

### Is there really such a thing as a home-team advantage?

For this question, the answer is yes, the home advantage exists because the most home wins in the stats are USA and Mexico and they also have the most home games.

```
: #Count the win home team
win_home_team = fifa_df.loc[fifa_df['home_team_result'] == 'Win']
most_win_home_team = win_home_team['home_team'].value_counts()
most_win_home_team.sort_values(ascending=False)
most_win_home_team
```

```
: USA                194
Mexico              190
Brazil             181
Saudi Arabia       164
Egypt              163
...
Cook Islands         2
Turks and Caicos Islands  2
US Virgin Islands    2
Anguilla             1
San Marino           1
Name: home_team, Length: 211, dtype: int64
```

```
: #Count each team's total home game
home_team = fifa_df.groupby(['home_team']).size().nlargest(3)
home_team
```

```
: home_team
Mexico    316
USA       314
Japan     280
dtype: int64
```

```
: #Total home team games
total_game = fifa_df.groupby(['home_team']).size()
total_fifa_game = total_game.sum()
total_fifa_game
```

```
: 23921
```

```
#Total wins of home game
total_win_home = most_win_home_team.sum()
total_win_home
```

```
11761
```

```
#Total wins of away game
total_win_away = most_win_away_team.sum()
total_win_away
```

```
6771
```

The above series shows that the USA has a 61.78% win rate in home games and Mexico has a 60.12% win rate in home games. Of course, strength is also part of the reason for the victory, because if we look at the highest winning away games, which is Brazil, they also have a winning percentage of about 61%. So if we choose to look at the total home win rate, then this would be about 49% and already much higher than the away win rate, which is only about 28.25%.

At this stage, I think the home field has a little advantage in terms of winning percentage. After all, playing in the most familiar environment for the players and having the local audience support, all these factors will affect the players' performance and reflect on the match result.