

PERFORMANCE OF CRICKETERS IN BADYANATH TROPHY: A STATISTICAL REPORT 2018



**DIBYOJYOTI BHATTACHARJEE
HEMANTA SAIKIA**

**PERFORMANCE OF CRICKETERS IN BAIDYANATH TROPHY:
A STATISTICAL REPORT : : 2018**

PERFORMANCE OF CRICKETERS IN BADIYANATH TROPHY: A STATISTICAL REPORT 2018

The report is prepared by **Prof. Dibyojyoti Bhattacharjee** of Assam University and **Dr. Hemanta Saikia** of Assam Agricultural University, Jorhat based on the performance of the cricketers participating in the Baidyanath Trophy Under-15 Cricket Tournament at District Sports Association Ground, Silchar. The performance Statistics is collected from the Mobile App “Cricheros”.

**PERFORMANCE OF CRICKETERS IN BAIDYANATH TROPHY:
A STATISTICAL REPORT : : 2018**

CONTENTS

<p>From the Authors' Desk</p> <p>1</p>  	<p>Wicket Keeping Performance</p> <p>6</p> 
<p>About the Study</p> <p>2</p>	<p>Bowling Performance</p> <p>9</p> 
<p>Batting Performance</p> <p>3</p> 	<p>Performance of All Rounders</p> <p>13</p>



From the Authors' Desk

It is about a decade that both the authors are involved in research on “**Cricket Analytics**”. This is a branch of study in which different Mathematical and Statistical tools are applied to extract the hidden information in cricket generated data.

Cricket is a game which generates huge amount of data. It is very natural the mathematicians and statisticians shall get attracted and perform various empirical works on cricket data. With the introduction of franchisee driven cricket analytical work in cricket in India has gained considerable momentum.

The analytical works of the authors in Cricket has found its expression in different reputed national and international sports journals. The concept of “Fielding Performance Measurement” developed by the authors is able to quantify the fielding ability of cricketers and rank them on the basis of their fielding skill. This was something, which was never been attempted previously by any other researcher. The authors had earlier also developed a model that can select objectively a squad of cricketers (cricket team) from a host of cricketers. The other analytical works of the authors include players’ valuation, development of the pressure index for the team batting second, performance measurement of batting partners, wicket keepers, predicting the outcome of cricket matches etc.

On the request of Mr. Niranjana Das of District Sports Association (DSA), Silchar and Mr. Aniruddha Laskar, Veteran Cricketer and Senior Reporter of News 18, the authors have computed the performance measures of the cricketers participating in the under-15 Baidyanath Trophy played in DSA from April 1-10, 2018.

The Authors hope that this study shall be used by the selectors and shall be of benefit to local cricket.

Dibyoyoti Bhattacharjee

Hemanta Saikia

About the Study

The study was performed with an objective to rank the cricketers based on their performance in the matches played in Baidyanath Trophy separately for the different expertise viz. batsmen, spin bowlers, fast bowlers, wicket keepers and all-rounders. The performance related data are collected from the mobile app “Cricheros” downloaded from Google play store. In addition to this, the authors made some visits to DSA ground to catch live action.

The performance statistics used in this study are derived based on the data generated by the players during the tournament. All the performance statistics used are published by the authors in some of their previous research papers that appeared in different national and international research journals. Players who have played a certain level of cricket quantify for the performance measurement like, played at least two matches in the tournament. Other details are provided in the appropriate section of the report.

The player performance statistics used in this report for ranking the cricketers takes into consideration the match situation while they are computed. Also, player known for multiple qualities like all-rounders and wicket keepers are aggregated into a single index so that the direct comparison is possible. As a balanced cricket team has bowlers of different expertise so the spinners and fast bowlers are differently ranked.

The authors hope that with all the performers of Baidyanath Trophy being ranked, as per different expertise it shall be easier for the DSA to choose the optimum squad of cricketers.

Dibyojyoti Bhattacharjee

Hemanta Saikia

Batting Performance



Batting Performance

Only those batsmen who satisfy the following 3 criteria are considered for measuring performance:

- Batsman has played at least 2 innings
- Faced at least 20 balls
- Has scored at least 20 runs

A total of 12 batsmen satisfied the aforesaid criteria.

The “average adjusted runs scored” by a batsman in all the innings he played, is taken as the measure of batting performance. This measure is then used for ranking the batsmen.

The adjusted runs scored by a batsman in a given innings is-

$$\text{Runs Scored} \times \sqrt{\frac{\text{Batsman's strike rate}}{\text{Match strike rate}}}$$

This is a better measure of batting performance than the ordinary batting average as it compares the performance of a batsman in relation to his peers who also participated in the match.

**PERFORMANCE OF CRICKETERS IN BAIDYANATH TROPHY:
A STATISTICAL REPORT : : 2018**

BATTING PERFORMANCE

Name	Team	Match	Runs	Balls faced	Not out	Adj Runs	Avg. Adj Runs	Rank
Rajat Kumar Deb	C H S	2	55	45	1	65.41	65.41	1
Biplob Das	N H S S	4	109	110	2	113.6	56.79	2
Sahil Ahmed Laskar	Govt Boys	4	112	129	1	103.1	34.35	3
Sagar Das	BUBB	2	42	60	0	38.1	19.05	4
Sushanto Das	S K HS	2	42	50	0	38.07	19.04	5
Rajib Das	Govt Boys	3	32	33	1	33.56	16.78	6
Hrithik Ranjan Deb	N H S S	4	33	36	2	32.25	16.13	7
Dipankar Das	S K HS	2	28	33	0	26.73	13.365	8
Sanjib Barman	S K HS	2	22	21	0	23.6	11.8	9
Prosenjit Das	Govt Boys	3	31	38	0	30.58	10.19	10
C Malsawmzuala	OHS	4	30	46	1	25.49	8.49	11
Sahanur Alom	NOHS S	4	43	78	0	32.72	8.18	12

CHS : Cachar High School, **NHSS** : Narshing Higher Secondary School, **Govt Boys**: Government Boys' Higher Secondary School, **BUBB** : Biplabi Ullaskar Bidya Bhawan, **SKHS** :Surya Kumar Higher Secondary School, **OHS** : Oriental High School, **NOHSS** : New Oxford Higher Secondary School

Wicket Keeping Performance



Wicket Keeping Performance

A wicket keeper in addition to his duty of wicket keeping also needs to be a good batsman. So the following criteria:

- As batsman he has played at least 2 innings
- As batsman he has faced at least 20 balls
- As batsman he has scored at least 20 runs
- Must have kept wickets in at least two matches
- Must have dismissed (stumping or caught or run out) at least two batsmen

A total of 6 wicket keepers satisfied the above criteria.

Now, for computing the performance measure of wicket keepers the following formula which is a combination of bye runs conceded by the wicket keeper/match and the number of batsmen dismissed by the wicket keeper/match is used.

$$\left(\frac{D'_i}{\text{Avg}(D'_i)} \right)^{0.89} \times \left(\left[\frac{1/B'_i}{\text{Avg}(1/B'_i)} \right]^\alpha \right)^{0.11}$$

**PERFORMANCE OF CRICKETERS IN BAIDYANATH TROPHY:
A STATISTICAL REPORT : : 2018**

Wicket Keeping Performance

The wicket keeping performance is then added to the batting performance of the wicket keeper to get the overall performance score of the keeper.

Name	Team	Matches	Catches	Stumping	Run out	Bye Runs Conceded	Runs Scored	Balls faced	Adj. Average	Performance Index	Rank
Biswajit Debnath	NHSS	3	3	1	0	4	92	120	20.61	2.78	1
Fayajul Hussan Laskar	BUBB	2	0	1	0	4	62	65	31.59	2.56	2
Sami Mazumder	OHS	4	2	2	0	8	56	73	16.57	2.14	3
Biswanath Goswami	CHS	2			2	1	13	17	11.61	2.01	4
Raj Das	Govt Boys	4	0	1	2	5	54	65	12.19	1.66	5
Heuting Changbe	NOHSS	4	2	0	0	6	23	60	3.88	0.86	6

Bowling Performance



Bowling Performance

Only those bowlers who satisfy the following 3 criteria are considered for measuring performance:

- **Bowler has bowled in at least 2 innings**
- **Bowled at least 30 balls**
- **Taken at least 3 wickets**

A total of 10 bowlers who played in the tournament satisfied the aforesaid criteria out of which two are spinners and eight are fast bowlers.

The bowling performance measure is traditionally measured using three performance statistics viz. economy rate, bowling strike rate and the bowling average.

The bowling strike rate is the number of balls bowled by a bowler per wicket taken. The economy rate is the number of runs conceded by the bowler per over and the bowling average is the number of runs conceded by the bowler per wicket. All these are negative dimensions, i.e. lesser the value better is the bowler. So combining all these measures to a single index the Combined Bowling Rate (CBR) is used.

Bowling Performance

$$CBR = \frac{3R}{W + (B/6) + W \times \frac{R}{B}}$$

where, W is the number of wickets taken by the bowler in the tournament, B is the balls bowled by the bowler in the tournament and R is the adjusted runs conceded by the bowler in the entire tournament.

The adjusted runs conceded by a bowler in a given match are computed in the following manner:

$$\text{Runs Conceded by a bowler} \times \frac{\text{Economy rate of the bowler}}{\text{Economy rate of the match}}$$

The sum of all such adjusted runs conceded by a bowler across all the matches in which he bowled gives the value of R.

CBR is a negative measure and lower the value better is the bowler.

It may be noted that the players who have satisfied all the criteria as bowlers and batsmen are considered as all-rounders and are considered separately in all-rounder section.

**PERFORMANCE OF CRICKETERS IN BAIDYANATH TROPHY:
A STATISTICAL REPORT : : 2018**

Bowling Performance

Bowler	School	Matches	Wickets	Balls	Runs Con.	CBR	Rank	Type
<i>Rafiqul H Mazumdar</i>	<i>NHSS</i>	4	4	82	37	4.05	1	Fast
<i>Rohan Kumar Dam</i>	<i>NHSS</i>	4	7	66	45	5.37	2	Spin
<i>Sudip Das</i>	<i>Govt Boys</i>	4	7	72	65	7.64	3	Fast
<i>Raj Kar</i>	<i>Govt Boys</i>	4	4	78	60	8.21	4	Fast
<i>Archlam Amin Laskar</i>	<i>NOHSS</i>	4	5	56	51	8.27	5	Fast
<i>Rohit Kumar Rowat</i>	<i>OHS</i>	4	7	90	86	8.74	6	Fast
<i>Anubhab Das</i>	<i>NHSS</i>	4	7	66	68	8.74	7	Fast
<i>Sahin Alam Barbhuiya</i>	<i>NOHSS</i>	4	5	64	72	10.49	8	Fast
<i>Akram H Mazumdar</i>	<i>Govt Boys</i>	4	3	31	45	12.63	9	Fast
<i>Akash Nath</i>	<i>OHS</i>	4	3	51	62	13.89	10	Spin

CHS : Cachar High School, **NHSS** : Narshing Higher Secondary School, **Govt Boys**: Government Boys' Higher Secondary School, **BUBB** : Biplabi Ullaskar Bidya Bhawan, **SKHS** :Surya Kumar Higher Secondary School, **OHS** : Oriental High School, **NOHSS** : New Oxford Higher Secondary School

**PERFORMANCE OF CRICKETERS IN BAIDYANATH TROPHY:
A STATISTICAL REPORT : : 2018**

Performance of All-Rounders



All Round Performance

All-rounders in cricket are those players who are equally well both with the bat and with the ball. Irrespective of the format of cricket all-rounders are real utility players in any team.

For the current context a cricketer who satisfies all the following criteria qualifies to be called as the all-rounder:

- As batsman has played at least 2 innings
- Faced at least 20 balls while batting
- Has scored at least 20 runs
- Bowled at least 30 balls
- Taken at least 3 wickets

There are only 8 cricketers satisfy the aforesaid criteria.

The performances of all-rounders are computed by a combination of the average adjusted runs scored by the batsman and the combined bowling rate. Let us call the measure as the Performance Score of all rounders PS_all in short. Higher the PS_all value better is the all-rounder.

**PERFORMANCE OF CRICKETERS IN BAIDYANATH TROPHY:
A STATISTICAL REPORT : : 2018**

All Round Performance

All-rounder	School	Matches	Wickets	Balls	Runs Con.	Runs scored	Balls Faced	Not out
Abhishek Deb	<i>NOHSS</i>	4	12	89	77	171	172	0
Amjad H Laskar	<i>Govt Boys</i>	4	6	90	67	129	106	1
Parikshit Banik	<i>Govt Boys</i>	4	7	90	53	60	74	2
Suden Ch. Das	<i>NHSS</i>	4	4	86	65	20	18	1
Rahim Uddin Barbhuiya	<i>NOHSS</i>	4	4	78	72	28	41	3
Abdul Ayan Barbhuiya	<i>NOHSS</i>	4	6	70	58	30	31	1
Gautam Rajbhar	<i>OHS</i>	4	4	78	79	31	33	0
Samarpan Deb	<i>OHS</i>	4	3	76	94	58	64	0
Y Jiban Singha	<i>OHS</i>	4	4	72	83	42	44	0

**PERFORMANCE OF CRICKETERS IN BAIDYANATH TROPHY:
A STATISTICAL REPORT : : 2018**

All Round Performance

Ranking of All Rounders

All-rounder	School	Avg. Adjusted Runs	CBR Score	PS_all	Rank	Bowling Type
Abhishek Deb	NOHSS	41.6	5.75	3.23	1	Fast
Amjad H Laskar	Govt Boys	46.2	7.04	3.17	2	Spin
Parikshit Banik	Govt Boys	28.7	4.98	2.89	3	Spin
Suden Ch. Das	NHSS	22.6	8.56	1.94	4	Fast
Rahim Uddin Barbhuiya	NOHSS	22.9	10.05	1.81	5	Fast
Abdul Ayan Barbhuiya	NOHSS	9.7	7.09	1.57	6	Fast
Gautam Rajbhar	OHS	10.2	11.28	1.17	7	Fast
Samarpan Deb	OHS	14	15.55	1.13	8	Fast
Y Jiban Singha	OHS	22.3	12.77	1.09	9	Fast

NHSS : Narshing Higher Secondary School, **Govt Boys**: Government Boys' Higher Secondary School, **OHS** : Oriental High School, **NOHSS** : New Oxford Higher Secondary School.