

PREDICTION ON PERFORMANCE IMPROVEMENT OF SPORTMENS

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Abstract- In our day to day life sports has been a part of life. A sportmen can succeed or fail depends on planning ,high-performance sports that are determined by the development and degree of maturity of overall players. Measuring the performance of sportmen require a lot of time, economic cost and manpower. meanwhile, directly predicting their performance based on their partnership is more challenging by knowledge based machine learning method. We can provide a promising prediction on performance of Indian sportmen based on their previous records and history.

The analysis of past performance of sportmen helps in the prediction which reveals the interesting tendencies and

result . The prediction can be carried using k-means, which helps to observe the performance of sportmen.

Keywords: Clustering algorithms, Clusters, Partnership, Runs, Data mining ,Sportmen performance, Cricket Matches, datasets.

1.INTRODUCTION

In The sport of cricket, two batsmen always bat in partnership, when two higher-order batsman are together they are largely free to play to their own styles. So, the performance of sportmen can be based on various factors such as technical , physical, Psychological capacities, confidence, strategic thinking, playing environment, balance and coordination,

reaction time, flexibility, coping with pressure. The prediction enables visualization of current and future partnership, this helps to create potential partnership in cricket with the value of the partnership not only integral to gaining mental toughness but is also essential to perform well in the game.

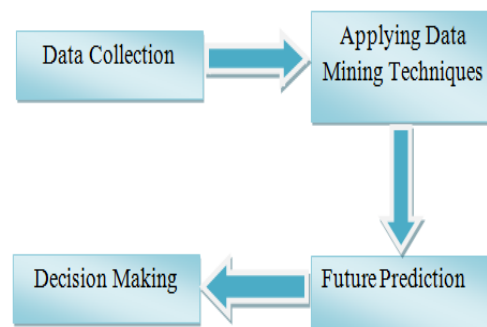


Figure1 .PHASES OF PREDICTION

2. PHASES OF PREDICTION

Data Collection is the process of gathering and measuring information based on various interest. For this, phase of prediction accurate data collection is essential in maintaining the integrity of research, making informed decision. Applying data mining techniques - Data mining is the process of extracting useful information and patterns from enormous data. One of the important task in data mining to select the correct data mining technique. A generalized approach has to be used to improve the accuracy and cost effectiveness of using data mining techniques. K-mean algorithm is used in this prediction process.

Prediction in data mining is to identify data points purely on the description of another related data value. Hidden data which can be used for future prediction. Decision in any field can not be based only on experience alone so, using algorithms and charts- decision making can be made more effectively.

3.FORMATS OF CRICKET

1.ONE DAY INTERNATIONAL is a form of limited overs, in which each team faces a fixed numbers of overs. With the help of various external sources and journal ODI cricketers in india and their obtained runs has been tabulated. The partnership between two cricketers is an vital role in increasing the winning count of the matches.

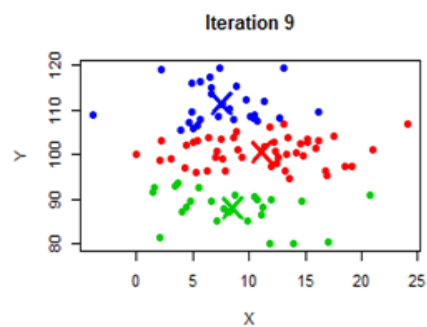
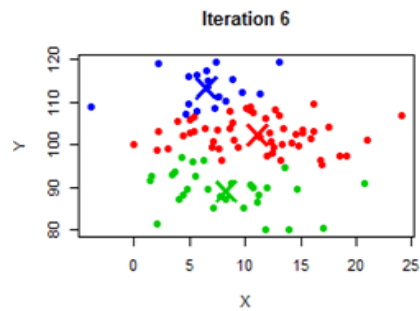
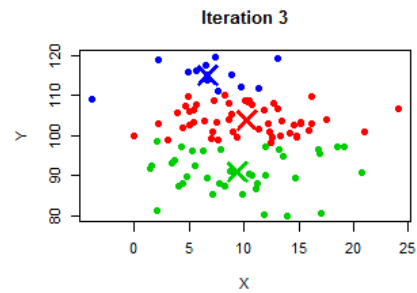
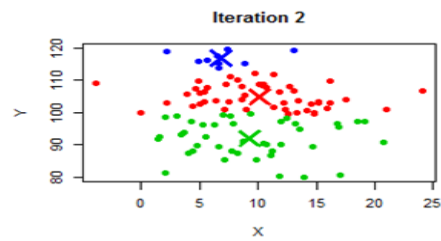
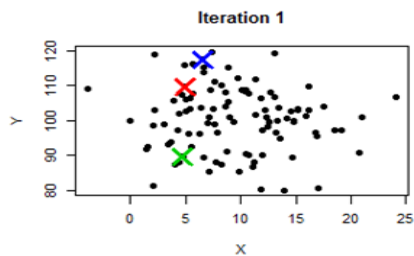
The data only add on to the Indian cricketers with various achievement records. In the below tabulation the

partnership of two Indian cricketers and their best runs had been taken for prediction.

Table 1: Best Partnership Cricketers In ODI Matches

Partner1	Partner2	Runs
Gautam Gambhir	Virat Kohli	2000
Gautam Gambhir	Virender Sehwag	2242
Shikhar Dhawan	Virat Kohli	2442
Shikhar Dhawan	Rohit Sharma	3368
MS Dhoni	Yuvraj Singh	3105
MS Dhoni	Suresh Raina	3569
Virat Kohli	Suresh Raina	2158
Virat Kohli	Rohit Sharma	3518
Virat Kohli	Ajinkya Rahane	2069
Sachin Tendulkar	Sourav Ganguly	8227
Sachin Tendulkar	Mohammad Azharuddin	3514
Rahul Dravid	Sachin Tendulkar	4173
Rahul Dravid	Sourav Ganguly	4363
Rahul Dravid	Virender Sehwag	3383
Rahul Dravid	Yuvraj Singh	2663
Virender Sehwag	Sachin Tendulkar	4387
Sourav Ganguly	Virender Sehwag	2606
Mohammad Azharuddin	Ravindrasinh Jadeja	2270
Vijay Shankar	Cheteshwar Pujara	2740
Ravindrasinh Jadeja	Sachin Tendulkar	2111

Note: ODI Record upto march 2018 has been included.



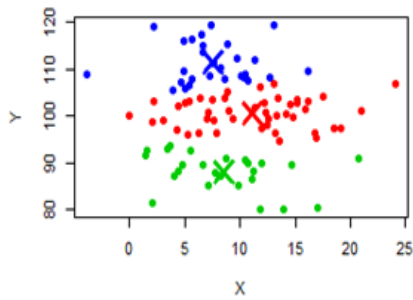


Figure2: Result for ODI, Test and Twenty20

From the above the best partnership has been simulated using k-means algorithm. The best partnership cricketers for the one day international has been predicted.

2.TEST CRICKET is the longest form of the sport of cricket and is considered its highest standard. Matches are played between national representative teams with test status as determined by international cricket council.

Table2: Best Partnership Cricketers In Test Matches

Partner1	Partner2	Runs
Rahul Dravid	VVS Laxman	4065
Rahul Dravid	Sachin Tendulkar	6920
Rahul Dravid	Sourav Ganguly	3294
Rahul Dravid	Virender Sehwag	3405
Rahul Dravid	Gautam Gambhir	2530
Sourav Ganguly	Sachin Tendulkar	4173
Gautam Gambhir	Virender Sehwag	4412
Mohammad Azharuddin	Sachin Tendulkar	2385
VVS Laxman	Sachin Tendulkar	3523
Sunil Gavaskar	Dilip Vengsarkar	3272
Chetan Chauhan	Sunil Gavaskar	3127
Mohinder Amarnath	Sunil Gavaskar	2366
Virat Kohli	Cheteshwar Pujara	2112

Note: Test cricket record upto march2018 included.

The above tabulation shows the best partnership cricketers in test matches and

the tabulation data is inserted into clustering k-mean algorithm and following result in figure2 has been observed.

3.TWENTY20 INTERNATIONAL is a form of cricket match between two representative teams, each having T20I status as determined by the international cricket council, and is played under the rules of twenty20 cricket.

Table 3: Best Partnership Cricketers In T20I

Partner1	Partner2	Runs
Rohit Sharma	KL Rahul	165
Rohit Sharma	Shikhar Dhawan	158
Rohi Sharma	Virat Kohli	138
Rohit Sharma	Zaheer Khan	36
MS Dhoni	Yusuf Pathan	63
MS Dhoni	Ravichandran Ashwin	59
KL Rahul	MS Dhoni	107
KL Rahul	Mandeep singh	103
Gautam Gambhir	Virender Sehwag	136
Virat Kohli	Suresh Raina	134
Yuvraj singh	MS Dhoni	102
Suresh Raina	Harbhajan Singh	61
S Sreesanth	RP Singh	17

Note:T20I Record upto december 2017 has been included.

The above tabulation shows the best partnership cricketers in T20I matches and the tabulation data is inserted into clustering k-mean algorithm and following result in figure2 has been observed. In this data both runs and wickets partnership are considered for better clarity of performance improvement.

4.CONCLUSION

From the above, analysis of data was possible but prediction for improvement was impossible but the best partnership cricketers concentrate on these factors such as strategic thinking, playing environment, balance and coordination, reaction time, flexibility, coping with pressure more for best performance.

5.FUTURE SCOPE

Data mining is proved to be an important tool in many areas of sports and the techniques are best used in deriving solution to a problem. Thus by data mining, The individual factors affecting the performance of cricketer players can be worked detailed in future.

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