

```
In [1]: #problem statement : create best team for world-cup
```

```
In [2]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

```
In [3]: ##reading data
```

```
In [4]: df=pd.read_csv("IPLData.csv")
```

```
In [5]: df.head()
```

	Player Name	Team	Nationality	Player_Type	Capped	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy	I
0	Shikhar Dhawan	Punjab	Indian	Batter	1	192.0	5783.0	34.63	126.60	4.0	16.5	8.25	
1	Shreyas Iyer	Kolkata	Indian	Batter	1	87.0	2375.0	31.67	123.96	NaN	NaN	NaN	
2	Faf Du Plessis	Bangalore	Overseas	Batter	1	100.0	2935.0	34.94	131.09	NaN	NaN	NaN	
3	Manish Pandey	Lucknow	Indian	Batter	1	154.0	3560.0	30.69	121.83	NaN	NaN	NaN	
4	Shimron Hetmyer	Rajasthan	Overseas	Batter	1	31.0	517.0	25.85	151.17	NaN	NaN	NaN	

```
In [6]: df.tail()
```

	Player Name	Team	Nationality	Player_Type	Capped	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy
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	Player Name	Team	Nationality	Player_Type	Capped	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy
230	Ravi Bishnoi	Lucknow	Indian	Bowler	1	23.0	8.0	4.00	50.00	24.0	25.25	6.97
231	Ruturaj Gaikwad	Chennai	Indian	Batter	1	22.0	839.0	46.61	132.13	NaN	NaN	NaN
232	Sunil Narine	Kolkata	Overseas	Allrounder	1	134.0	954.0	15.64	161.69	143.0	24.53	6.74
233	Kieron Pollard	Mumbai	Overseas	Allrounder	1	178.0	3268.0	29.98	149.77	65.0	31.62	8.78
234	Anrich Nortje	Delhi	Overseas	Bowler	1	24.0	7.0	7.00	116.67	34.0	20.56	7.65



In [7]:

#analyze the data

In [8]:

df.describe()

Out[8]:

	Capped	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy	Bowling_Strike_Rate	Catc
<b>count</b>	235.000000	215.000000	165.000000	161.000000	163.000000	140.000000	135.000000	143.000000	119.000000	27.000
<b>mean</b>	0.838298	43.897674	840.575758	21.792391	121.009939	31.485714	32.907185	8.223182	24.686134	30.962
<b>std</b>	0.561802	48.695302	1270.341831	11.664156	30.739189	36.872420	18.191441	1.223541	12.982049	34.544
<b>min</b>	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	5.360000	0.000000	0.000C
<b>25%</b>	0.500000	11.500000	67.000000	13.800000	112.635000	6.000000	23.025000	7.390000	18.495000	3.50C
<b>50%</b>	1.000000	25.000000	289.000000	22.410000	128.630000	19.500000	29.070000	8.190000	21.750000	19.00C
<b>75%</b>	1.000000	56.000000	954.000000	29.300000	137.550000	40.500000	36.030000	8.785000	26.190000	51.50C
<b>max</b>	2.000000	220.000000	6283.000000	58.500000	190.240000	167.000000	153.000000	13.120000	108.000000	126.00C



In [9]:

df.isnull().sum()

```
Out[9]: Player Name      0  
Team           0  
Nationality    0  
Player_Type    0  
Capped         0  
Matches_Played 20  
Runs           70  
Average        74  
Strike_Rate   72  
Wickets        95  
Bowling_average 100  
Economy        92  
Bowling_Strike_Rate 116  
Catches        208  
Run_outs       208  
Stumps         208  
dtype: int64
```

```
In [10]: df.info()
```

```
<class 'pandas.core.frame.DataFrame'>  
RangeIndex: 235 entries, 0 to 234  
Data columns (total 16 columns):  
 #   Column            Non-Null Count  Dtype     
---  --  
 0   Player Name        235 non-null    object    
 1   Team               235 non-null    object    
 2   Nationality        235 non-null    object    
 3   Player_Type        235 non-null    object    
 4   Capped             235 non-null    int64    
 5   Matches_Played    215 non-null    float64  
 6   Runs               165 non-null    float64  
 7   Average            161 non-null    float64  
 8   Strike_Rate        163 non-null    float64  
 9   Wickets            140 non-null    float64  
 10  Bowling_average   135 non-null    float64  
 11  Economy            143 non-null    float64  
 12  Bowling_Strike_Rate 119 non-null    float64  
 13  Catches            27 non-null     float64  
 14  Run_outs           27 non-null     float64  
 15  Stumps             27 non-null     float64  
dtypes: float64(11), int64(1), object(4)  
memory usage: 29.5+ KB
```

```
In [11]: # cleaning the data
```

```
In [12]: ## i want only capped data because players have relevant experience , so i have to remove the uncapped data
```

```
In [13]: df['Player_Type'].unique()
```

```
Out[13]: array(['Batter', 'Bowler', 'Keeper', 'Allrounder'], dtype=object)
```

```
In [14]: ## segregating data - capped batters
## first i find out batters the batters so i consider some important column
```

```
Batter = df[(df['Player_Type']=='Batter') & (df['Capped']==1)]
Batter_new = Batter[['Player Name', 'Team', 'Nationality', 'Matches Played', 'Runs', 'Average', 'Strike Rate']]
Batter_new
```

Out[14]:

	Player Name	Team	Nationality	Matches Played	Runs	Average	Strike Rate
0	Shikhar Dhawan	Punjab	Indian	192.0	5783.0	34.63	126.60
1	Shreyas Iyer	Kolkata	Indian	87.0	2375.0	31.67	123.96
2	Faf Du Plessis	Bangalore	Overseas	100.0	2935.0	34.94	131.09
3	Manish Pandey	Lucknow	Indian	154.0	3560.0	30.69	121.83
4	Shimron Hetmyer	Rajasthan	Overseas	31.0	517.0	25.85	151.17
5	Robin Uthappa	Chennai	Indian	193.0	4722.0	27.94	130.15
6	Jason Roy	Gujarat	Overseas	13.0	329.0	29.91	129.02
7	Devdutt Padikkal	Rajasthan	Indian	29.0	884.0	31.57	125.05
8	Priyam Garg	Hyderabad	Indian	19.0	205.0	14.64	110.81
12	Rahul Tripathi	Hyderabad	Indian	62.0	1385.0	26.13	136.32
13	Aiden Markram	Hyderabad	Overseas	6.0	146.0	29.30	122.69
14	Ajinkya Rahane	Kolkata	Indian	151.0	3941.0	31.53	121.34
15	Mandeep Singh	Delhi	Indian	105.0	1674.0	22.00	124.00
16	Rinku Singh	Kolkata	Indian	10.0	77.0	11.00	101.32

	Player Name	Team	Nationality	Matches Played	Runs	Average	Strike Rate
17	Manan Vohra	Lucknow	Indian	53.0	1054.0	22.43	130.61
19	David Warner	Delhi	Overseas	150.0	5449.0	41.60	139.97
26	David Miller	Gujarat	Overseas	89.0	1974.0	32.90	136.51
28	Anmolpreet Singh	Mumbai	Indian	1.0	16.0	16.00	114.29
29	Alex Hales	Kolkata	Overseas	6.0	148.0	24.67	125.42
30	Evin Lewis	Lucknow	Overseas	21.0	581.0	27.67	138.00
31	Karun Nair	Rajasthan	Indian	73.0	1480.0	24.26	128.63
205	Rohit Sharma	Mumbai	Indian	213.0	5611.0	31.17	130.40
207	Kane Williamson	Hyderabad	Overseas	63.0	1885.0	40.11	131.27
208	Virat Kohli	Bangalore	Indian	207.0	6283.0	37.40	129.95
212	KL Rahul	Lucknow	Indian	94.0	3273.0	47.43	136.38
216	Prithvi Shaw	Delhi	Indian	53.0	1305.0	24.62	146.30
217	Abdul Samad	Hyderabad	Indian	23.0	222.0	15.86	146.02
220	Mayank Agarwal	Punjab	Indian	100.0	2135.0	23.46	135.73
225	Suryakumar Yadav	Mumbai	Indian	115.0	2341.0	28.90	135.71
228	Yashasvi Jaiswal	Rajasthan	Indian	13.0	289.0	22.23	136.32
229	Shubman Gill	Gujarat	Indian	58.0	1417.0	31.49	123.00
231	Ruturaj Gaikwad	Chennai	Indian	22.0	839.0	46.61	132.13

In [15]:

```
## segregating data - capped bowlers
## i find out the bowlers so i consider some important column

Bowlers = df[(df['Player_Type']=='Bowler ') & (df['Capped']==1)]
Bowlers_new = Bowlers[['Player Name','Team','Nationality','Matches Played','Wickets',
                      'Bowling_average', 'Economy', 'Bowling_Strike_Rate']]
Bowlers_new
```

Out[15]:

Player Name	Team	Nationality	Matches Played	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
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	Player Name	Team	Nationality	Matches Played	Wickets	Bowling average	Economy	Bowling Strike Rate
36	Kagiso Rabada	Punjab	Overseas	50.0	76.0	20.53	8.21	15.00
37	Trent Boult	Rajasthan	Overseas	62.0	76.0	26.09	8.40	18.64
38	Mohammad Shami	Gujarat	Indian	77.0	79.0	30.41	8.63	21.14
39	T Natarajan	Hyderabad	Indian	24.0	20.0	34.40	8.24	25.05
40	Deepak Chahar	Chennai	Indian	63.0	59.0	29.19	7.80	22.44
41	Prasidh Krishna	Rajasthan	Indian	34.0	30.0	38.40	9.27	24.87
42	Lockei Ferguson	Gujarat	Overseas	22.0	24.0	27.00	8.12	19.96
43	Josh Hazlewood	Bangalore	Overseas	12.0	12.0	29.75	7.93	22.50
45	Bhuvneshwar Kumar	Hyderabad	Indian	132.0	142.0	25.27	7.30	20.77
46	Shardul Thakur	Delhi	Indian	61.0	67.0	27.87	8.89	18.81
47	Mustafizur Rahman	Delhi	Overseas	38.0	38.0	29.50	7.84	22.58
48	Kuldeep Yadav	Delhi	Indian	45.0	40.0	30.90	8.28	22.40
49	Rahul Chahar	Punjab	Indian	42.0	43.0	25.98	7.45	20.93
50	Yuzvendra Chahal	Rajasthan	Indian	114.0	139.0	22.28	7.59	17.61
51	Basil Thampi	Mumbai	Indian	20.0	17.0	40.82	9.80	25.00
52	Kartik Tyagi	Hyderabad	Indian	14.0	13.0	37.70	9.41	24.08
55	Avesh Khan	Lucknow	Indian	25.0	29.0	25.83	8.23	18.83
56	Ishan Porel	Punjab	Indian	1.0	1.0	39.00	9.74	NaN
57	Tushar Deshpande	Chennai	Indian	5.0	3.0	64.00	11.29	34.00
58	Ankit Singh Rajpoot	Lucknow	Indian	29.0	24.0	33.92	9.23	22.04
60	Murugan Ashwin	Mumbai	Indian	34.0	26.0	33.88	7.87	25.85
61	KC Cariappa	Rajasthan	Indian	11.0	8.0	43.50	9.67	27.00
62	Shreyas Gopal	Hyderabad	Indian	48.0	48.0	25.98	8.04	19.40
63	Jagadeesha Suchith	Hyderabad	Indian	17.0	12.0	38.50	8.88	26.00
65	Khaleel Ahmed	Delhi	Indian	24.0	32.0	24.56	8.69	16.97

	Player Name	Team	Nationality	Matches Played	Wickets	Bowling average	Economy	Bowling Strike Rate
66	Dushmantha Chameera	Lucknow	Overseas	41.0	42.0	27.21	7.92	20.62
67	Chetan Sakariya	Delhi	Indian	14.0	14.0	30.43	8.19	22.29
68	Sandeep Sharma	Punjab	Indian	99.0	112.0	25.44	7.78	19.62
69	Navdeep Saini	Rajasthan	Indian	28.0	17.0	48.71	8.48	34.47
70	Jaydev Unadkat	Mumbai	Indian	86.0	85.0	30.45	8.74	20.89
71	Mayank Markande	Mumbai	Indian	18.0	16.0	28.31	8.55	19.88
72	Shahbaz Nadeem	Lucknow	Indian	72.0	48.0	37.17	7.56	29.48
76	Daniel Sams	Mumbai	Overseas	5.0	6.0	153.00	8.50	108.00
77	Jason Behrendoff	Bangalore	Overseas	5.0	5.0	33.00	8.68	NaN
79	Tymal Mills	Mumbai	Overseas	5.0	5.0	30.60	8.58	21.40
80	Adam Milne	Chennai	Overseas	9.0	7.0	44.00	9.62	27.43
83	Rasikh Dar	Kolkata	Indian	1.0	1.0	NaN	10.50	NaN
87	Sean Abbott	Hyderabad	Overseas	2.0	0.0	NaN	11.40	NaN
88	Alzarri Joseph	Gujarat	Overseas	3.0	6.0	14.50	10.04	8.67
89	Riley Meredith	Mumbai	Indian	5.0	4.0	42.25	9.94	25.50
93	Lungi Ngidi	Delhi	Overseas	14.0	25.0	17.92	8.30	12.96
94	Karn Sharma	Bangalore	Indian	19.0	12.0	41.20	8.27	NaN
99	Tim Southee	Kolkata	Overseas	43.0	31.0	44.77	8.68	30.97
100	Varun Aaron	Gujarat	Indian	50.0	42.0	34.02	8.89	22.95
101	Kuldip Yadav	Rajasthan	Indian	1.0	0.0	NaN	8.00	NaN
102	Umesh Yadav	Kolkata	Indian	121.0	119.0	30.08	8.51	21.19
103	Nathan Coulter-Nile	Rajasthan	Overseas	38.0	48.0	21.92	7.52	17.48
104	Siddharth Kaul	Bangalore	Indian	54.0	58.0	29.24	8.59	20.43
210	Arshdeep Singh	Punjab	Indian	23.0	30.0	22.30	8.78	15.23
214	Varun Chakravarthy	Kolkata	Indian	31.0	36.0	23.31	6.82	20.50

	Player Name	Team	Nationality	Matches Played	Wickets	Bowling average	Economy	Bowling Strike Rate
215	Jasprit Bumrah	Mumbai	Indian	106.0	130.0	23.05	7.42	18.63
230	Ravi Bishnoi	Lucknow	Indian	23.0	24.0	25.25	6.97	21.75
234	Anrich Nortje	Delhi	Overseas	24.0	34.0	20.56	7.65	16.12

In [16]:

`df.columns`

Out[16]:

```
Index(['Player Name', 'Team', 'Nationality', 'Player_Type', 'Capped',
       'Matches_Played', 'Runs', 'Average', 'Strike_Rate', 'Wickets',
       'Bowling_average', 'Economy', 'Bowling_Strike_Rate', 'Catches',
       'Run_outs', 'Stumps'],
      dtype='object')
```

In [17]:

```
## segregating data - capped keepers
## i find out the Keepers so i consider some important column
```

```
Keeper = df[(df['Player_Type']=='Keeper') & (df['Capped']==1)]
Keeper_new = Keeper[['Player Name','Team','Nationality','Matches_Played','Runs', 'Average',
                     'Strike_Rate','Catches','Run_outs', 'Stumps']]
Keeper_new
```

Out[17]:

	Player Name	Team	Nationality	Matches Played	Runs	Average	Strike_Rate	Catches	Run_outs	Stumps
105	Quinton De Kock	Lucknow	Overseas	77.0	2256.0	31.30	130.90	53.0	0.0	14.0
106	Ambati Rayudu	Chennai	Indian	175.0	3916.0	29.40	127.50	58.0	12.0	2.0
107	Ishan Kishan	Mumbai	Indian	61.0	1452.0	28.50	136.30	19.0	1.0	2.0
108	Jonny Bairstow	Punjab	Overseas	28.0	1038.0	41.50	142.20	18.0	1.0	4.0
109	Dinesh Karthik	Bangalore	Indian	213.0	4046.0	25.80	129.70	123.0	14.0	32.0
110	Nicholas Pooran	Hyderabad	Overseas	33.0	606.0	22.40	155.00	11.0	3.0	0.0
111	KS Bharat	Delhi	Indian	8.0	191.0	38.20	122.40	4.0	0.0	1.0
112	Anuj Rawat	Bangalore	Indian	1.0	0.0	0.00	0.00	3.0	0.0	0.0
113	Prabhsimran Singh	Punjab	Indian	5.0	50.0	10.00	90.90	2.0	0.0	0.0
114	Sheldon Jackson	Kolkata	Overseas	4.0	38.0	19.00	122.60	2.0	0.0	0.0

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Catches	Run_outs	Stumps
117	Sam Billings	Kolkata	Overseas	22.0	334.0	17.60	133.60	13.0	1.0	0.0
118	Wridhiman Saha	Gujarat	Indian	133.0	2110.0	24.50	128.70	69.0	3.0	20.0
120	N Jagadeesan	Chennai	Indian	5.0	33.0	16.50	113.80	NaN	NaN	NaN
121	Vishnu Vinod	Hyderabad	Indian	3.0	19.0	6.30	73.10	0.0	0.0	2.0
206	Rishabh Pant	Delhi	Indian	84.0	2498.0	35.18	147.46	56.0	5.0	14.0
209	Sanju Samson	Rajasthan	Indian	121.0	3068.0	29.22	134.21	59.0	8.0	10.0
213	MS Dhoni	Chennai	Indian	220.0	4746.0	39.50	135.80	126.0	21.0	39.0
219	Jos Butler	Rajasthan	Overseas	65.0	1968.0	35.14	150.00	34.0	3.0	1.0

In [18]:

```
## segregating data - capped Allrounder
## i find out the Allrounder so i consider some important column

Allrounder = df[(df['Player_Type']=='Allrounder') & (df['Capped']==1)]
Allrounder_new = Allrounder[['Player Name','Team','Nationality','Matches_Played','Runs', 'Average',
                           'Strike_Rate','Wickets','Bowling_average', 'Economy', 'Bowling_Strike_Rate']]
Allrounder_new
```

Out[18]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
127	Ravichandran Ashwin	Rajasthan	Indian	167.0	456.0	11.120	109.88	145.0	27.80	6.91	2
128	Pat Cummins	Kolkata	Overseas	37.0	316.0	19.750	140.44	38.0	30.13	8.24	2
129	Dwayne Bravo	Chennai	Overseas	151.0	1537.0	22.940	130.25	167.0	24.32	8.36	1
130	Nitish Rana	Kolkata	Indian	77.0	1820.0	28.000	132.46	7.0	22.00	8.03	1
131	Jason Holder	Lucknow	Overseas	26.0	189.0	14.540	121.15	35.0	22.46	8.20	1
132	Harshal Patel	Bangalore	Indian	63.0	187.0	11.000	134.53	78.0	23.18	8.58	1
133	Deepak Hooda	Lucknow	Indian	80.0	785.0	16.700	129.54	9.0	50.89	8.46	3
135	Washington Sundar	Hyderabad	Indian	42.0	217.0	14.470	111.28	27.0	32.11	6.94	2

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
136	Krunal Pandya	Lucknow	Indian	84.0	1143.0	22.410	138.55	51.0	34.76	7.37	2
137	Mitchell Marsh	Delhi	Overseas	21.0	225.0	17.310	114.21	20.0	21.00	7.90	1
138	Riyan Parag	Rajasthan	Indian	30.0	339.0	16.950	118.53	3.0	73.67	9.97	4
139	Abhishek Sharma	Hyderabad	Indian	22.0	241.0	17.210	139.31	7.0	25.14	8.00	1
140	Sarfraz Khan	Delhi	Indian	40.0	441.0	23.210	138.21	NaN	NaN	NaN	1
141	Shahrukh Khan	Punjab	Indian	11.0	153.0	21.800	134.21	NaN	NaN	NaN	1
142	Shivam Mavi	Kolkata	Indian	26.0	48.0	6.800	97.90	25.0	28.60	8.30	2
143	Rahul Tewatia	Gujarat	Indian	48.0	521.0	23.680	124.34	32.0	31.88	7.71	2
144	Kamlesh Nagarkoti	Delhi	Indian	11.0	22.0	5.500	66.67	5.0	51.20	9.14	3
145	Harpreet Brar	Punjab	Indian	10.0	84.0	NaN	120.00	5.0	45.50	7.12	3
146	Shahbaz Ahamad	Bangalore	Indian	13.0	60.0	8.570	111.11	9.0	15.10	6.80	1
147	Liam Livingstone	Punjab	Overseas	9.0	112.0	14.000	125.84	NaN	NaN	NaN	1
149	Jayanth Yadav	Gujarat	Indian	19.0	40.0	10.000	111.11	8.0	52.38	6.87	4
150	Vijay Shankar	Gujarat	Indian	47.0	712.0	26.370	126.24	9.0	36.56	8.62	2
152	Marco Jensen	Hyderabad	Overseas	2.0	NaN	NaN	NaN	2.0	22.50	7.50	1
153	Shivam Dube	Chennai	Indian	24.0	399.0	22.170	120.54	4.0	32.50	8.30	2
154	K Gowtham	Lucknow	Indian	24.0	186.0	14.310	169.09	13.0	43.23	8.26	3
155	Lalit Yadav	Delhi	Indian	7.0	68.0	34.000	93.15	4.0	25.25	7.21	2
156	Ripal Patel	Delhi	Indian	2.0	25.0	25.000	92.59	NaN	NaN	7.33	1

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy	Bowling_Strike_I
159	Mahipal Lomror	Bangalore	Indian	11.0	181.0	22.620	119.87	1.0	74.00	7.48	6
165	Jofra Archer	Mumbai	Overseas	35.0	195.0	15.000	157.26	46.0	21.33	7.13	1
166	Rishi Dhawan	Punjab	Indian	26.0	153.0	21.860	113.33	18.0	35.56	7.87	2
168	Sherfane Rutherford	Bangalore	Overseas	7.0	73.0	14.600	135.19	1.0	59.00	8.63	4
169	Mithchel Santner	Chennai	Overseas	6.0	32.0	32.000	139.13	6.0	24.50	7.00	2
178	Pradeep Sangwan	Gujarat	Indian	39.0	24.0	3.430	61.54	35.0	33.57	8.79	2
185	Chris Jordan	Chennai	Overseas	24.0	64.0	9.140	112.28	25.0	27.92	9.12	1
186	Nathan Ellis	Punjab	Overseas	3.0	18.0	18.000	112.50	1.0	90.00	8.80	6
189	Gurkeerat Singh	Gujarat	Indian	41.0	511.0	21.300	121.10	5.0	19.40	7.46	1
195	Mohammad Nabi	Kolkata	Overseas	17.0	180.0	15.000	151.26	13.0	31.38	7.14	2
196	James Neesham	Rajasthan	Overseas	12.0	61.0	8.700	92.40	8.0	38.12	9.24	2
200	Fabian Allen	Mumbai	Overseas	4.0	6.0	6.000	50.00	1.0	90.00	8.18	6
201	David Willey	Bangalore	Overseas	3.0	0.0	0.000	0.00	2.0	47.50	9.50	3
202	Aman Khan	Kolkata	Indian	5.0	40.0	13.300	148.10	0.0	0.00	7.00	
203	Ravindra Jadeja	Chennai	Indian	200.0	2386.0	27.110	128.14	127.0	30.05	7.61	2
204	Andre Russell	Kolkata	Overseas	84.0	1700.0	29.310	178.57	72.0	26.40	9.05	1
211	Hardik Pandya	Gujarat	Indian	92.0	1476.0	27.330	153.91	42.0	31.26	9.07	2
218	Glen Maxwell	Bangalore	Overseas	97.0	2018.0	25.230	151.84	22.0	41.59	8.55	2
221	Rashid Khan	Gujarat	Overseas	76.0	222.0	9.255	137.04	93.0	20.56	6.33	1

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
222	Marcus Stoinis	Lucknow	Overseas	56.0	914.0	27.700	135.81	30.0	32.30	9.50	2
223	Moeen Ali	Chennai	Overseas	34.0	666.0	22.970	146.37	16.0	29.31	6.85	2
224	Venkatesh Iyer	Kolkata	Indian	10.0	370.0	41.110	128.47	3.0	23.00	8.12	1
226	Axar Patel	Delhi	Indian	109.0	953.0	17.300	125.33	95.0	29.07	7.22	2
232	Sunil Narine	Kolkata	Overseas	134.0	954.0	15.640	161.69	143.0	24.53	6.74	2
233	Kieron Pollard	Mumbai	Overseas	178.0	3268.0	29.980	149.77	65.0	31.62	8.78	2

◀ ▶

In [19]: *## cleaning the data by making null values to 0*

In [20]:  

```
Batter_new.fillna(0,inplace=True)

Bowlers_new.fillna(0,inplace=True)

Keeper_new.fillna(0,inplace=True)

Allrounder_new.fillna(0,inplace=True)
```

C:\Users\Administrator\anaconda3\lib\site-packages\pandas\core\frame.py:5176: SettingWithCopyWarning:  
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: [https://pandas.pydata.org/pandas-docs/stable/user\\_guide/indexing.html#returning-a-view-versus-a-copy](https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)  
return super().fillna(

In [21]:  

```
print(Batter_new.isnull().sum())
print()

print(Bowlers_new.isnull().sum())
print()

print(Keeper_new.isnull().sum())
```

```
print()  
  
print(Allrounder_new.isnull().sum())  
print()
```

```
Player Name      0  
Team            0  
Nationality     0  
Matches_Played  0  
Runs             0  
Average          0  
Strike_Rate     0  
dtype: int64
```

```
Player Name      0  
Team            0  
Nationality     0  
Matches_Played  0  
Wickets          0  
Bowling_average 0  
Economy          0  
Bowling_Strike_Rate 0  
dtype: int64
```

```
Player Name      0  
Team            0  
Nationality     0  
Matches_Played  0  
Runs             0  
Average          0  
Strike_Rate     0  
Catches          0  
Run_outs         0  
Stumps           0  
dtype: int64
```

```
Player Name      0  
Team            0  
Nationality     0  
Matches_Played  0  
Runs             0  
Average          0  
Strike_Rate     0  
Wickets          0  
Bowling_average 0
```

```
Economy          0
Bowling_Strike_Rate    0
dtype: int64
```

In [22]:

```
## analyzing batters data
top_batters = Batter_new.loc[Batter_new[ 'Average' ] >=32]
top_batters
```

Out[22]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate
0	Shikhar Dhawan	Punjab	Indian	192.0	5783.0	34.63	126.60
2	Faf Du Plessis	Bangalore	Overseas	100.0	2935.0	34.94	131.09
19	David Warner	Delhi	Overseas	150.0	5449.0	41.60	139.97
26	David Miller	Gujarat	Overseas	89.0	1974.0	32.90	136.51
207	Kane Williamson	Hyderabad	Overseas	63.0	1885.0	40.11	131.27
208	Virat Kohli	Bangalore	Indian	207.0	6283.0	37.40	129.95
212	KL Rahul	Lucknow	Indian	94.0	3273.0	47.43	136.38
231	Ruturaj Gaikwad	Chennai	Indian	22.0	839.0	46.61	132.13

In [23]:

```
top_batters_avg = top_batters.sort_values('Average' , ascending=False)
top_batters_avg
```

Out[23]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate
212	KL Rahul	Lucknow	Indian	94.0	3273.0	47.43	136.38
231	Ruturaj Gaikwad	Chennai	Indian	22.0	839.0	46.61	132.13
19	David Warner	Delhi	Overseas	150.0	5449.0	41.60	139.97
207	Kane Williamson	Hyderabad	Overseas	63.0	1885.0	40.11	131.27
208	Virat Kohli	Bangalore	Indian	207.0	6283.0	37.40	129.95
2	Faf Du Plessis	Bangalore	Overseas	100.0	2935.0	34.94	131.09
0	Shikhar Dhawan	Punjab	Indian	192.0	5783.0	34.63	126.60

	Player Name	Team	Nationality	Matches Played	Runs	Average	Strike Rate
26	David Miller	Gujarat	Overseas	89.0	1974.0	32.90	136.51

In [24]:

```
top_batters_matchplayed = top_batters.sort_values('Matches_Played' , ascending=False)
top_batters_matchplayed
```

Out[24]:

	Player Name	Team	Nationality	Matches Played	Runs	Average	Strike Rate
208	Virat Kohli	Bangalore	Indian	207.0	6283.0	37.40	129.95
0	Shikhar Dhawan	Punjab	Indian	192.0	5783.0	34.63	126.60
19	David Warner	Delhi	Overseas	150.0	5449.0	41.60	139.97
2	Faf Du Plessis	Bangalore	Overseas	100.0	2935.0	34.94	131.09
212	KL Rahul	Lucknow	Indian	94.0	3273.0	47.43	136.38
26	David Miller	Gujarat	Overseas	89.0	1974.0	32.90	136.51
207	Kane Williamson	Hyderabad	Overseas	63.0	1885.0	40.11	131.27
231	Ruturaj Gaikwad	Chennai	Indian	22.0	839.0	46.61	132.13

In [25]:

```
top_batters_runs= top_batters.sort_values('Runs' , ascending=False)
top_batters_runs
```

Out[25]:

	Player Name	Team	Nationality	Matches Played	Runs	Average	Strike Rate
208	Virat Kohli	Bangalore	Indian	207.0	6283.0	37.40	129.95
0	Shikhar Dhawan	Punjab	Indian	192.0	5783.0	34.63	126.60
19	David Warner	Delhi	Overseas	150.0	5449.0	41.60	139.97
212	KL Rahul	Lucknow	Indian	94.0	3273.0	47.43	136.38
2	Faf Du Plessis	Bangalore	Overseas	100.0	2935.0	34.94	131.09
26	David Miller	Gujarat	Overseas	89.0	1974.0	32.90	136.51
207	Kane Williamson	Hyderabad	Overseas	63.0	1885.0	40.11	131.27
231	Ruturaj Gaikwad	Chennai	Indian	22.0	839.0	46.61	132.13

In [26]:

```
top_batters_strikerate=top_batters.sort_values('Strike_Rate' , ascending=False)
top_batters_strikerate
```

Out[26]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate
19	David Warner	Delhi	Overseas	150.0	5449.0	41.60	139.97
26	David Miller	Gujarat	Overseas	89.0	1974.0	32.90	136.51
212	KL Rahul	Lucknow	Indian	94.0	3273.0	47.43	136.38
231	Ruturaj Gaikwad	Chennai	Indian	22.0	839.0	46.61	132.13
207	Kane Williamson	Hyderabad	Overseas	63.0	1885.0	40.11	131.27
2	Faf Du Plessis	Bangalore	Overseas	100.0	2935.0	34.94	131.09
208	Virat Kohli	Bangalore	Indian	207.0	6283.0	37.40	129.95
0	Shikhar Dhawan	Punjab	Indian	192.0	5783.0	34.63	126.60

In [27]:

```
# Top batsman
# 1) David Warner
# 2) KL Rahul
# 3) Virat Kohli
```

In [28]:

```
## analyzing bowlers data
top_bowlers = Bowlers_new.loc[Bowlers_new['Bowling_average'] <=24]
top_bowlers
```

Out[28]:

	Player Name	Team	Nationality	Matches_Played	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
36	Kagiso Rabada	Punjab	Overseas	50.0	76.0	20.53	8.21	15.00
50	Yuzvendra Chahal	Rajasthan	Indian	114.0	139.0	22.28	7.59	17.61
83	Rasikh Dar	Kolkata	Indian	1.0	1.0	0.00	10.50	0.00
87	Sean Abbott	Hyderabad	Overseas	2.0	0.0	0.00	11.40	0.00
88	Alzarri Joseph	Gujarat	Overseas	3.0	6.0	14.50	10.04	8.67

	Player Name	Team	Nationality	Matches_Played	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
93	Lungi Ngidi	Delhi	Overseas	14.0	25.0	17.92	8.30	12.96
101	Kuldeep Yadav	Rajasthan	Indian	1.0	0.0	0.00	8.00	0.00
103	Nathan Coulter-Nile	Rajasthan	Overseas	38.0	48.0	21.92	7.52	17.48
210	Arshdeep Singh	Punjab	Indian	23.0	30.0	22.30	8.78	15.23
214	Varun Chakravarthy	Kolkata	Indian	31.0	36.0	23.31	6.82	20.50
215	Jasprit Bumrah	Mumbai	Indian	106.0	130.0	23.05	7.42	18.63
234	Anrich Nortje	Delhi	Overseas	24.0	34.0	20.56	7.65	16.12

In [29]:

```
top_bowlers_avg = top_bowlers.sort_values('Bowling_average')

top_bowlers_Bowling_Strike_Rate = top_bowlers.sort_values('Bowling_Strike_Rate')

top_bowlers_Wickets = top_bowlers.sort_values('Wickets' , ascending=False)

top_bowlers_Economy = top_bowlers.sort_values('Economy')

top_bowlers_Matches_Played = top_bowlers.sort_values('Matches_Played' , ascending=False)
```

In [30]:

```
top_bowlers_avg
```

Out[30]:

	Player Name	Team	Nationality	Matches_Played	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
83	Rasikh Dar	Kolkata	Indian	1.0	1.0	0.00	10.50	0.00
87	Sean Abbott	Hyderabad	Overseas	2.0	0.0	0.00	11.40	0.00
101	Kuldeep Yadav	Rajasthan	Indian	1.0	0.0	0.00	8.00	0.00
88	Alzarri Joseph	Gujarat	Overseas	3.0	6.0	14.50	10.04	8.67
93	Lungi Ngidi	Delhi	Overseas	14.0	25.0	17.92	8.30	12.96
36	Kagiso Rabada	Punjab	Overseas	50.0	76.0	20.53	8.21	15.00
234	Anrich Nortje	Delhi	Overseas	24.0	34.0	20.56	7.65	16.12
103	Nathan Coulter-Nile	Rajasthan	Overseas	38.0	48.0	21.92	7.52	17.48

	<b>Player Name</b>	<b>Team</b>	<b>Nationality</b>	<b>Matches_Played</b>	<b>Wickets</b>	<b>Bowling_average</b>	<b>Economy</b>	<b>Bowling_Strike_Rate</b>
<b>50</b>	Yuzvendra Chahal	Rajasthan	Indian	114.0	139.0	22.28	7.59	17.61
<b>210</b>	Arshdeep Singh	Punjab	Indian	23.0	30.0	22.30	8.78	15.23
<b>215</b>	Jasprit Bumrah	Mumbai	Indian	106.0	130.0	23.05	7.42	18.63
<b>214</b>	Varun Chakravarthy	Kolkata	Indian	31.0	36.0	23.31	6.82	20.50

In [31]:

top\_bowlers\_Bowling\_Strike\_Rate

Out[31]:

	<b>Player Name</b>	<b>Team</b>	<b>Nationality</b>	<b>Matches_Played</b>	<b>Wickets</b>	<b>Bowling_average</b>	<b>Economy</b>	<b>Bowling_Strike_Rate</b>
<b>83</b>	Rasikh Dar	Kolkata	Indian	1.0	1.0	0.00	10.50	0.00
<b>87</b>	Sean Abbott	Hyderabad	Overseas	2.0	0.0	0.00	11.40	0.00
<b>101</b>	Kuldeep Yadav	Rajasthan	Indian	1.0	0.0	0.00	8.00	0.00
<b>88</b>	Alzarri Joseph	Gujarat	Overseas	3.0	6.0	14.50	10.04	8.67
<b>93</b>	Lungi Ngidi	Delhi	Overseas	14.0	25.0	17.92	8.30	12.96
<b>36</b>	Kagiso Rabada	Punjab	Overseas	50.0	76.0	20.53	8.21	15.00
<b>210</b>	Arshdeep Singh	Punjab	Indian	23.0	30.0	22.30	8.78	15.23
<b>234</b>	Anrich Nortje	Delhi	Overseas	24.0	34.0	20.56	7.65	16.12
<b>103</b>	Nathan Coulter-Nile	Rajasthan	Overseas	38.0	48.0	21.92	7.52	17.48
<b>50</b>	Yuzvendra Chahal	Rajasthan	Indian	114.0	139.0	22.28	7.59	17.61
<b>215</b>	Jasprit Bumrah	Mumbai	Indian	106.0	130.0	23.05	7.42	18.63
<b>214</b>	Varun Chakravarthy	Kolkata	Indian	31.0	36.0	23.31	6.82	20.50

In [32]:

top\_bowlers\_Wickets

Out[32]:

	<b>Player Name</b>	<b>Team</b>	<b>Nationality</b>	<b>Matches_Played</b>	<b>Wickets</b>	<b>Bowling_average</b>	<b>Economy</b>	<b>Bowling_Strike_Rate</b>
<b>50</b>	Yuzvendra Chahal	Rajasthan	Indian	114.0	139.0	22.28	7.59	17.61
<b>215</b>	Jasprit Bumrah	Mumbai	Indian	106.0	130.0	23.05	7.42	18.63

	<b>Player Name</b>	<b>Team</b>	<b>Nationality</b>	<b>Matches_Played</b>	<b>Wickets</b>	<b>Bowling_average</b>	<b>Economy</b>	<b>Bowling_Strike_Rate</b>
<b>36</b>	Kagiso Rabada	Punjab	Overseas	50.0	76.0	20.53	8.21	15.00
<b>103</b>	Nathan Coulter-Nile	Rajasthan	Overseas	38.0	48.0	21.92	7.52	17.48
<b>214</b>	Varun Chakravarthy	Kolkata	Indian	31.0	36.0	23.31	6.82	20.50
<b>234</b>	Anrich Nortje	Delhi	Overseas	24.0	34.0	20.56	7.65	16.12
<b>210</b>	Arshdeep Singh	Punjab	Indian	23.0	30.0	22.30	8.78	15.23
<b>93</b>	Lungi Ngidi	Delhi	Overseas	14.0	25.0	17.92	8.30	12.96
<b>88</b>	Alzarri Joseph	Gujarat	Overseas	3.0	6.0	14.50	10.04	8.67
<b>83</b>	Rasikh Dar	Kolkata	Indian	1.0	1.0	0.00	10.50	0.00
<b>87</b>	Sean Abbott	Hyderabad	Overseas	2.0	0.0	0.00	11.40	0.00
<b>101</b>	Kuldeep Yadav	Rajasthan	Indian	1.0	0.0	0.00	8.00	0.00

In [33]:

top\_bowlers\_Economy

Out[33]:

	<b>Player Name</b>	<b>Team</b>	<b>Nationality</b>	<b>Matches_Played</b>	<b>Wickets</b>	<b>Bowling_average</b>	<b>Economy</b>	<b>Bowling_Strike_Rate</b>
<b>214</b>	Varun Chakravarthy	Kolkata	Indian	31.0	36.0	23.31	6.82	20.50
<b>215</b>	Jasprit Bumrah	Mumbai	Indian	106.0	130.0	23.05	7.42	18.63
<b>103</b>	Nathan Coulter-Nile	Rajasthan	Overseas	38.0	48.0	21.92	7.52	17.48
<b>50</b>	Yuzvendra Chahal	Rajasthan	Indian	114.0	139.0	22.28	7.59	17.61
<b>234</b>	Anrich Nortje	Delhi	Overseas	24.0	34.0	20.56	7.65	16.12
<b>101</b>	Kuldeep Yadav	Rajasthan	Indian	1.0	0.0	0.00	8.00	0.00
<b>36</b>	Kagiso Rabada	Punjab	Overseas	50.0	76.0	20.53	8.21	15.00
<b>93</b>	Lungi Ngidi	Delhi	Overseas	14.0	25.0	17.92	8.30	12.96
<b>210</b>	Arshdeep Singh	Punjab	Indian	23.0	30.0	22.30	8.78	15.23
<b>88</b>	Alzarri Joseph	Gujarat	Overseas	3.0	6.0	14.50	10.04	8.67
<b>83</b>	Rasikh Dar	Kolkata	Indian	1.0	1.0	0.00	10.50	0.00

	Player Name	Team	Nationality	Matches_Played	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
87	Sean Abbott	Hyderabad	Overseas	2.0	0.0	0.00	11.40	0.00

In [34]: top\_bowlers\_Matches\_Played

	Player Name	Team	Nationality	Matches_Played	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
50	Yuzvendra Chahal	Rajasthan	Indian	114.0	139.0	22.28	7.59	17.61
215	Jasprit Bumrah	Mumbai	Indian	106.0	130.0	23.05	7.42	18.63
36	Kagiso Rabada	Punjab	Overseas	50.0	76.0	20.53	8.21	15.00
103	Nathan Coulter-Nile	Rajasthan	Overseas	38.0	48.0	21.92	7.52	17.48
214	Varun Chakravarthy	Kolkata	Indian	31.0	36.0	23.31	6.82	20.50
234	Anrich Nortje	Delhi	Overseas	24.0	34.0	20.56	7.65	16.12
210	Arshdeep Singh	Punjab	Indian	23.0	30.0	22.30	8.78	15.23
93	Lungi Ngidi	Delhi	Overseas	14.0	25.0	17.92	8.30	12.96
88	Alzarri Joseph	Gujarat	Overseas	3.0	6.0	14.50	10.04	8.67
87	Sean Abbott	Hyderabad	Overseas	2.0	0.0	0.00	11.40	0.00
83	Rasikh Dar	Kolkata	Indian	1.0	1.0	0.00	10.50	0.00
101	Kuldeep Yadav	Rajasthan	Indian	1.0	0.0	0.00	8.00	0.00

In [35]:

```
# Top bowlers
# 1) Yuzvendra Chahal
# 2) Jasprit Bumrah
# 3) Nathan Coulter-Nile
# 4) Kagiso Rabada
```

In [36]:

```
## analyzing Top All-rounder data
top_Allrounder = Allrounder_new[Allrounder_new['Strike_Rate'] >= 140]
top_Allrounder
```

Out[36]:

	Player Name	Team	Nationality	Matches Played	Runs	Average	Strike Rate	Wickets	Bowling average	Economy	Bowling Strike Rate
128	Pat Cummins	Kolkata	Overseas	37.0	316.0	19.75	140.44	38.0	30.13	8.24	21.9
154	K Gowtham	Lucknow	Indian	24.0	186.0	14.31	169.09	13.0	43.23	8.26	31.3
165	Jofra Archer	Mumbai	Overseas	35.0	195.0	15.00	157.26	46.0	21.33	7.13	17.9
195	Mohammad Nabi	Kolkata	Overseas	17.0	180.0	15.00	151.26	13.0	31.38	7.14	26.3
202	Aman Khan	Kolkata	Indian	5.0	40.0	13.30	148.10	0.0	0.00	7.00	0.0
204	Andre Russell	Kolkata	Overseas	84.0	1700.0	29.31	178.57	72.0	26.40	9.05	17.5
211	Hardik Pandya	Gujarat	Indian	92.0	1476.0	27.33	153.91	42.0	31.26	9.07	20.6
218	Glen Maxwell	Bangalore	Overseas	97.0	2018.0	25.23	151.84	22.0	41.59	8.55	29.1
223	Moeen Ali	Chennai	Overseas	34.0	666.0	22.97	146.37	16.0	29.31	6.85	25.6
232	Sunil Narine	Kolkata	Overseas	134.0	954.0	15.64	161.69	143.0	24.53	6.74	21.8
233	Kieron Pollard	Mumbai	Overseas	178.0	3268.0	29.98	149.77	65.0	31.62	8.78	21.6

◀ ▶

In [37]:

```
top_Allrounder_Average = top_Allrounder.sort_values('Average' , ascending=False)
top_Allrounder_Runs = top_Allrounder.sort_values('Runs' , ascending=False)
top_Allrounder_Strike_Rate = top_Allrounder.sort_values('Strike_Rate' , ascending=False)
top_Allrounder_Bowling_average = top_Allrounder.sort_values('Bowling_average' )
top_Allrounder_Economy = top_Allrounder.sort_values('Economy' )
top_Allrounder_Bowling_Strike_Rate = top_Allrounder.sort_values('Bowling_Strike_Rate' )
top_Allrounder_Wickets = top_Allrounder.sort_values('Wickets' , ascending=False)
top_Allrounder_Matches_Played = top_Allrounder.sort_values('Matches_Played' , ascending=True)
```

In [38]:

```
top_Allrounder_Average
```

Out[38]:

	Player Name	Team	Nationality	Matches Played	Runs	Average	Strike Rate	Wickets	Bowling average	Economy	Bowling Strike Ra
233	Kieron Pollard	Mumbai	Overseas	178.0	3268.0	29.98	149.77	65.0	31.62	8.78	21.6
204	Andre Russell	Kolkata	Overseas	84.0	1700.0	29.31	178.57	72.0	26.40	9.05	17.5
211	Hardik Pandya	Gujarat	Indian	92.0	1476.0	27.33	153.91	42.0	31.26	9.07	20.6
218	Glen Maxwell	Bangalore	Overseas	97.0	2018.0	25.23	151.84	22.0	41.59	8.55	29.1
223	Moeen Ali	Chennai	Overseas	34.0	666.0	22.97	146.37	16.0	29.31	6.85	25.6
128	Pat Cummins	Kolkata	Overseas	37.0	316.0	19.75	140.44	38.0	30.13	8.24	21.9
232	Sunil Narine	Kolkata	Overseas	134.0	954.0	15.64	161.69	143.0	24.53	6.74	21.8
165	Jofra Archer	Mumbai	Overseas	35.0	195.0	15.00	157.26	46.0	21.33	7.13	17.9
195	Mohammad Nabi	Kolkata	Overseas	17.0	180.0	15.00	151.26	13.0	31.38	7.14	26.3
154	K Gowtham	Lucknow	Indian	24.0	186.0	14.31	169.09	13.0	43.23	8.26	31.1
202	Aman Khan	Kolkata	Indian	5.0	40.0	13.30	148.10	0.0	0.00	7.00	0.0

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In [39]:

top\_Allrounder\_Runs

Out[39]:

	Player Name	Team	Nationality	Matches Played	Runs	Average	Strike Rate	Wickets	Bowling average	Economy	Bowling Strike Ra
233	Kieron Pollard	Mumbai	Overseas	178.0	3268.0	29.98	149.77	65.0	31.62	8.78	21.6
218	Glen Maxwell	Bangalore	Overseas	97.0	2018.0	25.23	151.84	22.0	41.59	8.55	29.1
204	Andre Russell	Kolkata	Overseas	84.0	1700.0	29.31	178.57	72.0	26.40	9.05	17.5

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
211	Hardik Pandya	Gujarat	Indian	92.0	1476.0	27.33	153.91	42.0	31.26	9.07	20.6
232	Sunil Narine	Kolkata	Overseas	134.0	954.0	15.64	161.69	143.0	24.53	6.74	21.8
223	Moeen Ali	Chennai	Overseas	34.0	666.0	22.97	146.37	16.0	29.31	6.85	25.6
128	Pat Cummins	Kolkata	Overseas	37.0	316.0	19.75	140.44	38.0	30.13	8.24	21.9
165	Jofra Archer	Mumbai	Overseas	35.0	195.0	15.00	157.26	46.0	21.33	7.13	17.9
154	K Gowtham	Lucknow	Indian	24.0	186.0	14.31	169.09	13.0	43.23	8.26	31.1
195	Mohammad Nabi	Kolkata	Overseas	17.0	180.0	15.00	151.26	13.0	31.38	7.14	26.1
202	Aman Khan	Kolkata	Indian	5.0	40.0	13.30	148.10	0.0	0.00	7.00	0.0

◀	▶
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In [40]:

top\_Allrounder\_Strike\_Rate

Out[40]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
204	Andre Russell	Kolkata	Overseas	84.0	1700.0	29.31	178.57	72.0	26.40	9.05	17.5
154	K Gowtham	Lucknow	Indian	24.0	186.0	14.31	169.09	13.0	43.23	8.26	31.1
232	Sunil Narine	Kolkata	Overseas	134.0	954.0	15.64	161.69	143.0	24.53	6.74	21.8
165	Jofra Archer	Mumbai	Overseas	35.0	195.0	15.00	157.26	46.0	21.33	7.13	17.9
211	Hardik Pandya	Gujarat	Indian	92.0	1476.0	27.33	153.91	42.0	31.26	9.07	20.6
218	Glen Maxwell	Bangalore	Overseas	97.0	2018.0	25.23	151.84	22.0	41.59	8.55	29.1
195	Mohammad Nabi	Kolkata	Overseas	17.0	180.0	15.00	151.26	13.0	31.38	7.14	26.1

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy	Bowling_Strike_Ra
233	Kieron Pollard	Mumbai	Overseas	178.0	3268.0	29.98	149.77	65.0	31.62	8.78	21.6
202	Aman Khan	Kolkata	Indian	5.0	40.0	13.30	148.10	0.0	0.00	7.00	0.0
223	Moeen Ali	Chennai	Overseas	34.0	666.0	22.97	146.37	16.0	29.31	6.85	25.6
128	Pat Cummins	Kolkata	Overseas	37.0	316.0	19.75	140.44	38.0	30.13	8.24	21.9



In [41]:

top\_Allrounder\_Bowling\_average

Out[41]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy	Bowling_Strike_Ra
202	Aman Khan	Kolkata	Indian	5.0	40.0	13.30	148.10	0.0	0.00	7.00	0.0
165	Jofra Archer	Mumbai	Overseas	35.0	195.0	15.00	157.26	46.0	21.33	7.13	17.9
232	Sunil Narine	Kolkata	Overseas	134.0	954.0	15.64	161.69	143.0	24.53	6.74	21.8
204	Andre Russell	Kolkata	Overseas	84.0	1700.0	29.31	178.57	72.0	26.40	9.05	17.5
223	Moeen Ali	Chennai	Overseas	34.0	666.0	22.97	146.37	16.0	29.31	6.85	25.6
128	Pat Cummins	Kolkata	Overseas	37.0	316.0	19.75	140.44	38.0	30.13	8.24	21.9
211	Hardik Pandya	Gujarat	Indian	92.0	1476.0	27.33	153.91	42.0	31.26	9.07	20.6
195	Mohammad Nabi	Kolkata	Overseas	17.0	180.0	15.00	151.26	13.0	31.38	7.14	26.3
233	Kieron Pollard	Mumbai	Overseas	178.0	3268.0	29.98	149.77	65.0	31.62	8.78	21.6
218	Glen Maxwell	Bangalore	Overseas	97.0	2018.0	25.23	151.84	22.0	41.59	8.55	29.1
154	K Gowtham	Lucknow	Indian	24.0	186.0	14.31	169.09	13.0	43.23	8.26	31.1

In [42]:

top\_Allrounder\_Economy

Out[42]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
232	Sunil Narine	Kolkata	Overseas	134.0	954.0	15.64	161.69	143.0	24.53	6.74	21.8
223	Moeen Ali	Chennai	Overseas	34.0	666.0	22.97	146.37	16.0	29.31	6.85	25.6
202	Aman Khan	Kolkata	Indian	5.0	40.0	13.30	148.10	0.0	0.00	7.00	0.0
165	Jofra Archer	Mumbai	Overseas	35.0	195.0	15.00	157.26	46.0	21.33	7.13	17.9
195	Mohammad Nabi	Kolkata	Overseas	17.0	180.0	15.00	151.26	13.0	31.38	7.14	26.3
128	Pat Cummins	Kolkata	Overseas	37.0	316.0	19.75	140.44	38.0	30.13	8.24	21.9
154	K Gowtham	Lucknow	Indian	24.0	186.0	14.31	169.09	13.0	43.23	8.26	31.3
218	Glen Maxwell	Bangalore	Overseas	97.0	2018.0	25.23	151.84	22.0	41.59	8.55	29.1
233	Kieron Pollard	Mumbai	Overseas	178.0	3268.0	29.98	149.77	65.0	31.62	8.78	21.6
204	Andre Russell	Kolkata	Overseas	84.0	1700.0	29.31	178.57	72.0	26.40	9.05	17.5
211	Hardik Pandya	Gujarat	Indian	92.0	1476.0	27.33	153.91	42.0	31.26	9.07	20.6

In [43]:

top\_Allrounder\_Bowling\_Strike\_Rate

Out[43]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
202	Aman Khan	Kolkata	Indian	5.0	40.0	13.30	148.10	0.0	0.00	7.00	0.0

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
204	Andre Russell	Kolkata	Overseas	84.0	1700.0	29.31	178.57	72.0	26.40	9.05	17.5
165	Jofra Archer	Mumbai	Overseas	35.0	195.0	15.00	157.26	46.0	21.33	7.13	17.9
211	Hardik Pandya	Gujarat	Indian	92.0	1476.0	27.33	153.91	42.0	31.26	9.07	20.6
233	Kieron Pollard	Mumbai	Overseas	178.0	3268.0	29.98	149.77	65.0	31.62	8.78	21.6
232	Sunil Narine	Kolkata	Overseas	134.0	954.0	15.64	161.69	143.0	24.53	6.74	21.8
128	Pat Cummins	Kolkata	Overseas	37.0	316.0	19.75	140.44	38.0	30.13	8.24	21.9
223	Moeen Ali	Chennai	Overseas	34.0	666.0	22.97	146.37	16.0	29.31	6.85	25.6
195	Mohammad Nabi	Kolkata	Overseas	17.0	180.0	15.00	151.26	13.0	31.38	7.14	26.3
218	Glen Maxwell	Bangalore	Overseas	97.0	2018.0	25.23	151.84	22.0	41.59	8.55	29.1
154	K Gowtham	Lucknow	Indian	24.0	186.0	14.31	169.09	13.0	43.23	8.26	31.3

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In [44]:

top\_Allrounder\_Wickets

Out[44]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
232	Sunil Narine	Kolkata	Overseas	134.0	954.0	15.64	161.69	143.0	24.53	6.74	21.8
204	Andre Russell	Kolkata	Overseas	84.0	1700.0	29.31	178.57	72.0	26.40	9.05	17.5
233	Kieron Pollard	Mumbai	Overseas	178.0	3268.0	29.98	149.77	65.0	31.62	8.78	21.6
165	Jofra Archer	Mumbai	Overseas	35.0	195.0	15.00	157.26	46.0	21.33	7.13	17.9

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
211	Hardik Pandya	Gujarat	Indian	92.0	1476.0	27.33	153.91	42.0	31.26	9.07	20.6
128	Pat Cummins	Kolkata	Overseas	37.0	316.0	19.75	140.44	38.0	30.13	8.24	21.9
218	Glen Maxwell	Bangalore	Overseas	97.0	2018.0	25.23	151.84	22.0	41.59	8.55	29.1
223	Moeen Ali	Chennai	Overseas	34.0	666.0	22.97	146.37	16.0	29.31	6.85	25.6
154	K Gowtham	Lucknow	Indian	24.0	186.0	14.31	169.09	13.0	43.23	8.26	31.3
195	Mohammad Nabi	Kolkata	Overseas	17.0	180.0	15.00	151.26	13.0	31.38	7.14	26.3
202	Aman Khan	Kolkata	Indian	5.0	40.0	13.30	148.10	0.0	0.00	7.00	0.0

◀	▶
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In [45]:

top\_Allrounder\_Matches\_Played

Out[45]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
233	Kieron Pollard	Mumbai	Overseas	178.0	3268.0	29.98	149.77	65.0	31.62	8.78	21.6
232	Sunil Narine	Kolkata	Overseas	134.0	954.0	15.64	161.69	143.0	24.53	6.74	21.8
218	Glen Maxwell	Bangalore	Overseas	97.0	2018.0	25.23	151.84	22.0	41.59	8.55	29.1
211	Hardik Pandya	Gujarat	Indian	92.0	1476.0	27.33	153.91	42.0	31.26	9.07	20.6
204	Andre Russell	Kolkata	Overseas	84.0	1700.0	29.31	178.57	72.0	26.40	9.05	17.5
128	Pat Cummins	Kolkata	Overseas	37.0	316.0	19.75	140.44	38.0	30.13	8.24	21.9
165	Jofra Archer	Mumbai	Overseas	35.0	195.0	15.00	157.26	46.0	21.33	7.13	17.9

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Wickets	Bowling_average	Economy	Bowling_Strike_Rate
223	Moeen Ali	Chennai	Overseas	34.0	666.0	22.97	146.37	16.0	29.31	6.85	25.6
154	K Gowtham	Lucknow	Indian	24.0	186.0	14.31	169.09	13.0	43.23	8.26	31.3
195	Mohammad Nabi	Kolkata	Overseas	17.0	180.0	15.00	151.26	13.0	31.38	7.14	26.3
202	Aman Khan	Kolkata	Indian	5.0	40.0	13.30	148.10	0.0	0.00	7.00	0.0

In [46]:

```
# top all rounders
# 1) Sunil Narine
# 2) Hardik Pandya
# 3) Andre Russell
# 4) Jofra Archer
```

In [47]:

```
## analyzing top keepers
top_Keeper = Keeper_new[Keeper_new['Average'] >= 25]
top_Keeper
```

Out[47]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Catches	Run_outs	Stumps
105	Quinton De Kock	Lucknow	Overseas	77.0	2256.0	31.30	130.90	53.0	0.0	14.0
106	Ambati Rayudu	Chennai	Indian	175.0	3916.0	29.40	127.50	58.0	12.0	2.0
107	Ishan Kishan	Mumbai	Indian	61.0	1452.0	28.50	136.30	19.0	1.0	2.0
108	Jonny Bairstow	Punjab	Overseas	28.0	1038.0	41.50	142.20	18.0	1.0	4.0
109	Dinesh Karthik	Bangalore	Indian	213.0	4046.0	25.80	129.70	123.0	14.0	32.0
111	KS Bharat	Delhi	Indian	8.0	191.0	38.20	122.40	4.0	0.0	1.0
206	Rishabh Pant	Delhi	Indian	84.0	2498.0	35.18	147.46	56.0	5.0	14.0
209	Sanju Samson	Rajasthan	Indian	121.0	3068.0	29.22	134.21	59.0	8.0	10.0
213	MS Dhoni	Chennai	Indian	220.0	4746.0	39.50	135.80	126.0	21.0	39.0
219	Jos Butler	Rajasthan	Overseas	65.0	1968.0	35.14	150.00	34.0	3.0	1.0

In [48]:

```
top_Keeper_Matches_Played = top_Keeper.sort_values('Matches_Played' , ascending=False )
top_Keeper_Runs = top_Keeper.sort_values('Runs' , ascending=False )
top_Keeper_Average = top_Keeper.sort_values('Average' , ascending=False )
top_Keeper_Strike_Rate = top_Keeper.sort_values('Strike_Rate' , ascending=False )
top_Keeper_Catches = top_Keeper.sort_values('Catches' , ascending=False )
top_Keeper_Run_outs = top_Keeper.sort_values('Run_outs' , ascending=False )
top_Keeper_Stumps = top_Keeper.sort_values('Stumps' , ascending=False )
```

In [49]:

top\_Keeper\_Matches\_Played

Out[49]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Catches	Run_outs	Stumps
<b>213</b>	MS Dhoni	Chennai	Indian	220.0	4746.0	39.50	135.80	126.0	21.0	39.0
<b>109</b>	Dinesh Karthik	Bangalore	Indian	213.0	4046.0	25.80	129.70	123.0	14.0	32.0
<b>106</b>	Ambati Rayudu	Chennai	Indian	175.0	3916.0	29.40	127.50	58.0	12.0	2.0
<b>209</b>	Sanju Samson	Rajasthan	Indian	121.0	3068.0	29.22	134.21	59.0	8.0	10.0
<b>206</b>	Rishabh Pant	Delhi	Indian	84.0	2498.0	35.18	147.46	56.0	5.0	14.0
<b>105</b>	Quinton De Kock	Lucknow	Overseas	77.0	2256.0	31.30	130.90	53.0	0.0	14.0
<b>219</b>	Jos Butler	Rajasthan	Overseas	65.0	1968.0	35.14	150.00	34.0	3.0	1.0
<b>107</b>	Ishan Kishan	Mumbai	Indian	61.0	1452.0	28.50	136.30	19.0	1.0	2.0
<b>108</b>	Jonny Bairstow	Punjab	Overseas	28.0	1038.0	41.50	142.20	18.0	1.0	4.0
<b>111</b>	KS Bharat	Delhi	Indian	8.0	191.0	38.20	122.40	4.0	0.0	1.0

In [50]:

top\_Keeper\_Runs

Out[50]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Catches	Run_outs	Stumps
<b>213</b>	MS Dhoni	Chennai	Indian	220.0	4746.0	39.50	135.80	126.0	21.0	39.0
<b>109</b>	Dinesh Karthik	Bangalore	Indian	213.0	4046.0	25.80	129.70	123.0	14.0	32.0
<b>106</b>	Ambati Rayudu	Chennai	Indian	175.0	3916.0	29.40	127.50	58.0	12.0	2.0
<b>209</b>	Sanju Samson	Rajasthan	Indian	121.0	3068.0	29.22	134.21	59.0	8.0	10.0

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Catches	Run_outs	Stumps
206	Rishabh Pant	Delhi	Indian	84.0	2498.0	35.18	147.46	56.0	5.0	14.0
105	Quinton De Kock	Lucknow	Overseas	77.0	2256.0	31.30	130.90	53.0	0.0	14.0
219	Jos Butler	Rajasthan	Overseas	65.0	1968.0	35.14	150.00	34.0	3.0	1.0
107	Ishan Kishan	Mumbai	Indian	61.0	1452.0	28.50	136.30	19.0	1.0	2.0
108	Jonny Bairstow	Punjab	Overseas	28.0	1038.0	41.50	142.20	18.0	1.0	4.0
111	KS Bharat	Delhi	Indian	8.0	191.0	38.20	122.40	4.0	0.0	1.0

In [51]:

top\_Keeper\_Average

Out[51]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Catches	Run_outs	Stumps
108	Jonny Bairstow	Punjab	Overseas	28.0	1038.0	41.50	142.20	18.0	1.0	4.0
213	MS Dhoni	Chennai	Indian	220.0	4746.0	39.50	135.80	126.0	21.0	39.0
111	KS Bharat	Delhi	Indian	8.0	191.0	38.20	122.40	4.0	0.0	1.0
206	Rishabh Pant	Delhi	Indian	84.0	2498.0	35.18	147.46	56.0	5.0	14.0
219	Jos Butler	Rajasthan	Overseas	65.0	1968.0	35.14	150.00	34.0	3.0	1.0
105	Quinton De Kock	Lucknow	Overseas	77.0	2256.0	31.30	130.90	53.0	0.0	14.0
106	Ambati Rayudu	Chennai	Indian	175.0	3916.0	29.40	127.50	58.0	12.0	2.0
209	Sanju Samson	Rajasthan	Indian	121.0	3068.0	29.22	134.21	59.0	8.0	10.0
107	Ishan Kishan	Mumbai	Indian	61.0	1452.0	28.50	136.30	19.0	1.0	2.0
109	Dinesh Karthik	Bangalore	Indian	213.0	4046.0	25.80	129.70	123.0	14.0	32.0

In [52]:

top\_Keeper\_Strike\_Rate

Out[52]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Catches	Run_outs	Stumps
219	Jos Butler	Rajasthan	Overseas	65.0	1968.0	35.14	150.00	34.0	3.0	1.0
206	Rishabh Pant	Delhi	Indian	84.0	2498.0	35.18	147.46	56.0	5.0	14.0

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Catches	Run_outs	Stumps
108	Jonny Bairstow	Punjab	Overseas	28.0	1038.0	41.50	142.20	18.0	1.0	4.0
107	Ishan Kishan	Mumbai	Indian	61.0	1452.0	28.50	136.30	19.0	1.0	2.0
213	MS Dhoni	Chennai	Indian	220.0	4746.0	39.50	135.80	126.0	21.0	39.0
209	Sanju Samson	Rajasthan	Indian	121.0	3068.0	29.22	134.21	59.0	8.0	10.0
105	Quinton De Kock	Lucknow	Overseas	77.0	2256.0	31.30	130.90	53.0	0.0	14.0
109	Dinesh Karthik	Bangalore	Indian	213.0	4046.0	25.80	129.70	123.0	14.0	32.0
106	Ambati Rayudu	Chennai	Indian	175.0	3916.0	29.40	127.50	58.0	12.0	2.0
111	KS Bharat	Delhi	Indian	8.0	191.0	38.20	122.40	4.0	0.0	1.0

In [53]:

top\_Keeper\_Catches

Out[53]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Catches	Run_outs	Stumps
213	MS Dhoni	Chennai	Indian	220.0	4746.0	39.50	135.80	126.0	21.0	39.0
109	Dinesh Karthik	Bangalore	Indian	213.0	4046.0	25.80	129.70	123.0	14.0	32.0
209	Sanju Samson	Rajasthan	Indian	121.0	3068.0	29.22	134.21	59.0	8.0	10.0
106	Ambati Rayudu	Chennai	Indian	175.0	3916.0	29.40	127.50	58.0	12.0	2.0
206	Rishabh Pant	Delhi	Indian	84.0	2498.0	35.18	147.46	56.0	5.0	14.0
105	Quinton De Kock	Lucknow	Overseas	77.0	2256.0	31.30	130.90	53.0	0.0	14.0
219	Jos Butler	Rajasthan	Overseas	65.0	1968.0	35.14	150.00	34.0	3.0	1.0
107	Ishan Kishan	Mumbai	Indian	61.0	1452.0	28.50	136.30	19.0	1.0	2.0
108	Jonny Bairstow	Punjab	Overseas	28.0	1038.0	41.50	142.20	18.0	1.0	4.0
111	KS Bharat	Delhi	Indian	8.0	191.0	38.20	122.40	4.0	0.0	1.0

In [54]:

top\_Keeper\_Run\_outs

Out[54]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Catches	Run_outs	Stumps
--	-------------	------	-------------	----------------	------	---------	-------------	---------	----------	--------

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Catches	Run_outs	Stumps
<b>213</b>	MS Dhoni	Chennai	Indian	220.0	4746.0	39.50	135.80	126.0	21.0	39.0
<b>109</b>	Dinesh Karthik	Bangalore	Indian	213.0	4046.0	25.80	129.70	123.0	14.0	32.0
<b>106</b>	Ambati Rayudu	Chennai	Indian	175.0	3916.0	29.40	127.50	58.0	12.0	2.0
<b>209</b>	Sanju Samson	Rajasthan	Indian	121.0	3068.0	29.22	134.21	59.0	8.0	10.0
<b>206</b>	Rishabh Pant	Delhi	Indian	84.0	2498.0	35.18	147.46	56.0	5.0	14.0
<b>219</b>	Jos Butler	Rajasthan	Overseas	65.0	1968.0	35.14	150.00	34.0	3.0	1.0
<b>107</b>	Ishan Kishan	Mumbai	Indian	61.0	1452.0	28.50	136.30	19.0	1.0	2.0
<b>108</b>	Jonny Bairstow	Punjab	Overseas	28.0	1038.0	41.50	142.20	18.0	1.0	4.0
<b>105</b>	Quinton De Kock	Lucknow	Overseas	77.0	2256.0	31.30	130.90	53.0	0.0	14.0
<b>111</b>	KS Bharat	Delhi	Indian	8.0	191.0	38.20	122.40	4.0	0.0	1.0

In [55]:

top\_Keeper\_Stumps

Out[55]:

	Player Name	Team	Nationality	Matches_Played	Runs	Average	Strike_Rate	Catches	Run_outs	Stumps
<b>213</b>	MS Dhoni	Chennai	Indian	220.0	4746.0	39.50	135.80	126.0	21.0	39.0
<b>109</b>	Dinesh Karthik	Bangalore	Indian	213.0	4046.0	25.80	129.70	123.0	14.0	32.0
<b>105</b>	Quinton De Kock	Lucknow	Overseas	77.0	2256.0	31.30	130.90	53.0	0.0	14.0
<b>206</b>	Rishabh Pant	Delhi	Indian	84.0	2498.0	35.18	147.46	56.0	5.0	14.0
<b>209</b>	Sanju Samson	Rajasthan	Indian	121.0	3068.0	29.22	134.21	59.0	8.0	10.0
<b>108</b>	Jonny Bairstow	Punjab	Overseas	28.0	1038.0	41.50	142.20	18.0	1.0	4.0
<b>106</b>	Ambati Rayudu	Chennai	Indian	175.0	3916.0	29.40	127.50	58.0	12.0	2.0
<b>107</b>	Ishan Kishan	Mumbai	Indian	61.0	1452.0	28.50	136.30	19.0	1.0	2.0
<b>111</b>	KS Bharat	Delhi	Indian	8.0	191.0	38.20	122.40	4.0	0.0	1.0
<b>219</b>	Jos Butler	Rajasthan	Overseas	65.0	1968.0	35.14	150.00	34.0	3.0	1.0

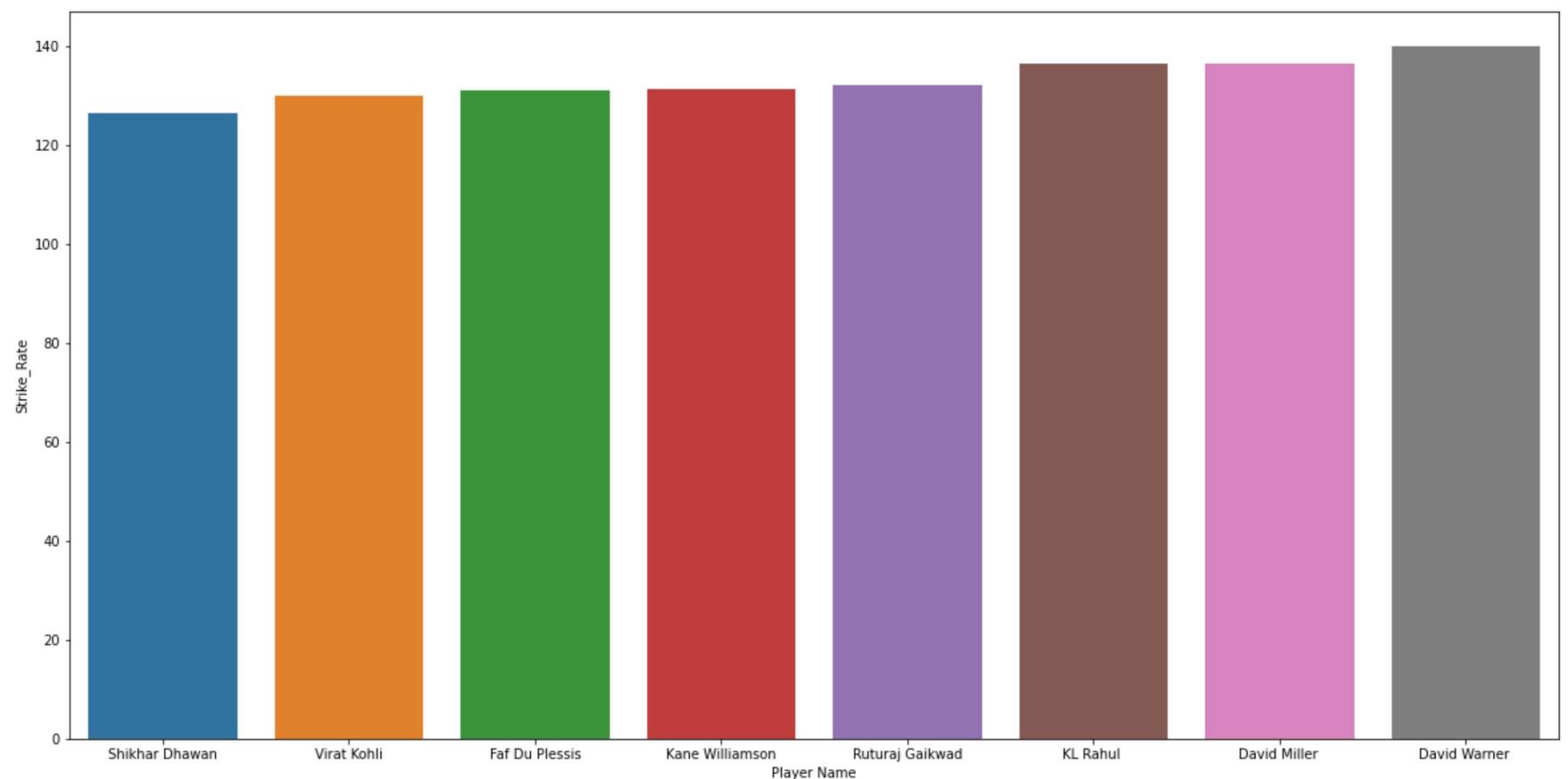
In [56]:

```
# Top keepers
# 1) MS Dhoni
# 2) Dinesh Karthik
# 3) Rishabh Pant
```

In [57]: `#visulazation of data`

In [58]: `#visulazation of batters data`  
`#the plot shows each of the top batters strike rate`  
`plt.figure(figsize=(20,10))`  
`sns.barplot(x='Player Name',y='Strike_Rate',data=top_batters , order=top_batters.sort_values('Strike_Rate')[['Player Name']]`

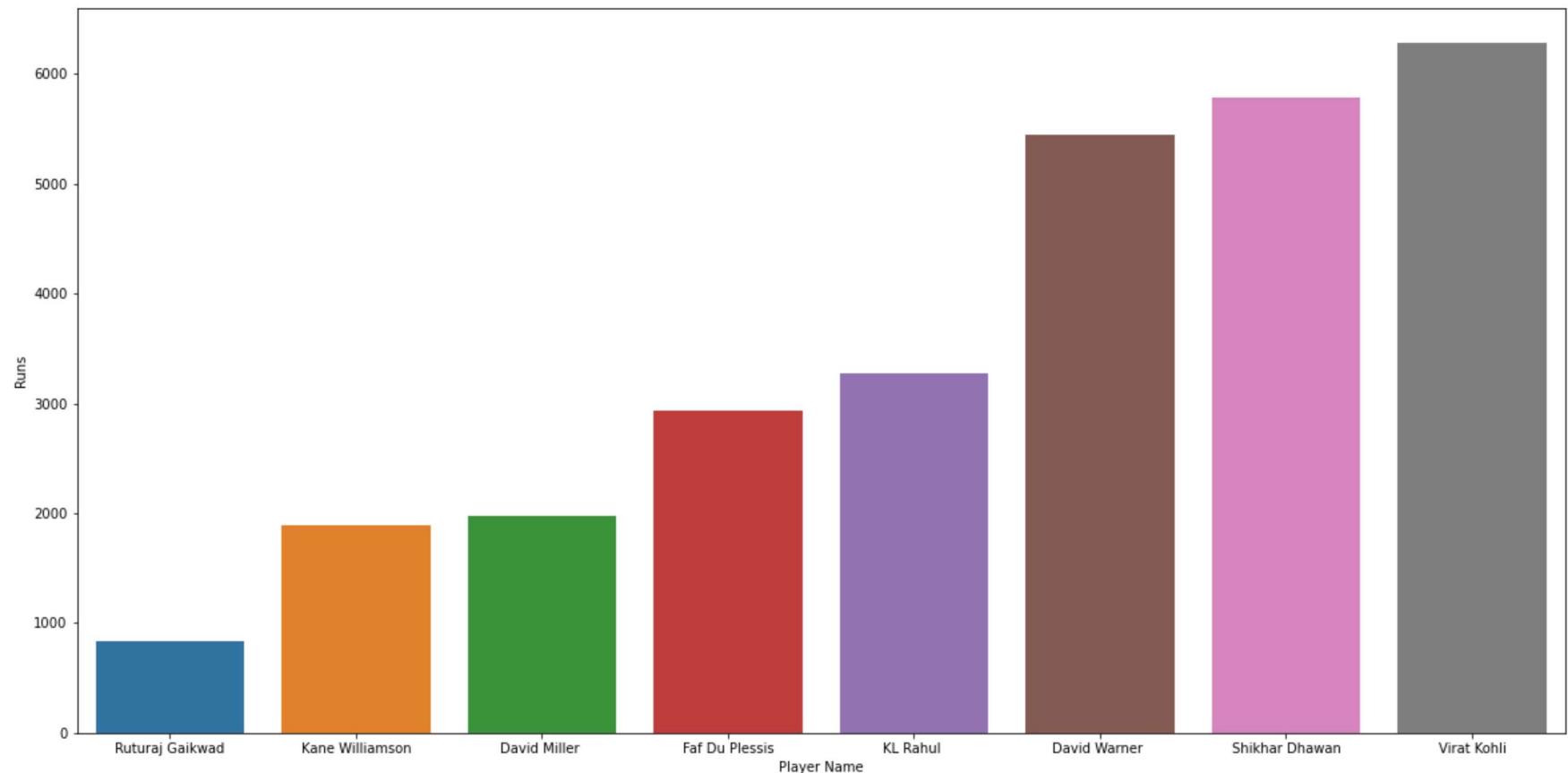
Out[58]: `<AxesSubplot:xlabel='Player Name', ylabel='Strike_Rate'>`



In [59]:

```
##plot the runs by players
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Runs',data=top_batters , order=top_batters.sort_values('Runs')['Player Name'])
```

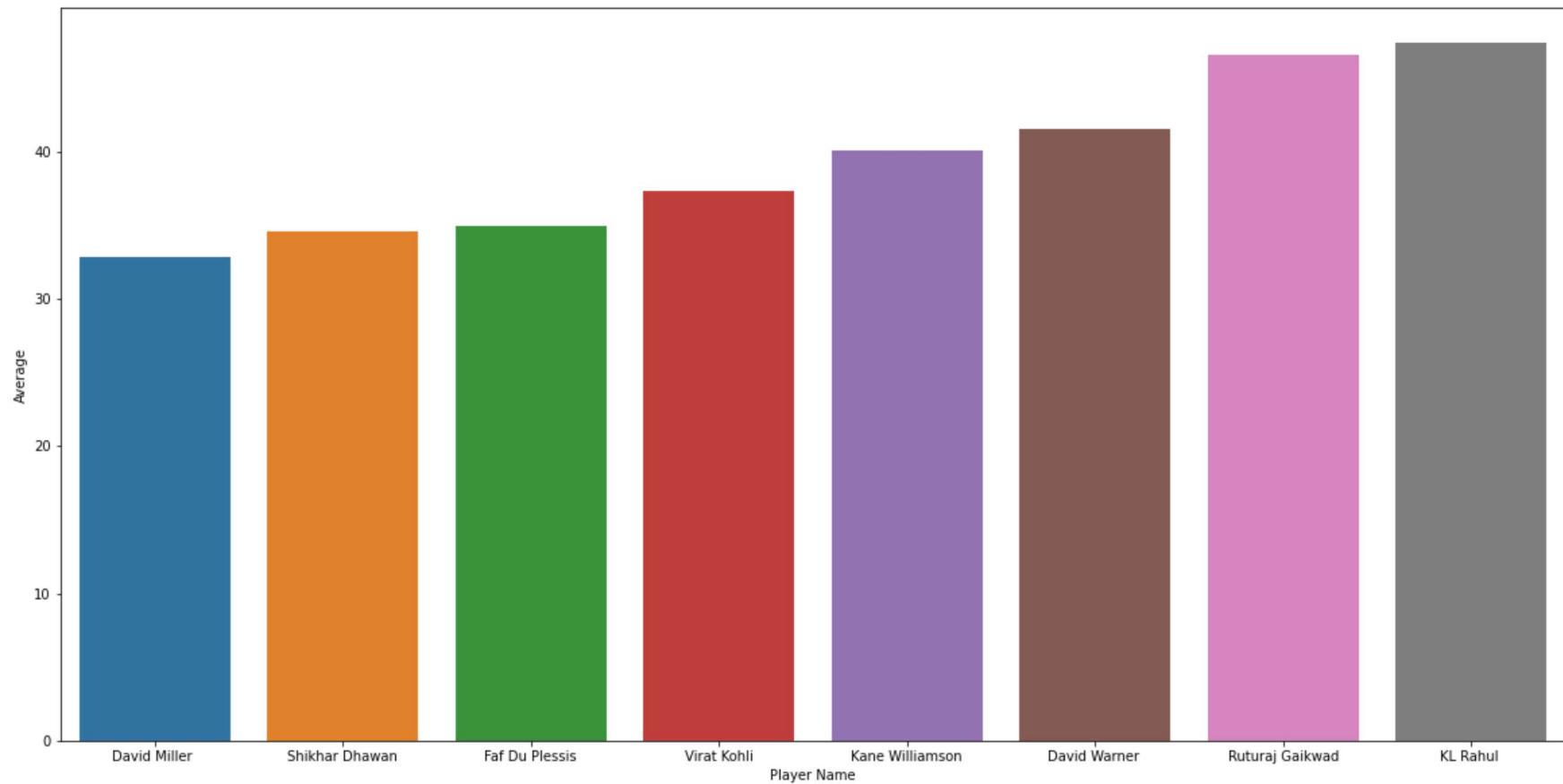
Out[59]: &lt;AxesSubplot:xlabel='Player Name', ylabel='Runs'&gt;



In [60]:

```
## average by players
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Average',data=top_batters , order=top_batters.sort_values('Average')['Player Name'])
```

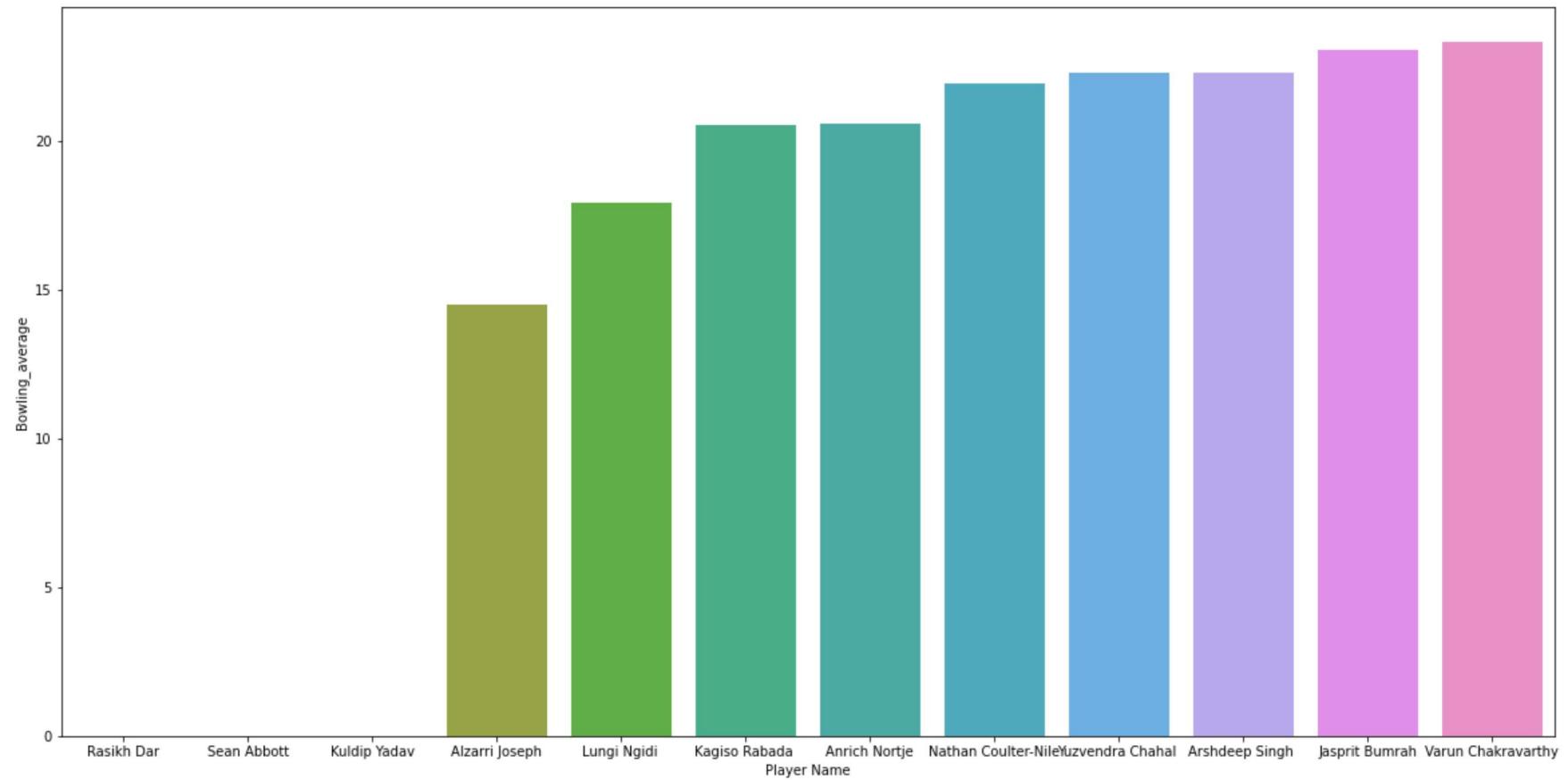
Out[60]: &lt;AxesSubplot:xlabel='Player Name', ylabel='Average'&gt;



In [61]:

```
#visualazation of bowlwers data
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Bowling_average',data=top_bowlers , order=top_bowlers.sort_values('Bowling_average')['Play
```

Out[61]:

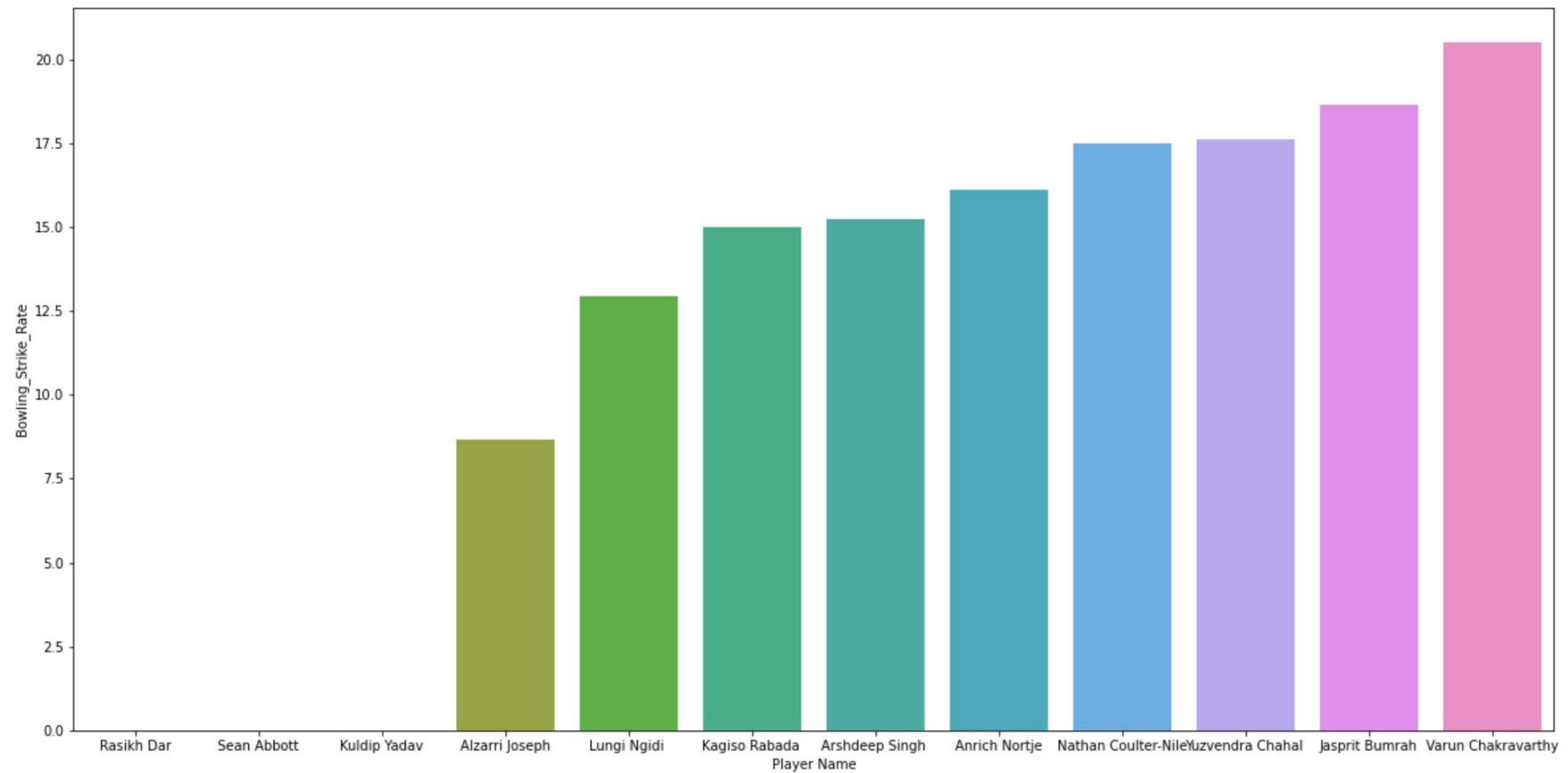


In [62]:

```
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Bowling_Strike_Rate',data=top_bowlers , order=top_bowlers.sort_values('Bowling_Strike_Rate'))
```

Out[62]:

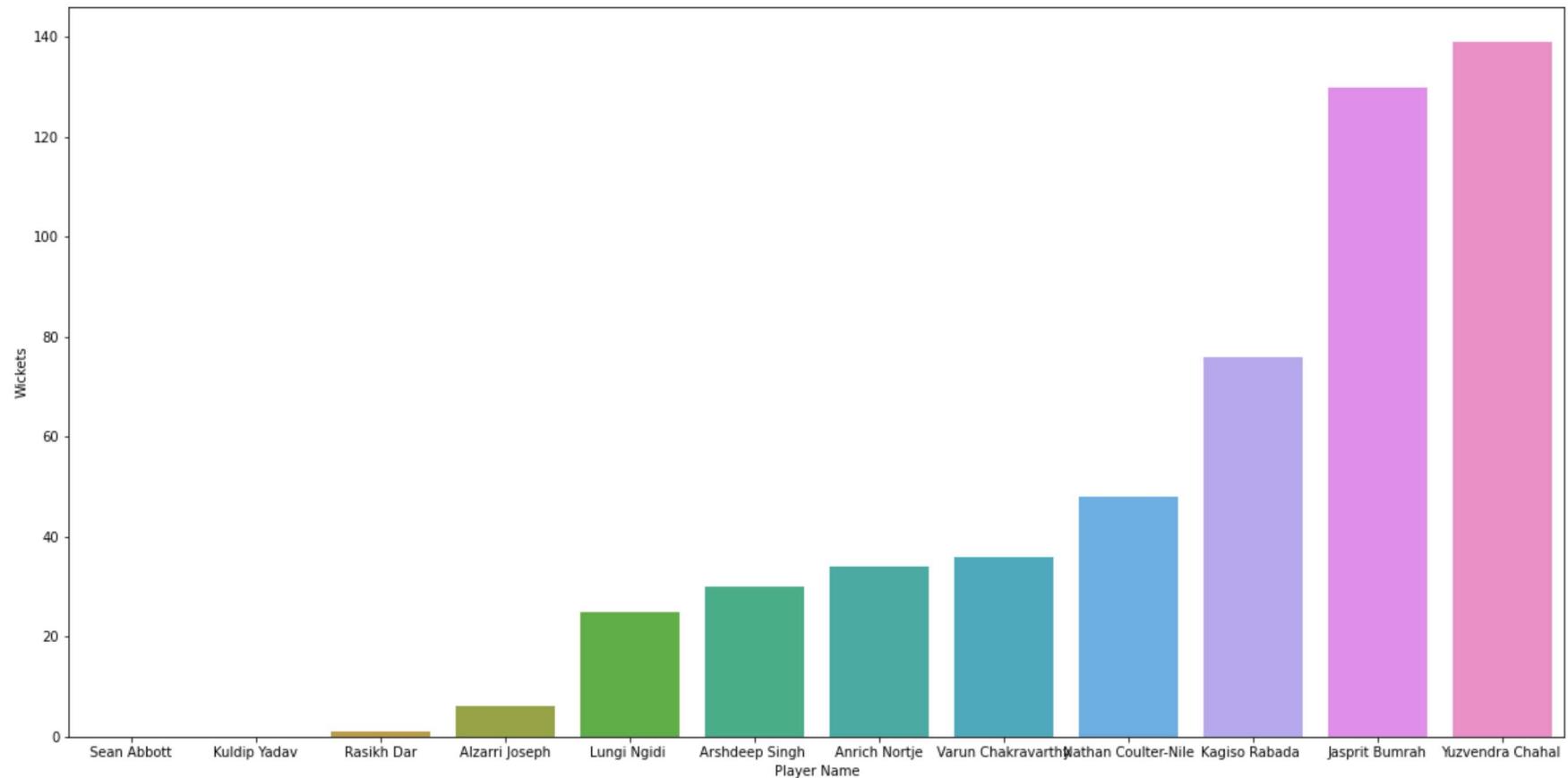
```
<AxesSubplot:xlabel='Player Name', ylabel='Bowling_Strike_Rate'>
```



In [63]:

```
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Wickets',data=top_bowlers , order=top_bowlers.sort_values('Wickets')['Player Name'])
```

Out[63]: &lt;AxesSubplot:xlabel='Player Name', ylabel='Wickets'&gt;

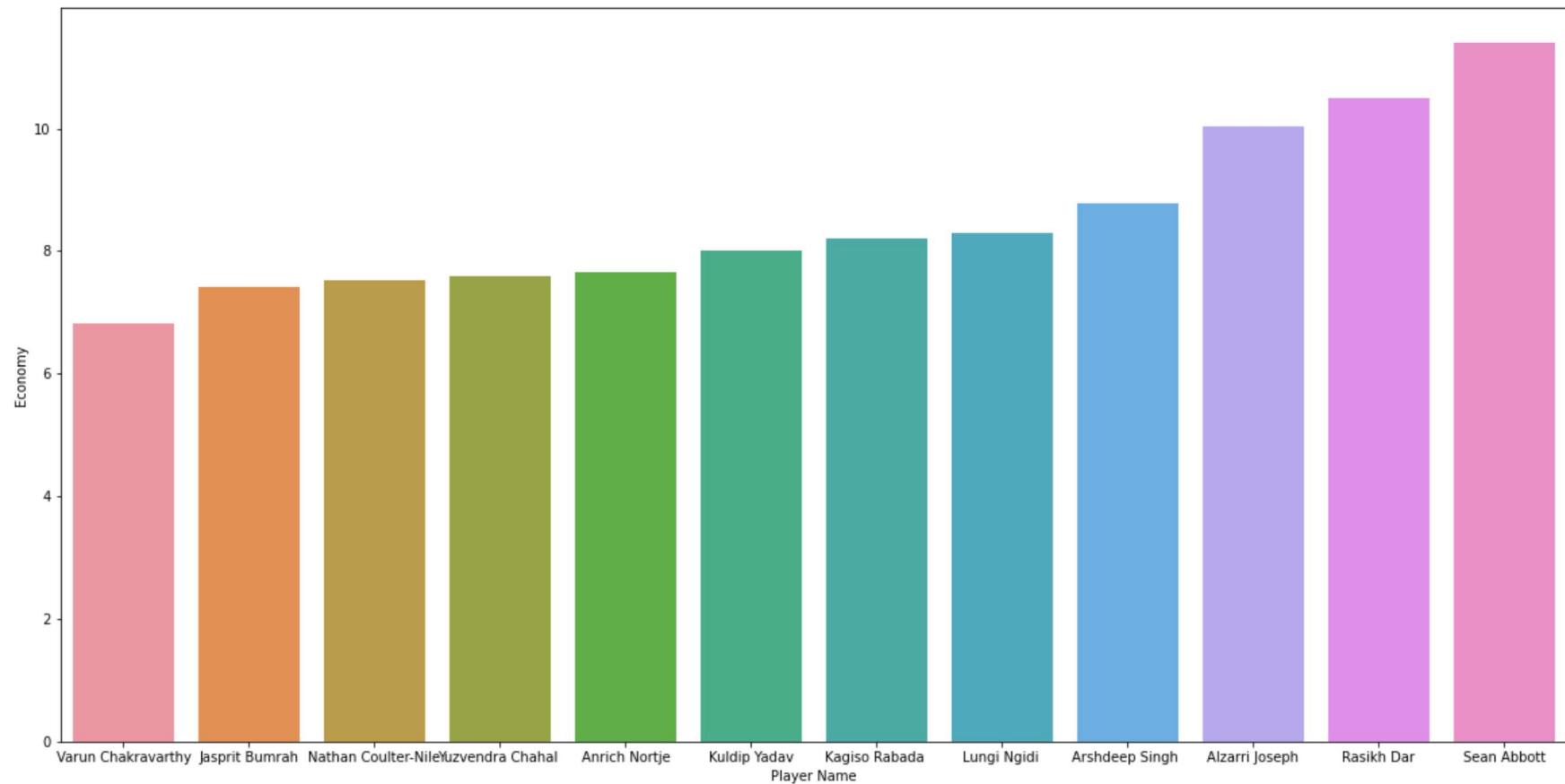


In [64]:

```
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Economy',data=top_bowlers , order=top_bowlers.sort_values('Economy')['Player Name'])
```

Out[64]:

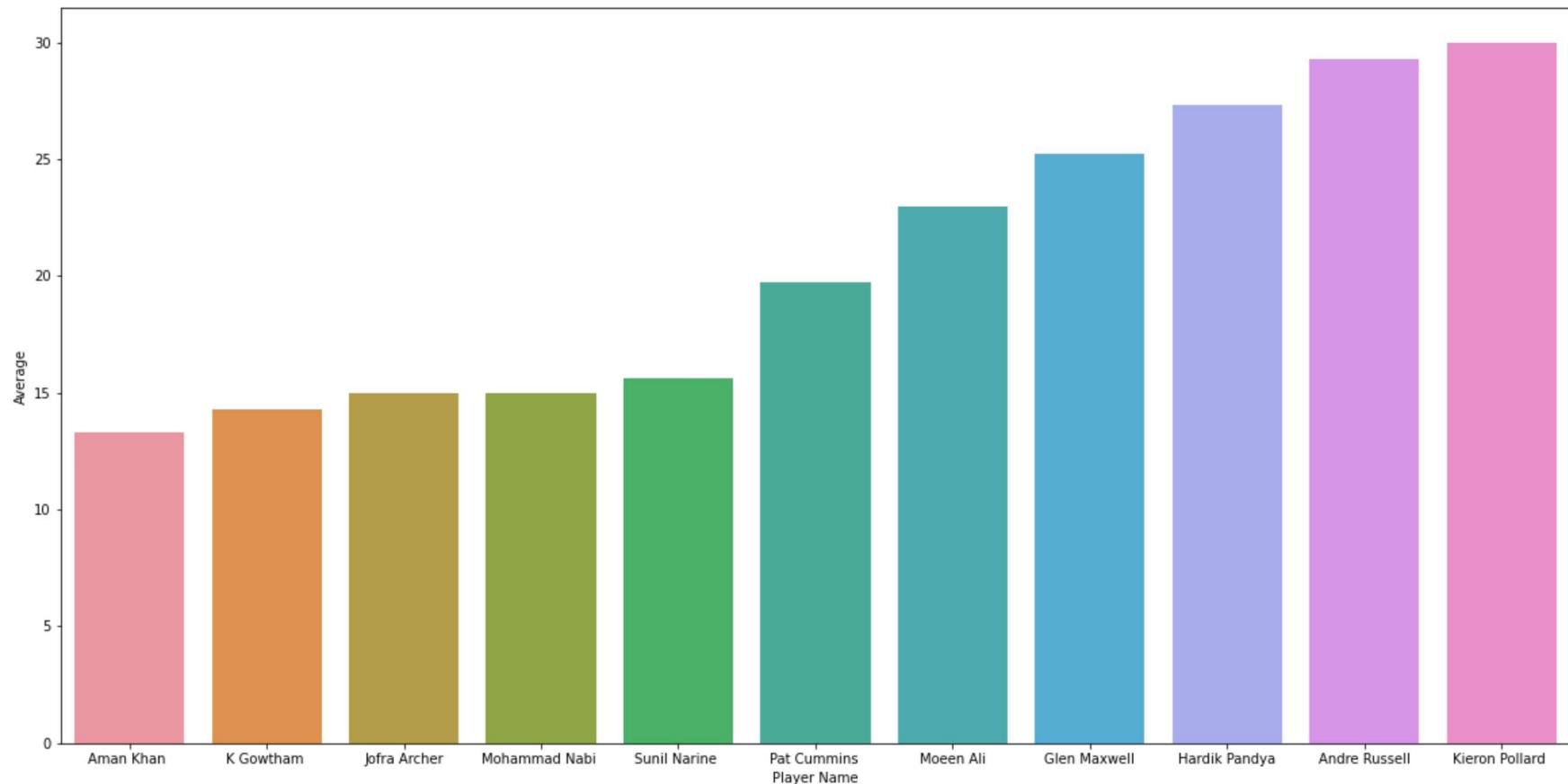
```
<AxesSubplot:xlabel='Player Name', ylabel='Economy'>
```



In [65]:

```
##visulazation of all rounders data
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Average',data=top_Allrounder , order=top_Allrounder.sort_values('Average')['Player Name'])
```

Out[65]:

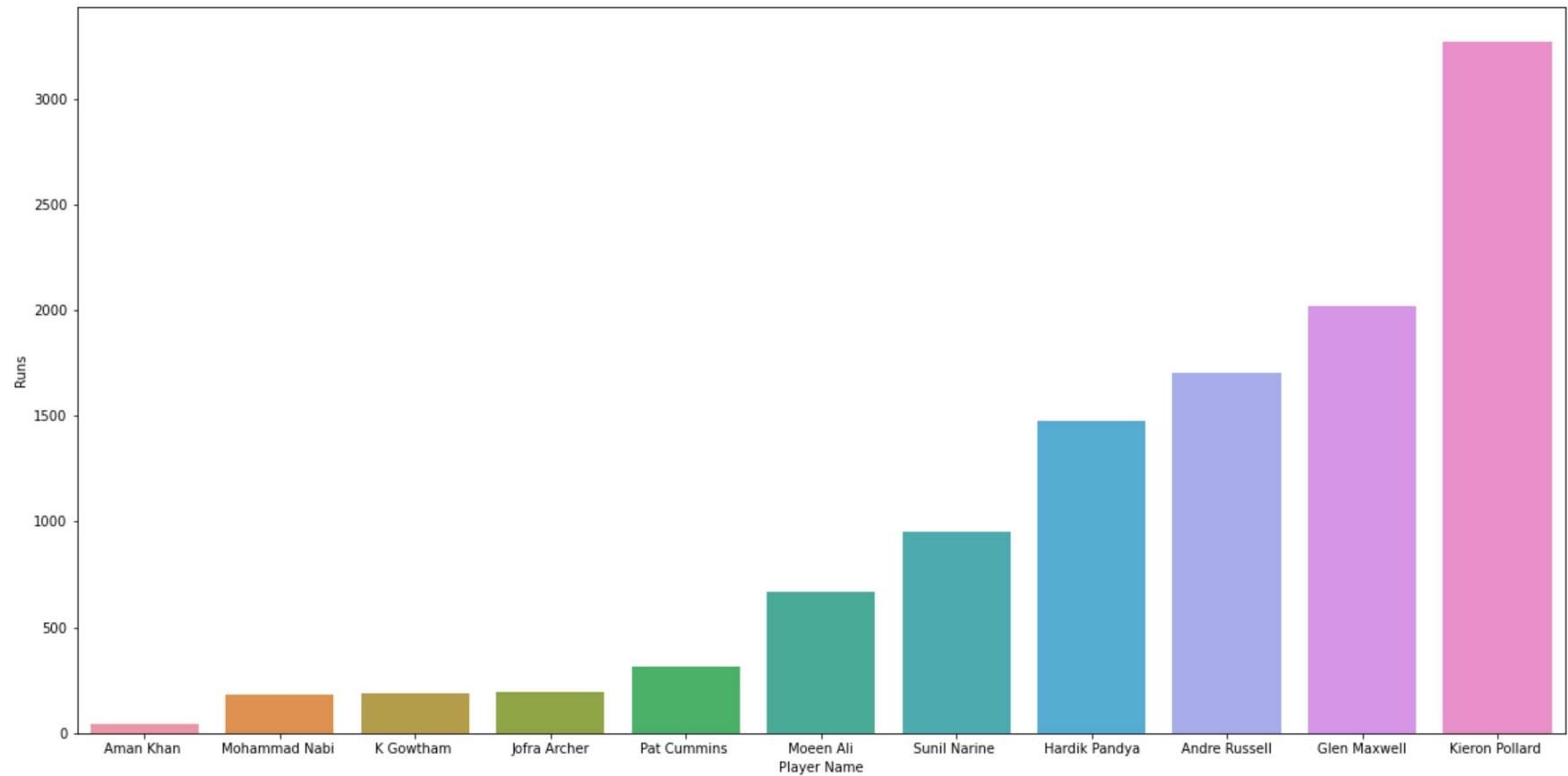


In [66]:

```
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Runs',data=top_Allrounder , order=top_Allrounder.sort_values('Runs')[['Player Name']])
```

Out[66]:

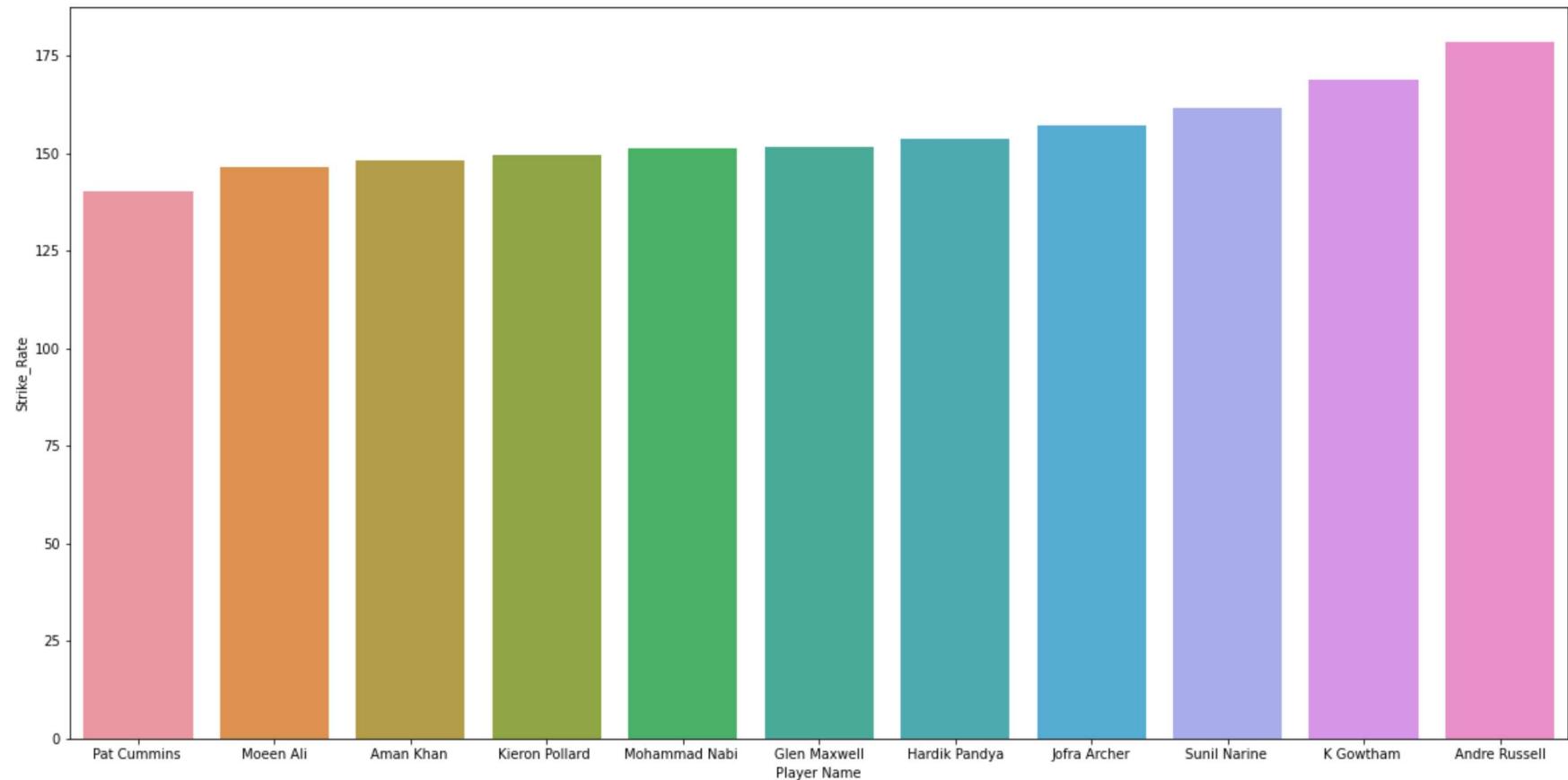
```
<AxesSubplot:xlabel='Player Name', ylabel='Runs'>
```



In [67]:

```
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Strike_Rate',data=top_Allrounder , order=top_Allrounder.sort_values('Strike_Rate')['Player Name'])
```

Out[67]: &lt;AxesSubplot:xlabel='Player Name', ylabel='Strike\_Rate'&gt;

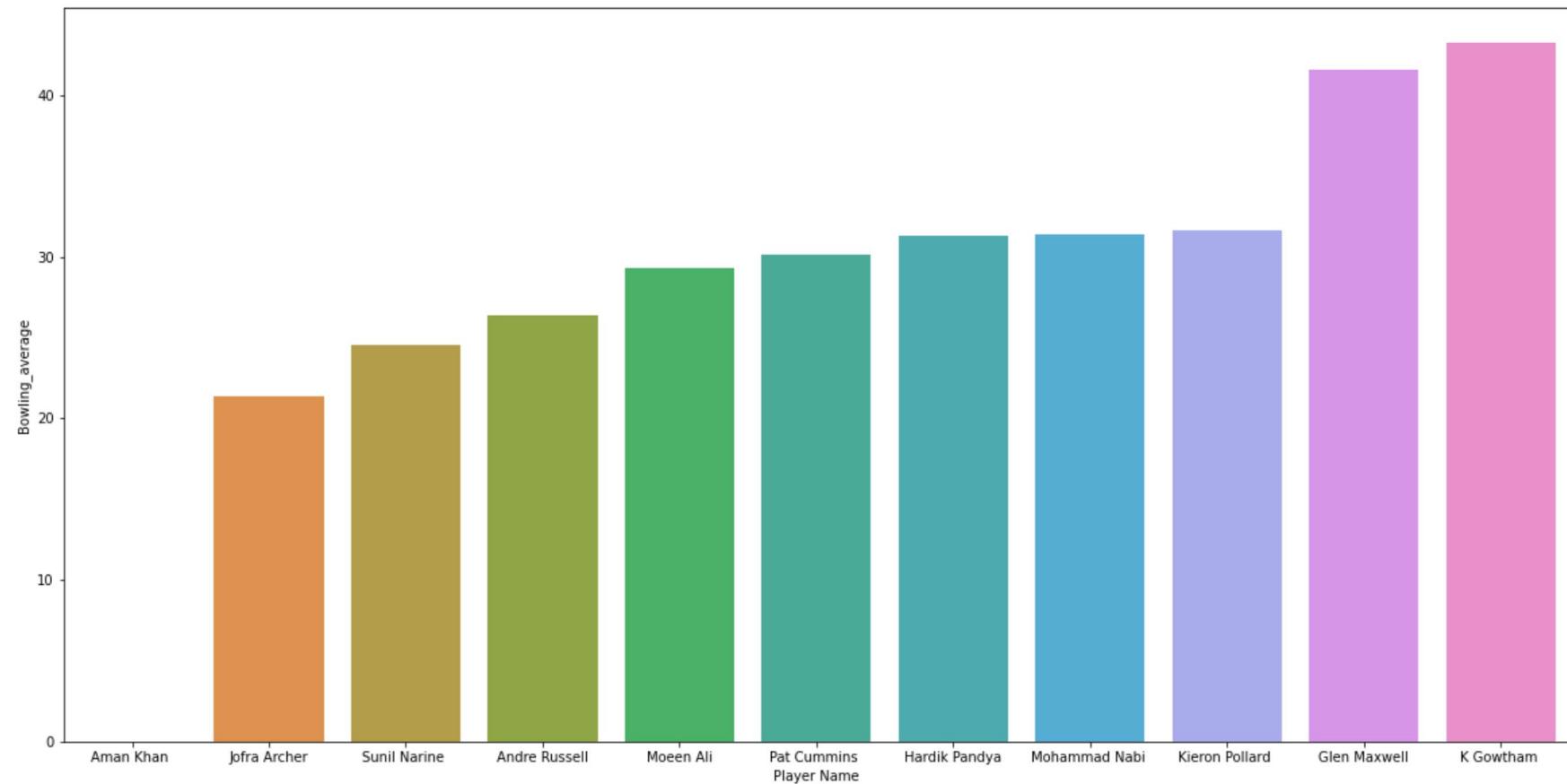


In [68]:

```
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Bowling_average',data=top_Allrounder , order=top_Allrounder.sort_values('Bowling_average'))
```

Out[68]:

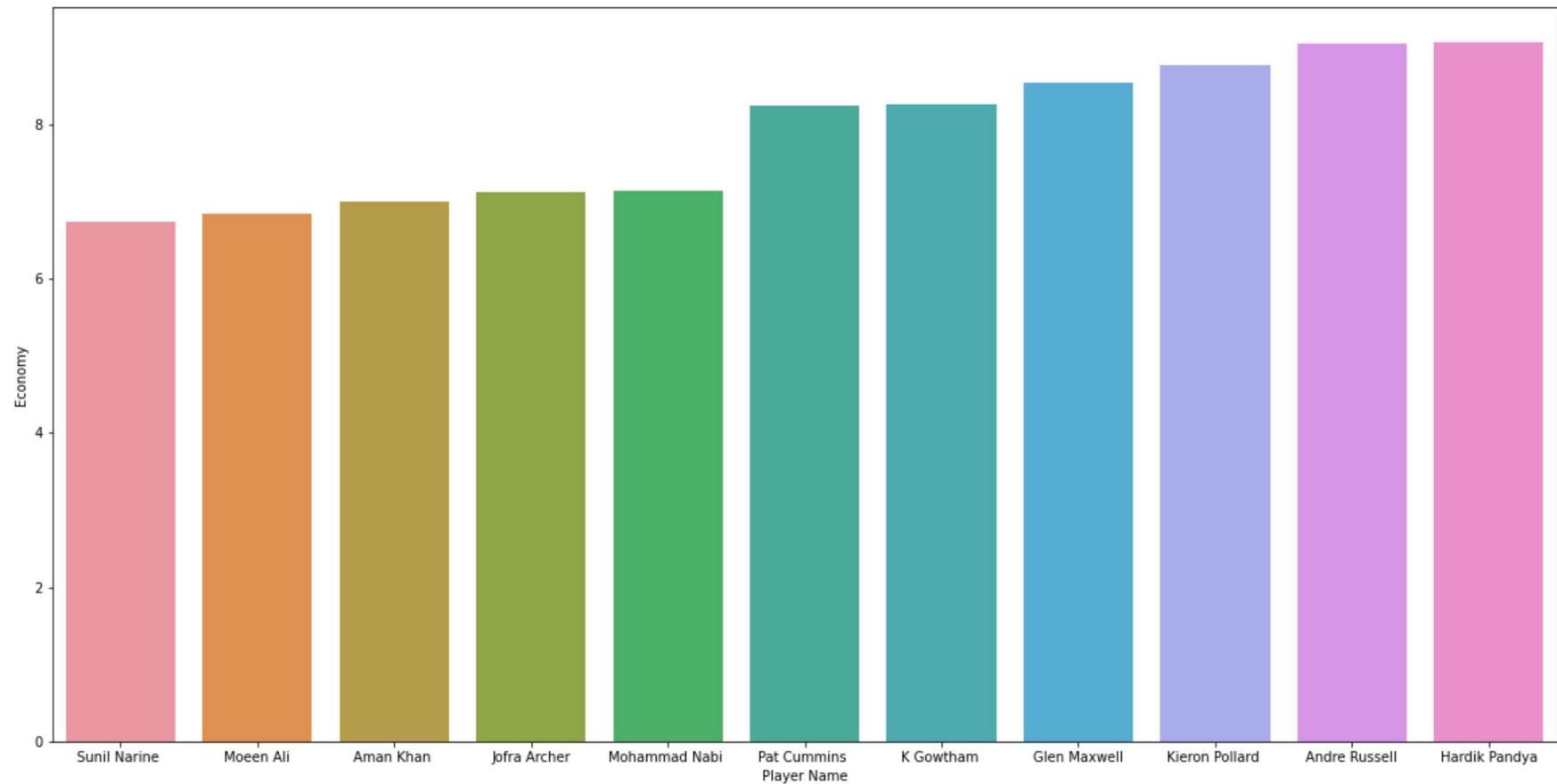
```
<AxesSubplot:xlabel='Player Name', ylabel='Bowling_average'>
```



In [69]:

```
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Economy',data=top_Allrounder , order=top_Allrounder.sort_values('Economy')['Player Name'])
```

Out[69]: &lt;AxesSubplot:xlabel='Player Name', ylabel='Economy'&gt;

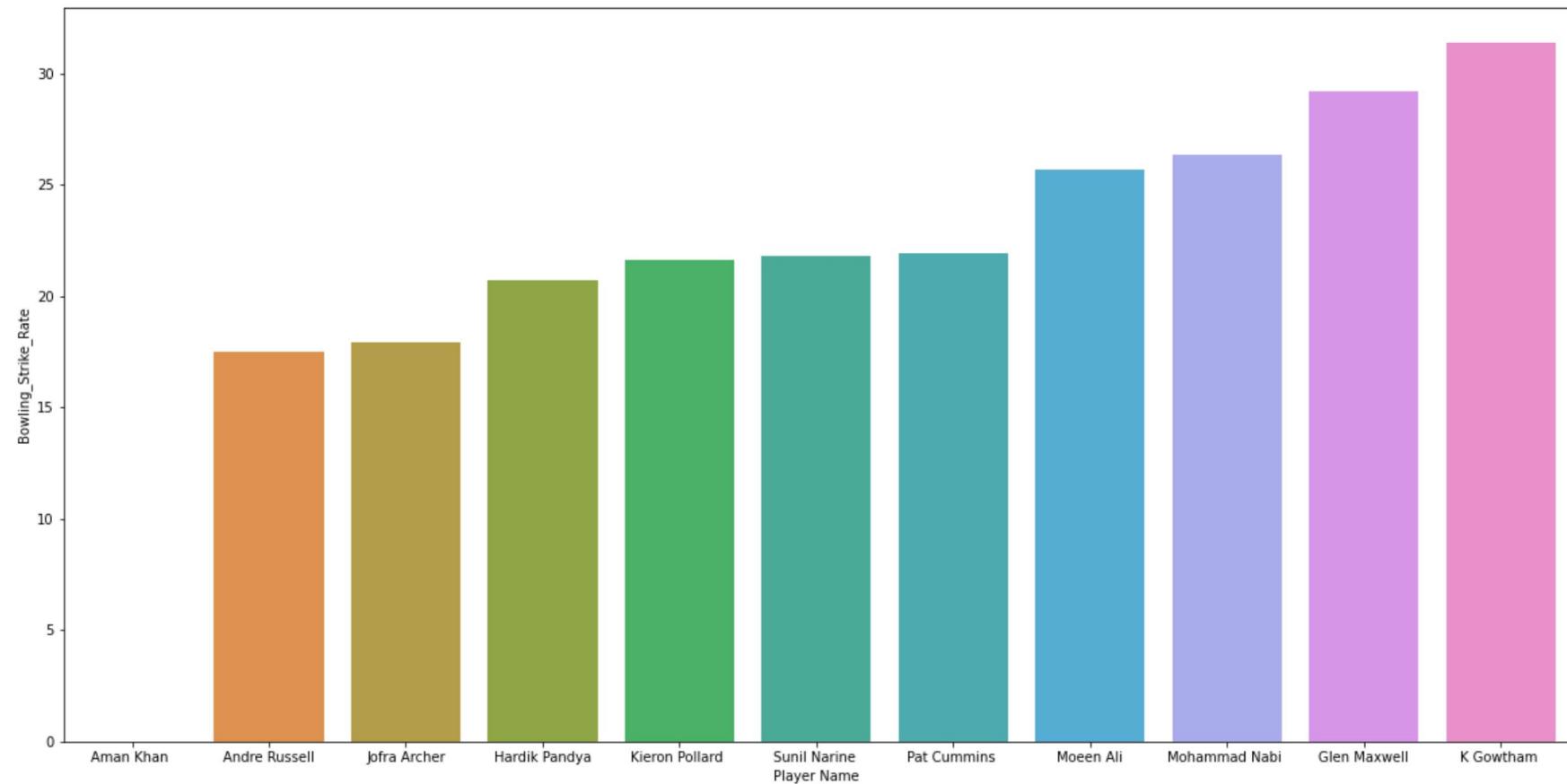


In [70]:

```
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Bowling_Strike_Rate',data=top_Allrounder , order=top_Allrounder.sort_values('Bowling_Strik
```

Out[70]:

```
<AxesSubplot:xlabel='Player Name', ylabel='Bowling_Strike_Rate'>
```

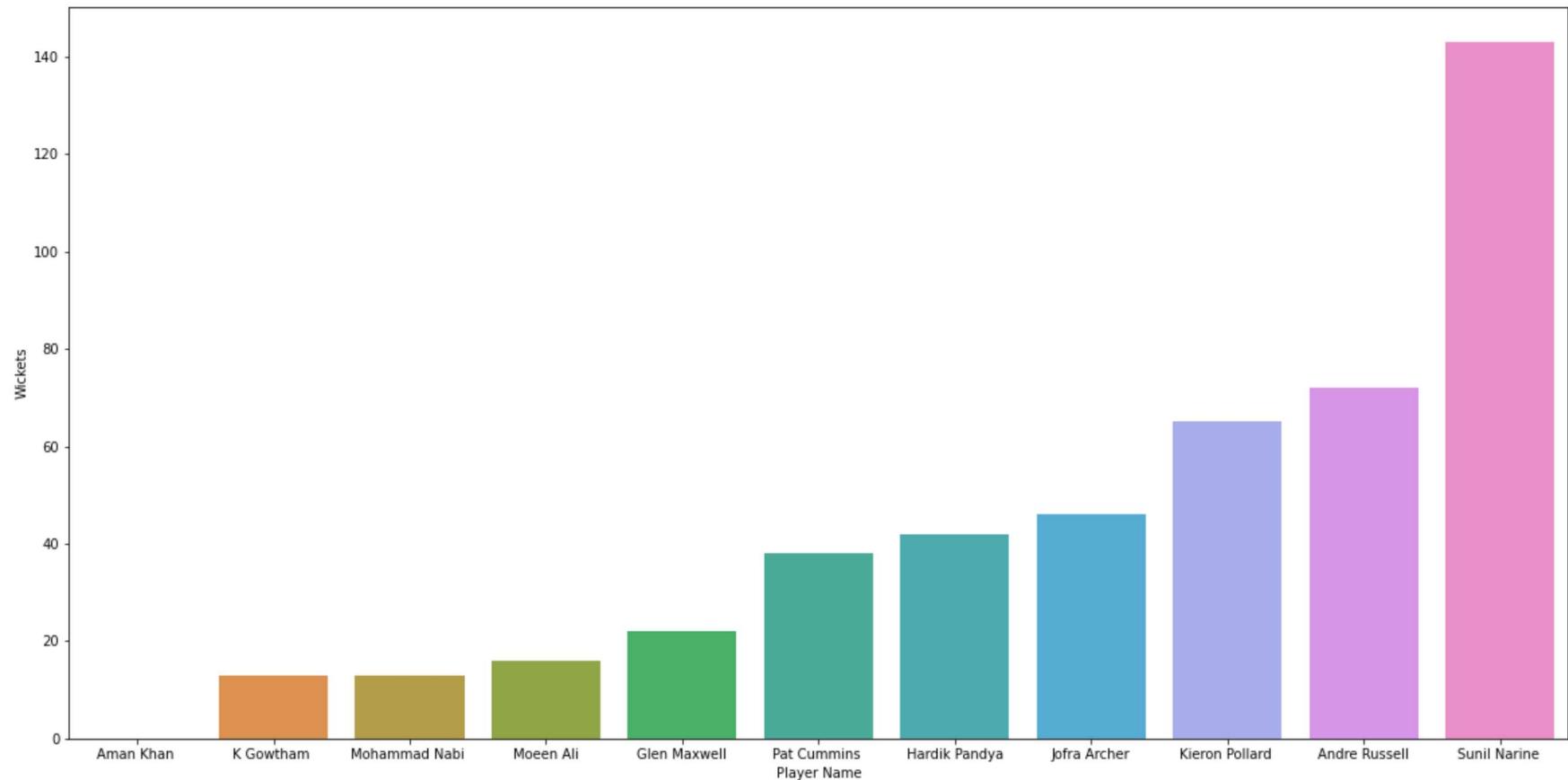


In [71]:

```
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Wickets',data=top_Allrounder , order=top_Allrounder.sort_values('Wickets')['Player Name'])
```

Out[71]:

```
<AxesSubplot:xlabel='Player Name', ylabel='Wickets'>
```

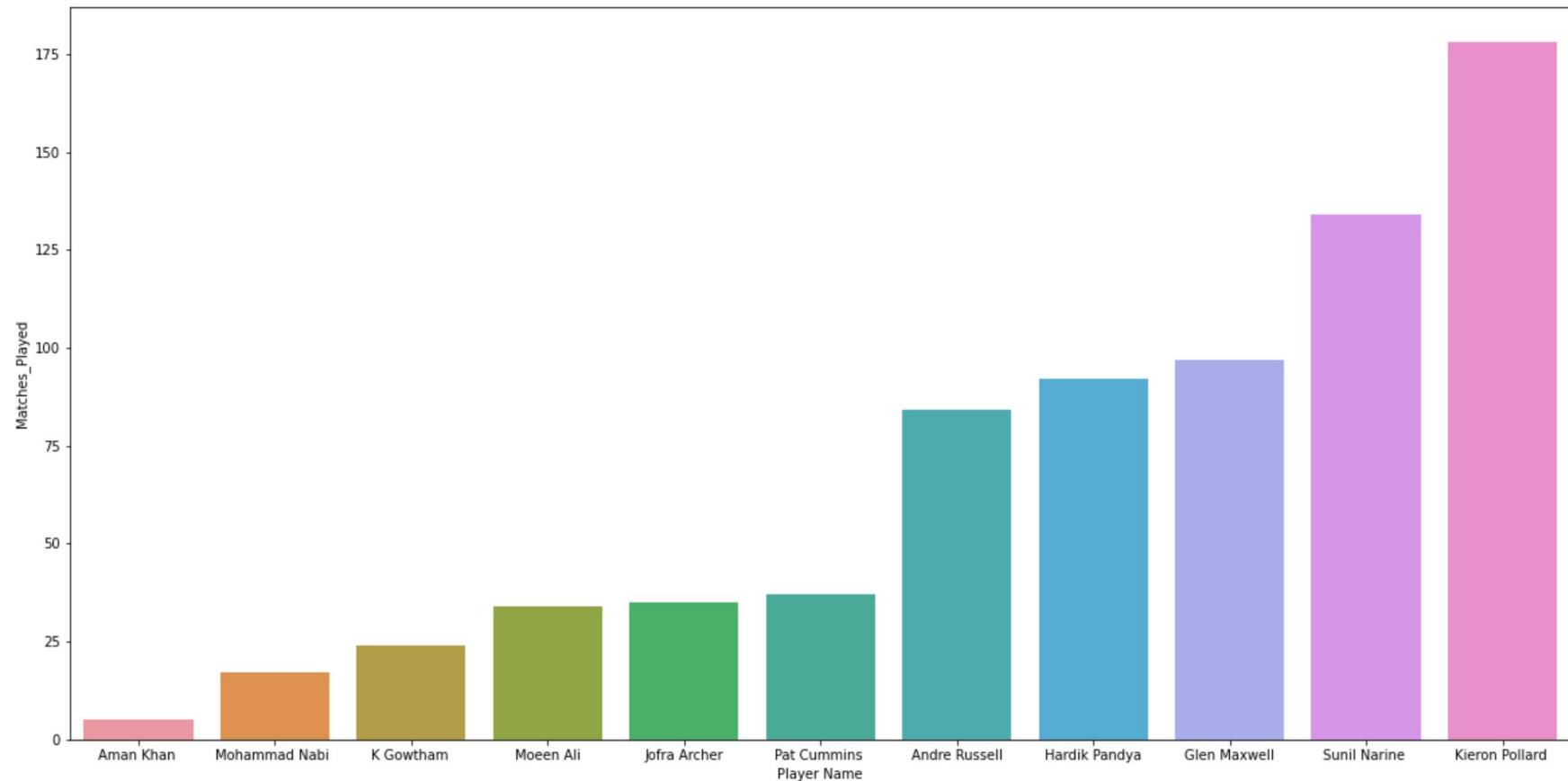


In [72]:

```
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Matches Played',data=top_Allrounder , order=top_Allrounder.sort_values('Matches Played')[
```

Out[72]:

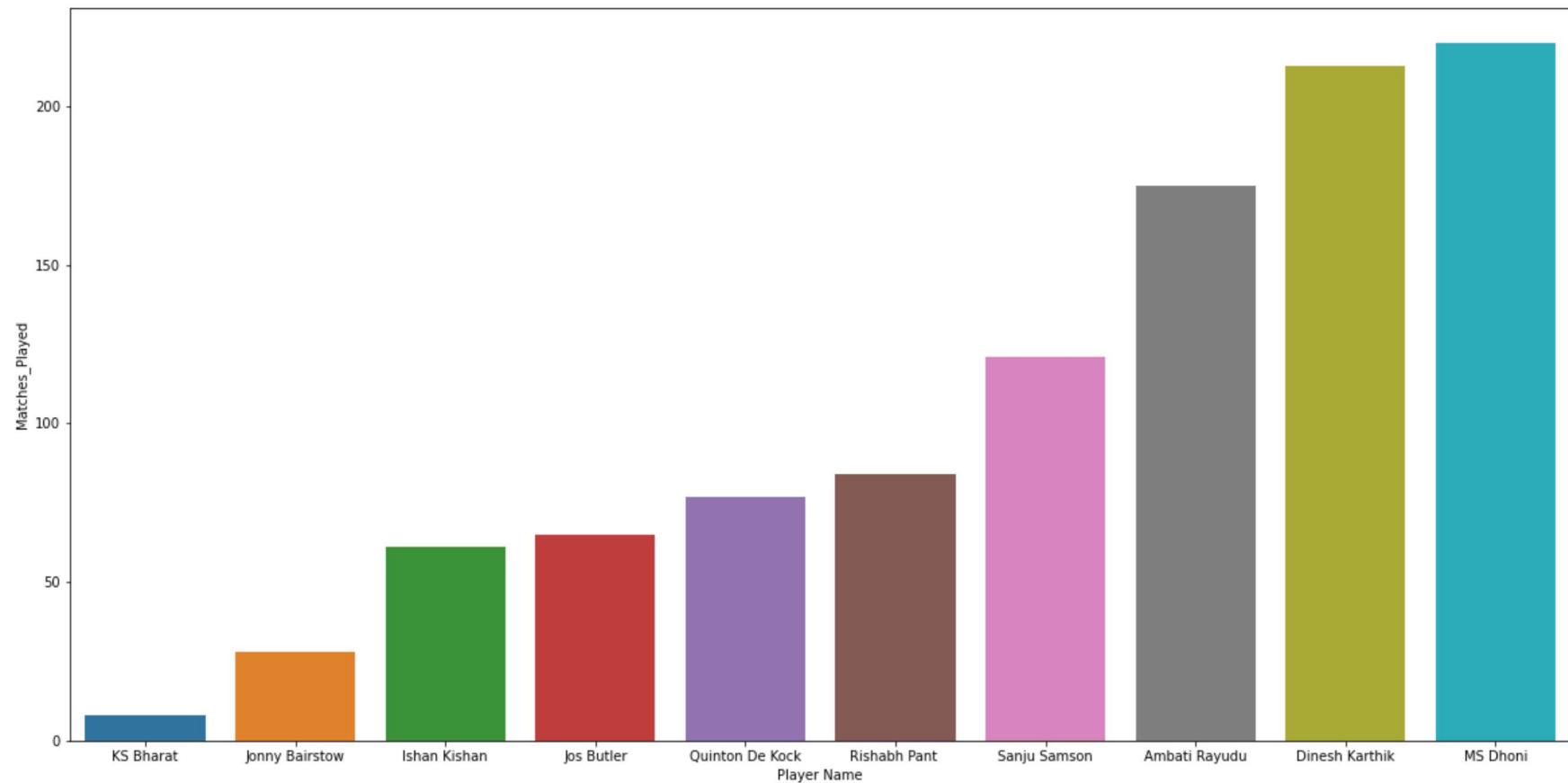
```
<AxesSubplot:xlabel='Player Name', ylabel='Matches Played'>
```



```
In [73]: ## analyzing the keepers data
```

```
In [74]: plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Matches Played',data=top_Keeper , order=top_Keeper.sort_values('Matches Played')['Player N
```

```
Out[74]: <AxesSubplot:xlabel='Player Name', ylabel='Matches Played'>
```

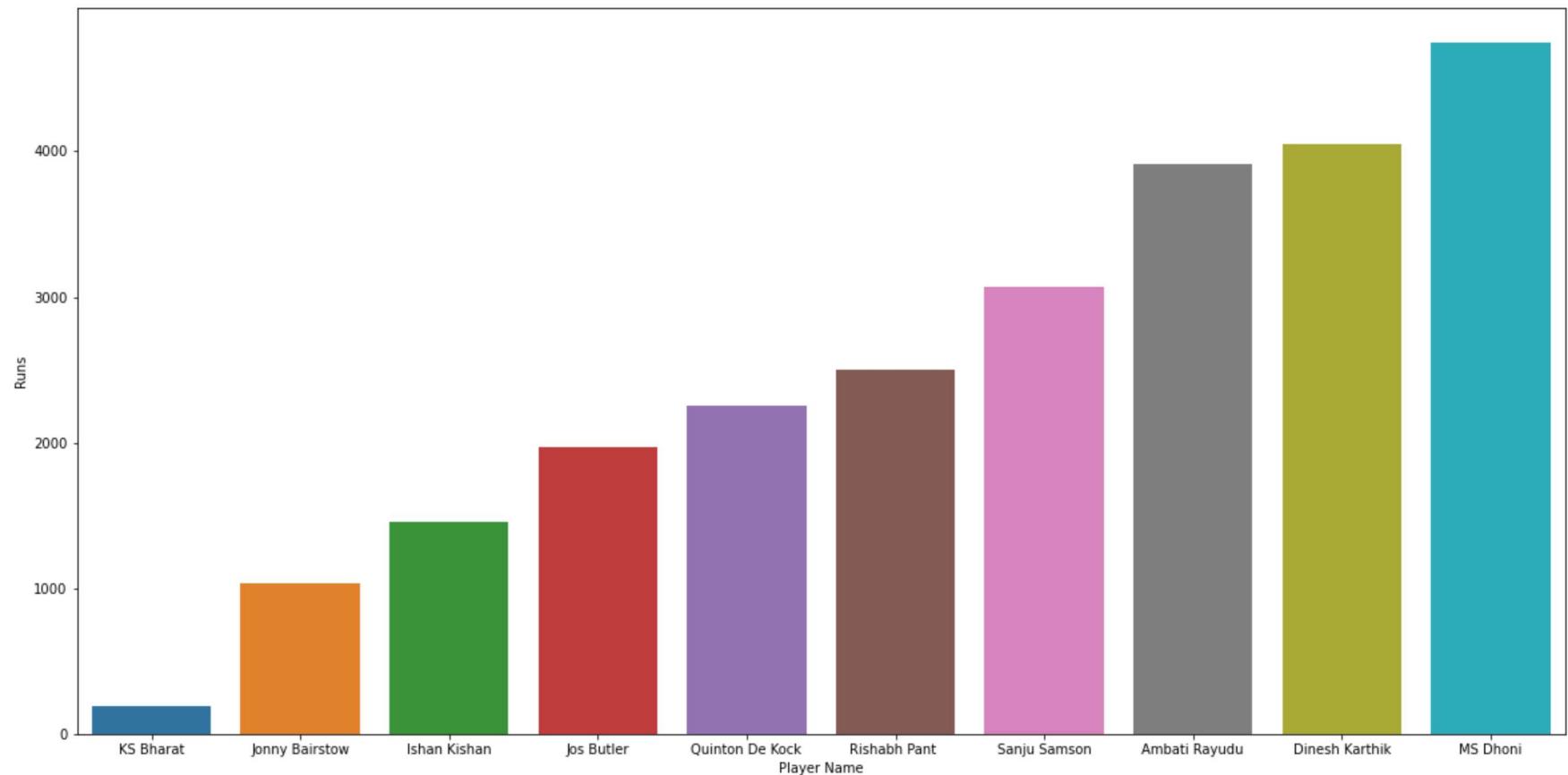


In [75]:

```
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Runs',data=top_Keeper , order=top_Keeper.sort_values('Runs')['Player Name'])
```

Out[75]:

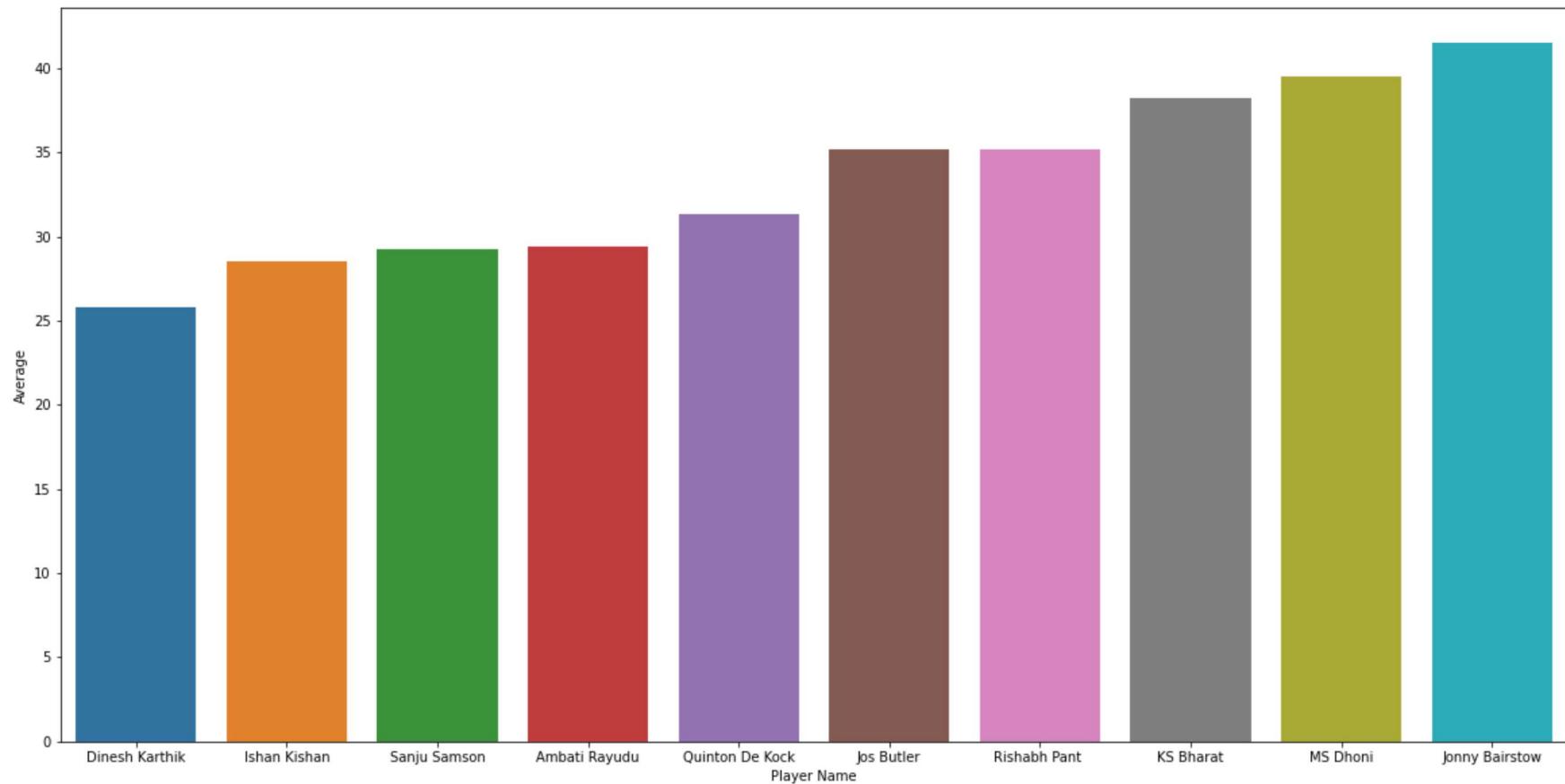
```
<AxesSubplot:xlabel='Player Name', ylabel='Runs'>
```



In [76]:

```
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Average',data=top_Keeper , order=top_Keeper.sort_values('Average')['Player Name'])
```

Out[76]: &lt;AxesSubplot:xlabel='Player Name', ylabel='Average'&gt;

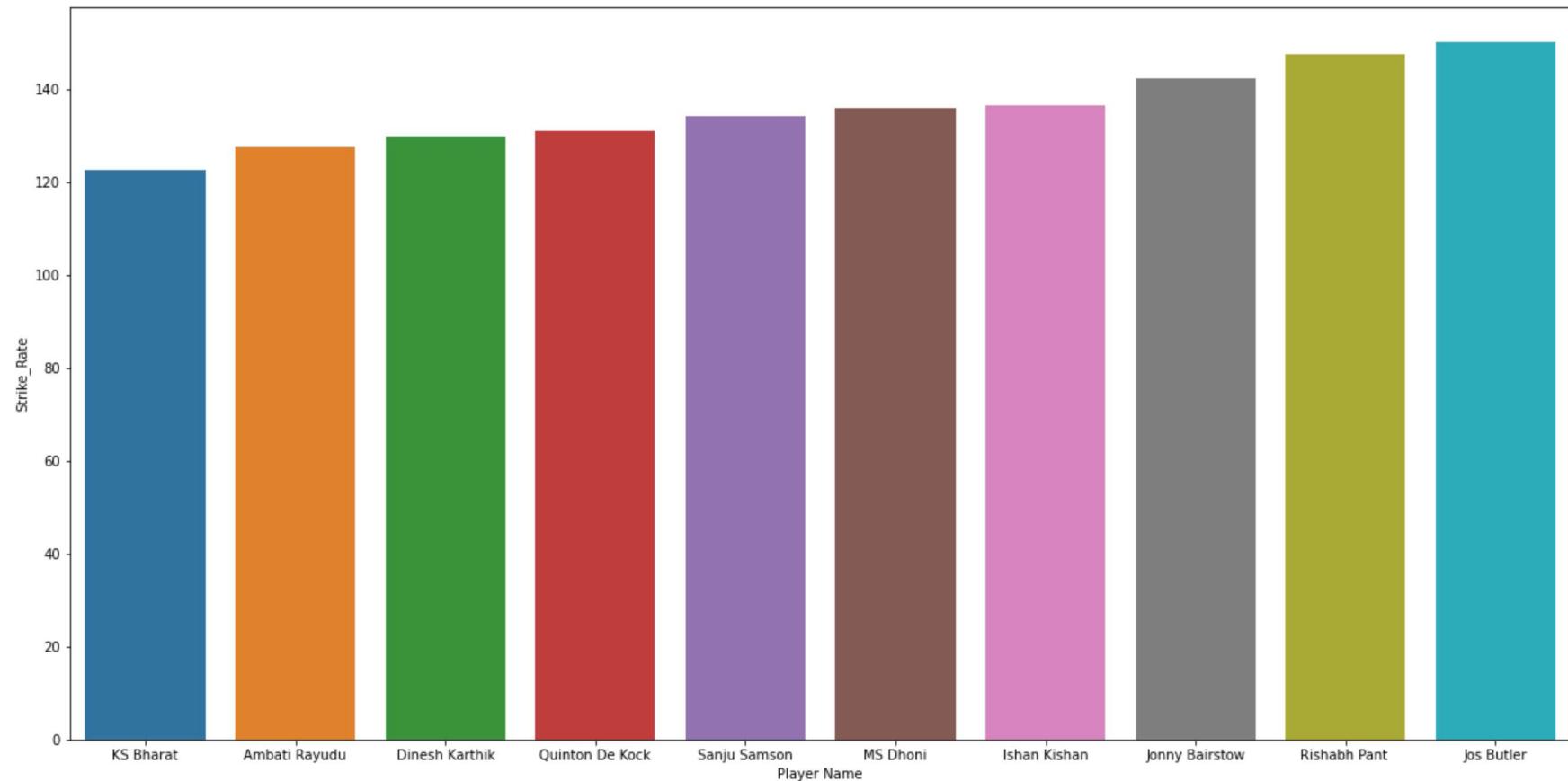


In [77]:

```
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Strike_Rate',data=top_Keeper , order=top_Keeper.sort_values('Strike_Rate')[['Player Name']])
```

Out[77]:

```
<AxesSubplot:xlabel='Player Name', ylabel='Strike_Rate'>
```

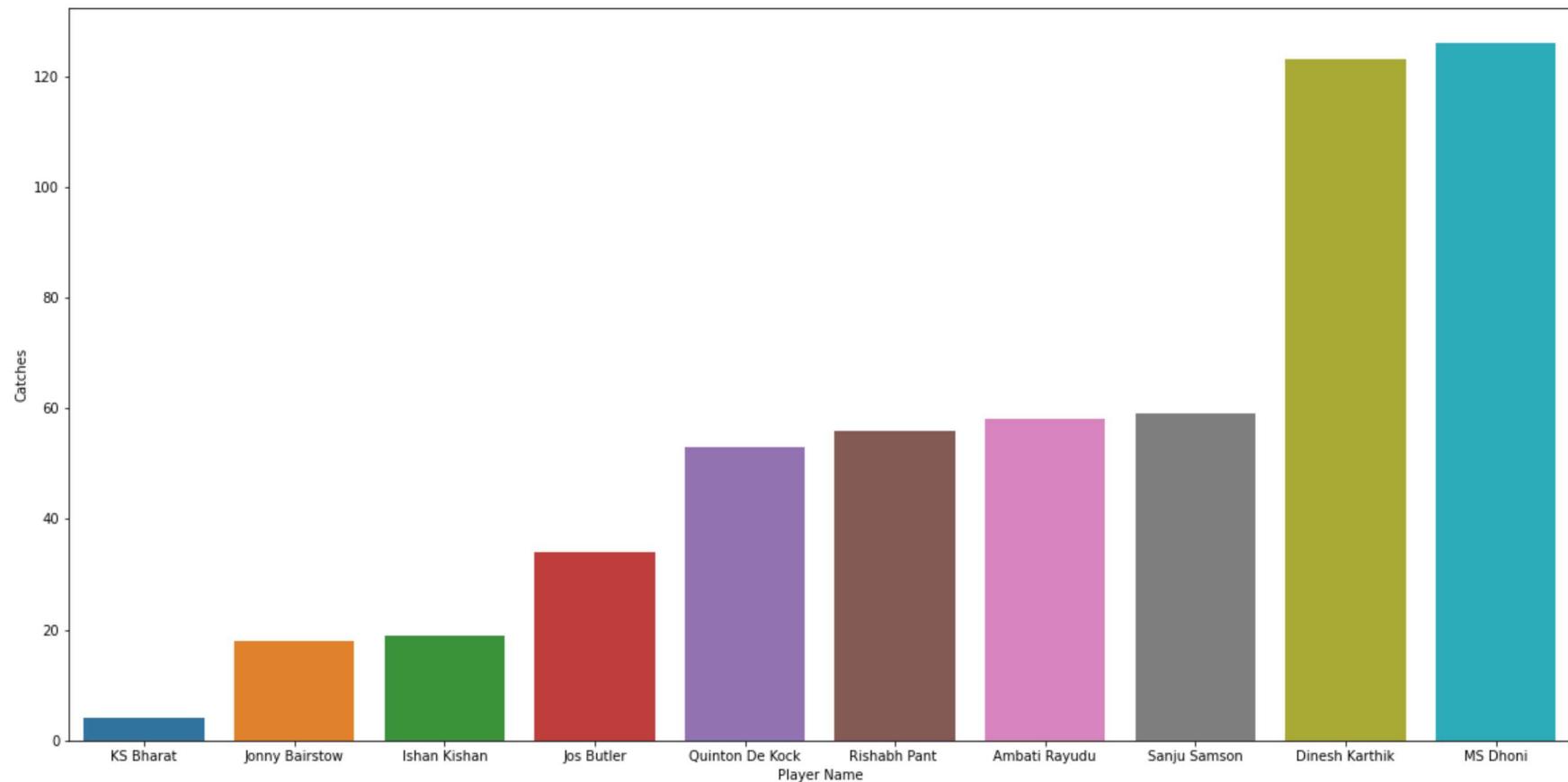


In [78]:

```
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Catches',data=top_Keeper , order=top_Keeper.sort_values('Catches')['Player Name'])
```

Out[78]:

```
<AxesSubplot:xlabel='Player Name', ylabel='Catches'>
```

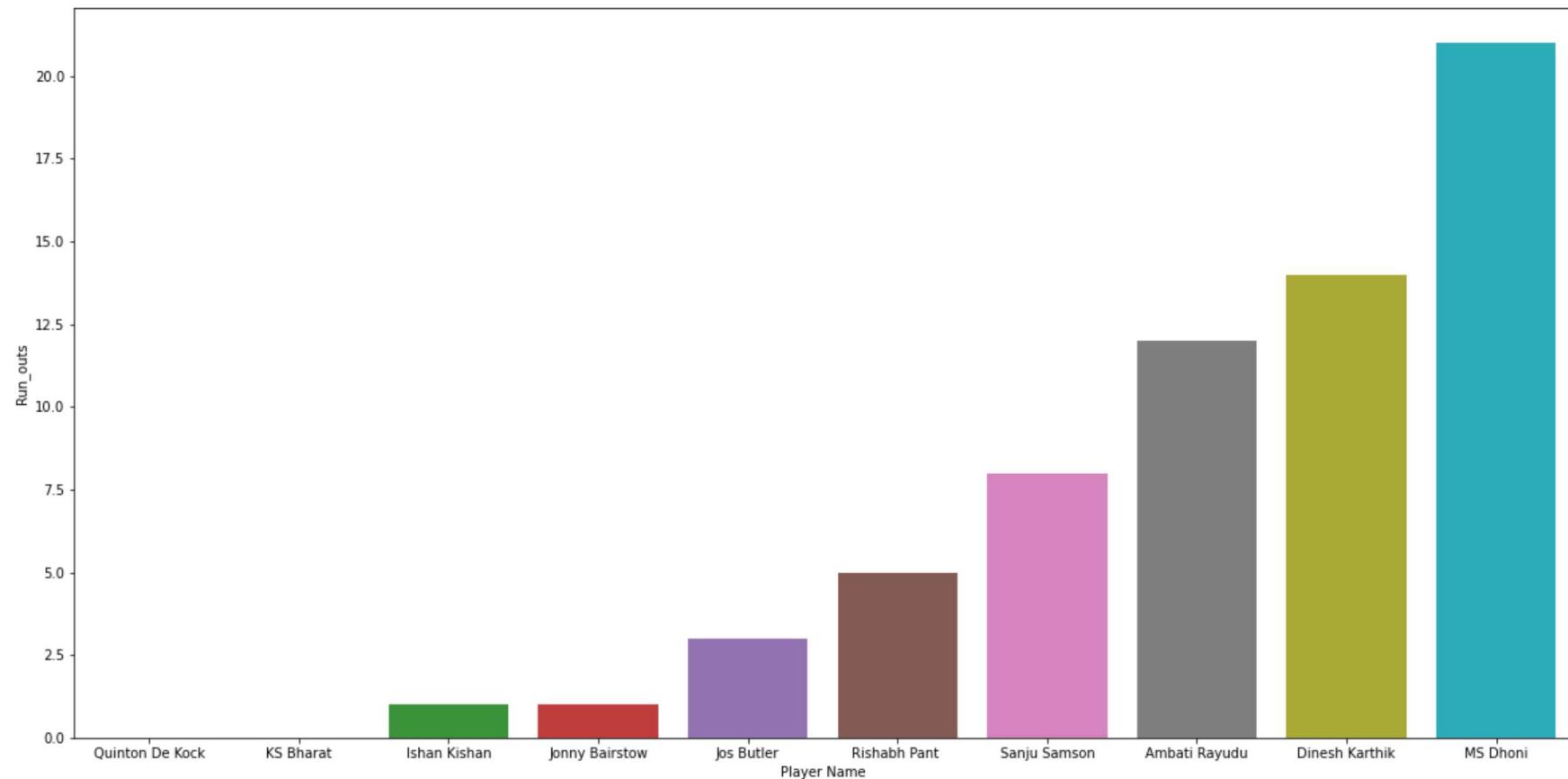


In [79]:

```
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Run_outs',data=top_Keeper , order=top_Keeper.sort_values('Run_outs')['Player Name'])
```

Out[79]:

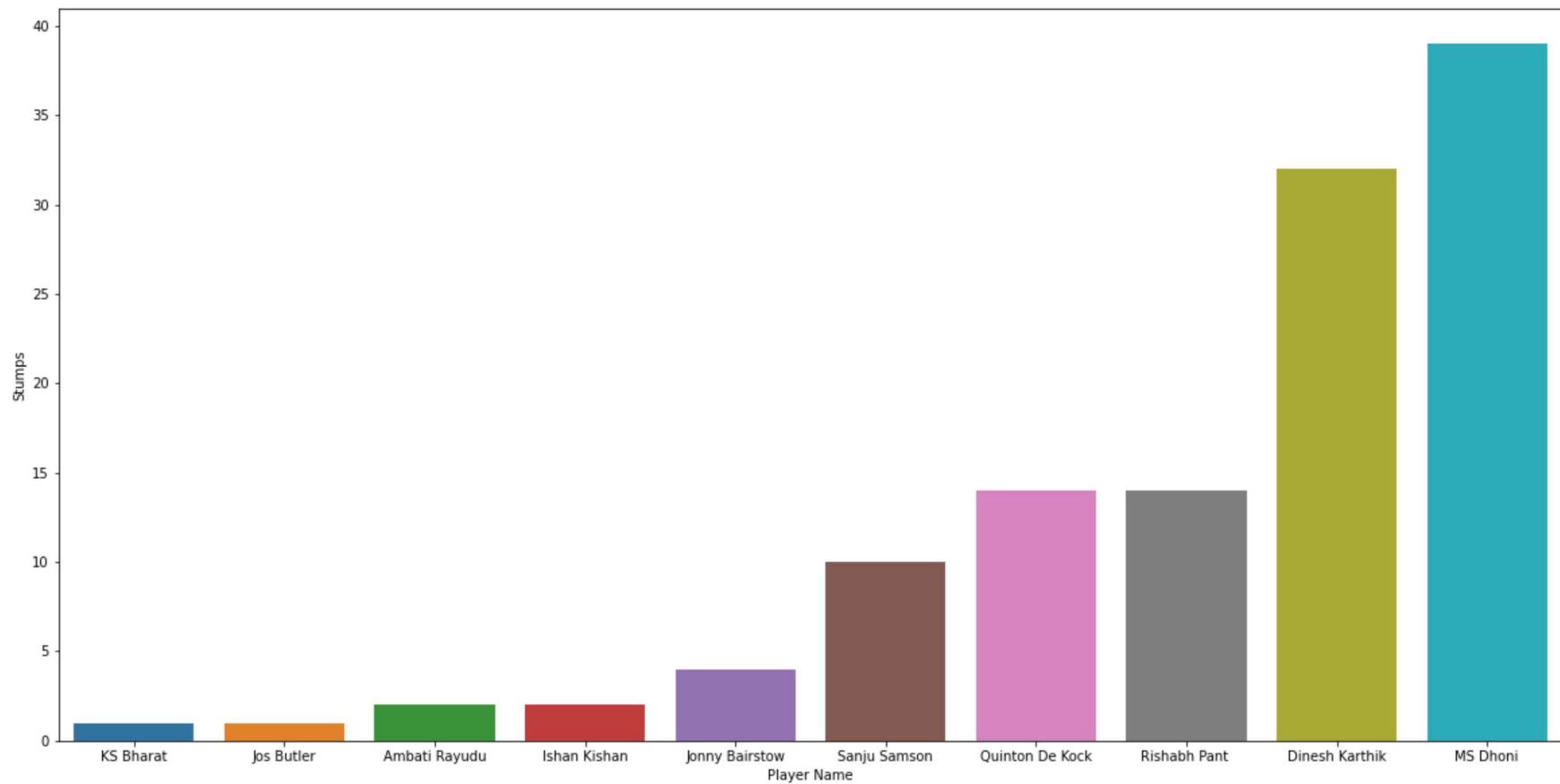
```
<AxesSubplot:xlabel='Player Name', ylabel='Run_outs'>
```



In [80]:

```
plt.figure(figsize=(20,10))
sns.barplot(x='Player Name',y='Stumps',data=top_Keeper , order=top_Keeper.sort_values('Stumps')['Player Name'])
```

Out[80]: &lt;AxesSubplot:xlabel='Player Name', ylabel='Stumps'&gt;



In [81]:

```
#Batters for the Final 11 KL Rahul, Virat Kohli, David Warner
# we are storing the values of each player in a separate dataframe to use for displaying using the barplot.

matches_values=[top_batters.iloc[6]['Matches_Played'], top_batters.iloc[2]['Matches_Played'], top_batters.iloc[5]['Matches_Played']]
runs_values=[top_batters.iloc[6]['Runs'], top_batters.iloc[2]['Runs'], top_batters.iloc[5]['Runs']]
average_values= [top_batters.iloc[6]['Average'], top_batters.iloc[2]['Average'], top_batters.iloc[5]['Average']]
Strike_rate_values= [top_batters.iloc[6]['Strike_Rate'], top_batters.iloc[2]['Strike_Rate'], top_batters.iloc[5]['Strike_Rate']]

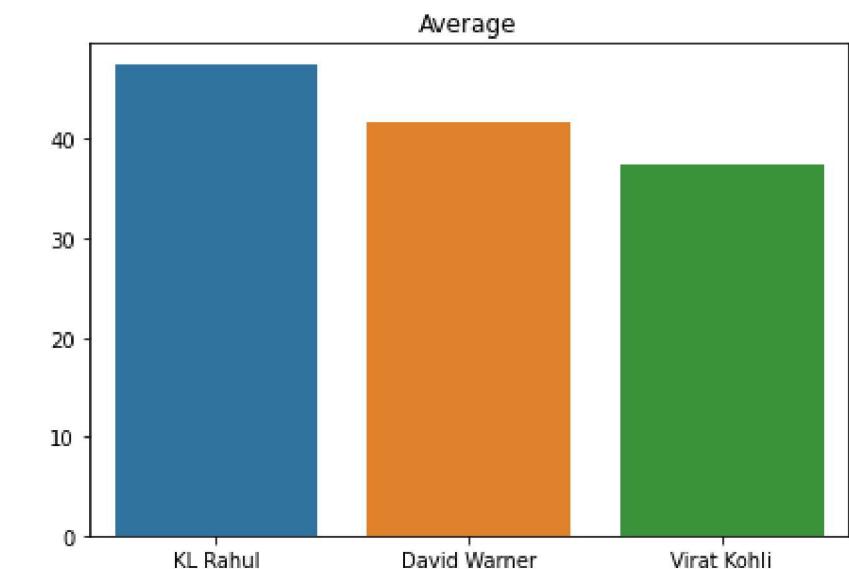
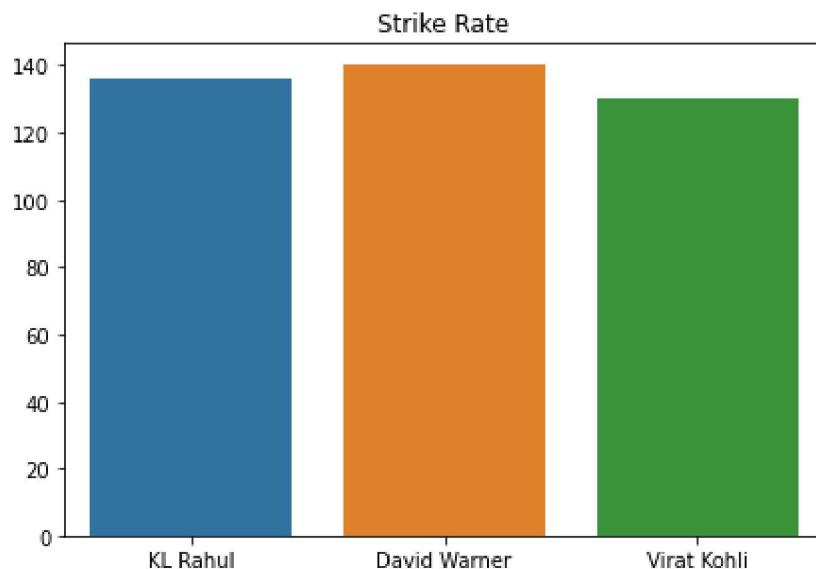
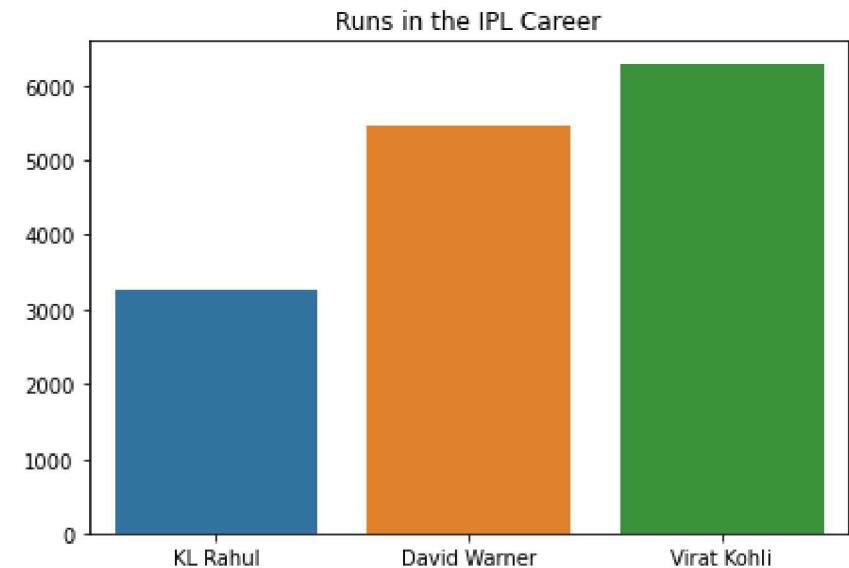
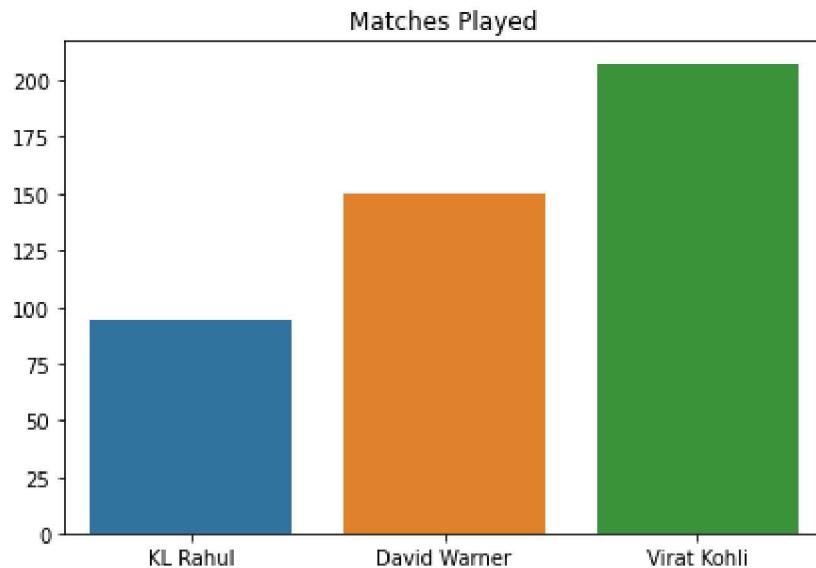
Labels=['KL Rahul', 'David Warner', 'Virat Kohli']

fig, axes = plt.subplots(2,2, figsize=(15,10))

axes[0][0].set_title("Matches Played")
axes[0][1].set_title("Runs in the IPL Career")
axes[1][0].set_title("Strike Rate")
axes[1][1].set_title("Average")
```

```
sns.barplot(x=Labels, y=matches_values, ax=axes[0][0])
sns.barplot(x=Labels, y=runs_values, ax=axes[0][1])
sns.barplot(x=Labels, y=Strike_rate_values, ax=axes[1][0])
sns.barplot(x=Labels, y=average_values, ax=axes[1][1])
```

Out[81]: <AxesSubplot:title={'center':'Average'}>



```
In [82]: ## top 11 # top all rounders
# 1) Sunil Narine
# 2) Hardik Pandya
# 3) Andre Russell
```

```
In [83]: matches_values=[top_Allrounder.iloc[5]['Matches_Played'], top_Allrounder.iloc[9]['Matches_Played'], top_Allrounder.iloc[6]['Matches_Played']]
runs_values=[top_Allrounder.iloc[5]['Runs'], top_Allrounder.iloc[9]['Runs'], top_Allrounder.iloc[6]['Runs']]
average_values= [top_Allrounder.iloc[5]['Average'], top_Allrounder.iloc[9]['Average'], top_Allrounder.iloc[6]['Average']]
Strike_rate_values= [top_Allrounder.iloc[5]['Strike_Rate'], top_Allrounder.iloc[9]['Strike_Rate'], top_Allrounder.iloc[6]['Strike_Rate']]
bowling_Strike_rate_values= [top_Allrounder.iloc[5]['Bowling_Strike_Rate'], top_Allrounder.iloc[9]['Bowling_Strike_Rate'], top_Allrounder.iloc[6]['Bowling_Strike_Rate']]
Bowling_average_values= [top_Allrounder.iloc[5]['Bowling_average'], top_Allrounder.iloc[9]['Bowling_average'], top_Allrounder.iloc[6]['Bowling_average']]
Economy_values= [top_Allrounder.iloc[5]['Economy'], top_Allrounder.iloc[9]['Economy'], top_Allrounder.iloc[6]['Economy']]
Wickets_values= [top_Allrounder.iloc[5]['Wickets'], top_Allrounder.iloc[9]['Wickets'], top_Allrounder.iloc[6]['Wickets']]

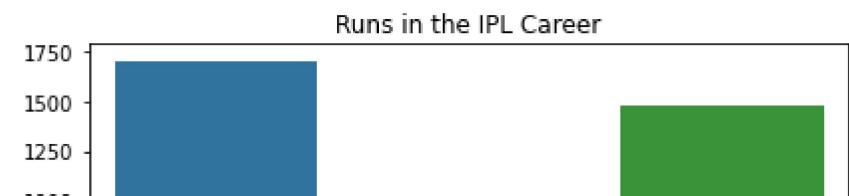
Labels=['Andre Russell', 'Sunil Narine', 'Hardik Pandya']

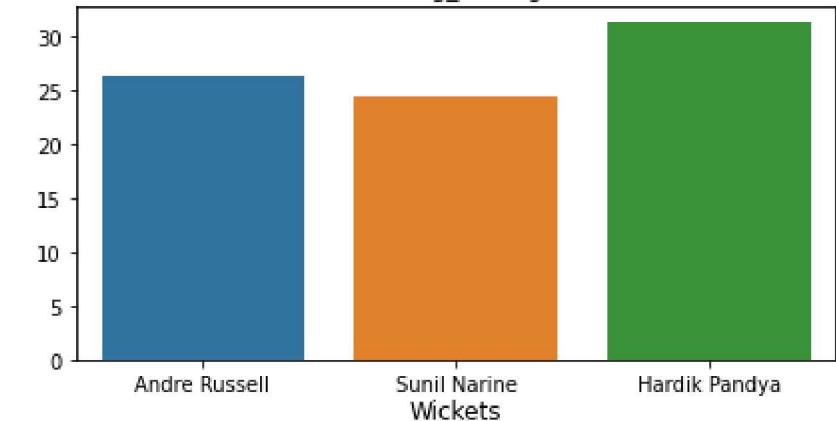
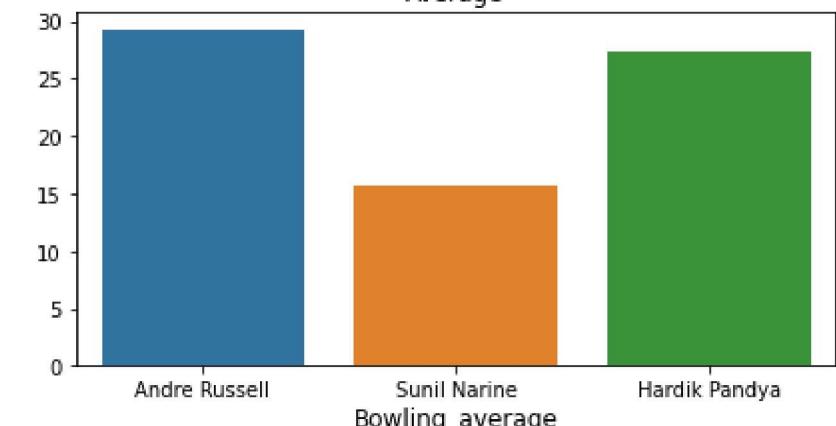
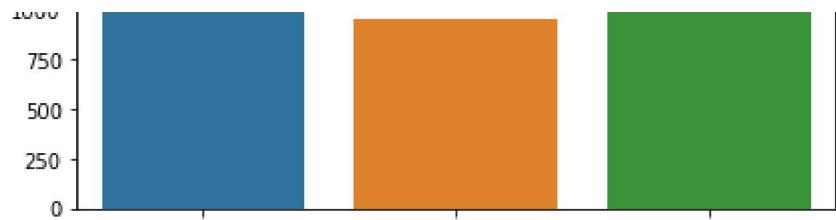
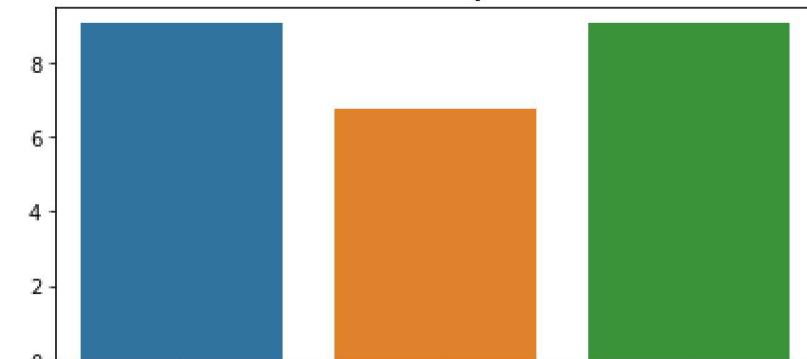
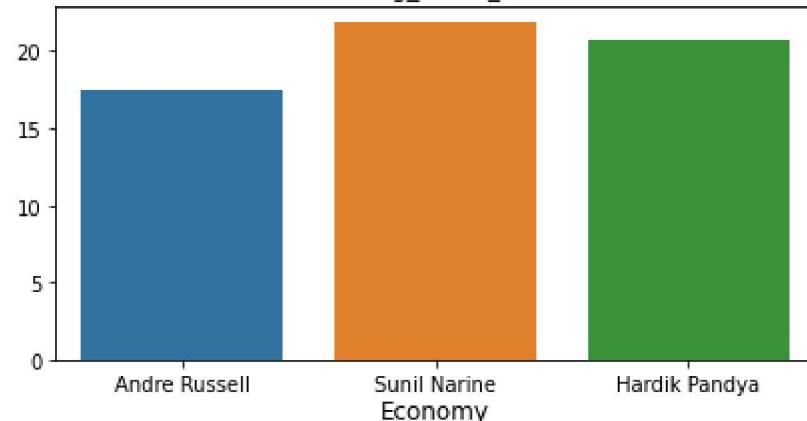
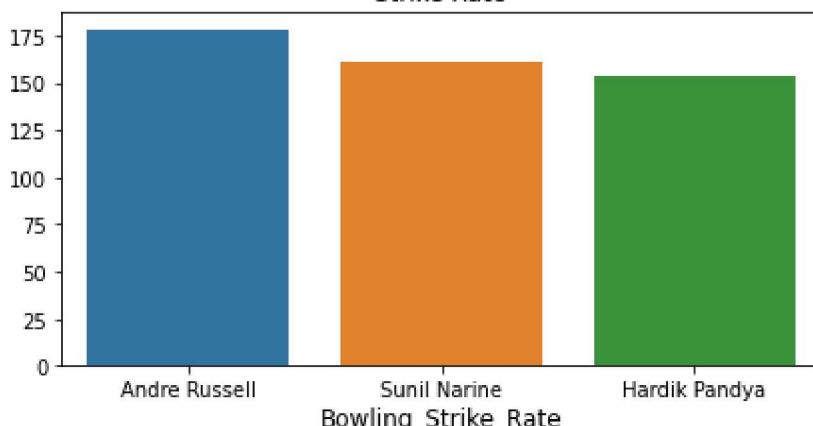
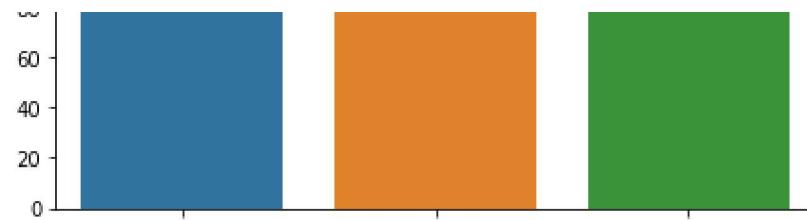
fig, axes = plt.subplots(4,2, figsize=(15,15))

axes[0][0].set_title("Matches Played")
axes[0][1].set_title("Runs in the IPL Career")
axes[1][0].set_title("Strike Rate")
axes[1][1].set_title("Average")
axes[2][0].set_title("Bowling_Strike_Rate")
axes[2][1].set_title("Bowling_average")
axes[3][0].set_title("Economy")
axes[3][1].set_title("Wickets")

sns.barplot(x=Labels, y=matches_values, ax=axes[0][0])
sns.barplot(x=Labels, y=runs_values, ax=axes[0][1])
sns.barplot(x=Labels, y=Strike_rate_values, ax=axes[1][0])
sns.barplot(x=Labels, y=average_values, ax=axes[1][1])
sns.barplot(x=Labels, y=bowling_Strike_rate_values, ax=axes[2][0])
sns.barplot(x=Labels, y=Bowling_average_values, ax=axes[2][1])
sns.barplot(x=Labels, y=Economy_values, ax=axes[3][0])
sns.barplot(x=Labels, y=Wickets_values, ax=axes[3][1])
```

```
Out[83]: <AxesSubplot:title={'center':'Wickets'}>
```





Andre Russell

Sunil Narine

Hardik Pandya

Andre Russell

Sunil Narine

Hardik Pandya

In [84]:

```
## top bowlers for 11
# 1) Yuzvendra Chahal
# 2) Jasprit Bumrah
# 3) Nathan Coulter-Nile
# 4) Kagiso Rabada
```

In [85]:

```
matches_values=[top_bowlers.iloc[10]['Matches_Played'], top_bowlers.iloc[0]['Matches_Played'], top_bowlers.iloc[7]['Matches_Played'], top_bowlers.iloc[11]['Matches_Played']]
bowling_Strike_rate_values= [top_bowlers.iloc[10]['Bowling_Strike_Rate'], top_bowlers.iloc[0]['Bowling_Strike_Rate'],top_bowlers.iloc[7]['Bowling_Strike_Rate'],top_bowlers.iloc[11]['Bowling_Strike_Rate']]
Bowling_average_values= [top_bowlers.iloc[10]['Bowling_average'], top_bowlers.iloc[0]['Bowling_average'],top_bowlers.iloc[7]['Bowling_average'],top_bowlers.iloc[11]['Bowling_average']]
Economy_values= [top_bowlers.iloc[10]['Economy'], top_bowlers.iloc[0]['Economy'],top_bowlers.iloc[7]['Economy'],top_bowlers.iloc[11]['Economy']]
Wickets_values= [top_bowlers.iloc[10]['Wickets'], top_bowlers.iloc[0]['Wickets'],top_bowlers.iloc[7]['Wickets'],top_bowlers.iloc[11]['Wickets']]

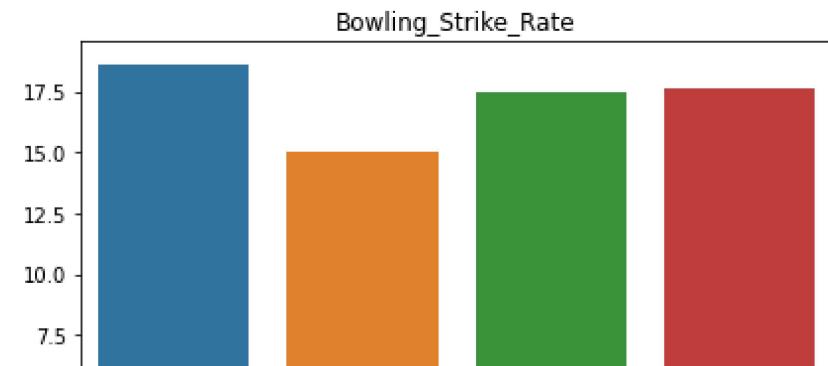
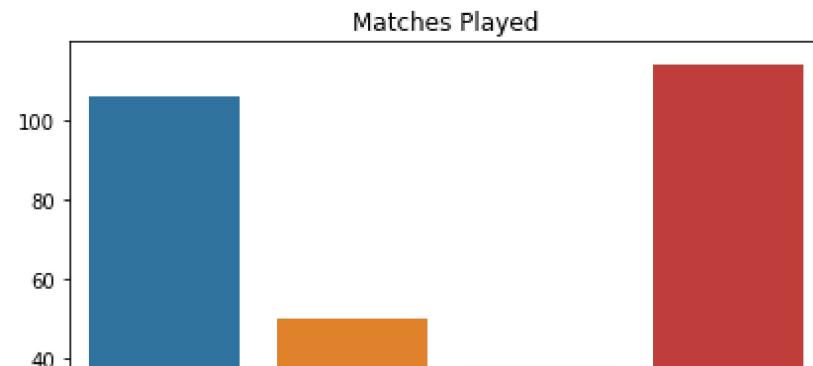
Labels=['Jasprit Bumrah', 'Kagiso Rabada', 'Nathan Coulter-Nile','Yuzvendra Chahal']

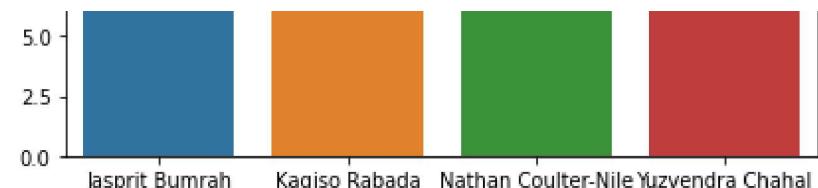
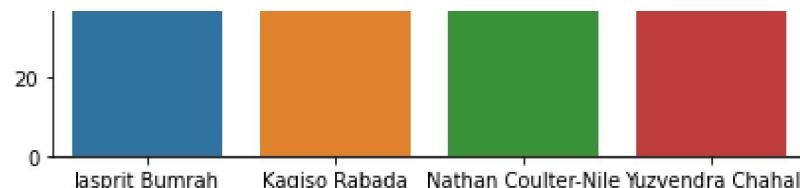
fig, axes = plt.subplots(3,2, figsize=(15,15))

axes[0][0].set_title("Matches Played")
axes[0][1].set_title("Bowling_Strike_Rate")
axes[1][0].set_title("Bowling_average")
axes[1][1].set_title("Economy")
axes[2][0].set_title("Wickets")

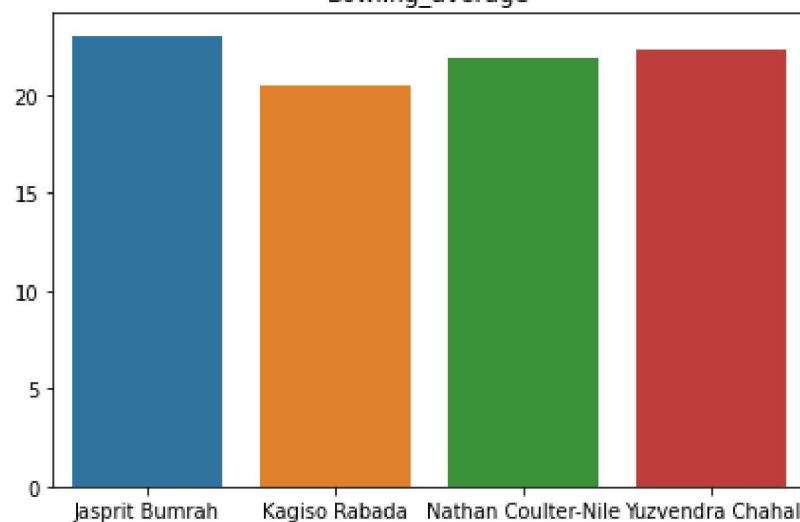
sns.barplot(x=Labels, y=matches_values, ax=axes[0][0])
sns.barplot(x=Labels, y=bowling_Strike_rate_values , ax=axes[0][1])
sns.barplot(x=Labels, y=Bowling_average_values , ax=axes[1][0])
sns.barplot(x=Labels, y=Economy_values , ax=axes[1][1])
sns.barplot(x=Labels, y=Wickets_values , ax=axes[2][0])
```

Out[85]: &lt;AxesSubplot:title={'center':'Wickets'}&gt;

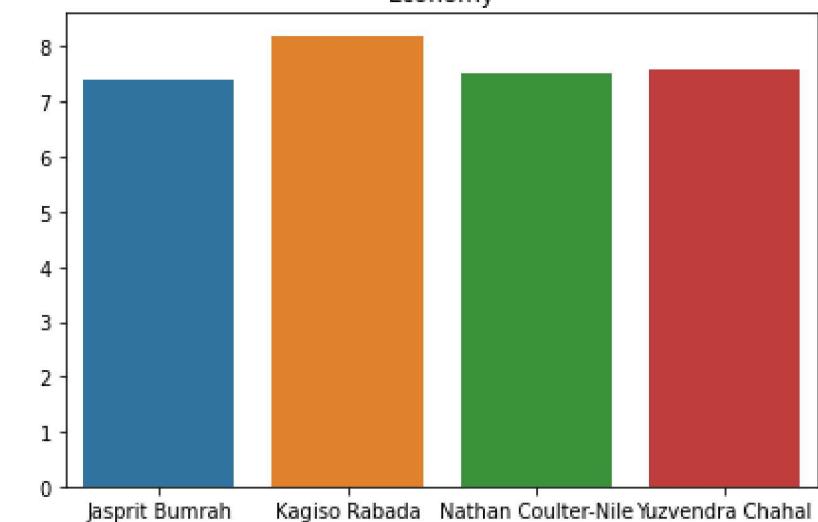




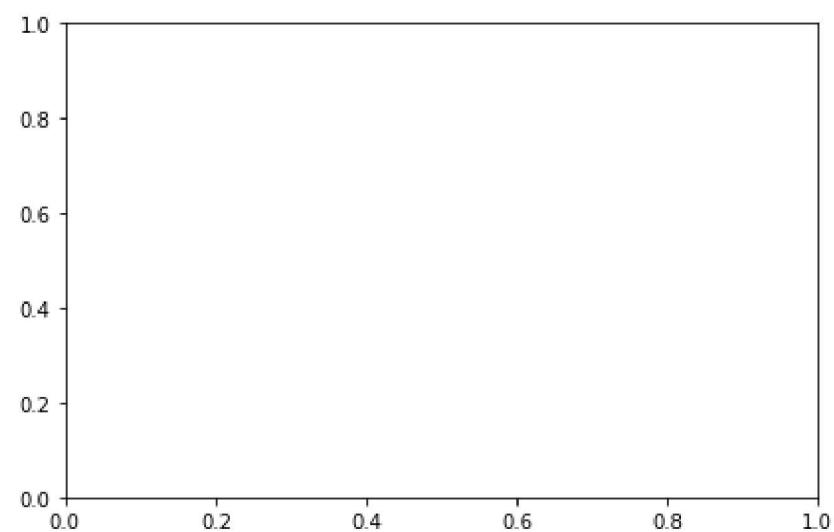
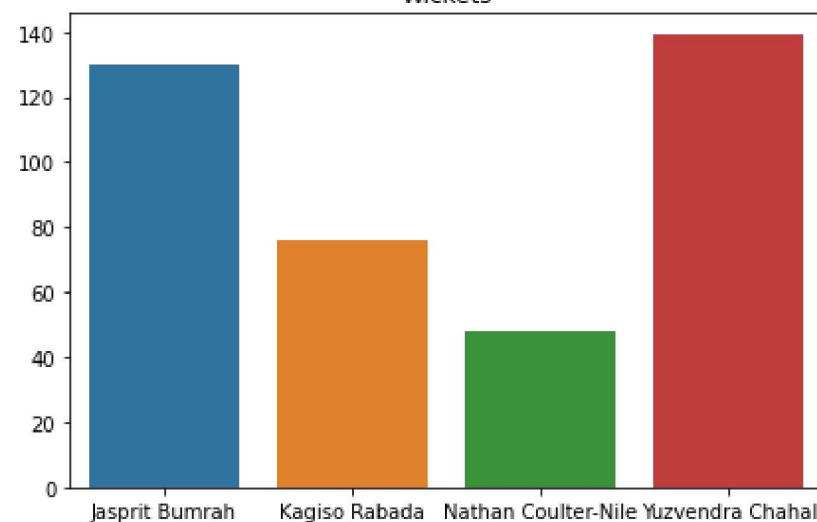
Bowling\_average



Economy



Wickets



In [86]:

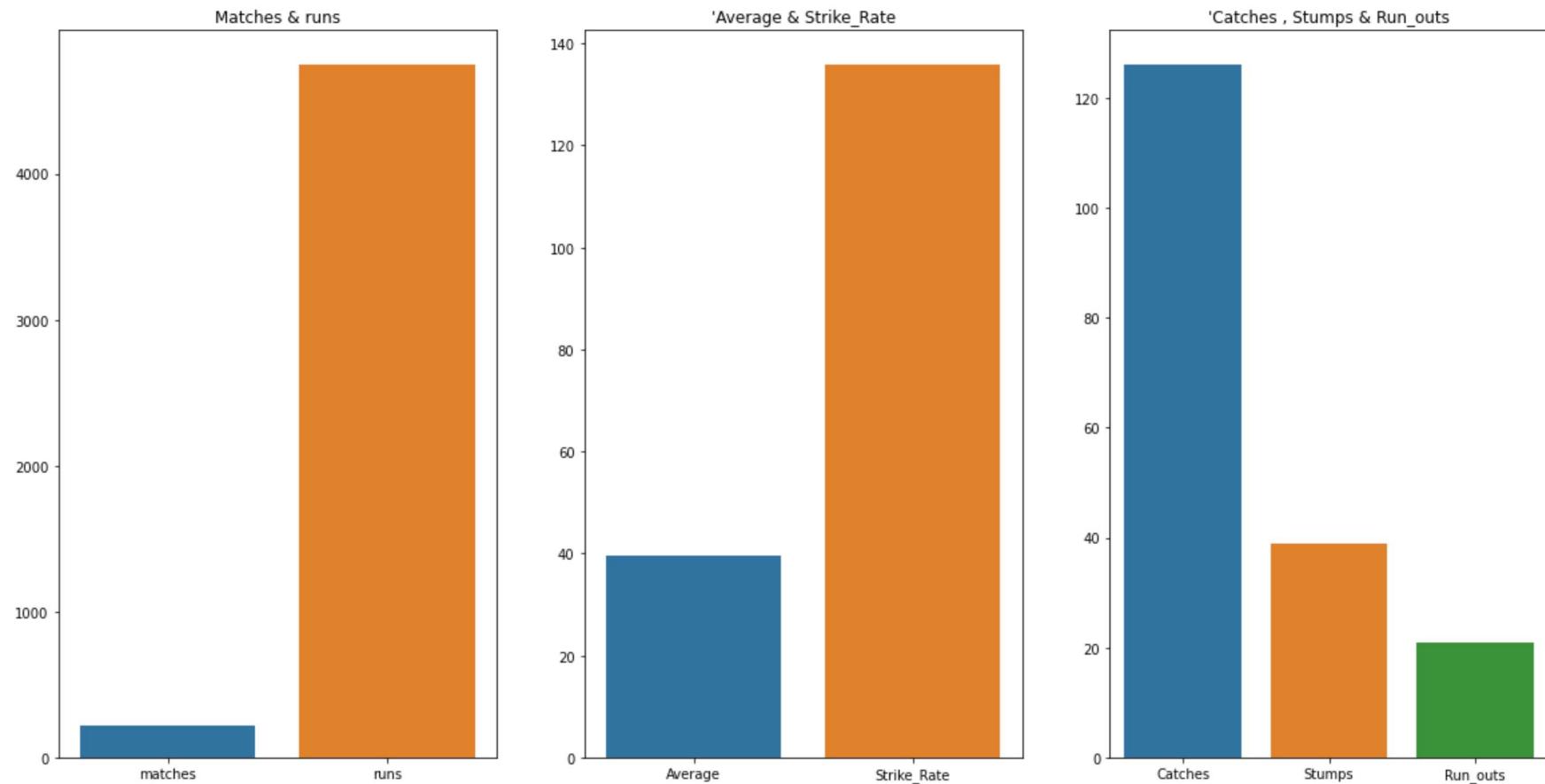
```
### Top keepers
# 1) MS Dhoni
```

In [87]:

```
matches_values=[top_Keeper.iloc[8]['Matches_Played'], top_Keeper.iloc[8]['Runs']]  
average_values=[top_Keeper.iloc[8]['Average'], top_Keeper.iloc[8]['Strike_Rate']]  
keeping_values=[top_Keeper.iloc[8]['Catches'], top_Keeper.iloc[8]['Stumps'], top_Keeper.iloc[8]['Run_outs']]  
  
l1=['matches', 'runs']  
l2=['Average', 'Strike_Rate']  
l3=['Catches', 'Stumps', 'Run_outs']  
  
fig, axes = plt.subplots(1,3, figsize=(20,10))  
  
axes[0].set_title("Matches & runs")  
axes[1].set_title("'Average & Strike_Rate")  
axes[2].set_title("'Catches , Stumps & Run_outs")  
  
sns.barplot(x=l1, y=matches_values, ax=axes[0])  
sns.barplot(x=l2, y=average_values, ax=axes[1])  
sns.barplot(x=l3, y=keeping_values, ax=axes[2])
```

Out[87]:

&lt;AxesSubplot:title={'center':'Catches , Stumps &amp; Run\_outs'}&gt;



In [88]:

```
batter1 = top_batters[top_batters['Player Name']=='David Warner ']
batter2 = top_batters[top_batters['Player Name']=='KL Rahul ']
batter3 = top_batters[top_batters['Player Name']=='Virat Kohli']

bowler1 = top_bowlers[top_bowlers['Player Name']=='Jasprit Bumrah']
bowler2 = top_bowlers[top_bowlers['Player Name']=='Kagiso Rabada ']
bowler3 = top_bowlers[top_bowlers['Player Name']=='Nathan Coulter-Nile']
bowler4 = top_bowlers[top_bowlers['Player Name']=='Yuzvendra Chahal ']

allrounder1= top_Allrounder[top_Allrounder['Player Name']=='Sunil Narine ']
allrounder2= top_Allrounder[top_Allrounder['Player Name']=='Hardik Pandya']
allrounder3= top_Allrounder[top_Allrounder['Player Name']=='Andre Russell']

keeper = top_Keeper[top_Keeper['Player Name']=='MS Dhoni']
```

```
In [89]: final= [batter1,batter2,batter3,bowler1,bowler2,bowler3,bowler4,allrounder1,allrounder2,allrounder3,kepper]
final_team = pd.concat(final)
```

```
In [90]: final_team_11 = final_team[['Player Name','Team','Nationality']].reset_index()
```

```
In [91]: final_team_11[['Player Name','Team','Nationality']]
```

```
Out[91]:
```

	Player Name	Team	Nationality
0	David Warner	Delhi	Overseas
1	KL Rahul	Lucknow	Indian
2	Virat Kohli	Bangalore	Indian
3	Jasprit Bumrah	Mumbai	Indian
4	Kagiso Rabada	Punjab	Overseas
5	Nathan Coulter-Nile	Rajasthan	Overseas
6	Yuzvendra Chahal	Rajasthan	Indian
7	Sunil Narine	Kolkata	Overseas
8	Hardik Pandya	Gujarat	Indian
9	Andre Russell	Kolkata	Overseas
10	MS Dhoni	Chennai	Indian

```
In [ ]:
```