

IPL 2008-2019 Dataset Analysis

Debmalya Biswas

2022-11-07

Introduction

The Indian Premier League (**IPL**) is a Men's T20 franchise cricket league of India that started in 2008. In 2010, the IPL became the first sporting event in the world to be broadcast live on YouTube. The brand value of the IPL in 2019 was 47,500 crore (US\$5.9 billion). The IPL is the most-attended cricket league in the world and in 2014 was ranked sixth by average attendance among all sports leagues. In this visualization project, we are gonna perform Exploratory Data Analysis (**EDA**) on IPL 2008-2019 dataset by exploring through various statistical queries that might interest an inquisitive cricket mind.

Dataset & Variables

Source: <https://www.kaggle.com/anuranroy/ipldatasets>

The dataset comprises of 2 csv files:

- **deliveries2.csv:** This dataset consists of 179078 rows and 22 columns. It contains ball-by-ball delivery-wise statistics of every match played in the period 2008-2019. The variables are as follows:

Variable	Type	Description
match_id	Numeric (discrete)	match id number
inning	Binary	1 denotes 1st innings, 2 denotes 2nd innings
batting_team	Nominal	name of the batting team
bowling_team	Nominal	name of the bowling team
over	Numeric (discrete)	over number in a match
ball	Numeric (discrete)	ball number in an over
batsman	Nominal	name of the striking batsman in the delivery
non_striker	Nominal	name of the non-striking batsman in the delivery
bowler	Nominal	name of the bowler
is_super_over	Binary	1 if it is a super over delivery else 0
wide_runs	Numeric (discrete)	runs for the batting team due to a wide ball delivery
bye_runs	Numeric (discrete)	bye runs
legbye_runs	Numeric (discrete)	legbye runs
noball_runs	Numeric (discrete)	runs due to a no-ball delivery
penalty_runs	Numeric (discrete)	penalty runs
batsman_runs	Numeric (discrete)	runs scored by the batsman in the delivery
extra_runs	Numeric (discrete)	total extra runs scored in the delivery
total_runs	Numeric (discrete)	total runs scored in the delivery
player_dismissed	Nominal	player dismissed in the delivery
dismissal_kind	Nominal	type of dismissal

Variable	Type	Description
fielder	Nominal	fielder who contributed in the dismissal
winner	Nominal	winner of the match

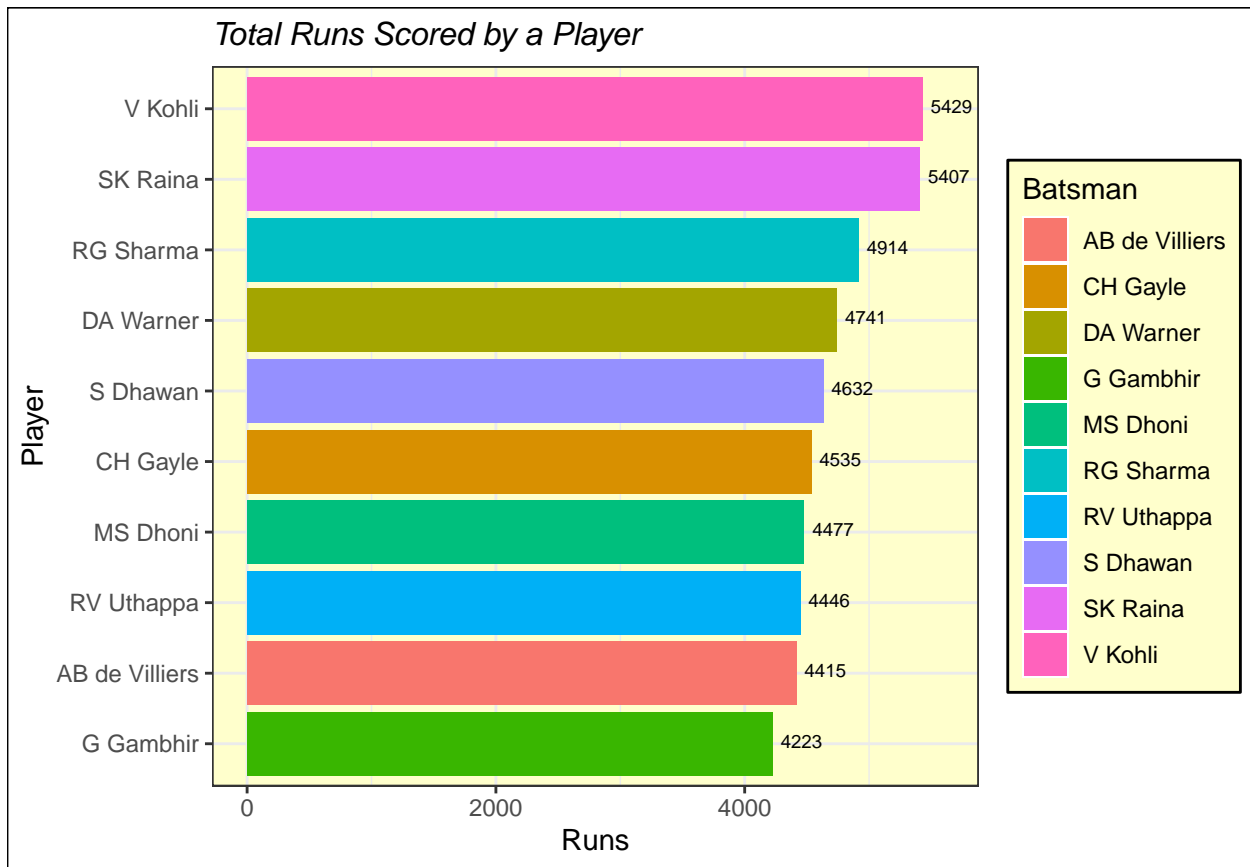
- **matches.csv:** This dataset consists of 756 rows and 18 columns. It contains match-wise statistics of every match played in the period 2008-2019. The variables are as follows:

Variable	Type	Description
id	Numeric (discrete)	match id number
season	Numeric (discrete)	IPL season
city	Nominal	city hosting the match
date	Ordinal	date of the match
team1	Nominal	first team
team2	Nominal	second team
toss_winner	Nominal	team winning the toss
toss_decision	Binary	toss winning team's decision to field or bat
result	Nominal	result type of the match is normal, tie or no result
dl_applied	Binary	1 if dls method applied else 0
winner	Nominal	winner of the match
win_by_runs	Numeric (discrete)	run difference if won by runs
win_by_wickets	Numeric (discrete)	wicket difference if won by wickets
player_of_match	Nominal	player of the match
venue	Nominal	venue where the match is played
umpire1	Nominal	1st umpire
umpire2	Nominal	2nd umpire
umpire3	Nominal	3rd umpire

Data Analysis (DA)

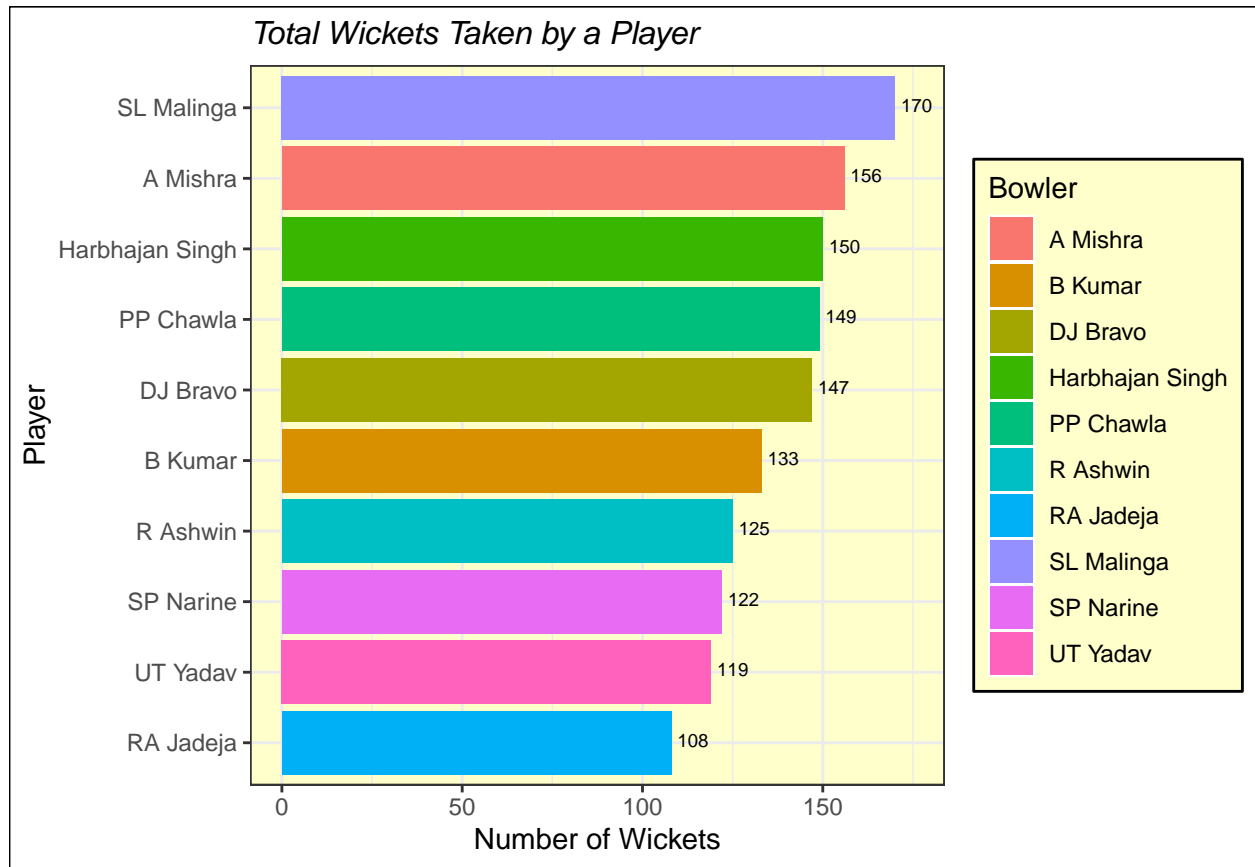
Player-wise

- Highest Run Scorers in IPL:



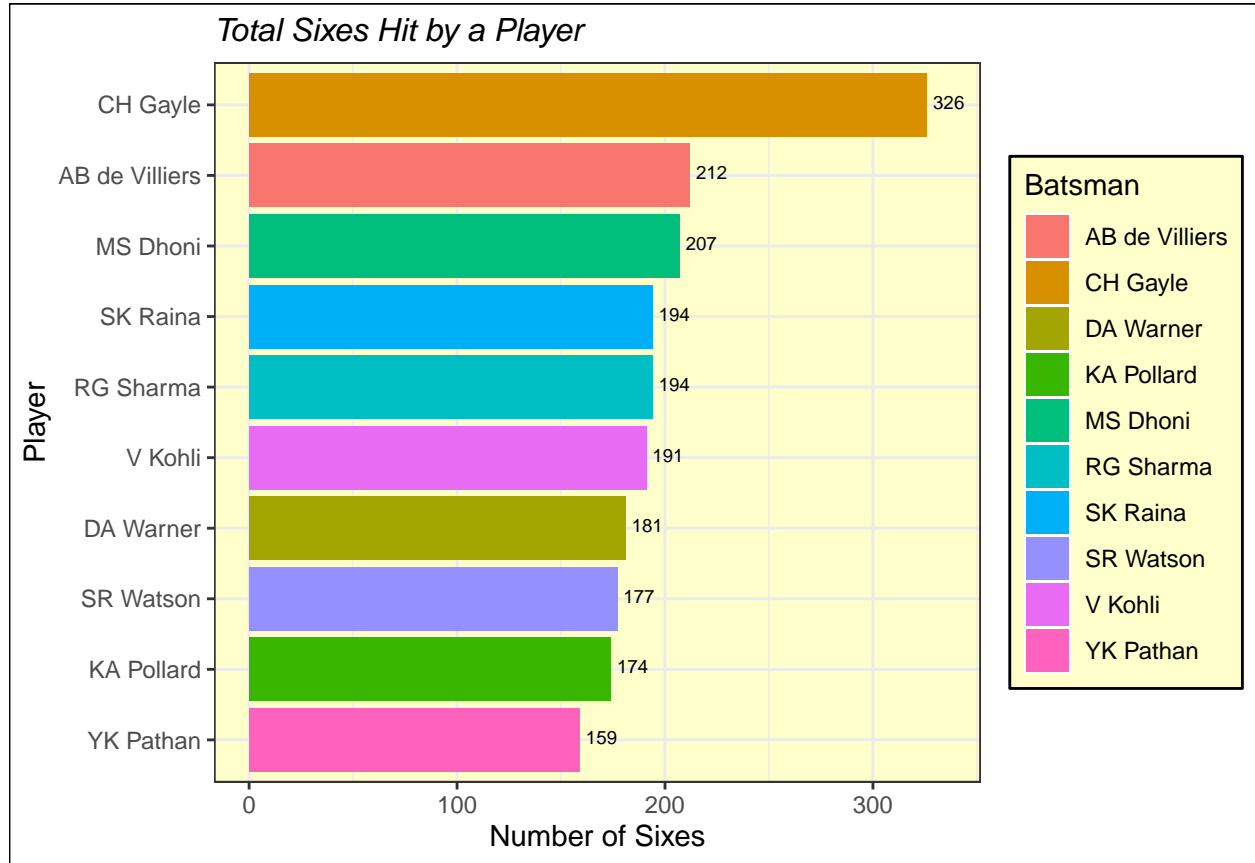
- *Comment:* The “Run-Machine” Virat Kohli tops the list with 5429 runs, followed closely by Suresh Raina with 5407 runs and then Rohit Sharma with 4914 runs. David Warner (4741), Chris Gayle (4535) and AB de Villers (4415) are the only foreign players in this list.

- Highest Wicket Takers in IPL:



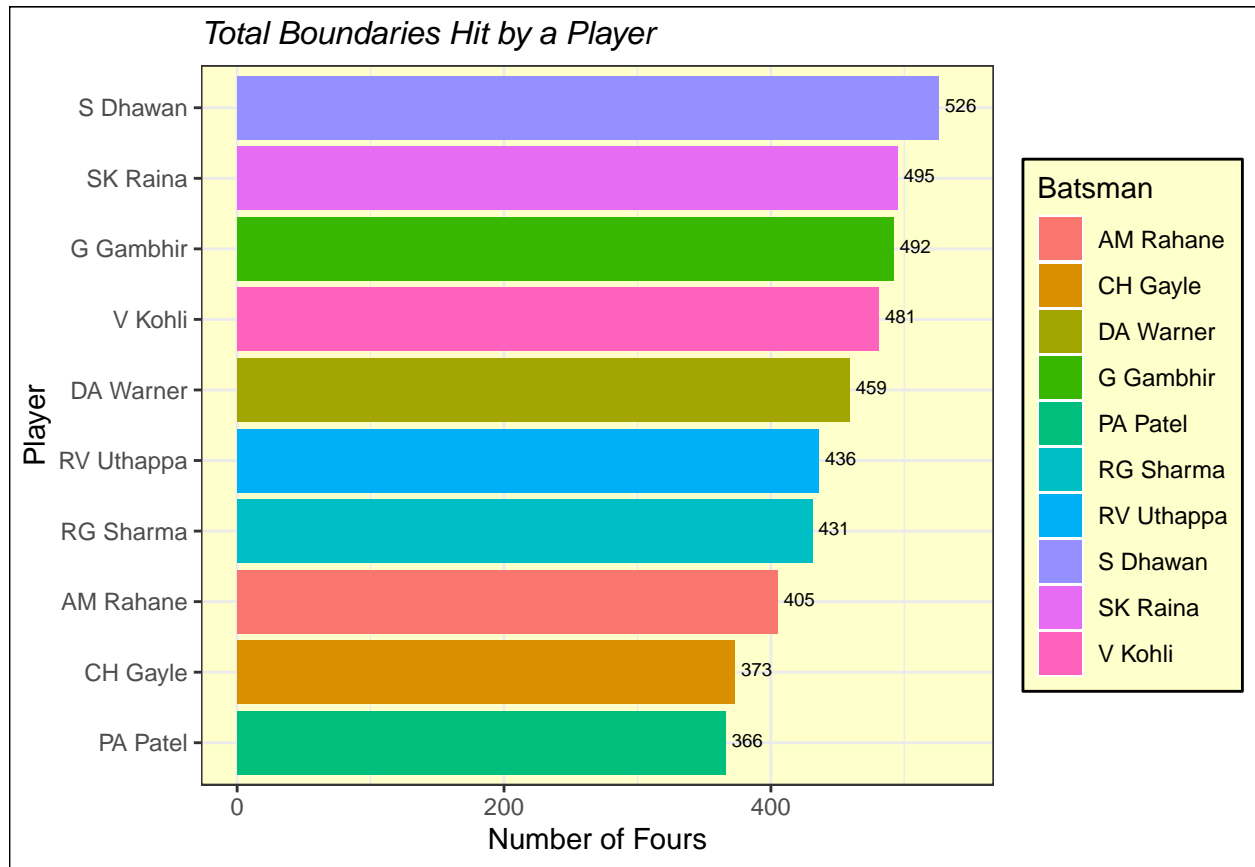
- *Comment:* Lasith Malinga tops the most wicket takers list with 170 wickets, followed by Amit Mishra (156) and Harbhajan Singh (150). Dwayne Bravo (147) and Sunil Narine (122) are the only other Overseas players in this list.

- Most Six Hitters in IPL:



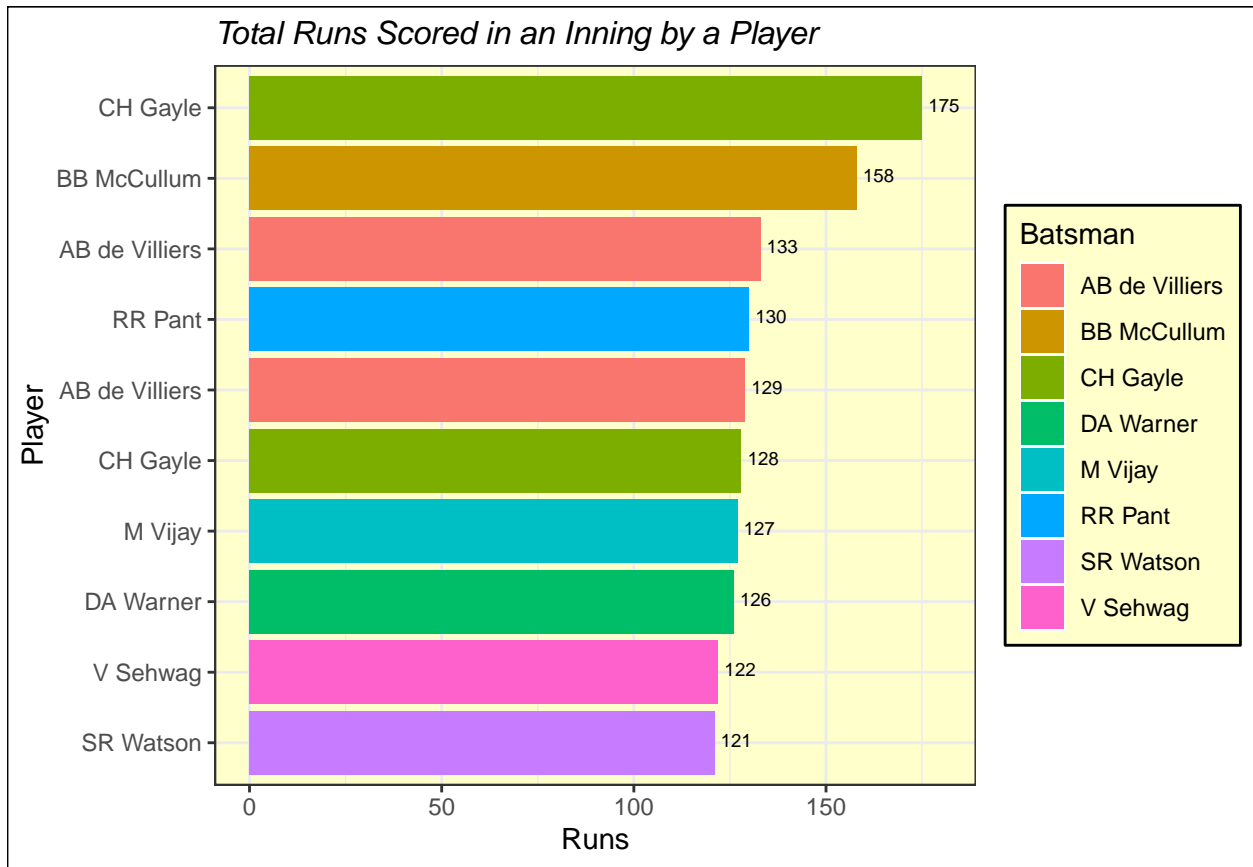
- *Comment:* The “Universe Boss” Chris Gayle tops this list hitting a humongous number of 326 sixes in his IPL career 2008-2019, “not-so-close”-ly followed by AB de Villiers (212) and Mahendra Singh Dhoni (207). Other foreign players in this list are David Warner (181), Shane Watson (177) and Kieron Pollard (174).

- Most Boundary Hitters in IPL:



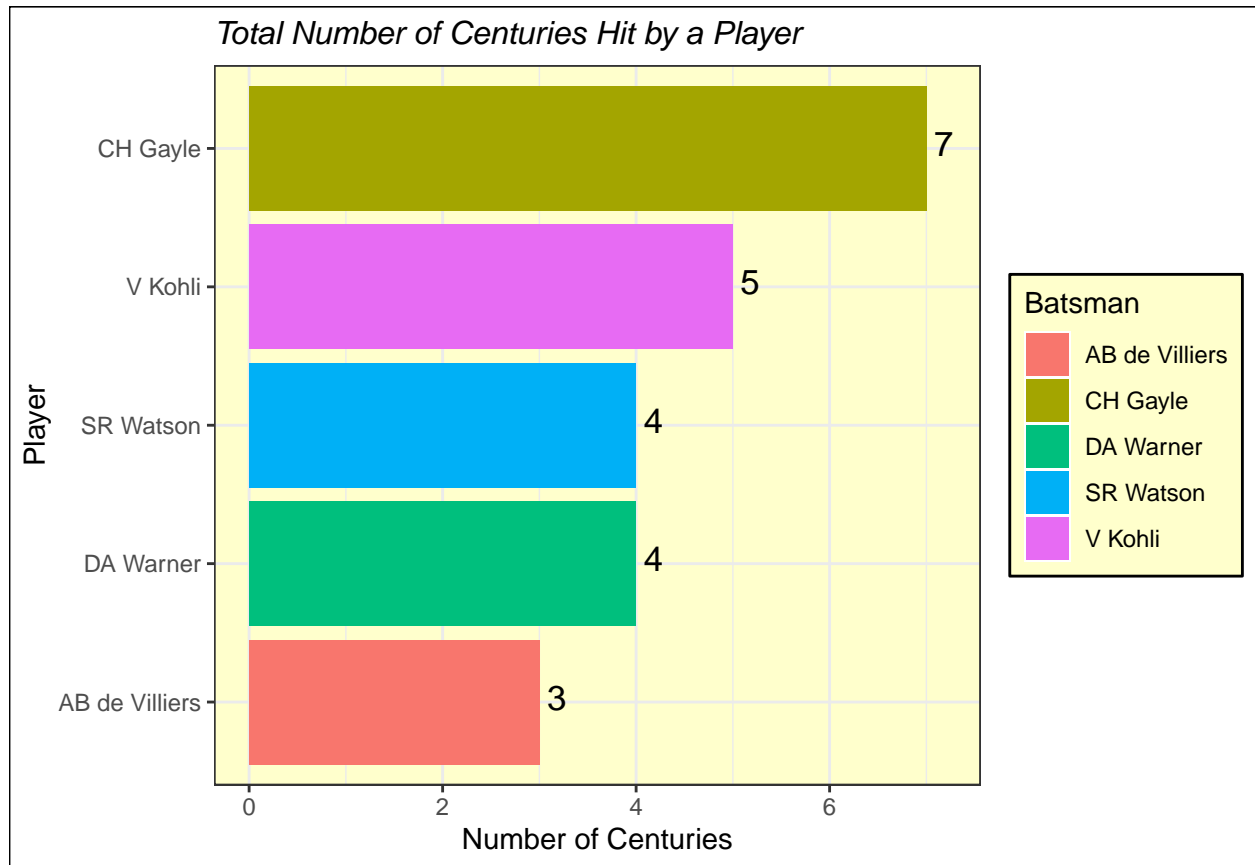
- *Comment:* “Gabbar” Shikhar Dhawan has hit the most boundaries (526) in IPL 2008-2019, followed by Suresh Raina (495) and Gautam Gambhir (492). David Warner (459) and Chris Gayle (373) are the only foreign players in this list.

- Highest Individual Run Scorers in a Match:



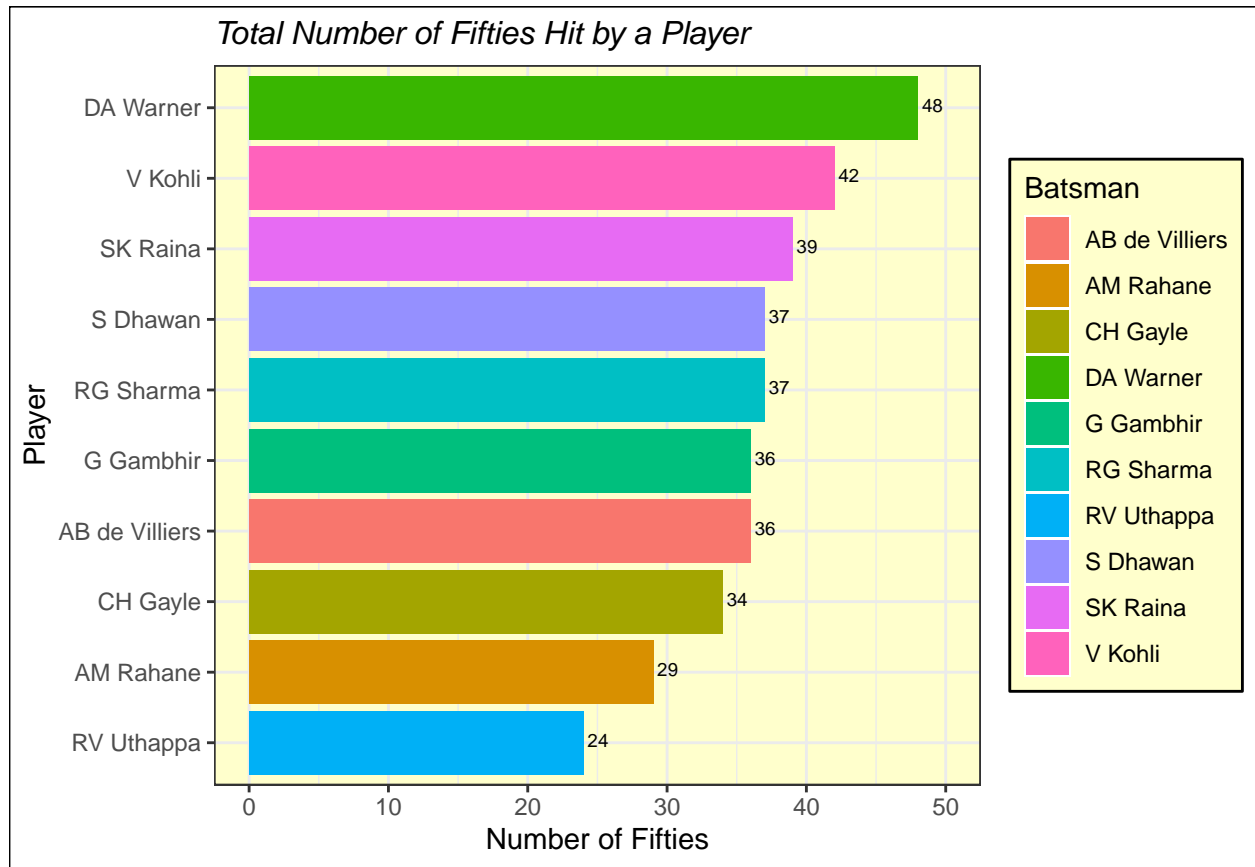
- *Comment:* Chris Gayle has scored the most runs, a humongous 175 in an inning, followed by Brendon McCullum (158) and AB de Villiers (133). Rishabh Pant (130), Murli Vijay (127) and Virendra Sehwag (122) are the only Indian players in this list.

- Top 5 Players with Most IPL Centuries:



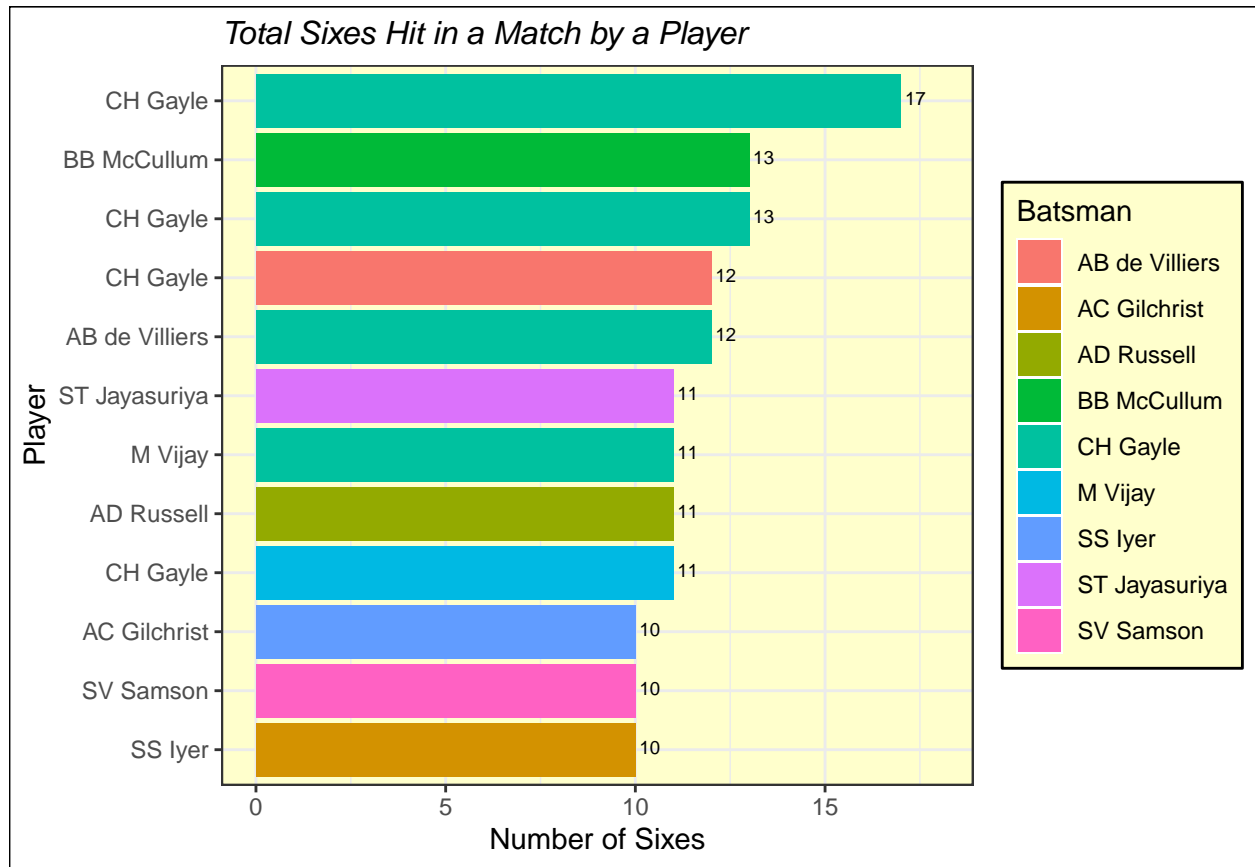
- *Comment:* Chris Gayle has hit a total of 7 IPL(2008-2019) Centuries in this 20 over format league, followed by Virat Kohli (5) being the only Indian player in the list.

- Top 10 Players with Most IPL Fifties:



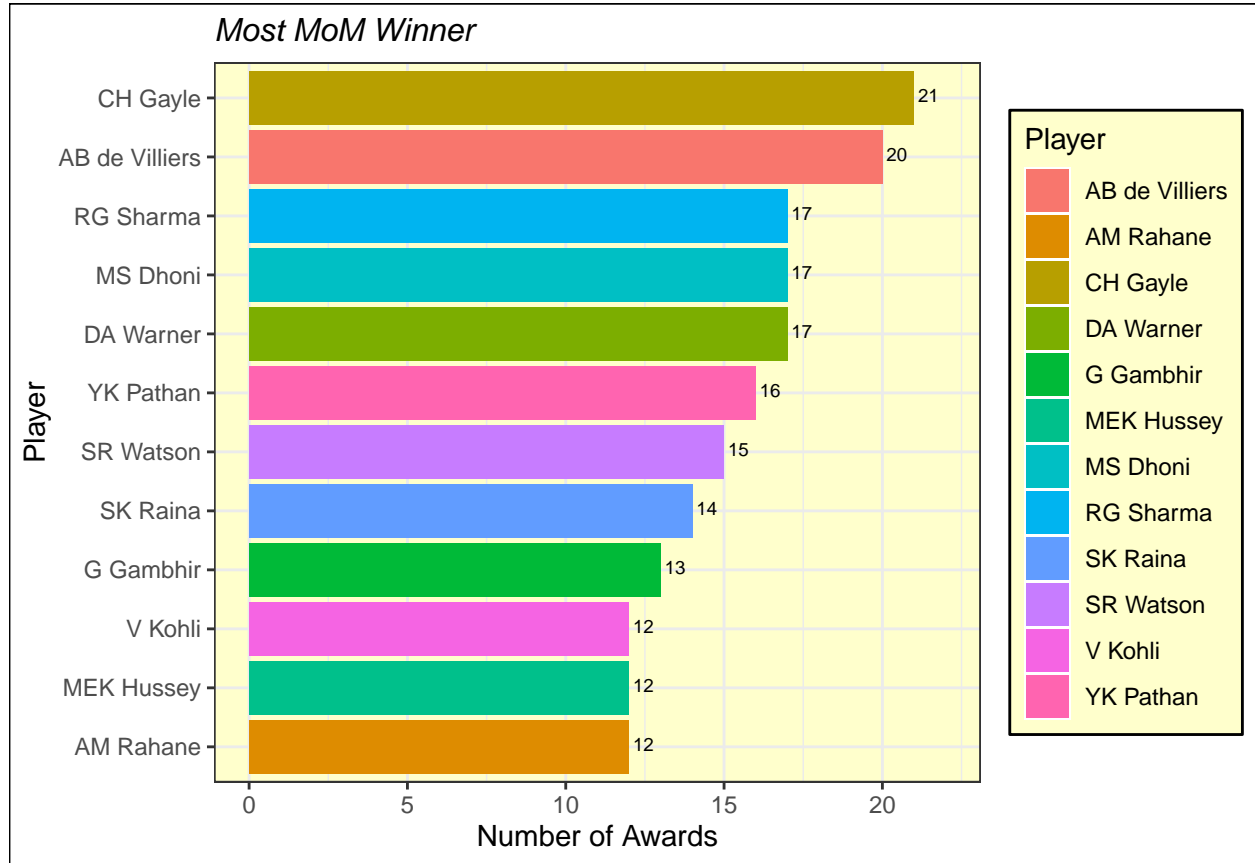
- *Comment:* David Warner has been the most consistent player in IPL 2008-2019 with the most number of fifties (48), followed by Virat Kohli (42) and Suresh Raina (39). AB de Villiers with 36 fifties and Chris Gayle with 34 fifties are the only foreign players in the list.

- IPL Players with Most Sixes Hit in a Match:



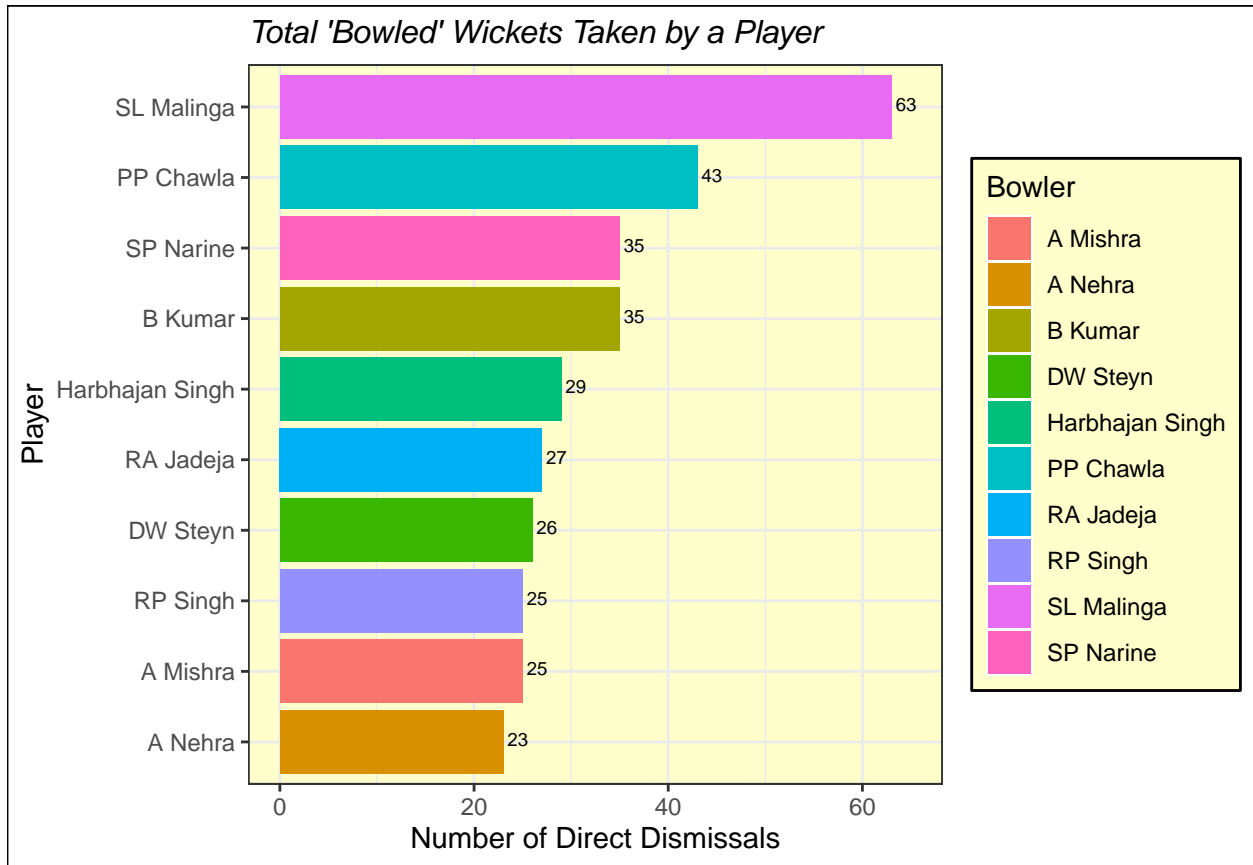
- *Comment:* Not to anyone's surprise, Chris Gayle tops the list of hitting the most number of sixes (17) in a single match, followed by Brendon McCullum (13), Chris Gayle (13) and then Chris Gayle (12). Chris Gayle appears 4 times in this list. Murli Vijay (11) and Shreyas Iyer (10) are the only Indians in the list.

- Most Man of The Match Award Winners in IPL:



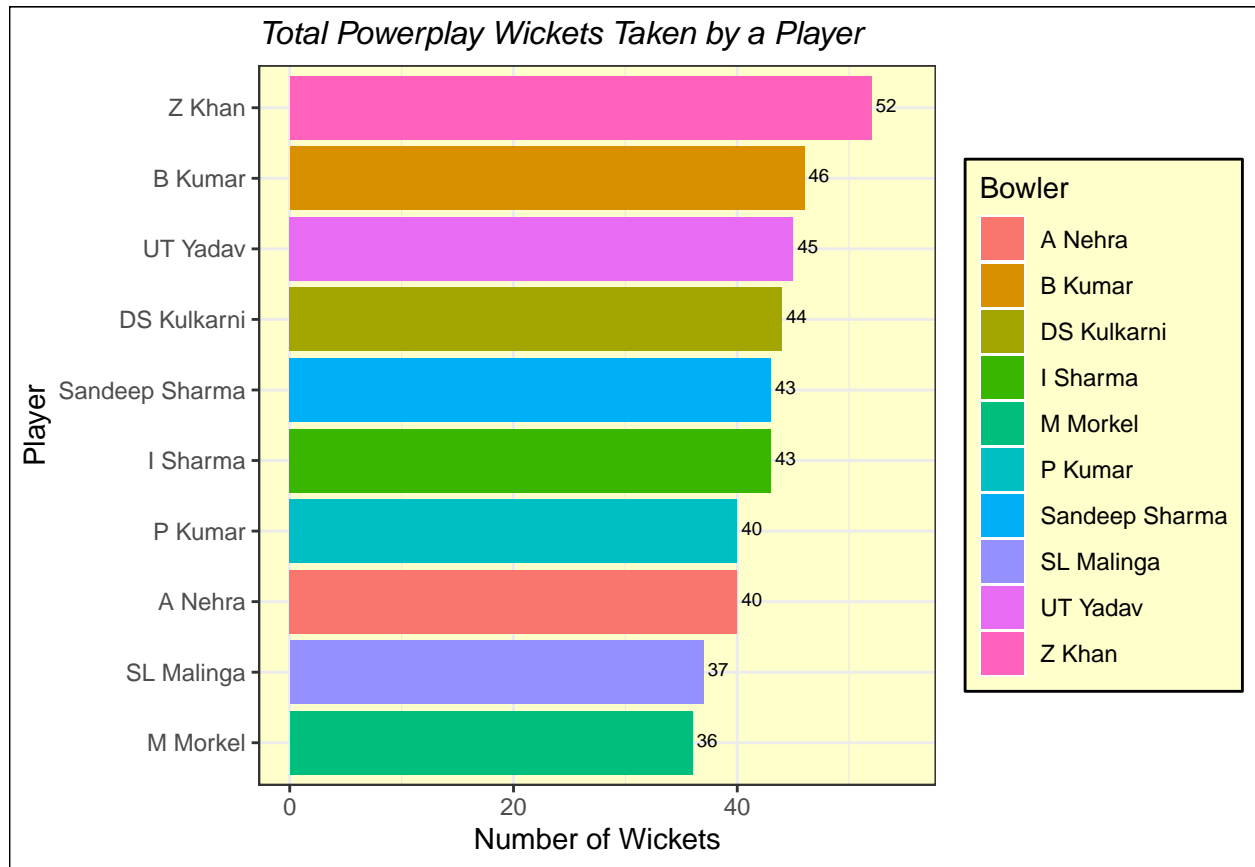
- *Comment:* Chris Gayle has been awarded Man of the Match 21 times, followed by AB de Villiers (20) and Rohit Sharma (17). David Warner (17), Shane Watson (15) and Michael Hussey (12) are the only foreign players in this list.

- Top 10 “Bowled” (direct dismissal) Wicket Takers in IPL:



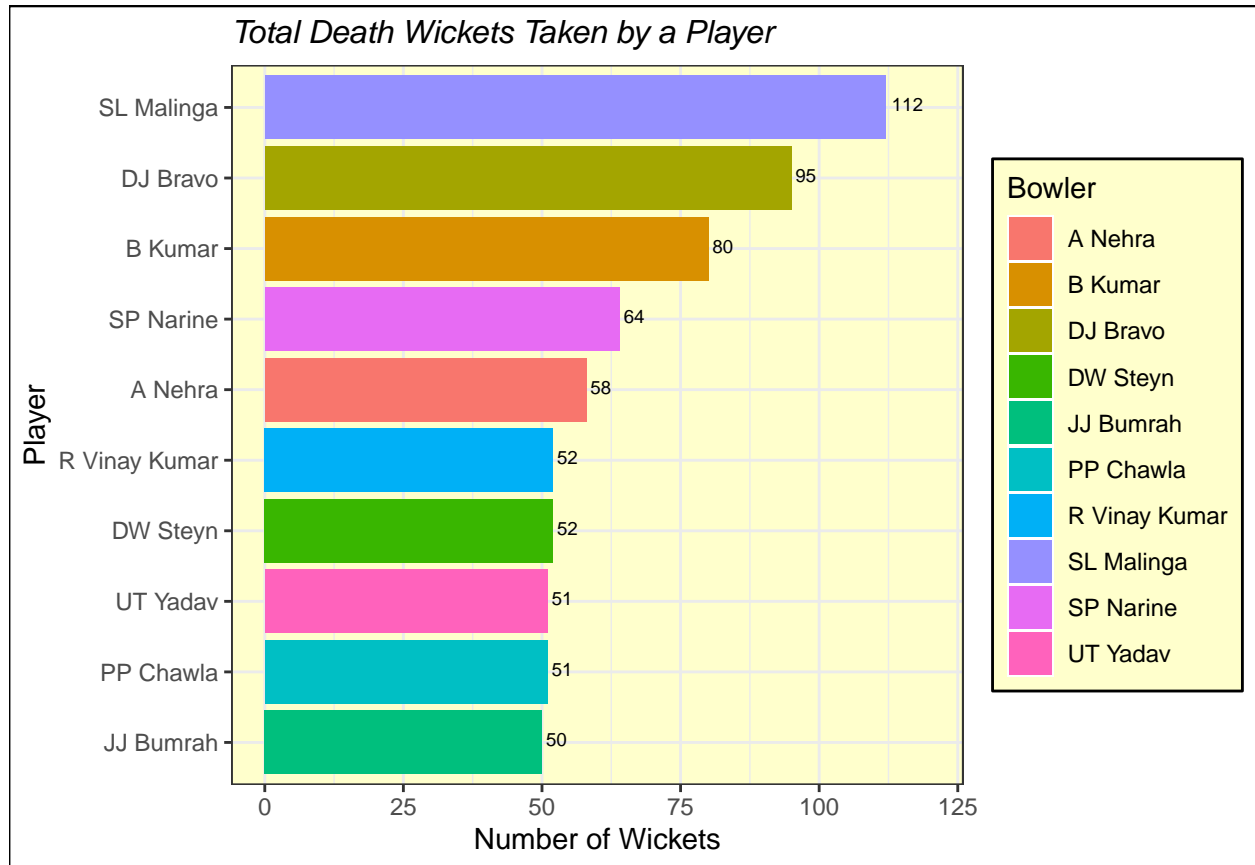
- *Comment:* Lasith Malinga has the most number of direct “Bowled” dismissals numbering up to 63 taking a huge lead, followed by Piyush chawla (43), Sunil Narine (35) and Bhuvaneshwar Kumar (35). Dale Steyn (26) is the only other foreign player in this list.

- Top 10 Powerplay Bowlers in IPL:



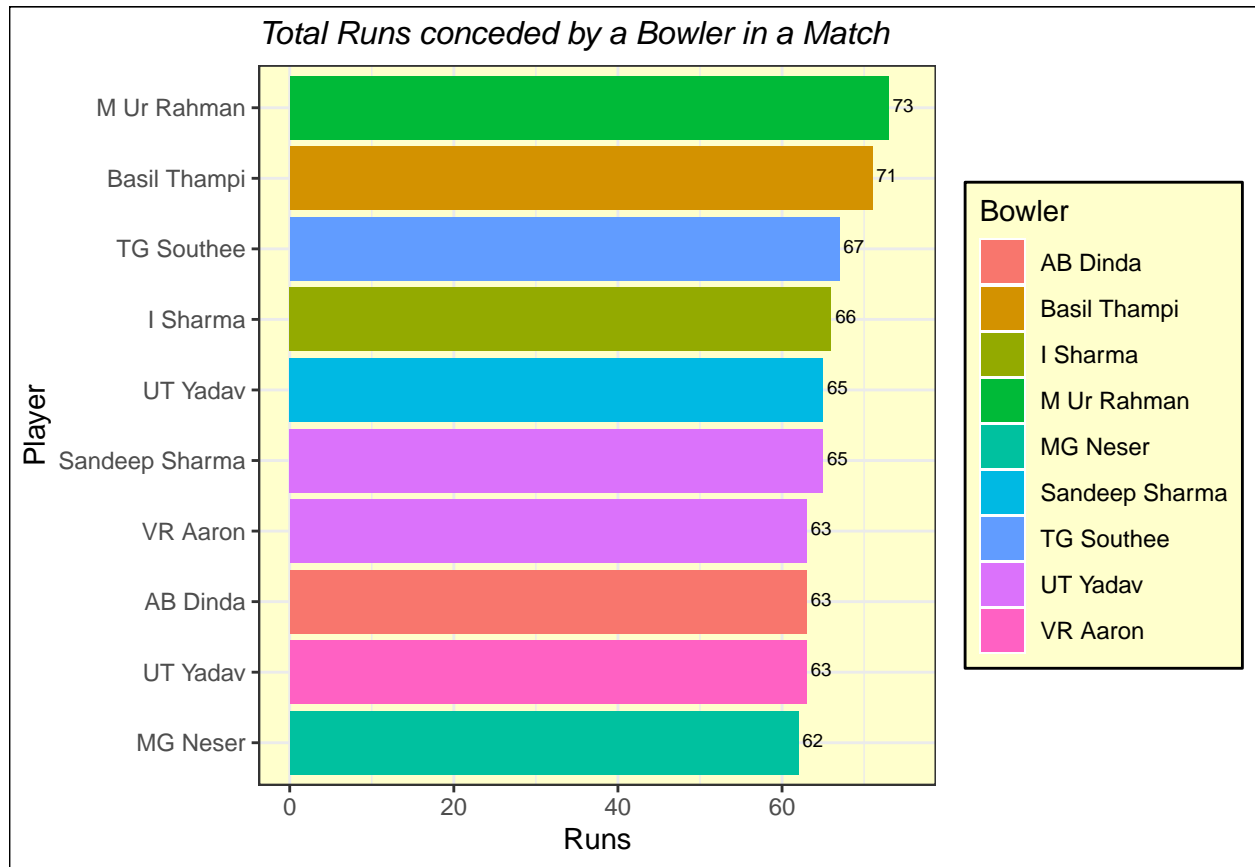
- *Comment:* Zaheer Khan has taken 52 wickets in powerplay overs the most by any bowler, followed by Bhuvaneshwar Kumar (46) and Umesh Yadav (45). Lasith malinga (37) and Morne Morkel (36) are the only foreign players in this list.

- Top 10 Death Bowlers in IPL:



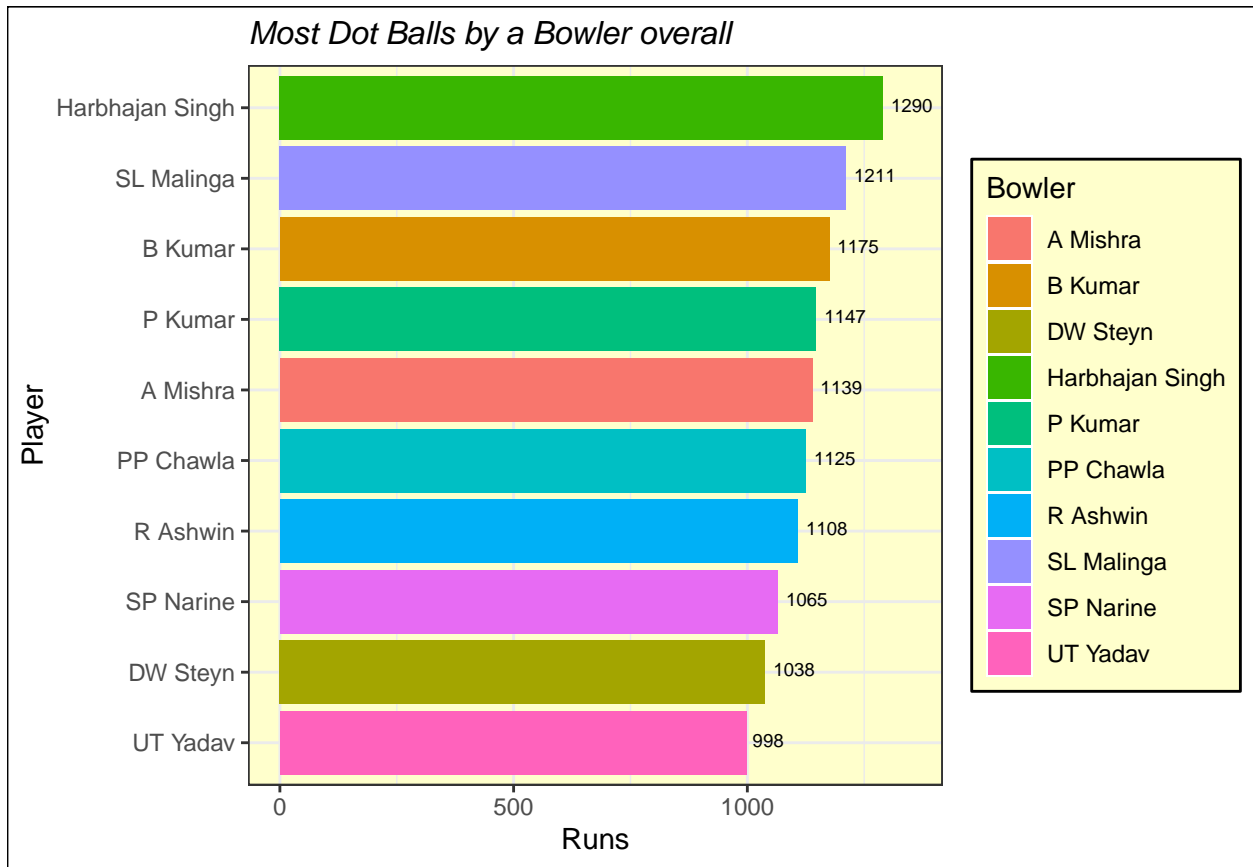
- *Comment:* Lasith Malinga tops the list by taking a total of 112 wickets in Death Overs only, followed by Dwayne Bravo (95) and Bhuvaneshwar Kumar (80). Dale Steyn (52) is the only other foreign player in this list.

- Most Runs conceded by a Bowler in a Match:



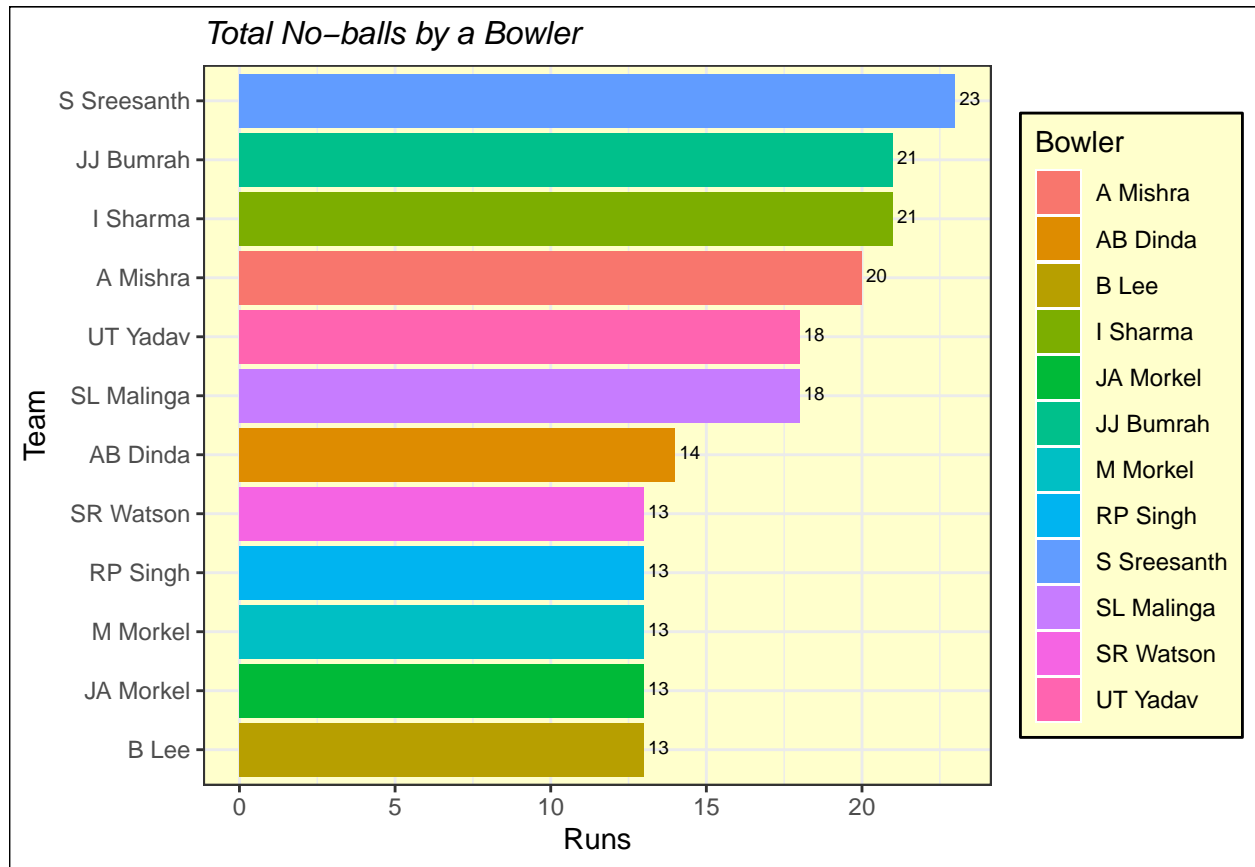
- *Comment:* Mujeeb Ur Rahman holds the record of conceding the most runs (73) in a single Match, followed by Basil Thampi (71) and Tim Southee (67).

- Most Dot Balls by a Bowler in IPL:



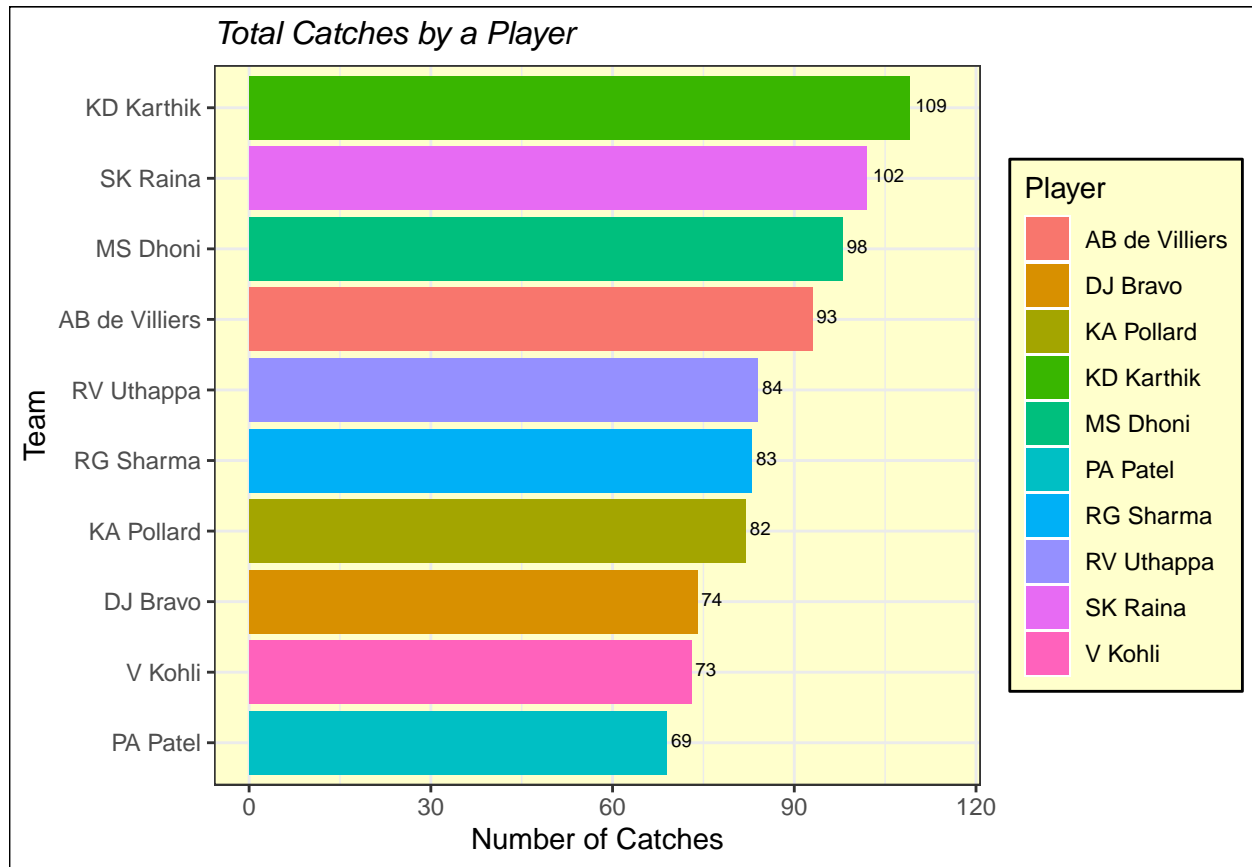
- *Comment:* Harbhajan Singh has delivered 1290 dot balls in total the most by any bowler in IPL, followed by Lasith Malinga (1211) and Bhuvaneshwar Kumar (1175). Dale Steyn (1038) is the only other foreign player in this list.

- Most No-balls by Bowlers in IPL:



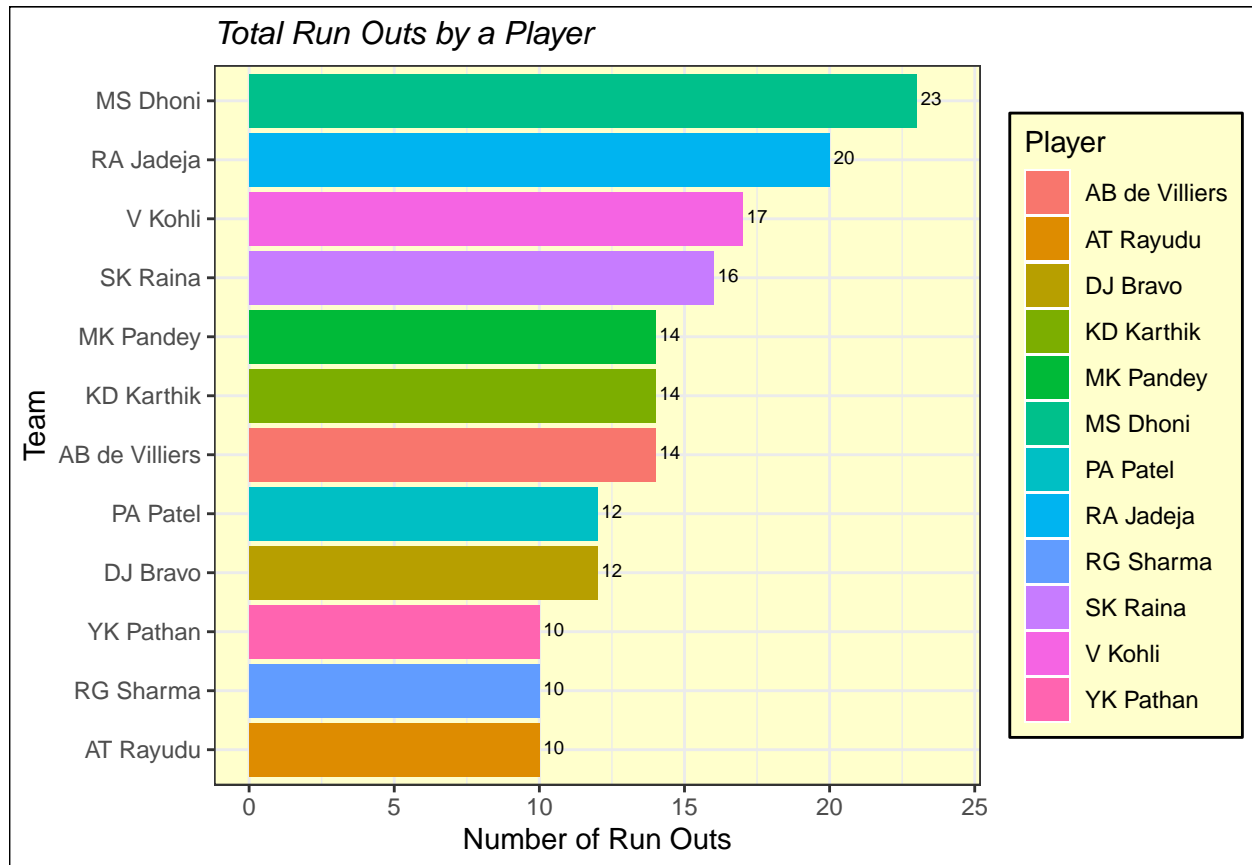
- *Comment:* Sreesanth has bowled the most no-balls (23), followed by Jasprit Bumrah (22) and Ishant Sharma (21).

- Players with most Catches in IPL:



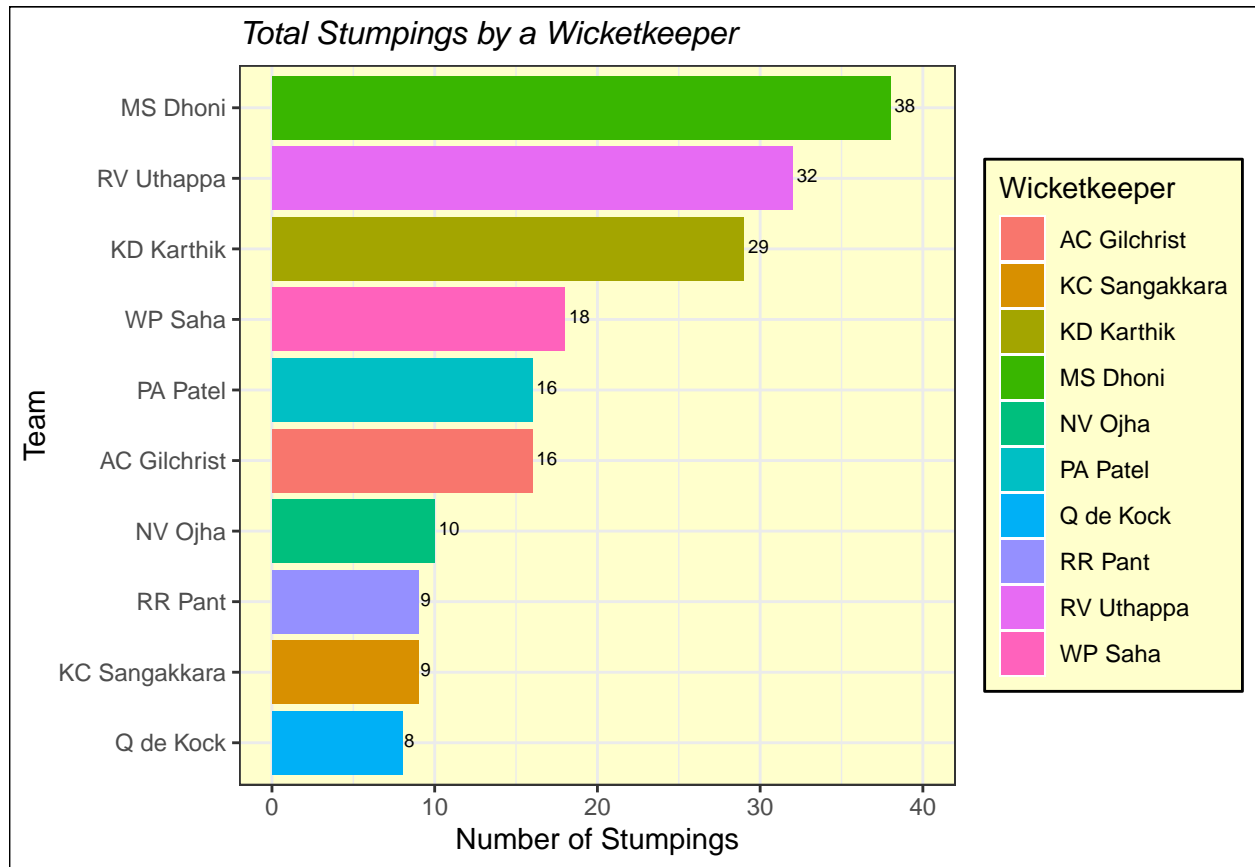
- *Comment:* Dinesh Karthik has taken the most number of catches (109), followed by Suresh Raina (102) and MS Dhoni (98). AB de Villiers (93), Kieron Pollard (82) and Dwayne Bravo (74) are the foreign players in this list.

- Players with most Run Outs in IPL:



- *Comment:* The Wicketkeeper MS Dhoni (23) tops the list, followed by two non-wicketkeeping skilled throwers and excellent fielders, Ravindra Jadeja (20) and Virat Kohli (17). AB de Villiers (14) and Dwayne Bravo (12) are the only foreign players in this list.

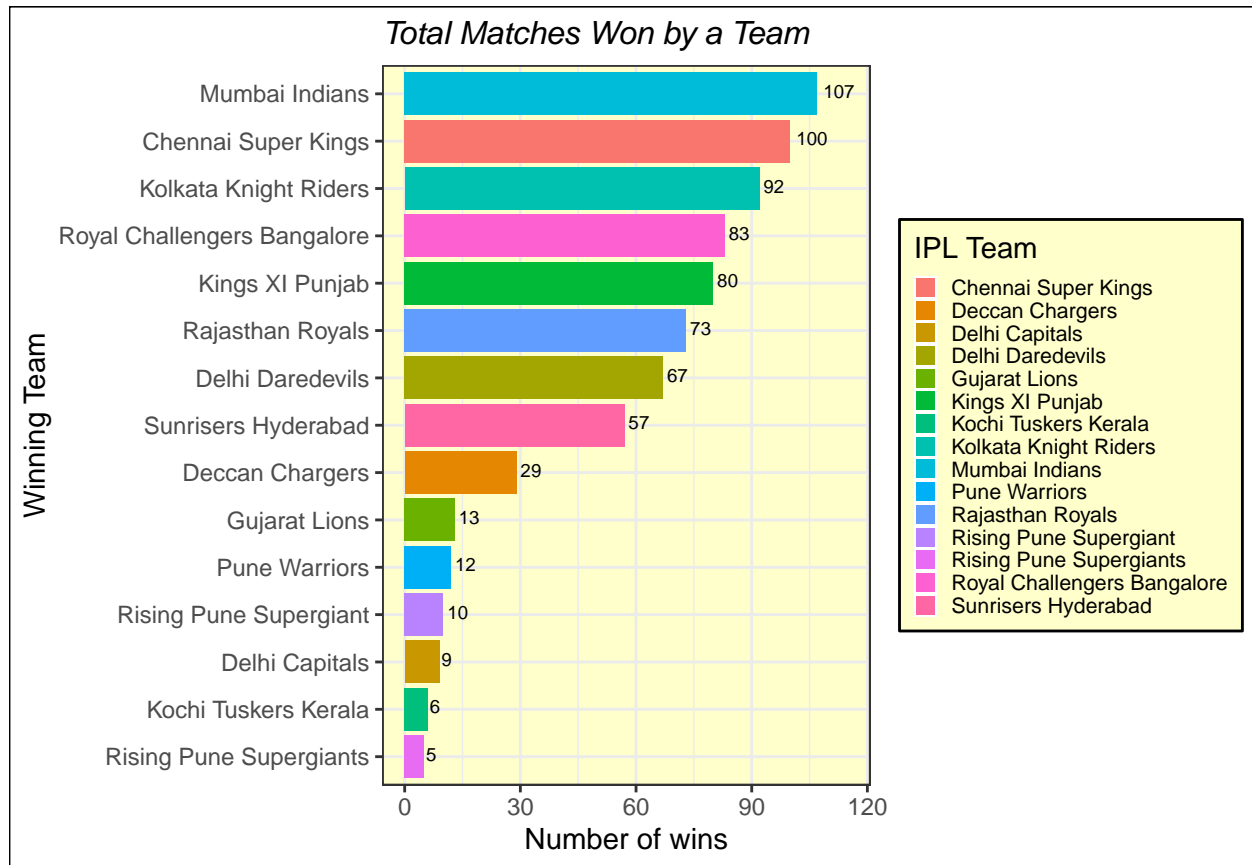
- Wicketkeepers with most Stumpings in IPL:



- Comment:* MS Dhoni tops the list with most stumpings (38), followed by Robin Uthappa (32) and Dinesh Karthik (29). Adam Gilchrist (16) and Quinton de Kock (8) are the only foreign players in this list.

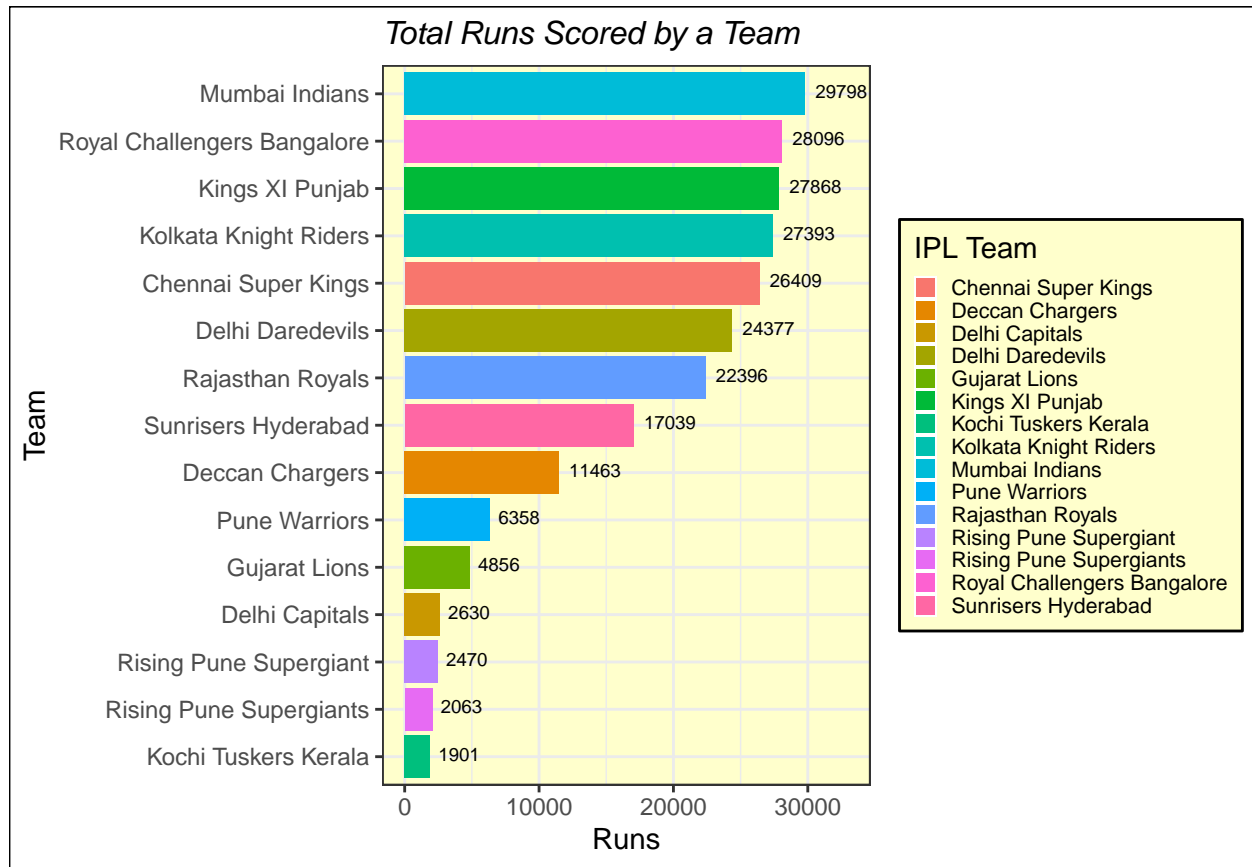
Team-wise

- Total Wins by Teams in IPL:



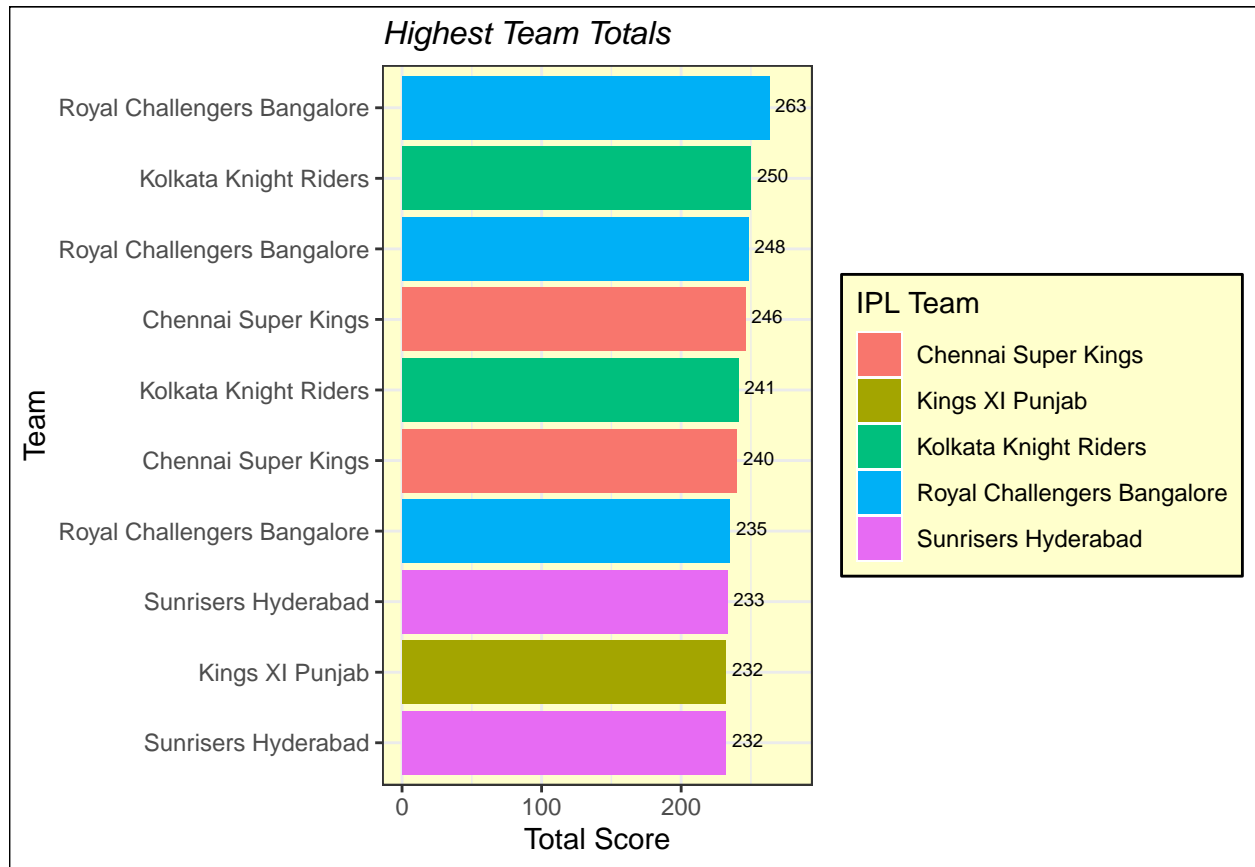
- *Comment:* Mumbai Indians is the most successful IPL Team in terms of Wins (107), followed by Chennai Super Kings (100) and Kolkata Knight Riders (92).

- Total Runs Scored by Teams in IPL:



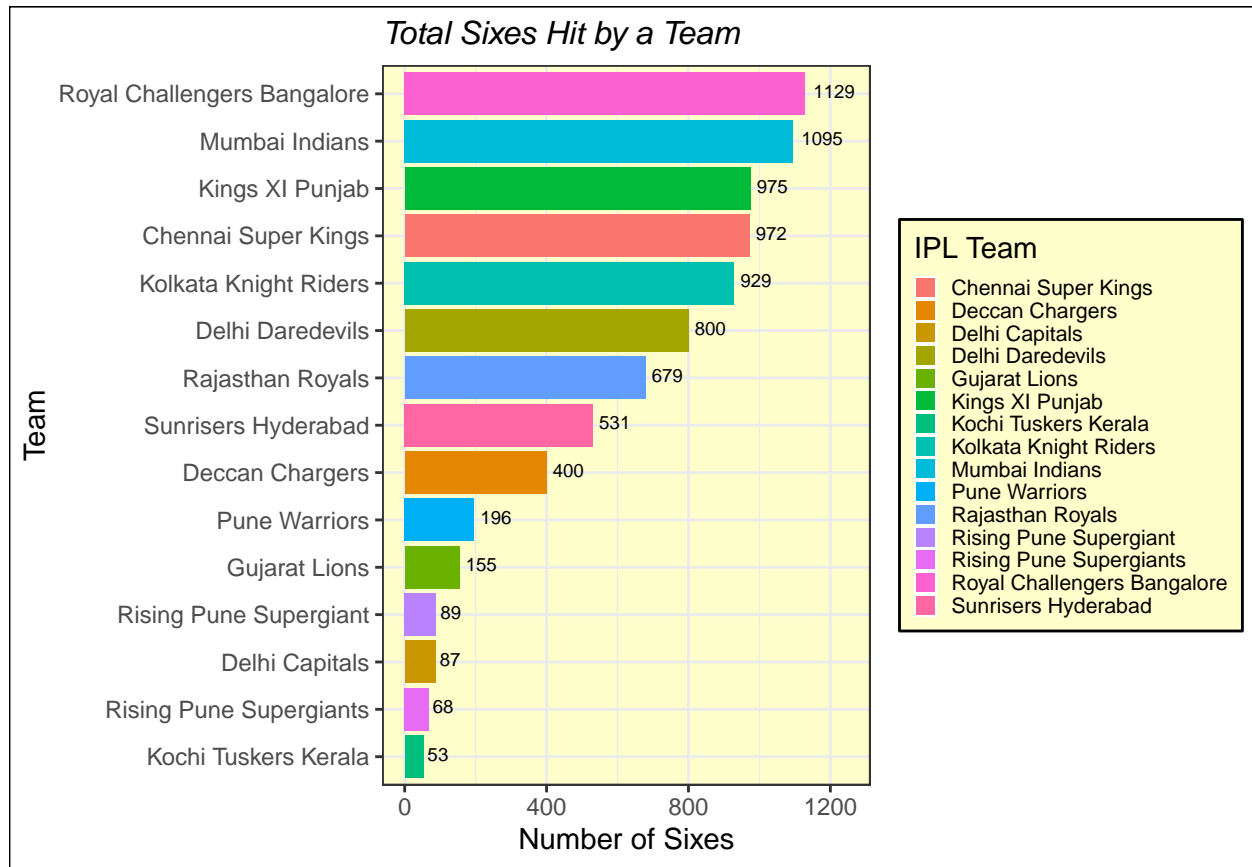
- *Comment:* Mumbai Indians has scored the most runs (29798) in IPL 2008-2019, followed by the “not-so-successful” team Royal Challengers Bangalore (28096) and Kings XI Punjab (27868).

- Highest Total by Teams in IPL:



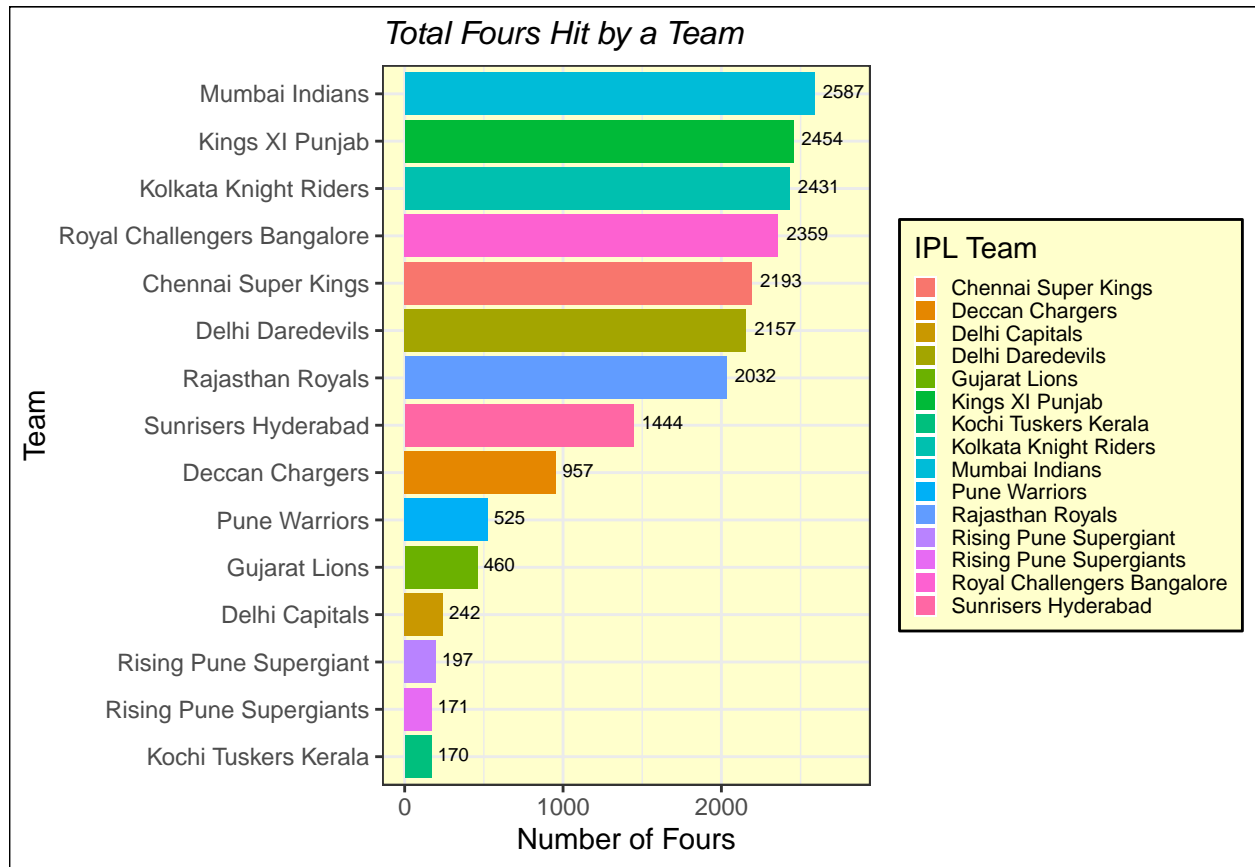
- *Comment:* Royal Challengers Bangalore (263) holds the record of the highest team total by any team in an inning in IPL 2008-2019, followed by Kolkata Knight Riders (250) and Royal Challengers Bangalore (248). Royal Challengers Bangalore appears thrice in this list.

- Total Overboundaries by Teams in IPL:



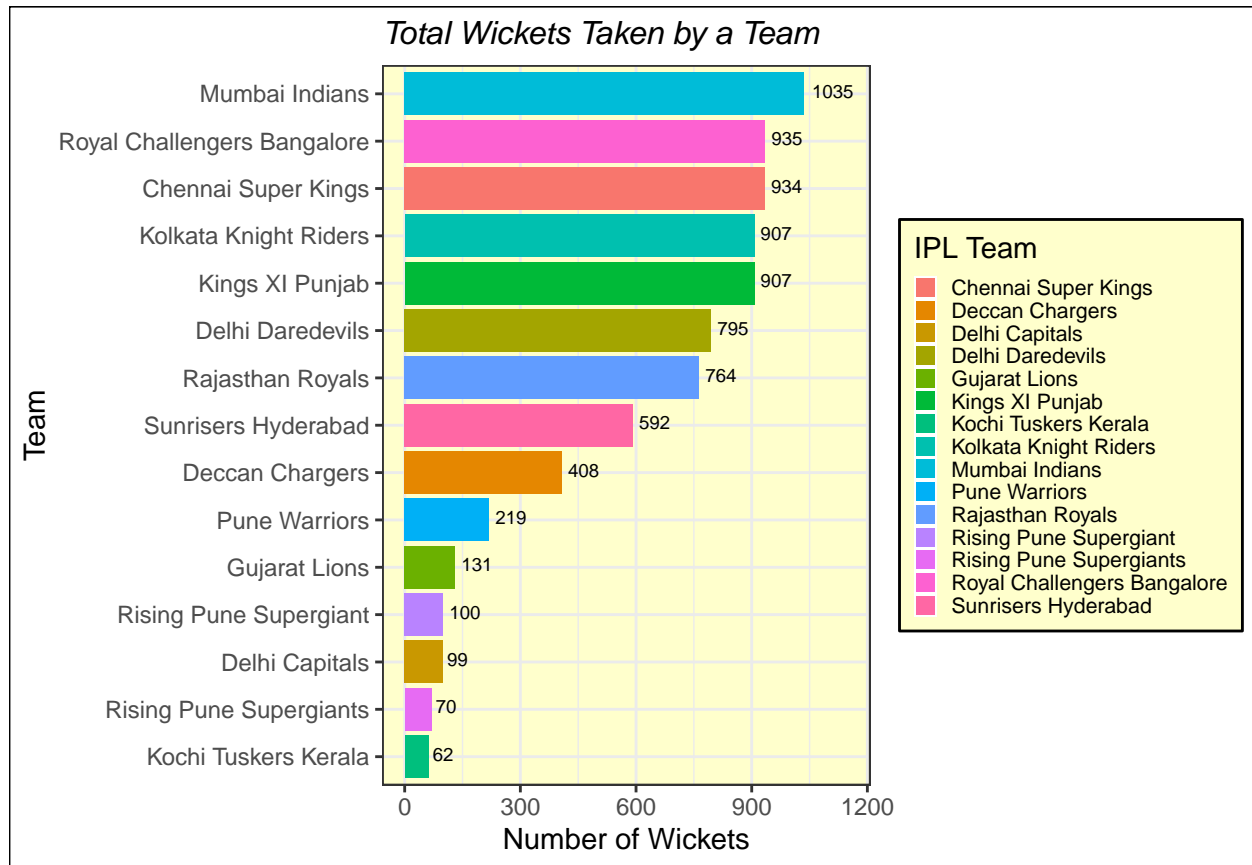
- *Comment:* Having the top two six-hitters in the team and , it comes as no surprise that Royal Challengers Bangalore has hit the most number of sixes in IPL 2008-2019, followed by Mumbai Indians (1095) and Kings XI Punjab (975).

- Total Boundaries by Teams in IPL:



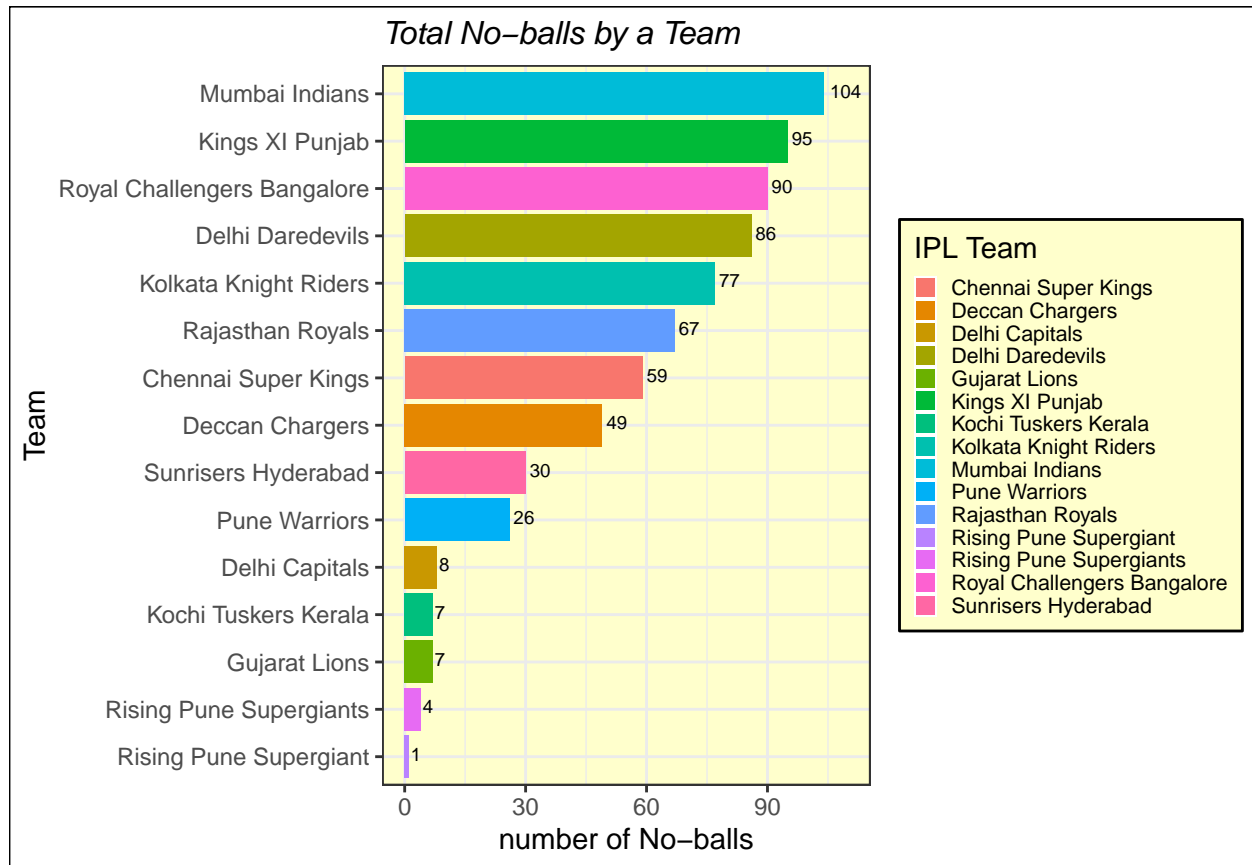
- *Comment:* Mumbai Indians has hit the most number of fours (2587), followed by Kings XI Punjab (2454) and Kolkata Knight Riders (2431).

- Total Wickets Taken by Teams in IPL:



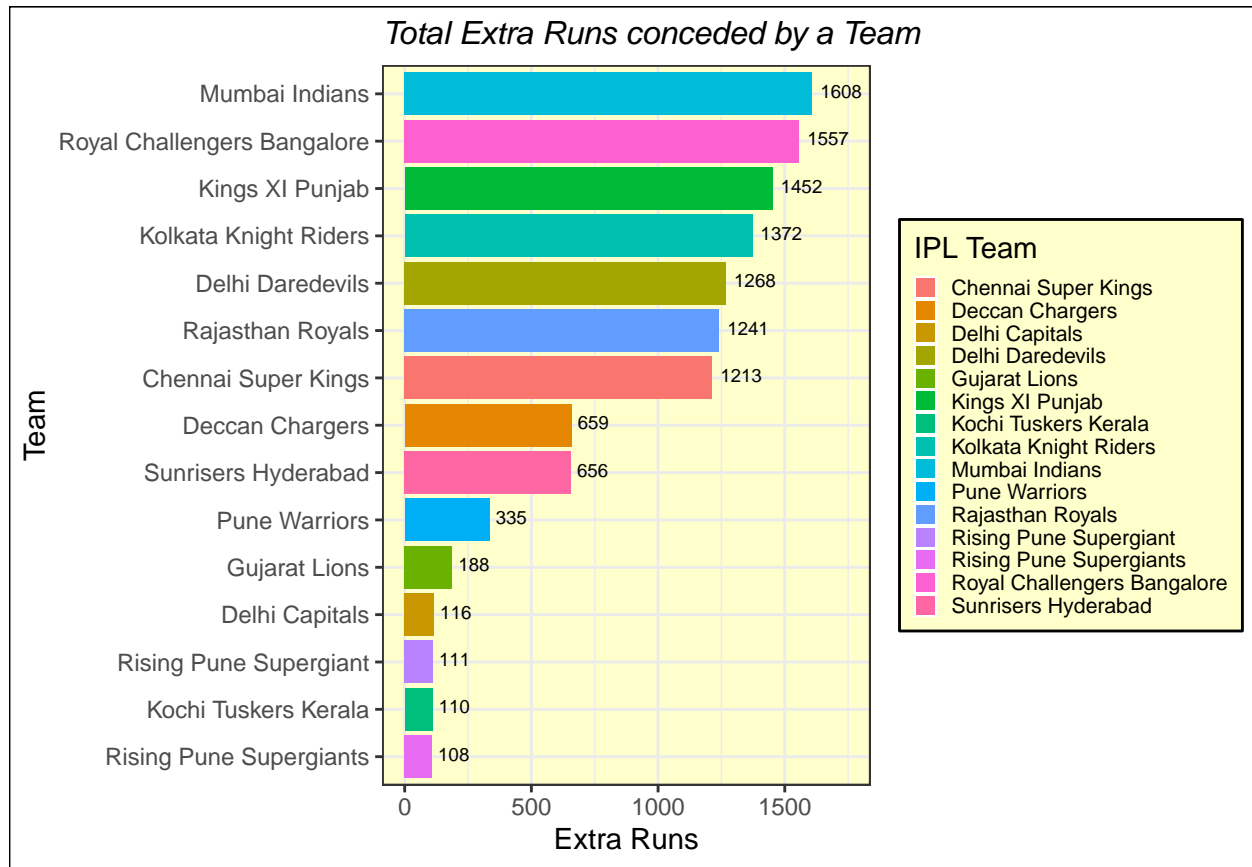
- *Comment:* Mumbai Indians has taken the most number of wickets (1035), followed by Royal Challengers Bangalore (935) and Chennai Super Kings (934).

- Total No-balls by Teams in IPL:



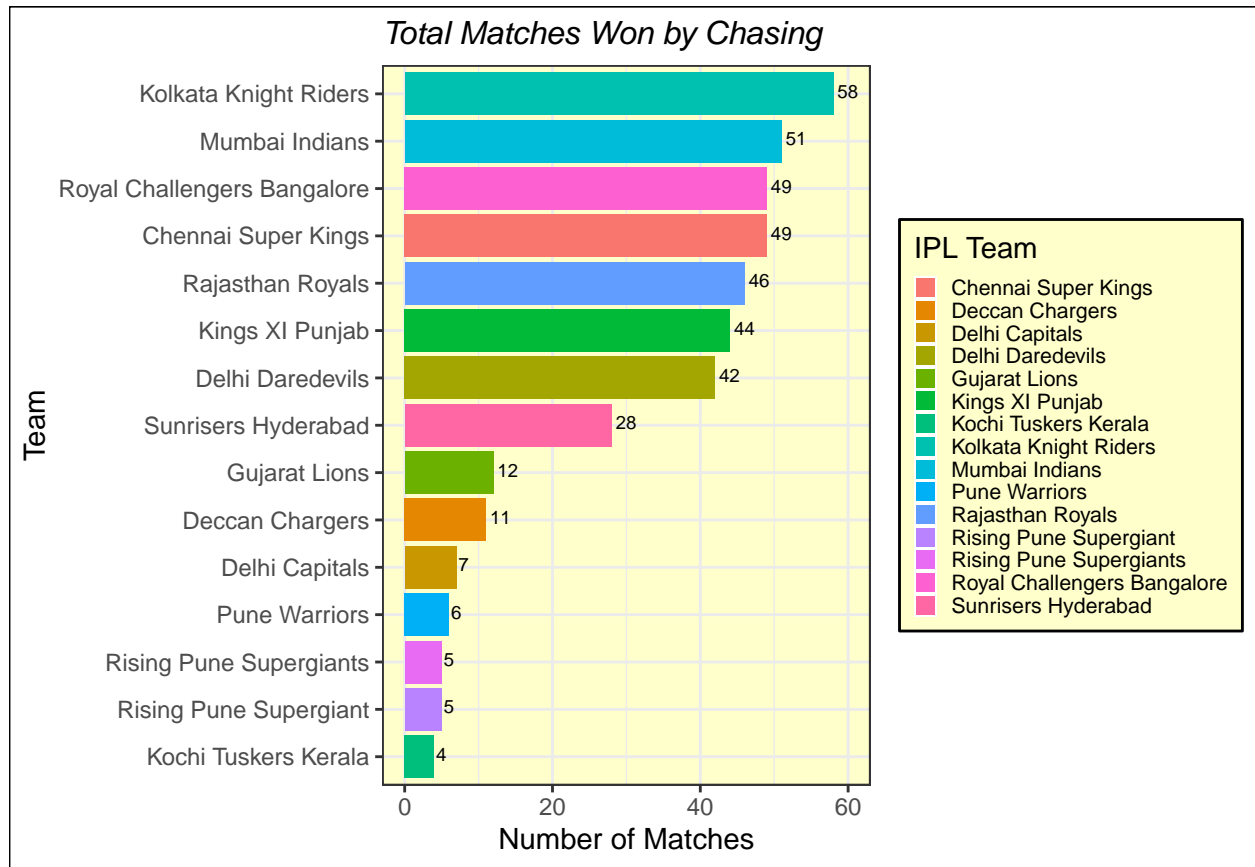
- *Comment:* Mumbai Indians Plays has bowled the most number of no-balls (104) in IPL, followed by Kings XI Punjab (95) and Royal Challengers Bangalore (90).

- Most Extra Runs conceded by Teams in IPL:



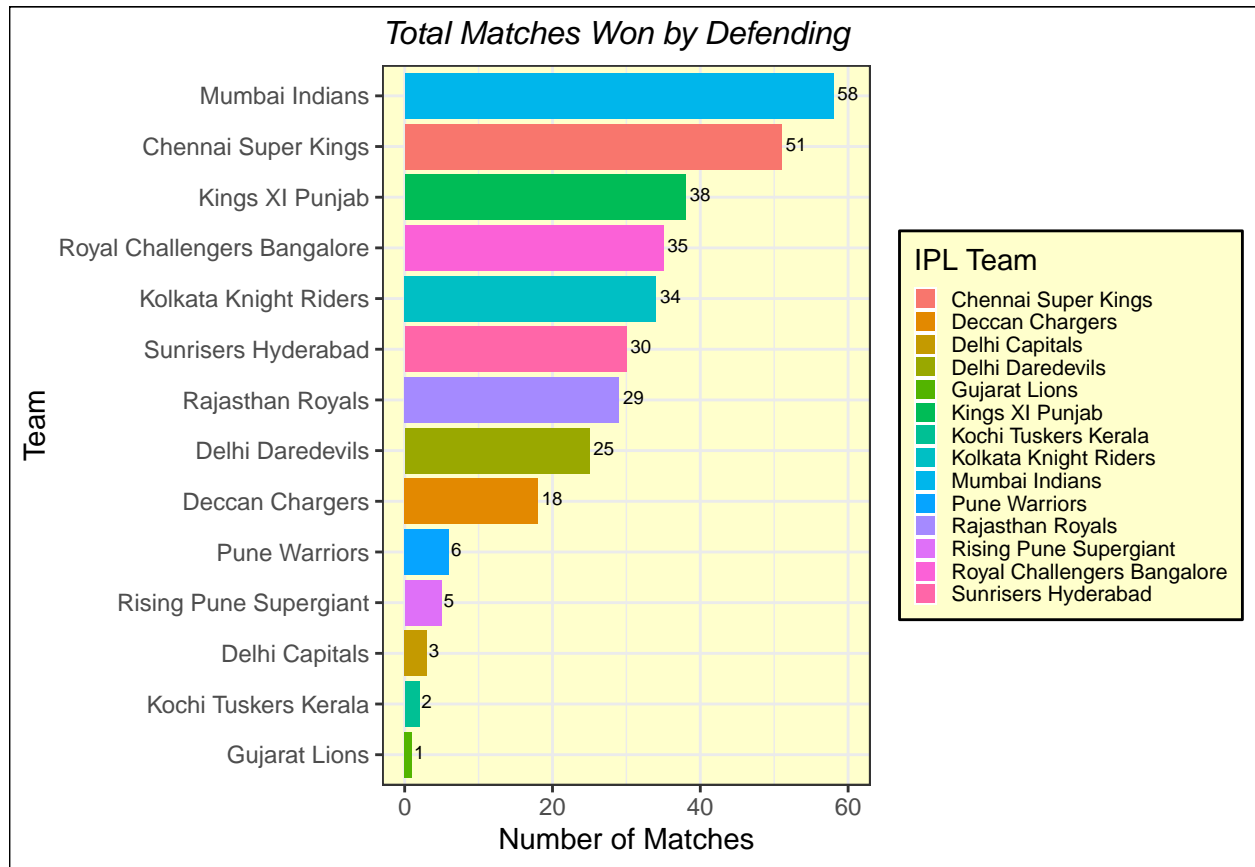
- *Comment:* Mumbai Indians has conceded the most number of extra runs (1608), followed by Royal Challengers Bangalore (1557) and Kings XI Punjab (1452).

- Best Chasing Team in IPL:



- *Comment:* Kolkata Knight Riders has successfully chased the most number of matches (58), followed by Mumbai Indians (51), Royal Challengers Bangalore (49) and Chennai Super Kings (49).

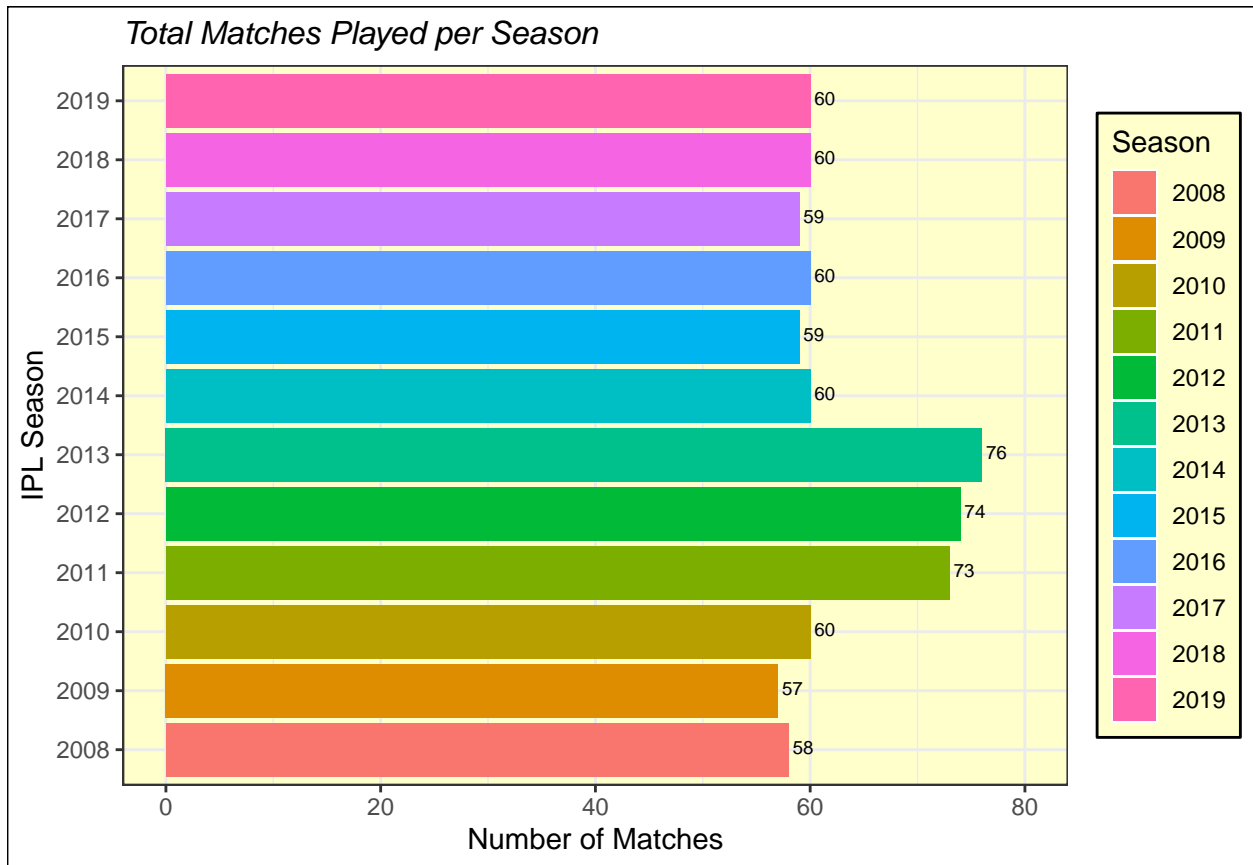
- Best Defending Team in IPL:



- *Comment:* Mumbai Indians has successfully defended the most number of matches (58), followed by Chennai Super Kings (51) and Kings XI Punjab (38).

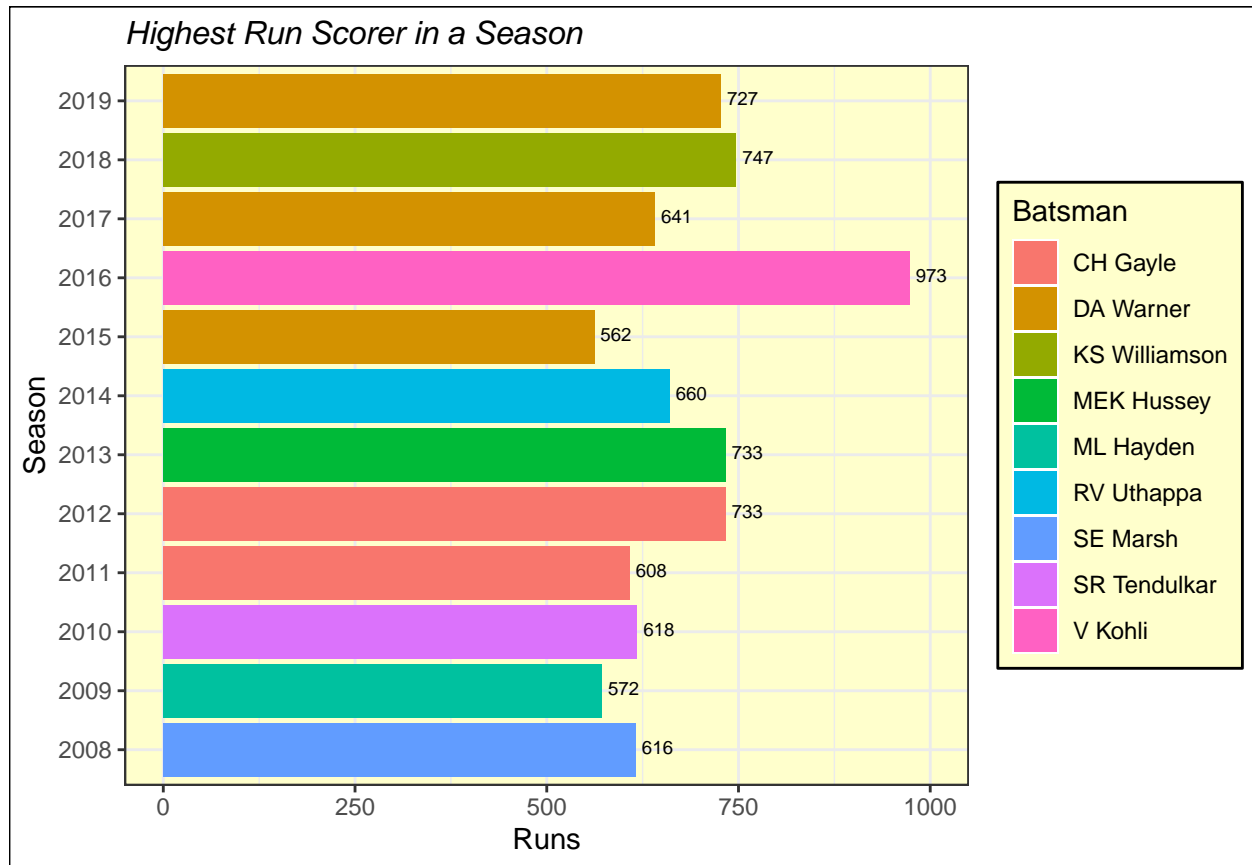
Season-wise

- Number of Matches Played Each Season:



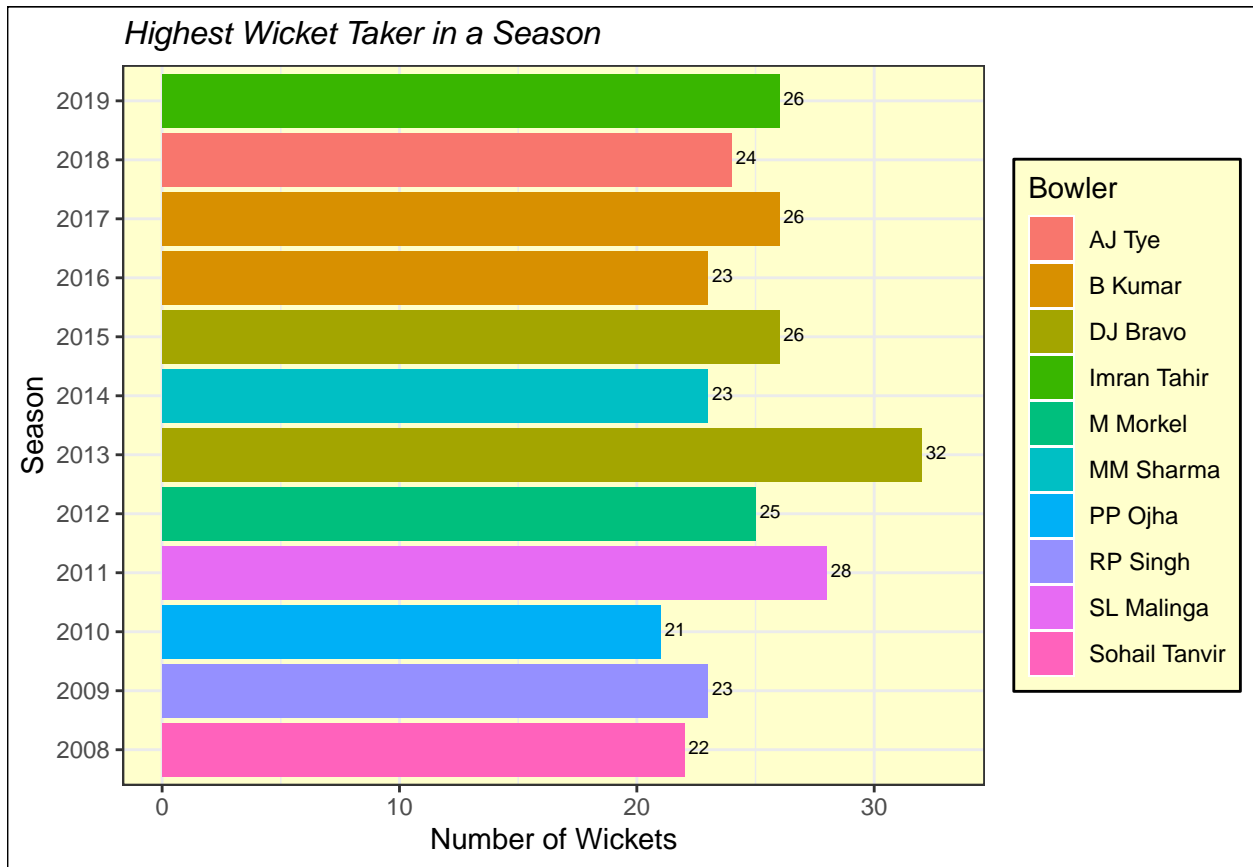
- *Comment:* IPL-2013 has seen the most number of matches (76), followed by IPL-2012 (74) and IPL-2011 (73).

- Highest Run Scorer by Season in IPL:



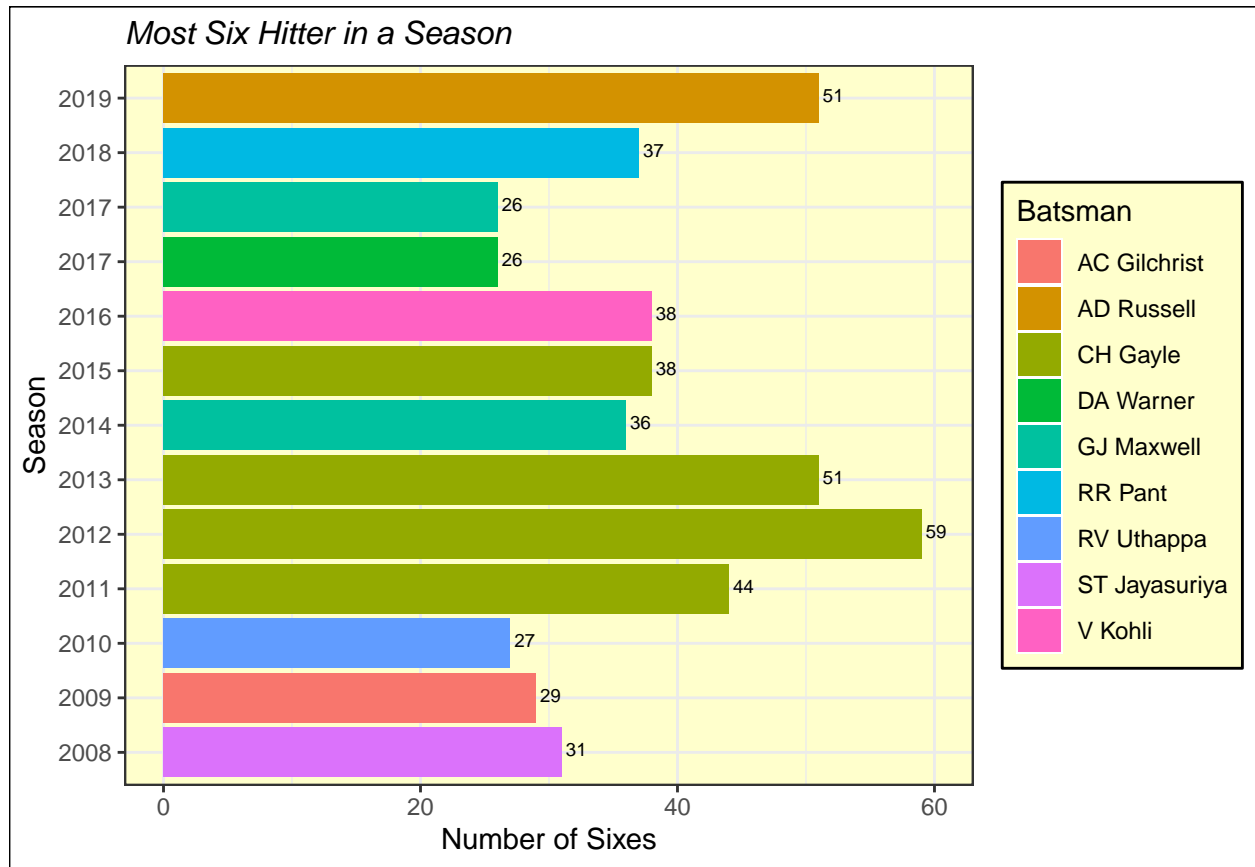
- *Comment:* Among all IPL seasons, Virat Kohli has scored the most number of runs in a single season (973) in IPL-2016 scoring a total of 973 runs, followed by Kane Williamson (747) in IPL-2018, Michael Hussey (733) in IPL-2013 and Chris Gayle (733) in IPL-2012.

- Highest Wicket Taker by Season in IPL:



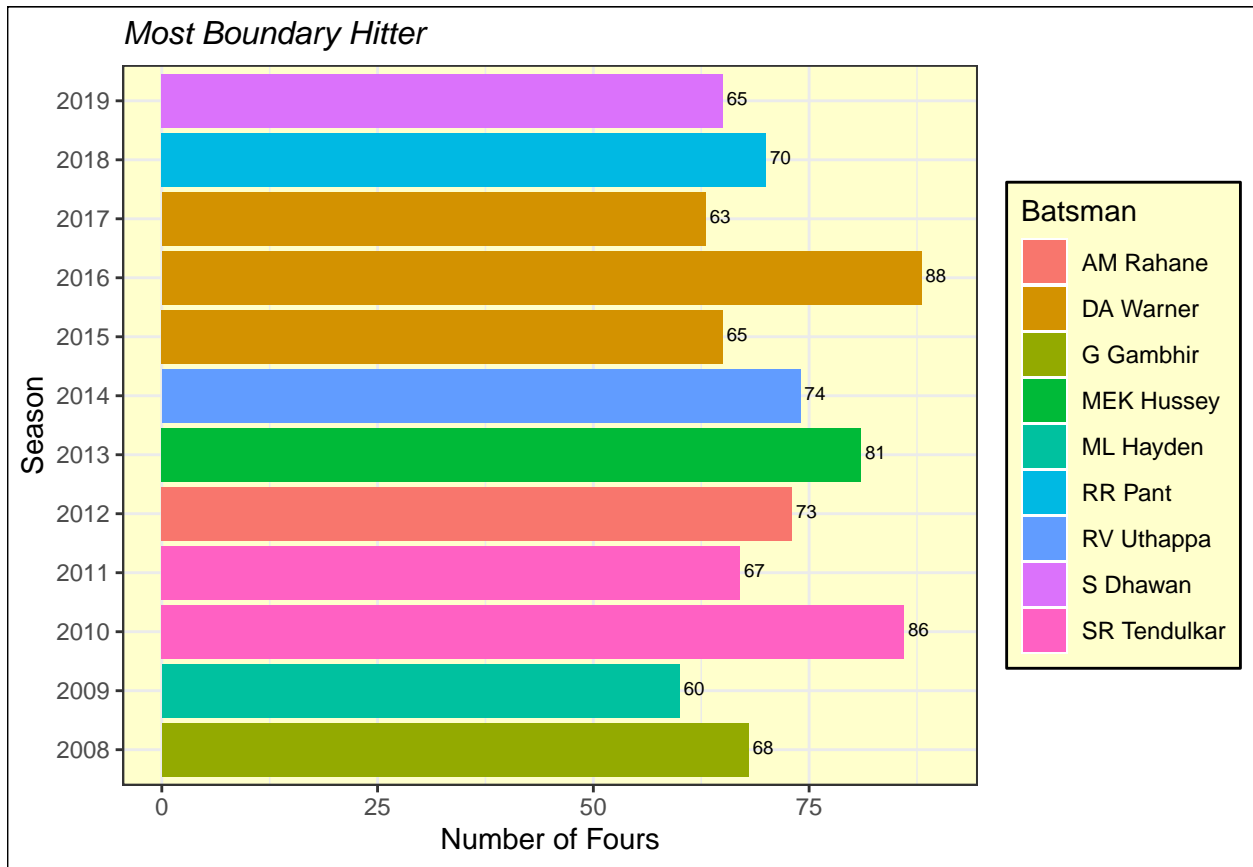
- *Comment:* Among all seasons, Dwayne Bravo has been the leading wicket taker in a single season in IPL-2013 taking a total of 32 wickets, followed by Lasith Mailnga (28) in IPL-2011, Imran Tahir (26) in IPL-2019, Bhuvaneshwar Kumar (26) in IPL-2017 and Dwayne Bravo (26) in IPL-2015.

- Most Six Hitters by Season:



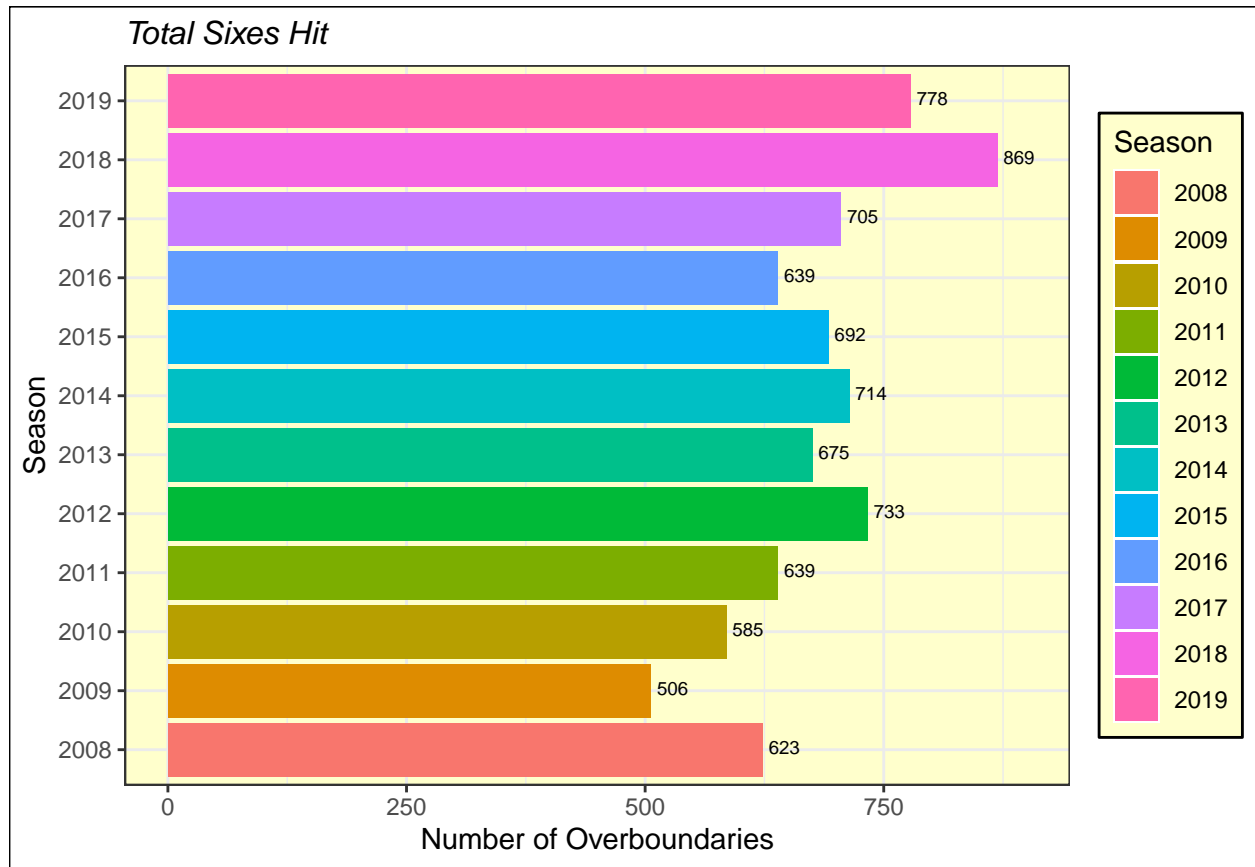
- *Comment:* Among all seasons, Chris Gayle holds the record of hitting the most number of sixes in a single season in IPL-2012 hitting a total of 59 sixes, followed by Andre Russell hitting 51 sixes in IPL-2019. Chris Gayle is also the leading six hitter of three other seasons IPL-2011, IPL-2013 and IPL-2015.

- Most Boundary Hitters by Season:



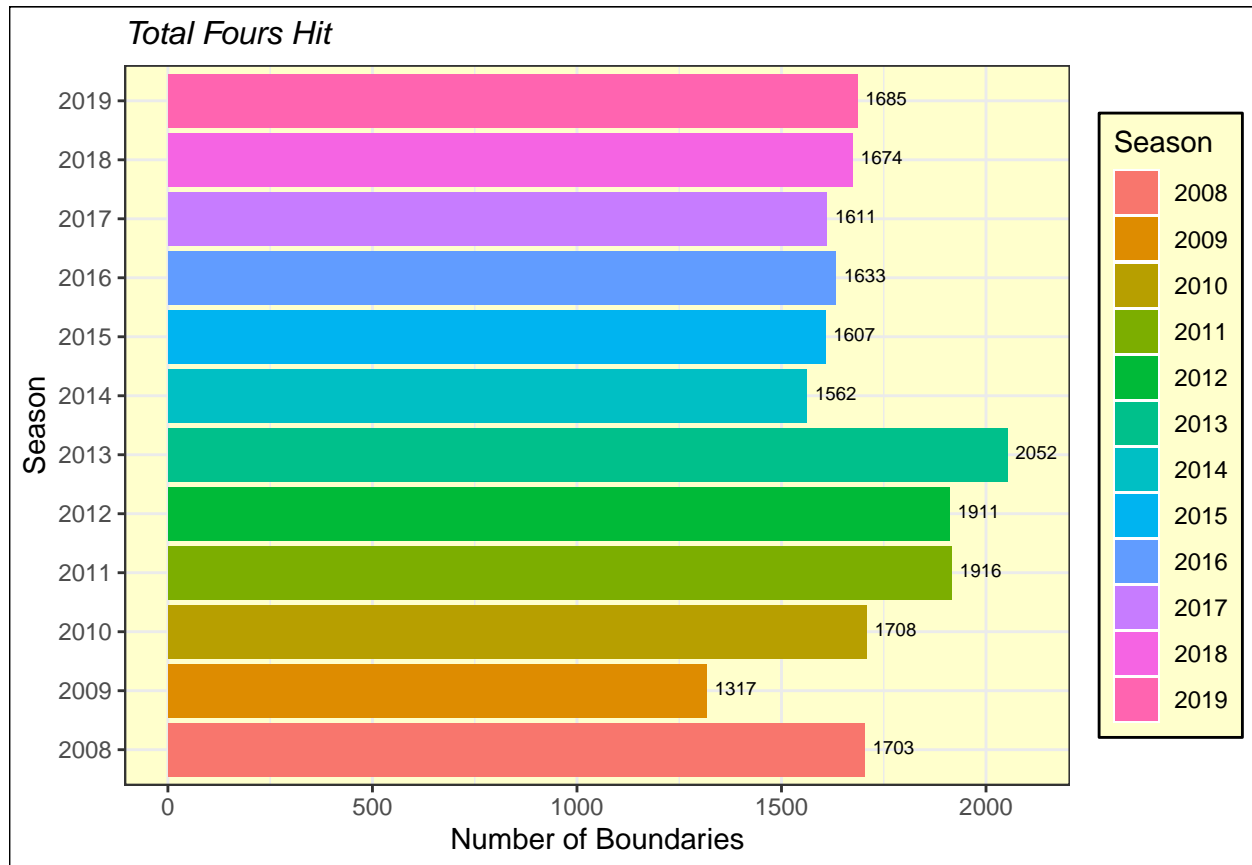
- *Comment:* Among all seasons, David Warner holds the record of being the most boundary hitter in a single season in IPL-2016 hitting a total of 88 boundaries, closely followed by Sachin Tendulkar hitting 86 boundaries in IPL-2010 and Michael Hussey hitting 81 boundaries in IPL-2013.

- Total Sixes Hit, by Season:



- *Comment:* IPL-2018 has seen the most number of overboundaries amounting to 869, followed by IPL-2019 (778) and IPL-2012 (733).

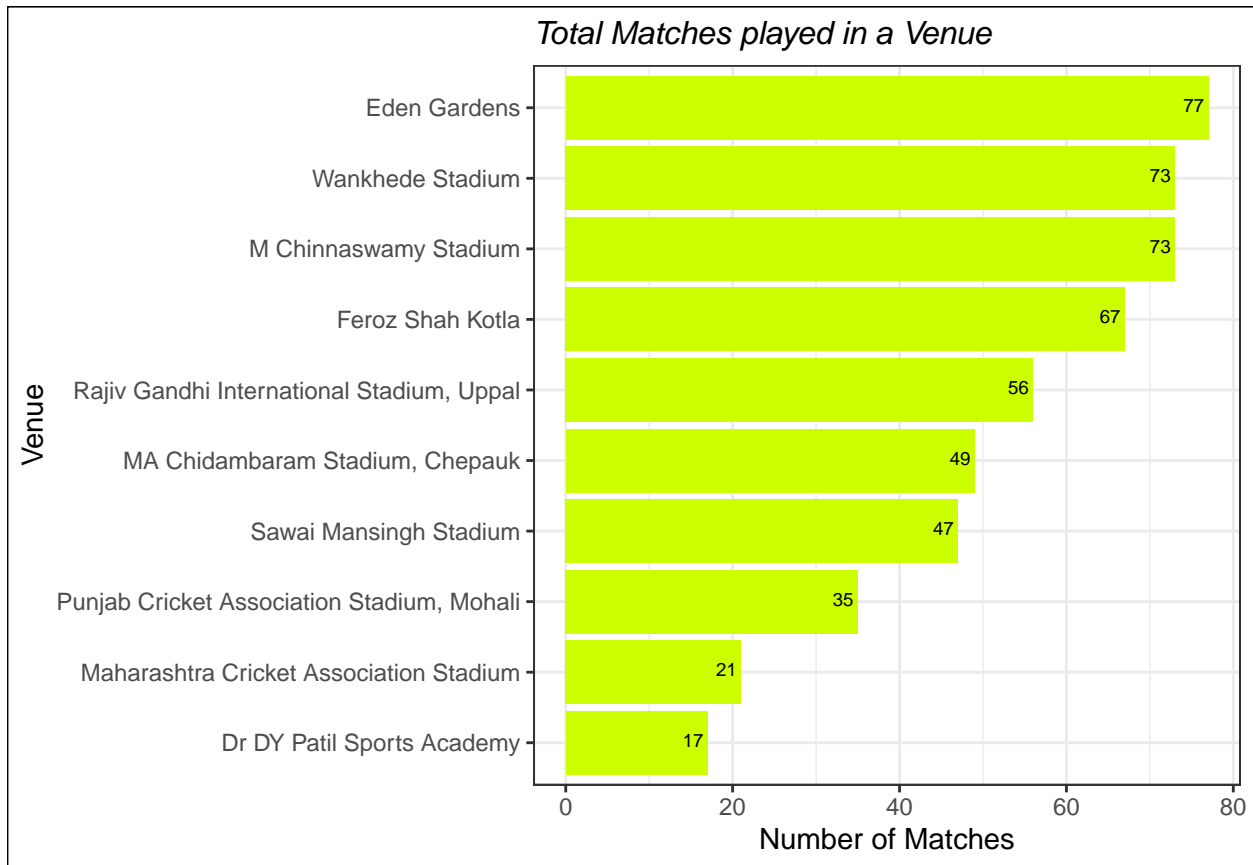
- Total Boundaries Hit, by Season:



- *Comment:* IPL-2013 has seen the most number of boundaries numbering up to 2052, followed by IPL-2011 (1916) and IPL-2012 (1911).

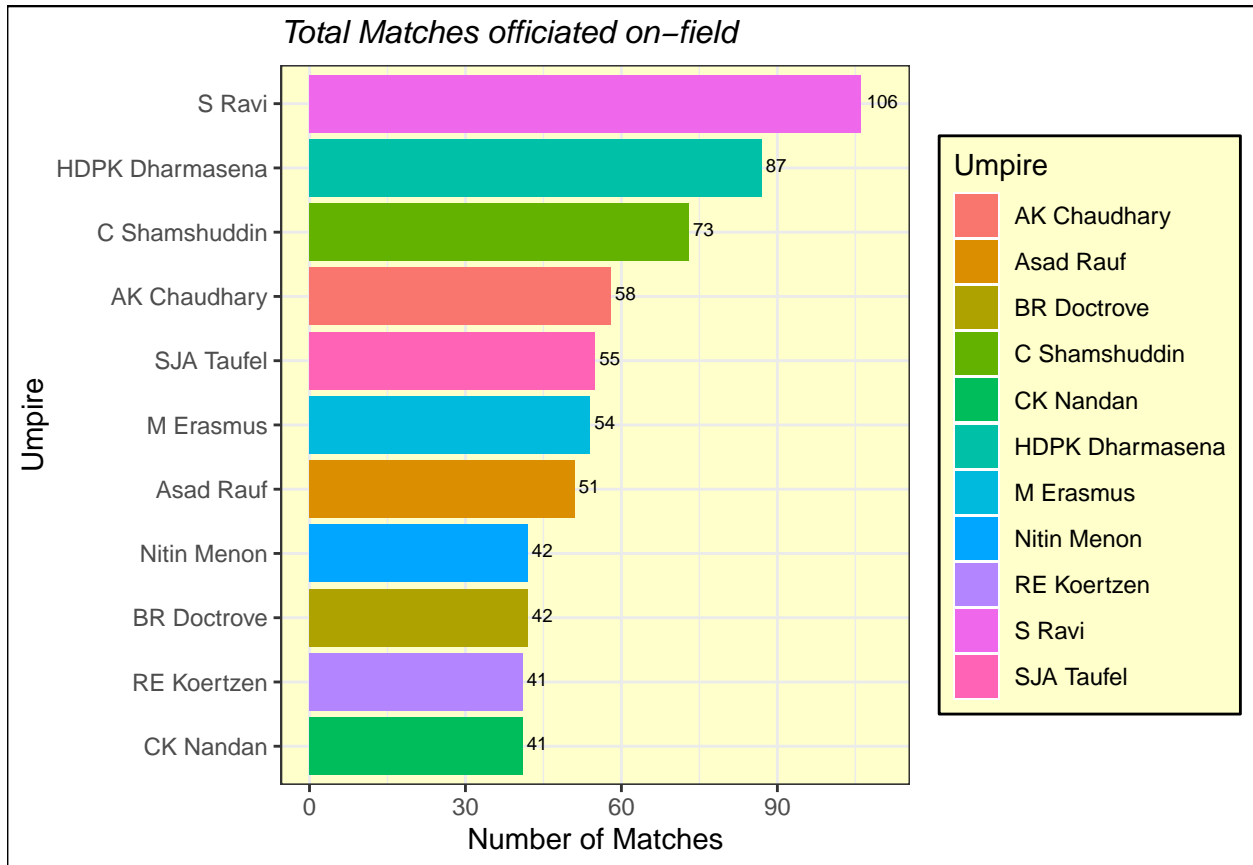
Others

- Top 10 Venues with most IPL Matches Played:



- *Comment:* Highest number of matches were played in Eden Gardens Cricket Stadium (77) in Kolkata, followed by Wankhede Stadium (73) in Mumbai and M Chinnaswamy Stadium (73) in Bangalore.

- Top 10 Umpires who officiated most number of Matches on-field:



- *Comment:* S Ravi has officiated the most number of 106 IPL matches, followed by Dharmasena (87) and Shamsuddin (73).

Conclusion

We have successfully performed an Exploratory Data Analysis by exploring thorough various general, batting and bowling queries grouping them by player, team, season and others, and answering them in a visual way for ease of capturing the data analysis and statistics.