Sports Analytics (Cricket) Report

Objective:

The primary goal of this data analysis project is to evaluate the fitness and performance of cricket players in preparation for an upcoming T20 game. The analysis will focus on understanding each player's current form and historical performance. The insights gained will aid team management in making informed decisions regarding player selection and strategies for the upcoming game.

Dataset:

The data includes player details such as full name, date of birth, playing style, teams played for, and career statistics including batting and bowling averages, high scores, wickets, and more. The information is provided in JSON format.
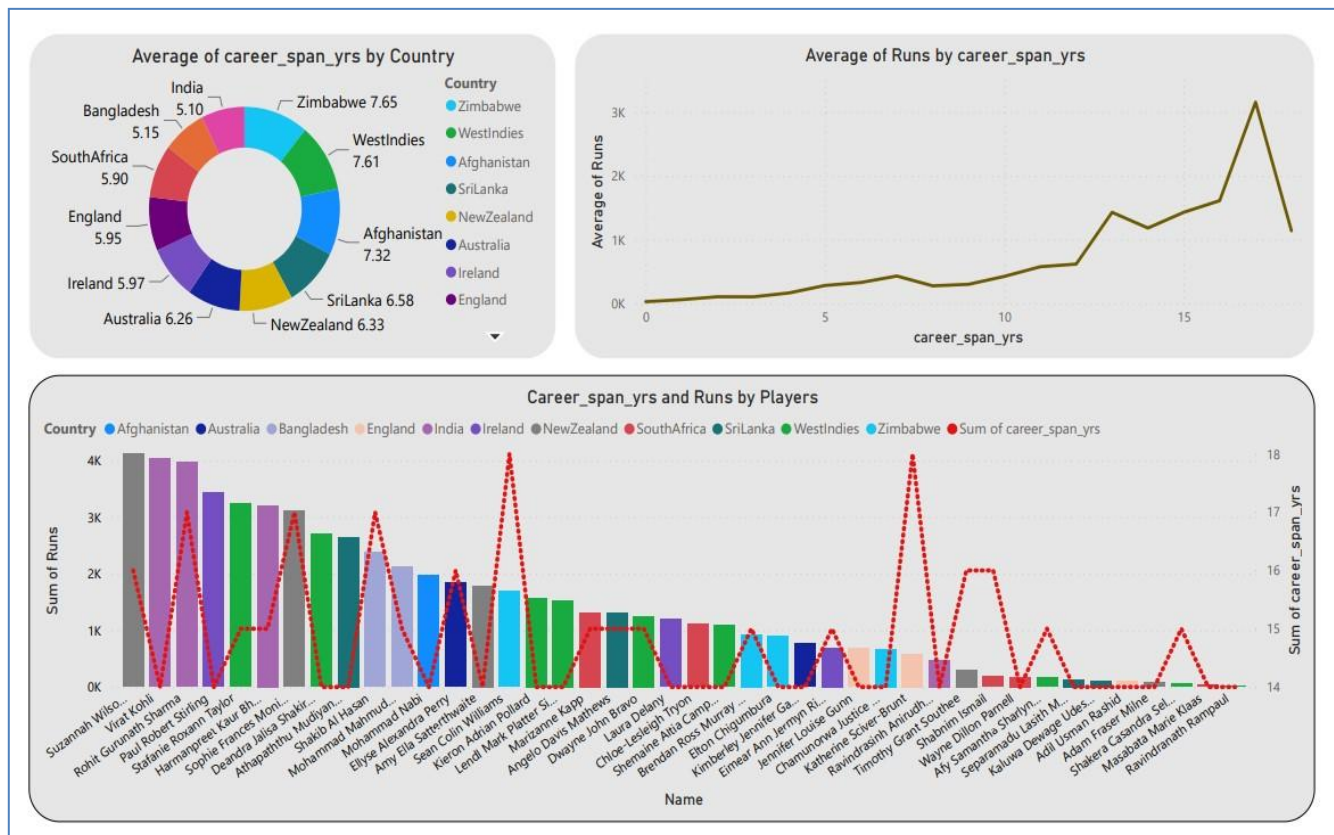
The data is of T20 International. The dataset has players' details from 7 different countries.
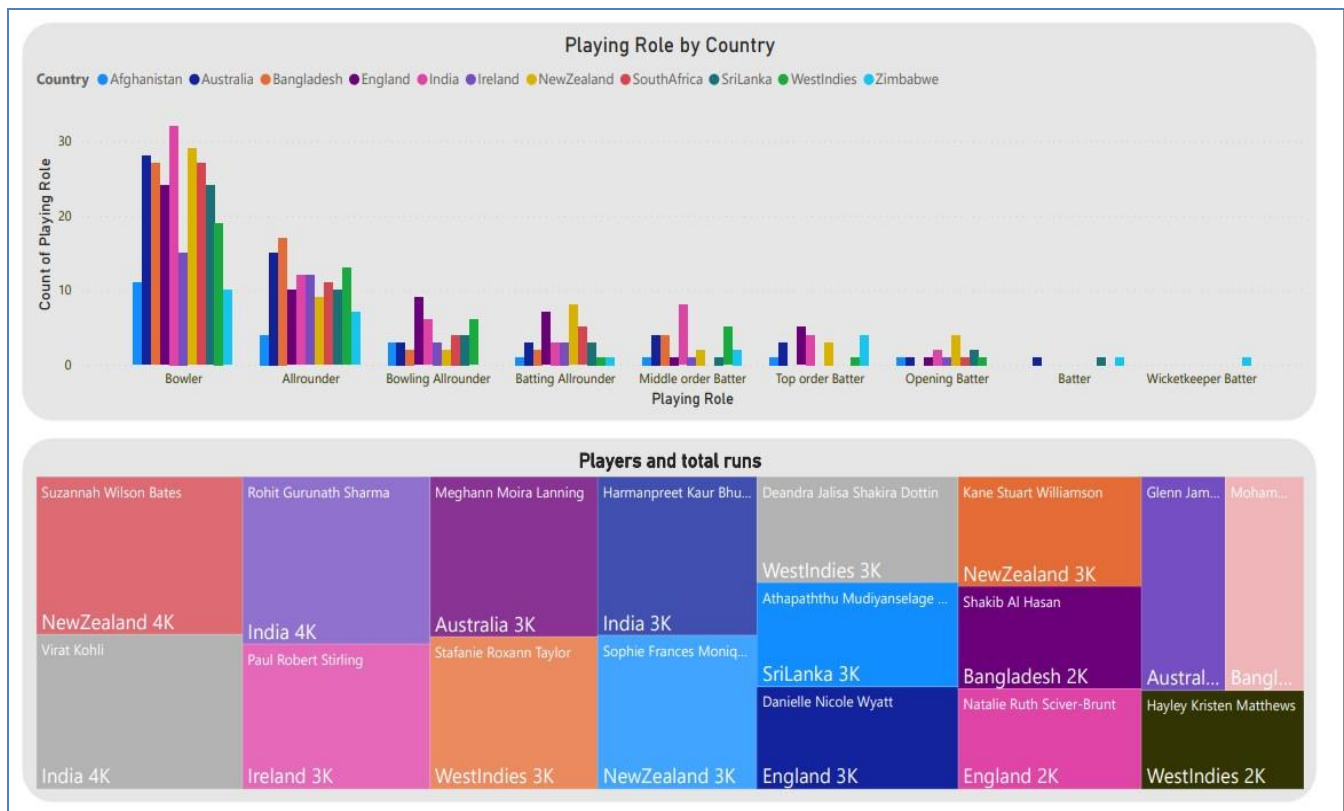
Total Players - 3347

The dataset had too many missing values in the statistics and Top statistics columns. Either the player was not given a chance to bat during a particular match or data was not available. Hence it is meaningless to impute the missing values in the dataset as every player has a unique career statistics. So it is better to drop these null values for further analysis. After dropping the nulls, the data had players around 530 players.

The information of every player in .json format was extracted to make separate dataframes and then concatenated to make a final dataframe for EDA.

EDA Using PowerBI:

Average of career_span_yrs by Country

India 5.10
Bangladesh 5.15
SouthAfrica 5.90
England 5.95
Ireland 5.97
Australia 6.26
NewZealand 6.33
SriLanka 6.58
Afghanistan 7.32
WestIndies 7.61
Zimbabwe 7.65

Country
● Zimbabwe
● WestIndies
● Afghanistan
● SriLanka
● NewZealand
● Australia
● Ireland
● England

Average of Runs by career_span_yrs

Career_span_yrs and Runs by Players

Country ● Afghanistan ● Australia ● Bangladesh ● England ● India ● Ireland ● NewZealand ● SouthAfrica ● SriLanka ● WestIndies ● Zimbabwe ● Sum of career_span_yrs

- The above donut plot shows the average career span of the players in each country. Zimbabwe has the players with an average span of 7.65, followed by West Indies and Afghanistan. India has players with an average span of 5 years.

- The 'career span' and the 'average runs scored' is linearly correlated except for the 18th year which has an average score around 1300 runs.

- The third plot shows the players' career span and the total runs scored throughout their career.

  1. According to the dataset, New Zealand female cricketer Suzzannah Wislon bates has the maximum runs scored of 4118 and has a career span of 16 yrs.

  2. Among men, Virat Kohli has the maximum T20 score of 4037 with a career span of 14 yrs.

  3. Rohit Sharma stands 3rd with total runs of 3974 over a career span of 16 yrs.

- Katherine Sciver-Brunt (England) and Sean Colin Williams (Zimbabwe) have a highest career span of 18 years with an average score of around 1300 runs.

- Among the top scorers, West Indies has 6 players, followed by India with 4 players.

- Even though some of the players have a span of more than 15 years, they have total runs lesser than 1000, and the reason is most of them are bowlers.

Playing Role by Country

Country: Afghanistan, Australia, Bangladesh, England, India, Ireland, NewZealand, SouthAfrica, SriLanka, WestIndies, Zimbabwe

Players and total runs

- The first plot shows the Playing roles of the players per country.

- Bowlers - India, New Zealand, Ireland, South Africa

- All Rounder - Bangladesh, Australia, West Indies, India, Ireland

- Bowling All Rounder - England, India, West Indies

- Batting All Rounder – New Zealand, England, South Africa

- Middle order Batter – India, West Indies, Australia, South Africa

- The second plot shows the Top 15 players by their total scores and country.

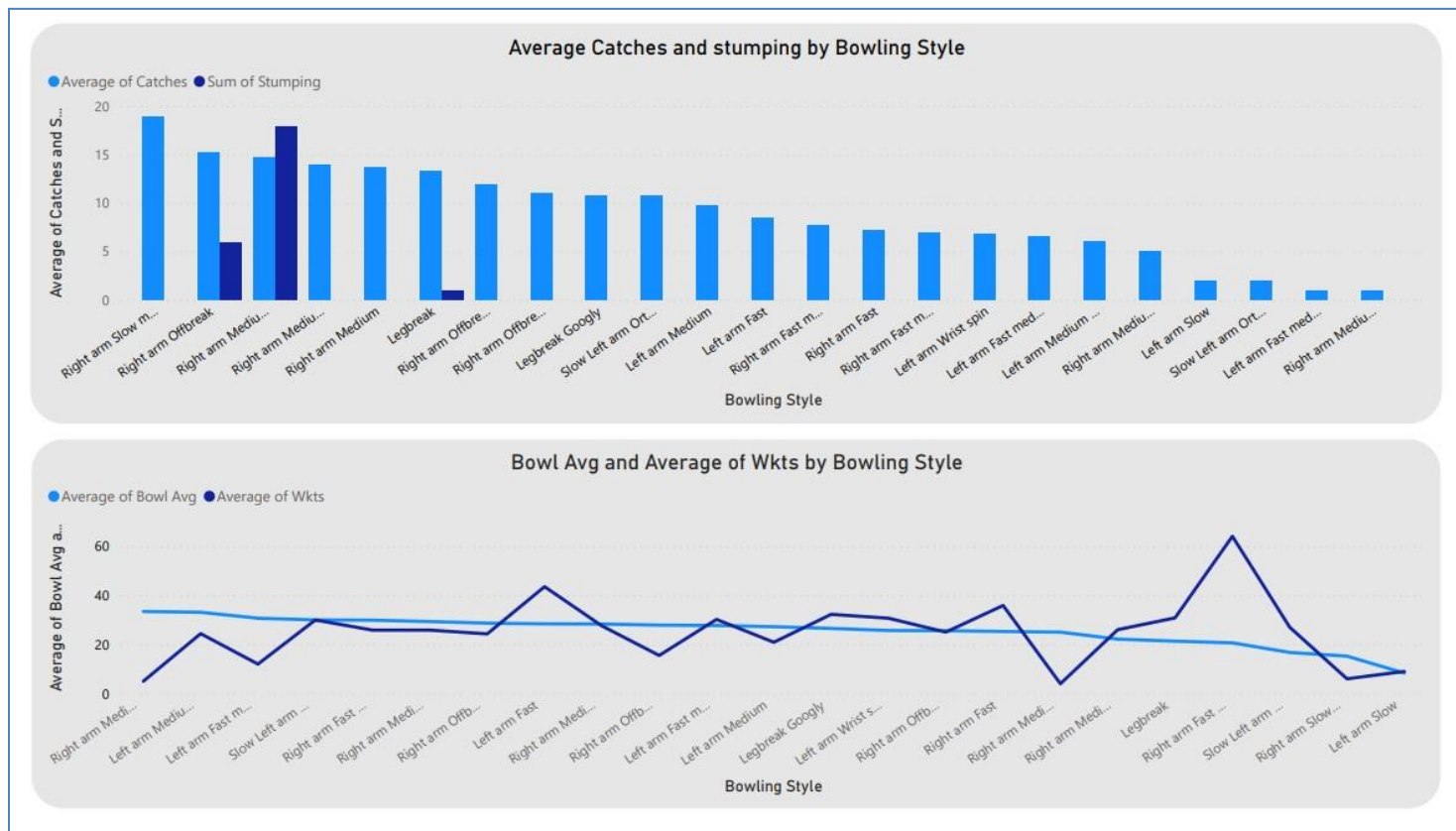**Players vs High Score and Batting Style**

- The first plot shows the highest score, scored by a player. About 81% of the high scorers are Right hand batmen and 19% are left handed. All the top 10 scorers have career span of 7 years and above.

- The details of the top 10 scorers and the number of centuries in T20Is are as follows:

  1. Glen Maxwell (Australia) – 145 (5 100s) – Not Out

  2. Megann Moira Lanning(Australian Female) – 133 (2 100s) – Not out

  3. Hayley Kristen Mathews(West Indies Female) – 132 (2 100s) -Out

  4. Danniel Nicole wyatt(England Female) – 124 (2 100s) -Out

  5. Kevin Joseph O'Brien(Ireland) -124 (1 100) - Out

  6. Suzannah Wilson Bates(New Zealand Female)-124 (1 100) –Not out

  7. Virat Kohli(India) -122 (1 100) –Not Out

  8. Rohit Sharma(India)-121 (5 100s) - Not Out

  9. Paul Stirling (Ireland) -115 (1 100)- Not Out

  10. Attapattu (Srilanka) – 113 (1 100) –Out

- Among the top scores there are 4 female cricketers who have equally performed well and there are 3 females among the Top 5 players.

- Anisa Mohamed (West Indies) has 3 times 5W in an innings, and all other players have 2 times 5w in an innings.

- 2 players from India, South Africa, Bangladesh, Srilanka and 1 from Australia and New Zealand

Players Bat Avg and Bowl Avg

Average of BBI_runs, Average of BBI_wickets
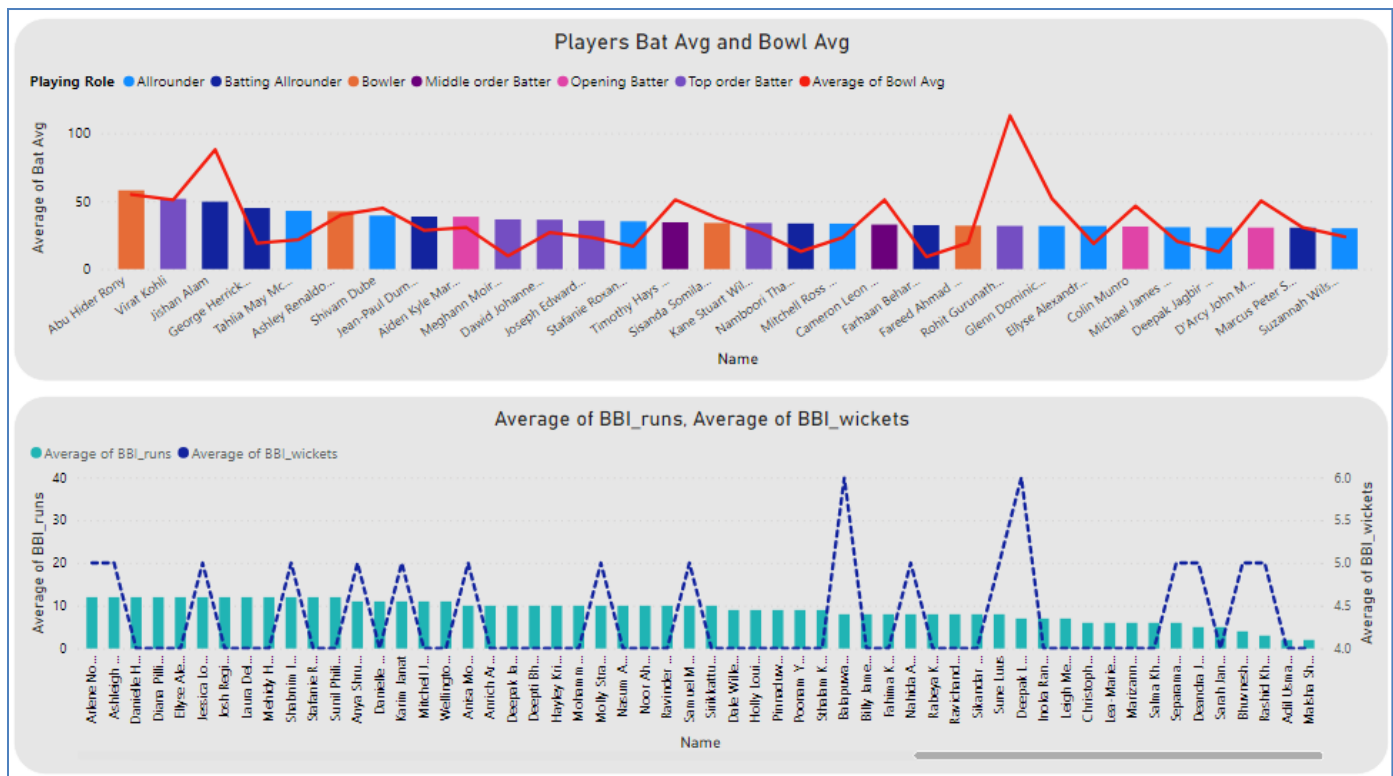
- Abu Haider Rony (Bangladesh), a Bowler, has the highest batting average of 58 and bowling average of 55.

- Virat Kohli has a batting average of 51.75, but has the second highest bowling average of 51. The lower the bowling average is, the better the bowler is performing.

- Hence among these players, Farhan Beherdien (South Africa), a batting All Rounder, has the best bowling average of just 9.00 followed by Megann Moira Lanning (Australian female), with 9.75.

- Rohit Sharma, A top Order batter, has the highest bowling average of 113.

- Indian players like Deepak Hooda(12.66), Tilar varma(13.00) with low bowling average can be given more chances to bowl than the Top order batters.

- The BBI gives the best figures achieved by a bowler in a specific innings.

- Deepak Chahar(India) has the BBI of 6/7 and Ajantha Mendis(Sri Lanka) with 6/8
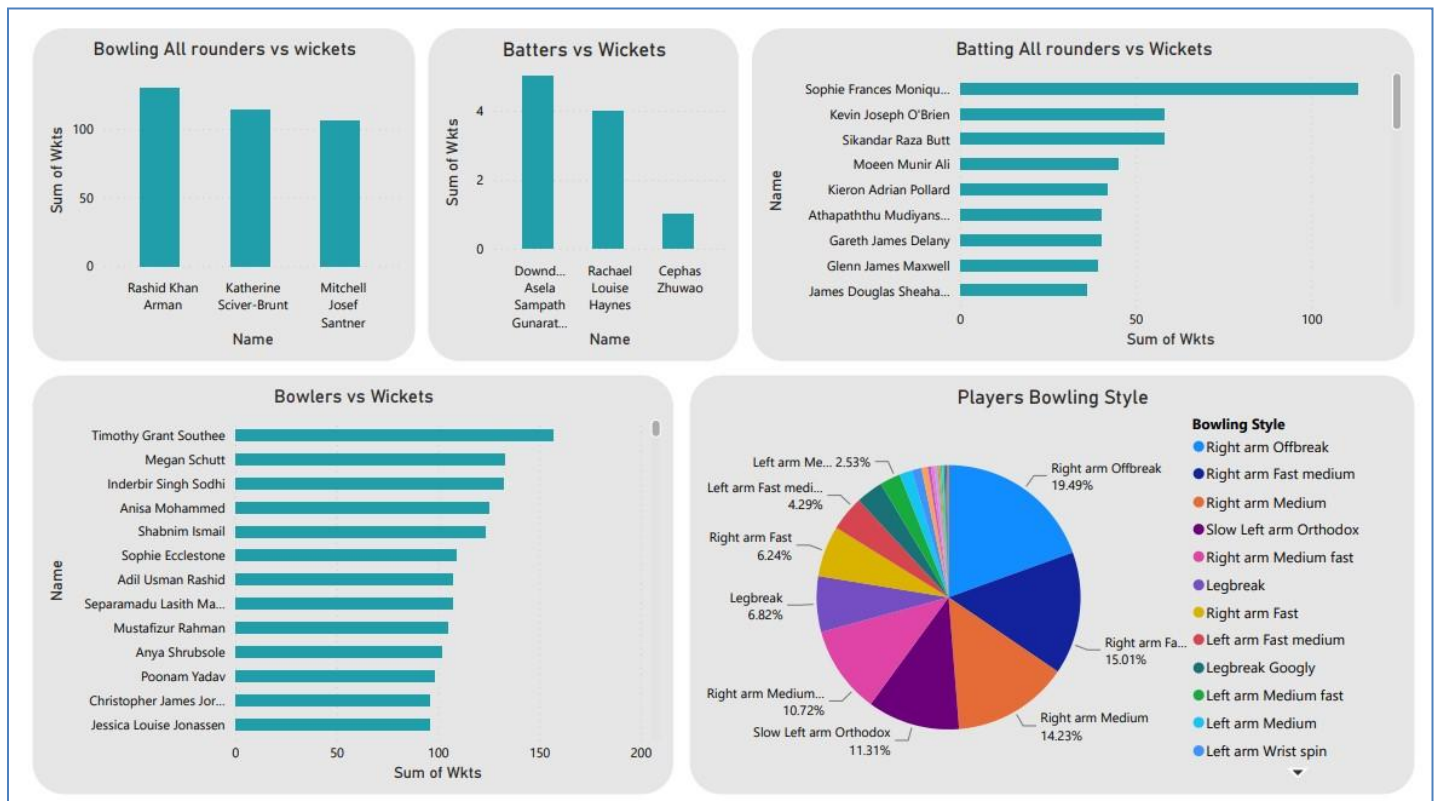
- The above dashboard shows the bowling summary of the players with different playing roles.

- Bowling All rounders - Rashid khan(Afghanistan)- 130 Wkts, Katherine Brunt(England)-114, Mitchell Santner(New Zealand)- 106

- Batters – Sampath(Srilanka)-5,Raechel Hayenes(Australia)-4, Cephas(Zimbabwe)-1 (The batters relatively have a very low wickets summary)

- Batting All rounders – Sophie Frances (New Zealand)-113 wkts ,while other players have wickets ranging between 35 and 60.

- Bowlers – Timothy (NZ)(Right Arm Fast medium)-157 wkts and Poonam Yadav (Female) is the only player from India among the top 10, with 98 wickets.

- The pie chart shows the percentage of bowlers in every bowling style. The maximum of the bowlers are from the categories , Right Arm Fast Medium (29%) and Right Arm offbreak (19.49%).

- To be noted more number of wickets is taken by the Right arm fast medium players. There are 3 players among the top 10 players by wickets.

Average Catches and stumping by Bowling Style

● Average of Catches ● Sum of Stumping

Bowl Avg and Average of Wkts by Bowling Style

● Average of Bowl Avg ● Average of Wkts

- The above chart shows the Average number of catches and Stumping by Bowling style.

- Right Arm slow medium – 19(catches)

- Right Arm fast medium -18(stumping)

- Left Arm Slow category has the best bowling average of 8.33

- Right arm fast medium has the highest wickets of 64.00
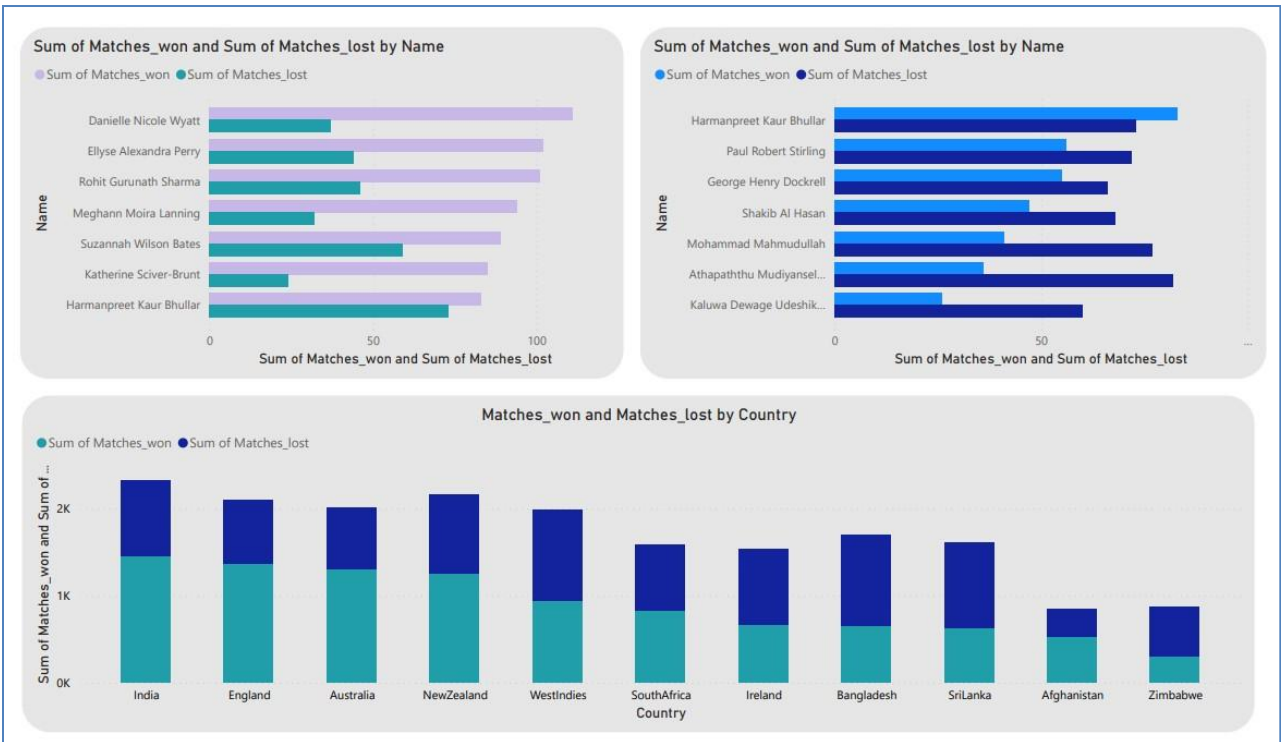
- The plot shows maximum number of wins and losses by player. Danielle Wyatt(England)-111 won,37 lost

- Rohit Sharma stands 3rd with 101 wins and 46 lost

- Attapattu (Sri Lanka) has most number of lost matches with 82 lost, 36 won.

- From India Harmanpreet has 83 wins and 73 losses

- The country with most number of wins is India with 1463 wins and 867 lost

- The country with more number of losses is West Indies with 1049 and 945 wins.

Conclusion

- From the above statistics it can be said India has been consistently performing well in T20 international.

- Indian players can be seen among all sorts of top categories.

- From the above data it is clear that Female cricketers are performing exceptionally well like men, as most of the categories have females as top players.

- Despite Age or a long career span, players have been performing well. This shows the fitness of the players. When the players are fit, it helps them to avoid injuries and also increases the endurance which naturally improves the overall game. And hence players can be selected based on their previous performances than considering their career span. Yet new comers also should be given equal opportunities.

- Best Bowlers with good bowling average should be given more chance to bowl, than the batters with worst bowling averages in order to improve the overall performance of the Team.