

Passing Success Percentages and Ball Possession Rates of Successful Teams in 2014 FIFA World Cup

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Abstract

This study was conducted to examine the ball possession and passing success percentage of successful teams in 2014 FIFA World Cup. The data were obtained from international TV channels publishing competitions and the database of the website of the Fédération Internationale de Football Association - FIFA through official overviews of the games. So the parameters such as ball possession percentages, passing attempted, passing success percentages, accurate and non-accurate passes of successful teams in matches were analyzed. These performance indicators were analyzed by e-Analyze Soccer computer program. The data obtained in this study was recorded in SPSS 16.0 program and interpreted by calculating frequency and percentage values. Ball possession percentages of the successful teams vary between 50.32% and 56.71%. Among 17102 passing attempts of successful teams, it was determined that 13378 were successful having a high rate of passing success such as 78.22%. As a result, in the organizations such as World Cup which elite athletes participated, while successful teams had high rates of the ball possession it can be said that having the ball in midfield and offensive region and passing attempt, successful passing scores, passing success percent at a high level are the most basic principles that bring success.

Keywords: Soccer, World Cup, Successful Teams, Analysis

2014 FIFA Dünya Kupasının Başarılı Takımlarında Pas Başarı Yüzdeleri ve Topa Sahip Olma Oranları

Özet

Bu çalışma, 2014 FIFA Dünya Kupasının başarılı takımlarında topa sahip olma ve pas başarı yüzdelerinin incelenmesi amacıyla yapılmıştır. Araştırma verileri, müsabakaları yayımlayan uluslararası TV kanalından ve FIFA (Fédération Internationale de Football Association) resmi internet sitesinden elde edilmiştir. Müsabakalarda başarılı takımların topa sahip olma yüzdeleri, pas girişimleri, olumlu ve olumsuz pas sayıları gibi teknik parametrelerin dağılımları analiz edilmiştir. Elde edilen veriler SPSS 16.0 programında kaydedilmiş, frekans ve yüzde değerleri hesaplanarak yorumlanmıştır. Dünya kupasının başarılı takımlarında topa sahip olma yüzdelerinin %50.32 ile %56.71 arasında değiştiği tespit edilmiştir. Başarılı takımların 17102 pas girişiminin 13378'inde başarılı olarak %78.22 gibi yüksek bir pas başarı yüzdesine sahip oldukları belirlenmiştir. Sonuç olarak, Futbol Dünya kupası gibi üst düzey sporcuların katıldığı organizasyonlarda, başarılı takımların yüksek topa sahip olma oranlarına sahip olurken, topa daha çok orta saha ve hücum bölgelerinde sahip olmaları, bununla birlikte pas girişimi, başarılı pas sayıları ve pas başarı yüzdelerinin oldukça yüksek düzeyde olmasının başarıyı da beraberinde getiren en temel unsurlardan olduğu söylenebilir.

Anahtar Kelimeler: Futbol, Dünya Kupası, Başarılı Takımlar, Analiz

Introduction

Soccer is the world's most popular form of sport, being played in every nation without exception. The most widespread code is association football or soccer. The sport has a rich history though it was formalized as we know it today by the establishment of the Football Association in 1863. The game soon spread to continental European countries and later to South America and the other continents. The world's governing body, the Federation of the International Football Association (FIFA), was set up in 1904 and the first Olympic soccer competition was held 4 years later. Uruguay played host to the first World Cup tournament in 1930. This competition is held every 4 years and is arguably the tournament with the most fanatical hold on its spectators and television audiences. So far, only eight nations have won the tournament - Uruguay, Argentina, Brazil, Germany, England, Italy, France and Spain. Whilst they may represent the top teams at elite level, the popularity of the game is reflected in the millions who participate in soccer at lower levels of play (Reilly and Williams, 2003).

World Cup Soccer matches refer to the level of designations of improvement. Especially, the World Champion team's technical analysis would prove to designate the necessity of the level of soccer that is being played in the world (Balyan et al., 2007). Statistical techniques are applied to every aspect of life with technological advances. For example, implementation of various analysis techniques has attracted the interest of researchers in the fields assessing of sport competitions. Although, soccer is the world's most popular sport, use of statistical methods has recently started for data evaluation (Cengiz and Kilinc, 2007). In order to run a game tactically, high level knowledge is required from and by coaches and analysis experts (Perl, Grunz and Memmert, 2013).

Match analysis describes sports behaviors at this level of performance outcome, coding the actions of individuals or groups in technical terms that have relevance to players and coaches (McGarry and Franks, 2003). The analysis of performance is vital in soccer if the individual or team is to be successful. For many soccer coaches the information gained from performances will not only form the basis of weekly training programmes, but also may act as the primary source for the scheduling of seasonal plans (Carling, Williams and Reilly, 2005). For soccer analysis, some of these systems provide game-related statistics about players' actions (such as control, passing, shots on goal, fouls, etc.) that may provide valuable information about the performance of successful and unsuccessful teams during a match (Moura, Martins and Cunha, 2013). We may also add ball possession and passing success percentage to the list. In literature, it is also noted that there are many studies (Araya et al, 2013; Bradley et al, 2013; Castellano et al, 2012; Collet, 2013; Lago et al, 2007; Lago et al, 2010; Parziale et al, 2013; Redwood-Brown, 2008) examining the percentage of ball possession and passing success in soccer.

Ball possession is one of the most commonly studied performance indicators, though its relationship to team performance requires further clarification (Lago and Martin, 2007; Castellano, Casamichana and Lago, 2012). Ball possession does not guarantee winning, but it means setting the pace and rhythm of the game and, most importantly, it forces the opponent to do lots of running. The world's best teams distinguish themselves by nearly perfectly safeguarding and handling the ball in all game situations. They are masters at steadily building their game from the back under pressure (Schreiner and Elgert, 2013). As the struggle for ball possession is a key element of play strategy or tactics in elite soccer matches, analysis of the non-linear evolution and transitions of passing sequences of teams may yield information about their play organization (Cotuk and Yavuz, 2007). Therefore, this study was

conducted to examine the ball possession and passing success percentage of successful teams in 2014 FIFA World Cup.

Materials and Methods

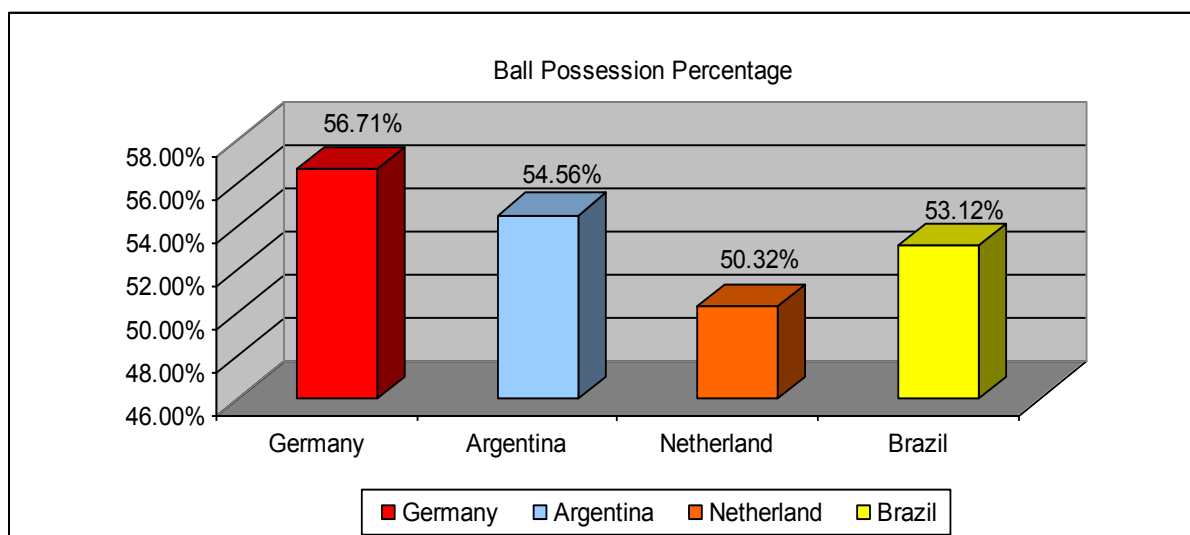
In this study, data were collected from matches played in the 2014 FIFA World Cup in Brazil. The data were obtained from international TV channels publishing competitions and the database of the website of the Fédération Internationale de Football Association - FIFA (www.fifa.com) through official overviews of the games. The study was developed through the variables analysis:

- a) Ball possession percentages, ball possession percentages according to the regions
- b) Passes attempted, passing success percentages, accurate and non-accurate passes

These performance indicators were analyzed by e-Analyze Soccer computer program. The data obtained in this study was recorded in SPSS 16.0 program and interpreted by calculating frequency and percentage values.

Results

This study was conducted to examine the ball possession and passing success percentage of successful teams in 2014 FIFA World Cup. So the parameters such as ball possession percentages, ball possession according to the regions, accurate pass percentages, accurate and non-accurate passes were analyzed and presented in tables.



Graph 1. Ball possession percentages of the successful teams

Ball possession percentages of the successful teams in the World Cup vary between 50.32% and 56.71%. The highest rate belongs to the German National Team which is the Champion of the 2014 FIFA World Cup tournament.

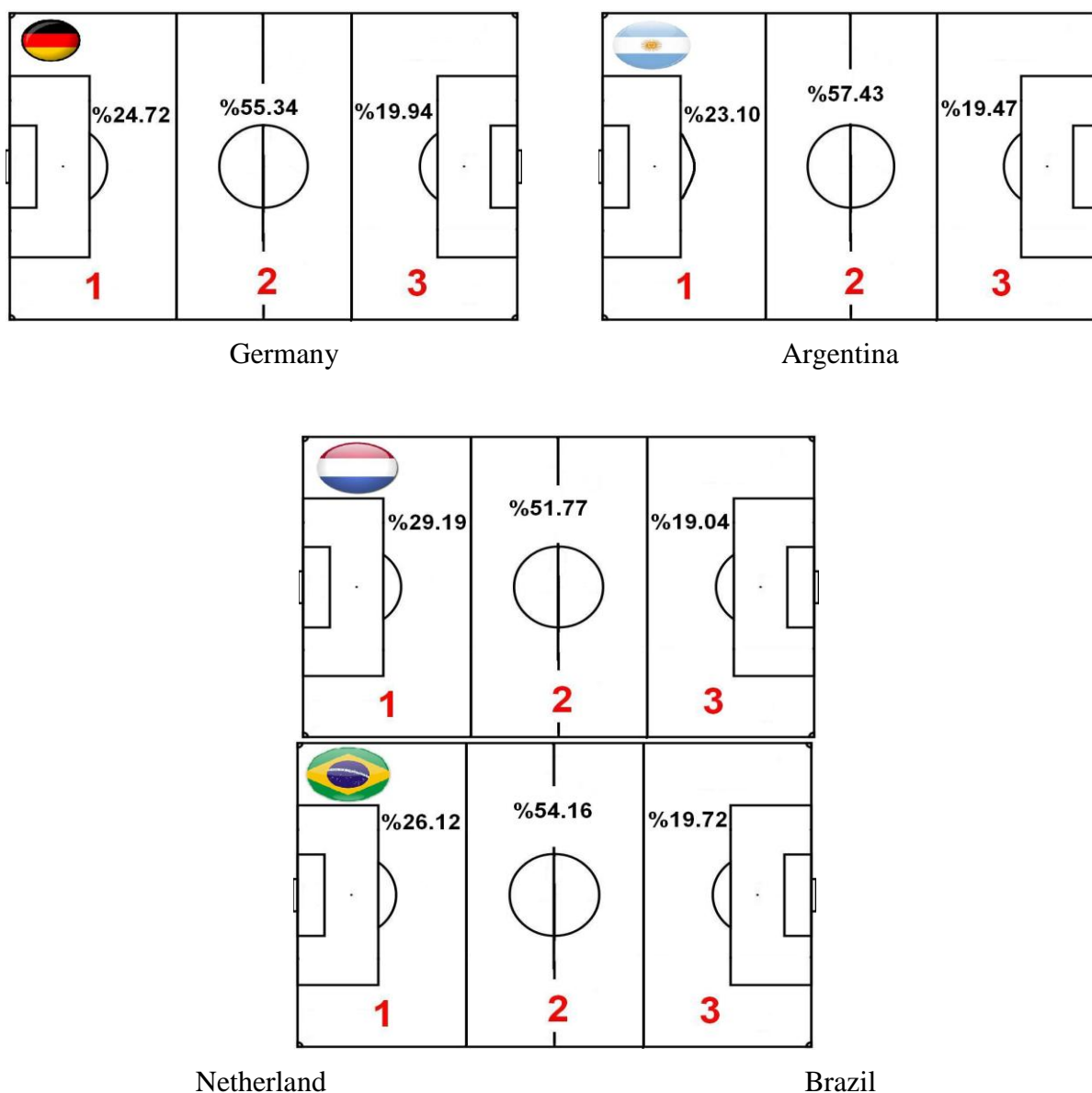


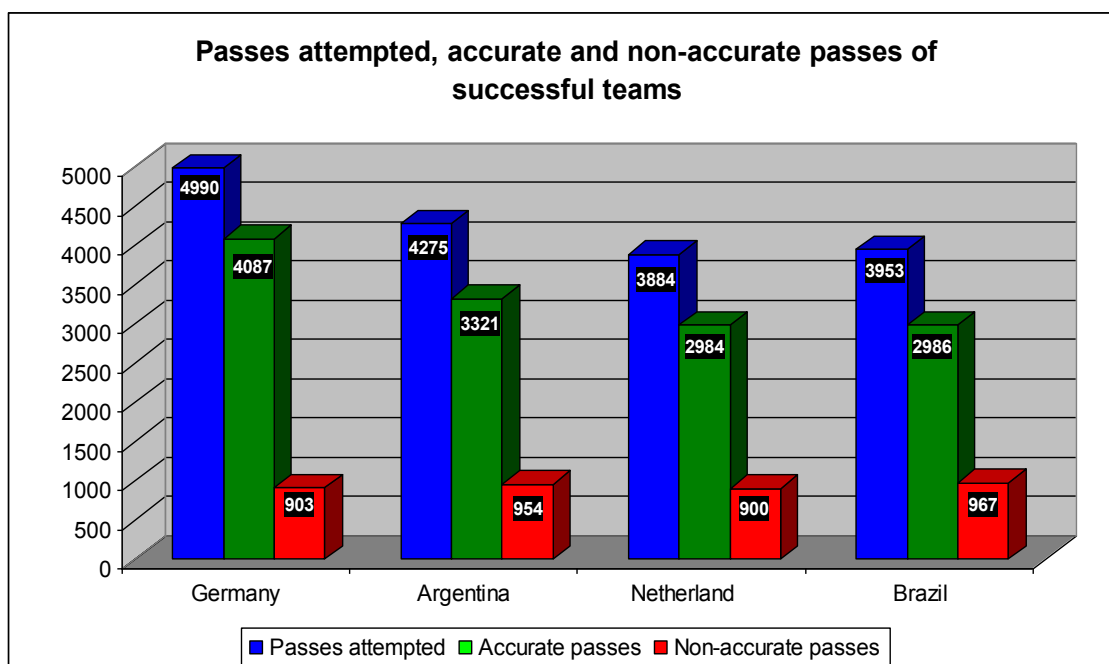
Figure 1. The percentages of ball possession of the successful teams according to regions

The possession of ball by region of the successful team in the World Cup was examined. It was determined that number one region in defensive field, it was between 23.10% and 29.19%. Number two region in midfield, it was 51.77% and 57.43% and number three region in offensive field, it was 19.04% and 19.94%.

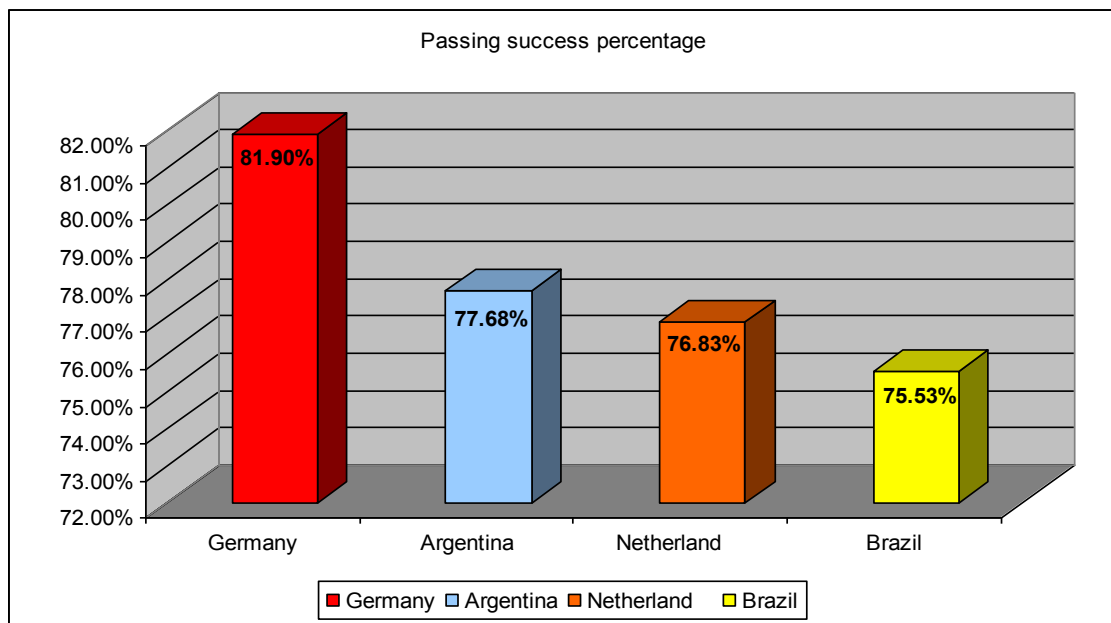
Table 1. Passes attempted, accurate and non-accurate passes, and passing success percentage of successful teams

Team	Passes attempted	Accurate passes	Non-accurate passes	Passing success percentage
Germany	4990	4087	903	% 81.90
Argentina	4275	3321	954	% 77.68
Netherland	3884	2984	900	% 76.83
Brazil	3953	2986	967	% 75.53
Total	17102	13378	3724	% 78.22

Among 17102 passing attempts of successful teams in World Cup, it was determined that 133378 were successful having a high rate of passing success such as 78.22%.



Graph 2. Passes attempted, accurate and non-accurate passes of successful teams



Graph 3. Passing success percentage of successful teams

When passing success percentage of successful teams in 2014 FIFA World Cup was examined, World Cup champion Germany had the highest passing success percentage with 81.90%. At the end of the tournament, Argentina (77.68%), Netherlands (76.83%) and Brazil (75.53%) with the possession of the close rates on accurate passes, have been lined up together.

Discussion and Conclusion

This study was conducted to examine the ball possession and passing success percentage of successful teams in 2014 FIFA World Cup. Ball possession percentages of the successful teams in the World Cup vary between 50.32% and 56.71%. The highest rate belongs to the German National Team which is the Champion of the 2014 FIFA World Cup tournament. Regarding the ball possession rates according to the areas, Argentina has the lowest rate with 23.10% and the Netherlands has the highest with 29.19% in the area number 1 which is the defensive area. The ball possession percentage of the all successful teams in midfield which is number two region is more than 50%. Similarly, in number three region which is offensive field it is between 19.04% and 19.94%. Amongst the most successful teams in the World Cup, Germany had the highest rate (81.90%) of accurate passes and pass attempts, Argentina had the second place with 77.68%, Netherlands had the third place with 76.83% and as owning the fourth place Brazil followed the first three with the rates of 75.53% on accurate passes. The teams in top four in the World Cup had the high rate of ball possession. Moreover, they had the ball in midfield more than other fields. Depending on this, it can be said that the high rate in their passing success percentages were the most important performance parameters in high level of tournaments.

In soccer, the ability to retain possession of the ball for prolonged periods of time has been suggested to be linked to success (Lago-Peñas and Dellal, 2010). In the study of Araya and

Larkin (2013) examining the differences between the soccer teams in top ten and last ten in 2012/2013 season of the English Premier League, ball possession percentage of the top ten successful teams was found to be $53.48 \pm 4.96\%$. In the study of Bradley, Lago-Penas, Rey and Diaz (2013) it was found that passing success percentage of the teams which had the high percentage of possession of ball in English Premier League was $80.8 \pm 10.3\%$ and stated that this percentage was much higher than the teams that had the low percent possession of the ball. Castellano, Casamichana and Lago (2012) examined the differences between successful and unsuccessful teams in the World Soccer Cup and found that in world cup matches, ball possession percentage of the teams winning competitions in 2006 World Cup was $52.4 \pm 7.2\%$, in 2010 World cup it was $52.4 \pm 6.0\%$. Lago-Ballesteros and Lago-Peñas (2010) found that the ball possession percentage as 55.57% for the top 4 clubs in Spain Soccer League.

In the study of Collet (2013), it was emphasized that there was an important correlation between team success and passing and moreover there was a strong correlation between the possession of ball more and passing scores. Lago and Martin (2007) found that the teams' possession of ball in Spanish Soccer League were higher in the winning and drawing matches compared to the defeated matches. In the study of Parziale and Yates (2013) on the value of the ball possession, when a team in English Premier League had the ball possession more than 64%, it was found that there was a positive correlation between the percentage of ball possession and winning the match. Clemente (2012) it was found that the most successful teams in the FIFA World Cup 2010 realized more passes per match than other teams. According to the Lago-Peñas, Lago-Ballesteros and Rey (2011), winning teams in UEFA Champions League significantly have higher ball possession percentages and successful passes values than drawing and losing teams.

In soccer, for a goal to be scored a team usually has to have possession of the ball (Lago-Peñas and Dellal, 2010). According to the Castellano, Casamichana and Lago (2012) the effectiveness of attacking play and ball possession appear to be the performance indicators that constitute the keys to success in today's soccer. Vogelbein, Noop and Hokelmann (2014) emphasized in their study analyzing the Germany Bundesliga Soccer League in 2010/2011 season, the percentage of ball possession was an important indicator to have a successful performance.

In this study, the successful teams of FIFA 2014 World Cup have high rates in the criteria of the ball possession and passing success that are basic principles of success in soccer. As a result, in the organizations such as Soccer World Cup which elite athletes participated, while successful teams had high rates of the ball possession it can be said that having the ball in midfield and offensive region and passing attempt, successful passing scores, passing success percent at a high level are the most basic principles that bring success.

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