Original Article

Goal difference relationship between the national leagues of Brazil, Germany and England from the perspective of the prospect theory

FÁBIO BLOISE MUNDSTOCK¹, FLAVIANE HENRIQUES DA SILVA MAIA² , CAMILA CRISTINA
FONSECA BICALHO³
¹Porto Alegre, BRAZIL;
²Sports Training Center, Universidade Federal de Minas Gerais, BRAZIL;
³Department of Human Movement Sciences, Universidade do Estado de Minas Gerais, BRAZIL

Abstract:
Introduction: The game culture of the Brazilian school is quite different from the European one. While the tendency in Brazil is to dribble, improvise and create more space to play with a more distant marking, in Europe, the game is more intense, with fair marking, without much space for the opponent, which imposes a faster exchange of passes, helped by a quality turf that increases the speed of the ball. Because marking is an attribute that characterizes the success of a team, the hypothesis of the study was to verify if an athlete's decision making becomes riskier within the domain of the loss in the main football leagues of the world. **Objectives**: The aims of this study were: analyze the relationship between the halves of the games and goal difference, and to assess the sextile with the highest occurrence in Brazil, Germany and England; investigate the relationship between halves and goal results by comparing the Bundesliga and the Premier League with the Brazilian Championship. **Method:** The analysis considered the main national competitions in Brazil, Germany and England held in 2019/2020, with data being sourced from the official website of each Confederation. For data check and double check, the scout platform "Instat" was used. Data analysis followed descriptive and analytical procedures (Shapiro-Wilk normality test, chi-squared test). **Results:** This study showed the existence of a game culture with a higher occurrence of goals in the last sextile in the main football competitions in Brazil, Bundesliga and Premier League. According to the Prospect Theory this behavior on the part of the athlete indicates a game culture marked by a riskier decision making in situations with a greater pressure as to time to reach targets, so more space opens up for the incidence of goals. **Conclusions:** In practice, the athlete tends to dare more in his moves and, therefore, be more successful. On the other hand, the risk of conceding a goal during the match in a counterattack increases as well. It is concluded that there is a standard behavior in most matches and, according to the perspective of the Prospect Theory, football teams tend to make riskier and more creative decisions within the loss domain, which usually occurs at the end of the match. This factor is one of the theoretical explanations for the occurrence of goals in the last sextiles of each half of a football match.
Key Words: **football, professional football, decision-making, performance analysis.**

Introduction

Football is a big business, and the difference between winning or losing a match can represent a lot of money at the end of a championship (Baert & Amez, 2018). This sports segment, which involves a large production chain (athletes, clubs, federations, media, sponsors, suppliers, fans, etc.), generated in 2018 around 48.8 billion BRL in Brazilian football, accounting for 0.72% of the GDP, creating approximately 156,000 direct and indirect jobs. The 2018 Brazilian championship took 8 million spectators to the stadiums in the 380 matches of the competition (Confederação Brasileira de Futebol - CBF, 2019). In addition to box office revenue, the selling of athletes, TV broadcasting quotas, sponsorships and other businesses are increasingly impacting clubs' revenues. The game culture of the Brazilian school is quite different from the European one. According to Drubscky (2014), Brazil has a tendency towards dribbling, improvisation, and making more space for playing with a more distant marking. Bad turf, in its turn, causes the ball to run at a slower speed. Brazilian referees are also responsible for the low dynamics of the game, as they interrupt the match more often. However, in Europe, the game is more intense, with fair marking, without much space for the opponent, which imposes a faster exchange of passes, helped by a quality turf that increases the speed of the ball (Drubscky, 2014). Both in Germany and in England, teams are more organized, with a quick sector recovery and the game geared more towards the collective (Reineke, Duda, & Fiedor, 2020).

Although the act of scoring a goal represents only 1% of the ball possession in a competition (Tenga, Ronglan, & Bahr, 2010), this is the main objective of a football match that directly influences the decision making of the teams. In this sense, a team's objective in a match has a great influence on the coach's intervention in the game environment, being able to change the ways of playing and the athletes' behavior inside

Corresponding Author: FÁBIO BLOISE MUNDSTOCK, E-mail: fabiomundstock@yahoo.com.br

----

the field (Bento et al., 2012). Moreover, the act of scoring or conceding a goal changes the psychological moment, altering the athlete's emotions in a positive or negative way (Redwood-Brown et al., 2017).

In football, with strictly defined game rules, it can be concluded that players' actions are intentional activities that require not only a good physical preparation, but above all, the activation of thought processes, which, due to the need to make the right decision, constitute the top link in the process of effective action under the conditions of sports competition (Reineke et al., 2020). Because scoring is an attribute that characterizes the success of a team (Gomes & Souza, 2008), there is a gradual interest in mapping and elucidating the pattern of behavior of athletes when scoring a goal. Depending on the moment in which the goal is scored, the team's tactical behavior may change because, when a goal is scored, and with an advantage on the scoreboard, the team tends to change its behavioral pattern by increasing ball possession and planning more carefully the next goal so as not to lose the advantage gained (Soncin et al., 2017).

On-field results directly influence the work of coaches, especially in Brazil, where the short-term outlook is what weighs in the decision of club managers for the coach to stay in the team. A coach keeps his post for an average of 537 days in the Premier League, and about 336 days in the Bundesliga, while in the Brazilian Championship, he stays for 168 days in the A Series, and only 122 days in the B Series (Poli, Ravenel, & Besson, 2020). Therefore, for the coach the interest for positive results, goals and, mainly, the need to win can lead to changes in strategies, style of play and behaviours. And this study intends to contribute with a theoretical model that assists the coach with this reflection and strategic decision-making during competitions.

Several studies seek to parameterize and characterize the incidence of goals by segmenting the halves of the games and fragmenting them into sextiles (Alberti et al., 2013; Bartés et al., 2020; Kubayi, 2020; Zhao & Zhang, 2019; Wang & Qin, 2020). Zhao and Zhang (2019) segment the halves into six sextiles and point out that the number of goals increases as the game moves forward. Wang and Qin (2020) identify the characteristics of shooting and goal scoring in the 2019 Women's World Cup soccer tournament that was held in France. Alberti et al. (2013) suggest that scoring patterns are not related to a season or playing style, and points to the evolution of fatigue as one of the factors that can influence the increase in the number of goals scored for each sextile, especially the last ones in each half (3rd and 6th). Kubayi (2020) also reports physical fatigue as an important cause for the highest incidence of goals in the second stage and highlights those lapses in concentration can lead to tactical errors, mainly in the defensive sector. Baert and Amez (2018) mention that studies do not produce the same results when comparing the incidence of goals between the national leagues of other countries. Little is known about the occurrence of goals in Brazil when it comes to the halves of the games, and whether the pattern is similar to that of other international leagues. The team's tactical ability and the athlete's technical ability influence the performance and achievement of goal scoring in football (Andrade et al., 2021; Reineke et al., 2020). It is known that psychological aspects must be considered for a better understanding of the goal scoring moment. Several studies have shown the relationship between the athlete's psychological factor and performance (Kunrath et al., 2020). Variables such as motivation, wellbeing, the leadership profile of the coach, creativity, level of psychic activation and emotion management have been presented in the literature as possible relationships for victory in certain competitions and sports (Kempe & Memmert, 2018; Horikawa & Yagi, 2012; Van Gils et al., 2018). However, in these studies, athletes' behavior was not considered from a theoretical perspective capable of explaining decision making in relation to goal difference at various moments during the match. Considering the tactical behaviour from the local culture, would this be an explanation for this phenomenon in football? Prospect theory is often used to predict individuals' risky tax decisions (Austin, Bobek, & Jackson, 2021). The authors examined the feelings directly evoked as a result of being in a win-lose domain and confirmed that these feelings influence individuals' decision-making in a way that is theoretically consistent with prospect theory. According to Prospect Theory, individuals perceive outcomes in terms of the value function, which can be thought of as a representation of some central components of the human perceived pleasure machine (Larrick et al., 2009). The main feature of prospect theory is the value function, which is concave for gains, convex for losses, and steeper for losses than for gains and has been widely used in economic, financial market studies and business psychology (Austin et al., 2021; Constantinople, Piet, & Brody, 2019). Stark, Baldwin, Hertel, and Rothman (2017) measured affective responses to safe and risky options, holding the actual decision domain constant, and looked at how individuals felt about each option in relation to being in a domain of gain or loss. This article discussed the relationship of goals at the end of the game from a psychological perspective. The Prospect Theory was adopted as theoretical framework. According to theoretical hypotheses, an athlete's decision making grows riskier within the loss domain. In the three experiences from Larrick et al. (2009), the authors compared a 'do your best" condition with a "specific and challenging objective" condition. The condition of the target consistently increased risk behaviors in negotiation and decision-making tasks. The Prospect Theory considers that targets influence expectations, choice of strategy and unethical behavior. From the Prospect Theory it may be possible to explain some behaviors concerning the player's decision making, taking goal difference as main reference. Thus, the objectives of this study were: (1) To analyze the relationship between the halves of the games and goal difference, and to assess the sextile with the highest occurrence in Brazil, Germany and England, (2) To investigate the relationship between halves and goal results comparing the Bundesliga and the Premier League with the Brazilian Championship.

Methods

The present study refers to the analysis of the main national competitions in Brazil, Germany and England. The competitions were held in 2019 in Brazil, and in 2019/2020 in Europe, with the participation of the most representative clubs of each country.

In Brazil, the 2019 Brazilian Football Championship was selected for analysis. There were 380 matches between the 20 national elite football teams; all teams played against each other twice. The club that scores the most points is considered the champion, and the four clubs with the lowest score are relegated to the 2nd division. The top six in the competition qualify for the CONMEBOL Libertadores, which is the main South American tournament. In addition to the sports award, clubs receive a decreasing financial amount, with the champion receiving the highest prize money, and the 16th place, the lowest prize. The four relegated clubs do not receive any prize money. These data were accessed through the game overviews available on the official website of the Brazilian Football Confederation [Confederação Brasileira de Futebol] (www.cbf.com.br).

In Germany, the 2019/2020 German Football Championship (Bundesliga) was selected for analysis. There were 306 matches between the 18 national elite football teams. All clubs played against each other twice, with the winning team being the one that scored the most points. The two teams with the lowest score are relegated to the 2nd division, and a promotion or relegation place is contested in a direct confrontation between the 16th place in the Bundesliga and the 3rd place in the second division. The top four in the competition qualify for the UEFA Champions League, the main European competition. These data were sourced from the Bundesliga's official website (www.bundesliga.de), through the Spielplan tab for each match.

In England, the 2019/2020 English Football Championship (Premier League) was selected for analysis. There were 380 matches between the 20 national elite football teams. All clubs played against each other twice, with the winning team being the one that scored the most points. The three teams with the lowest score are relegated to the 2nd division (EFL Championship). The top four teams in the competition qualify for the UEFA Champions League, the main European competition. These data were accessed through the Premier League's official website (www.premierleague.com).

As a source for checking and double checking the data relating to the Brazilian Championship, Bundesliga and Premier League, the scout platform "Instat" was used (www.instatscout.com).

Data analysis

The data were organized in accordance with the criteria of Zhao and Zhang (2019). An Excel spreadsheet was used as a tool, and each goal scored was inserted into a sextile, described as follows: Sextile 1: 0 to 15 minutes in the 1st half; Sextile 2: 16 to 30 minutes in the 1st half; Sextile 3: 31 to 45 minutes in the 1st half + injury time (if any). Sextile 4: 0 to 15 minutes in the 2nd half; Sextile 5: 16 to 30 minutes in the 2nd half; Sextile 6: 31 to 45 minutes in the 2nd half + injury time (if any).

For data analysis, descriptive procedures (mean and standard deviation) and analytical procedures were adopted. The Shapiro-Wilk normality test and the chi-squared test were run to determine differences in the frequency of goals between the first and second halves, as well as between the six sextiles of the matches. The procedures were carried out on the SPSS software, version 21.0, and the significance value adopted was $p < .05$.

Results

In the Brazilian championship, 876 goals were scored, with an average of 2.30 goals per game. In the Bundesliga, 982 goals were scored, with an average of 3.20 goals per game. In the Premier League, 1,034 goals were scored, with an average of 2.72 goals per game.

Table 1 shows the number of goals per half and the comparison between the Brazilian Championship, the Bundesliga and the Premier League. The results showed a difference between goal differences in the Brazilian Championship compared to the international leagues, both in the first and second halves of the matches.

Table 1. Goal difference in the first and second halves of the 2019 Brazilian Championship, 2019/2020 Bundesliga and 2019/2020 Premier League.

Half of the game	Brazilian Champ. (876 goals)	Bundesliga (982 goals)	Premier (1034 goals)	χ^2 (df)	p
	Goals scored	Goals scored	Goals scored		
1st half	385	413	475	55.231 (8)	
2nd half	491	569	559	52.491 (9)	0.001*
M (SD)	438 (±74.95)	491 (±110.30)	517 (±59.39)		

The frequency of goals analyzed in the three championships reinforces the pattern identified in other studies (Alberti et al., 2013; Mitrotasios & Armatas, 2014; Silva, 2007), with the highest frequency of goals being found in the second half of the game (Figure 1). The most pronounced pattern was observed in the Bundesliga, with an occurrence of 57.95% of goals in the second half, while the lowest one was observed in the

Premier League, with an occurrence of 54.06% of goals. There were no differences between the expected pattern of goals (first and second halves) in the Brazilian championship compared to the international leagues.
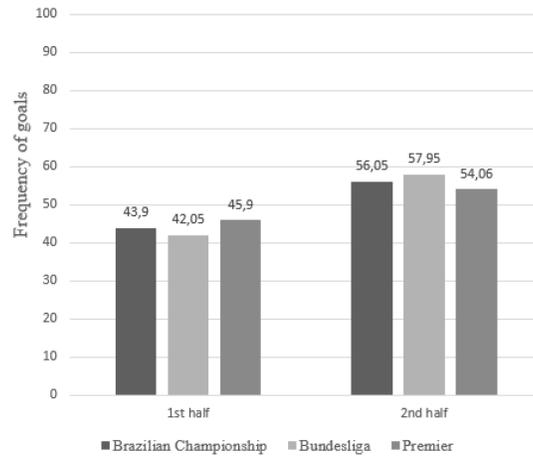

Figure 1. Frequency of goals scored in the first and second halves of the 2019 Brazilian Championship, 2019/2020 Bundesliga and 2019/2020 Premier League.

Regarding the period of occurrence of the goals and the percentage of difference between the competitions in each sextile, a significant difference was found between goal difference in the Brazilian Championship and in the international leagues. The games played in the Brazilian championship had a lower incidence of goals in sextiles 2, 4, 5 and 6 (Table 2) and a lower incidence of goals in sextile 3 compared only with the Premier League.

Table 2. Distribution of the number of goals every 15 minutes along the halves and comparison between the Brazilian Championship, Bundesliga and Premier League.

Half of the game		Brazilian Champ.	Bundesliga	Premier League	$\chi^2 (df)$	p
(sextile)	minutes	# of goals	# of goals	# of goals		
Sextile 1 (1st half)	0-15	119	135	115	8.973(6)	0.175
Sextile 2 (1st half)	16-30	92	119	158	7.333 (4)	0.019*
Sextile 3 (1st half)	31-45	174	159	202	18.421(7)	0.001*
Sextile 4 (2nd half)	0-15	136	185	172	19.423(7)	0.007*
Sextile 5 (2nd half)	16-30	136	157	164	20.105(7)	0.005*
Sextile 6 (2nd half)	31-45	219	227	223	18.842 (9)	0.027*

A pattern of goals was observed among the three competitions analyzed (Figure 2). Broadly speaking, there was a lower incidence of goals in the Brazilian Championship compared to other leagues. It is worth noting that, in the Bundesliga, there is a tendency for matches with a more balanced occurrence of number of goals between the beginning and the end of the match. In the Premier League, a high incidence of goals was also found at the end of the first half of the game, resulting in an increase in the occurrence of goals in the second half.
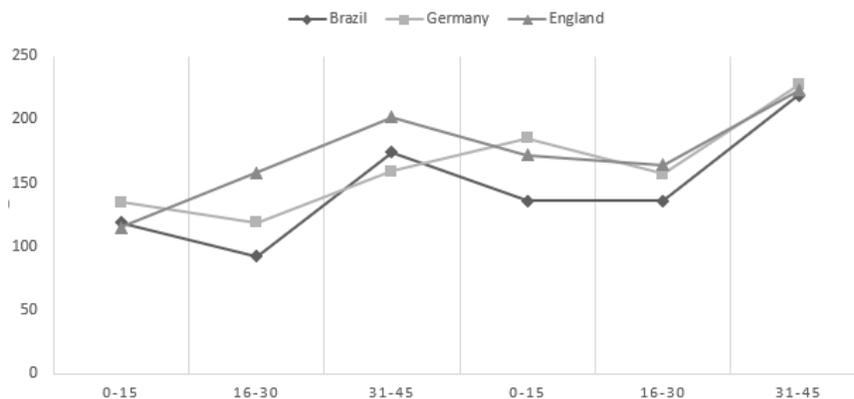

Figure 2. Number of goals scored in each of the six 15-minute intervals of the matches in each league (Brazilian Championship, Bundesliga and Premier League) in the 2019/20 season.

Dicussion

The study showed a higher incidence of goals in the second half of the games in the three competitions assessed. According to the Prospect Theory (Larrick et al., 2009), this behavior on the part of the athlete indicates a game culture marked by a riskier decision making in situations with a greater pressure as to time to reach targets, so more space opens up for the incidence of goals. In practice, the athlete tends to dare more in his moves and, therefore, be more successful. On the other hand, the risk of conceding a goal during the match in a counterattack increases as well. This study reinforces the tendency of teams to go from risk avoidance in gains to risk seeking in the face of possible losses, called the "reflection" effect.

The analysis referring to the 2019 Brazilian Football Championship is close to the results shown by Mitrotasios and Armatas (2014), who also indicate the second half of the game as the stage with the highest number of goals scored (57.9%). It was confirmed in this study that the 6th sextile had a higher number of goals scored. These data corroborate with the findings of Silva (2007), which report a higher incidence of goals in the second stage of the match (55.83%). This is a trend explained by the Prospect Theory (Larrick et al., 2009), that is, the objectives systematically transform the assessment of results and are directly related to the athlete's evaluative capacity in relation to their motivation to reach the target. With regard to the cognitive assessment of football players, further investigations are suggested in the sense of identifying and assessing the effect that goal difference in the last sextile has on decision making.

The value function presented in the Prospect Theory (Larrick et al., 2009) assumes that people are averse to losses, considering them more significant than gains. This means that the athlete tends to feel the pain of loss more than the euphoria of victory. Thus, the value function is more pronounced below the reference point in the loss domain than above it in the gain's domain. Bringing this relationship to sports, it is possible to predict that target-oriented teams score more goals at the end of each half because they are motivated by the success result and avoiding the pain of losing, of frustration in the face of defeat by the opponent. This result shows that the athlete motivated by the target tends to seek performance situations, face challenges and reach a high level of performance. In 2019, of the 876 goals scored in the Brazilian Championship, 219 occurred in the last sextile, that is, 25% of the total. These data are close to the research by Silva (2007), in which 21.88% of the goals were scored in the last sextile. In the championships assessed in this study, a difference was found between goal differences in the Brazilian Championship and in the International Leagues. Zhao and Zhang (2018) and Armatas and Yiannakos (2010) also indicated the last sextile as the most opportune moment for scoring goals in the Premier League.

As the game comes to an end, the athlete's cognitive capacity is reduced by physical exertion and mental fatigue (Cardoso et al., 2021). The pressure for the result, be it adverse or not, causes the coach to make tactical decisions, changing players mainly in the offensive sector. When more rested athletes end up having advantages in the face of a more fatigued defensive sector, they consequently leave more space for the rival offensive sector to seek the goal. Goal scoring is a combination of several factors, such as technical, psychological, physical and tactical aspects (Reineke, et al.,2020). Njororai (2014) stresses that the adoption of riskier attack strategies in order to change the result of the match is one of the reasons for the increase in the number of goals scored at the end. Tactical changes made because the game is ending, loss of concentration and increased mental fatigue are also mentioned by Reineke, et al. (2020) as possibilities for the highest incidence of goals at the end of the match.

The effects of fatigue on motor skills in a football athlete due to the high energy demands of matches are pointed out in the study by Russell et al. (2019). In the same direction, Bangsbo (1994) reports that fatigue can lead to the athlete's physical and technical impairment and affect cognitive assessment and decision making. In this sense, further studies are needed to outline and characterize the relationship of cognitive skills with decision making and the game culture in Brazil.

Conclusions

This study reinforces the direct relationship between the goals scored in the last sextile of each half of the game in the Brazilian Championship, Bundesliga and Premier League. Even though the game culture is different between Brazilian and European football, the volume of goals in the 3rd and 6th sextiles is larger compared to that in the other sextiles. The incidence of goals in the second half of the three leagues studied is higher than in the first half of the match, a piece of data that reinforces the importance of physical and mental exhaustion in match results.

Brazilian football is characterized by a game with only one chance to score a goal. The fear of losing the match is much greater than the desire to add points to the scoreboard. Therefore, it is preferable to safeguard oneself, keeping a favorable result. The results presented in sextiles 2, 4 and 5 show the accommodation of a less competitive way of playing, waiting for the final moments of the match to confirm the result or change the adverse score.

Both in the Bundesliga and in the Premier League, the distribution of goals between the sextiles is more uniform, with no discontinuity in sextiles 2, 4 and 5 in search of goals. It is a characteristic of competitiveness

----

and of the unrelenting pursuit of the goal in these two European competitions. Even so, the volume of goals in sextiles 3 and 6 has the same behavior as that of the Brazilian championship.

This study showed the existence of a game culture with a higher occurrence of goals in the last sextile in the main football competitions in Brazil and in the German and English leagues. It is concluded that there is a standard behavior in most matches and, according to the perspective of the Prospect Theory (Larrick et al., 2009), football teams tend to make riskier and, apparently, more creative decisions within the loss domain, which usually occurs at the end of each half in the matches. This factor is one of the theoretical explanations for the occurrence of goals in the last sextiles of each half.

Further research needs to explore other psychological variables that are associated with this behavior, such as creativity, attention, concentration and mental fatigue. Identifying an athlete's behavior at decisive moments in the game and understanding it is an essential tool to raise the effectiveness of a coach's work and the direct intervention of sports psychology professionals.

Conflicts of interest - No potential conflict of interest was reported by the authors.

References:
Alberti, G., Marcello, I., Arcelli, E., Cavaggioni, L., & Rampinini, E. (2013). Goal scoring patterns in major European soccer leagues. *Sport Sciences for Health, 9*(3), 151-153. Doi:10.1007/s11332-013-0154-9
Andrade, L., Machado, G., Gonçalves, E., & Teoldo, I. (2021). Decision making in soccer: effect of positional role of U-13 soccer players. *Journal of Physical Education & Sport, 21*(3).
Armatas, V., & Yiannakos, A. (2010). Analysis and evaluation of goals scored in 2006 World Cup. *Journal of Sport and Health Research, 2*(2), 119-128.
Austin, C. R., Bobek, D. D., & Jackson, S. (2021). Does prospect theory explain ethical decision making? Evidence from tax compliance. *Accounting, Organizations and Society*, 101251.
Baert, S., & Amez, S. (2018). No better moment to score a gol than just before half time? A soccer myth statistically tested. *Plos One, 13*(3), e0194255.
Bangsbo, J. (1994). Energy demands in competitive soccer. *Journal of Sports Sciences, 12*(sup.1), S5-S12.
Bartés, A., Calle, M., Susín, A., Gonçalves, B., Vives, M., Sampaio, J., & Peña, J. (2020). Analysis of the winning probability and the scoring actions in the American professional soccer championship. *Revista Internacional de Ciencias del Deporte,16*(59), 67-84. Doi:10.5232/ricyde2020.05906
Bento, D., Dourado, A., Almeida, L., Istchuk, L., & Nascimento, L. (2012). Relação entre o gol marcado antes dos quinze minutos de partida e o resultado final de jogo no futebol [Relationship between the goal scored before the fifteenth minute of the match and the final result of the match in football]. *EF Deportes:Revista Digital, 17*(169).
Cardoso, F., Calvo, T., Patrick, T., Afonso, J., & Teoldo, I. (2021). How Does Cognitive Effort Influence the Tactical Behavior of Soccer Players? *Perceptual and Motor Skills, 128*(2), 851-864. DOI:10.1177/0031512521991405
Constantinople, C. M., Piet, A. T., & Brody, C. D. (2019). An analysis of decision under risk in rats. *Current Biology, 29*(12), 2066-2074.
Drubscky, R. (2014). *O universo tático do futebol*: escola brasileira [The world of football tactics: the Brazilian school]. Editora Health. 382p.
Gomes, A., & Souza, J. (2008). *Futebol*: Treinamento desportivo de alto rendimento [Football: High Performance Sports Training]. Artmed.
Horikawa, M., & Yagi, A. (2012). The relationships among trait anxiety, state anxiety and the goal performance of penalty shoot-out by university soccer players. *PloS one, 7*(4), e35727. Doi:10.1371/journal.pone.0035727
Kempe, M., & Memmert, D. (2018). "Good, better, creative": the influence of creativity on goal scoring in elite soccer. *Journal of Sports Sciences, 36*(21), 2419-2423. Doi:10.1080/02640414.2018.1459153
Kubayi, A. (2020). Analysis of goal scoring patterns in the 2018 FIFA World Cup. *Journal of Human Kinetics, 71*, 205. Doi: 10.2478/hukin-2019-0084
Kunrath, C., Cardoso, F., Calvo, T., & Teoldo, I. (2020). Mental Fatigue in Soccer: A Systematic Review. *Revista Brasileira de Medicina do Esporte, 26*(2), 172-178. Doi:10.1590/1517-869220202602208206
Larrick, R. P., Heath, C., & Wu, G. (2009). Goal-induced risk taking in negotiation and decision making. *Social Cognition, 27*(3), 342-364. Doi: 10.1521/soco.2009.27.3.342
Mitrotasios, M., & Armatas, V. (2014). Analysis of goal scoring patterns in the 2012 European Football Championship. *The Sport Journal, 50*, 1-9. Doi: 10.4100/jhse.2012.82.05
Njororai, W. (2014). Timing of goals scored in Selected European and South American Soccer Leagues, FIFA and UEFA Tournaments and the critical phases of a match. *International Journal of Sports Science, 4*(6A), 56-64. Doi: 10.5923/s.sports.201401.08
Poli R., Ravenel L., & Besson R. (2020). Demographic analysis of professional football club coaches. *CIES Football Observatory Monthly Report,56*.

Redwood-Brown, A., Sunderland, C., Minniti, A., & O'Donoghue, P. (2017). Perceptions of psychological momentum of elite soccer players. *International Journal of Sport and Exercise Psychology, 16*(6), 590-606. Doi:10.1080/1612197X.2017.1313295

Reineke, A., Duda, H., & Fiedor, M. (2020). Recognition of the game and cooperation by players when scoring goals in football based on the goals scored during the selected matches of the UEFA Champions League and the European League. *Journal of Physical Education and Sport, 20*(6), 3070-3079.

Russell, S., Jenkins, D., Rynne, S., Halson, S. L., & Kelly, V. (2019). What is mental fatigue in elite sport? Perceptions from athletes and staff. *European Journal of Sport Science, 19*(10), 1367-1376. Doi:10.1080/17461391.2019.1618397

Silva, C. (2007). Gols: Uma avaliação no tempo de ocorrência no futebol internacional de elite [Goals: An assessment on the time of occurrence in elite international football]. *EF Deportes: Revista digital, 12*(112).

Soncin, R., Pennone, J., Pinho, J., Diniz, M., Claudino, J., Amadio, A., ... Mezêncio, B. (2017). Modelos de análise de scout no futebol (baseado na temporada 2013/2014 da Liga dos Campeões)[Scout analysis models in football (based on the 2013/2014 Champions League season)]. *Revista Brasileira de Educação Física Esporte, 31*(1), 33-39. Doi:10.11606/1807-5509201700010033

Stark, E., Baldwin, A., Hertel, A., & Rothman, A. (2017). Understanding the framing effect: Do affective responses to decision options mediate the influence of frame on choice? *Journal of Risk Research*, 20, 1585e1597

Tenga, A., Ronglan, L., & Bahr, R. (2010). Measuring the effectiveness of offensive match-play in professional soccer. *European Journal of Sport Science, 10*(4), 269-277. Doi:10.1080/17461390903515170

Van Gils, S., Van Quaquebeke, N., Borkowski, J., & Van Knippenberg, D. (2018). Respectful leadership: Reducing performance challenges posed by leader role incongruence and gender dissimilarity. *Human relations, 71*(12), 1590-1610. Doi:10.1177/0018726718754992

Zhao, Y., & Zhang, H. (2019). Analysis of goals in the English Premier League. *International Journal to Performance Analysis in Sport, 19*(5), 820-831. Doi:10.1080/24748668.2019.1661613

Wang, S. H., & Qin, Y. (2020). Analysis of shooting and goal scoring patterns in the 2019 France Women's World, Cup. *Journal of Physical Education and Sport*, *20*(6), 3080-3089.

--2575

JPES ®   www.efsupit.ro