

Comparative Performance Analysis And Tactics Between Indian Super League And European Leagues

Nikhil M ¹ and Nayana Nimkar ^{2*}

¹Student, ²*Professor, Symbiosis School of Sports Sciences, Symbiosis International (Deemed University), Pune, Maharashtra, India

*Corresponding Author Email Id: director@ssss.edu.in

Abstract

Indian football has been lagging behind the world's elite for a long time. This is why the Indian Super League (ISL) was established. Its main objective is to improve the standard of Indian Football, both at club level as well as international level. One of the reasons why Indian football struggles is because the clubs (and even the national team, for that matter) do not score as many goals as their European counterparts and concede too many goals due to being weak offensively and defensively. In this research paper, the researcher analyses as to where Indian club football lags behind the European clubs using a points system that he designed. The aim of the points system is to analyse the performance i.e., Performance Analysis.

Keywords: Indian Super League, Indian Football, European Football, Performance Analysis, Goals

Introduction

Football, referred to some as soccer, is the most wonderful and vital game for many individuals over the globe, irrespective of sexual orientation, religion or position. As indicated by (Witzig, 2006), the game of football is known for enthralling action and edge of the seat moments. It is played by 250 million players in over 200 countries and dependencies, making it the world's most popular sport. Individuals get engaged with football by going to live games in the stadium, watching it on TV or listening to the games on radio stations. The simple guidelines and negligible hardware has helped football turn into the most prevalent game on the planet. Numerous individuals who are over the top of football take after their stars and take an interest in that game on an amateur or expert level (1).

Due to its immense popularity, a lot of people have come up with statistical models of predicting games based on different parameters, mainly for betting. Since betting gives you the ability to win money, it has a profit-based edge to it. Football is a game that consists of numbers, and people have used it to boost their Fantasy Premier League winning chances. All of these and much more is possible due to the availability of data and technological advancements. Data for key performance indicators (KPI's) match statistics, Player Statistics etc. play a vital role in analysing performance from different aspects (2).

Sir Alex Ferguson, the legendary football manager, once said that goals and attackers win you games but clean sheets and defenders win you tournaments. However, the area of research will be limited to Indian club football, specifically the Indian Super League (ISL) and the Top 6 European Leagues (Premier League, La Liga, Serie A, Bundesliga, Ligue 1 and Liga NOS).

Since its formation, the Indian Super League has grown in popularity with the stakeholders of Indian Football. It has made the All India Football Federation (AIFF) operate with more accountability (still not very high quality, but certainly better than the past). Another instance where the Indian Super League has transformed Indian football is in the field of data. Its official website contains many statistical metrics like touches number of passes completed, pass accuracy, shots, shot conversion rate, number of fouls committed, interceptions, tackles in addition to the usual number of goals scored, number of clean sheets, yellow cards and red cards. With so many metrics available readily in the official website, viewers can identify exactly what can be done to improve the standard of the ISL. However, there are a few indicators absent from Indian Football, most notably Heat Maps, which would be a welcome addition to the league (3,4).

The objective of this research paper is to assess and analyse the performances of ISL Clubs and European League Champions. Then, the researcher aims to compare where the ISL clubs lag behind the European clubs and by how much.

Methodology

The period of research covered was from the 2018-19 ISL season to the 2020-21 ISL season which is the last three seasons. The ISL data was collected from the official website of ISL. The data was publically available (5). The sample size consisted of the teams which reached the playoffs during the last three seasons i.e., 3*4 = 12 teams. The sample also contained the league champions of the top 6 European leagues of the 2020-21 season (6).

The methodology of the research has been designed in such a way that the researcher has created a points system wherein the teams' attacking performances, specifically the number of goals scored, the teams' defensive performance, specifically the number of goals conceded and the number of clean sheets, and the teams' disciplinary record i.e., the number of yellow cards and red cards, were all assessed and calculated. The points system designed is as follows:

Table 1: Discipline & Performance Index

Metric	Points
Per Goal Scored	+3
Per Goal Conceded	-2
Per Clean Sheet	+5
Per Yellow Card	-1
Per Red Card	-5

The points system was designed by the researcher (as seen above in Table 1) in such a way that the total amounts to 0. The reason each and every red card is worth -5 points is because in the European leagues, if a player accumulates 5 yellow cards in a season even without being sent off, then the player is suspended for one match.

Additionally, the normal points system used in football (3 for a win, 1 for a draw and 0 for a loss) is also included. Goals scored and Goals conceded have been classified according to the phases of the game (in my case, the 1st 30 minutes, middle 30 minutes, last 30 minutes and extra-time wherever applicable). This showed whether teams started well or took time to settle in the match or finished strongly. Two additional performance metrics that were used in this research included attempts per goal scored and fouls per booking. It measured how effective and how aggressive respectively a team may have performed. A similar system was used in the 2010 FIFA World Cup (7). Individuals and Team behaviour are also compared (8).

The champions of the 2020-21 season of the top 6 European Leagues will be used as a comparison to the 12 ISL teams that reached the playoffs during the last three seasons. This will allow us to see where Indian football (Indian club football, to be precise) lags behind. Technical analysis and Goal scoring patterns will also be used (9,10,11,12).

The data was collected directly from the official website of the Indian Super League (ISL) (for Indian clubs), Whoscored.com as well as Transfermarkt.com (for both Indian and European clubs). Microsoft Excel was used for the analysis of the data. In this research paper, the researcher also tried to find the correlation between Attempts per goal and the number of goals and fouls per booking and the number of bookings. This may also allow us to see the difference between the cultures of ISL and European Football (13).

Results and Discussion

The graphs given below indicate how efficient a team was in scoring goals.

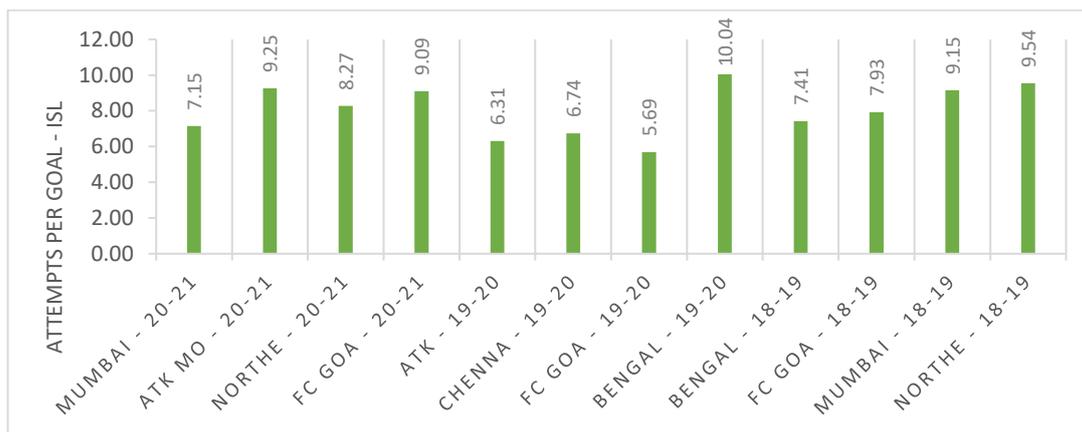


Figure 1: Attempts per Goal (ISL)

In Figure 1, it is concluded that the range lies between 5.69 and 10.04 among the Indian clubs with FC Goa in 2019-20 being the most efficient in front of goal and Bengaluru FC in the same season being the least efficient.

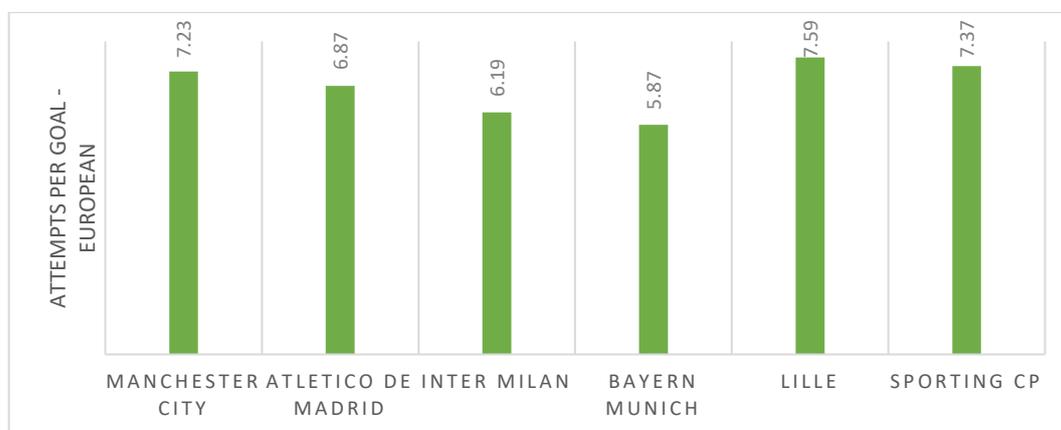


Figure 2: Attempts per goal (European)

In Figure 2, the last season’s champions in the Top 6 European Leagues have a smaller range of between 5.87 and 7.59. It is also observed that even the least efficient champion of 2020-21 among the European clubs, Lille, shot more efficiently when compared to more than half the ISL clubs that reached the playoffs in the last three seasons. Interestingly, FC Goa in 2019-20 needed marginally fewer attempts to score a goal than Bayern Munich in 2020-21. It is the only instance when an ISL club was more efficient in shooting than a European League Champion in 2020-21. The dataset for the Indian clubs had a mean of 8.05 and a standard deviation of 1.398 (calculated). For the European clubs, the mean and standard deviation were 6.85 and 0.687 respectively (calculated).

The graphs given below show the number of fouls a team committed for every booking they received on average.

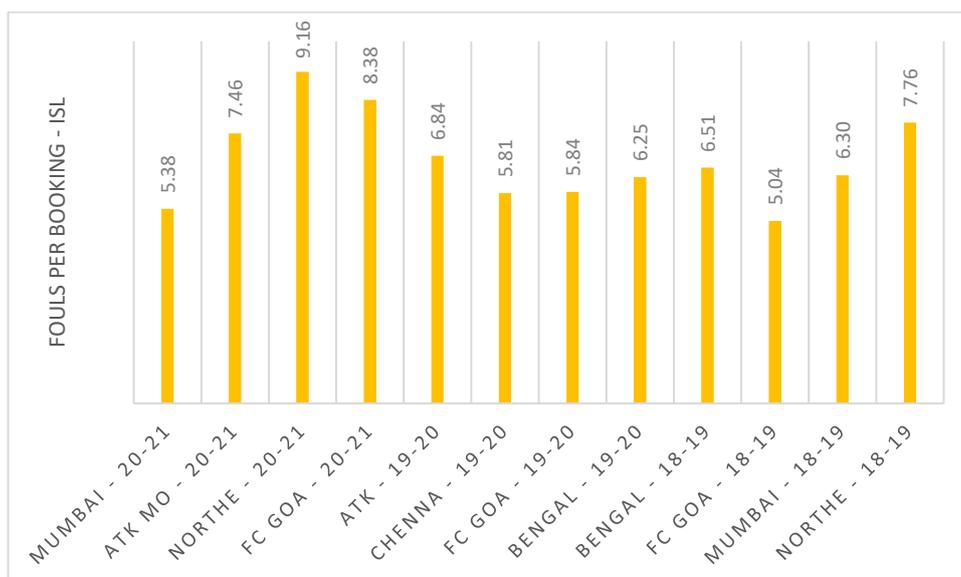


Figure 3: Fouls per Booking (ISL)

In Figure 3, it is observed that the ISL clubs tended to commit anywhere between 5 and 9 fouls per booking received. The mean number of fouls per booking for Indian clubs are 6.73 ± 1.244 respectively (calculated).

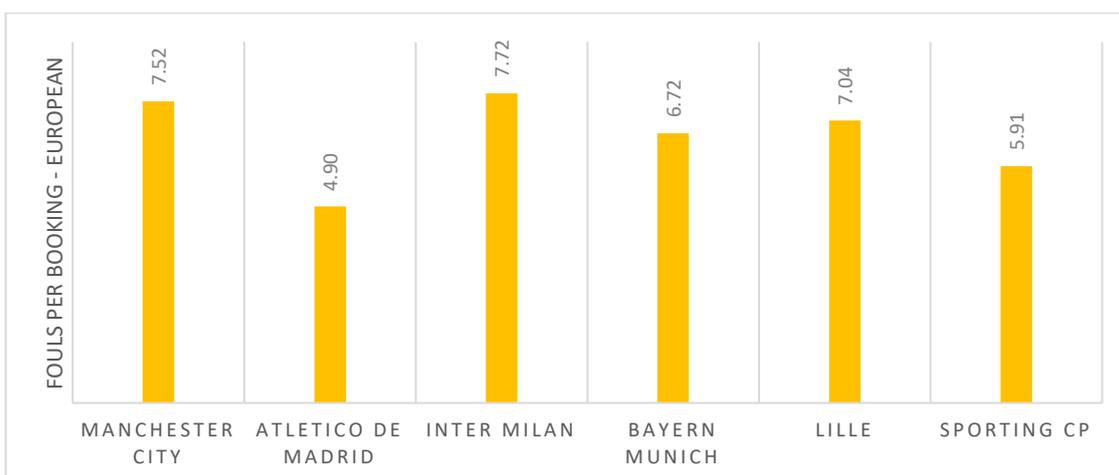


Figure 4: Fouls per Booking (European)

In Figure 4, it is observed that the European clubs stayed closer to the average with only Atletico Madrid being the exception. You can see that Atletico was very aggressive when it came to committing fouls. The mean number of fouls per booking for the European clubs are 6.64 ± 1.065 respectively (calculated).

The points system designed by the researcher (see the methodology section above) displays the following results:

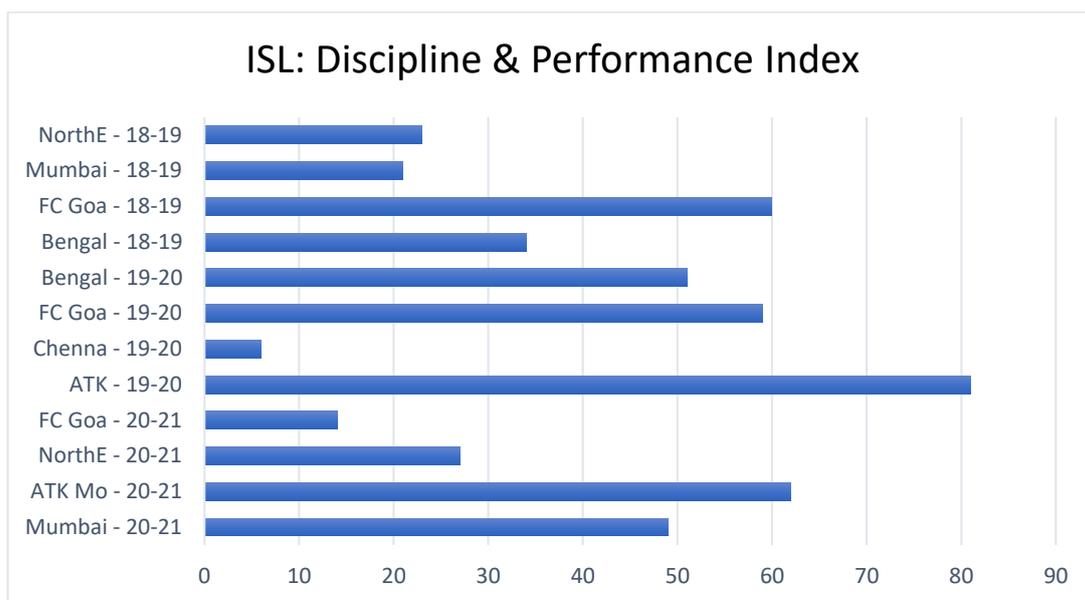


Figure 5: Discipline & Performance Index (Total) – ISL

In Figure 5, the ISL clubs are analysed in absolute terms using the points system designed by the researcher. ATK in 2019-20 were the best performers among the teams that reached the playoffs over the past three seasons with a score of 81. Chennaiyin FC in 2019-20 was the luckiest team to reach the playoffs in the last three seasons with a score of just 6.

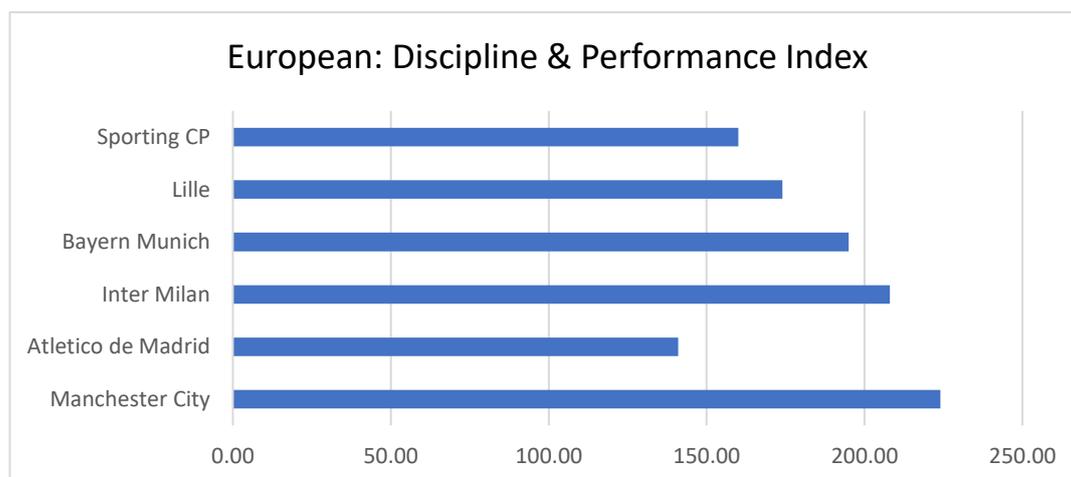


Figure 6: Discipline & Performance Index (Total) – European

In Figure 6, all of the league champions of the Top 6 European Leagues scored more points than the ISL clubs. However, it must be remembered that the European league seasons are much longer than the ISL season. And this is where the points per match statistic comes into picture.

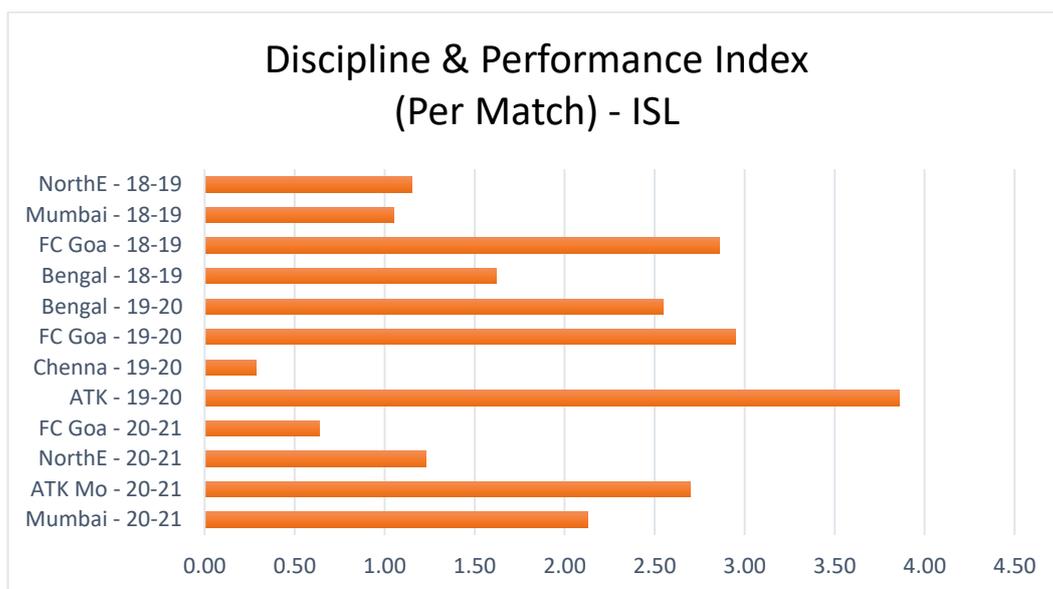


Figure 7: Discipline & Performance Index (Per Match) – ISL

In Figure 7, it is the same as Figure 5 with the only difference being Figure 7 displays the average points earned per match among the ISL clubs.

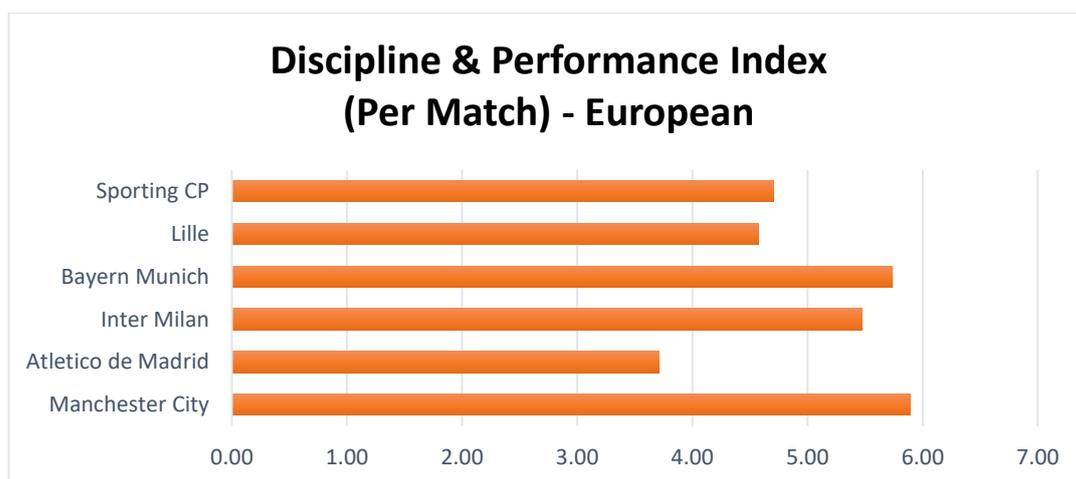


Figure 8: Discipline & Performance Index (Per Match) – European

Similarly, while Figure 6 shows the absolute values, Figure 8 shows the average points earned per match among the league champions of European Leagues in 2020-21.

The first thing to note is that European clubs have more points than Indian clubs. But it is because the European clubs play over 38 matches a season in a league (34 for Bayern and Sporting and 38 for the rest). On the other hand, Indian clubs played only 18 matches a season in 2018-19 and 2019-20 and 20 matches a season in 2020-21 (excluding play-offs). For the ISL clubs that reached the final, 3 additional games were added (two-leg semi-finals and a final). Hence, there is a big difference in absolute terms between ISL clubs and European clubs.

On a per match basis, the comparison is easy. The European clubs blew out the ISL teams and only one Indian club (ATK in 19-20) marginally performed better than one European league champion in 2020-21 (Atletico Madrid). Among the ISL clubs, the variance in points is huge (14). Given below is a table of the mean values of the Points/Match of ISL as well as European clubs (calculated):

Table 2 Mean Value

Category	Mean
----------	------

Points per match Mean (ISL)	1.92
Points per match Mean (European)	5.02
Points per match SD (Indian)	1.086
Points per match SD (European)	0.836

The following table is the correlation values calculated:

Table 3 Correlation

Category	Value
Goals scored & Attempts per goal Correlation (ISL)	-0.895*
Fouls per booking & Total Bookings Correlation (ISL)	-0.64*
Goals scored & Attempts per goal Correlation (European)	-0.86*
Fouls per booking & Total Bookings Correlation (European)	-0.845*

*represents significant value

From the above table (Table 3), it is concluded that there is a strong negative correlation between Goals scored & Attempts per goal and Fouls per booking & Fouls per booking and Total Bookings (in both the ISL and the European teams). The coefficient of determination (r^2) was calculated as follows: For Goals scored & Attempts per goal (ISL), it is 0.801; for Fouls per booking & Total Bookings (ISL), it is 0.4096; for Goals scored & Attempts per goal (European), it is 0.7396 and for Fouls per booking & Total Bookings (European), it is 0.714. When r^2 is multiplied by 100, the system's accuracy may be measured. For example, the Goals scored & Attempts per goal for ISL teams is $0.801 \times 100 = 80.1$ which indicates that around 80.1% of the time, the model can predict accurately in this category (15,16,17).

Conclusion

The points system designed by the researcher may help future research. However, it does indicate strongly how a team performs over the course of a season. It also indicates a big gulf between the ISL clubs and the European clubs, especially on a per match basis. The Indian clubs have a lot of ground to make up over the next decade or so (or even longer). Even if the ISL season was as long as their European counterparts, the difference would be huge because of the low per match points score of the ISL teams.

The points system designed by the researcher is a good starting point for further refinement. The metrics that can be added to the existing points system include passing sequences and the number of shots taken. The development that future researchers may want to make include the correlation between tactics deployed and creating chances. The researcher suggests that the points designed by him be taken into consideration when doing Match Analysis. In addition to the connection between the tactics being put into use and chances created, the outcome of the former on the latter may also be applied for future research.

References

1. Witzig, R. 2006. The Global Art of Soccer. New Orleans: Paperback.
2. Hughes M, Franks I. Analysis of passing sequences, shots and goals in soccer. Journal of sports sciences. 2005 May 1;23(5):509-14.
3. Gonzalez-Rodenas J, Lopez-Bondia I, Calabuig F, James N, Aranda R. Association between playing tactics and creating scoring opportunities in elite football. A case study in Spanish Football National Team. Journal of Human Sport and Exercise. 2015;10(1):65-80.
4. Sarmiento H, Marcelino R, Anguera MT, Campaniço J, Matos N, Leitão JC. Match analysis in football: a systematic review. Journal of sports sciences. 2014 Dec 14;32(20):1831-43.
5. Results F, FANTASY I. Hero ISL Player and Team Statistics - Indian Super League [Internet]. Indian Super League. 2021 [cited 23 November 2021]. Available from: <https://www.indiansuperleague.com/stats>

6. [Internet]. Whoscored.com. 2021 [cited 23 November 2021]. Available from: <https://www.whoscored.com/>
7. Simiyu WW. Analysis of goals scored in the 2010 world cup soccer tournament held in South Africa.
8. Taylor BJ, Mellalieu DS, James N. A comparison of individual and unit tactical behaviour and team strategy in professional soccer. *International Journal of Performance Analysis in Sport*. 2005 Nov 1;5(2):87-101.
9. Yi Q, Gómez MA, Wang L, Huang G, Zhang H, Liu H. Technical and physical match performance of teams in the 2018 FIFA World Cup: Effects of two different playing styles. *Journal of sports sciences*. 2019 Nov 17;37(22):2569-77.
10. Kubayi A. Analysis of goal scoring patterns in the 2018 FIFA World Cup. *Journal of human kinetics*. 2020 Jan;71:205.
11. Vergonis A, Michailidis Y, Mikikis D, Semaltianou E, Mavrommatis G, Christoulas K, Metaxas T. Technical and tactical analysis of goal scoring patterns in the 2018 FIFA World Cup in Russia. *Facta Universitatis, Series: Physical Education and Sport*. 2019 Nov 19:181-93.
12. Rumpf MC, Silva JR, Hertzog M, Farooq A, Nassis G. Technical and physical analysis of the 2014 FIFA World Cup Brazil: winners vs. losers. *The Journal of sports medicine and physical fitness*. 2017 Oct 1;57(10):1338-43.
13. Göral K. Passing success percentages and ball possession rates of successful teams in 2014 FIFA World Cup. *International Journal of Sport Culture and Science*. 2015 Mar;3(1):86-95.
14. Tenga A, Holme I, Ronglan LT, Bahr R. Effect of playing tactics on goal scoring in Norwegian professional soccer. *Journal of Sports Sciences*. 2010 Feb 1;28(3):237-44.
15. Bagchi A, Salvi N, Raizada S. Predicting the outcome of FIFA world cup matches. 2019 Jan 1; 4(1):339-342.
16. Bagchi A, Raizada S, Mhatre A. Forecasting the winner of pro kabaddi league matches. *Indian Journal of Physical Education, Sports Medicine & Exercise Science*. 2019;4(1):383-386.
17. Raizada S, Bagchi A, Menon H, Nimkar N. Predicting the outcome of ICC cricket world cup matches. *Indian Journal of Physical Education, Sports Medicine & Exercise Science*. 2019;4(1):119-122.
- 18.