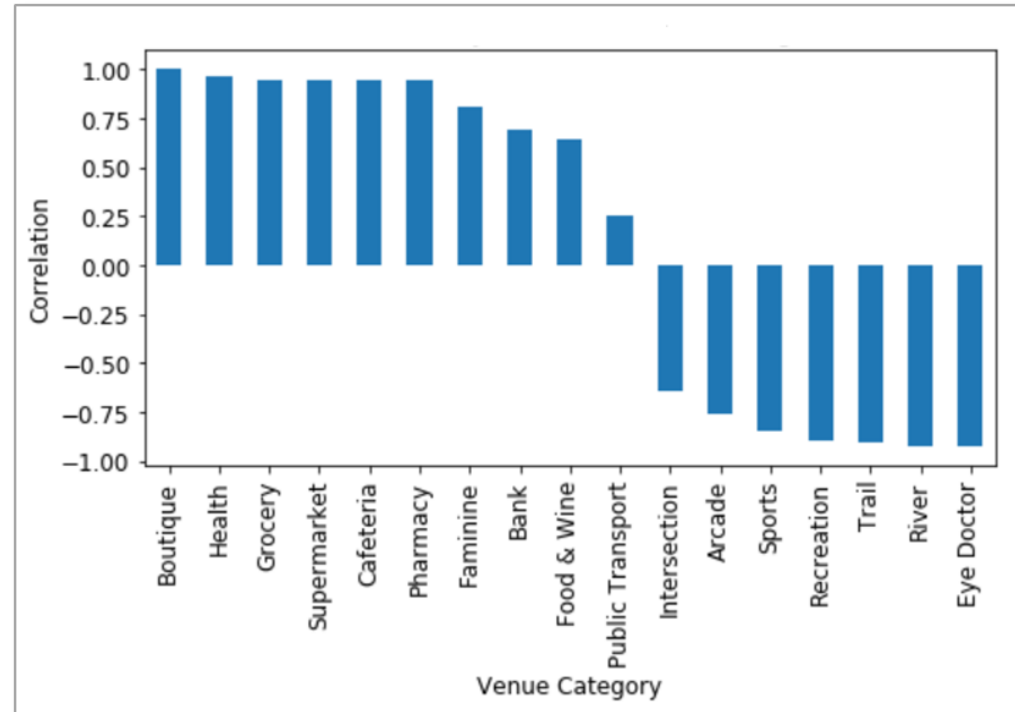
- **Sports –**

- These are the places where sports activities are conducted
- All the sports places offer substitute service of fitness in addition
- Hence the area where sports activities are conducted, are not suitable places for 'Gym/Fitness' centers

Assumptions behind feature creation continued...

- **Public transport –**
 - The purpose served by the 'Gym/Fitness' center has very little demand in the area where public transport like bus, train or metro station are located
 - This is because, 'Gym/Fitness' centers are sought by people in the nearby residential area
- **Feminine –**
 - It is said that women are more conscious about their health and fitness
 - As their engaging nature, they prefer their training centers in the area where services like 'Baby Store', 'Cooking School', 'Cosmetics Shop', 'Lingerie Store', 'Nail Salon', 'Women's Store' are being provided
 - Hence these type of area have more potential for woman 'Gym/Fitness' centers

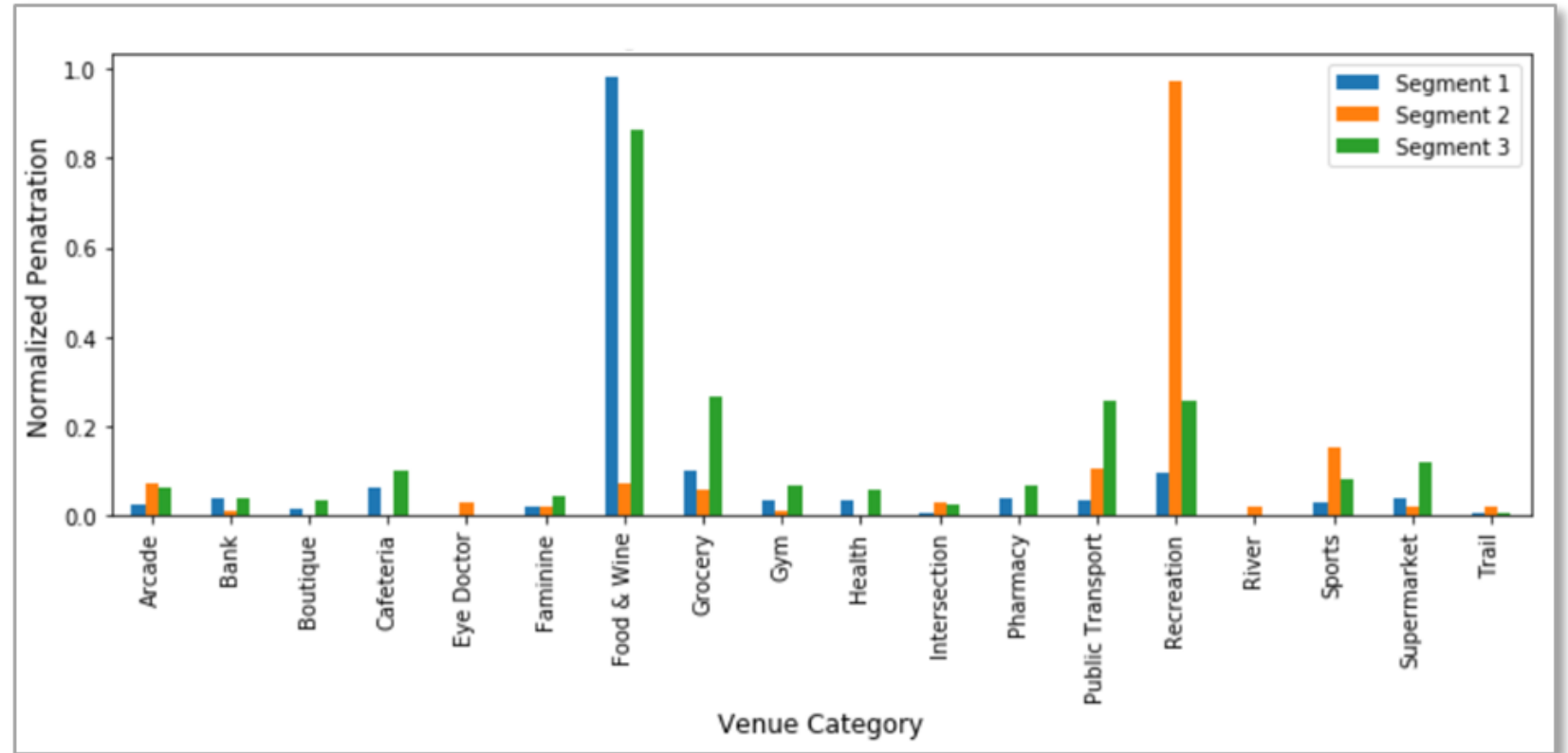
Association of penetration of Gym with penetration of other feature categories



- 'Boutique', 'Health', 'Grocery', 'Supermarket', 'Cafeteria' and 'Pharmacy' have **high positive** correlation with 'Gym' penetration.
- 'Feminine', 'Bank', 'Food & Wine' have **moderate positive** association with 'Gym' penetration.
- 'Public Transport' has **least positive association** with 'Gym' penetration.
- 'Intersection', 'Arcade' and 'Sports' have **moderate negative** association with 'Gym' penetration.
- 'Recreation', 'Trail', 'River' have **high negative** association with 'Gym' penetration.

Understanding segment profiles –

Analysis of penetration patterns of feature categories across segments



Understanding segment profiles –

Analysis of penetration patterns of feature categories across segments

continued...

- **Segment 1 – Moderate potential for Gym**
 - **High penetration** of 'Food & Wine', 'Bank'
 - **Moderate penetration** of 'Cafeteria', 'Boutique', 'Feminine', 'Grocery', 'Super market', 'Health', 'Pharmacy'
 - **Low penetration** of 'Arcade', 'Intersection', 'Public Transport', 'Recreation', 'Sports', 'Trail'
- **Segment 2 – Low potential for Gym**
 - **High penetration** of 'Arcade', 'Eye Doctor', 'Intersection', 'Recreation', 'River', 'Sports', 'Trail'
 - **Moderate penetration** of 'Public Transport', 'Feminine'
 - **Low penetration** of 'Bank', 'Food & Wine', 'Grocery', 'Super market'
- **Segment 3 – High potential for Gym**
 - **High penetration** of 'Grocery', 'Health', 'Pharmacy', 'Public Transport', 'Super market', 'Boutique', 'Cafeteria', 'Feminine'
 - **Moderate penetration** of 'Arcade', 'Food & Wine', 'Bank', 'Intersection', 'Recreation', 'Sports'
 - **Low penetration** of 'Trail'

Conclusion –

How this analysis
can be used....?

- Since all the neighbourhoods in the New York City are segmented in 3 segments and are labelled for segment membership, every single neighbourhood draws the picture of future potential for 'Gym/Fitness' center by virtue of segment profile
- For example, neighbourhood 'Allerton' is classified in Segment 1, then it can be perceived as moderate potential neighbourhood for 'Gym/Fitness' business
- All the neighbourhoods with segment membership for **segment 3** are **prioritized first**, since this segment has high potential for 'Gym/Fitness' business
- All the neighbourhoods with segment membership for **segment 2** are **avoided**, since this segment has very little or no potential for the business

Thank You!