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Original Article

Winners and losers in top level soccer. How do they differ?

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Abstract:
The aim of the current study was to identify the differences between top-level teams after wide and short range results. The data corresponded in 64 games of 2013/14 European soccer leagues. Wide and short range results were divided in two equal categories. The researchers described the descriptive statistics for all the soccer factors. They tested normality and homogeneity by Kolmogorov-Smirnov and Levene's controls respectively. Furthermore, they examined the differences between wide and short range results by ANOVA analyses and post hoc Tukey's comparisons. The results showed that in wide range results (≥3 difference), the winners perform significant higher performance than the losers in the following factors: aerial duels ($p < .10$), overall duels ($p < .10$), ball possession ($p < .05$), overall passes ($p < .05$), opponent-half passing accuracy ($p < .05$), overall shots ($p < .001$), shot accuracy ($p < .10$), on-target shots ($p < .001$), short distance ($p < .001$) and long distance shots ($p < .05$), as well corners ($p < .05$). No differences between winners and losers were found regarding the above variables in short range results. Soccer coaches should focus in improvements of these factors in order to achieve wide range victories.
Key words: Successful, match analysis, soccer, possession, shot, duels.

Introduction

Soccer game reflects the potential and the performance characteristics of each team. Technical, tactical, physiological and psychological interactions determine team performance as well as the result of the game. Match analysis is defined as the objective recording and assessment of behavioral actions that occur during soccer games (Carling, Williams, & Reilly, 2005). Essentially it is considered as the primary source of information for the training staff regarding the strengths and weaknesses of own and opponent teams (Carling, Reilly, & Williams, 2008; Martinez & Lago, 2007; Zubillaga, Gorospe, Mendo, & Villaseñor, 2007). Researchers perform more and more complex qualitative and quantitative statistics for highly expertized analyses of defensive and attacking behaviors. The final results, qualifications, promotions, victories as well as the league rankings have been examined and correlated with a variety of performance indicators.

Ball Possession

The literature review showed that possession is frequently related to performance. In World Cup of 1990 (Hughes & Franks, 2005), in Euro of 2000 (Hook & Hughes, 2001), as well as in World Cups of 2002/2006/2010 (Castellano, Casamichana, & Lago, 2012) the most successful teams performed higher possession percentage than the less successful ones. Janković and colleagues (2011a) also added that in World Cup of 2010 the winners performed longer possession ratings than losers, while the opponent teams presented similar ratings after draws (Janković, Leontijević, Pašić, & Jelušić, 2011a). Japheth and Hughes (2001) also added that the national team of France performed longer possession percentage than their opponents during Euro of 2000. Similarly, the most successful teams of 2001/2 English Premier League performed longer possession ratings than the less successful ones (Jones, James, & Mellalieu, 2004). They also added that both successful and unsuccessful teams had longer possession when they were losing matches compared to winning results. The 170 soccer matches of 2003/4 Spanish leagues showed that there is a possession advantage for the home teams (Lago & Martin, 2007). Furthermore, the researchers concluded that when teams are back on score, they increase their possession ratings during the game (Bloomfield, Polman, & O'Donoghue, 2005; Jones et al., 2004; Lago &

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Dellal, 2010; Lago & Martin, 2007; Sasaki, Nevill, & Reilly, 1999). In the same way, Lago and colleagues (2010) concluded an advantage of successful teams in possession ratings of 2008/9 Spanish leagues (Lago, Lago, Dellal, & Gomez, 2010). In Champions League analyses of 2007-2010 games it was found that winners performed higher possession ratings than defeated teams (Lago, Lago, & Rey, 2011). In contrast, it was found that in World Cup of 1994 the possession did not affect the result (Stanhope, 2001).

Passing

Literature review suggested that overall passes and passing accuracy are related to the final result of a game. It has been found that in 1998 and 2010 World Cup as well as in 2009/10 Champions League the successful teams performed greater overall passes and passing accuracy than the less successful ones (Janković et al., 2011a; Szwarc, 2007). Similarly, the qualified teams for that World Cup performed higher number of passes than the non-qualified (Reed, 2004). In 2000 Euro cup the winner covered longer distance by passing game than the other teams (Luhtanen, Belinskij, Hayrinen, & Vanttinen, 2001). Comparisons between more developed and less developed leagues showed great differences in overall passes and passing accuracy (Bekris et al., 2010). In the same way, in Bosnian and Herzegovina 2008/9 Premier League the winners performed around 50% more passes than the loser ones, but in 2008 Euro there were not significant differences between the two comparing groups (Kapidžić, Mejremić, Bilalić, & Bečirović, 2010). In Greek Super League it was found that more successful teams perform higher overall passes and passing accuracy than less successful. The league winner also achieved to reduce the passing accuracy of the opponents, finding that probably is a winning indicator (Bekris et al., 2013). Hughes and Franks (2005) concluded that pass sequence is positively linked to goal achievement. Furthermore, successful teams perform higher number of assists than the less successful ones (Armatas, Yiannakos, Papadopoulou, & Skoufas, 2009; Bekris et al., 2013; Lago et al., 2010). Horn and colleagues (2002) finally added the passing game zone in which it is more possible for a team to achieve a goal (Horn, Williams, & Ensum, 2002).

1 vs 1 playing duels

This soccer factor is very important as individual attacking and defending abilities are very useful for 1 vs 1 playing with or without ball, on the overall or aerial. However, there was a gap in literature review concerning this factor and how it affects the performance. Buraczewski (2009) found that 1 vs 1 playing of Polish teams was far less successful than other elite leagues. Particularly differences observed in attack, and especially header duels on the team's own half of the field as well as on the opponent's half. Furthermore, it was found that the home teams obtain advantage concerning aerial duels (Tucker, Mellalieu, James, & Taylor, 2005).

Overall shots

Many studies concerning overall have been conducted. In the 1990, 2002, 2006 and 2010 World Cups, the successful teams performed more overall shots than the unsuccessful ones (Castellano et al., 2012; Hughes & Franks, 2005; Szwarc, 2004; Sajadi & Rahnama, 2007). Similar findings were observed in 2008/9 Spanish soccer leagues, 2009/10 Serbian, 2004/5 Italian and 2006/7 as well as 2011/12 Greek leagues respectively (Bekris et al., 2013; Janković, Leontijević, Jelušić, Pašić, & Mićović, 2011b; Lago et al., 2010; Rampinini, Impellizzeri, Castagna, Coutts, & Wisløff, 2009). Some studies combined ball possession and overall shots. Specifically, the researchers found that the most successful teams performed more overall shots as a result of converting ball possession in opportunities to score (Griffiths, 1999; Hughes & Franks, 2005; Taylor & Williams, 2002). Bekris and colleagues (2005) findings suggested that teams which perform more shots than their opponents indicate 57.2% winning percentage (Bekris, Louvaris, Souglis, Hountis, & Siokou, 2005).

On-target shots

Similarly to overall shots, many studies examined the soccer factor 'on-target shots' as a success indicator. In the 1998, 2002, 2006, 2010 World Cups as well in 2008 Euro Cup the successful teams performed significantly more on-target shots than the less successful teams (Castellano et al., 2012; Grant, Williams, Reilly, & Borrie, 2009; Janković, Leontijević, & Mićović, 2009; Janković et al., 2011a; Kapidžić et al., 2010; Roxburg 2008). Similarly, in 2005/6 Champions League and Europa League the successful teams performed more on-target shots than the less successful ones (Zubillaga et al., 2007). In the same way, Lago and colleagues (2010) concluded that in Spanish leagues the successful teams performed higher effectiveness and more on-target shots than the less successful ones. In contrast, Acar and colleagues (2009) concluded that the World Cup winner Italy did not differ significantly concerning the number of on-target shots from their opponents (Acar, Yapıcıoğlu , Arıkan, Yalçın, Ateş, & Ergun, 2009).

Shot distance

The shot distance is a factor that affects the result of the game. Specifically, it was found in 2008-9 Bosnia and Herzegovina Premier League that winners revealed higher number of short and long distance shots (Kapidžić et al., 2010). Bekris and colleagues (2013) also added that in Greek Super League the number of short

distance shots was highly related to the final ranking of the team. However, Kapidžić and colleagues (2009) observed that only on-target shots were significantly related to result of the games of 2008 Euro Cup (Kapidžić, Becirovic, & Imamovic, 2009).

Crosses

Number of crosses is highly linked to performance. Specifically, it was found that World Cup winner France used more crosses than their opponents (Griffiths, 1999). Similarly, in 2011/12 Greek Super League the more successful team performed higher number of crosses than the less successful (Bekris et al., 2013). On the contrary, the best 2008/9 Spanish teams used less crosses than their opponents (Lago et al., 2010). The contradictory findings of studies (Hughes, Robertson, & Nicholson, 1988) are probably explained either by qualitative differences of the teams or by statistical insufficient methods that were followed (Low, Taylor, & Williams, 2002).

Corners

Studies showed that in 2008/9 Bosnia and Herzegovina Premier League more successful teams performed higher number of corners than the less ones (Kapidžić et al., 2010). However, researchers did not find any differences among teams that participated in 2008 Euro Cup (Kapidžić et al., 2010) or in Spanish soccer leagues (Lago et al., 2010).

In summary, the literature review revealed the soccer factors which are associated more or less to the final result of a game. However, the researchers of the current study did not find any study about differences of short (i.e. 1-0) and wide range (i.e. 4-0) results. Short range results are probably games that the teams do not differ significantly, whereas a random factor (i.e. defender's mistake, attacker's individual action, referee's decision) is frequently the cause of the final result. Contrary, when the difference of goals scored is greater, randomness do not affects the final result. Therefore, the aim of the current study was to identify the soccer factors that affect the final result of short (difference of goals= 1) and wide range (difference of goals ≥3) results.

Method

Sample

In order to carry out this study, 64 games corresponding to the 2013/14 season of European soccer leagues have been analyzed. The recorded football games were analyzed by two experienced observers. For any conflict in analyses a third one was taking the final decision. The researchers used only the elite leagues of United Kingdom, Germany, Spain and France.

Procedure

The researchers classified the games, regarding the final result, into two categories of 32 games each. The first category included games with one goal difference, while the second included games with a difference of three goals or more. The researchers limited their data only for games without red cards.

Variables

The researchers assessed the following soccer factors: Ball possession, percentage of achieved overall and aerial duels, overall shots, short and long distance shots, on-target shots, overall passes, own-half passing accuracy, opponent's half passing accuracy, overall crosses, crosses accuracy and overall corners.

Statistics

The researchers used the SPSS package (v.17) for the statistical analyses of the data. Descriptive statistics were counted for all the soccer factors. Kolmogorov-Smirnov and Levene's controls were tested the normality and homogeneity respectively ($p > .05$). Then analyses of variance (ANOVA) were used to examine the significance of differences ($p < .10$) between short and wide range wins and defeats. Finally, Tukey's comparisons were used to reveal which groups differentiated from each other.

Results

Data controls

The researchers examined the differences between short and wide range results with the measurements described. The Kolmogorov-Smirnov statistical tests indicated normality in distribution for all the variables ($p > .05$). Similarly, Levene's test also showed homogeneity as the variances of the variables are not significantly different ($p > .05$).

Descriptive statistics-ANOVA-Post Hoc Comparisons

The following tables show the descriptive statistics of soccer factors which are related with short and wide range results (Tables I-II).

Table 1. Soccer factors and the range of final result (I).

	Factors			
Result	Ball possession	Aerial duels	Overall duels	Overall shots
Short wins[1]	51.48 (13.05)	48.68 (12.39)	51.33 (5.28)	14.33 (5.05)
Short defeats[2]	48.52 (13.05)	51.33 (12.39)	48.84 (5.38)	14.67 (4.46)
Wide wins[3]	56.78 (12.16)	55.86 (9.61)	52.45 (5.91)	20.83 (7.16)
Wide defeats[4]	43.22 (12.16)	44.14 (9.61)	47.55 (5.91)	8.00 (3.52)
Anova	2.43**	2.35*	1.91*	12.10****
Tukey's	3>4	3>4	ns	1<3;2>4;3>4
	Short distance shots	Long distance shots	On-target shots	
Short wins[1]	8.00 (4.77)	6.33 (2.71)	5.17 (2.13)	
Short defeats[2]	8.58 (3.34)	6.08 (2.35)	4.17 (2.55)	
Wide wins[3]	13.08 (4.83)	7.75 (4.63)	9.08 (2.94)	
Wide defeats[4]	3.75 (2.01)	4.33 (2.46)	1.83 (1.19)	
Anova	11.42****	2.33*	20.80****	
Tukey's	1<3;2>4;3>4	3>4	1<3;2>4;3>4	

**** p<.001; *** p<.01; ** p<.05; * p<.10

Table 2. Soccer factors and the range of final result (II).

	Factors		
Result	Shot accuracy	Own-half passing accuracy	Opponent-half passing accuracy
Short wins[1]	37.45 (14.79)	87.23 (7.20)	65.66 (7.47)
Short defeats[2]	28.15 (15.71)	85.82 (6.94)	62.45 (9.22)
Wide wins[3]	44.98 (9.44)	90.97 (6.51)	73.84 (9.73)
Wide defeats[4]	27.86 (24.91)	90.00 (5.76)	64.83 (7.03)
Anova	2.76**	1.56	4.14***
Tukey's	3>4	Ns	1<3;3>4
	Overall passes	Overall crosses	Corners
Short wins[1]	413.08 (133.78)	22.25 (9.79)	6.50 (3.53)
Short defeats[2]	387.33 (129.85)	25.58 (8.94)	7.58 (3.87)
Wide wins[3]	573.08 (161.88)	18.42 (8.61)	6.25 (2.60)
Wide defeats[4]	421.33 (106.72)	11.83 (6.29)	2.75 (1.82)
Anova	4.70***	5.78***	5.62***
Tukey's	1<3; 3>4	2>4	2>4;3>4

**** p<.001; *** p<.01; ** p<.05; * p<.10

The results (tables I-II) showed that teams which achieved wide range wins perform higher rates of overall passes (p< .05), opponents' half passing accuracy (p< .10), overall shots (p< .05), short-distance shots (p< .01) and on-target shots (p< .001) than teams which achieved short range wins. On the other hand, teams which defeated with only one goal perform higher rates of overall shots (p< .05), short-distance shots (p< .05), on-target shots (p< .10), corners (p< .01) and overall crosses (p< .001), than teams which defeated with more goals. Regarding differences between teams in short range results the analyses did not show any significant difference between winners and losers. However, significant differences between teams were found concerning wide range results. Specifically it was found that teams which achieved wide range wins perform higher rates of ball possession (p< .05), aerial duels (p< .10), overall passes (p< .05), opponents' half passing accuracy (p< .05), overall shots (p< .001), short distance shots (p< .001), long distance shots (p< .05), shot accuracy (p< .10), on-target shots (p< .001) and corners (p< .05), than teams that defeated.

Discussion

Ball possession

Regarding the ball possession, as expected, the teams differed significantly in *wide range results*. Specifically, the percentage of ball possession for the winners reached a 57% while it reached a 43% for losers. Conversely, in *short range results* the teams performed similar amount of ball possession. Although winners frequently revealed shorter possession than losers, in average scores they prevailed with only 2% of difference.

Therefore, the decline in this difference in short range results might have been caused by the fact that the teams adapt their strategies in order to make the game drawn. Literature review also supports this explanation (Bloomfield et al., 2005, Jones et al., 2004, Lago et al., 2010; Sasaki et al., 1999). The current study agrees with past finding regarding the *wide range results* in which losing teams are not able to approach ball possession of winning teams (Lago et al., 2010). Lago and Martin (2007) added that lower quality for one team the greater possession for the opponent. According to the findings and the literature review, ball possession is not only an attacking strategy but also a defensive one by preventing the opponent of scoring. However, possession must be supported by high level of technical and tactical skills (Roxburg, 2008). To sum up, higher ball possession ensures a wide range win.

Aerial & overall duels

Significant differences were observed between teams of *wide range results* regarding aerial duels. Specifically, it was reported 56% of successful aerial duels for the winners but only 44% for the losers. In contrast to the above finding the teams did not differentiate at all in *short range results*. Thus the findings revealed that aerial skills affect the final result of a game. Additionally, Buraczewski (2009) suggested that top level teams present high successful rates of aerial skills. High quality and expertize training in such skills (i.e. heading, strength) might influence the final result. As far as the overall duels, although no significant differences were found between teams, the analyses showed a significant overall difference. The winners of *wide range results* presented higher percentage than losers on overall duels (around 4% more). In summary, the findings suggest that 1 Vs 1 duels affect the result.

Overall passes & passing accuracy

The findings indicated a significant difference between teams in *wide range results*. Indeed the winners performed around 150 passes more than losers did. In support of this finding the winners of *wide range results* performed significantly more passes than winners of *short range results*. On the other hand, no difference was found between teams in *short range results*. Seeing that past literature revealed differences between winners and losers regarding their overall passes (Grant et al., 1999; Janković et.al., 2011a; Kapidžić et. al., 2010; Reed, 2004; Szwarc, 2007), the current study adds that the range of final result might affect this relationship. This finding probably explains the reason for which Szwarc (2004) concluded that successful teams sometimes do not perform higher overall passes than the less successful ones. The literature review also showed that only the top level teams differed in this factor from the less successful (Bekris et al., 2013; Kapidžić, et al., 2010). Scoulding and colleagues (2002) added that mid-level teams perform many passes in their defending area (Scoulding, James, & Taylor, 2002). Thus, passes is suggested to be used correctly in a way to produce more opportunities for shooting. In conclusion the study suggests that overall passes is a factor that affects the range of final result, finding that probably explains the conflict of previous studies. The results did not demonstrate any difference between teams in *wide* or *short range results* regarding the overall passing accuracy. Although literature review supported this finding (Janković et al., 2011a), other studies concluded higher rates for successful teams (Janković et al., 2011b) while other indicated lower rates for successful teams (Balyan, Vural, Çatıkkaş, Yücel, Afacan, & Atik, 2007). One explanation for this conflict came by Bekris and colleagues (2013) who suggested that the level of teams affect this relationship. To sum up the findings suggest that passing accuracy does not affect the final result.

Own-half & opponent-half passing accuracy

The findings showed that own-half passing accuracy is not related to the final result. This is probably explained by the fact that in own half, more defenders participate in passing process and consequently they reveal high passing accuracy regardless the score of the game. Regarding the opponent-half passing accuracy the study indicated a difference between teams only in *wide range results*. The opponent-half passing accuracy percentage was 74% for the winners while it was 65% for the losers. Furthermore, winners of *wide range results* performed higher opponent's half passing accuracy than winners of *short range results*. On the contrary in *short range results*, the 66% of the winners' passing accuracy was not significantly different from the losers' 62%. Bergier and Buraczewski (2007) added that accurate passes benefit not only the ball possession but also the shot opportunities. It is obvious that high opponent-half passing accuracy is a significant factor that affects the final result.

Overall shots

The analyses revealed a significant difference between winners and losers only in *wide range results* regarding the overall shots. In contrast there was not any difference between teams in *short range results*. Furthermore, the winners of *wide range results* performed significantly more shots than winners of *short range results* as well as the losers of *short range results* performed more shots than losers of *wide range results*. Previous findings suggested that successful teams perform more overall shots than the less successful ones. However the researchers included all the results regardless the score difference (Armatas et al., 2009; Castellano

et al., 2012; Hughes & Franks, 2005; Janković et al., 2011a; Lago et al., 2010; Rampinini et al., 2009; Sajadi & Rahnama, 2007; Szwarc, 2004). Findings of the current study agree with Bekris and colleagues (2013) who suggested that only the champion differ significantly from the other teams. The current study concludes that as the qualitative difference between teams grows, and therefore the score range, the more obvious is the difference in overall shots.

Short & long distance shots

The study also examined the shot distance. The results showed that teams differed significantly regarding both short and long distance shots. Specifically, *wide range* winners performed more short and long distance shots than the losers did. Furthermore, *wide range* winners and *short range* losers recorded more short distance shots than *short range* winners and *wide range* losers. However, no differences were found in *short range results* neither in short nor in long distance shots. Although some studies indicated the relationship between result and one of these factors other concluded a relationship with both short and long distance shots (Bekris et al., 2013; Kapidžić et al., 2009; Kapidžić et al., 2010). This conflict is probably explained by the different level of the comparing teams.

Shot accuracy & On-target shots

One more factor that the current study examined was the shot accuracy. The results showed that winners of *wide range results* dominated in shot accuracy with a 45%, percentage higher than the losers' one of 28%. In contrast, in *short range results* the difference between winners and losers was not significant. Similarly, concerning the on-target shots only the winners of *wide range results* performed significantly better rates than the losers did. On the other hand, in *short range results* the difference was not significant. Furthermore, winners of *short range results* performed significantly less on-target shots than the winners of *wide range results* while the losers of *short range results* performed significantly more on-target shots than the losers of *wide range results*. Although previous studies suggested that shots on-target affect the final result (Castellano et.al., 2012; Grant et al., 1999; Janković, et al., 2011b; Janković et al., 2009; Kapidžić et al., 2010; Lago et al., 2010; Roxburg, 2008; Zubillaga et al., 2007), the current findings add that shots on-target affect only the wide range results. It is probably explained by the fact that wide range winners perform shots under better conditions because of greater technical and tactical skills than their opponents. Therefore, it is obvious that wide range wins linked with overall shots, short and long distance shots, as well as shot accuracy and on-target shots.

Corners

Regarding the number of corners, the results showed that *wide range* winners performed significantly more corners than the losers did. In contrast, there was not any difference in corners between winners and losers of *short range results*. It is obvious that corners differ significantly when the defeated teams lose with many goals, finding that highlights losers' weaknesses to avoid granting corners to their opponents. By combining findings of previous studies (Kapidžić et al., 2010; Lago et al., 2010) the current study concludes that the number of corners is a factor that indicates the qualitative difference between two teams. Additionally, losers of *short range results* performed significantly more corners than losers of *wide range results*.

Overall crosses & Crosses accuracy

The overall crosses as well as the crosses accuracy did not differ significantly between teams regarding the *range of the result*. This may be explained by the fact that wide range winners use more frequently a short distance passing game with high accuracy that was already found in "opponent-half passing accuracy" factor. Lago and colleagues (2010) also suggested that winners perform less crosses than losers do, finding that agrees with current study which indicates that crosses are not related to the result. However, the study showed that losers of *short range results* performed higher rates of overall crosses than losers of *wide range results*. Seems that when a team loses by one goal, trying to score, use more the attacking style of crosses than a team that loses by many goals.

Conclusion

The current study concludes that in top level games the winners of wide range results differed significantly from losers in many soccer factors. Specifically, in wide range results the overwhelming ball possession of winners, leads to higher passing accuracy on the opponent-half, higher number of overall shots (short and long-distance) as well as on-target shots. Furthermore, 1 vs 1 aerial and overall duels heighten the win possibilities. Therefore, soccer coaches should emphasize in practicing individual ball possession skills as well as team cooperation abilities of attacking play such as ball possession under pressing conditions, ball possession against more players in opponent-half, and attacks against organized defense. Furthermore, 1 vs 1 and shooting effectiveness training games are suggested. Obviously, whether coaches take in mind the above suggestions they will reduce the possibility of losing a game by unpredictable factors. Definitely, they will improve the conditions for greater victories. Correspondingly, coaches of weaker teams should emphasize more in improving the factors

that affect the result range of a game. In summary, the researchers agree with Lago's (2007) findings regarding the non-significant differences between teams of similar level. The current study adds that differences between winners and losers exist mainly in wide range results.

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