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JAIN CRICKET TODAY

Decoding Player Performance in Cricket: A Statistical Analysis using Survival Analysis and Mean performances of Indian Players

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Cricket in India is more than just a sport. It's a way of life From dusty street corners to grand stadiums, cricket is played and celebrated with passion across the country. Cricket was not as popular as it is now few decades ago Indian Cricket was not that dominant in cricket field and even in International Cricket Council. India had quite a success before the 1980s like winning a Test Series of 1971 against the England .And not many International Teams would tour India and for this to happen BCCI would have to pay teams to tour India. But this all changed after India won the 1983 World Cup which inspired many Indian and brought India into spotlight. Its was not expected that India would win the world cup as they were facing West Indies in final that had already won Starting editions of World cup in 1975,1979 under the captaincy of Clive Llyod who wanted to retire from cricket with 3 World cup but India had other plans as they defend a mere target of 183 against a strong Windies Batting lineup with likes of Viv Richards. After that India and Pakistan jointly hosted the 1987 World Cup keeping aside there political relations. Indian Cricket was doing well and had many greats making debut in late 1990 like Sourav Ganguly, Rahul Dravid, Yuvraj Singh. But this all change in the year 2000 when Indian Captain Mohammed Azharuddin ,Ajay Jadeja and Manoj Prabhakar were found guilty for fixing scandal .Indian cricket was in search of a captain could India that was Sourav Ganguly. Sourav Ganguly went on to be a game changer where we had India doing well in the overseas tour where India would struggle to win a match but under his captaincy India when on to draw the test series in England in 2002. Additionally, Dravid faced criticism for his conservative approach to captaincy, which some felt limited India's potential. Dravid stepped down as captain in 2007, following India's early exit from the 2007 World Cup. With first Edition of T20 World Cup India went on to announce a young Indian squad with a new captain who was MS Dhoni. He went on to win India the T20 World Cup where we also witnessed the 6 balls 6 sixes from Yuvraj Singh against England to Stuart Broad after a argument from Andrew Flintoff.

This success of T20 World Cup India went to introduce Indian Premier League which has gone on to make a revenue of $530 million in 2018 and even more over the years.IPL and T20 has change the game completely with respect to batting where we can see team England who play with same approach in ODI and T20.

ICC Cricket World Cup 2011

After the T20 World cup MS Dhoni went on to become the most successful and iconic captains in the history of Indian cricket. He led the Indian cricket team from 2007 to 2017. He also guided the team to victory in the 2011 ICC Cricket World Cup, which was held in India. This was India's first World Cup victory since 1983, and Dhoni played a crucial role in leading the team to this historic triumph. he also led the team to victory in the 2011 ICC Cricket World Cup held in India.

Dhoni’s retired from Test cricket in 2014, but continued to lead the Indian cricket team in the limited-overs formats until 2017. During this time, he went on to achieve several notable victories, including leading India to the final of the 2014 ICC World Twenty20. Virat Kohli took over the captaincy of Test cricket and went on to make India the number 1 Test cricket Team dominating at Home and Overseas which was not the case with Dhoni’s captaincy in Test Cricket.Kohli led India to a historic Test series win in Australia in 2018-19, becoming the first Indian captain to achieve the feat.

The Indian Team overall has many problems that are affecting their performance in big stages of ICC tournaments, like dependency on the top 3, not yet found out who will play at number 4, failure of the middle order in pressure situations, and not giving a long rule to a player.

In this report, we present a survival analysis of the best batsmen in Indian cricket, examining their performance over time and the factors that may influence their longevity in the game.
Specifically, we will use survival analysis techniques to study the time to failure or time before a player is dismissed of India's top batsmen.

In addition, we will use a multivariate analysis of variance (MANOVA) to compare the average performance of top pitchers against top hitters. This will allow us to explore any differences or similarities between the two groups and provide insight into the factors that contribute to success in cricket.

The purpose of this report is to provide a comprehensive analysis of the performance of Indian cricketers and examine various key performance indicators such as batting average, strike rate and bowling economy. In doing so, we seek to gain a deeper understanding of the strengths and weaknesses of individual players as well as identify patterns and trends in the overall performance of the Indian cricket team.

In this report, we will focus on analysing the performance of some of the best Indian cricketers, explore their strengths and weaknesses and examine how they have contributed to the success of the Indian cricket team. Through this analysis, we hope to gain insights that can help fans and professionals alike better understand the game of cricket in India.

Analysis of Data

The analysis is to compare the performance of two Indian cricket bowlers Yuzendra Chahal and Ravindra Jadeja, in terms of their average and strike rate over a period of several years in White Ball Cricket. The data for this analysis will be collected annually.Analysis will be conducted using a MANOVA to determine if there is a significant difference in performance between the two bowlers over time.

Average	Strike Rate	Player
0	0	Yuzvendra Chahal
18.44	24	Yuzvendra Chahal
21.02	22.13	Yuzvendra Chahal
24.79	26.51	Yuzvendra Chahal
30.51	28.64	Yuzvendra Chahal
41.57	31.71	Yuzvendra Chahal
26.6	24	Yuzvendra Chahal
25.11	23.5	Yuzvendra Chahal
49.5	54.54	Ravindra Jadeja
33.5	32.1	Ravindra Jadeja
65.25	71.47	Ravindra Jadeja
24.57	31.93	Ravindra Jadeja
47.31	54.75	Ravindra Jadeja
48.27	53.45	Ravindra Jadeja
14.43	14.57	Ravindra Jadeja
39.67	36	Ravindra Jadeja

There is significant difference of average and strike rate of Ravindra Jadeja and Yuzvendra Chahal.

The analysis is to compare the performance of two Indian cricket bowlers, Jasprit Bumrah and Mohammed Shami , in terms of their average and strike rate over a period of several years .The data for this analysis will be collected annually.Analysis will be conducted using a MANOVA to determine if there is a significant difference in performance between the two bowlers over time.

Average	Wkts	Player
0	0	Jasprit Bumrah
17.24	45	Jasprit Bumrah
24.78	51	Jasprit Bumrah
20.4	78	Jasprit Bumrah
20.12	42	Jasprit Bumrah
38.04	27	Jasprit Bumrah
24.08	37	Jasprit Bumrah
19.95	39	Jasprit Bumrah
21.48	25	Mohammed Shami
26.81	32	Mohammed Shami
27.61	23	Mohammed Shami
28.16	50	Mohammed Shami
19.82	77	Mohammed Shami
40.53	19	Mohammed Shami
22.66	29	Mohammed Shami
30.78	23	Mohammed Shami

There is significant difference of average and strike rate of Jasprit Bumrah and Mohammed Shami.

Survival Analysis of Sheryas Iyer in T20

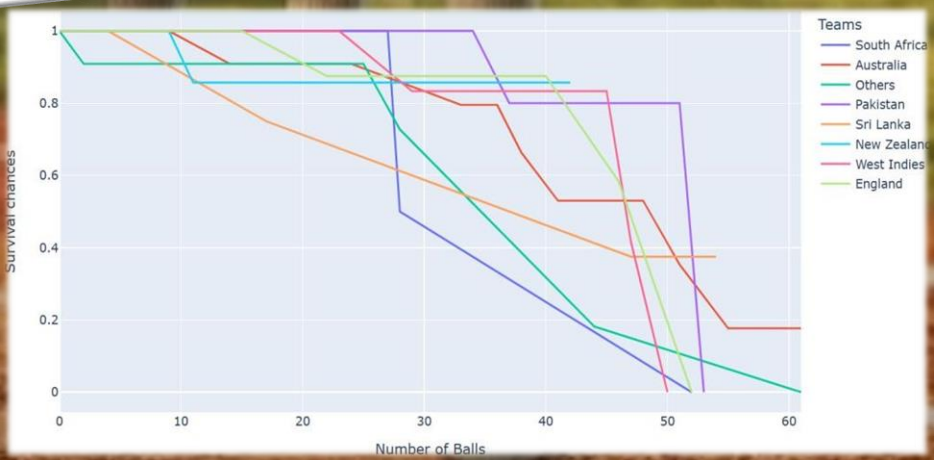
In this, we have used survival analysis to find the survival chance of Shreyas Iyer in T20 cricket. We have taken the balls faced by the player and the status that he was out or not. By this graph, we can observe that Shreyas Iyer has more survival chances with the teams like Srilanka, west indies, and England. Against west indies, he has a survival rate of 0.85 and with England, it is 0.8 by facing 45 balls. and against Sri Lanka, he has a survival rate of 1 for 26 balls and it dips down to 0.75 till the 35 balls then it dips down to 0.34 in the later stages. Against New Zealand, he maintained a survival rate of 0.66 up to 29 balls. When he plays against South Africa his survival rate is just 0.58 and with other teams, his survival ratio is very least.

Survival Analysis of Virat Kohli in ODI

This chart tells the survival chance of Virat Kohli who has been phenomenal in ODI cricket. First let us look into the teams like West Indies South Africa, England, and Pakistan. It says that against South Africa Kohli has a good survival chance when compared with other teams he has an SR of 93% for the first 90 balls and with west indies 75% and slowly starts to decrease after 70 and 57% after facing 100 balls. After 140 balls his SR decreases further. With west indies almost linearity in his SR. With Srilanks he has a survival rate above 50% in the first 90 balls then it decreases sharply. With Pakistan, his survival chance is only 115 balls with a percentage of 51. With the other teams, Kohli has the least survival rate as the data is insufficient.

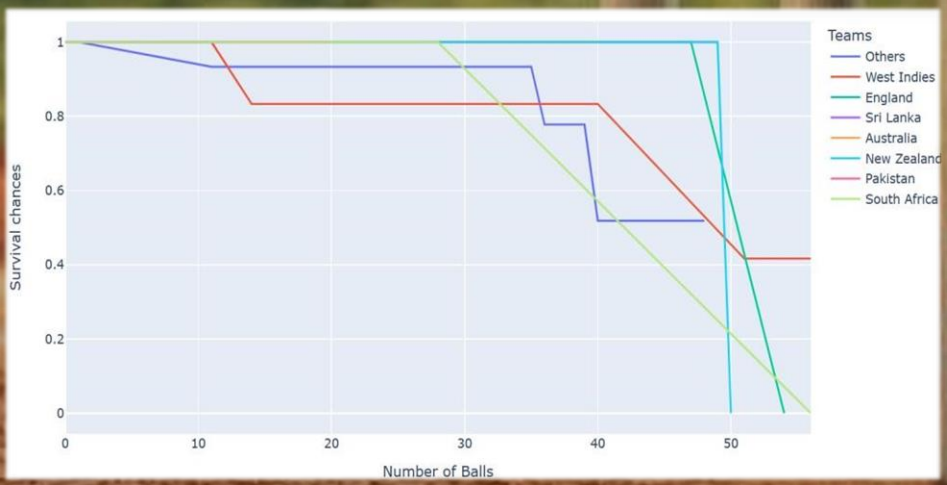
Survival Analysis of Virat Kohli in T20

This chart tells the survival chance of Top Indian cricketer Virat Kohli with consistent T20 record. In T20 Kohli has a good survival rate with all the teams which shows a linear trend. He has a good survival ratio with the teams like Pakistan, England, and Australia for his first fifty balls is above 50 percent. With Pakistan, he has the maximum survival ratio of 80%. and the least is with South Africa is only 50 percent for 28 balls. With Srilanka, he has a good survival rate till the first 20 balls and then it slowly decreases to 30% later on. And with the other teams, he has a survival rate of 0.9 percent for the 25 balls then decrease to 0.7 percent after the 30 balls then to 0.2 after playing the 40 balls.



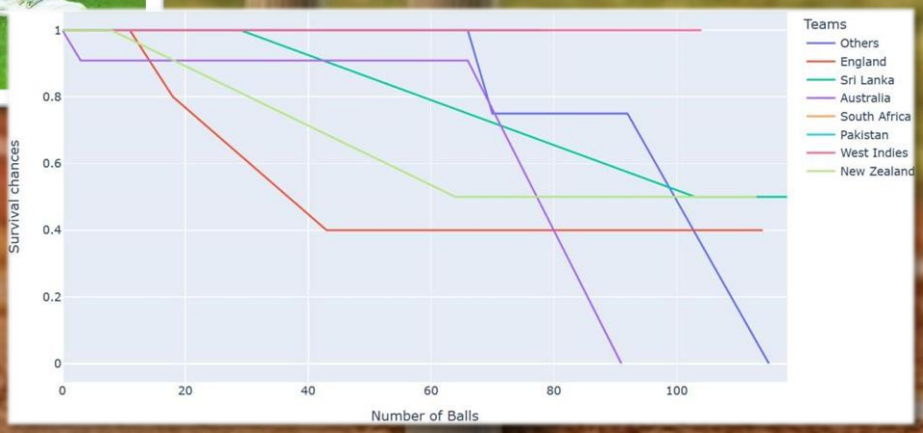
Survival Analysis of KL Rahul in T20

This graph explains the survival rate of KL Rahul in his T20I carrier. When we talk about England Sri Lanka and New Zealand KL Rahul has a survival chance of 100 percent till he faces the 50 balls then the survival rate drops suddenly. But with the other teams his survival rates are as follows, With the West Indies he has a survival chance of 1 till 11 balls then it dips down to 0.8 percent after 14 balls and continues to 41 balls then again dips to 0.51 percent in later stages. With Sri Lanka, he has a survival ratio of 1 till 28 balls and continues to decrease to 0 after 51 balls. But with the other teams, he has a survival chance of more than 0.5 percent until the 50 balls and there is no sharp decrease in the survival rate.



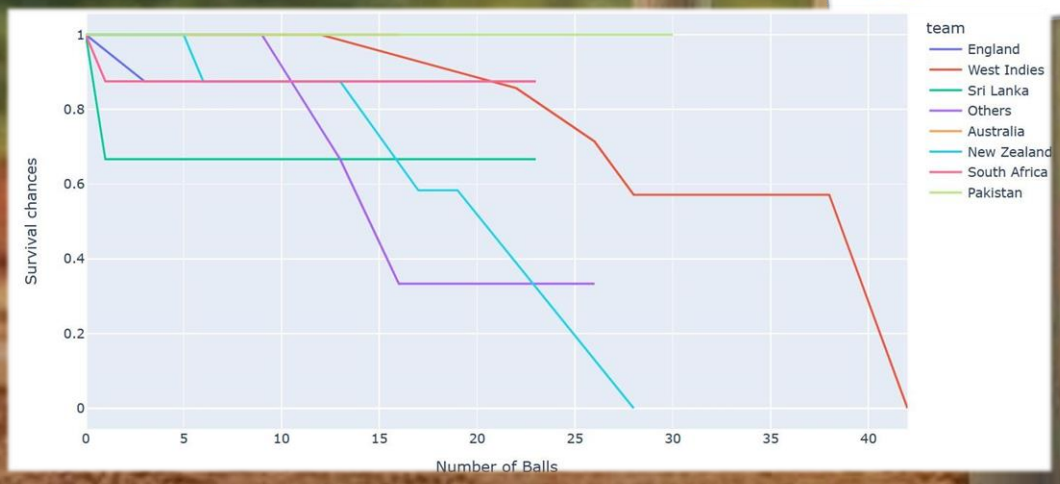
Survival Analysis of KL Rahul in ODI

The graph explains the survival rate of Kl Rahul in the ODI format. With respect to Others and Australia he does well having a rate of around one till 66 but goes on to drop to 0 until 91 balls but against others it drops 0.75 till 92 balls but goes on to drop to 0 after 115 balls. Against quality sides England and New Zealand after 11 balls and balls drop to 0.4 at 43 balls and 0.5 at 64 balls respectively and remain to steady until 114 and 113 balls. Against Sri Lanka Kl Rahul has a survival rate of 1 until 28 balls but goes on a steady drop till 103 balls to 0.5 and remains steady until 118 balls



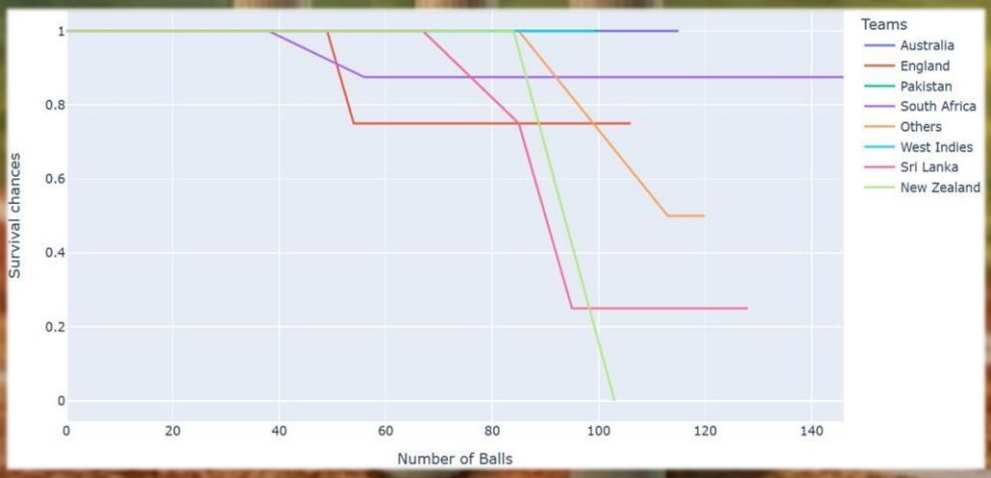
Survival Analysis of Rishabh Pant in T20

This is the player survival analysis stats of aggressive Indian wicketkeeper-batsman Rishabh Pant. This graph is showing that against Pakistan he has a survival chance of 1 percent until he faces 30 balls and then it dips down to 0. But with west indies, until 12 balls his survival chance is 1 and then it dips down to 0.9 after 25 balls and again goes down to 0.51 after 30 balls, and this continues to decrease until 40-45 balls. But with teams like South Africa, Srilanka, New Zealand, and others he has the survival rate only till the 25 balls and they are 0.8,0.66, 0.58, and 0.33 respectively.



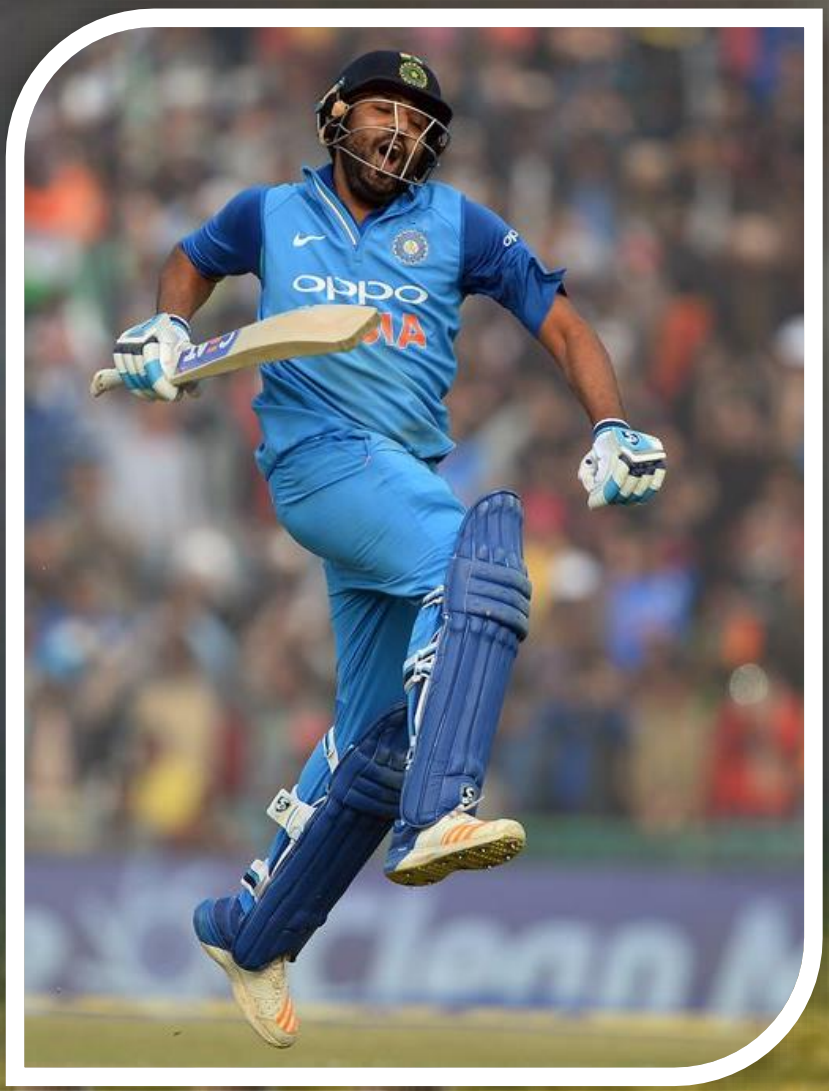
Survival Analysis of Shikhar Dhawan in ODI

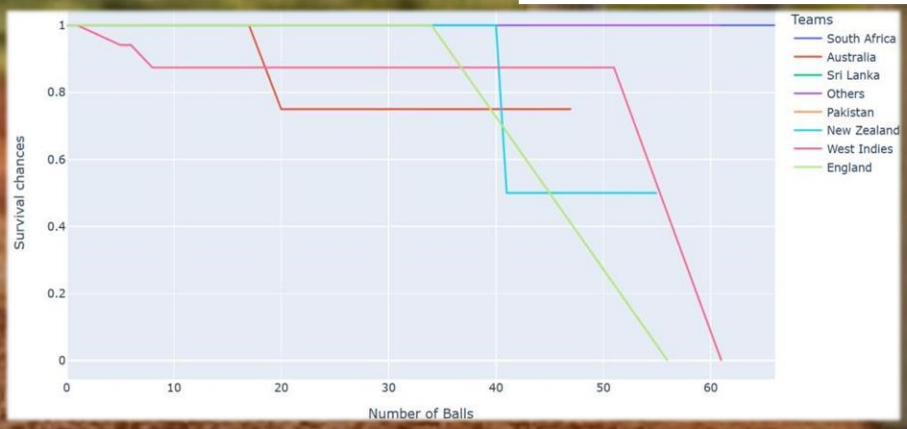
Shikhar Dhawan who has been one quality opener for India has pretty decent record .His survival rate states steady until 99, 100 and 115 number of balls is 1.The survival rate again New Zealand is 1 till 84 balls but steady down at 0 after 103 balls.Against South Africa and England the survival rate reduces steady after 38 and 49 balls from and reduces to 0.87 and 0.75 respectively and goes on steady until 146 and balls respectively.Againts others the survival reduces from in 85 and goes on a steady down to 0.5 in 113 balls and gets steady till 120 balls.



Survival Analysis of Rohit Sharma in T20

Rohit Sharma has been one of the finest T20 player. But his survival rate is 1 until 18 ball against Pakistan .Against Sri Lanka his record great with a survival rate of 1 until 43 balls and against New Zealand is I till 40 and reduces steadly to 0.5 in 41 balls and remains steady till 55 balls.Against mighty Australia remain 1 until 17 balls and reduces 0.75 in 20 balls remains steady until 47 balls and against West Indies it survival reduces from balls 1 till 8 to 0.87 and remain steady until 51 balls and reduces to 0 at 61 balls.Against England his survival rate 1 remains steady until 34 balls and reduces steady to 0 in 56 balls.

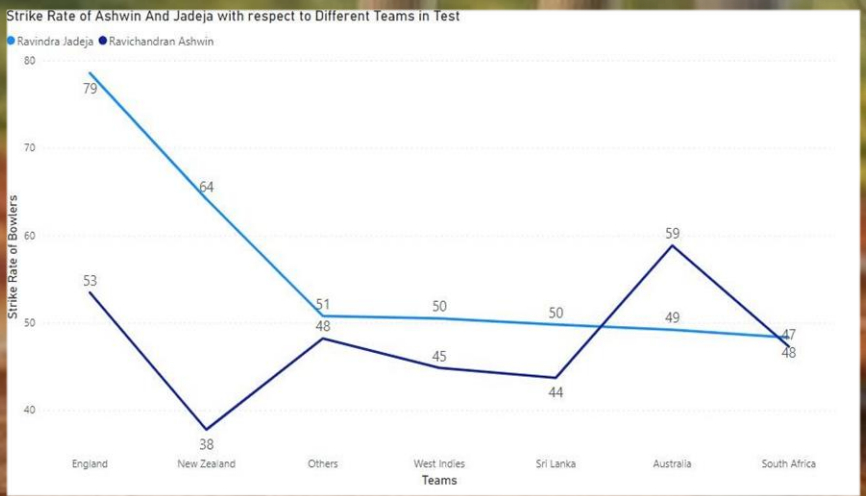




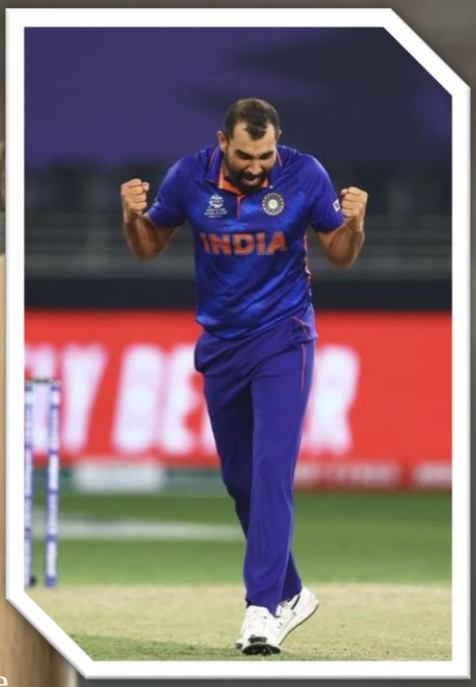
Graphical Representation

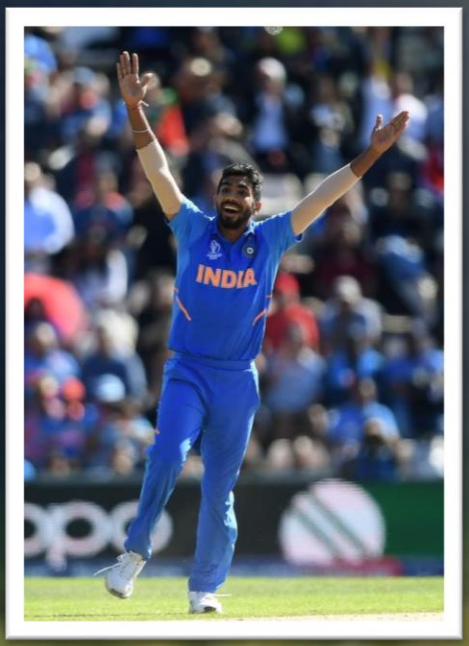
The chart shows the strike rates of two prominent spinners in Test cricket, Ravichandran Ashwin and Ravindra Jadeja, against major cricket teams including England, New Zealand, West Indies, Sri Lanka, Australia and South Africa. After analyzing the data it can be observed that Ashwin has a better success rate than Jadeja when he plays against England as Ashwin's strike rate is 53 while Jadeja's is 79. Similarly when he plays against New Zealand Ashwin's strike rate is 38 which is better than Jadeja's 64 and lower than Ashwin's average strike rate.

However, playing against West Indies, Sri Lanka and South Africa, Jadeja has a better success rate compared to Ashwin. Although Jadeja's strike rate is around 50 when playing against New Zealand and England, Ashwin does better against these teams with a strike rate below 50. Interestingly, when playing against Australia, Jadeja's strike rate is 49 better than Ashwin.

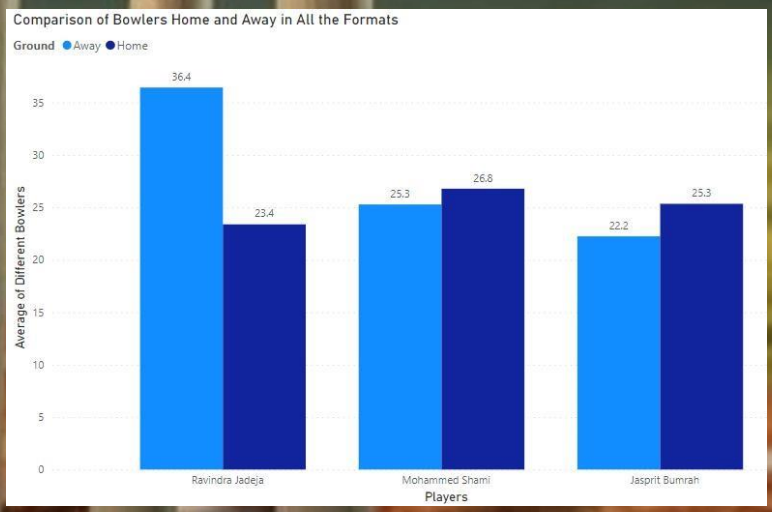


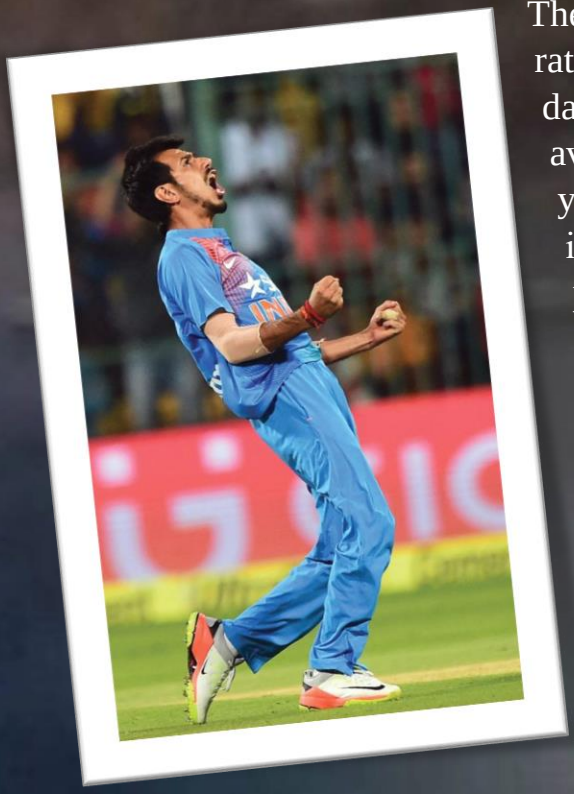
The graph presented here is a comparison of 3 Indian bowlers' performance in their home and away conditions across all formats. The data shows that Ravindra Jadeja has a better average in home conditions compared to away conditions, while Mohammed Shami and Jasprit Bumrah have their best averages in away conditions. Specifically, Jadeja's average at home is 46.4, and away is 23.4 which half of that of home matches, Shami's home average is 26.8, and away is 23.5, and Bumrah's home average is 25.4, and away is 22.2.





The data suggests that there is less fluctuation in the averages of seam bowlers compared to spinners when comparing home and away conditions. Additionally, spinners tend to be more effective in home conditions, while seam bowlers tend to have a greater impact in both home and away conditions.

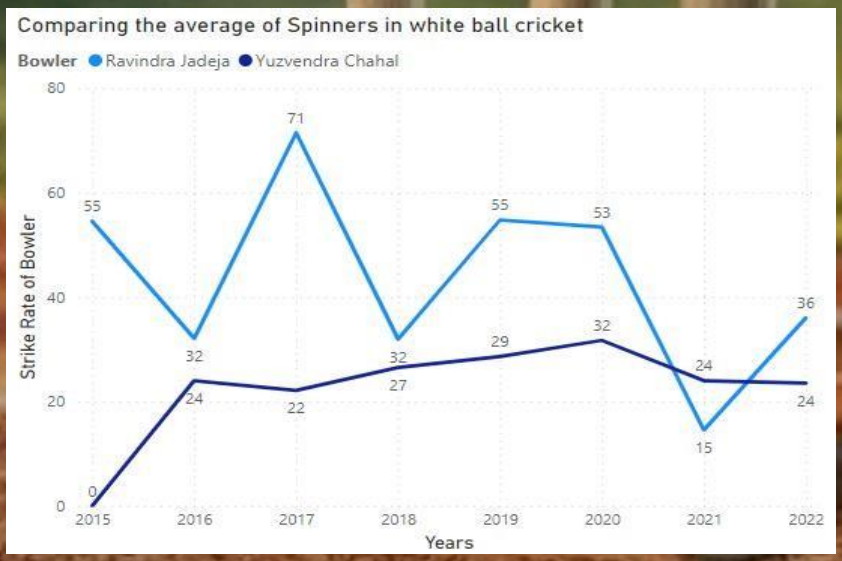




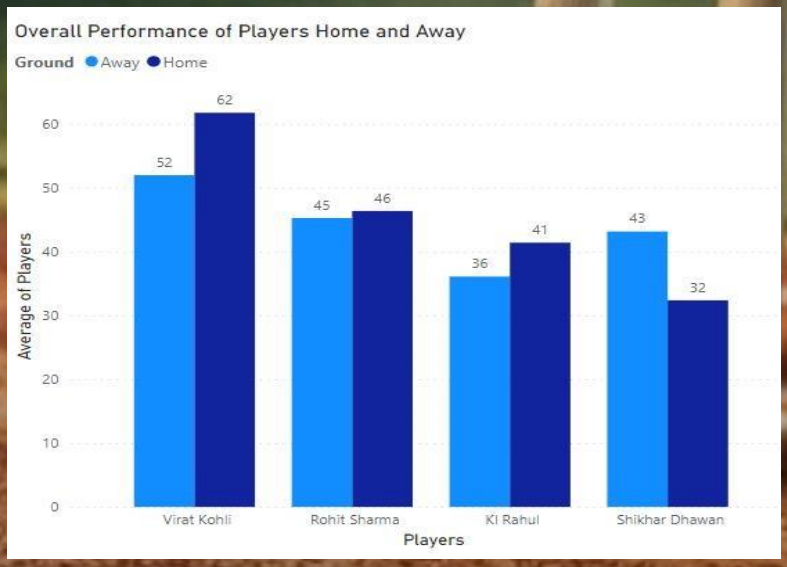
The graph shown here depicts the average strike rates of spinners in cricket from 2015 to 2022. The data shows that Yuzvendra Chahal has a lower average strike rate than Ravindra Jadeja in most years. Furthermore, there is very little fluctuation in chahel's strike which indicates a consistent performance in the game.

On the other hand, Jadeja's strike rate has fluctuated more, ranging from 50 to 70 over the years. In 2021, Jadeja's lowest strike tally was 15, which is comparably better than chahel's strike rate.

This indicates that Jadeja's performance in that particular year was exceptional and he was able to make a significant impact on the game. Overall, the data shows that chahel and Jadeja are both exceptional bowlers, but chahel tends to have a more consistent performance with a lower strike rate, while Jadeja has a higher variation in strike rate but can occasionally perform exceptionally.

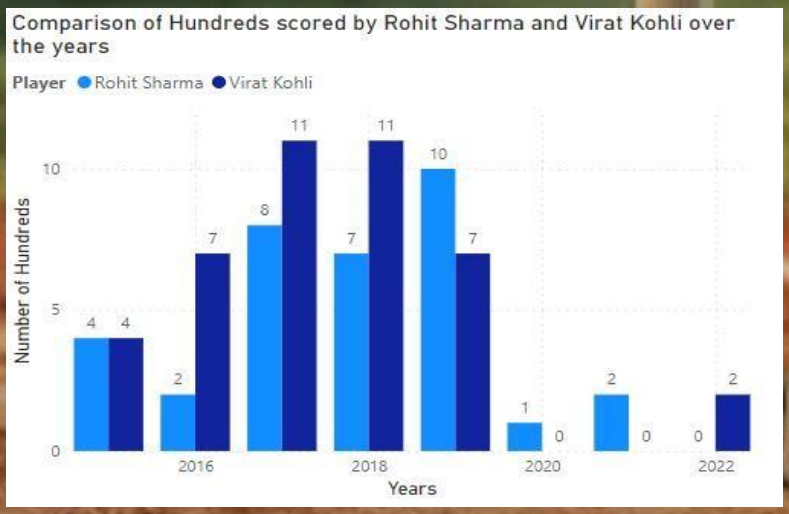


This graph helps us in understanding the batting performance of 4 famous Indian cricketers across all the formats in their home and away matches. This data says that Virat Kohli has a good average in all the formats of his home and away matches followed by Rohit Sharma. And Virat Kohli has a better average of 62 in his home series and 52 in his away series likewise Rohit Sharma also has an average of 46 in his home and 45 in his away matches. when we see the graph of KL Rahul and Shikhar Dhawan, the data says in the home conditions KL Rahul has a better avg in all the formats with an average of 41 than Shikhar Dhawan ie 32 but in the away conditions Shikhar Dhawan has a greater impact in his game, which means Dhawan has an average of 43 in his away matches and Rahul has an average of just 36. By looking at this data if we have an option of choosing 3 players for the home and away matches we can choose Virat, Rohit, and Rahul for the home series and Virat, Rohit, and Dhawan for the away matches.

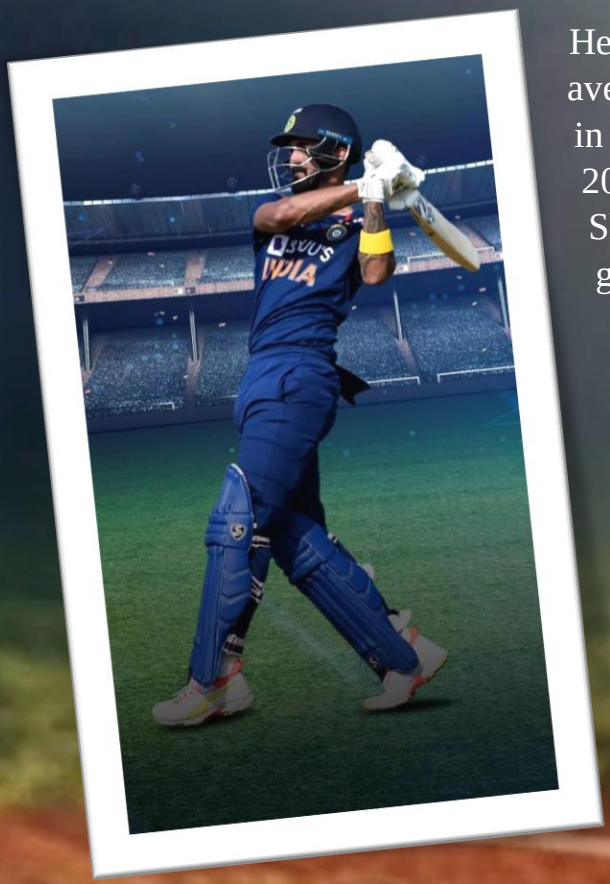


This multiple bar chart depicts the hundreds scored by the two Indian players Rohit Sharma and Virat Kohli from 2015 to 2022. It says that there is a normality in the data of scoring hundreds. From 2015 to 2018 Virat Kohli has an increasing trend in scoring hundreds, he scored 4,7,11,11, and hundreds respectively in the four years, and then it dropped to 7 and then to 0 in 2020. And then he scored 2 hundred in the year 2022. Rohit Sharma has been consistent in scoring hundreds in all the formats from 2k15 to 2k21. He was scoring Hundreds for consecutive five years with an average of 6 hundred.

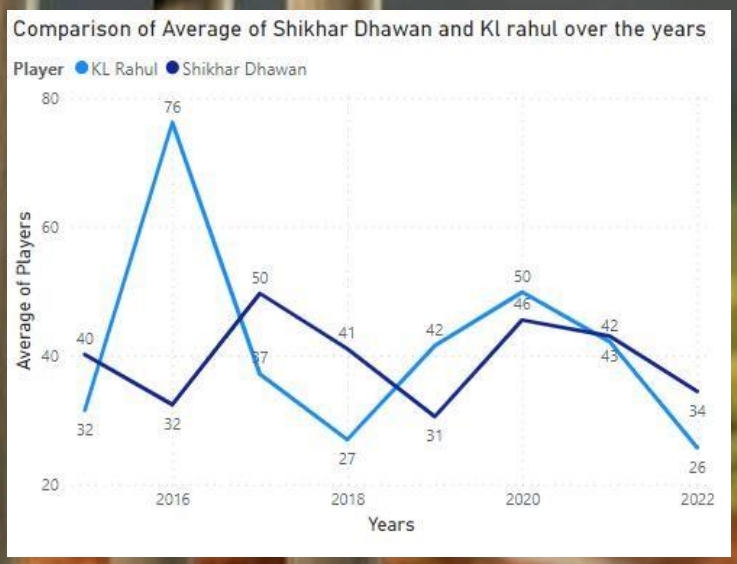
But after 2019 the hundreds scored has been reduced by both the players may be due to the number of matches they have played as the covid cases were increasing in India, and all the sports were given a break. This concludes that both the players have a good number of hundreds but Virat Kohli has more hundreds when we compare it with Rohit Sharma.

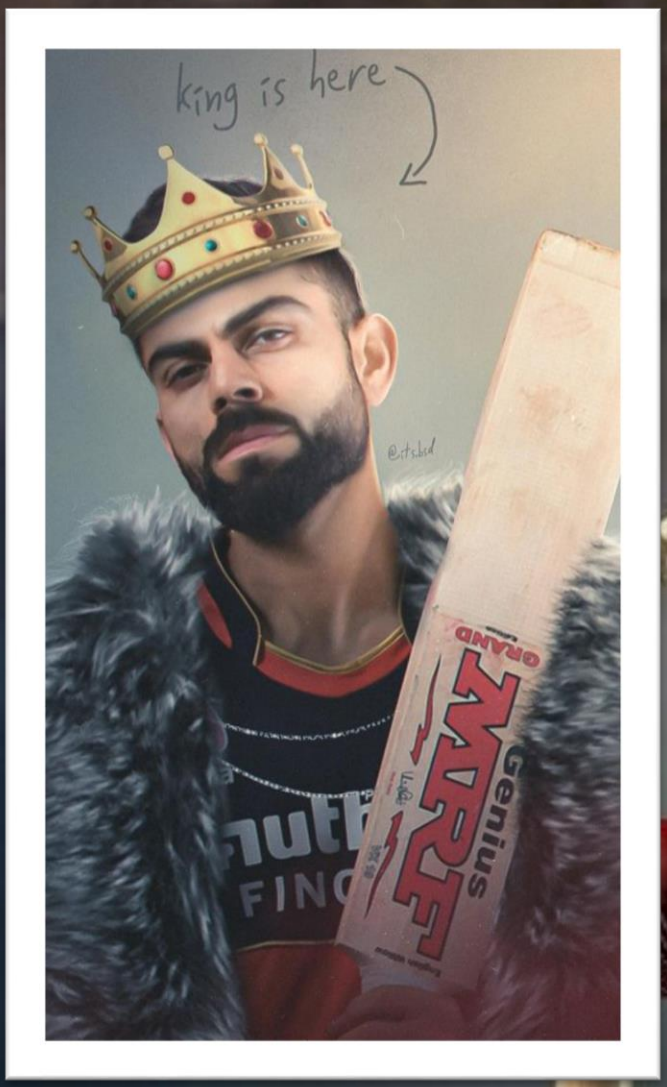


This is the data showing the average of Dhawan and K L Rahul from 2015 to 22. Kl Rahul had an average of 32 in 2015 and 26 in 2022 which is less than the beginning. In the middle he had a huge variation in the average, he had an excellent average of 75 in the year 2016 and then dropped drastically to 27, and then he increased his strike rate in 2020 but decreased in the year 2022. But in the case of Shikhar Dhawan, he has had a decent average in his game over the years without much fluctuations in the average in the scores.

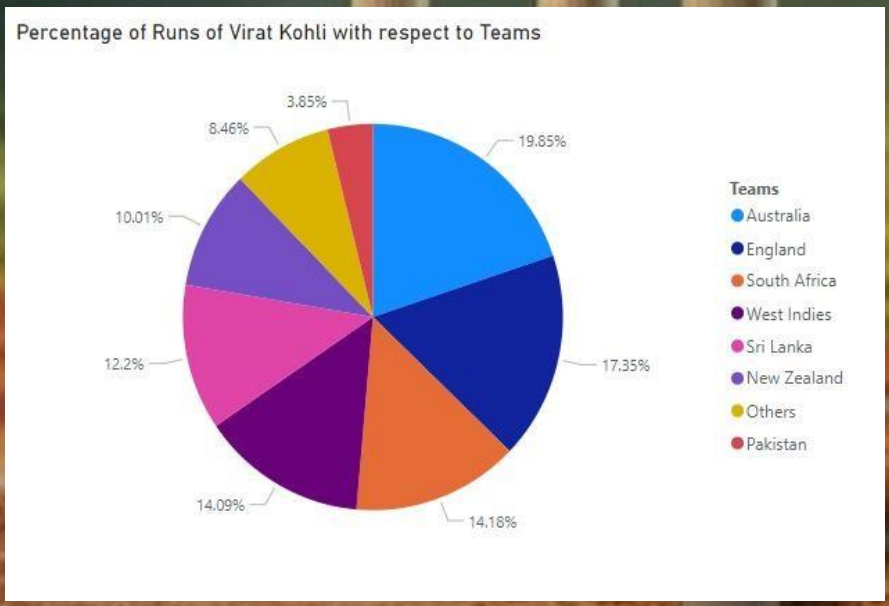


He had an average of 40 in early 2015 and an average of 34 in 2022, and he had the highest average of 50 in 2017. After comparing this we can conclude that Shikhar Dhawan has a greater impact and a good average in the game as a batsman.





This graph is to analyze the runs of Virat Kohli against different teams in international cricket. Virat Kohli has scored the highest number of runs against Australia which is 19.85% of his total runs scored. Followed by England that is 17.35%, then his scores were almost the same against South Africa and west indies ie 14.18 & 14.09 respectively, he scored about 12.2% runs against Sri Lanka and10.01 against Newzealand, 3.85% against Pakistan. Virat Kohli has a very good track record of runs against strong teams like Australia and England where he played more matches against these teams and knows the pros and cons of those teams and plays accordingly. Against Pakistan he scored fewer runs may be due to the fewer matches that he played with them. If we take other teams except for these popular teams he has scored 8.42% of the score which is quite less as the number of matches he played against these teams is also less.



The project focused on analyzing data relating to Indian cricketers across different formats of the game. Through the statistical analysis, the project aimed to conclude the performance of Indian players in various aspects of the game such as batting and bowling. The project could also explore trends and patterns in the data, such as how certain players perform in different conditions, against different opponents, and at different stages of their careers. Ultimately, the project sought to provide insight into the strengths and weaknesses of Indian cricketers and the overall performance of the Indian cricket team.This analysis is done for finding areas of strength and weakness in the Indian cricket team. By analysing data related to batting, bowling, and fielding, the team's management can make informed decisions on areas that need improvement or further development. data analysis can help in selecting the right players for specific roles based on their strengths and weaknesses. For example, a player who performs well in Indian conditions may be preferred over a player who struggles in those conditions. data analysis can provide insights into the performance of individual players, which can help in managing their workload and formulating strategies for upcoming matches. It can play a crucial role in helping the Indian cricket team make informed decisions and improve its performance.In this, we have used MANCOVA for analyzing the multi variables in the data and checking the performance of the player. Then we used Kalpan-Meier Estimator or test for survival analysis and check whether the player will survive or not in the game. And used different charts or graphs to analyze the different players in the Indian cricket team and compare their performance over the period and with other players. In the survival analysis, we have analyzed the players like Virat Kohli, Rohit Sharma, Kl Rahul, Shikhar Dhawan, Rishabh Pant, and Shreyas Iyer for their batting and checked how many balls they can survive against all the international teams. This analysis was applied to all the formats of the player and found that Rohit Sharma, Virat Kohli, and Shikhar Dhawan have better survival rates when compared

with the other players in Indian cricket. The graphical representation tells the insights of the data. From the graphs when we first compared the bowling stats of Indian spinners in test cricket and it's observed that Ravichandran Ashwin has a great strike rate in test cricket when we compare with Ravindra Jadeja. Then we compared players like Bumrah, Shami, and Jadeja in their home and away matches and observed that Jadeja is likely to be effective more in the home matches than in the away matches but Bumrah and Shami are effective in both home and away conditions but the impact is more in the away matches. Then we compared the periodic change in the bowling strike rates of Jadeja and Chahel from 2015 to 2022. and it is observed that Chahel is more consistent in his performance but Jadeja is more likely to fluctuate in his strike rates. Then the batting averages come into the picture where Virat Kohli has better stats when compared to all the players in both home and away matches followed by Rohit Sharma then when we compare Rahul and Dhawan, Dhawan has a good average in the away matches while Rahul has a good average in the home matches. Then we plot the bar chart for players scoring hundred in past seven years in this Virat Kohli hits maximum hundreds in the first five years and then it decreases while Rohit has a decent number of hundreds in the first five years and continues to hit 3 hundred in the next two years. Then there is a comparison with the average of Shikhar Dhawan and K L Rahul in their carrier it's observed that Shikhar Dhawan has a consistent average over time where as KL Rahul has more fluctuation in his average. Then we have a pie chart representing the runs scored by Virat Kohli against all the international teams. It observed that he has scored more runs against Australia followed by England and against Pakistan and New Zealand he has scored very less runs.

In conclusion, the analysis of Indian cricket player stats provides valuable insights into the strengths and weaknesses of the Indian team and individual players, which can help in making informed decisions, setting realistic targets, and improving overall performance.

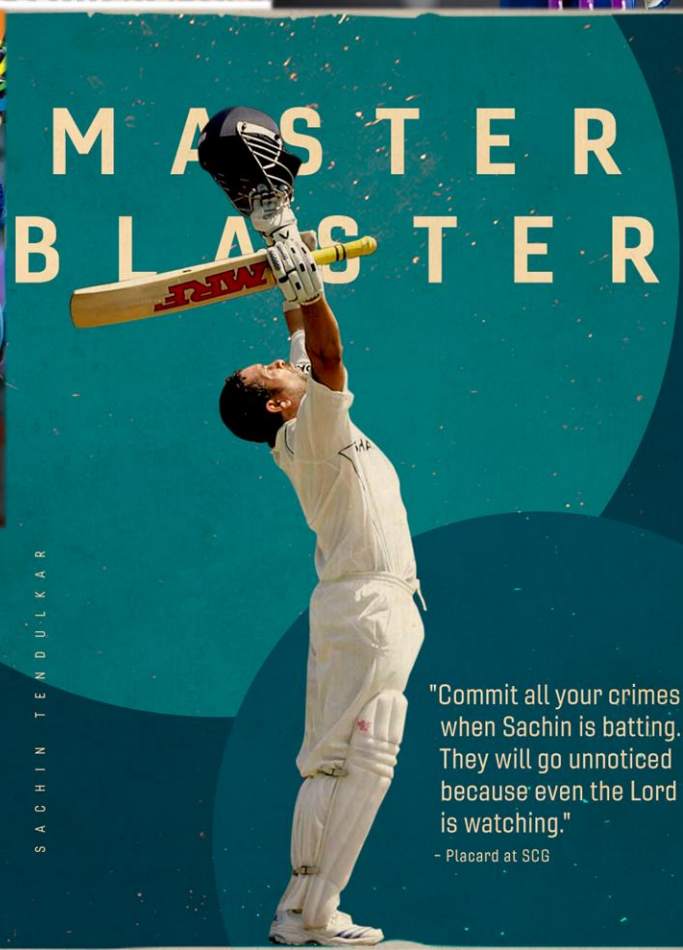

BORDER - GAVASKAR TROPHY
WINNERS


RELIANCE
LG
PEPSI
HERO HONDA
ICC Cricket World Cup 2011


RELIANCE
LG
pepsi


MITHALI
KA RAJ


WOMENS ASIA CUP, 2022
CHAMPIONS


MASTER
BLASTER
SACHIN TENDULKAR
"Commit all your crimes when Sachin is batting. They will go unnoticed because even the Lord is watching."
- Placard at SCG