Dodgers_Attendance_Analysis

June 23, 2024

0.1 Analysis of Los Angeles Dodgers Attendance Data

In this analysis, we will explore a dataset on the Los Angeles Dodgers Major League Baseball team to make recommendations to management on how to improve attendance.

0.1.1 Steps for Analysis

1. Summary Statistics
2. Attendance by Day of the Week
3. Attendance by Opponent
4. Impact of Temperature
5. Day vs. Night Games
6. Promotional Events

```python
[2]: import pandas as pd
     import matplotlib.pyplot as plt

     # Load the dataset
     file_path = '/Users/nickblackford/Downloads/dodgers-2022.csv'
     dodgers_df = pd.read_csv(file_path)

     # Display the first few rows of the dataset
     dodgers_df.head()
```

```
[2]:    month  day  attend day_of_week opponent  temp   skies day_night cap shirt  \
     0    APR   10   56000     Tuesday  Pirates    67   Clear       Day  NO    NO
     1    APR   11   29729   Wednesday  Pirates    58  Cloudy     Night  NO    NO
     2    APR   12   28328    Thursday  Pirates    57  Cloudy     Night  NO    NO
     3    APR   13   31601      Friday   Padres    54  Cloudy     Night  NO    NO
     4    APR   14   46549    Saturday   Padres    57  Cloudy     Night  NO    NO

        fireworks bobblehead
     0         NO         NO
     1         NO         NO
     2         NO         NO
     3        YES         NO
     4         NO         NO
```
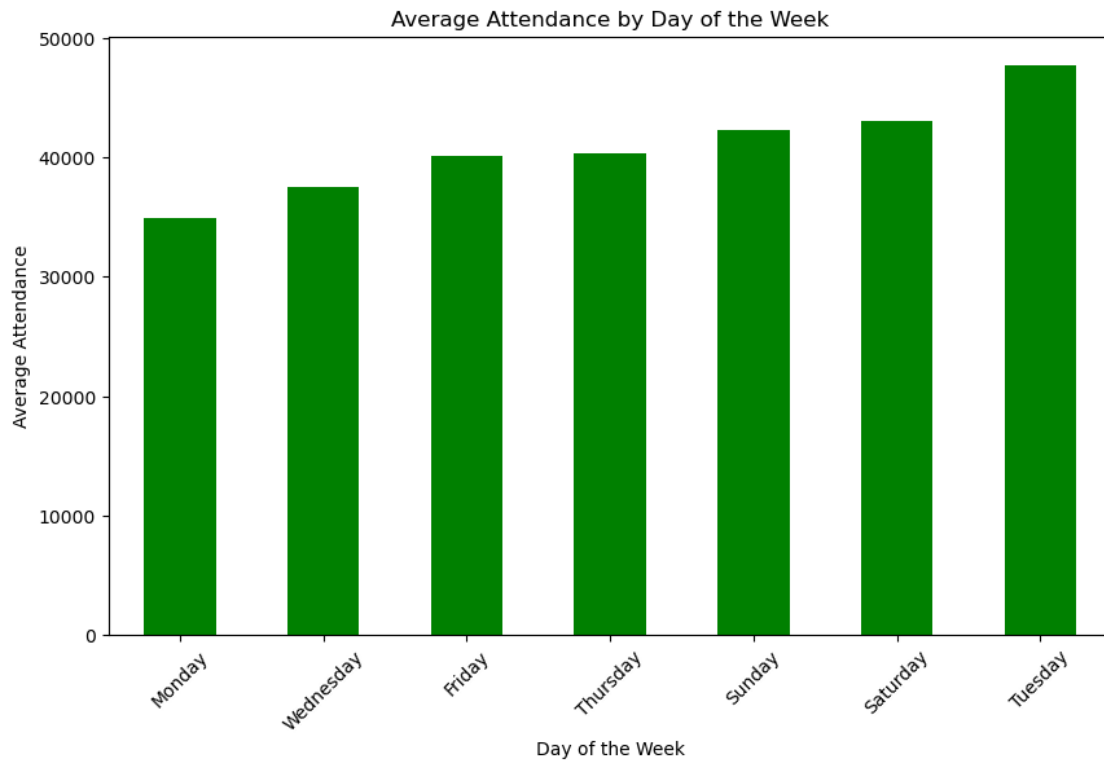
```python
[3]: # Summary statistics
     summary_stats = dodgers_df.describe()
     summary_stats
```

```
[3]:              day         attend        temp
     count   81.000000      81.000000   81.000000
     mean    16.135802   41040.074074   73.148148
     std      9.605666    8297.539460    8.317318
     min      1.000000   24312.000000   54.000000
     25%      8.000000   34493.000000   67.000000
     50%     15.000000   40284.000000   73.000000
     75%     25.000000   46588.000000   79.000000
     max     31.000000   56000.000000   95.000000
```
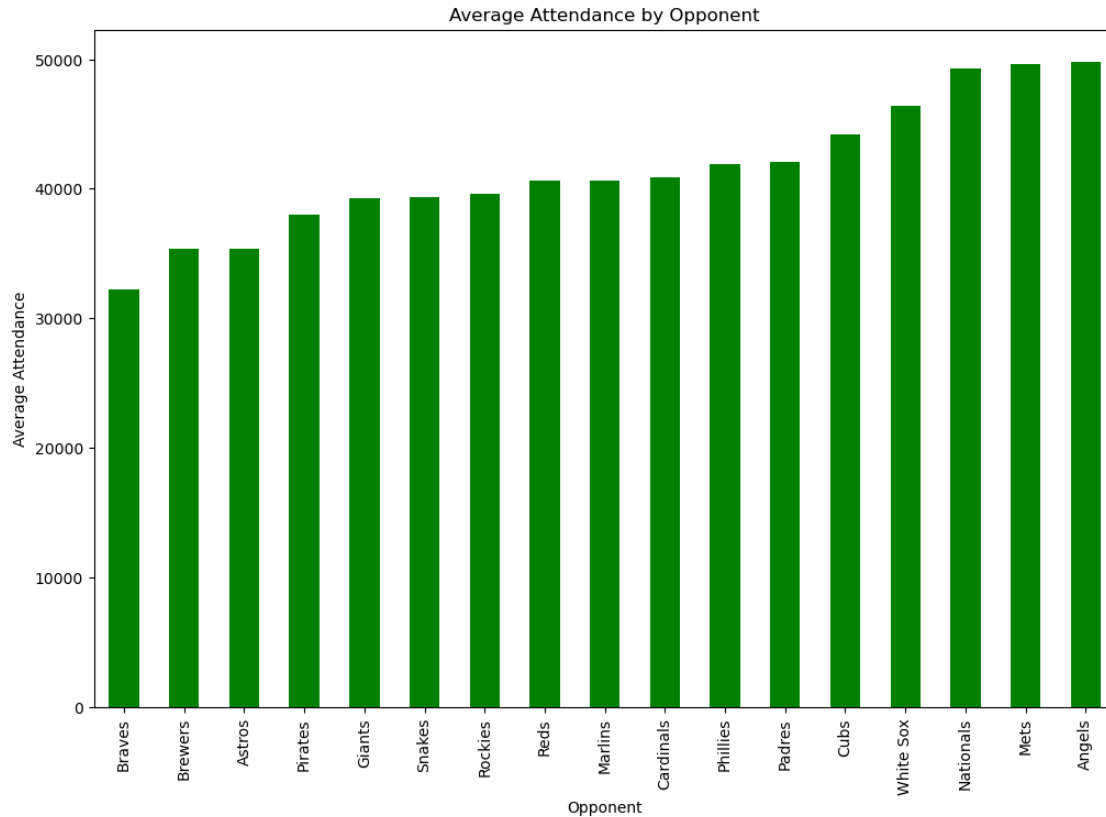
```python
[8]: # Attendance by Day of the Week
     attendance_by_day = dodgers_df.groupby('day_of_week')['attend'].mean().
       ↪sort_values()

     # Plot
     plt.figure(figsize=(10, 6))
     attendance_by_day.plot(kind='bar', color='green')
     plt.title('Average Attendance by Day of the Week')
     plt.xlabel('Day of the Week')
     plt.ylabel('Average Attendance')
     plt.xticks(rotation=45)
     plt.show()
```

Average Attendance by Day of the Week

```
[9]:  # Attendance by Opponent
      attendance_by_opponent = dodgers_df.groupby('opponent')['attend'].mean().
       ↪sort_values()

      # Plot
      plt.figure(figsize=(12, 8))
      attendance_by_opponent.plot(kind='bar', color='green')
      plt.title('Average Attendance by Opponent')
      plt.xlabel('Opponent')
      plt.ylabel('Average Attendance')
      plt.xticks(rotation=90)
      plt.show()
```
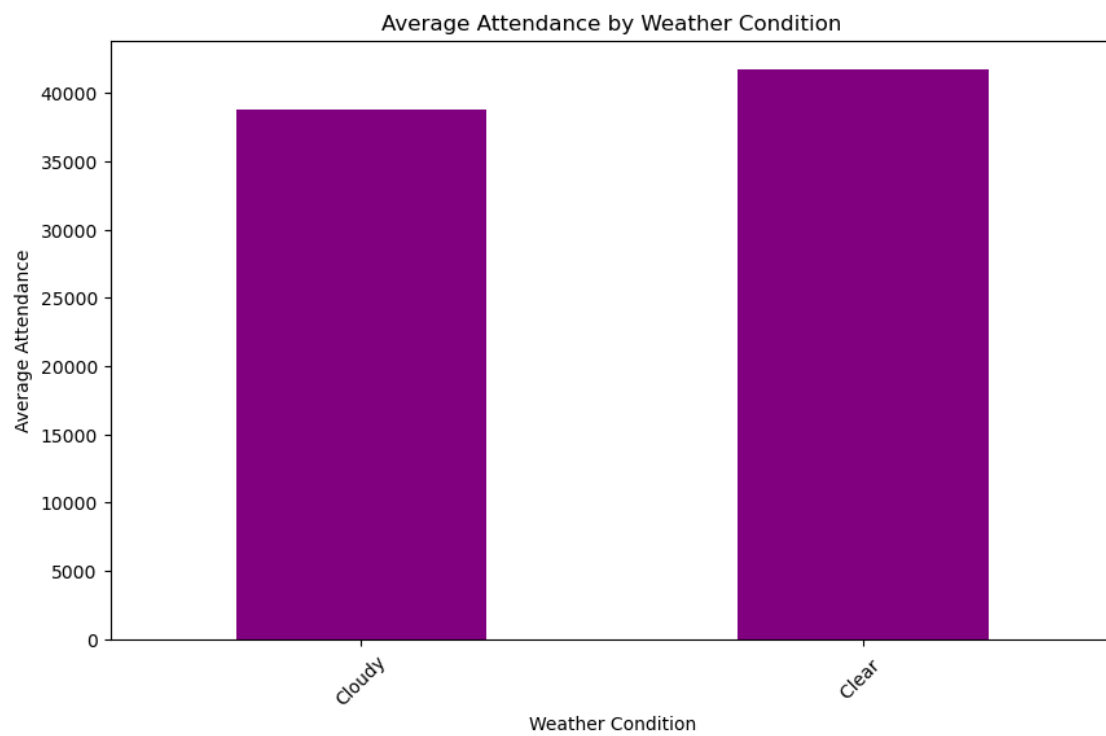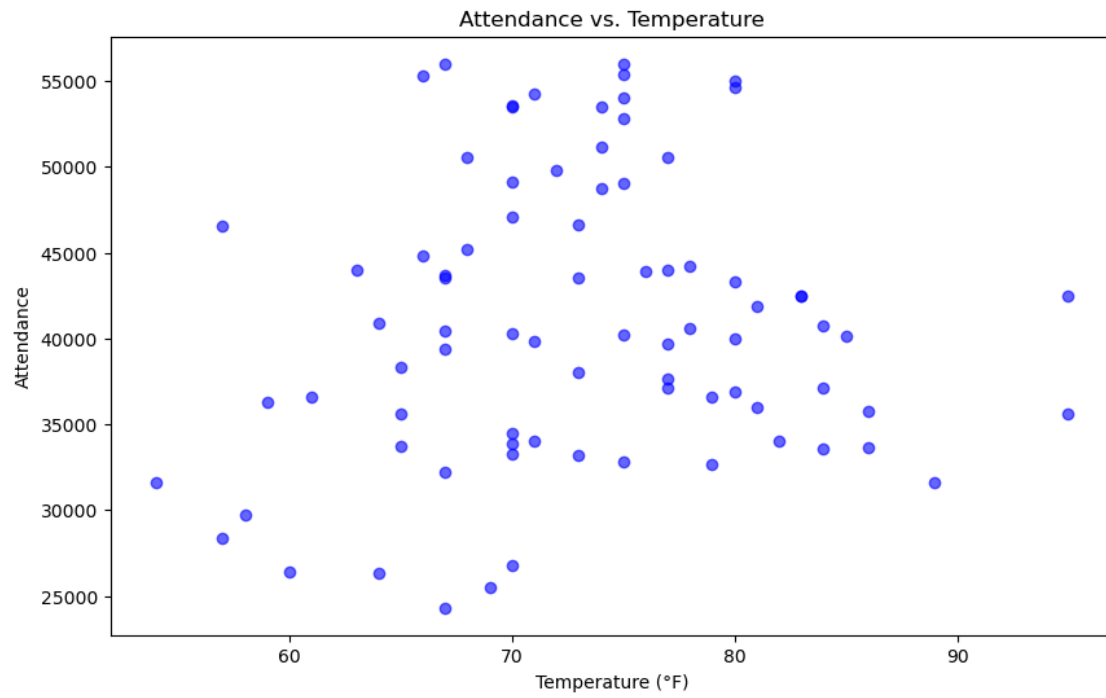
Average Attendance by Opponent

```
[10]: # Scatter plot of Attendance vs. Temperature
      plt.figure(figsize=(10, 6))
      plt.scatter(dodgers_df['temp'], dodgers_df['attend'], alpha=0.6, color='blue')
      plt.title('Attendance vs. Temperature')
      plt.xlabel('Temperature')
      plt.ylabel('Attendance')
      plt.show()

      # Attendance by Weather Condition
      attendance_by_weather = dodgers_df.groupby('skies')['attend'].mean().
       ↪sort_values()

      # Plot
      plt.figure(figsize=(10, 6))
      attendance_by_weather.plot(kind='bar', color='purple')
      plt.title('Average Attendance by Weather Condition')
      plt.xlabel('Weather Condition')
      plt.ylabel('Average Attendance')
      plt.xticks(rotation=45)
      plt.show()
```
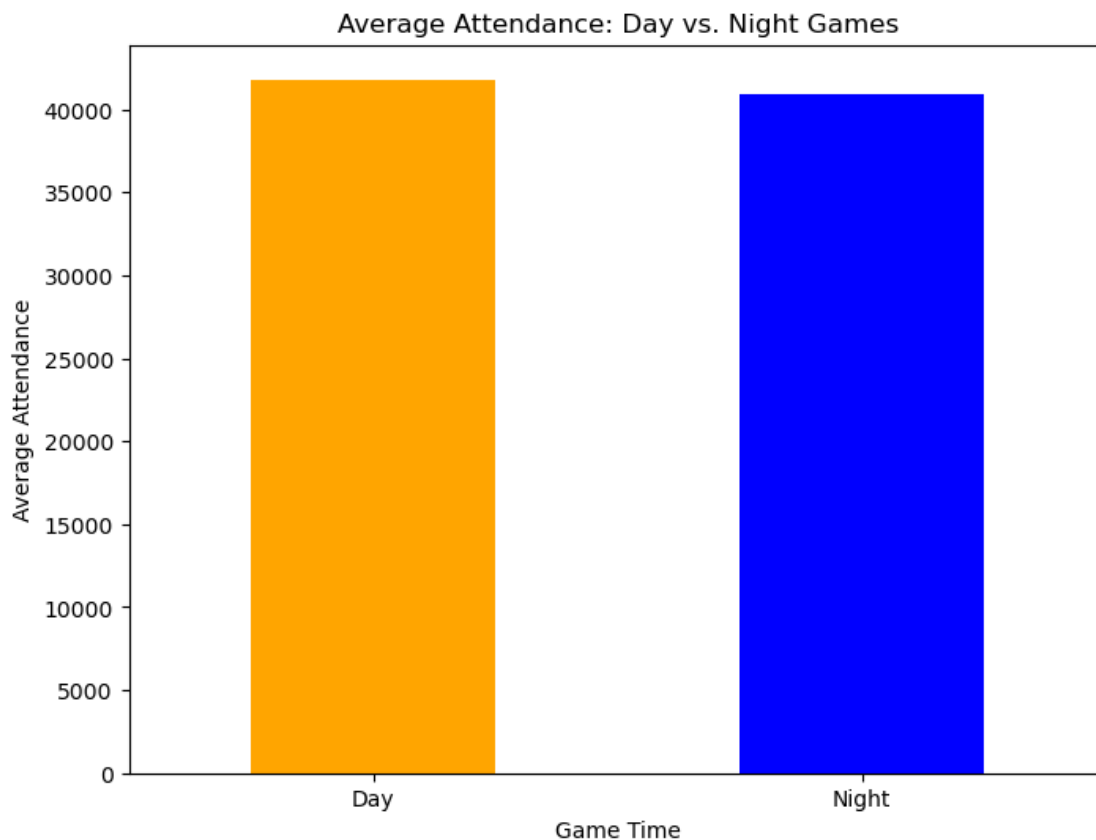
Attendance vs. Temperature

Average Attendance by Weather Condition

```
[11]:  # Attendance for day vs night
       attendance_day_night = dodgers_df.groupby('day_night')['attend'].mean()

       # Plot
       plt.figure(figsize=(8, 6))
       attendance_day_night.plot(kind='bar', color=['orange', 'blue'])
       plt.title('Average Attendance: Day vs. Night Games')
       plt.xlabel('Game Time')
       plt.ylabel('Average Attendance')
       plt.xticks(rotation=0)
       plt.show()
```



```
[12]:  # Attendance by promo events
       promotional_factors = ['cap', 'shirt', 'fireworks', 'bobblehead']
       attendance_promotions = {}

       for promo in promotional_factors:
           attendance_promotions[promo] = dodgers_df.groupby(promo)['attend'].mean()

       # Plot by promotion event type
```
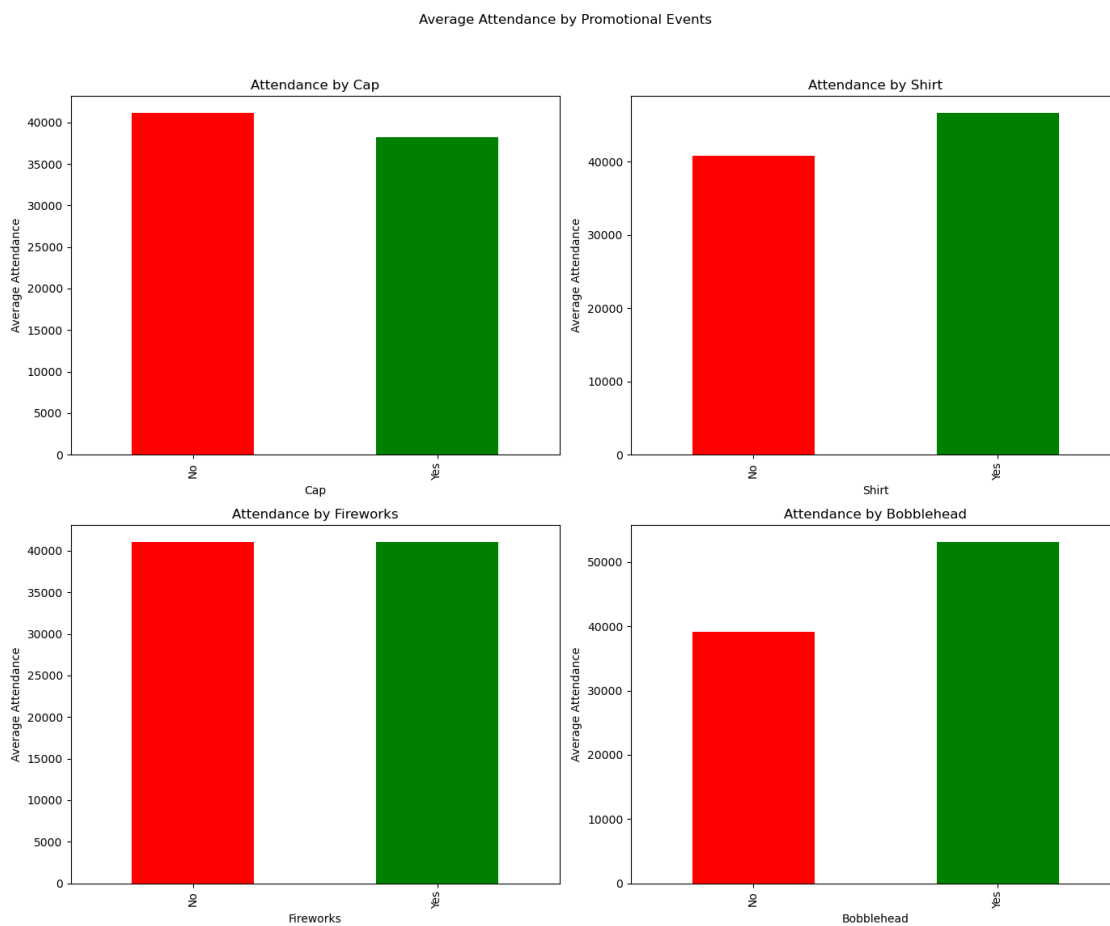
```
fig, axes = plt.subplots(2, 2, figsize=(14, 12))
fig.suptitle('Average Attendance by Promotional Events')

for ax, promo in zip(axes.flatten(), promotional_factors):
    attendance_promotions[promo].plot(kind='bar', ax=ax, color=['red', 'green'])
    ax.set_title(f'Attendance by {promo.capitalize()}')
    ax.set_xlabel(promo.capitalize())
    ax.set_ylabel('Average Attendance')
    ax.set_xticks([0, 1], ['No', 'Yes'])

plt.tight_layout(rect=[0, 0.03, 1, 0.95])
plt.show()
```


0.1.2 Recommendations to Management

Based on the analysis, here are several recommendations to improve attendance at Los Angeles Dodgers games:

1. **Schedule More Weekend Games**: Focus on scheduling more games on Friday, Saturday, and Sunday, as these days tend to have higher attendance.

2. **High-Profile Opponents**: Scheduling games against popular opponents, like the Yankees, result in higher attendance.

3. **Night Games**: Night games tend to have slight better attendance than day games, so scheduling more night games could be beneficial.

4. **Promotional Events**:

   - **Fireworks**: Implement more fireworks nights as fireworks are positively correlated with higher attendance.
   - **Bobblehead Giveaways**: Increase the frequency of bobblehead nights to attract more fans.
   - **Cap and Shirt Giveaways**: While the impact of cap and shirt giveaways is smaller than other types of promotions, they will still contribute to higher attendance and should be utilized.

5. **Weather Considerations**: Promote games more effectively when clear weather is expected as people appear more likely to attend when the weather is clear.

By implementing these strategies, the Dodgers management can increase attendance to their games; Hence, driving success within the organization.