Casal, C.A.; Losada, J.L.; Maneiro, R. y Ardá, T. (2017) Influencia táctica del resultado parcial en los saques de esquina en fútbol / Influence of Match Status on Corner Kick in Elite Soccer. Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte vol. 17 (68) pp. 715-728
Http://cdeporte.rediris.es/revista/revista68/artinfluencia851.htm
DOI: https://doi.org/10.15366/rimcafd2017.68.009

ORIGINAL

INFLUENCE OF MATCH STATUS ON CORNER KICKS TACTICS IN ELITE SOCCER

INFLUENCIA TÁCTICA DEL RESULTADO PARCIAL EN LOS SAQUES DE ESQUINA EN FÚTBOL

Casal, C.A[1]; Losada, J.L.[2]; Maneiro, R.[3]; Ardá, T.[4]

Spanish-English translator: Anne Murray, annetrans@gmail.com

[1] Doctor en Ciencias de la Actividad Física y del Deporte. Profesor del departamento de Ciencias Actividad Física y Deporte, Universidad Católica de Valencia "San Vte Mártir" (Spain) ca.casal@ucv.es

[2] Doctor en Psicología. Profesor del departamento de Metodología de las Ciencias del Comportamiento, Universidad de Barcelona (Spain) jlosada@ub.edu

[3] Doctor en Ciencias de la Actividad Física y del Deporte. Profesor del departamento de Ciencias Actividad Física y Deporte, Universidad Pontificia de Salamanca (Spain) rmaneirodi@upsa.es

[4] Doctor en Educación Física. Profesor del departamento de Educación Física y Deportiva, Universidad de A Coruña (Spain) ardasd@udc.es

ACKNOWLEDGEMENTS

This study forms part of a research project on exercise and sport as motivators for a healthy lifestyle "*La actividad física y el deporte como potenciadores del estilo de vida saludable: Evaluación del comportamiento deportivo desde metodologías no intrusivas*" funded by the Department of Research, Development and Innovation of the Spanish Ministry of Economy and Competitiveness (DEP2015-66069-P; MINECO/FEDER, UE) for the period 2016-2018.

Código UNESCO / UNESCO CODE: 5899 Entrenamiento deportivo / Sport training
Clasificación consejo de Europa / Council of Europe classification: 17. Otras (Análisis del juego) / Other (Game analysis)

Recibido 15 de mayo de 2015 **Received** May 15, 2015
Aceptado 12 de febrero de 2016 **Accepted** Frebuary 12, 2016

ABSTRACT

The aim of this study was to analyze how the situational variable match status might affect tactical and strategic behavior during the execution of corner kicks in elite soccer. We studied 902 corner kicks taken during 95 matches played during the final stages of the 2012 UEFA European Championships and the 2010 FIFA World Cup. We used the Chi-squared automatic interaction detection (CHAID) decision-tree method to identify interactions. Three models were identified. When a corner kick is taken during the last 30 minutes of the match, and the score is level, attacking teams place 2-5 players in the shooting area, while defending teams place 1-2 players between the posts. Attacking teams that are losing in this same situation place 2-5 players in a position to receive the ball, while the defending team leaves its posts undefended. Finally, when the team taking the corner kick is losing during the last 30 minutes of the match, it places 6 or more players in a position to take a shot at goal.

KEY WORDS: corner kicks, observational methodology, elite soccer, situational variables, performance analysis.

RESUMEN

El propósito del estudio es analizar como la variable situacional *resultado parcial* puede afectar al comportamiento táctico-estratégico en los saques de esquina en fútbol. Se han estudiado 902 saques de esquina realizados en 95 partidos correspondientes a la UEFA Euro 2012, y Fase Final de la FIFA *World Cup* 2010. Para identificar las interacciones se utilizó el método de crecimiento *Chi-square automatic interaction detector* (*CHAID*), que nos ha permitido identificar tres modelos: con el resultado de empate en los últimos minutos de juego, el equipo atacante incorpora al remate entre 2 a 5 jugadores y el equipo rival sitúa 1 ó 2 jugadores bajo palos. Ganando en los últimos minutos del encuentro, el equipo sitúa también entre 2 a 5 jugadores en ataque y el rival no defiende bajo palos. Perdiendo en los últimos minutos del encuentro, el equipo atacante incorpora a 6 o más jugadores al ataque.

PALABRAS CLAVE: saques de esquina, metodología observacional, fútbol de élite, variables situacionales, análisis del rendimiento.

INTRODUCTION

Context and contextual factors must be taken into account when analyzing performance in soccer (Carling, Williams, & Reilly, 2005; Kormelink & Seeverens, 1999). Numerous studies have provided evidence on which variables should be analyzed in such situations (Bloomfield, Polman, & O´Donoghue, 2005; Jones, James, & Mellalieu, 2004; Lago & Martín, 2007; O´Donoghue & Tenga, 2001; Sasaki, Nevill, & Reilly, 1999; Shaw & O´Donoghue, 2004; Tucker, Mellalieu, James, & Taylor, 2005). Nevill and

Holder (1999), for example, reported that match status (the score at a given time in a game) and the quality of the rival team are the two main factors that influence team performance. Similarly, findings by Sasaki et al. (1999), O´Donoghue and Tenga (2001), Jones et al. (2004), Shaw and O´Donoghue (2004), Bloomfield, Polman, and O´Donoghue (2005), Tucker et al. (2005), Lago and Martín (2007), Castellano, Perea, and Hernández Mendo (2008), and Taylor, Mellalieu, James, and Shearer (2008) all support the idea that match status influences the technical, tactical, and strategic behaviors of both players and teams. The impact on performance of the quality of the rival team is supported by findings by Grant, Williams, and Hocking (1999), Hook and Hughes (2001), and Hughes and Churchill (2005). Significant differences have also been observed between successful and unsuccessful teams in terms of technical, tactical, and physical performance (Bradley, Di Mascio, Peart, Olsen, & Sheldon, 2010; Hughes & Franks, 2005; Lago-Ballesteros & Lago-Peñas, 2010; Rampini, Impellizzeri, Castagna, Coutts, & Wisloff, 2009). Finally, studies by Lago (2009), Taylor et al. (2008), and Tucker et al. (2005) have shown significant differences in ball possession according to the location of the match. Many studies that have analyzed performance in soccer have focused on how goals are scored, as this information is obviously highly relevant to improving performance in attack. Set plays, and corner kicks in particular, can have a significant impact on the outcome of matches between two teams of a very similar level, as reported by Castelo (2009) and Ardá, Maneiro, Rial, Losada, and Casal (2014). Corner kicks in soccer have been analyzed both quantitatively (number of kicks per match) and qualitatively (effectiveness) (Acar et al., 2009; Alonso, 1995; Ardá et al., 2014; Borrás & Sainz de Baranda, 2005; Carling et al., 2005; Casáis, 2006; Castelo, 1999; Ensum, Williams, & Grant, 2000; Márquez & Raya, 1998; Mesonero & Sainz de Baranda, 2006; Pérez & Vicente, 1996; Roxburg & Turner, 2008, 2009, 2010, 2011; Sainz de Baranda, López-Riquelme, & Ortega, 2011; Sánchez Flores et al., 2012; Saraiva, 2007; Silva, 2011; Taylor, James, & Mellalieu, 2005).

As already mentioned, match status can influence the behavior of both individual players and teams, but very few studies have analyzed the association between match status and corner kicks, although Borrás and Sainz de Baranda (2005) and Sainz de Baranda et al. (2011) reported significant differences in how corner kicks are taken depending on the score of the match when they are taken. The aim of this study was to investigate the association between corner kick performance indicators and match status while controlling for situational variables known to significantly impact team behavior, namely, match venue and quality of the teams. Specifically, we performed a multivariate interaction analysis of corner kick performance indicators, with consideration of the interaction between rival teams and the following objectives: to investigate whether or not match status influences the technical-tactical behavior of attacking and defending teams during the execution of corner kicks and to determine which behaviors are modified and how.

METHOD

Match sample

We analyzed 902 corner kicks taken during the final stages of the 2012 UEFA European Championships in Poland/Ukraine (31 matches) and the 2010 FIFA World Cup in South Africa (64 matches). These matches were chosen to control for the effect of match status (all the matches were played on neutral ground) and the level of the teams (all the matches were between top-level teams competing in the final stages of European and world championships).

Performance indicators

The observation instrument used was the same as that used in a study of corner kick success in the 2010 FIFA World Cup by Ardá et al (2014). The performance indicators were time of the match at which the corner kick was taken, position of the corner kick (right, left), laterality of kick (natural, switched), number of attackers in a position to receive the ball, number of defenders in a position to recover the ball, interaction context (balance between the number of attackers and defenders in the shooting area), delivery of the ball (direct, indirect), path of the ball (ground, air), type of marking (zone, man-to-man, combined), number of players defending the goalposts, number of intervening attackers, zone to which the last pass is made (near post, far post), shooting area, offensive organization (static, dynamic), and type of shot. For more details on the instrument see Ardá et al (2014).

Data collection procedures

We employed a direct observational methodology design characterized by non-participative, systematic observation in a natural setting (Anguera, Blanco Villaseñor, Losada, & Hernández Mendo, 2000). Video recordings of the matches available from television channels were systematically analyzed post-event by four expert observers. For all the matches analyzed, the observation instrument was first applied to the team being observed and then to the other team. Data were successively recorded by coding each of the performance indicators for all the corner kicks taken and noting down the match status at the time. Match status was categorized as ‘‘winning’’, ‘‘drawing’’, or ‘‘losing’’ based on the number of goals scored and conceded by the team being observed at the time of data entry (Bloomfield et al., 2005b; Jones et al., 2004).

Data were collected for the duration of each match, excluding injury time.

Reliability testing

The four observers were all trained following the protocols described by Losada and Manolov (2014). In the first stage, eight observation sessions were held in which the observers were trained using the consensus agreement method

(Anguera, 1990). With this method, data are recorded only when there is agreement between the observers. The quality of the data was also verified by calculating Cohen's kappa statistic for interobserver agreement. The results, based on the criteria of Fleiss, Levin, & Paik (2003) were excellent (Table 1).

Table 1. Reliability of variables in the observation instrument according to interobserver agreement (kappa statistic)

Categories	Ob_1-Ob_2	Ob_1-Ob_3	Ob_1-Ob_4	Ob_2-Ob_3	Ob_2-Ob_4	Ob_3-Ob_4
Position of corner kick	1	1	1	1	1	1
Laterality of corner kick	1	1	1	1	1	1
No. of attackers	0.87	0.81	0.70	0.58	0.7	0.79
No. of defenders	0.89	0.85	0.56	0.8	0.71	0.8
Interaction context	0.89	0.87	0.88	0.86	0.87	0.88
Delivery of ball	0.81	0.76	0.54	1	0.71	0.84
Path of ball	0.9	0.88	0.86	0.81	0.88	0.83
Type of marking	0.53	0.76	0.88	0.79	0.83	0.77
No. of players defending the goalposts	0.9	1	0.89	1	0.93	0.95
No. of intervening attackers	0.84	0.88	1	0.85	0.7	0.8
Zone to which the last pass is made	0.78	0.84	0.75	0.38	0.71	0.82
Shooting area	0.82	0.82	0.81	1	0.64	0.79
Offensive organization	0.81	0.81	0.45	1	0.64	0.78
Type of shot	1	0.93	0.91	0.95	1	1
K_{total}	**0.86**	**0.87**	**0.8**	**0.85**	**0.8**	**0.86**

Data analysis

Data were analyzed using IBM SPSS Statistics (version 22). The statistical analysis consisted of building a decision-tree classification model to provide validation tools for exploratory and confirmatory classification analyses, by assigning a suitable measure to all the variables included. The model generated provides a solution to prediction, classification, and segmentation problems and yields a flow-chart structure showing the procedure and its results.

The data analysis phase started by building a decision tree in which all variables were treated as nominal, and each node contained a frequency table showing the number of cases (count and percentage) for each category of the dependent variable. The *Chi*-squared Automatic Interaction Detector (CHAID)

method was used to build the tree. This consists of a multiway algorithm that explores data both quickly and efficiently and creates segments and profiles for the desired result. The method also permits the automatic detection of interactions via *Chi*-squared analysis. At each step of the process, CHAID chooses the predictor variable with the strongest interaction with the dependent variable. The categories of each predictor are merged if they are not significantly different to the predictor variable.

The dependent variable was match status (winning, drawing, or losing), and the predictors were the variables from the observation instrument. Split-sample validation with a training sample was used to generate a model that was subsequently tested on a hold-out sample. The maximum tree depth was set at 3, with a minimum of 100 cases per parent node and 25 cases per child node. (Table 2)

Table 2. Summary of model

Specifications	Decision-tree technique	CHAID
	Dependent variable	Match status
	Independent variables	Time (moment of the match at which the corner kick was taken), position of the corner kick (right vs left), kicking foot, number of attackers, number of defenders, interaction context, delivery of the ball, path of the ball, type of marking, number of defenders between the posts, number of intervening attackers, zone to which the last pass is made, shooting area, offensive organization, and type of shot
	Validation	None
	Maximum tree depth	3
	Minimum cases per parent node	100
	Minimum cases per child node	25
Results	Independent variables included	Defenders between the posts, time, number of intervening attackers
	Number of nodes	8
	Number of terminal nodes	5
	Depth	3

RESULTS

The final model had 8 nodes (5 of which were terminal), and the predictors retained were time, number of attackers, and players defending the goalposts (Fig. 1).

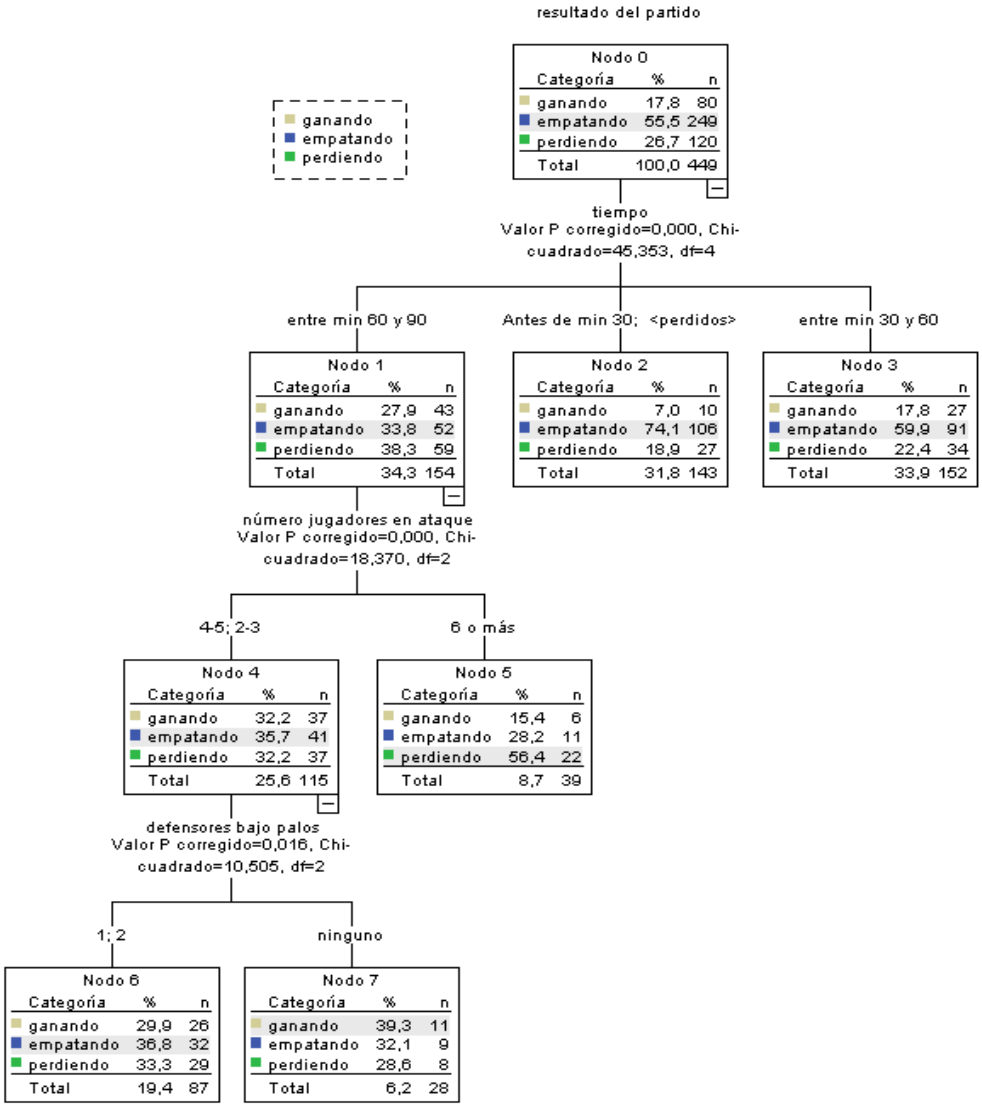

Fig. 1. Structure of decision tree

The root node (0) was the dependent variable, i.e. match status, and the most frequent category was “drawing" (n=49). Time had the greatest influence on match status and gave rise to nodes 1, 2, and 3. Nodes 2 and 3 were terminal nodes, while node 1, “minutes 60-90”, showed that the most frequent category for the dependent variable was “losing” (n=59). Node 1 was split by “number of attackers”, which gave rise to two new nodes, 4 and 5. Node 4 contained the categories “2-3 players” and “4-5 players”, as no significant differences were found with respect to the dependent variable, and "drawing" (n=41) was the most common match status. Node 5, a terminal node, contained the category “6 or more players”, and the most common match status was “losing”. The next variable included in the model was “number of players defending the goalposts”, which was split into two new nodes, 6 and 7. Node 6 contained the category “1 and 2 players”, for which “drawing” (n=32) was the most common

match status. By contrast, the most frequent match status for node 7, which contained the category “no players defending the goalposts” was “winning” (n=11).

Three models were thus detected for the execution of corner kicks in the matches analyzed: 1) a kick taken during minutes 60-90 when the teams were drawing and when there were 2-5 attackers in a position to receive the ball and 1-2 defenders between the goalposts; 2) a kick taken by a winning team during minutes 60-90 with 2-5 attackers and no players defending the posts; 3) a kick taken by a losing team during minutes 60-90, with 6 or more attackers in a position to receive the ball; the number of defenders between the posts was not significant in this case.

The model correctly predicted 58.4% of the cases in the dataset. Its predictive accuracy was 92% for the “drawing” category, 13.8% for the “winning” category, and 18.3% for the “losing” category. It can therefore be considered to provide a moderate fit to the observed data.

DISCUSSION

The findings of this study show that match status influences the tactical and strategic behavior of teams in relation to corner kicks in elite soccer. We performed a multivariate decision-tree analysis to explore associations between different performance indicators and match status. To our knowledge, similar studies to date have analyzed this subject using univariate or bivariate analyses, but none have investigated multiple interactions between corner kick performance indicators and the score of the match when the kick was taken. Another distinguishing aspect of our study is that we analyzed these interactions from the perspective of the interaction between the attacking and defending teams.

We found statistically significant associations between match status and the time of the match, the number of attackers in a position to receive the ball, and the number of players defending the goalposts.

Like Sainz de Baranda and López-Riquelme (2012), we found that most corner kicks are taken when the match status is drawing. As these authors suggested, this might be because that when teams are drawing, they tend to more actively try to score in order to take the lead. However, we also believe that the higher frequency of corner kicks in this situation might simply be due to the fact that draws are more common during matches.

The number of players defending the goalposts was another tactical-strategic aspect influenced by match status. We saw that when the match status is drawing, the defending team tends to place 1 or 2 players in the area of the goalposts during a corner kick, whereas the score is in its favor or against it. These observations, which coincide with those of Sainz de Baranda and

López-Riquelme (2012) are logical from a strategic perspective, as when the teams are drawing, the defending team needs to make every effort to keep the score level. In other words, its strategy is to not prepare for launching a counterattack, but rather simply to prevent the other team from scoring from the corner kick. If the defending team is losing, however, it needs to contemplate the possibility of a counterattack, as it is empirically known that corner kicks can open up scoring opportunities for the defense, and many teams in such a situation will position their players further upfield, including probably those they need most (i.e. those that should theoretically be between the posts). In brief, teams that are drawing or losing may need to take more precautions in defense, as they cannot afford to make as many errors as if it were winning. Findings by the above authors and by Ardá et al. (2014), however, contradict this theory, as their investigations reveal that corner kicks are more effective when defenders are placed at the goalposts.

We also observed that the number of attackers in a position to receive the ball during a corner kick varied according to match status, with 6 attackers available to participate in the set play when the team was losing but just 2-5 players when the team was winning or drawing. One possible explanation is that teams that are losing use more attackers as the more players in a position to participate in the corner kick, the greater the possibilities of a shot on goal (Ardá et al, 2014). By contrast, when they do not need to take risks in attack, teams seem to choose to strengthen their defense, positioning fewer players in counterattack positions and more players in or around the rival goal area.

Finally, our decision-tree analysis revealed interactions between several of the performance indicators analyzed, showing, for instance, that when teams are losing towards the end of the match (minutes 60-90), they place at least 6 players in the shooting area. As explained above, the purpose of this strategy is to increase their chances of scoring a goal and drawing the match.

When the match status is drawing and there are fewer than 30 minutes of play left, attacking teams place between 2 and 5 players in a position to receive the ball, while the teams defending the ball at this time place 1 or 2 players at the goalposts. This shows greater precaution by both teams, reflected by the fact that they both seek to maintain a greater balance between attack and defense.

When the match status is winning to an end, attacking teams with the score in their favor position between 2 and 5 players in the shooting area during a corner kick, while defending teams who are winning tend to leave their goalposts undefended. This may be because attacking teams wish to maintain their advantage on the scoreboard and make it more difficult for the defending team to counterattack by placing more players in a defensive position. By contrast, a defending team that is losing will be seeking to launch a counterattack to level the match or to at least reduce the goal difference.

Our results in the context of the moment of the match when the corner kick is taken seem to suggest that everything happens in the last 30 minutes, indicating that teams tend to resort to "textbook" strategies that are seen as more effective, both in attack and defense. In other words, the patterns detected suggest that teams forgo more “undisciplined” tactics in favor of pre-established models that they believe will help them achieve the result they are looking for.

CONCLUSIONS

We have investigated how corner kicks performance in elite soccer is affected by whether the team is winning, losing, or drawing at the time the kick is taken. We performed a multivariate decision-tree analysis to explore interactions between various corner kicks performance indicators in a setting in which interactions between the competing teams were also considered. The results show that match status influences both tactical and strategic approaches to corner kicks. The variables affected are the number of attackers in a position to participate in the corner kick and the number of defenders placed at the posts at different moments of the match. We identified three tactical-strategic models employed by both attacking and defending teams during corner kicks according to whether they are winning, losing, or drawing in the last 30 minutes of the match.

1. When the match status is losing, and 30 minutes or less remaining, attacking teams position 6 or more players in the shooting area.

2. When the match status is drawing, and 30 minutes or less remaining, attacking teams place 2-5 players in a position to receive the ball, while defending teams place 1 or 2 defenders between the posts.

3. When the match status is winning, and 30 minutes or less remaining, attacking teams place 2-5 players in a position to receive the ball, while defending teams leave their goal undefended.

4. Our findings could be very useful for teams and coaches as they add to the body of knowledge on performance and tactics in set-piece actions. The limitations inherent to this study could be reduced in future studies by analyzing other competitions using larger samples and considering goal differences and other performance indicators to continue to identify factors that influence the effectiveness of corner kicks.

REFERENCES

Acar, M. F., Yapicioglu, B., Arikan, N., Yalcin, S., Ates, N., & Ergun, M. (2009). Analysis of goals scored in the 2006 world cup. En *The Proceding of the Sixth World Congress on Science and Football, Science and Football, VI* (En T. Reilly and Feza Korkusuz (Eds), pp. 233-242). London: Routledge.

Alonso, A. (1995). *Estrategia ofensiva en fútbol*. Madrid: Gymnos.

Anguera, M. T. (1990). Metodología observacional. En J. Arnau, M. T. Anguera, & J. Gómez (Eds.), *Metodología de la investigación en Ciencias del Comportamiento* (pp. 125-236). Murcia: Secretariado de Publicaciones de la Universidad de Murcia.

Anguera, M. T., Blanco Villaseñor, Á., Losada, J. L., & Hernández Mendo, A. (2000). La metodología observacional en el deporte: conceptos básicos. *Lecturas: Educación Física y Deportes*, *24*. Recuperado a partir de http://www.efdeportes.com/efd24b/obs.htm

Ardá, T., Maneiro, R., Rial, A., Losada, J. L., & Casal, C. A. (2014). Análisis de la eficacia de los saques de esquina en la copa del mundo de fútbol 2010. Un intento de identificación de variables explicativas. *Revista de Psicología del Deporte*, *23*(1). 165-172

Bloomfield, J. R., Polman, R. C. J., & O´Donoghue, P. G. (2005). Effects of score-line on team strategies in FA Premier League Soccer. *Journal of Sports Sciences*, *23*, 192-193.

Borrás, D., & Sainz de Baranda, P. (2005). Análisis de córner en función del momento del partido en el mundial de Corea y Japón 2002. *Cultura, ciencia y deporte: revista de ciencias de la actividad física y del deporte de la Universidad Católica de San Antonio*, *2*, 87-93.

Bradley, P., Di Mascio, M., Peart, D., Olsen, P., & Sheldon, B. (2010). High-intensity activity profiles of elite soccer players at different performance levels. Journal of Strength and Conditioning Research. *Journal of Strength and Conditioning Research*, *24*(9), 2343-2351. https://doi.org/10.1519/JSC.0b013e3181aeb1b3

Carling, C., Williams, A. M., & Reilly, T. (2005). *Handbook of soccer match analysis: A systematic approach to improving performance*. Abingdon UK: Routledge. https://doi.org/10.4324/9780203448625

Casáis, L. (2006). Procesos ofensivos que llevan al gol: orientaciones para el entrenamiento táctico. *Training Fútbol*, *129*, 26-33.

Castellano, J., Perea, A., & Hernández Mendo, A. (2008). Análisis de la evolución del fútbol a lo largo de los mundiales. *Psicothema*, *20*(4), 928-932.

Castelo, J. (1999). *Fútbol. Estructura y dinámica del juego*. Barcelona: INDE.

Castelo, J. (2009). *Tratado General de Fútbol. Guía práctica de ejercicio*. Barcelona: Editorial Paidotribo.

Ensum, J., Williams, M., & Grant, A. (2000). An analysis of attacking set plays in Euro 2000. *Insight*, *4*, 36-40.

Fleiss, J. L., Levin, B., & Paik, M. C. (2003). *Statistical methods for rates and proportions* (3ª ed.). Hoboken: John Wiley y Sons.

https://doi.org/10.1002/0471445428

Grant, A. G., Williams, A. M., & Hocking, M. (1999). Analysis of successful and unsuccessful teams in the 1999 Women's World Cup. *Insigt*, *3*(1), 10-12.

Hook, C., & Hughes, M. (2001). Patterns of play leading to shots in 'euro 2000'. *In Pass.com. UWIC*.

Hughes, M. D., & Churchill, S. (2005). Attacking profiles of successful and unsuccessful teams in Copa America 2001. En *Science and Football V* (In T. Reilly, J. Cabri, & D. Araujo (Eds), pp. 219-224). Abingdon, UK: Routledge.

Hughes, M., & Franks, I. (2005). Analysis of passing sequences, shots and goals in soccer. *Journal of Sports Sciences*, *23*(5), 509-514. https://doi.org/10.1080/02640410410001716779

Jones, P. D., James, N., & Mellalieu, S. . (2004). Possession as a performance indicator in soccer. *International Journal of Performance Analysis of Sport*, *4*, 98-102. https://doi.org/10.1080/24748668.2004.11868295

Kormelink, H., & Seeverens, T. (1999). *Match analysis and game preparation.* Spring City, PA: Reedswain.

Lago-Ballesteros, J., & Lago-Paños, C. (2010). Performance in team sports: identifying the keys to success in soccer. *Journal of Human Kinetics*, *25*, 85-95. https://doi.org/10.2478/v10078-010-0035-0

Lago, C. (2009). The influence of match location, quality of opposition, and match status on possession strategies in professional association football. *Journal of Sports Sciences*, *27*(13), 1463-1469. https://doi.org/10.1080/02640410903131681

Lago, C., & Martín, R. (2007). Determinants of possession of the ball in soccer. *Journal of Sports Sciences*, *25*(9), 969-974. https://doi.org/10.1080/02640410600944626

Losada, J. L., & Manolov, R. (2014). The process of basic training, applied training, maintaining the performance of an observer. *Quality & Quantity*. doi:10.1007/s11135-014-9989-7 https://doi.org/10.1007/s11135-014-9989-7

Márquez, J. L., & Raya, A. (1998). El córner en el Mundial de Francia'98: Análisis y desarrollo. Training Fútbol. *Training Fútbol*, *32*, 8-45.

Mesonero, D., & Sainz de Baranda, P. (2006). Análisis de los goles del Mundial de Corea y Japón 2002: situación numérica. *Training Fútbol*, *127*, 34-46.

Nevill, A., & Holder, R. (1999). Home advantage in sport: An overview of studies on the advantage of playing at home. *Sports Medicine*, *28*, 221-236. https://doi.org/10.2165/00007256-199928040-00001

O´Donoghue, P., & Tenga, A. (2001). The effect of score-line on work rate in elite soccer. *Journal of Sports Sciences*, *19*, 25-26.

Pérez, Z., & Vicente, E. (1996). Analisis de la estrategia a balon parado en USA'94. *El Entrenador Español*, *69*, 48-57.

Rampini, E., Impellizzeri, F., Castagna, C., Coutts, A., & Wisloff, U. (2009). Technical performance during soccer matches of the Italian Serie A

league: Effect of fatigue and competitive level. *Journal of Systems Science and Medicine in Sport*, *12*(1), 227-233. https://doi.org/10.1016/j.jsams.2007.10.002

Roxburgh, A. & Turner, G. (2008). *UEFA Champions League Technical Report 2007/2008.*

Roxburgh, A. & Turner, G. (2009). *UEFA Champions League Technical Report 2008/2009.*

Roxburgh, A. & Turner, G. (2010). *UEFA Champions League Technical Report 2009/2010.*

Roxburgh, A. & Turner, G. (2011). *UEFA Champions League Technical Report 2010/2011.*

Sainz de Baranda, P., & López-Riquelme, D. (2012). Analysis of corner kicks in relation to match status in the 2006 World Cup. *European Journal of Sport Science*, *12*(2), 121-129. https://doi.org/10.1080/17461391.2010.551418

Sainz de Baranda, P., López-Riquelme, D., & Ortega, E. (2011). Criterios de eficacia ofensiva del saque de esquina en el Mundial de Alemania 2006: Aplicación al entrenamiento. *Revista Española de Educación Física y Deportes*, *395*, 47-59.

Sánchez Flores, J., García Manso, J. M., Martín, J. M., Ramos, E., Arriaza, E., & Da Silva, M. E. (2012). Análisis y evaluación del lanzamiento de esquina (córner) en el fútbol de alto nivel. *Revista Andaluza de Medicina del Deporte*, *5*((4)), 140-146. https://doi.org/10.1016/S1888-7546(12)70022-9

Saraiva, N. G. (2007). *A importancia dos lances de bola parada (libres, cantos e penaltis) no Futebol de 11. Análise de situaçoes finalizadas com golo na 1ª Liga Portuguesa 2005/2006 e no Campeonato do Mundo 2006. Faculdade de desporto*. Universida de desporto, Oporto.

Sasaki, Y., Nevill, A., & Reilly, T. (1999). Home advantage: A case study of Ipswich Town football club during the 1996–97 season. *Journal of Sports Sciences*, *17*, 831.

Shaw, J., & O´Donoghue, P. (2004). The effect of scoreline on work rate in amateur soccer. En P. O´Donoghue & M. D. Hughes (Eds.), (In P. O´Donoghue & M.D. Hughes (Eds.), pp. 84-91). Cardiff: UWIC.

Silva, D. (2011). *Praxis de las acciones a balón parado en fútbol. Revisión conceptual bajo la teoría de la praxiología motriz*. Facultad de Ciencias de la Educación y Psicología. Universidad Roviar I Virgili, Tarragona.

Taylor, J. B., James, N., & Mellalieu, S. (2005). Notational analysis of corner kicks in english premier league soccer. En *Science and Football V, The proceding of the Fifht World Congress on Science and Football* (En T. Reilly, J. Cabri and D. Araujo (Eds), pp. 225-230). Londres: Routledge.

Taylor, J. B., Mellalieu, S., James, N., & Shearer, D. A. (2008). The influence of match location, quality of opposition, and match status on technical performance in professional association football. *Journal of Sports Sciences*, *26*(9), 885-895. https://doi.org/10.1080/02640410701836887

Tucker, W., Mellalieu, S., James, N., & Taylor, J. B. (2005). Game location effects in professional soccer: A case study. *International Journal of Performance Analysis of Sport*, *5*, 23-35. https://doi.org/10.1080/24748668.2005.11868325

Referencias totales / Total references: 45 (100%)
Referencias propias de la revista / Journal's own references: 0 (0%)

Rev.int.med.cienc.act.fís.deporte - vol. 17 - número 68 - ISSN: 1577-0354