



ANALYSIS OF VIRAT KOHLI'S CAREER

Presenters-

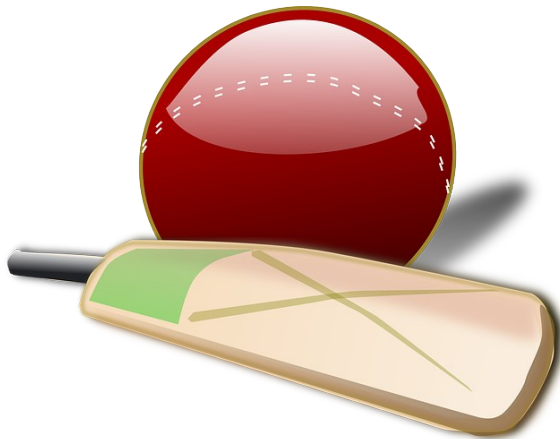
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INTRODUCTION :-



Virat Kohli
Born: 5 November 1988

Virat Kohli is an Indian cricketer. He was born in Delhi, India on **November 5, 1988**. Virat is the first player in ICC cricket history to win all 3 ICC awards in a single year- ICC ODI player of the year, ICC Test player of the year and ICC Player of the year award in 2018.

Virat also became the greatest Indian captain in Test cricket with 27 test wins, 12 overseas test wins and highest winning percentage as captain in both Tests and ODIs.

Objectives :-

- To forecast the strike rate for next 2 years.
- To check whether the Boundaries and Formats are independent or dependent.
- To find whether Virat Kohli scored on an average 50 runs in world cup.



CHI-SQUARE TEST :- (Independence of Two Attributes)

- **Definition :-**

Chi square test of independence is a statistical hypothesis test use to determine whether two categorical or nominal variables are likely to be related or not. We can use the test when we have counts of values for two categorical variables.

- **The assumptions of the chi-square include :**

- 1). Both variables are categorical.
- 2). All observations are independent.
- 3). Cells in the contingency table are mutually exclusive.
- 4). Expected value of cells should be 5 or greater in at least 80% of cells.
- 5). Number of observations > 50

Hypothesis:

H₀ :- Boundary and formats are independent

H₁ :- Boundary and format are dependent

Test Statistic:

$$\chi^2_c = \sum \frac{(O_i - E_i)^2}{E_i}$$

Observation Table:

<i>OBSERVATION(O_i)</i>			
FORMAT	BOUNDARY		
	4s	6s	TOTAL
Test	896	24	920
ODI	1148	126	1274
T20	290	91	381
IPL	546	210	756
TOTAL	2880	451	3331

Decision Criteria:

Reject H₀ in favour of H₁ whenever $\chi^2_{\text{cal}} > \chi^2_{(r-1)(c-1), \alpha}$, where r=4,c=2,α=0.05

Calculation:

EXPECTED VALUE (E)		
FORMAT	4s	6s
Test	795.437	124.563
ODI	1101.51	172.493
T20	329.415	51.5854
IPL	653.642	102.358
TOTAL	2880	451

(i)

<u>(O-E) ^ 2/E</u>		
	4s	6s
Test	12.7137	81.1874
ODI	1.9624	12.5315
T20	4.7159	30.1153
IPL	17.7263	113.197
TOTAL		274.1499
<u>DEGREE OF FREEFOM</u>		3

(ii)

$$\chi^2_{\text{cal}} = 274.1499$$

$$\chi^2_{(r-1)(c-1),\alpha} = \chi^2_{(4-1)(2-1),0.05} = 7.815$$

Result:

As $\chi^2_{\text{cal}} = 274.1499 > \chi^2_{(r-1)(c-1),\alpha} = 7.81$ Hence, we reject H_0 at 5% l.o.s

Interpretation:

So we conclude that Boundary and Formats are dependent.



T - TEST (Single mean):

Definition:

The one-sample t-test is used to determine whether a sample comes from a population with a specific mean. This population mean is not always known, but is sometimes hypothesized

• The assumptions of the T test (Single mean) include :

- 1)The data should be continuous (not discrete).
- 2)The data follow the normal probability distribution.
- 3)The sample is a simple random sample from its population. Each individual in the population has an equal probability of being selected in the sample.

Hypothesis:

H_0 : The Average runs of Virat Kohli in World Cup is equals to 50 i.e $\mu_0=50$

H_1 : The Average runs of Virat Kohli in World Cup is less than 50 i.e $\mu_0<50$

Test statistics:

$$t = \frac{\bar{X} - \mu}{s / \sqrt{n}}$$

Decision criteria :

Reject H_0 whenever, $T_{cal} < -T_{(\alpha), (n-1)}$

Calculation:

$\bar{x} = 32.67$, $\mu = 50$, $n = 15$, $s = 26.623$, $l.os. = 5\%$

$T_{cal} = -2.52$ & $T_{tab} = T_{(\alpha), (n-1)} = T_{((0.05), (14))} = 1.7613$

Result:

$T_{cal} = -2.52 < -T_{tab} = 1.7613$ i.e. $T_{cal} < -T_{tab}$

\therefore We reject H_0 at 5% los

Interpretation:

The Average runs of Virat Kohli in World Cup is less than 50

Conclusion :-

- So from the above tests we conclude that,
 - 1).Number of 6s and 4s are dependent on formats.
 - 2).Average runs of Virat Kohli in world cup is less than 50.
- From dashboard we conclude that,
 - 1).We can observe that the maximum strike rate was linear in the following years except only once high in the year 2019.
 - 2).Most of the time(i.e. 56%)he was dismissed because of catch out.
 - 3).The graphs that represent RUNS, describes that he has scored 12285 runs in 257 ODI cricket matches. In total of 99 TEST matches,he scored 7962 runs; followed by 4674 runs in 132 IPL matches and 3227 runs in 95 T20 matches.

THANK YOU