

The best locations to open a sports bar/pub using UK football stadiums data

Mark Forster

30th June 2020

1 Introduction

1.1 Business description

The UK. Football is the UK's national sport and as such it is home to many football (soccer) teams and football leagues. Football generated a turnover of approximately 375 million pounds in 2018. On match days football stadiums around the UK are filled with fans excited to support their teams and celebrate their victories, and pubs and bars located close to football stadiums are able to capitalise on this large customer base.

The aim of this analysis is to predict the best locations to open a new sports bar/pub within close proximity to football stadiums in the UK. It is hypothesised that football stadiums with the highest capacity (most potential customers) and lowest number of existing pubs/bars (least competition) are likely to provide the best locations for a new venue. Stadium location data scraped from the web and Foursquare data of existing venues will be used to determine the best locations.

1.2 Stakeholder interest

This data is of interest to owners of existing sports bar/pub chains who are looking to expand and open new venues.

2 Data acquisition and cleaning

2.1 Data sources

Football stadium data is easily available on many websites, including Wikipedia. Stadium data including stadium name, maximum capacity, longitude, and latitude will be scraped from the web. Foursquare will be used to obtain venue information and the number of nearby pubs/bars based on the stadium location data.

| | Name | Team | Capacity | Latitude | Longitude | Easting | Northing | Grid Reference | Also known as |
|---|--------------------|--------------------------|----------|-----------|-----------|---------|----------|----------------|----------------|
| 0 | Abbey Stadium | Cambridge United | 10847 | 52.212799 | 0.154298 | 547284 | 259362 | TL472593 | NaN |
| 1 | Adams Park | Wycombe Wanderers | 10284 | 51.630600 | -0.800299 | 483134 | 193102 | SU831931 | NaN |
| 2 | Alexandra Stadium | Crewe Alexandra | 10153 | 53.087502 | -2.435690 | 370916 | 354565 | SJ709545 | Gresty Road |
| 3 | Almondvale Stadium | Livingston | 10122 | 55.886398 | -3.522070 | 304893 | 666964 | NT048669 | NaN |
| 4 | Amex Stadium | Brighton and Hove Albion | 22374 | 50.860901 | -0.080140 | 535213 | 108577 | TQ352085 | Falmer Stadium |

2.2 Data cleaning

Data has been scraped and cleaned as shown below to provide a dataframe containing stadium name, football club, maximum capacity, longitude, and latitude coordinates for all top 5 English leagues and top 4 Scottish leagues. Dataframe contains 141 stadiums.

| | Stadium_name | Team_name | Capacity | Latitude | Longitude |
|---|--------------------|--------------------------|----------|-----------|-----------|
| 0 | Abbey Stadium | Cambridge United | 10847 | 52.212799 | 0.154298 |
| 1 | Adams Park | Wycombe Wanderers | 10284 | 51.630600 | -0.800299 |
| 2 | Alexandra Stadium | Crewe Alexandra | 10153 | 53.087502 | -2.435690 |
| 3 | Almondvale Stadium | Livingston | 10122 | 55.886398 | -3.522070 |
| 4 | Amex Stadium | Brighton and Hove Albion | 22374 | 50.860901 | -0.080140 |
| 5 | Anfield | Liverpool | 45522 | 53.430801 | -2.960960 |
| 6 | Ashton Gate | Bristol City | 21497 | 51.439999 | -2.620210 |
| 7 | B2net Stadium | Chesterfield | 10400 | 53.253502 | -1.427200 |
| 8 | Balmoor | Peterhead | 4000 | 57.511200 | -1.795990 |
| 9 | Bayview Stadium | East Fife | 2000 | 56.188900 | -2.999140 |

Foursquare used to retrieve venue information within a 500-meter radius of each stadium as shown below.

```
all_stadium_venues.head()
```

| | Stadium_name | Stadium Latitude | Stadium Longitude | Venue | Venue Latitude | Venue Longitude | Venue Category |
|---|---------------|------------------|-------------------|-----------------------|----------------|-----------------|-------------------|
| 0 | Abbey Stadium | 52.212799 | 0.154298 | Pipasha | 52.213388 | 0.154665 | Indian Restaurant |
| 1 | Abbey Stadium | 52.212799 | 0.154298 | Abbey Stadium | 52.212570 | 0.154379 | Soccer Stadium |
| 2 | Abbey Stadium | 52.212799 | 0.154298 | Abbey Leisure Complex | 52.209225 | 0.154829 | Gym Pool |
| 3 | Abbey Stadium | 52.212799 | 0.154298 | B&Q | 52.211464 | 0.149038 | Hardware Store |
| 4 | Abbey Stadium | 52.212799 | 0.154298 | Cambridge United FC | 52.211833 | 0.154815 | Sports Club |