Best Locations for a Night Club in New York

# Introduction

## Background

Assume an entertainment company is choosing a location for a night club in New York City. This report will suggest the top three neighborhoods for the night club by analyzing data obtained using the Four Square API and data for New York City's neighborhoods. In addition, an appropriate genre of music will be recommended from the following: EDM (Electronic Dance Music), Trap, Hip Hop, Trance, or House based on the neighborhood's proximity to other clubs.

## Problem

Neighborhoods will be plotted and clustered based on their night life. A neighborhood which already has a medium amount of night life which is not already saturated by night clubs of the same genre would be a candidate.

Said entertainment company wants to choose an optimal location for their night club which will attract a lot of patrons. Locating the club in a popular, trendy area of the city is important. Neighborhoods with other clubs within walking distance are a good bet for oftentimes club patrons will hop from club to club, especially, if there are other genres of music close by. Thus, it will be important to locate the club in an area which is not already saturated by clubs of the same genre of music. That is, we want to avoid placing an EDM club in an area already saturated by other EDM clubs. One club of the same type might be okay for you will have curious club goers that like EDM music want to try a different venue and they are already nearby but if there are already two or three EDM clubs within walking distance or a five minute cab/uber ride that neighborhood should be avoided.

## Interest

The bar and night club industry has steady grown since the mid 1990’s reaching 23.15 billion U.S. dollars in 2015 [1]. Running a night club can cost several million dollars just for a yearly lease depending on location. A well-placed dance club can gross revenues anywhere from $5,000 to $35,000 nightly [2]. As Harold Samuel, the real estate magnate, once said “Location, Location, Location”. Location is of major influence on a brick-and-mortar business and how successful it will become.

# Data Description

### Data Sources

As mentioned above, the data used will be venue data obtained using the Four Square API and New York neighborhood data obtained from https://geo.nyu.edu/catalog/nyu\_2451\_34572 . This is the same data that was used in a previous assignment for this course. This data is used to identify the location of each neighborhood in New York using longitude and latitude. The Foursquare API is used to access night club venue information.

### Data Cleaning

### Feature Selection

# Methodology

Exploratory Data Analysis

Inferential Statistical testing

Machine learning

# Results

# Discussion

# Conclusion

### Calculation of Target Variable

Relationship Between Improvement and Age

Relationship between improvement and minutes played

Relationship between improvement and games played

Relationship between improvement and positions

Relationship between improvement and last year’s improvement

Relationship between improvement and draft positions

Relationship between improvement and teams

# Clustering

Regression Models

Applying standard algorithms and their problems

Solution to the problems

Performance of different models

Classification Models

# Conclusions

# Future Directions

References

[1] [https://www.statista.com/topics/1752/bars-and-nightclubs](https://www.statista.com/topics/1752/bars-and-nightclubs/%23:~:text=Sales%20in%20the%20drinking%20place,alcoholic%20beverages%20for%20immediate%20consumption.)

[2] <https://www.referenceforbusiness.com/business-plans/Business-Plans-Volume-07/Nightclub.html>