

Comparative Analysis of Player Performance Across Nationalities in the Indian Premier League

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Abstract: *This study investigates the performance differences between Indian and foreign players in the Indian Premier League IPL from 2015 to 2023, focusing on batsmen and bowlers. Using data on runs and wickets per match, the study reveals no significant difference in batting performance between Indian and foreign players, as confirmed by statistical testing. However, a significant difference is observed in the bowling performance, with foreign bowlers outperforming Indian bowlers. These findings suggest that IPL teams with a higher proportion of foreign bowlers may have a competitive advantage. The study also highlights limitations related to the timeframe and player availability, recommending future research to explore additional performance factors.*

Keywords: IPL performance, Indian players, foreign players, batting analysis, bowling comparison

1. Introduction

In India, cricket remains the one sport that continues to unite the entire country. India's population stands at a staggering 1.44 billion and out of those, about 1.1 billion Indians follow cricket conscientiously with a yearly growing rate of 9%¹. These viewership numbers have not been achieved solely through international cricket, however. The entire landscape of cricket was changed in 2008, with the introduction of the Indian Premier League (IPL). Using the relatively new 20 over format, it gave fans the chance to experience the game in a faster, more enthralling format. The league took India by storm, and today is the biggest franchise league in the world.

One of the main objectives of the IPL has always been to provide opportunities to young, budding talents. Although it has continued to do this, the focus has frequently been shifted to attracting overseas players instead. These overseas players come with giant price tags, often much greater than Indian players. The general consensus behind this has been related to their international track record which is correlated with their ability to perform under pressure². The division in this price tag between Indian and overseas players has created a dynamic of them competing against each other to perform for a team based on a price, rather than calibre.

Given this context, my research paper seeks to answer the following research question, "Is there a significant difference between the performance of Indian and overseas players in the IPL?" The results of the study shows that there is no significant difference in the performance of Indian and foreign batsmen, but there is a significant difference in the performance of Indian and foreign bowlers. While there have been studies that compare the performance of players based on nationality, we contribute to the existing research by studying this phenomenon in the IPL context, in a multiregional team - based sport. The results of the paper have implications on the various IPL teams as it will provide them with an insight to understand the appropriate team composition based on different nationalities. Furthermore, the

research also throws light on the fact that there is scope for significant improvement in the performance of Indian bowlers.

2. Literature Review

Since its introduction, 20 over cricket has been looked at thoroughly from various angles. Our literature review focuses on the difference in performance between Indian and foreign players. A study conducted by Dhali and Paul (2018) examined the average total runs and the average strike rate for the top 5 Indian and foreign batsmen and the bowling average as well as average economy of the top 5 Indian and foreign bowlers for the first 4 years of the IPL. The result was that Indians emerged ahead in all these fronts. Ghosh and Paul (2021), continued this for the next 4 years as well, coming to the conclusion that Indian batsmen scored more, but foreigners had a higher strike rate. Foreign bowlers, however, outperformed Indians overall, in terms of average wickets, runs, and economy rate. Dutta et al (2022), using the computer language Python, examined the decision - making of teams to buy foreign players and developed a way to rank them according to their performance. This paper focused solely on foreign players and used different algorithms to determine their performance level and corresponding valuation. Chowdhury et al (2023) studied if foreign players truly have an impact on an IPL team and concluded that the impact of foreign players was significant in terms of batting, however, there was no significant impact on bowling. Rana and Chowdhary (2024) did a case study comparing the performance of Indian and foreign players in 2020, and found that Indian bowlers outperformed foreign bowlers, as the top 3 wicket takers were all Indian. However, foreign batsmen outperformed Indian batsmen, as the top 5 leading run scorers were all foreign. Kapas et al. (2024) compared solely the batting performance through multiple factors such as runs scored, average score, strike rate, centuries, sixes, fours, etc. of foreign versus Indian players. The outcome was that although foreign players have a higher rate of scoring runs or a higher strike rate, Indian batsmen were leading the race in

¹ <https://playtoday.co/blog/stats/cricket-viewership-statistics/>

² <https://economictimes.indiatimes.com/news/sports/why-ipl-franchises-pay-big-money-to-australian-players/articleshow/106239191.cms?from=mdr>

franchises - pay - big - money - to - australian - players/articleshow/106239191.cms?from=mdr

terms of most runs scored. This shows that the varying methodology used had a different impact on different studies. Although these articles examine the foreign versus Indian performance debate, research suggests that there is still some ambiguity in this area.

3. Data and Descriptive Statistics³

To collect data for my research, the official IPL website was the primary source. To answer the question, the study divided

the data collection into two sections, batsmen and bowlers. Within this, it was further divided into foreign and Indian players. All data collected was from the year 2015 to 2023. For all batsmen, the study got the total runs scored by each of them, divided by the matches played to calculate runs per match. For all bowlers, similarly, the total wickets taken was divided by the matches played to get wickets per match. Hence the variables defining performance for batsmen were runs per match, and for bowlers, wickets per match. The data generated the graphs shown below.

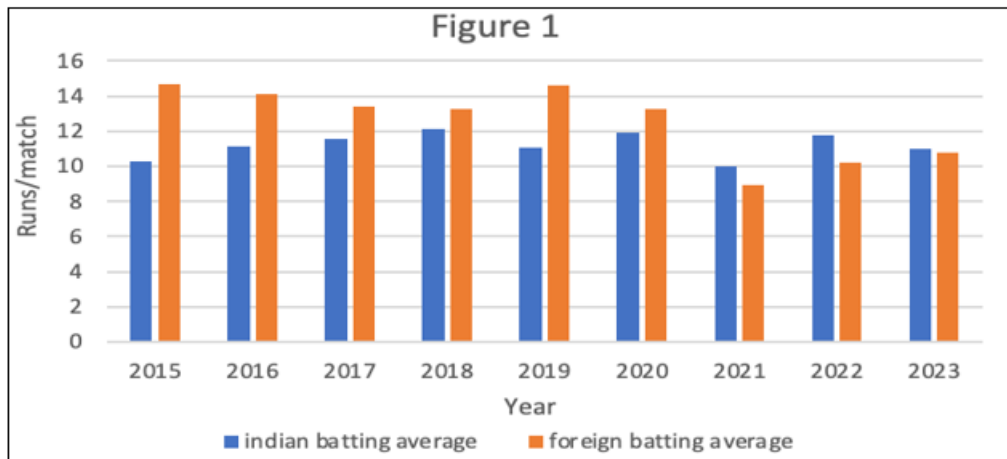


Figure 1: Batting Performance of Indian and Foreign National Players in the IPL

Source: Author's computation from IPL Data

As we can see in Figure 1, the trend suggests that the performance of foreign batsmen was consistently better than Indian batsmen from the year 2015 to 2020. However, from 2020 to 2023, the Indian batsmen's performance overtook foreign batsmen as they had a higher runs per match average. The runs per match have not increased much however for Indian batsmen and is rather fluctuating as in 2015 they had

an average of around 10 runs per match which subsequently increased to 12 runs per match at its peak and then came back down to 11 runs per match in 2023. However, the foreign batsmen averages have almost consistently decreased from 14 runs per match in 2015 to 11 runs per match in 2023 leading to the change in trend.

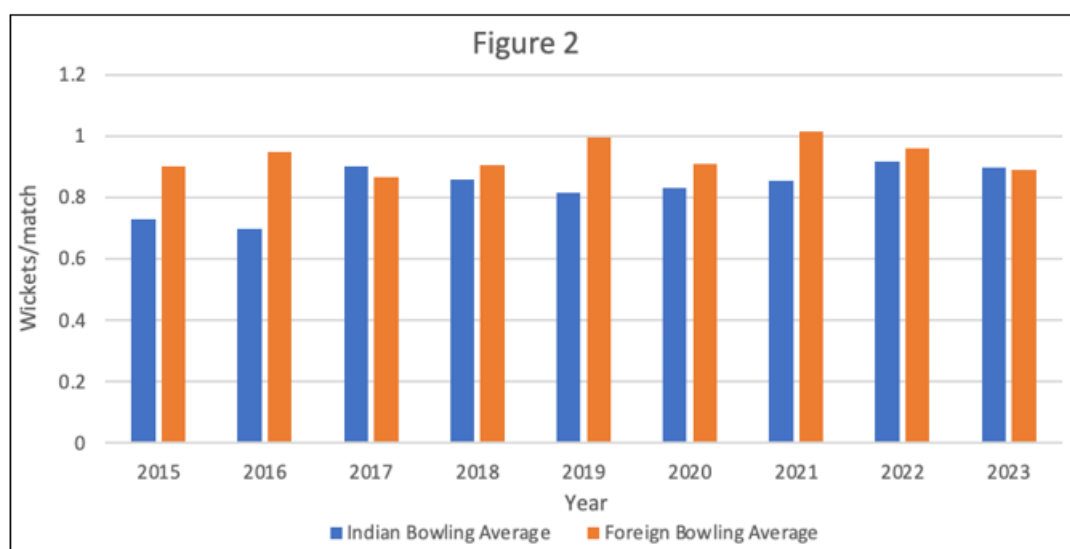


Figure 2: Bowling Performance of Indian and Foreign National Players in the IPL

Source: Author's computation from IPL Data

Figure 2 represents the bowling metric. In this data, there is no clear and successive trend that is visible. Nonetheless, in the 9 years in which the data has been collected, in 7 of those years, foreigners have had a higher wickets per match average. In this set of data too, there is no consistent increase

or decrease in the variable, and exhibits significant volatility. For foreign bowlers, for instance, in 2015, the average was 0.9 wickets per match, which increased to 1 wicket per match in 2019 and 2021 but then dropped to back around 0.9 in 2023.

4. Results and Analysis

The research question sought to answer whether there was a significant difference between the performance of Indian and foreign players. This analysis was performed separately for batsmen and bowlers. The null and alternative hypotheses for batsmen and bowlers are mentioned below.

Null hypothesis: *There is no difference in batting performance for Indian and foreign players* **Alternative hypothesis:** *There is a significant difference in the batting performance between Indian and foreign players.*

Null Hypothesis: *There is no difference in bowling performance for Indian and foreign players* **Alternative Hypothesis:** *There is a significant difference in the bowling performance between Indian and foreign players.*

To test this hypothesis, we conduct a two - sample t - test that examines and compares the average performance of batsmen and bowlers between Indian and foreign nationals. On performing the test, we reject the null hypothesis if the test statistic value is greater than the critical value. Conversely, we fail to reject the null hypothesis if the test statistic value is less than the critical value. Looking at the batsmen first, the t - test generated the following results.

Table 1: Result of the t - test for the difference in batting performance between Indian and Foreign Nationality Players in the IPL

	Runs per Matches (Indian Players)	Runs per Matches (Foreign Players)
Mean	11.20	12.58
Variance	0.53	4.34
Observations	9	9
Hypothesized mean difference	0	
df	10	
t Stat	- 1.88	
P (T<=t) one - tail	0.0450	
t Critical one - tail	1.81	
P (T<=t) two - tail	0.090	
t Critical two - tail	2.23	

For the t - test the value of alpha was taken as 0.05. Since the p value of the data is 0.09, which is greater than 0.05, we fail to reject the null hypothesis and conclude that there is no significant difference in the performance of Indian and foreign batsmen. Looking at bowlers next, the second t - test generated the following results.

Table 2: Result of the t - test for the difference in bowling performance between Indian and Foreign Nationality Players in the IPL

	Wickets per matches (Indian Players)	Wickets per Matches (Foreign Players)
Mean	0.833	0.933
Variance	0.00579	0.00251
Observations	9	9
Hypothesized mean difference	0	
df	14	
t Stat	- 3.27	
P (T<=t) one - tail	0.00281	

t Critical one - tail	1.76	
P (T<=t) two - tail	0.00561	
t Critical two - tail	2.145	

For this second t - test, the p - value is 0.005 which is lesser than the value of alpha, therefore we can reject the null hypothesis. Hence, we can conclude that there is a significant difference in the performance of Indian and foreign bowlers.

5. Conclusion

The main objective of our study was to examine the performance of batsmen and bowlers in the Indian Premier League held from the years 2015 to 2023. The performance of batsmen was measured through the variable runs per matches while the performance of bowlers was measured by the variable total wickets per total matches. The results of the study find that while there is no significant difference in the batting performance between Indian and foreign players, there is a significant difference in the bowling performance between Indian and foreign players in the IPL. The results imply that bowling performance is significantly better among foreign players and therefore, teams that have a higher proportion of foreign bowlers could have a possible advantage in a better performance as compared to other teams in the tournament. This study has a few limitations. Firstly, the time period of the study is restricted only for the last 8 years. While this tournament began in 2008, a larger time period could probably provide better insights. Secondly, the results of this study are affected by the player availability each year. Hence, the years in which a greater number of foreign players were available, probably have a greater proportion of foreign players playing in that year. Thirdly, the number of matches played for Indian players and foreign players does vary which affects the average value. It hence represents the scope for improvement as performance is often impacted by this limitation. Lastly, there could be other possible factors that could lead to the difference in performance which is not examined in this study. This could be a future area for research to analyse the factors which affect the batting and bowling performance of Indian and foreign nationals.

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