Data Analytics Project

T20-Cricket_Team-Analysis

Problem Statement

In This project we created a Power BI Dashboard which helps to review and compare performances of all the players in T20 Men's Cricket World Cup tournament. This dashboard also enables us to select the best 11 of the tournament based on their performance based on defined selection criteria which is included as a part of problem statement.

▸

Data Transformation

Performed initial data cleaning after scrapping data such as player name correction, handle missing value, match id linking etc. using Pandas. Transformed the final data for dashboard using Power Query of Power BI.

T20 World Cup Cricket Data Pre Processing

```
In [2]:  #import necessary libraries
         import pandas as pd
         import json
```

(1) Process Match Results

```
In [3]:  with open('C:/Users/HP/Desktop/t20_wc_match_results.json') as f:
             data = json.load(f)

         df_match = pd.DataFrame(data[0]['matchSummary'])
         df_match.head()
```

Out[3]:

	team1	team2	winner	margin	ground	matchDate	scorecard
0	Namibia	Sri Lanka	Namibia	55 runs	Geelong	Oct 16, 2022	T20I # 1823
1	Netherlands	U.A.E.	Netherlands	3 wickets	Geelong	Oct 16, 2022	T20I # 1825
2	Scotland	West Indies	Scotland	42 runs	Hobart	Oct 17, 2022	T20I # 1826
3	Ireland	Zimbabwe	Zimbabwe	31 runs	Hobart	Oct 17, 2022	T20I # 1828
4	Namibia	Netherlands	Netherlands	5 wickets	Geelong	Oct 18, 2022	T20I # 1830

```
In [4]:  df_match.shape
```

Data cleaning/transformation in Power Query

Data modelling in Power Pivot
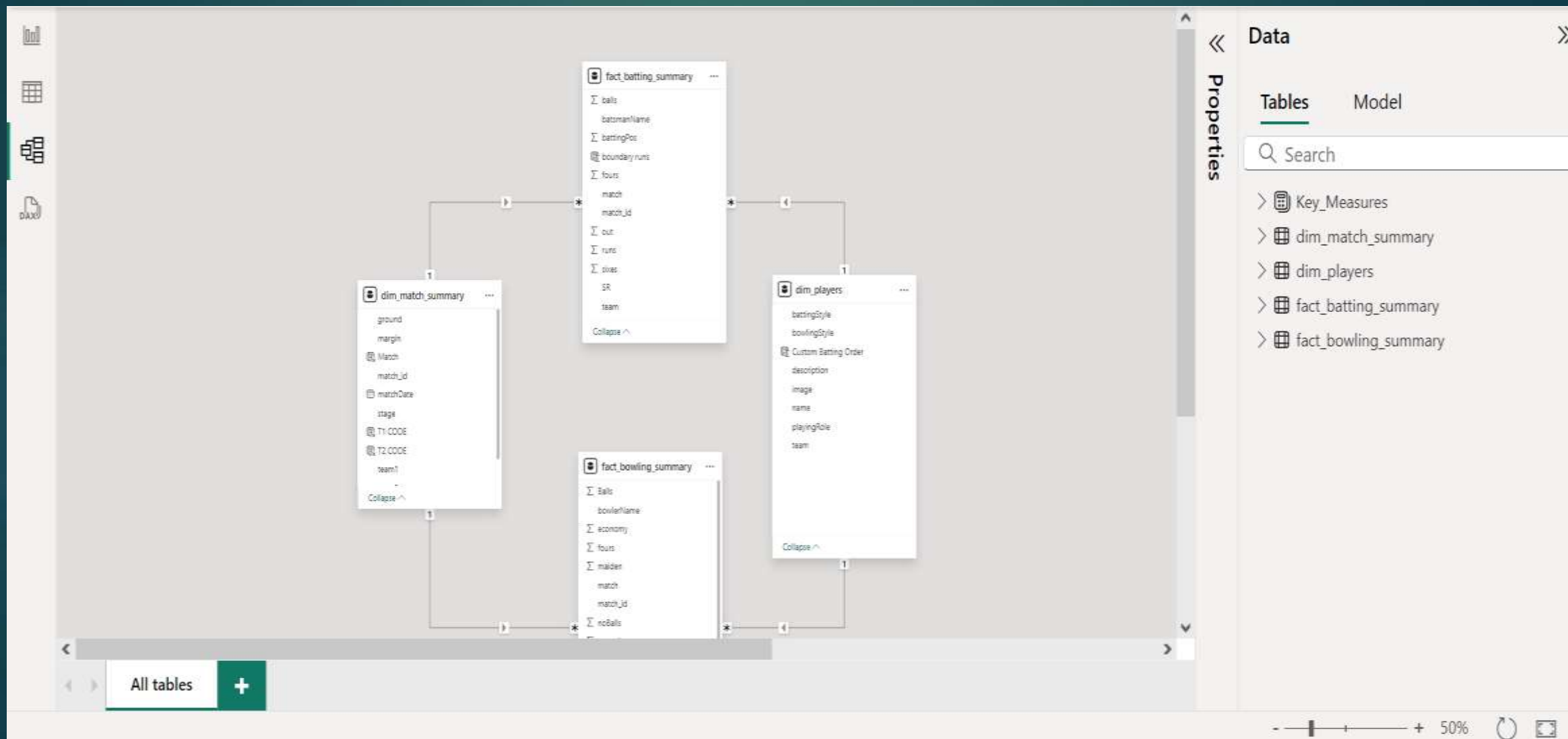
Solution approach

- A few measures were created to calculate the KPIs as shown below:

- Total Runs = SUM(fact_batting_summary[runs])

- Total Innings Batted = COUNT(fact_batting_summary[match_id])

- Batting Avg = DIVIDE([Total Runs],[Total Innings Dismissed],0)

- Total balls faced = SUM(fact_batting_summary[balls])

- Strike rate = DIVIDE([Total Runs],[total balls faced],0)*100

- Batting Position = ROUNDUP(AVERAGE(fact_batting_summary[batting_pos]),0)

- Boundary % = DIVIDE(SUM(fact_batting_summary[Boundary runs]),[Total Runs],0)

- Avg. balls faced = AVERAGE(fact_batting_summary[balls])

- Wickets = SUM(fact_bowling_summary[wickets])

- Balls Bowled = SUM(fact_bowling_summary[balls])

Solution approach

▶ A few measures were created to measure the KPIs as shown below:

▶ Runs Conceded = SUM(fact_bowling_summary[runs])

▶ Economy = DIVIDE([Runs Conceded], ([balls Bowled]/6),0)

▶ Bowling Strike Rate = DIVIDE([balls Bowled], [wickets],0)

▶ Bowling Average = DIVIDE([Runs Conceded],[wickets],0)

▶ Total Innings Bowled = DISTINCTCOUNT(fact_bowling_summary[match_id])

▶ Dot ball % = DIVIDE(SUM(fact_bowling_summary[zeros]), SUM(fact_bowling_summary[balls]),0)

▶ Player Selection = if(ISFILTERED(dim_player[name]),"1","0")

DAX formula

▶ boundary runs = fact_batting_summary[fours]*4 + fact_batting_summary[sixes]*6

▶ Boundary runs = fact_bowling_summary[fours]*4 +fact_bowling_summary[Sixes]*6

Dashboard Openers

Dashboard
Middle Order

Dashboard
Finishers

Power Hitters | Anchors | Finishers | All Rounders | Specialist Fast Bowlers

Finisher / Lower Order Anchor   Qualifier   Super 12

Select Player(s) by clicking the player's name to see their individual or combined strength.

Name	Team	Batting Style	Bowling Style	Innings Batted	Runs	Avg. Balls Faced	Batting Avg	Strike rate	Innings Bowled	Wickets	Economy	Bowling Strike Rate	Maidens
Curtis Campher	Ireland	Right hand Bat	Right arm Medium fast	6	126	12.83	25.20	163.64	4	2	9.25	24.00	0
Glenn Maxwell	Australia	Right hand Bat	Right arm Offbreak	4	118	18.25	39.33	161.64	2	3	6.00	6.33	0
Marcus Stoinis	Australia	Right hand Bat	Right arm Medium	4	126	19.50	42.00	161.54	4	1	9.67	54.00	0
Sikandar Raza	Zimbabwe	Right hand Bat	Right arm Offbreak	8	219	18.50	27.38	147.97	8	10	6.50	14.40	0
Hardik Pandya	India	Right hand Bat	Right arm Medium fast	5	128	19.40	25.60	131.96	6	8	8.11	13.50	0

Batting AVG. — 20.16

Avg. Balls Faced — 13.65

Batting S/R — 117.08

Bowling S/R — 18.43

Curtis Campher
Marcus Stoinis
Glenn Maxwell
Sikandar Raza
Hardik Pandya

Strike rate

Batting Avg

Dashboard
All Rounder

Player Analysis | **Final 11**

Power Hitters | Anchors | Finishers | All Rounders | Specialist Fast Bowlers
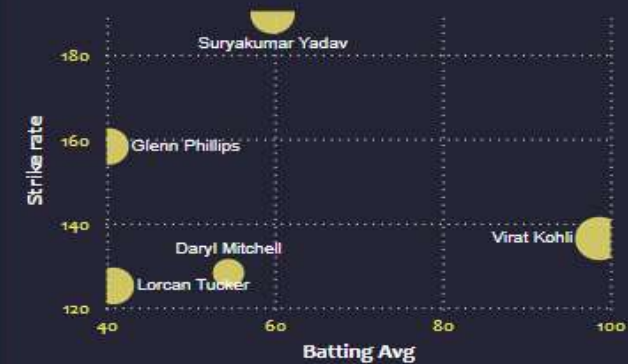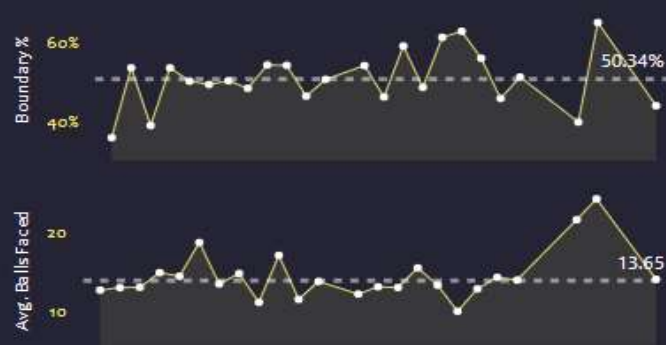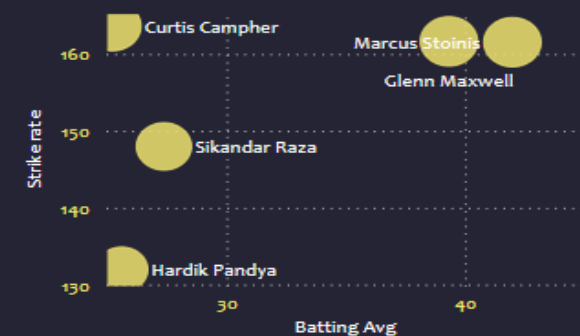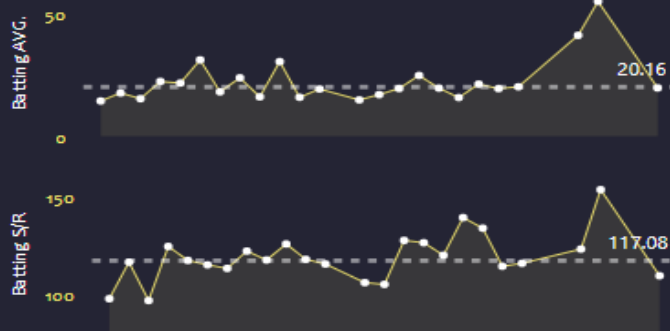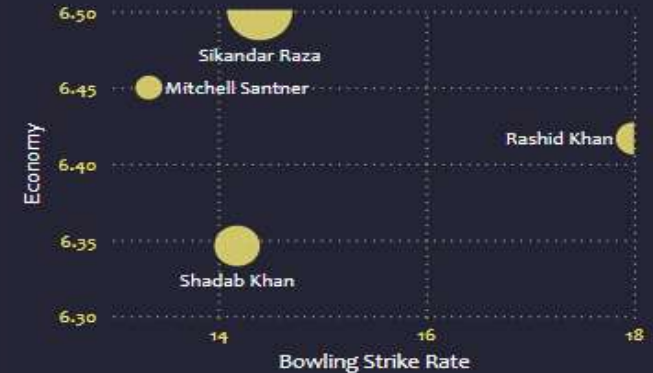
All Rounder / Lower Middle Order

Qualifier | Super 12

Select Player(s) by clicking the player's name to see their individual or combined strength.

Name	Team	Batting Style	Bowling Style	Innings Batted	Runs	Batting Avg	Strike rate	Innings Bowled	Balls Bowled	Wickets	Economy	Bowling Strike Rate	Maidens
Rashid Khan	Afghanistan	Right hand Bat	Legbreak Googly	3	57	28.50	178.13	3	72	4	6.42	18.00	0
Shadab Khan	Pakistan	Right hand Bat	Legbreak	6	98	24.50	168.97	7	156	11	6.35	14.18	0
Mitchell Santner	New Zealand	Left hand Bat	Slow Left arm Orthodox	3	27	27.00	168.75	5	120	9	6.45	13.33	0
Sikandar Raza	Zimbabwe	Right hand Bat	Right arm Offbreak	8	219	27.38	147.97	8	144	10	6.50	14.40	0

Batting Avg: 20.16
Economy: 7.32
Strike rate: 117.08
Bowling Strike Rate: 18.43

Sikandar Raza
Mitchell Santner
Rashid Khan
Shadab Khan

Economy / Bowling Strike Rate
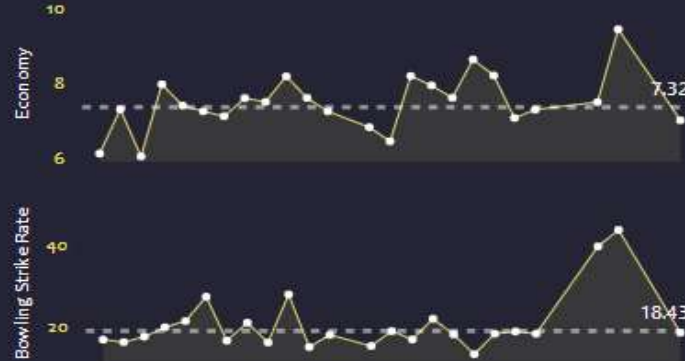
Dashboard
Specialist Fast Bowlers

Dashboard
Final Best-11 Players

Player's Name	Image	Team	Batting Style	Playing Role	Bowling Style	Batting AVG.	Batting S/R	Economy	Bowling S/R	Bowling AVG.	Custom Batting Order ▲
Jos Buttler		England	Right hand Bat	Wicketkeeper Batter		45.00	144.23				1
Rilee Rossouw		South Africa	Left hand Bat	Top order Batter	Right arm Offbreak	35.25	169.88				2
Virat Kohli		India	Right hand Bat	Top order Batter	Right arm Medium	98.67	136.41				3
Suryakumar Yadav		India	Right hand Bat	Batter	Right arm Medium, Right arm Offbreak	59.75	189.68				4
Glenn Phillips		New Zealand	Right hand Bat	Wicketkeeper Batter	Right arm Offbreak	40.20	158.27				5

Select your Final 11

Search

☐ Aaron Finch
☐ Aayan Afzal Khan
☐ Adam Zampa
☐ Adil Rashid
☐ Afif Hossain
☐ Ahmed Raza
☐ Aiden Markram
☐ Akeal Hosein
☐ Alex Hales
☐ Alishan Sharafu
☐ Alzarri Joseph
☐ Andy Balbirnie
☑ Anrich Nortje
☐ Arshdeep Singh
☐ Aryan Lakra
☐ Ashton Agar
☐ Asif Ali

| Team Performance | 39.60 Batting Avg | 154.54 Strike rate | 19.71 Average Balls Faced | 14.12 Bowling Avg. | 13.09 Bowling S/R | 6.47 Economy | 41.15% Dot ball % |

Conclusion

The outcome was a detailed dashboard that provided clear insights into players performances. It helped the decision makers in selecting the best team for T20 World Cup based on solid data analysis.

Thank you!