

ANALYSIS OF ATTACK TACTICS OF FOOTBALL TEAMS IN THE CHAMPIONS LEAGUE FOR THE PERIOD FROM 2014 TO 2019

Bojan Leontijević¹, Lazar D. Tomić¹, Marko Šmrkić², David Nikolić², Aleksandar Janković¹

¹Faculty of Sport and Physical Education, University of Belgrade, Serbia

²Faculty of Sport and Physical Education, University of Belgrade, student of EAS, Serbia

Abstract

The aim of this research is to present the essential parameters related to the highest quality football teams attack tactics to the scientific and professional public by analyzing the long-term competitive manifestations in the Champions League elite football competition. The analysis comprises all the matches that have been played since the 2014/15 season ending up with the 2018/19 season, which means 625 played matches in total. In order to clearly present the top teams criteria related to the attack tactics, in this research, variables describing the ball possession and the attacks after which the goals were scored were observed. The results showed that the teams spent most of their time gaining the ball possession in the maneuvering third of the field (51%) and that the organization of the attack was dominated by the passes in the middle distances (10 – 30m). Apart from that, it was noticed that every tenth shot towards the goal represents an effective attack and that most of the goals are scored in the last 15 minutes of the game ($p=0.008$). When it comes to the structure of the effective attacks, the results showed that 76% of the goals are scored after the ball possession, while 1/4 of the effective actions occurred after the organized set pieces attack. Additionally, no significant differences regarding the prevalence of the activities that preceded the scoring of the goals from the game ($p=0.16$) and after the set pieces ($p=0.88$) by seasons were found. However, the final shots from the game were usually preceded by a pass from the side in the form of a cross shot and a return ball ($p=0.000$), and when it comes to organizing the offensive set pieces ($p=0.000$), the goals were most often scored after corners and penalties. The results obtained in this research provide objective information that can be used for planning and organizing training units in the preparation of teams for competitive performances.

Key words: FOOTBALL / COMPETITION ACTIVITY / LEAGUE OF CHAMPIONS

Correspondence with the author: Bojan Leontijević, E-mail: bojan.leontijevic@gmail.com

INTRODUCTION

Researchers are trying in different ways to discover the factors that can contribute to success in football (Lago-Penas et al., 2010; Castellano et al., 2012; Evangelos et al., 2014; Liu & Gomez, 2014; Liu et al., 2015a; Almeida, 2018). It is very difficult to predict the events in team games, however, the analysis of the competitive activities can provide significant information about the performance of the players and the whole team (Mitrotasios & Armatas, 2014; Janković et al., 2016; Leontijević et al., 2017; 2018; Kubayi & Toriola, 2019). Therefore, monitoring competitive activity in football enables obtaining the objective data on the efficiency of an individual or a team, and thus represents an important segment in the preparation of teams for more successful performance during the competitive activities.

Having in mind the overall importance of monitoring the competitive activity, the subject of a large number of researches was the analysis of the achieved team and individual achievements in the highest quality football competitions such as the representative World and Continental Championships (Castellano et al., 2012; Liu & Gomez, 2014; Liu et al., 2015a; Mitrotasios & Armatas, 2014; Goral, 2015; Kubayi & Toriola, 2019), i.e. club international and national competitions (Lago-Penas et al., 2010; Lago-Penas & Dellal, 2010; Liu et al., 2015b; Janković et al., 2016; Leontijević et al., 2017; 2018; Almeida, 2018). By analyzing the results of the conducted research, certain predictors that contribute to the success in modern football have been clearly singled out.

The results confirmed that the total number of shots on the goal, especially shots taken within the goal and those realized within the penalty area, have a positive effect on the final outcome of the competitive activity (Castellano et al., 2012; Evangelos et al., 2014; Liu & Gomez, 2014; Liu et al., 2015a). In addition, the ball possession also stands out as a significant factor in achieving a positive result, i.e. teams that continuously manage to control the ball for a longer time interval in relation to the opponent achieve a better placement at the end of the competition season (Evangelos et al., 2014; Goral, 2015; Almeida, 2018). However, a review of the literature concluded that the ball possession depends on the current result and venue of the match, therefore the results of the previous research show that the losing teams increase the possession in their favor as match time progresses and the home court advantage has a direct impact on the posed ball (Lago-Penas & Dellal, 2010). In the same way, Colett (2012) explains that when the most successful teams play among each other the possession does not significantly affect the final outcome and concludes that the percentage of the effective passes and shots on the goal are much stronger predictors in relation to the overall possession of the ball.

Along with the discovery of the predictors that contribute to the success in football, researchers are also trying by analysis to identify certain tactical tendencies related to the structure of the game and the organization of attacks that ended with kick on goal (Janković et al., 2016; Leontijević et al., 2017; 2018), and the special attention is paid to the analysis of the effective attacks (Mitrotasios & Armatas, 2014; Kubayi & Toriola, 2019). The interpretation of the results shows that the largest number of successful attacks starts in the opponent's half of the field and follows after the continuous actions, the final passes are most represented from the side positions, and it is confirmed that the most effective attacks end from the zones within the penalty area. Also, Leontijević et al. (2018) confirmed that the teams that play in better league competitions have players who are trained for faster play, while achieving greater efficiency in manifesting technical-tactical skills compared to the players who play in leagues with a slightly lower UEFA coefficient.

No research in which parameters that can indicate the current trends in attack tactics of the top teams having been monitored over a longer period of time has been found so far. Therefore, in order to determine the initiative of the football experts when it comes to attack tactics in the modern football game, it is necessary to conduct a long-term analysis of the competitive activity of the highest quality football teams. The aim of this research is to present to the scientific and professional public the important parameters related to the attack tactics of the highest quality football teams by analyzing the long-term competitive manifestations in the elite football competition of the Champions League. It is expected that, based on the obtained results, certain characteristics of the attack tactics of the top teams will be revealed and that the

importance of the comprehensive preparation of the players for the participation in the competitive activities of modern football will be confirmed.

METHOD

Research sample

For the purpose of this research, the analysis includes all the matches played in the Champions League competition starting from the 2014/15 season and ending up with the 2018/19 season. Thus, a total of 625 matches played in the elite football competition were processed.

Variables samples and data collection method

Reviewing the literature so far, certain predictors that contribute to the positive result achievement in football have clearly been identified, and in order to present the top teams criteria related to the ball possession and the effective attacks structure in this study, the following variables were observed:

- Successful attacks – all the realized attacks that ended with a shot towards the goal (inaccurate, accurate and efficient attacks);
- Ball possession – a time interval in which a team controls the ball in a certain area in relation to the total – active duration of the match presented in percentages (defensive, maneuvering and attack zone);
- Passes – pass representation during the ball possession in relation to the distance of the players and the efficiency presented in percentages (short up to 10m, medium from 10-30m, long over 30m);
- Efficient attacks time interval – match scoring goals period (0-15, 15-30, 30-45, 45-60, 60-75, 75-90);
- Efficient attacks structure – the number of players and the time interval during actions from which the goals were scored;
- The way of scoring goals – the presence of the effective attacks from the game or after the set pieces;
- The way of scoring goals from the game - after combinatorics, cross kick or return ball, forward passing, long passes, individual actions, shots outside 16m, after a mistake by a defensive player or own goals;
- The way of scoring goals from the set pieces attack - after corners, direct free kicks, indirect free kicks, penalties, throw-ins.

All the analyzed data were collected by reviewing the UEFA technical report (uefatechnicalreports.com) which included technical-tactical manifestations of all the players within the teams that played in the Champions League competition during the observed 5 competition seasons.

Data processing and statistical analysis

The data from all the variables were primarily processed by the descriptive analysis (total, mean and standard deviation). After that, the analysis for determining the differences in the prevalence of the effective attacks by competition seasons in relation to the time interval was performed by using the non-parametric statistics, i.e. the X square test (χ^2). The same statistical procedure was used to notice the differences when it comes to the way of scoring goals from the game and after the offensive breaks between the competition seasons. The magnitude of the influence, i.e. the strength of the relationship among the variables, is represented by Cramer's indicator (Cramer's V). Furthermore, the Kruskal - Wallis H test was used to detect the differences in terms of time interval and manner of realization of the effective attacks within the same variables without the influence of the competition seasons, and Man-Whitney U was used in case of identifying significant statistical differences for mutual comparisons within the variable test. The level of statistical significance was at $p < 0.05$. Statistical analyses were performed by using Microsoft Excel and SPSS 17.0 (SPSS INC Chicago, IL).

RESULTS

Analyzing all the attacks in which the teams sent a shot on the goal, the results show that the offensive actions mostly ended with the shots outside the goal, but that on average every tenth attempt is an effective attack in the elite European competition (table 1).

Table 1. The representation of the successful attacks in the Champions League competitions by seasons

Successful attacks				
Seasons	Total	Inaccurate	Accurate	Effective
2018/2019	3728	2087	1275	366
2017/2018	3662	2067	1194	401
2016/2017	3463	1936	1147	380
2015/2016	3768	2162	1259	347
2014/2015	3570	2039	1170	361
Процек	3638	2058	1209	371
%	100	56.6	33.2	10.2

Most of the time in the possession of the ball, the teams spent in the central part of the field, which is almost half the total time during which the ball was in their control. In addition, it is noticed that the possession of the ball was more represented in the defensive third of the field in relation to the attacking third, where the players spent the least time with the ball (table 2). Furthermore, the results of the research showed that this competition is mostly dominated by the additions in the middle distances, as well as that the players achieve 84% efficiency when cooperating with two players (table 2). When it comes to the structure of the effective attacks, it was determined that the actions after which goals were scored last on average about 12 seconds, and that an average of 4 players participate in them (table 2).

Table 2. Possession, pass play and the structure of the effective attacks in the Champions League competition

Possession (%)	Average	Stdev
Defensive zone	29	0.91
Maneuvering zone	51	0.91
Attack zone	20	0.86
Passing	Average	%
Total	481	100
Short (%)	130	27
Medium (%)	293	61
Long (%)	63	13
Successful (%)	404	84
Efficient attack	Average	Stdev
Number of player	4	0.13
Time interval (sek)	12	0.76

Analyzing the results related to the representation of goals in relation to the time interval of the game by competition seasons, it was determined that there are no statistically significant differences ($c^2=18.3$; $df=20$; $p=0.57$). However, significant differences in the number of the effective attacks between the time intervals of the match were revealed ($c^2=15.72$; $df=5$; $p=0.008$). The number of scored goals increases as the time of the match progresses in the first half, but the most efficient attacks, compared to all the other intervals, the teams realize in the last 15 minutes of the match (chart 1). No statistically significant differences were observed among other time intervals.

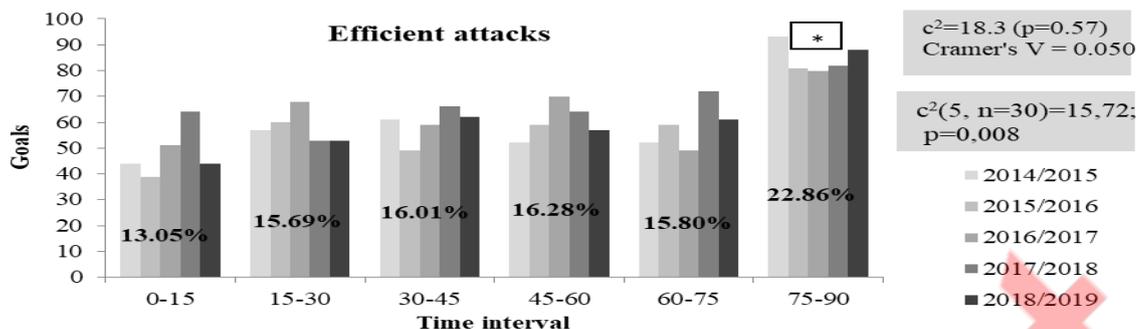


Chart 1. The representation of the effective attacks in relation to the time interval of the game by seasons
 Note: Man-Whitney U test; * - significant difference compared to other intervals.

When it comes to the way of scoring shots, the results showed that in the Champions League competition almost 1/4 of the goals (24%) are scored after the game organization interruption (chart 2), but as expected, significantly more goals are scored by the teams after the possession of the ball (76%).

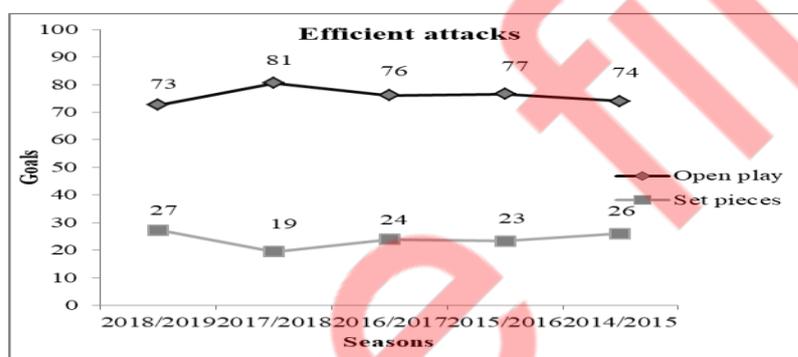


Chart 2 The representation of the effective attacks in relation to the way of scoring goals by seasons

The results of the research did not statistically show the significant differences in the representation of the effective attacks by seasons when it comes to the way of scoring goals from the game ($c^2 = 30.5$; $df = 24$; $p = 0.16$) and after the organization of the offensive break ($c^2 = 9.65$; $df = 16$; $p = 0.88$). However, during the effective attacks resulting from the game, there are statistically significant differences in relation to the method of assistance ($c^2 = 29.66$; $df = 6$; $p = 0.000$). The final shots were usually preceded by a pass from the side in the form of a cross shot and a return ball. After that, significantly more often than in other ways, the teams scored goals after combinatorics, i.e. in the form of the cooperation of several players, and the least effective attacks from the game were scored by the players after the long passes (chart 3).



Chart 3. The way of the effective attacks realization from the game by seasons

Note: Man-Whitney U test; * - significant difference compared to combinatorics; # - significant difference compared to forward passing; ∞ - significant difference compared to long passes; § - significant difference compared to individual actions; ¥ - significant difference compared to shots outside 16m; † - significant difference compared to mistake by defensive player.

Also, the statistically significant differences for the different types of the set pieces after which the teams scored goals were observed ($c^2 = 21.12$; $df = 4$; $p = 0.000$). The teams scored most of the goals after taking corners and penalties, which is significantly more than by using other ways of taking a break from the game. Also, it was noticed that the participants of the Champions League competition achieved the least efficient attacks after throw-ins (chart 4).

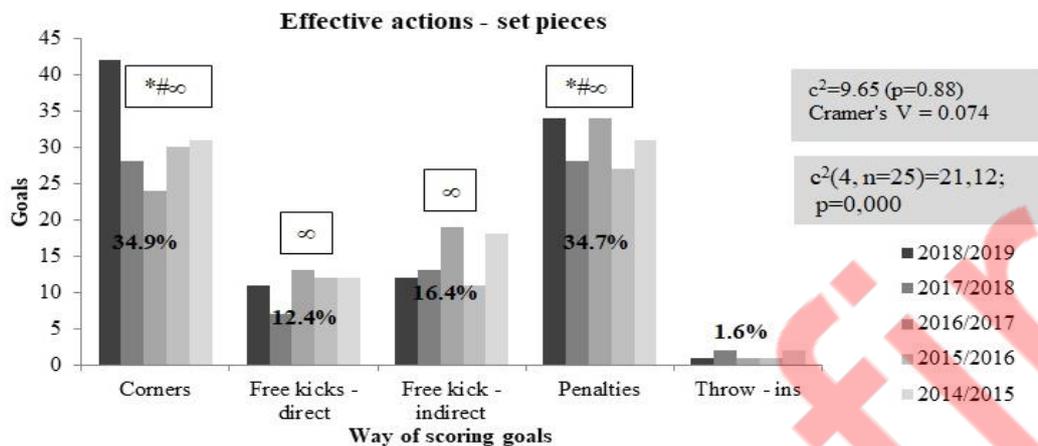


Chart 4. The way of the efficient attacks realization after the set pieces by seasons

Note: Man-Whitney U test; * - significant difference compared to indirect free kicks; # - significant difference compared to direct free kicks; ∞ - significant difference compared to throw-ins.

DISCUSSION

The aim of this research is to present the essential parameters related to the highest quality football teams attack tactics to the scientific and professional public by analyzing the long-term competitive manifestations in the Champions League elite football competition. The results of this research showed that the teams spend most of their time in the possession of the ball in the central third of the field and that the organization of the attack is dominated by passes at the middle distance. In addition, it was noticed that every tenth shot towards the goal represents an efficient attack and that the most efficient actions are realized in the last 15 minutes of the game. When it comes to the structure of the effective attacks, the results showed that most goals are scored after the possession of the ball, while 1/4 of the effective actions occurred after an organized set pieces. No significant differences regarding the prevalence of activities that preceded scoring from the game and after set pieces by seasons were found, but center shots and return balls, corners and penalties stood out as the situations after which the teams most often scored. Thus, the analysis of the competitive activity revealed certain characteristics in the attack tactics during the performance of the highest quality football teams that can be used to define the current attack tendencies in modern football.

A review of the previous research has confirmed the association of the total number of the performed attacks completed with the shots on the goal, and especially the precise shots, with success during the competitive activity (Lago – Penas et al., 2010; Castellano et al., 2012; Evangelos et al., 2014; Liu et al., 2015; Almeida, 2018). The results of our research show that the precise shots represent 1/3 of the total number of the successful attacks, and similar results, when it comes to the precise shots, were presented by Janković et al. (2016). Every tenth shot was effective, i.e. an average of 2.97 goals was scored per match, which is slightly more than the matches of the European Championship in 2012 when the teams scored 2.62 goals per match (Mitrotasios & Armatas, 2014) and the World Cup where the average goal in the match was 2.67 (Kubayi & Toriola, 2019).

The analysis of the results in this research determined that in the Champions League competition, the teams spend most of their time in the possession of the ball on the central part of the field, as well as the highest quality national teams at the 2014 World Cup (Goral, 2015). However, researchers point to the total number of the realized passes and the percentage of efficiency as more significant predictors of the

successful outcome in competitive activities in relation to the total ball possession (Lago – Penas & Dellal, 2010; Collet, 2012). Players most often use passes at medium distances, and the high level of technical-tactical readiness of the players who play in the Champions League confirms the efficiency of the 84% of the passes. The players of the German national team that won the World Cup in 2014 made 81.9% of the successful passes (Goral, 2015), while the players playing in the German and French national championships achieved significantly more efficient passes compared to the players playing in Austria and Serbia (Leontijević et al., 2018), but again lower values in relation to the results obtained in our study. This data confirms the high quality of the competition, as well as the players or teams that play in the Champions League. Goral (2015) concludes that the achieved possession in the maneuvering part of the field with a large number of attempts and a high percentage of the successful passes from that zone to the opponent's goal is a basic principle that contributes to the success at the top level.

The results of the research indicate that there are no significant differences between the competition seasons when it comes to the representation of the efficient actions in relation to the time interval of the match, however it was noticed that in all seasons most of the goals in the Champions League competition are scored in 75-90 minutes. By analyzing the effective attacks on EC and WC (Mitrotasios & Armatas, 2014; Kubayi & Toriola, 2019), the researchers obtained the same results. The obtained results are interpreted as a consequence of the appearance of the player fatigue as the time of the match progresses, which confirms the reduced ability of the players to repeat the high-intensity activities in the last 15 minutes of the match (Mohr et al., 2003). In addition, certain tactical changes, due to the need to achieve a positive outcome, may be the cause of a number of effective attacks as the end of the competitive activity approaches.

Teams most often realized the effective attacks in the analyzed seasons after the possession of the ball (76%), i.e. during the continuous actions and counterattacks. The available literature confirms that a higher number of goals is also scored in the top representative competitions after the open game (Mitrotasios & Armatas, 2014; Kubayi & Toriola, 2019). Efficient actions in the Champions League competition lasted on average about 12 seconds and an average of 4 players participated, and similar results in the research were obtained by Janković et al. (2016) and Leontijević et al. (2017) analysis of all the successful attacks in the same competition. Final passes were more represented in relation to all the other ways from the side areas in the form of the cross shots and return passes, and the same case was at the European Championship in 2012 when this way represented 43.7% of all the assists in the competition (Mitrotasios & Armatas, 2014). Also, in our research, teams often came to the effective attacks after combinatorics in the form of a cooperation of several players in a small space. The results related to the goals scored after the set pieces indicate that 1/4 of the goals are scored in that way, and corners and penalties stand out as the situations after which the teams most often scored a goal. The analysis of the effective attacks from the World Cup in the period from 1998 to 2014 concluded that the representation of goals after the offensive set pieces decreases as the football game evolves (Kubayi & Toriola, 2019). Therefore, the obtained results can be an important indicator that should encourage greater commitment of football coaches to the organization of the offensive set pieces during the training units.

CONCLUSION

In this research, the analysis of the long-term performances of the top teams in the elite football competition highlighted certain characteristics in the attack tactics of the teams that participated. The efficient attacks from the open game dominate, in which an average of 4 players participate, lasting about 12 seconds, while the goals scored after the offensive set pieces represent 1/4 of all the effective actions. No significant differences were observed when it comes to the representation of different types of assists from the game and after the offensive set pieces in the competition seasons, but during the organization of the game the final passes from the side in the form of the center shots and return passes stood out, and corners and expected penalties are the most common type of the offensive set pieces from which the goals were scored. The results related to the time interval of the effective actions clearly indicate the need for good physical preparation of the players, i.e. the importance of the players who are able to maintain a high level of

concentration and the ability to make correct technical-tactical decisions as the match is near the end. The teams spend most of the time in the possession of the ball in the maneuvering third of the field, so it is assumed that the teams that achieve dominance in that zone have a better chance of achieving a positive result. Players most often use passes at medium distances (10 - 30m), and the results of this research related to the efficiency of passing (84%) confirmed that players who play in top teams are required to have a high level of technical-tactical skills.

The results in this research provide objective information that can be used to plan and organize training units in preparing teams for competitive performances, and also contribute to the design of the training exercises that would meet the needs of the players in relation to the observed attack tendencies of the top football teams. In addition, the results obtained in this research can represent the important guidelines in working with younger football players so that they can later unhinderedly meet the requirements in top senior football.

There are several limitations to this study. The analysis included all the teams that participated in the Champions League competition in the period from 2014 to 2019, so it was not possible to identify factors that significantly affected the success of the teams, i.e. in which the parameters of the teams that continued the competition after groups compared to other teams. Also, certain parameters such as the zone of starting the effective attacks, the zone of goal kicks and others, are not included in this research, and they can also be of great importance for detecting trends in the game. Therefore, it is recommended that future research include a number of variables that could contribute to defining guidelines in contemporary football on the example of the quality national competitions while identifying factors that separate successful from those less successful teams in the table.

REFERENCES

1. Almeida, C. H. (2018). What performance-related variables best differentiate between eliminated and qualified teams for the knockout phase of UEFA Champions League?. *Methodology*.
2. Castellano, J., Casamichana, D., & Lago, C. (2012). The use of match statistics that discriminate between successful and unsuccessful soccer teams. *Journal of human kinetics*, 31(1), 137-147.
3. Collet, C. (2012). The possession game? A comparative analysis of ball retention and team success in European and international football, 2007–2010. *Journal of sports sciences*, 31(2), 123-136.
4. Evangelos, B., Aristotelis, G., Ioannis, G., Stergios, K., & Foteini, A. (2014). Winners and losers in top level soccer. How do they differ?. *Journal of Physical Education and Sport*, 14(3), 398-405.
5. Göral, K. (2015). Passing success percentages and ball possession rates of successful teams in 2014 FIFA World Cup. *International Journal of Sport Culture and Science*, 3(1), 86-95.
6. Janković, A., Leontijević, B., & Tomić, L. (2016). Attacks of the soccer teams participating in the Champions League and the Serbian Super Liga. *Physical culture*, 70(1), 80 – 87.
7. Kubayi, A., & Toriola, A. (2019). Trends of Goal Scoring Patterns in Soccer: A Retrospective Analysis of Five Successive FIFA World Cup Tournaments. *Journal of Human Kinetics*, 69(1), 231-238.
8. Lago-Peñas, C., & Dellal, A. (2010). Ball possession strategies in elite soccer according to the evolution of the match-score: the influence of situational variables. *Journal of human kinetics*, 25(1), 93-100.
9. Lago-Peñas, C., Lago-Ballesteros, J., Dellal, A., & Gómez, M. (2010). Game-related statistics that discriminated winning, drawing and losing teams from the Spanish soccer league. *Journal of sports science & medicine*, 9(2), 288-293.
10. Leontijević, B., Janković, A., & Tomić, L. (2017). Tactics of attack of football teams in the Champions League knockout phase in seasons of 2015/2016 and 2016/2017. *Physical culture*, 71(2), 137-144.
11. Leontijević, B., Janković, A., & Tomić, L. (2018). Attacking performance profile of football teams in different national leagues according to uefa rankings for club competitions. *Facta Universitatis, Series: Physical Education and Sport*, 697-708.
12. Liu, H., & Gómez, M. A. (2014). Relationships between match performance indicators and match outcome in 2014 Brazil FIFA world cup. In *Conference: VIII Congreso Internacional de la Asociacion Espanola de Ciencias del Deporte. Spain*.
13. Liu, H., Gomez, M. A., Lago – Penas, C., & Sampaio, J. (2015a). Match statistics related to winning in the group stage of 2014 Brazil FIFA World Cup. *Journal of sport sciences*, 33(12), 1205 – 1213.
14. Liu, H., Hopkins, W. G., & Gómez, M. A. (2015b). Modelling relationships between match events and match outcome in elite football. *European journal of sport science*, 16(5), 516-525.
15. Mitrotasios, M., & Armatas, V. (2014). Analysis of goal scoring patterns in the 2012 European Football Championship. *The Sport Journal*, 50, 1-9.

16. Mohr, M., Krstrup, P., & Bangsbo, J. (2003). Match performance of high-standard soccer players with special reference to development of fatigue. *Journal of sports sciences*, 21(7), 519-528.

Online first