

# Moneyball: A Cricket Analysis

## Team Aces

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# Project Overview

The Project has been divided into two Parts

## ❖ **Part A : Impact of Toss on winning a Game of Cricket**

- Scraping Data from ESPN CricInfo
- Data Cleaning and Preprocessing
- Visualizing and Drawing Conclusions from it

## ❖ **Part B : Selecting World XI for ICC T20I World Cup- 2022**

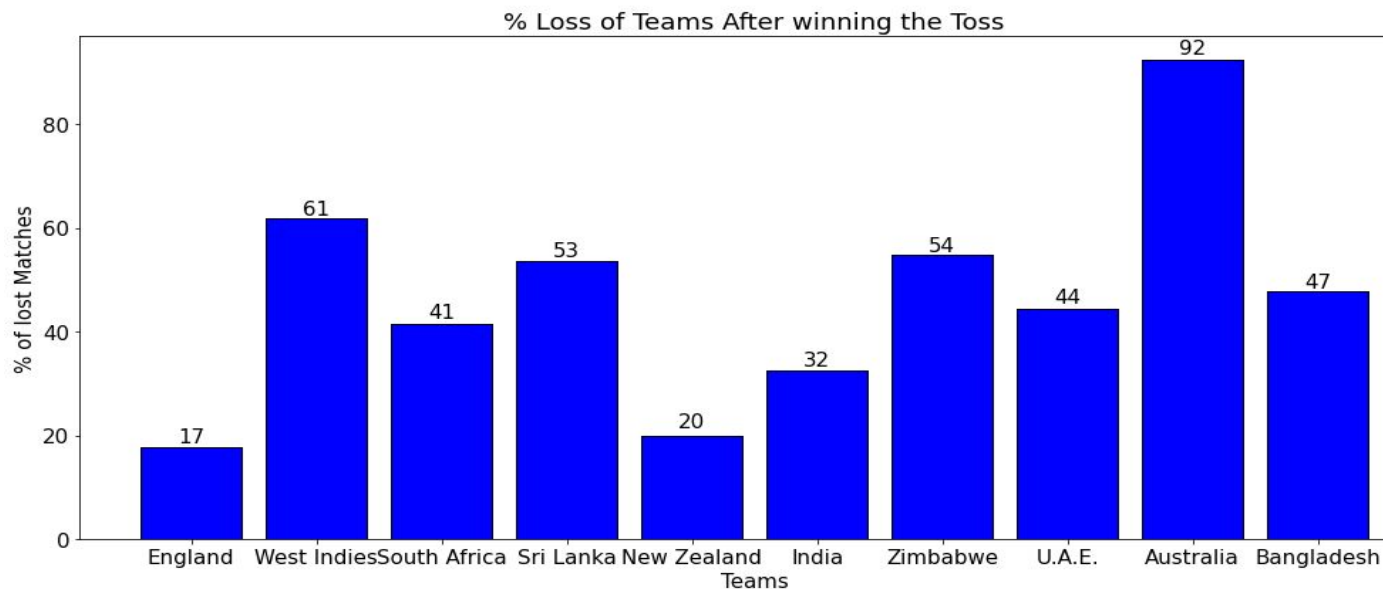
- Using IPL Ball by Ball Dataset from Kaggle
- Cleaning and Preprocessing the Data
- Selecting the Players for each categories by answering the questions that determine certain qualities of the player.

# Part A : Impact of Toss on winning a Game of Cricket

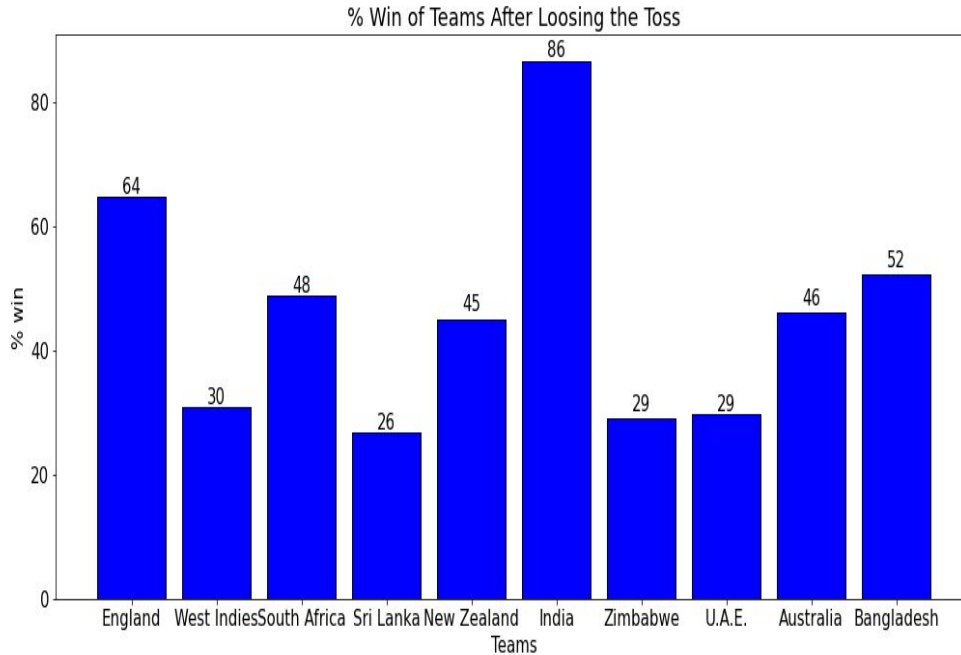
Data source : ESPN CricInfo

Parsed Using BeautifulSoup

	Team	Result	Margin	Toss	Bat	Opposition	Ground	Date	Toss_winner	Match_winner
0	Australia	1	92 runs	1	1st	Pakistan	Brisbane	13 Jan 2017	Australia	Australia
1	Australia	0	6 wickets	1	1st	Pakistan	Melbourne	15 Jan 2017	Australia	Pakistan
2	India	1	3 wickets	1	2nd	England	Pune	15 Jan 2017	India	India
3	Australia	1	7 wickets	1	2nd	Pakistan	Perth	19 Jan 2017	Australia	Australia
4	India	1	15 runs	0	1st	England	Cuttack	19 Jan 2017	England	India



# Observations

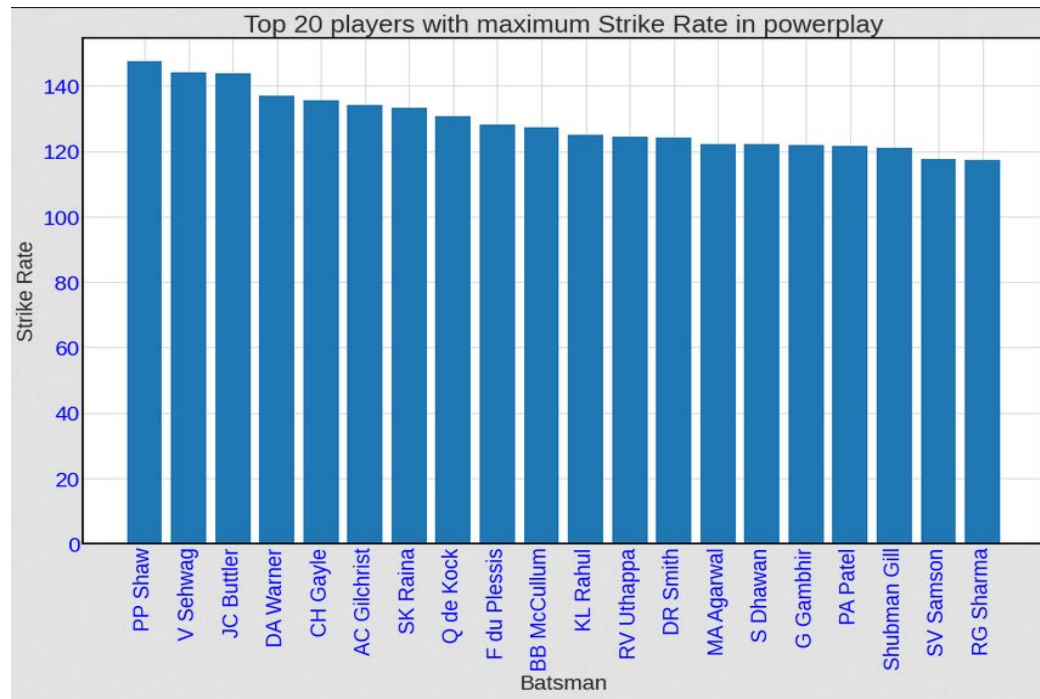


1. Impact of toss varies from Team to Team
2. England, Bangladesh & South Africa uses the toss to their favour
3. Australia, West Indies, Sri Lanka is yet to learn to make use of the toss
4. India outperforms other countries in winning a match even after losing the toss. Its winning records after winning a toss is also quite high. Hence India is good in using toss to its advantage

## ❖ Part B : Selecting World XI for ICC T20I World Cup- 2022

### Best Openers:

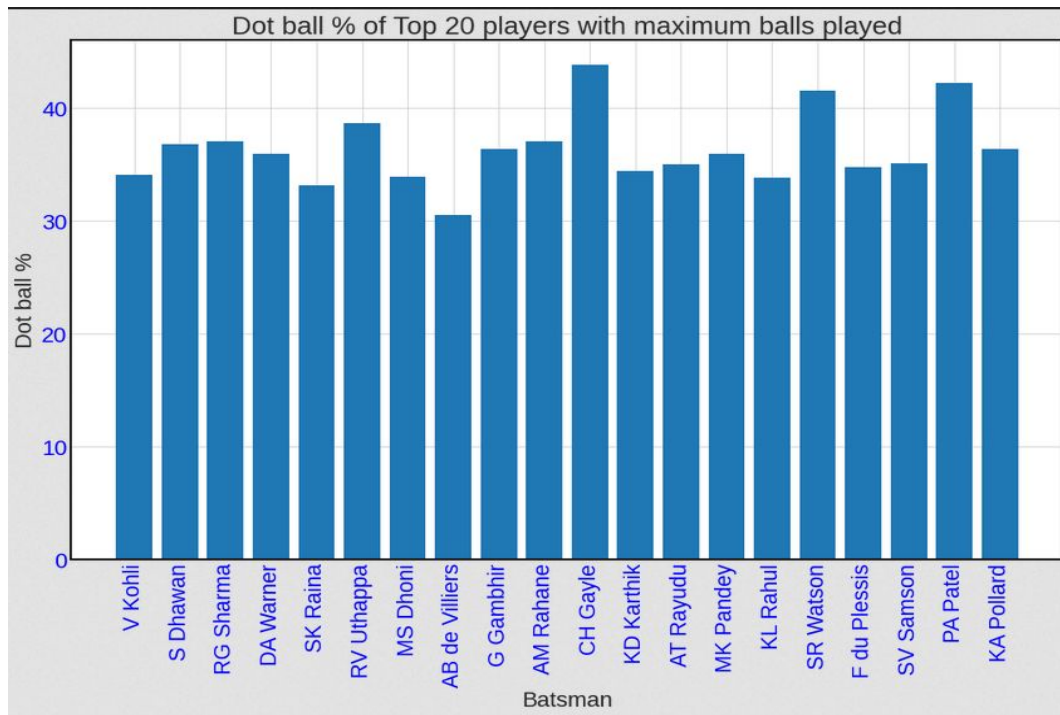
- The major quality we require for the opening batsmen is “Aggression” in batting, i.e with good Strike rate.
- Comparing the number of balls played and strike rate in powerplay of all the players, we selected **JC Butler** and **DA Warner**.



## ❖ Part B : Selecting World XI for ICC T20I World Cup- 2022

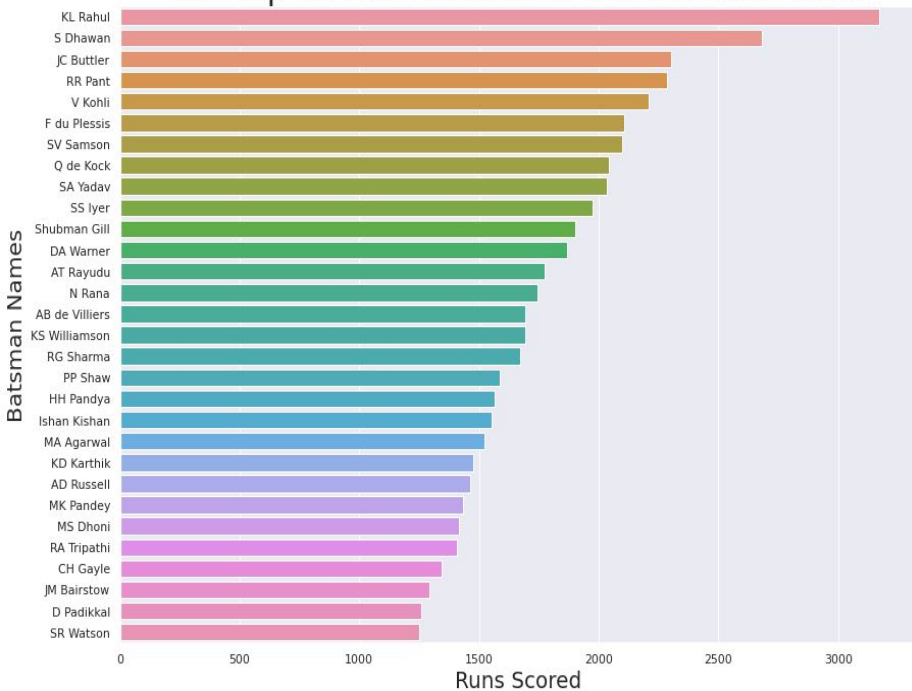
### Best Anchor Batsmen:

- For the third top order batsman, we need 1 experienced player who is an anchor batsman and also has a good strike rate.
- Comparing the number of balls played , dot ball % and strike rate of all the players, **Virat Kohli** was the best choice for the anchor batsman.

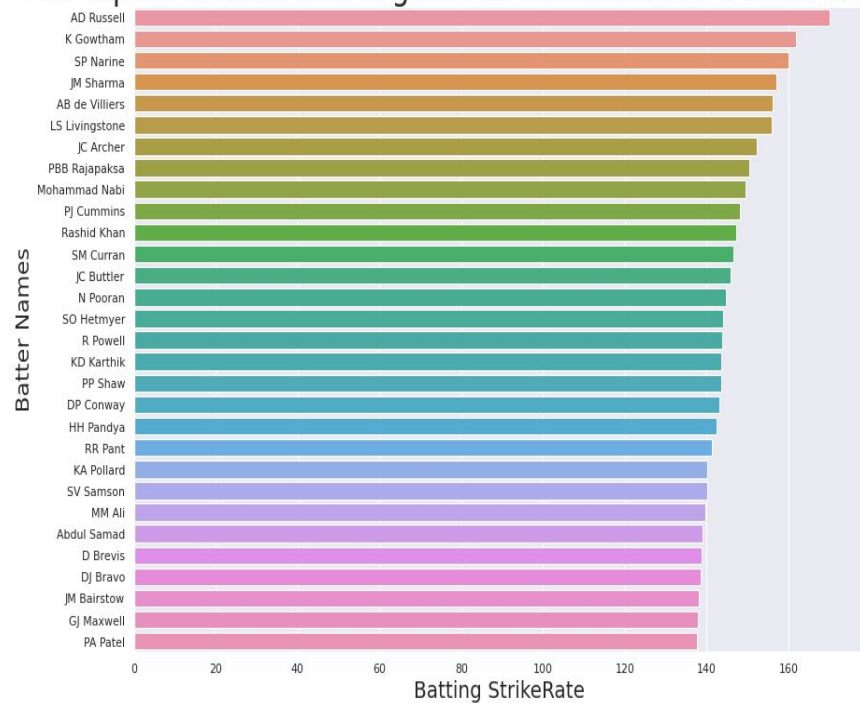


# Middle order Players

## The Top 30 Run scorers for the IPL 2018-2022



## The Top 30 Batters with regards to StrikeRate for the IPL 2018-2022



# Ideal Middle Order **T20** batsman

1. Have a healthy **average** as well as **Strike Rate**.
2. Have high Strike Rate in death Overs.
3. If he does bowling it is an advantage.

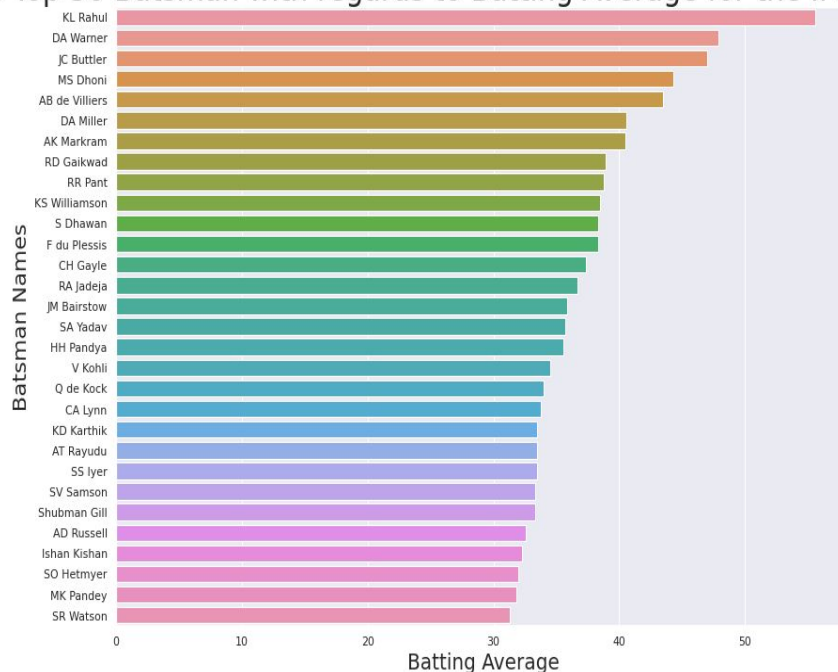
Players found out fit for this Role -

KL Rahul

DA Miller

AD Russell

The Top 30 Batsman with regards to Batting Average for the IPL 2018-2022





# Who are the Best Bowlers?



# Who was the Highest Wicket-Taker in IPL between 18-22?

**Name: Jasprit Bumrah**

**Wickets Taken: 102**

**Matches Played: 73**

**Name: K Rabada**

**Wickets Taken: 96**

**Matches Played: 57**



# METRICS to be considered

$$\text{Economy Rate} = \frac{\text{Runs Conceded}}{\text{Overs Bowled}}$$

$$\text{Bowling average} = \frac{\text{Runs conceded}}{\text{Wickets taken}}$$

$$\text{Bowling Strike-rate} = \frac{\text{Balls Bowled}}{\text{Wickets taken}}$$

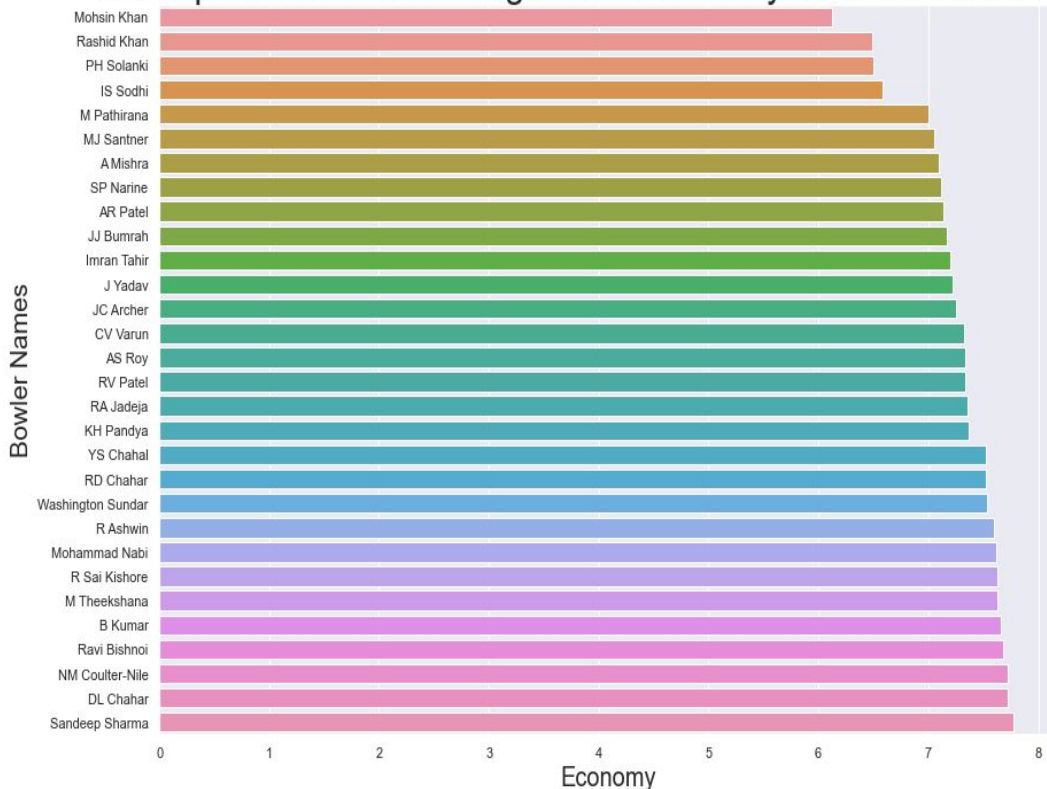
# Bowler with Best Economy Rate

Name: Rashid Khan

Economy Rate: 6.3485



The Top 30 Bowlers with regards to Economy for the IPL 2018-2022



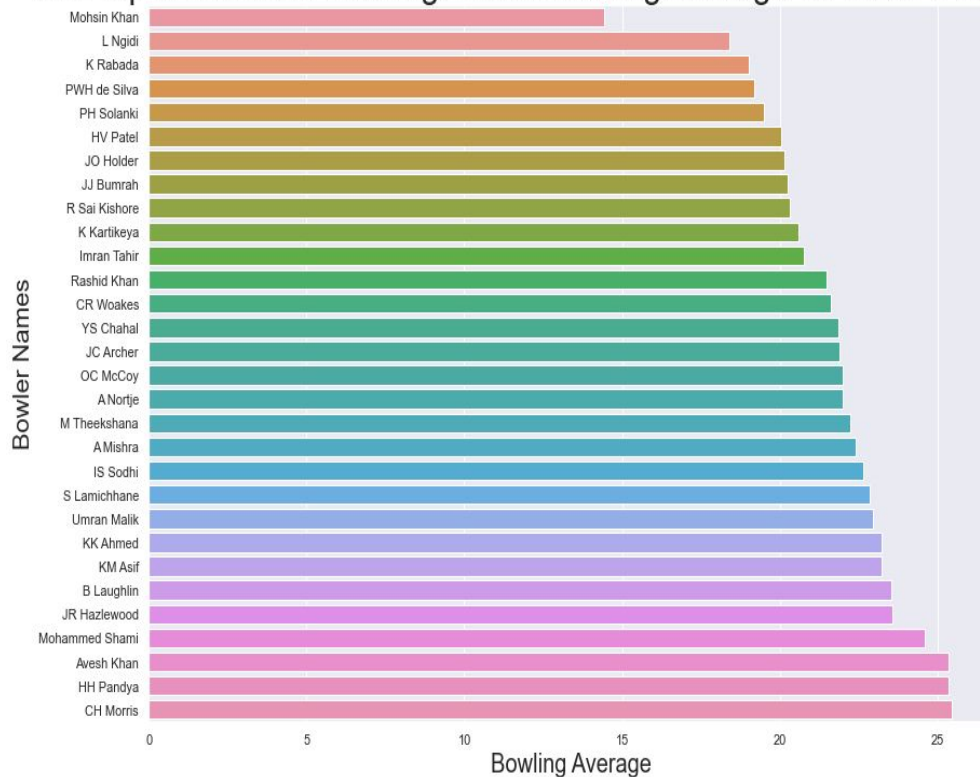
# Bowler with Best Bowling Average

Name: Mohsin Khan

Bowling Average: 14.4286



The Top 30 Bowlers with regards to Bowling Average for the IPL 2018-2022



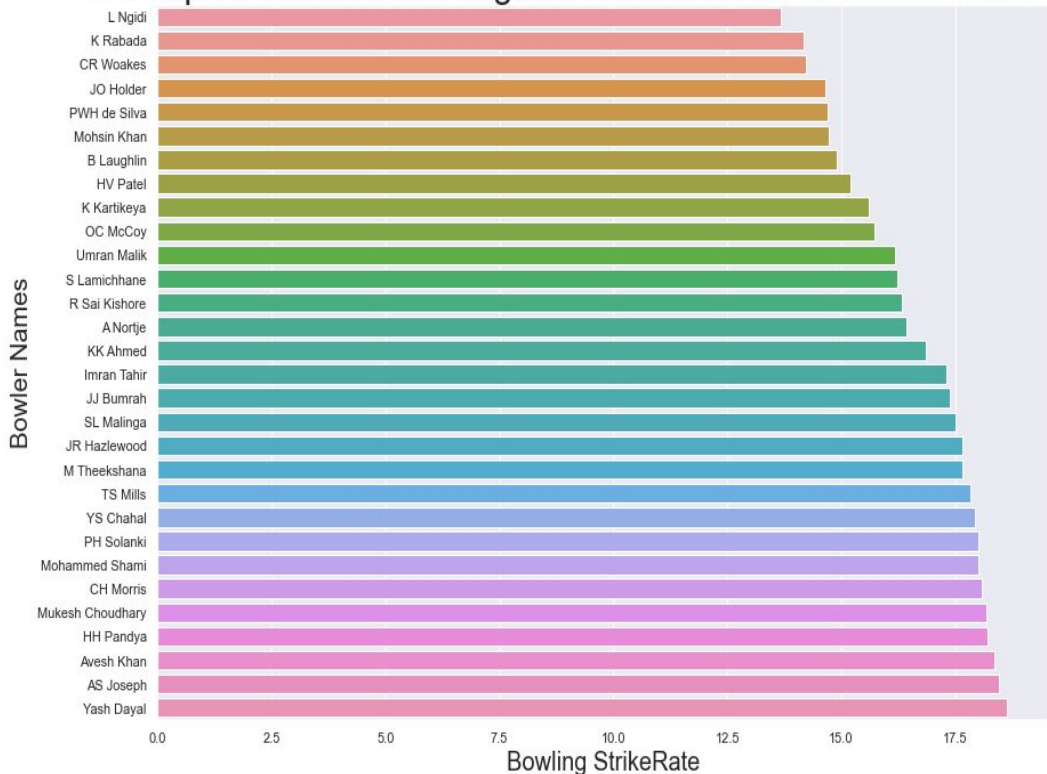
# Bowler with Best Strike Rate

Name: L Ngidi

Strike Rate: 13.68



The Top 30 Bowlers with regards to StrikeRate for the IPL 2018-2022



# LET'S GET MORE SPECIFIC!!!

- **Death Overs**

- The death overs are the last few overs of an innings in the shorter formats of cricket.
- In T20 matches, the last 4/5 overs are commonly referred to as death overs.

- **PowerPlay Overs**

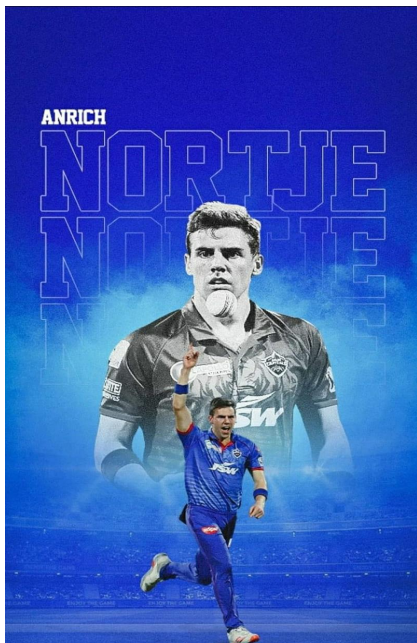
- Powerplay is the term given to a set of overs with special fielding rules during a limited overs cricket match.
- In T20 cricket, the powerplay lasts for the first six overs of each team's innings



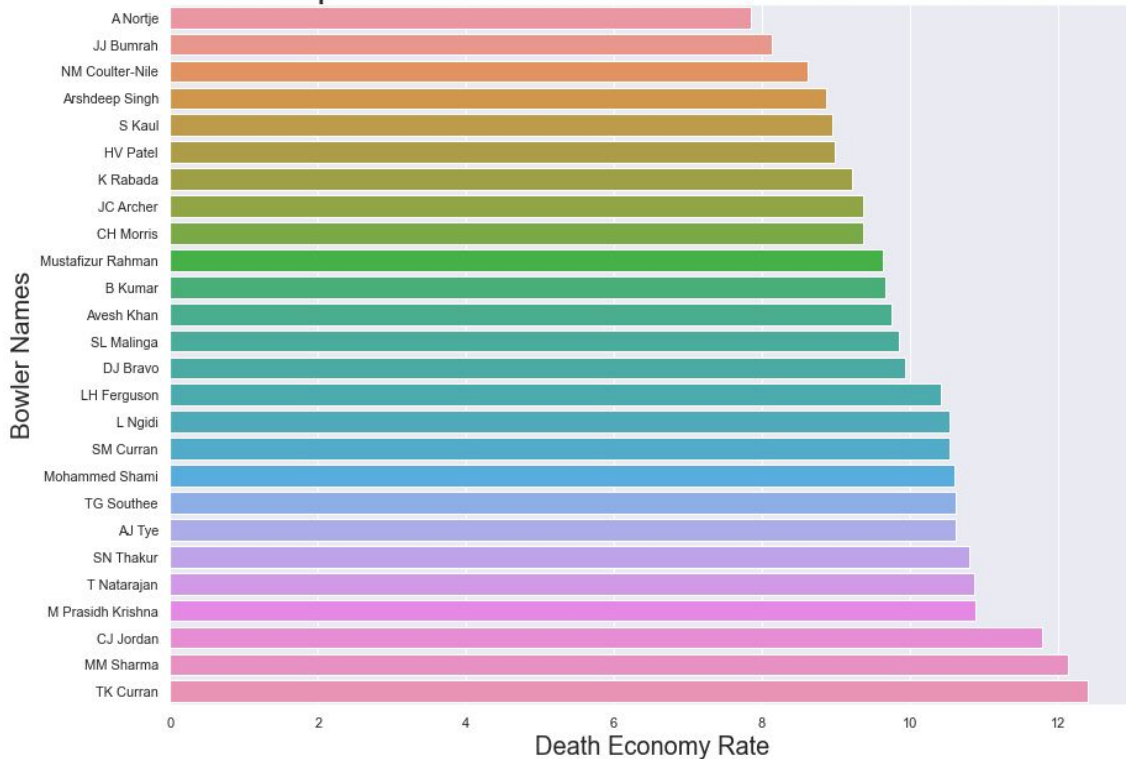
# Death Bowler King

Name: A Nortje

Economy Rate: 7.8529



The Top 30 Death Over Bowlers for the IPL 2018-2022





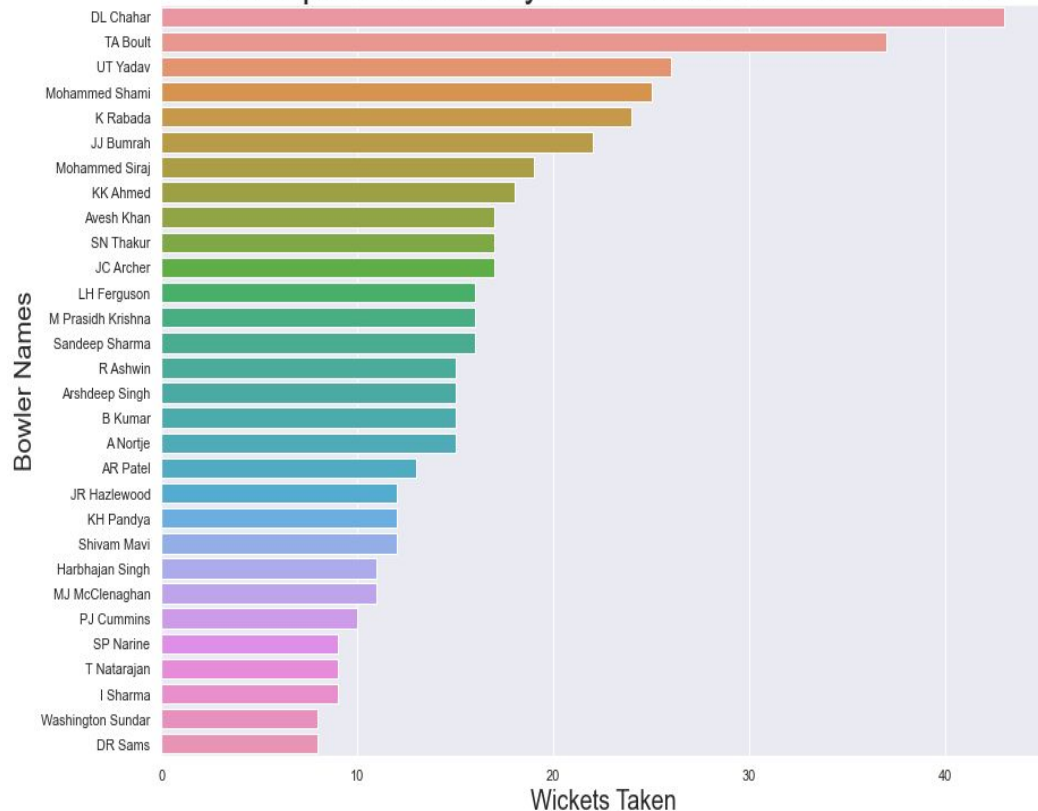
# PowerPlay Wizard

**Name: Deepak Chahar**

**Wickets Taken: 43**

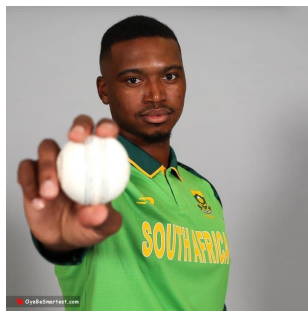


The Top 30 PowerPlay Bowlers for the IPL 2018-2022





# WORLD XI



# Conclusion and Future Work

- Utilizing the power of data exploration and analysis we were able to find out various interesting insights about cricket
- We were able to understand the importance of Toss and how it provides an edge to most of the international teams
- Utilizing IPL Dataset we were able to identify the great players of the game
- We were able to understand that various metrics to be considered to find out the best of players
- We can further improve upon our player selection by providing greater importance to individuals who have performed well recently
- We can also further utilize scraping to find out other information about selected players
- Most bowlers were fast pacers and not spinners, this was due to the lack of role column in the dataset, we can improve and actually find out the players and how they bowl by scraping various cricket websites to gain the required information and filter such players