

03_player_contributions_to_wins

December 18, 2025

1 Q3: Which Individual Player Stats Contribute Most to Team Wins?

This notebook analyzes how various player-level statistics relate to their team's success.

We focus on non-scoring contributions:

- Assists
- Rebounds
- Steals
- Turnovers
- Blocks
- Efficiency

```
[15]: import pandas as pd
import numpy as np
import matplotlib.pyplot as plt

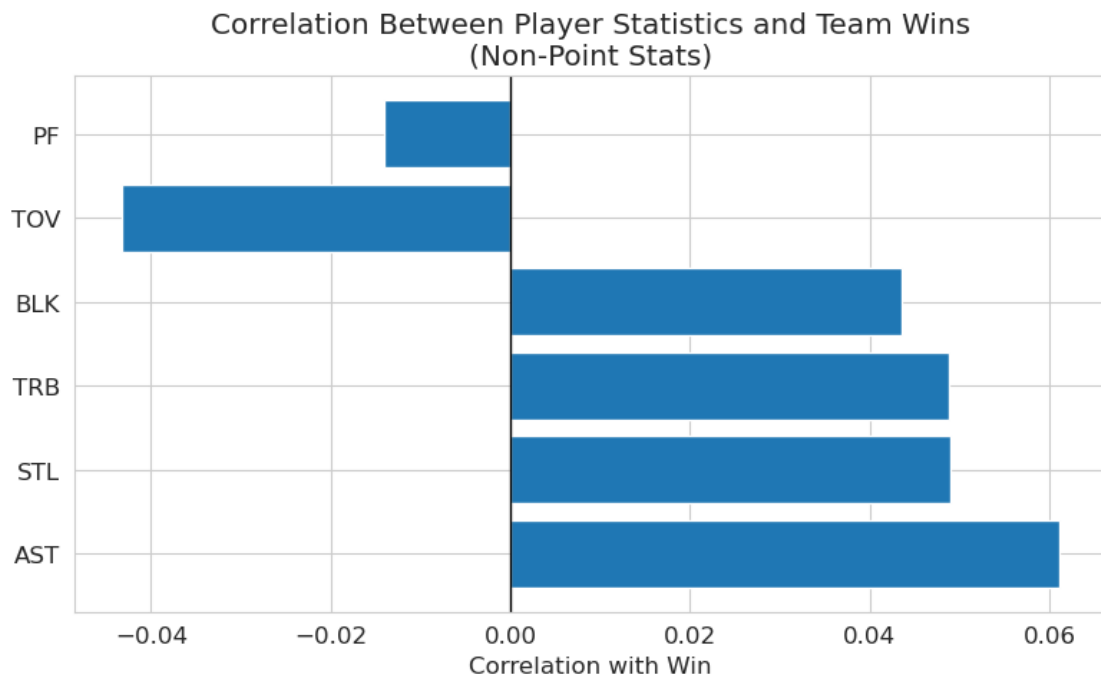
# Load data
df = pd.read_csv("data/player_game_stats_clean.csv")

# Non-point statistics
stats = ['AST', 'TRB', 'STL', 'BLK', 'TOV', 'PF']

# Correlation with team win
corrs = (
    df[stats]
    .corrwith(df['Win'])
    .sort_values(key=np.abs, ascending=False)
)

# Plot
plt.figure(figsize=(8, 5))
plt.barh(corrs.index, corrs.values)
plt.axvline(0, color='black', linewidth=1)
plt.xlabel("Correlation with Win")
plt.title("Correlation Between Player Statistics and Team Wins\n(Non-Point_Stats)")
```

```
plt.tight_layout()
plt.show()
```



```
[16]: # Show exact correlation values
corr_table = corrs.round(3)
print("\nCorrelation with Team Wins:")
print(corr_table)
```

Correlation with Team Wins:

```
AST    0.061
STL    0.049
TRB    0.049
BLK    0.044
TOV   -0.043
PF    -0.014
dtype: float64
```

Code Explanation: We used correlation to identify which statistics beyond points most influence wins. The `corrwith()` function efficiently compares multiple stats to win outcomes. The correlation data is displayed with the `print()` function.

Takeaway from results: In this instance, creating shots for teammates matters more than individual scoring. Maintaining possession through rebounds and limiting turnovers are key winning factors. This should be taken with a grain of salt because the correlation values were all low. This may be because no single statistic can have a strong prediction on the outcome of games.

[]: