

**DISCIPLINARY RULES OF FOOTBALL: A COMPARATIVE ANALYSIS OF FOUL AND YELLOW CARD DATA ACROSS MAJOR LEAGUES**

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**ABSTRACT**

This study aims to examine the disciplinary rules of football and their effects on different leagues. Foul and yellow card data from the English Premier League, Spanish La Liga, Italian Serie A, German Bundesliga, Brazilian Série A and Turkish Super League in the 2023-2024 season were analyzed. The research aimed to understand the differences between each league's playing style, player behavior and referee decisions. The data was retrieved from the Wyscout database and the number of fouls and yellow cards and foul/yellow card ratios of the leagues were statistically compared. The findings showed that the Brazilian league had the highest foul and yellow card averages ( $p=0.012$ ,  $p=0.016$ ) while the English league had the lowest number of fouls but the highest foul to yellow card conversion rate ( $p=0.011$ ). This conversion rate was found to be the lowest in the Turkish and Italian leagues. These results reflect the diversity of disciplinary practices and referee decision-making mechanisms between leagues, as well as the differences in tactical understanding of players and coaches. The research highlights the need to standardize the rules of the game and improve refereeing practices. The presence of talented players in Brazilian football, their capacity to display their talents and the fact that these players can only be stopped by fouls may be one reason for the significance of the foul/yellow card ratio. The study makes important contributions to better understand the effects of game dynamics on discipline and fair play in the world's major leagues.

**Key words:** Foul. Yellow Card. Leagues. Referee Decision.

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**RESUMO**

Regras disciplinares do futebol: uma análise comparativa de dados de faltas e cartões amarelo nas principais ligas

Este estudo tem como objetivo examinar as regras disciplinares do futebol e seus efeitos em diferentes ligas. Dados sobre faltas e cartões amarelos das ligas Premier League Inglesa, La Liga Espanhola, Serie A Italiana, Bundesliga Alemã, Série A Brasileira e Super Lig Turca na temporada 2023-2024 foram analisados. A pesquisa buscou compreender as diferenças no estilo de jogo, comportamento dos jogadores e decisões dos árbitros em cada liga. Os dados foram obtidos a partir do banco de dados Wyscout, e o número de faltas, cartões amarelos e as proporções entre faltas/cartões amarelos das ligas foram comparados estatisticamente. Os resultados mostraram que a liga brasileira apresentou as maiores médias de faltas e cartões amarelos ( $p=0,012$ ,  $p=0,016$ ), enquanto a liga inglesa teve o menor número de faltas, mas a maior taxa de conversão de falta para cartão amarelo ( $p=0,011$ ). Essa taxa de conversão foi encontrada como a mais baixa nas ligas turca e italiana. Esses resultados refletem a diversidade das práticas disciplinares e dos mecanismos de decisão dos árbitros entre as ligas, bem como as diferenças no entendimento tático de jogadores e técnicos. A pesquisa destaca a necessidade de padronizar as regras do jogo e aprimorar as práticas de arbitragem. A presença de jogadores talentosos no futebol brasileiro, sua capacidade de exibir suas habilidades e o fato de que esses jogadores só podem ser parados por meio de faltas podem ser uma das razões para a importância da proporção de faltas/cartões amarelos. O estudo faz contribuições importantes para compreender melhor os efeitos da dinâmica do jogo na disciplina e no fair play nas principais ligas do mundo.

**Palavras-chave:** Falta. Cartão Amarelo. Ligas. Decisão do Árbitro.

## INTRODUCTION

The aim of FIFA's in-game penalties is to promote fair play, punish violent play that may lead to player injury, and generally eliminate any advantage that fouls and inappropriate behavior may give to the offending player or team (Jewell, 2009).

As one of the most popular sports worldwide, football provides a fertile ground for the analysis of player behavior, referee decisions and game dynamics (Aliende et al., 2023).

An important aspect of these dynamics is the behavior of referees and players in maintaining discipline during the match. This can be understood by looking at the statistical records of the number of fouls and yellow cards at the end of the match.

These values not only influence match results, but also reflect the playing styles, tactical approaches and refereeing tendencies of different leagues. Whether a foul is penalized with a yellow card depends on the severity of the foul, the player's intentions and the dynamics of the game.

If a player unintentionally hurts an opponent while fighting for the ball, this is considered a foul, but may not warrant a yellow card. If the same action is done dangerously and with excessive force, it will be penalized with a yellow card by the referee (Guan and Niu, 2021).

A red card may also be given if the player directly intends to harm the opponent or if there is a violent tackle. These rules have been standardized by FIFA and IFAB and are applied in all official competitions (Gouttebarga et al., 2022).

In the game of football, it is seen that teams commit tactical fouls in order to turn the matches in their favor by acting within the limits of the rules in the disciplinary regulations of the game, that is, without getting a yellow card without being punished.

This is because a player who receives a yellow card has to be very careful in the following minutes in order not to be ejected from the game by receiving a second yellow card in the ongoing competition.

This affects his quality of play a lot. In this situation, coaches even have to change their most valuable players with yellow cards. In many teams, not the same players, but different

players can commit fouls. In this case, the referee should be aware of this and penalize with a yellow card when a team fouls repeatedly.

Even though the rules of the game are clearly stated, it is possible to find some differences between leagues and therefore between referees in terms of in-game penalties. Of course, the rule-maker will not be satisfied with different standards in the application of the rules in different country leagues. Because the language of football should be one. When international competitions are considered and referees from different countries officiate in these competitions, the irregular practices are disturbing.

According to referees, changing the dynamics of the competition harms football (Erikstad and Johansen, 2020). From this point of view, it is necessary to standardize football game rules by examining referee and player behaviors in different countries.

Referee practices in some European leagues, which are seen as major leagues, and referee behavior in Brazil, a major football country in South America, are important in the game of football (Moriconi and De Cima, 2021).

Because it is possible to come across more accurate referee decisions in leagues where football is played at the highest levels. Referees are human and where there are human beings, there is the concept of error.

However, it is wise to think that these erroneous decisions occur in countries where football is relatively lower in terms of quality and tempo.

It is very rare to see great referees coming from countries that are at the bottom of the world leagues.

It is a fact that good football develops the referees of that league, and good referees develop the football of that league.

As a result, it is getting harder and harder to be tolerant of wrong or incomprehensible decisions of referees in football. In a football environment where millions of dollars are at stake, it is becoming unbearable for both clubs and national teams when referees' decisions affect the results of competitions. In countries where this problem is experienced at high levels, it is seen that it brings along many sociological problems. In this sense, a study on the effects of referee

decisions on social psychology and sociology awaits researchers.

Brazilian football is more based on player talent, and it is known that they are not as loyal to the tactics of the Under-21 team as European football.

But in recent years, the change in this game structure has been visible. It is an inevitable consequence of the return of Brazilian players who played in Europe and the result of their competitions with European clubs and national teams has been a transformation because it is no longer possible to win competitions and tournaments with only individual player talent.

It can be said that the development in training knowledge and the emphasis on physical conditioning has reduced the limits of the individual game.

There are many fundamental differences in the profiles of the leagues analyzed in the present research. Football in the English Premier League, where the world's most valuable players play, is watched from all over the world and the referee decisions here are very visible.

In this league where quality players play, considering the talents of both defensive and striker players and the referees' idea of not slowing down the pace of the game in order to beautify the game, but never giving fouls that will make football ugly, the number of fouls is reduced and the number of fouls turns into yellow cards. Team discipline is more prominent in German football. For them, football has a set of unchanging game and tactical rules. This structure is followed in any case. Players are given very little freedom.

For example, the position for a pass or a shot is fixed. In other words, teams play in a machine-like formation. However, it is seen that the individual game understanding of foreign players playing in the German football league and the efforts of young talented players to show their talents have led to a slight differentiation of the German game structure. In Italian football, the defensive game and player structure draws attention.

Their game structure is based on not conceding a goal first and then scoring a goal. They are closer to the view that the match cannot be lost without conceding a goal. Therefore, there are fewer goals in the Italian league.

Although this hard-defensive football comes to the forefront, it is observed that the big clubs participating in the European cups also go beyond this.

The teams in the Turkish football league do not have a special tactical structure adopted by the country's football. In different competitions, it is possible to see teams on the field with a different and unpredictable game and formation.

Studies have addressed disciplinary elements in soccer, the relationship between players' physical aggression and team success, the influence of refereeing styles, and cultural differences in game management.

For example, Lago-Peñas et al., (2010) reported that there are significant differences in the physical demands and tactical behavior of teams across leagues, which may contribute to differences in foul and card frequency.

Similarly, Mascarenhas et al., (2006) emphasized the influence of referee decision-making processes on disciplinary penalties and highlighted the importance of cultural and contextual factors.

In this context, the research presented here analyzes the differences between countries in terms of the number of fouls, the number of cards and the conversion rate of fouls into yellow cards in football leagues.

The synthesis of these studies aims to contribute to the disciplinary models in football and their league-specific dynamics by addressing foul and yellow card comparisons among six major football leagues.

## MATERIALS AND METHODS

This study analyzes the number of fouls and yellow cards in the Premier League (England), La Liga (Spain), Serie A (Italy), Bundesliga (Germany), Serie A (Brazil) and Super League (Turkey) football leagues for the 2023-2024 season using Wyscout statistical databases. Wyscout provides soccer data including all events such as accurate and inaccurate passes, ball possession rates, shots, fouls, yellow and red cards, etc. It contains various JSON files such as competitions, matches, events, players, teams, referees and coaches (Ghar et al., 2021).

Then, the conversion rates of fouls to yellow cards in the database were manually

calculated as %. Differences between leagues were statistically analyzed.

### Statistical analysis

All results are presented as the means±standard error of the mean (SEM). Statistical comparisons were made using the SPSS 25. statistical software (SPSS, Inc., Chicago, IL). The normality of the data was tested with one-sample Kolmogorov–Smirnov test before analyses. After verifying that data were normally distributed, one-way analysis of variance (ANOVA) and Tukey–Kramer post hoc tests for multiple comparisons were performed. For all statistical tests,  $p < .05$  was considered statistically significant

### RESULTS

The number of fouls in Brazil was significantly higher than all other leagues ( $p=0.001$ ). The lowest number of fouls was observed in England (Figure 1).

The highest mean number of yellow cards was observed in Brazil ( $p=0.001$ ) and the lowest in Germany and Italy (Figure 2).

The highest ratio of fouls to yellow cards was observed in England (20.48%;  $p=0.001$ ). The lowest rates were observed in Italy and Turkey (17.6%; 17.99%). These rates were close to each other in the Brazilian and Spanish leagues (18.89%; 18.36%) (Figure 3).

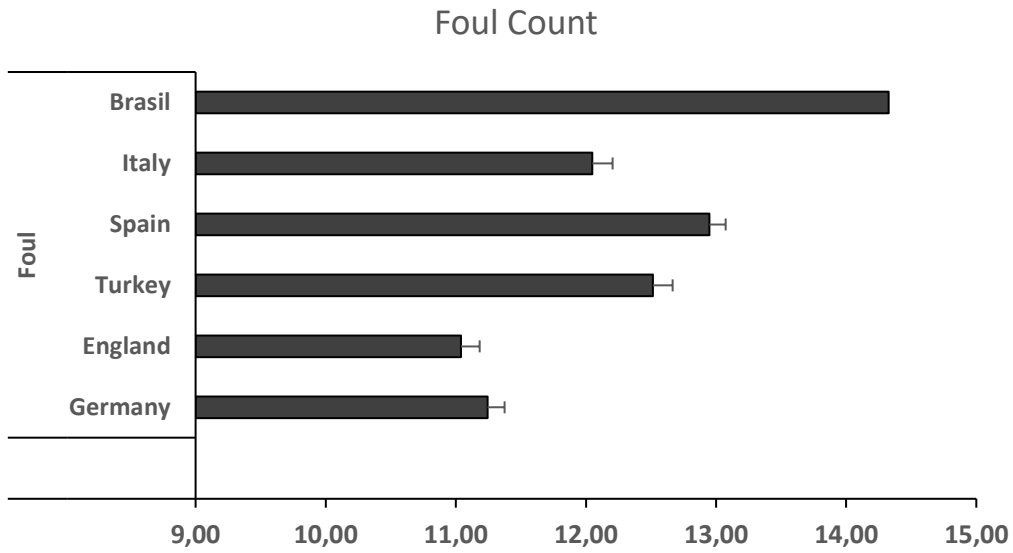
Statistical findings of the parameters measured in the study are presented in Table 1.

**Table 1** - Fouls, yellow cards, fouls turned into yellow cards statistics of football leagues.

Parameters	Leagues	Mean	Std. D.	SEM	Min.	Max.	p
Foul Count	Germany	11.24	3.712	0.150	2	23	0.012
	England	11.04	3.597	0.130	2	23	
	Türkiye	12.51	3.956	0.143	1	29	
	Spain	12.95	4.181	0.152	3	31	
	Italy	12.05	3.450	0.125	2	25	
	Brasil	14.33	4.302	0.156	2	29	
Yellow Card Count	Germany	2.07	1.404	0.057	0	7	0.016
	England	2.15	1.437	0.052	0	7	
	Türkiye	2.15	1.469	0.053	0	7	
	Spain	2.31	1.452	0.053	0	7	
	Italy	2.07	1.314	0.048	0	7	
	Brasil	2.58	1.450	0.053	0	8	
Foul/Yellow Card (%)	Germany	18.81	13.60	0.55	0.00	60.00	0.011
	England	20.48	17.08	0.62	0.00	50.00	
	Türkiye	17.99	13.34	0.48	0.00	90.00	
	Spain	18.36	11.83	0.43	0.00	77.78	
	Italy	17.60	11.69	0.42	0.00	100.00	
	Brasil	18.89	11.50	0.42	0.00	100.00	

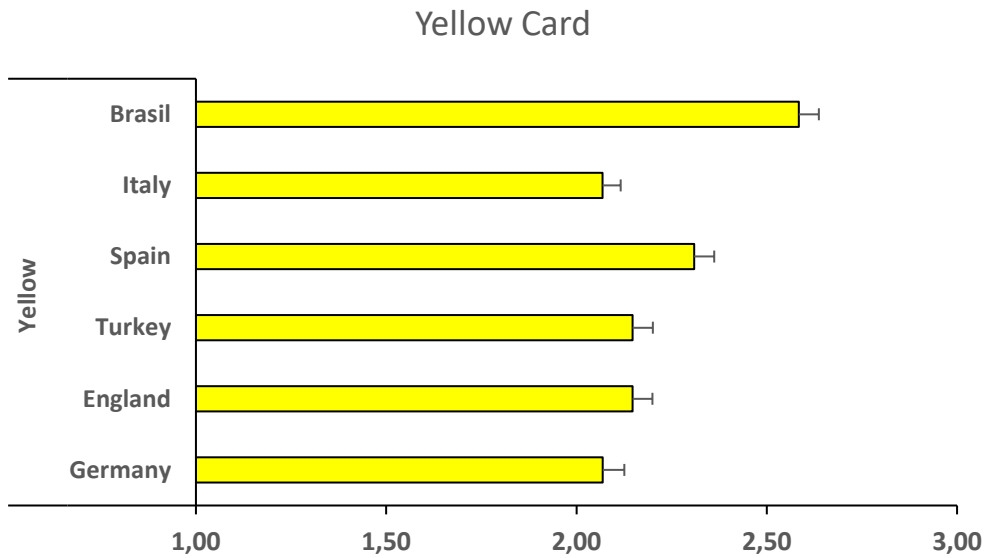
The table shows fouls, yellow card averages and the rate of fouls turned into yellow cards according to the leagues of the countries.

When compared by leagues, it is seen that these three parameters are statistically significantly different.



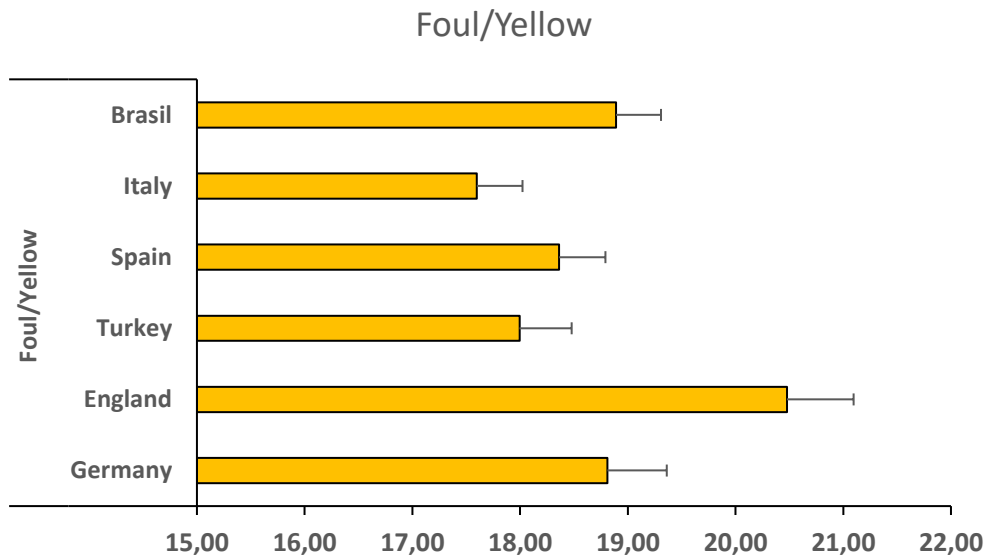
**Figure 1 - Average Fouls in Leagues.**

The highest foul rate is in the Brazilian league and the lowest in the English league; the closest is in the German league.



**Figure 2 - Average Number of Yellow Cards in Leagues.**

The highest number of yellow cards is seen in the Brazilian league. It is followed by Germany and Italy.



**Figure 3** - Percentage of Fouls Turned into Yellow Cards in Leagues.

In terms of the ratio of fouls to yellow cards, England has the highest rate. It is followed by Brazil and Germany respectively. Italy has the lowest rate in this regard. Turkey has the lowest rate of fouls being converted into yellow cards after Italy.

## DISCUSSION

By analyzing official league data for the 2023-2024 season, this study aims to gain a more detailed understanding of disciplinary models and their impact on league-specific dynamics. Being both a physical and strategic sport, soccer is notable for its many disciplinary rules.

Among these rules, fouls and carding have an important place to ensure a fair and safe game. In this study, fouls and yellow card practices are investigated in the top soccer leagues of England, Germany, Italy, Brazil and Turkey. The data shows that the English Premier League has the lowest number of fouls, followed by the German Bundesliga. The number of fouls in both leagues was found to be significantly lower than all other leagues.

Frequent stoppages of play in a soccer competition are detrimental to the nature of the game. A game that is constantly stopped with fouls, injuries and 'VAR' interruptions negatively affects the spectator's viewing pleasure, while on the other hand, it causes the player's motivation to decrease and cool down. In a cold

game, it is difficult for good teams to find a rhythm again. In this sense, it is a frequently talked about situation in football that some teams resort to tactical fouls (Triviño, 2012; Moore, 2017).

In order to avoid such situations, it is suggested that the disciplined nature of the style of play in England and Germany and the foul evaluation criteria of the referees are much stricter.

However, this behavior of the referees in these leagues to keep the game going may allow the players to play a more careful game. In the study, it is seen that the number of yellow cards in the Brazilian league is significantly higher than all other leagues ( $p < 0.05$ ).

In Brazilian football, the fact that the players engage in more one-on-one battles, especially in many positions besides passing, may be an important factor. In such positions, it can be considered as a more probable situation that the opponent in the defense frequently fouls the defender, and therefore, increased fouls are more likely to turn into yellow cards. In addition, the presence of individually talented players in Brazilian football and the fact that these players can only be stopped by fouls may be the main reasons for the increase in the number of fouls and cards (Uehara et al., 2021; Abd Karim et al., 2022).

While in European soccer players are expected to stick more to team tactics, this is not the case in Brazilian soccer.

Although team tactics are important, players are given more freedom in Brazil. In this sense, the number of individually talented players in this league and the fact that opponents resort to fouls to stop these players may be the most important reason for this statistic. The nature of Brazilian football based on individual duels and the referees' low tolerance for rough tackles on talented players and their instinct to protect them may explain this.

#### **Foul to Yellow Card Rates: England's Uniqueness**

In English football, which has an important place in the world, it has been stated that many factors are involved in the frequency and profile of cards issued against players in the English Premier League (Reilly and Witt, 2011).

In the present study, it was found that the rate of fouls turning into yellow cards in England was significantly higher than in other leagues except Brazil and Germany. This may indicate that English referees are sensitive to penalizing fouls with cards and tend to show cards more frequently, regardless of the severity of the foul.

This tendency may be associated with the strategy of maintaining the pace of the game and deterring harsh tackles in England. There is a separate strand of literature on the use of disciplinary sanctions in professional football. For example, research has examined the impact of player ejections on match outcomes (e.g. Ridder et al., 1994) and the determinants of the disciplinary cards players receive in an offense-penalty context (e.g. Witt, 2005).

Research suggests that leagues with different playing styles, such as the physical intensity of the Premier League and the tactical discipline of Serie A, show marked differences in foul and yellow card rates (Dellal et al., 2011).

For example, James et al., (2002) showed that leagues with a more open and fast-paced playing structure have lower foul rates but higher yellow card rates, as fouls are often committed to prevent critical passes.

Here it is clear that tactical fouls to slow down the opponent and reduce the tempo of the game are never allowed. This statistic is taken as an indication that in English football an opponent can only be defeated by the power of the game and that it is never permissible to gain

an advantage from behavior outside the game. When we consider the fact that the protection of high-cost players in the most valuable league in the world is also taken into account, it is clear how correctly English referees apply the game discipline instruction.

#### **CONCLUSION**

As a result, the view that there is not a complete harmony in refereeing practices and referee decisions in the leagues of the countries is also revealed in this study, the difference in the number of fouls and cards and the rate of fouls to yellow cards may vary according to the country's football, while the refereeing practices of some countries are more stable in this regard, the situation is not the same in some country leagues.

The main reasons for this are the football cultures of the country leagues, the quality of the players and referees playing in the league and their training. The high number of fouls in Brazilian football may be the result of the fact that their players prefer individual play more, on the other hand, it is very striking that England is the league where the least fouls are committed and the most yellow cards are shown.

The referee practices in this league, which is accepted by many football authorities, where the world's important players and important coaches work and where football is played at the highest level, should be a guide for all other leagues.

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