
WHICH CITY HAS THE BEST NIGHTLIFE?

Las Vegas?

Miami?

NY?

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• Introduction

Millions of people love to travel and explore new places all over the world.

Before they plan their trip. Most of the tourists will try to look for the best places to stay, dine, party, etc.

We all know **Las Vegas**, **New York City**, and **Miami** are the most attractive tourist destinations among others in the USA. Each place is unique and known for its attraction.

The entertainment capital of the world LAS VEGAS is known for its gambling, shopping, fine dining, entertainment, and nightlife. The major attraction in Las Vegas are the casinos and the hotels and each casino have its nightclubs.

The city that never sleeps NEW YORK is known for many Broadway theaters, cinemas, and electronic billboards and nightlife. It has one of the world's most famous bars, music clubs, and night clubs.

Miami South Beach is home to some of the most beautiful beaches and outstanding nightclubs in the country. The city attracts the second-highest number of foreign tourists of any city in the United States, after New York City.

Let us help a tourist who is a Night Owl (Nightlife Lover) and curious to know which city has the best **Nightlife** among these three cities?

• Data

To address this, we must know the definition of Nightlife and what categories come under this Nightlife. For this project, we will be considering the below factors(features).

- Venue Ratings
- Venue Prices
- Venue Likes
- Venue Tips

We will be narrowing our search for within 5 miles radius from the center of the City.

Following data sources will be needed to extract/generate the required data:

- Cities Lat and Long values will be obtained using Google Maps API reverse geocoding.
- Venues and its details will be obtained using Foursquare API.

Note: We will be evaluating our results with *Top 10 values* from each nightlife category for each city. We also restrict our data collection for up to 50 records for each category.

Collection of the required data is done in two parts:

- First part: we collect the basic venue information like name, id, address, category etc.
- Second part: we collect further venue details like ratings, tips, likes, price range etc.

Once we collect the data in two parts. We merge the second part to the first part of the data. So that we can see all information together i.e venue name, id, rating, tips, counts, category and price range etc.

Data: Part 1

.1 Nightlife Categories as per Foursquare API

| | id | category |
|----|--------------------------|-----------------|
| 0 | 52e81612bcb57f1066b7a0d | Beach Bar |
| 1 | 56aa371ce4b08b9a8d57356c | Beer Bar |
| 2 | 4bf58dd8d48988d117941735 | Beer Garden |
| 3 | 52e81612bcb57f1066b7a0e | Champagne Bar |
| 4 | 4bf58dd8d48988d11e941735 | Cocktail Bar |
| 5 | 4bf58dd8d48988d118941735 | Dive Bar |
| 6 | 4bf58dd8d48988d1d8941735 | Gay Bar |
| 7 | 4bf58dd8d48988d119941735 | Hookah Bar |
| 8 | 4bf58dd8d48988d1d5941735 | Hotel Bar |
| 9 | 4bf58dd8d48988d120941735 | Karaoke Bar |
| 10 | 4bf58dd8d48988d11b941735 | Pub |
| 11 | 4bf58dd8d48988d11c941735 | Sake Bar |
| 12 | 4bf58dd8d48988d1d4941735 | Speakeasy |
| 13 | 4bf58dd8d48988d11d941735 | Sports Bar |
| 14 | 56aa371be4b08b9a8d57354d | Tiki Bar |
| 15 | 4bf58dd8d48988d122941735 | Whisky Bar |
| 16 | 4bf58dd8d48988d123941735 | Wine Bar |
| 17 | 50327c8591d4c4b30a586d5d | Brewery |
| 18 | 4bf58dd8d48988d121941735 | Lounge |
| 19 | 53e510b7498ebcb1801b55d4 | Night Market |
| 20 | 4bf58dd8d48988d11f941735 | Nightclub |
| 21 | 4bf58dd8d48988d11a941735 | Other Nightlife |
| 22 | 4bf58dd8d48988d1d6941735 | Strip Club |

.2 NY Nightlife Categories

Beach Bar
Beer Bar
Beer Garden
Champagne Bar
Cocktail Bar
Dive Bar
Gay Bar
Hookah Bar
Hotel Bar
Karaoke Bar
Pub
Sake Bar
Speakeasy
Sports Bar
Tiki Bar
Whisky Bar
Wine Bar
Brewery
Lounge
Night Market
Nightclub
Other Nightlife
Strip Club

NY Nightlife category record counts (grouped).

```
: NY['categories'].value_counts()

11]: Wine Bar      44
     Cocktail Bar  40
     Hookah Bar    38
     Strip Club    36
     Gay Bar       35
     Whisky Bar    33
     Sports Bar    32
     Beer Garden   29
     Speakeasy     28
     Sake Bar      27
     Pub           26
     Dive Bar      24
     Karaoke Bar   24
     Beer Bar      20
     Nightclub     20
     Lounge        17
     Brewery       14
     Tiki Bar      13
     Hotel Bar     5
     Beach Bar     4
     Night Market  4
     Champagne Bar 2
     Name: categories, dtype: int64
```

.3 Miami Nightlife Categories

Beach Bar
Beer Bar
Beer Garden
Champagne Bar
Champagne Bar not found
Cocktail Bar
Dive Bar
Gay Bar
Hookah Bar
Hotel Bar
Karaoke Bar
Pub
Sake Bar
Speakeasy
Sports Bar
Tiki Bar
Whisky Bar
Wine Bar
Brewery
Lounge
Night Market
Night Market not found
Nightclub
Other Nightlife
Strip Club

Miami Nightlife category record counts (grouped).

```
Miami['categories'].value_counts()
```

```
3]: Nightclub      46  
    Wine Bar      30  
    Sports Bar    27  
    Cocktail Bar  20  
    Hookah Bar    15  
    Pub           14  
    Lounge        14  
    Beer Garden   10  
    Speakeasy     10  
    Brewery       8  
    Hotel Bar     8  
    Dive Bar      7  
    Gay Bar       6  
    Karaoke Bar   6  
    Strip Club    6  
    Beer Bar      5  
    Beach Bar     4  
    Whisky Bar    4  
    Tiki Bar      1  
    Sake Bar      1  
    Name: categories, dtype: int64
```

.4 Vegas Nightlife Categories

Beach Bar
Beer Bar
Beer Garden
Champagne Bar
Cocktail Bar
Dive Bar
Gay Bar
Hookah Bar
Hotel Bar
Karaoke Bar
Pub
Sake Bar
Speakeasy
Sports Bar
Tiki Bar
Whisky Bar
Wine Bar
Brewery
Lounge
Night Market
Night Market not found
Nightclub
Other Nightlife
Strip Club

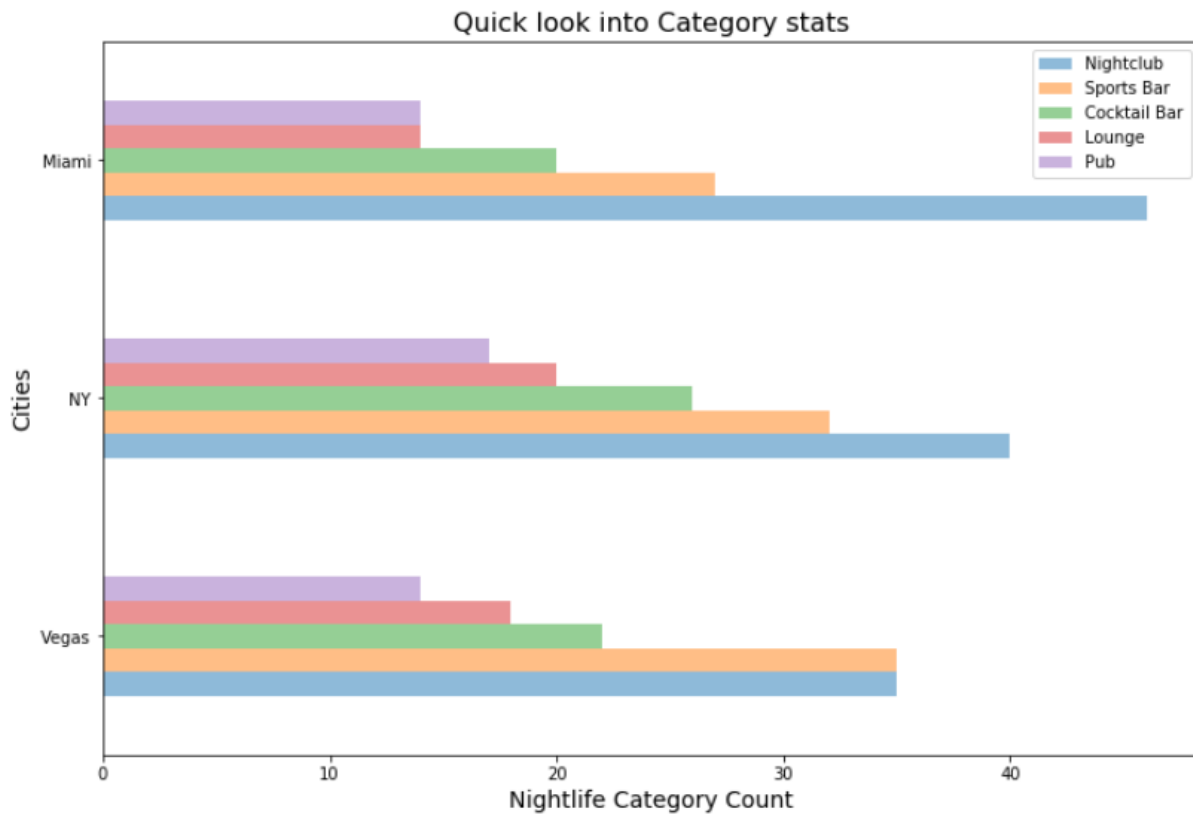
```
: Vegas['categories'].value_counts()
```

```
l5]: Nightclub      35  
     Sports Bar     35  
     Strip Club     26  
     Dive Bar       26  
     Pub            22  
     Hotel Bar      20  
     Brewery        18  
     Cocktail Bar   18  
     Beer Garden    14  
     Lounge         14  
     Speakeasy      14  
     Gay Bar        13  
     Karaoke Bar    13  
     Hookah Bar     10  
     Wine Bar       10  
     Beer Bar        6  
     Beach Bar       5  
     Whisky Bar      4  
     Tiki Bar        4  
     Sake Bar        3  
     Champagne Bar   1  
     Other Nightlife 1  
     Name: categories, dtype: int64
```

As we noticed, a couple of categories has very few record counts. Let's consider only those categories which have at least 10 records.

Here, is the list of Nightlife categories common across three cities:

- Nightclub
- Pub
- Lounge
- Cocktail Bar
- Sports Bar



As we noticed, different categories have different counts. To be consistent let us get top 25 records for each category. Once we have further venue details like ratings etc. We will be sorting the data and narrow it down to top 10.

Vegas data filtered by nightlife categories

Vegas_category_filtered

| | id | name | lat | lng | city | state | categories |
|-----|--------------------------|-------------------------------------|-----------|-------------|-----------|-------|--------------|
| 26 | 4d0144ba6212721ea500e011 | The Chandelier | 36.109475 | -115.173501 | Las Vegas | NV | Cocktail Bar |
| 27 | 586776c9f5957273256c396e | The Dorsey | 36.122231 | -115.170430 | Las Vegas | NV | Cocktail Bar |
| 28 | 4fda3875e4b02f685e771630 | Bar 46 | 36.170719 | -115.144544 | Las Vegas | NV | Cocktail Bar |
| 29 | 56ea4ff1498eba4b1eb2a462 | The Still | 36.121391 | -115.175272 | Las Vegas | NV | Cocktail Bar |
| 30 | 4b933bdaf964a5208b3c34e3 | Phil's Italian Steak House | 36.124209 | -115.172173 | Las Vegas | NV | Cocktail Bar |
| ... | ... | ... | ... | ... | ... | ... | ... |
| 270 | 49de85bef964a52069601fe3 | LAVO Italian Restaurant & Nightclub | 36.124404 | -115.169382 | Las Vegas | NV | Nightclub |
| 271 | 4c5778b2b7a31b8dc07c50da | Aria SkySuite Lounge | 36.108554 | -115.178104 | Las Vegas | NV | Nightclub |
| 272 | 49de8976f964a5206e601fe3 | The Rockhouse | 36.122500 | -115.171007 | Las Vegas | NV | Nightclub |
| 273 | 5c1dbc2e1c0b34002c88a8cb | On The Record | 36.104892 | -115.174535 | Las Vegas | NV | Nightclub |
| 274 | 4be5b5af2457a593d2dfab15 | Palms Fantasy Towers | 36.114254 | -115.194488 | Las Vegas | NV | Nightclub |

104 rows × 7 columns

NY data filtered by nightlife categories

NY_category_filtered

| | id | name | lat | lng | city | state | categories |
|-----|---------------------------|--|-----------|------------|----------|-------|--------------|
| 55 | 50bcb93ae4b0efcb4c84d434 | The Dead Rabbit | 40.703051 | -74.010992 | New York | NY | Cocktail Bar |
| 56 | 57196183498efea4a4043f3c | Dutch Fred's | 40.760700 | -73.987914 | New York | NY | Cocktail Bar |
| 57 | 4c9a999d292a6dcb7871d076 | Riverpark | 40.739803 | -73.973459 | New York | NY | Cocktail Bar |
| 58 | 4dc34fc7ae608779d1064ae9 | Bathtub Gin | 40.743638 | -74.003290 | New York | NY | Cocktail Bar |
| 59 | 54f276c5498e7a6fbbeb24115 | Tanner Smiths | 40.764486 | -73.981652 | New York | NY | Cocktail Bar |
| ... | ... | ... | ... | ... | ... | ... | ... |
| 474 | 3fd66200f964a520f2e61ee3 | The Monster | 40.733522 | -74.002508 | New York | NY | Nightclub |
| 475 | 51603739e4b0a9d70ee7fe34 | Comedy Cellar at The Village Underground | 40.730792 | -74.000846 | New York | NY | Nightclub |
| 476 | 4e0bcf1f45dd496ab442f888 | The Cutting Room | 40.745986 | -73.982801 | New York | NY | Nightclub |
| 477 | 4c8d901155fba093997669ab | Bedlam | 40.721866 | -73.980485 | New York | NY | Nightclub |
| 478 | 4e7f894f00394ee73103f4ef | No Fun | 40.721418 | -73.987719 | New York | NY | Nightclub |

112 rows × 7 columns

Miami data filtered by nightlife categories

```
: Miami_category_filtered
```

| | id | name | lat | lng | city | state | categories |
|-----|--------------------------|---------------------------------------|-----------|------------|-------------|-------|--------------|
| 19 | 4af6f0bef964a5203e0422e3 | Mango's Tropical Cafe | 25.779351 | -80.130978 | Miami Beach | FL | Cocktail Bar |
| 20 | 4f21ea32e4b05183c96b76f8 | The Broken Shaker | 25.804369 | -80.126288 | Miami Beach | FL | Cocktail Bar |
| 21 | 55fef511498ecbc151fc3f6e | American Social | 25.767836 | -80.196240 | Miami | FL | Cocktail Bar |
| 22 | 40e5f700f964a520090a1fe3 | The Playwright Irish Pub & Restaurant | 25.784139 | -80.131997 | Miami Beach | FL | Cocktail Bar |
| 23 | 55fed742498eb466f6578517 | Sweet Liberty Drink & Supply Co. | 25.796032 | -80.129744 | Miami Beach | FL | Cocktail Bar |
| ... | ... | ... | ... | ... | ... | ... | ... |
| 210 | 5b7c200892e7a9002c1175a4 | Centro Wynwood | 25.799715 | -80.209303 | Miami | FL | Nightclub |
| 211 | 5ac0fc858b98fd444435f1dd | The 5Th Base | 25.778202 | -80.220985 | Miami | FL | Nightclub |
| 212 | 564e752c498e340b55544f08 | Rockwell Miami | 25.777863 | -80.133035 | Miami Beach | FL | Nightclub |
| 213 | 40e0b100f964a5204a051fe3 | Space 34 | 25.784714 | -80.192734 | Miami | FL | Nightclub |
| 214 | 4ac5678df964a520e3b120e3 | FIFTY Ultra Lounge | 25.768623 | -80.189605 | Miami | FL | Nightclub |

98 rows × 7 columns

Now, we need to make a list of venue ids to pass it to the venue details Foursquare API.

We have a total of 314 venues.

| | id | name | lat | lng | city | state | categories |
|-----|--------------------------|-----------------------|-----------|------------|-------------|-------|--------------|
| 19 | 4af6f0bef964a5203e0422e3 | Mango's Tropical Cafe | 25.779351 | -80.130978 | Miami Beach | FL | Cocktail Bar |
| 191 | 4af6f0bef964a5203e0422e3 | Mango's Tropical Cafe | 25.779351 | -80.130978 | Miami Beach | FL | Nightclub |

Now, we need to make a list of venue ids to pass it to the venue details Foursquare API.

We have a total of 314 venues.

We noticed a couple of venue ids have multiple categories as shown above. As we can only make 500 premium calls/day. Let us get the unique venue ids.

Now, we have 292 unique venue ids. The next step is to pass these venue ids in a loop to Foursquare API to get further venue details like price, ratings, tips, and likes, etc.

.5 Convert datatypes

```
venue.id          object
venue.name        object
venue.price.tier  object
venue.price.message object
venue.likes.count object
venue.rating      object
venue.tips.count  object
venue.popular.timeframes object
dtype: object
```

We need to convert datatypes for venue.rating, venue.tips.count,venue.likes.count and venue.price.tier to float and int respectively.

Data: Part II

| | venue.id | venue.name | venue.price.tier | venue.price.message | venue.likes.count | venue.rating | venue.tips.count |
|---|--------------------------|-----------------------|------------------|---------------------|-------------------|--------------|------------------|
| 0 | 547ec4fc498e110589f46917 | Basement | 3 | Expensive | 73 | 7.2 | 16 |
| 1 | 4b2c9a88f964a52014c824e3 | Four Kegs Sports Pub | 2 | Moderate | 54 | 8.0 | 42 |
| 3 | 4b1b0c64f964a5201ff723e3 | Maxine's Bistro & Bar | 2 | Moderate | 214 | 6.4 | 121 |
| 4 | 4e7f894f00394ee73103f4ef | No Fun | 2 | Moderate | 294 | 6.7 | 106 |
| 5 | 4b2c87aaf964a520a3c724e3 | WALL Miami | 3 | Expensive | 118 | 7.6 | 45 |

Vegas dataset after merging part 2 into part 1 of it.

| | id | name | lat | lng | city | state | categories | price_tier | price_range | likes | rating | tips |
|---|--------------------------|----------------|-----------|-------------|-----------|-------|--------------|------------|-------------|-------|--------|------|
| 0 | 4d0144ba6212721ea500e011 | The Chandelier | 36.109475 | -115.173501 | Las Vegas | NV | Cocktail Bar | 2 | Moderate | 1036 | 8.3 | 307 |
| 1 | 4d0144ba6212721ea500e011 | The Chandelier | 36.109475 | -115.173501 | Las Vegas | NV | Lounge | 2 | Moderate | 1036 | 8.3 | 307 |
| 2 | 586776c9f5957273256c396e | The Dorsey | 36.122231 | -115.170430 | Las Vegas | NV | Cocktail Bar | 3 | Expensive | 79 | 7.4 | 12 |
| 3 | 4fda3875e4b02f685e771630 | Bar 46 | 36.170719 | -115.144544 | Las Vegas | NV | Cocktail Bar | 2 | Moderate | 17 | 6.7 | 4 |
| 4 | 56ea4ff1498eba4b1eb2a462 | The Still | 36.121391 | -115.175272 | Las Vegas | NV | Cocktail Bar | 1 | Cheap | 39 | 6.9 | 8 |

```
Vegas_Final_df['categories'].value_counts()
```

```
Nightclub      22
Sports Bar     19
Pub            16
Cocktail Bar   15
Lounge         14
Name: categories, dtype: int64
```

NY dataset after merging part 2 into part 1 of it.

| | id | name | lat | lng | city | state | categories | price_tier | price_range | likes | rating | tips |
|---|---------------------------|-----------------|-----------|------------|----------|-------|--------------|------------|-------------|-------|--------|------|
| 0 | 50bcb93ae4b0efcb4c84d434 | The Dead Rabbit | 40.703051 | -74.010992 | New York | NY | Cocktail Bar | 3 | Expensive | 2047 | 9.0 | 477 |
| 1 | 57196183498efeeaaa4043f3c | Dutch Fred's | 40.760700 | -73.987914 | New York | NY | Cocktail Bar | 3 | Expensive | 209 | 8.2 | 39 |
| 2 | 4c9a999d292a6dcb7871d076 | Riverpark | 40.739803 | -73.973459 | New York | NY | Cocktail Bar | 3 | Expensive | 346 | 8.8 | 125 |
| 3 | 4dc34fc7ae608779d1064ae9 | Bathtub Gin | 40.743638 | -74.003290 | New York | NY | Cocktail Bar | 3 | Expensive | 1244 | 8.6 | 311 |
| 4 | 54f276c5498e7a6fbeb24115 | Tanner Smiths | 40.764486 | -73.981652 | New York | NY | Cocktail Bar | 3 | Expensive | 604 | 8.5 | 85 |

```
NY_Final_df['categories'].value_counts()
```

```
Pub            25
Sports Bar     24
Cocktail Bar   24
Nightclub      17
Lounge         16
Name: categories, dtype: int64
```

Miami dataset after merging part 2 into part 1 of it.

| | id | name | lat | lng | city | state | categories | price_tier | price_range | likes | rating | tips |
|---|--------------------------|-----------------------|-----------|------------|-------------|-------|--------------|------------|-------------|-------|--------|------|
| 0 | 4af6f0bef964a5203e0422e3 | Mango's Tropical Cafe | 25.779351 | -80.130978 | Miami Beach | FL | Cocktail Bar | 2 | Moderate | 1134 | 7.9 | 297 |
| 1 | 4af6f0bef964a5203e0422e3 | Mango's Tropical Cafe | 25.779351 | -80.130978 | Miami Beach | FL | Nightclub | 2 | Moderate | 1134 | 7.9 | 297 |
| 2 | 4f21ea32e4b05183c96b76f8 | The Broken Shaker | 25.804369 | -80.126288 | Miami Beach | FL | Cocktail Bar | 2 | Moderate | 1042 | 9.2 | 231 |
| 3 | 55fef511498ecbc151fc3f6e | American Social | 25.767836 | -80.196240 | Miami | FL | Cocktail Bar | 1 | Cheap | 28 | 5.0 | 32 |
| 4 | 55fef511498ecbc151fc3f6e | American Social | 25.767836 | -80.196240 | Miami | FL | Sports Bar | 1 | Cheap | 28 | 5.0 | 32 |

```
Miami_Final_df['categories'].value_counts()
```

```
Nightclub      19
Sports Bar     19
Cocktail Bar   16
Lounge         13
Pub            10
Name: categories, dtype: int64
```

2.6 Hot Encoding

we Hot Encode any categorical data. Hot encoding converts categorical data into numeric values as shown below.

| | | | likes | rating | tips | price_range_Cheap | price_range_Expensive | price_range_Moderate | price_range_Very Expensive |
|--|-----------------------------------|--------------|-------|--------|------|-------------------|-----------------------|----------------------|-------------------------------|
| | name | categories | | | | | | | |
| | BARDOT Brasserie | Cocktail Bar | 157 | 8.6 | 37 | 0 | 1 | 0 | 0 |
| | The Chandelier | Cocktail Bar | 1036 | 8.3 | 307 | 0 | 0 | 1 | 0 |
| | Caesars Palace Diamond VIP Lounge | Cocktail Bar | 82 | 8.3 | 27 | 0 | 1 | 0 | 0 |
| | Phil's Italian Steak House | Cocktail Bar | 20 | 8.1 | 10 | 0 | 0 | 1 | 0 |
| | Baccarat Bar | Cocktail Bar | 71 | 7.8 | 20 | 0 | 1 | 0 | 0 |

2.7 Normalize the data

We usually normalize the data. If the column values have a wide range of different numbers.

In our case ratings, likes and counts all have a different range of numbers. Let us normalize those values.

| | likes | rating | tips | price_range_Cheap | price_range_Expensive | price_range_Moderate | price_range_Very Expensive |
|--------------|-------|--------|-------|-------------------|-----------------------|----------------------|----------------------------|
| categories | | | | | | | |
| Cocktail Bar | 184.6 | 7.84 | 57.2 | 0.0 | 0.7 | 0.3 | 0.0 |
| Lounge | 411.2 | 8.08 | 135.9 | 0.0 | 0.6 | 0.3 | 0.1 |
| Nightclub | 616.1 | 8.36 | 106.3 | 0.1 | 0.3 | 0.1 | 0.5 |
| Pub | 58.9 | 7.51 | 25.6 | 0.5 | 0.0 | 0.5 | 0.0 |
| Sports Bar | 123.2 | 7.61 | 33.8 | 0.4 | 0.0 | 0.6 | 0.0 |

2.8 Final dataset

Now, we merge all the three individual data sets into one final dataset and group them by place and category.

| | | likes | rating | tips | Cheap | Expensive | Moderate | VeryExpensive |
|-------|--------------|----------|----------|----------|-------|-----------|----------|---------------|
| place | categories | | | | | | | |
| Miami | Cocktail Bar | 0.454586 | 0.913043 | 0.465657 | 0.1 | 0.1 | 0.7 | 0.1 |
| | Lounge | 0.275661 | 0.891304 | 0.283502 | 0.1 | 0.3 | 0.5 | 0.1 |
| | Nightclub | 0.280952 | 0.903261 | 0.227273 | 0.0 | 0.5 | 0.3 | 0.2 |
| | Pub | 0.138889 | 0.822826 | 0.201347 | 0.2 | 0.0 | 0.8 | 0.0 |
| | Sports Bar | 0.161640 | 0.828261 | 0.248822 | 0.3 | 0.0 | 0.7 | 0.0 |
| NY | Cocktail Bar | 0.318267 | 0.957609 | 0.318056 | 0.0 | 0.8 | 0.1 | 0.1 |
| | Lounge | 0.452157 | 0.923913 | 0.531528 | 0.0 | 0.7 | 0.3 | 0.0 |
| | Nightclub | 0.227872 | 0.878261 | 0.162500 | 0.1 | 0.4 | 0.2 | 0.3 |
| | Pub | 0.191591 | 0.839130 | 0.229583 | 0.3 | 0.2 | 0.5 | 0.0 |
| | Sports Bar | 0.098985 | 0.794565 | 0.110972 | 0.4 | 0.1 | 0.5 | 0.0 |
| Vegas | Cocktail Bar | 0.119097 | 0.825263 | 0.171772 | 0.0 | 0.7 | 0.3 | 0.0 |
| | Lounge | 0.265290 | 0.850526 | 0.408108 | 0.0 | 0.6 | 0.3 | 0.1 |
| | Nightclub | 0.397484 | 0.880000 | 0.319219 | 0.1 | 0.3 | 0.1 | 0.5 |
| | Pub | 0.038000 | 0.790526 | 0.076877 | 0.5 | 0.0 | 0.5 | 0.0 |
| | Sports Bar | 0.079484 | 0.801053 | 0.101502 | 0.4 | 0.0 | 0.6 | 0.0 |

• Methodology

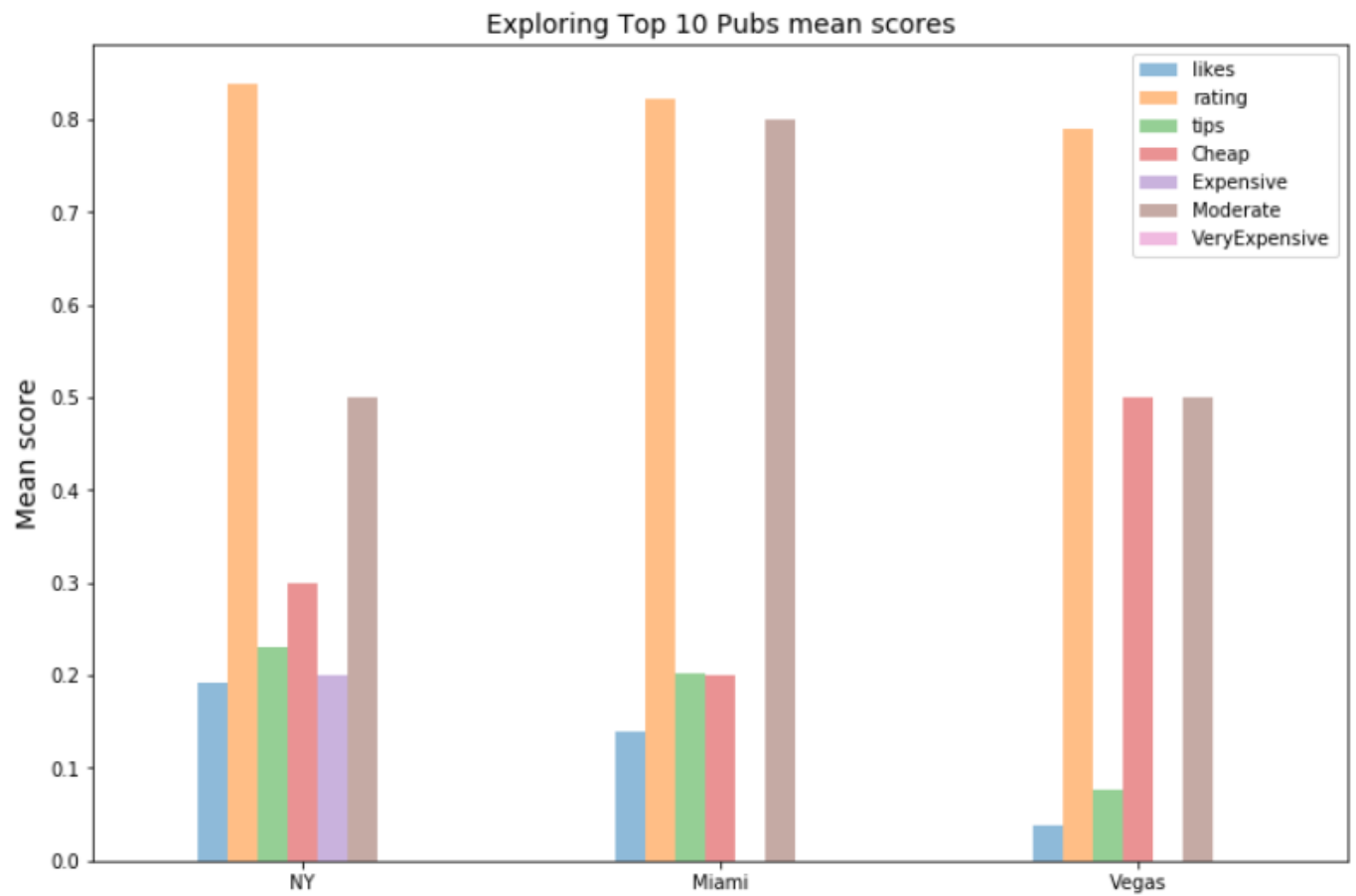
In this project, we will confine our efforts to the Nightlife categories suggested by Foursquare API, and the venues within 5 miles radius from the center of the city. Here in the final step, we deal with the **Top 10 records** from each category for each city.

In step one, we obtained the nightlife categories suggested by the Foursquare API. Later, we filtered the nightlife categories which are common across different cities. For these filtered categories, we gathered the **data: name, Lat, Lng, id of the venue** for each category within 5 miles of radius using FourSquare API. We limited our search for up to 50 records for each category.

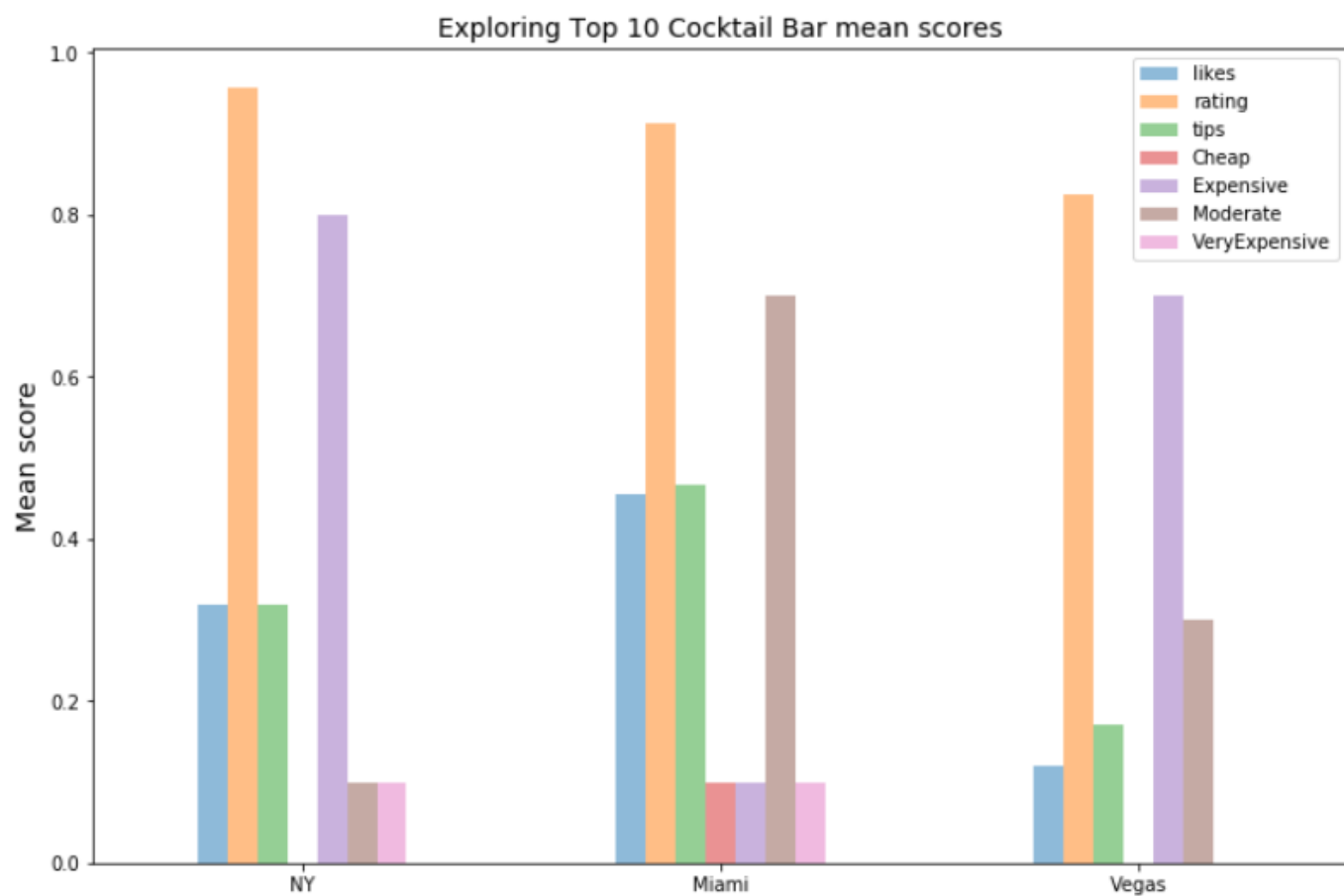
In step two, we went ahead to get more details about each venue like **ratings, prices, likes, tips** bypassing the venue ids. After grouping the records based on the categories, we noticed different value counts for each group. To get accurate results, we decided to go with the top 10 records from each category. Repeat these steps for each city.

In step three, we **Hot Encode** any categorical data. In our case its the **price_range** column. Once we hot encode the price column, we normalize the data because data varies within a different range of numbers. After normalizing the data, we merge the data related to these three cities into a final data frame and obtained the mean values shown above.

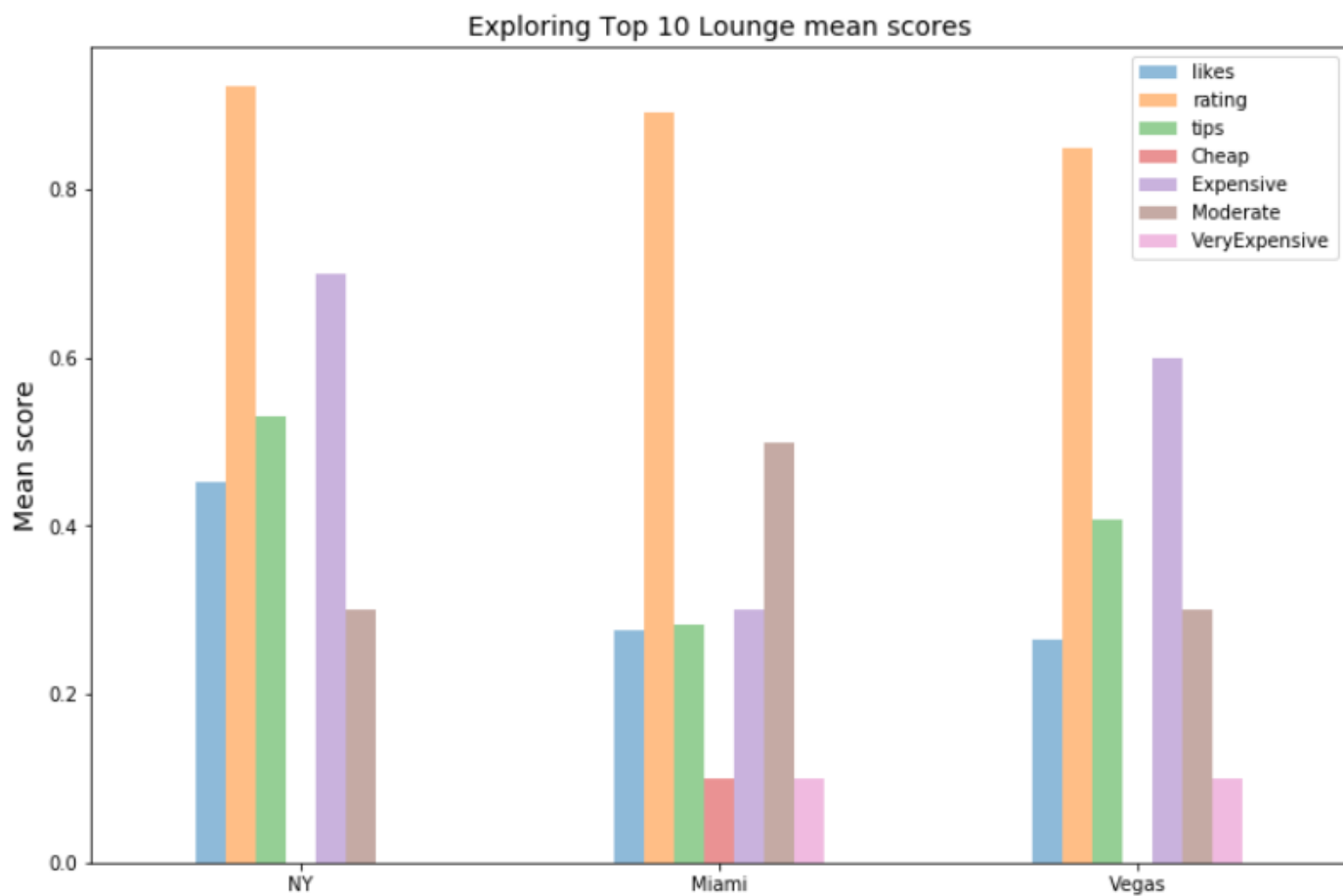
- Analysis



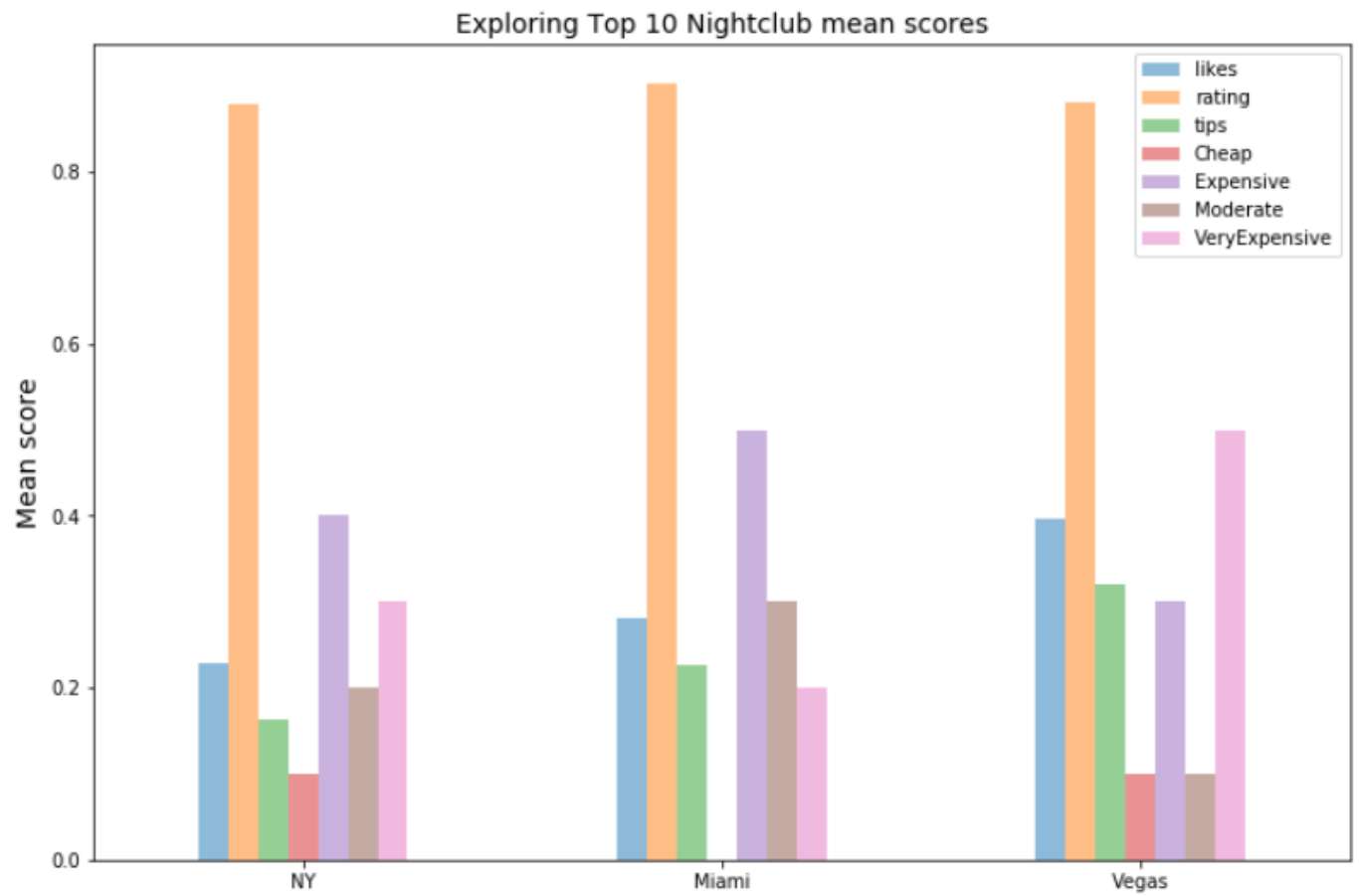
The above chart shows NY has the best Pubs ratings.



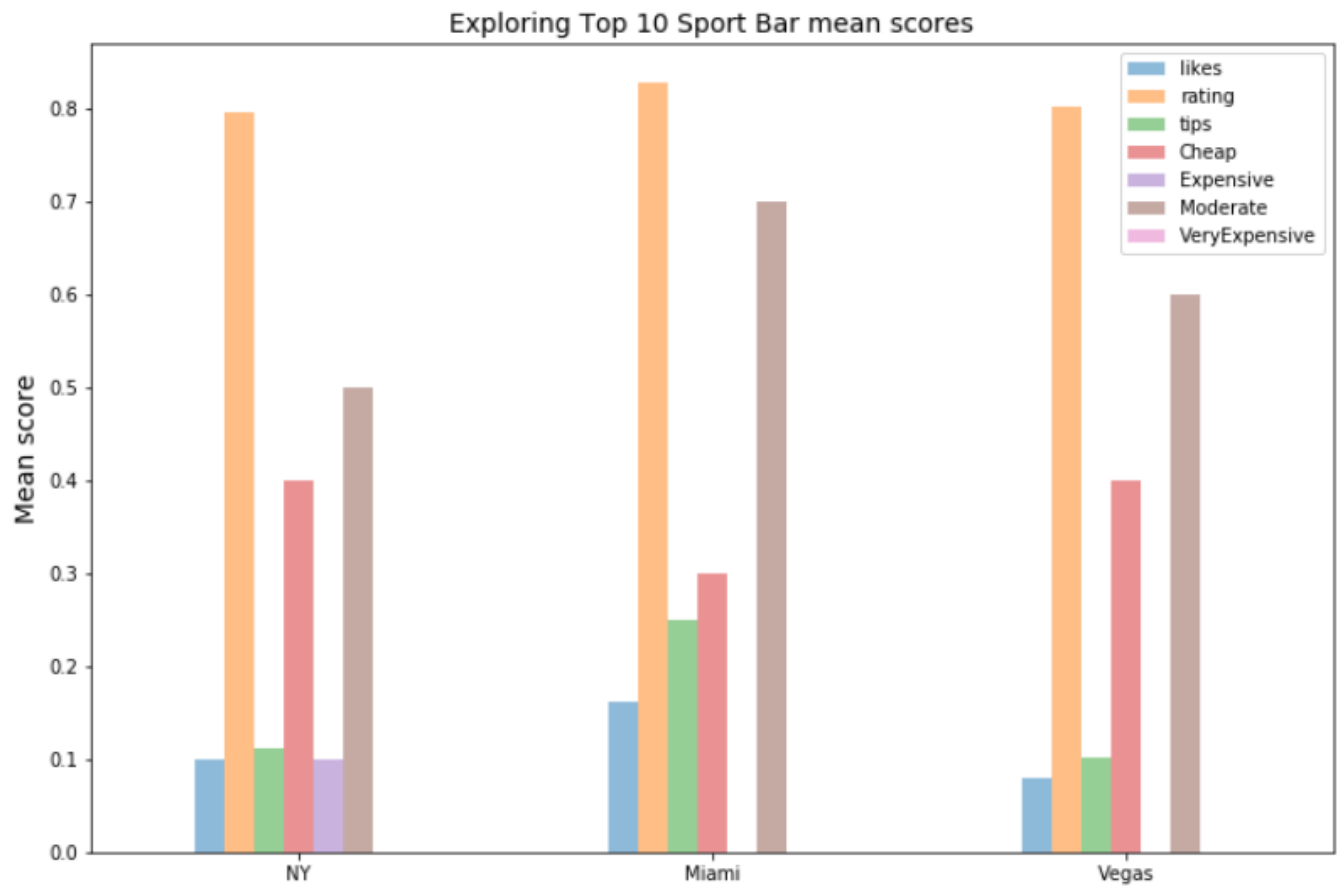
The above chart shows NY has the best Cocktail Bars ratings.



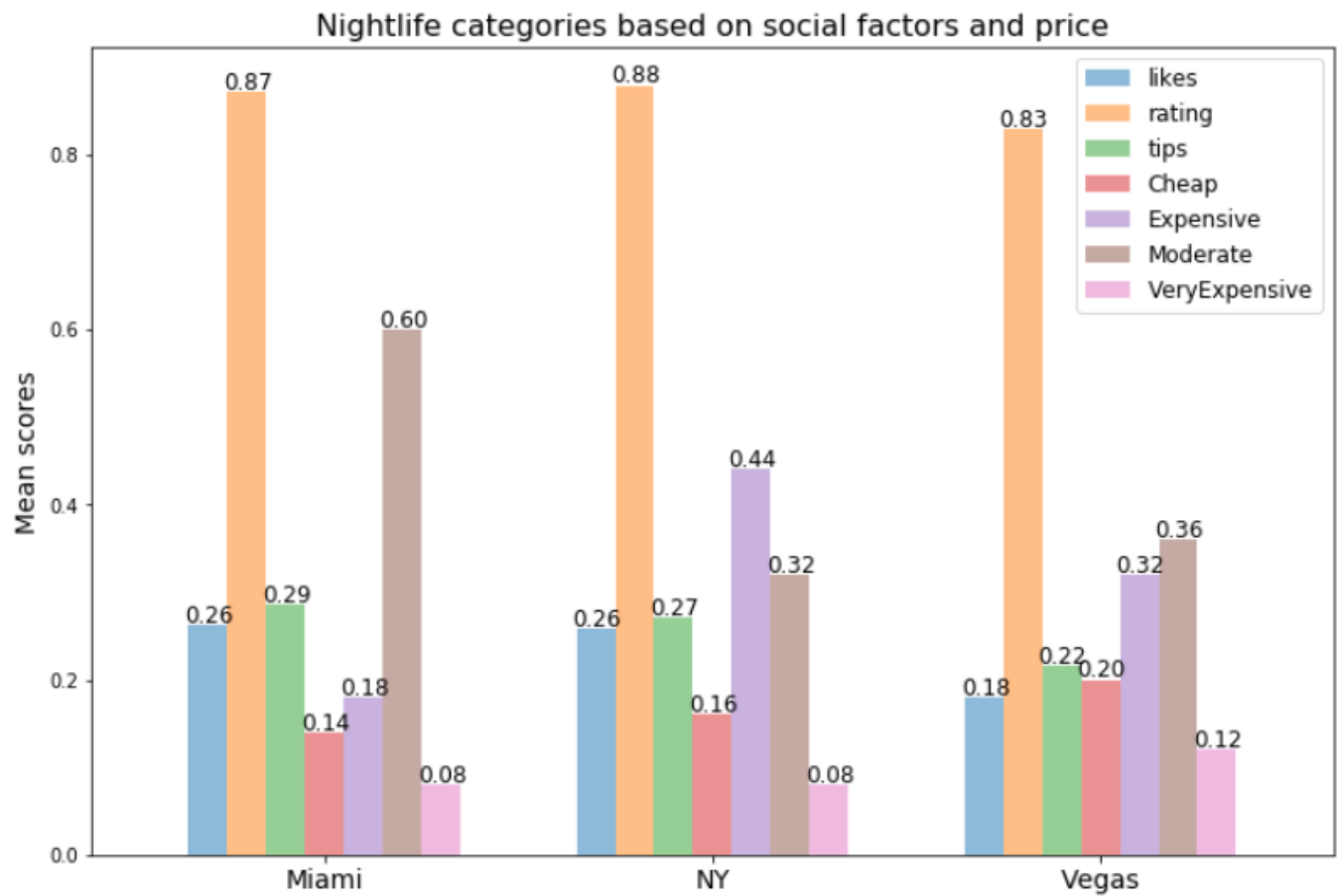
The above chart shows NY has the best Lounges ratings.



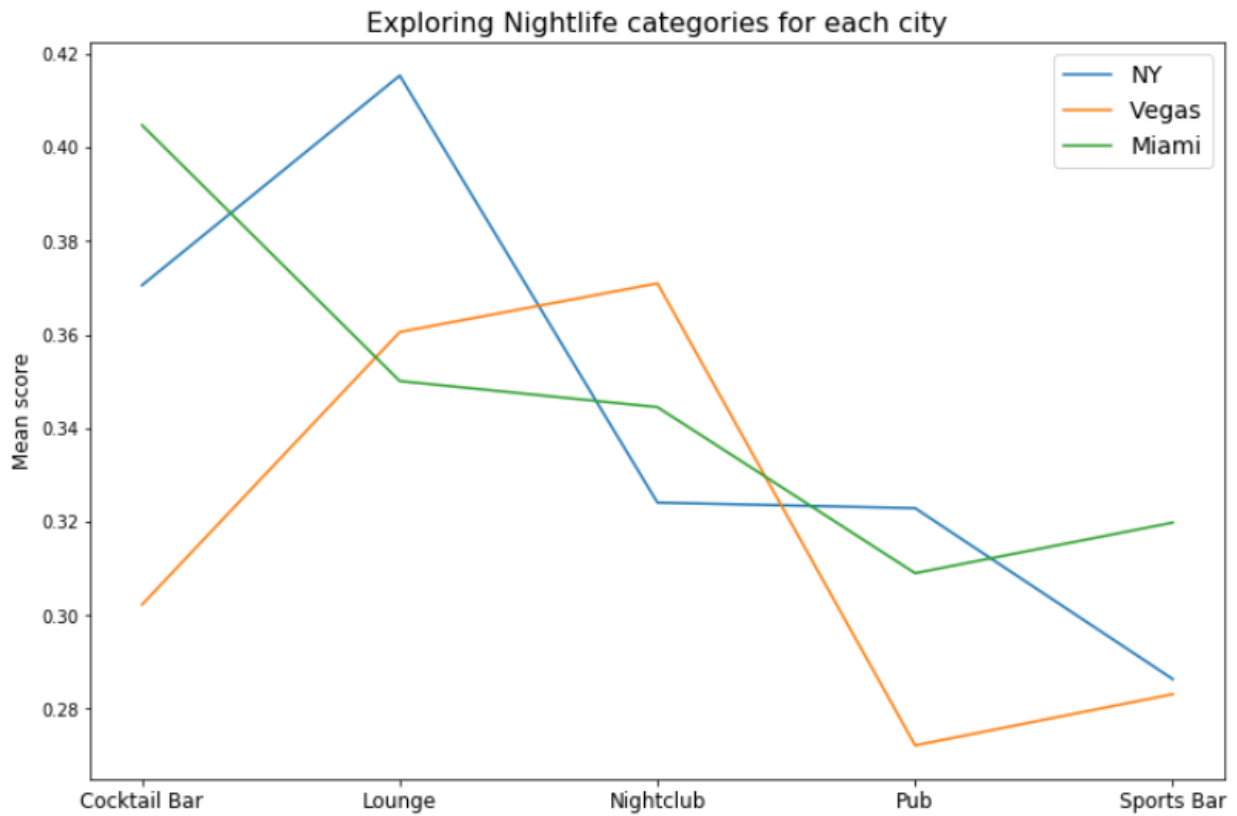
The above chart shows Miami Nightclubs has the best ratings.



The above chart shows Miami has best the Sport Bars ratings.

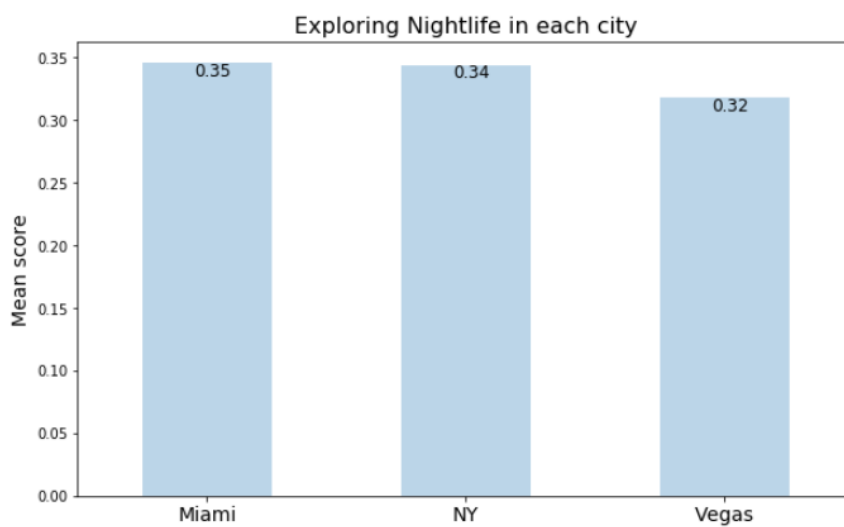


Based on the above chart, **NY** nightlife categories got the best rating. Whereas **Miami** secured most tips. **Vegas** has the most **Very expensive** as well as **less expensive** nightlife options compared to **Miami** and **NY**.



Based on the above chart. It is evident that

- **NY** has best Lounges and Pubs
- **Miami** has best Cocktail Bars and Sport Bars
- **Vegas** has best Nightclubs



Though **Miami and NY** has much similar mean scores for Nightlife categories but data shows **Miami** has the **best nightlife** compared to **NY and Vegas**.

• Result & Discussion

We analyzed the five Nightlife categories (**Sport Bars, Pubs, Nightclubs, Cocktail Bars and Lounges**). We considered social factors like ratings, likes, tips and prices for our analysis.

Based on the analysis, we found **NY** has the best *ratings*, **Miami** secured best *tips* and **Vegas** received minimum likes for their nightlife venues.

Vegas has both **very expensive** and **less expensive** nightlife options. It is interesting to notice that people in **Miami and NY** gave equal *likes* to their nightlife venues.

Based on the Data. We also observed:

- **NY** has the best *Lounges and Pubs*
- **Miami** has the best *Cocktail Bars and Sport Bars*
- **Vegas** has the best *Nightclubs*

• Conclusion

Although **Miami and NY** have much similar mean scores for Nightlife categories. Which indicates both cities have similar Nightlife. But, based on the data **Miami** has the **best nightlife** compared to **NY and Vegas**.