FOOTBALL OF THE FUTURE THROUGH THE ANALYSIS OF 2014 FIFA WORLD CUP

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ABSTRACT

This study was conducted to interpret the football of the future by analyzing eight teams that qualified for quarter finals in 2014 FIFA (Fédération Internationale de Football Association) World Cup. Research data were obtained from Instat analysis system together with the international TV channel broadcasting the matches and the official FIFA web site to analyze each of the 51 different items defined by the researchers. Technical parameters such as the distribution of goals scored and conceded according to time frames, ball possession ratios according to the regions, shots taken, shots on target, successful and unsuccessful passes in the matches etc. were analyzed. The data obtained were recorded to SPSS program and interpreted by calculating frequency and percentage values. The champion of 2014 World Cup was Germany, Argentina took the second place and Netherlands had the third place. As a result of the analysis, it was seen that success is not coincidence and the ranking should also be like this. One of the main, most important issues in the championship is the lack of fundamental training of players in terms of individual, group and team tactics.

Keywords: Analysis, Football, World Cup

2014 FIFA DÜNYA KUPASI ANALİZİYLE GELECEĞİN FUTBOLU

ÖZET

Bu çalışma, 2014 FIFA Dünya Kupasında çeyrek finale kalan sekiz takımın analizi yapılarak geleceğin futbolunu yorumlamak için yapılmıştır. Araştırma verileri, Instat analiz sistemi ile birlikte müsabakaları yayımlayan uluslararası TV kanalı ve FIFA resmi internet sitesinden her takım için araştırmacıların belirlediği 51 farklı parametrenin analizi için elde edilmiştir. Müsabakalarda, atılan ve yenilen gollerin zaman dilimlerine göre dağılımı, bölgelere göre topa sahip olma yüzdeleri, atılan şut, isabetli şut, başarılı ve başarısız pas sayıları gibi teknik parametrelerin dağılımları analiz edilmiştir. Elde edilen veriler SPSS programında kaydedilmiş, frekans ve yüzde değerleri hesaplanarak yorumlanmıştır. 2014 Dünya kupası şampiyonu Almanya ikinci Arjantin ve üçüncü Hollanda olmuştur. Yapılan analiz sonucunda başarının tesadüf olmadığı ve sıralamanın da böyle olması gerektiği görülmüştür. Şampiyonada öne çıkan en önemli ve ana konularından biri de sporcuların bireysel, grup ve takım taktiği konusundaki temel eğitim eksiklikleridir.

Anahtar kelimeler: Analiz, Dünya Kupası, Futbol

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INTRODUCTION

Football is undisputedly the most popular sports in the world today [1] and success in football requires high-level technique, tactics and physical skills [2,3]. The money spent in sports and sponsorships have increased the attention in this sector and made it an ever growing industry. In such a case, sports branches taking advantage of the technological opportunities is an inevitable result. Such that, when the training scientists are utilizing tools and materials of new technology in creating athletes of the future in sports laboratories, they are trying to develop new sports systems by analyzing matches in computer environment [4].

In the last decade, analysis applications became more popular among sports and exercise scientists to understand different performance indicators in individual and team sports. Many analysts working in various levels have used analysis for many objectives including technical-tactical evaluation, movement analysis, providing feedback, norm improvement and modeling [5,6]. A well-designed analysis system provides the trainers with correct and reliable information in bulk and is effective on the next application and performance. If the capacities of player and team performance are to be improved, feedback within training process is vital. Therefore, analysis of performance parameters is one of the most important factors to ensure required quality [7,8].

For the effective use of performance in football, teams require to use the skills and strategies of their players in top level. In team sports such as football, evaluation of performance is more difficult compared to individual sports [7].

It is quite important to define and understand relevant parameters to analyze collective performance of the teams and ensure the observation achieves basic objectives in football [8,9]. Many analysts working in various levels have used analysis for many objectives including technical-tactical evaluation, movement analysis, providing feedback, norm improvement and modeling [5,6]. Match analysis means examining and objectively recording of events happening during the match. It may be focused on the activities of a single player as well as covering all actions and movements of players around the ball [7]. Match analysis is the main research topic in studies concerning football. Because, the analysis systems used to analyze matches in football may provide useful data on statistics of actions of players such as shooting, committing foul, passing, ball control related to the match and performance

indicators of successful or unsuccessful teams [10,11]. An indicator of a performance parameter is gathering or selecting of data for the purpose of identifying all or a few different aspects of performance [12]. In team sports such as football, performance indicators are technical parameters such as goals scored and conceded, possession ratio, shots taken, shots on target, corner kicks, successful and unsuccessful passes [8,9,13].

The interpretation made based on these numerical values may misguide people and using this alone is not enough to evaluate the performance of a team or football player. During the observation and analysis of matches, the quality of movements that the football players exhibit is more important than the quantity of those. In other words, the number of effective sprints that a football player performs to active areas is more valuable than the total running distance, or the number of effective passes delivered towards the forward and side is more crucial than the number of total passes. Therefore, we made observations of the behaviors required from the players as well as numerical analysis of eight teams that played quarter finals in 2014 FIFA (Fédération Internationale de Football Association) World Cup held in Brazil. Moreover, we tried to form an opinion on how the future players of the teams that best present the team performance should be. In this context, this study was performed with the aim of analyzing eight football teams that made it to quarter finals in 2014 FIFA World Cup in terms of different variables and how future players should be.

METHODS AND PROCEDURES

Notational analysis is frequently used method for the quantitative assessment of football matches as it is in this study. For this purpose, Instat analysis software (Instat, Moscow, Russia, version 3.0) was used to obtain research data among the 51 different items determined by the researchers for each team. The software tracks the entire field of play across the length and width by 16 cameras to capture the movement of each player during the match. Then, the statistical data about technical and tactical parameters such as goals scored and conceded, effective attack forms, ball possession ratios, amount, duration, locations and distribution of attacks, distribution of shots taken, passing distribution of teams, attack attempts of teams, distribution of tackling of teams and repossession ratios of teams were obtained from the software. In the light of these technical data, to identify the characteristics of future players, we tried to determine the positive movements of players by watching the matches all over again from the recorded media. Especially, the evaluations of

final preferences of players were analyzed by observation method on the images from international TV channels broadcasting the matches and the official FIFA website using pen and paper. Only the normal duration of the matches was taken into account when the results were presented, therefore extra time was ignored.

All the data obtained in the study were analyzed by SPSS program (IBM, New York, USA, version 21.0) and results were expressed as frequency and ratio values.

RESULTS

In this study, competition performance of 2014 FIFA World Cup had been analyzed in terms of different variables. The findings obtained were presented in the following tables.

Table 1. Goals scored in time zones

Teams	Total goals scored	0-15 min.		15-30 min.		30-45 min.		45-60 min.		60-75 min.		75-90 min.	
	f	f	%	f	%	f	%	f	%	f	%	f	%
Germany	18	3	16,7	4	22,2	2	11,1	2	11,1	2	11,1	2	11,1
Argentina	8	3	37,5	-	-	1	12,5	1	12,5	1	12,5	1	12,5
Netherlands	15	1	6,7	2	13,3	1	6,7	2	13,3	3	20,0	6	40,0
Brazil	11	1	9,1	3	27,3	1	9,1	1	9,1	2	18,2	3	27,3
Colombia	12	1	8,3	2	16,7	-	-	3	25,0	2	16,7	4	33,3
France	10	-	-	2	20,0	2	20,0	1	10,0	3	30,0	2	20,0
Belgium	6	-	-	-	-	-	-	-	-	1	16,7	3	50,0
Costa Rica	5	-	-	-	-	1	20,0	3	60,0	-	-	1	20,0

Germany stands out as the team with most goals and as the team that scored most in the first 30 minutes and in overtime. Netherlands stands out as the team that scored most in the last 30 minutes and Belgium as the team that couldn't score at all in the first half.

Table 2. Goals conceded in time zones

Teams	Total goals conceded	0-15 min.		15-30 min.		30-45 min.		45-60 min.		60-75 min.		75-90 min.	
	f	f	%	f	%	f	%	f	%	f	%	f	%
Germany	4	-	-	-	-	-	-	1	25	1	25	1	25
Argentina	4	1	25	-	-	-	-	1	25	-	-	1	25
Netherlands	4	-	-	2	50	-	-	2	50	-	-	-	-
Brazil	14	3	21,4	6	42,9	1	7,1	-	-	1	7,14	3	21,43
Colombia	4	1	25	-	-	1	25	-	-	2	50	-	-
France	3	1	33,3	-	-	-	-	-	-	-	-	2	66,67
Belgium	3	1	33,3	1	33,3	-	-	-	-	-	-	-	-
Costa Rica	2	-	-	1	50	-	-	-	-	-	-	1	50

Germany was the team that never conceded a goal in the first half whereas Brazil conceded most goals in the first half. However, Belgium was the team that never conceded a goal in the second half; Germany, Argentina and Costa Rica were the teams that conceded one goal in the last 15 minutes of the matches.

Table 3. Ball possession times

Teams	Total time of ball possession			Ball poss. <5s	Ball poss. 5-15s	Ball poss. 15-45s	Ball poss. >45s
	(min.)	%	f	f	f	f	f
Germany	35:33	58	127	38	42	37	10
Argentina	32:47	54	133	40	48	38	7
Netherlands	30:04	51	122	38	44	34	6
Brazil	27:01	52	125	41	48	32	3,6
Colombia	22:26	47	119	47	47	22	3
France	27:21	54	121	43	41	34	3,4
Belgium	28:59	53	133	44	49	35	4,8
Costa Rica	23:13	40	126	50	46	28	2,2

When the ball possession ratios were taken into consideration, Germany had the highest ratio by 58% average in the matches played during the championship and it was followed by Argentina by 54%.

Table 4. Type of attacks

Teams	Total attacks	Positional attacks	Counter attacks	Set-pieces attacks	Left flanks	Center	Right flanks
	f	f	f	f	f	f	f
Germany	97	70	17	10	23	32	32
Argentina	98	69	17	12	24	36	25
Netherlands	85	61	15	9	24	25	25
Brazil	93	63	18	12	26	31	23
Colombia	79	52	15	12	21	24	23
France	90	64	15	11	29	24	26
Belgium	100	67	19	15	26	26	33
Costa Rica	85	58	18	9	20	29	26

When the offensive styles of teams are examined, it was seen that Germany set deep playmaking, used center and right wing while Belgium and Netherlands played counter-attack football.

Table 5. Distribution of shots taken

Teams	Shots	Shots on target	Wide	On the bar	Blocked	From the box	From box on target
	f	f	F	f	f	f	f
Germany	14	7	3,7	0,1	3,3	9	4,7
Argentina	15	5	6	0,3	3,9	9	3,3
Netherlands	12	6	3	0,4	3	7	3,9
Brazil	15	6	5	-	4,1	8	3,7
Colombia	11	4,4	3,2	-	3	5	2,6
France	17	7	6	0,8	3,6	11	7
Belgium	18	7	6	0,4	4,4	9	4,2
Costa Rica	7	2,6	3,6	-	1,2	4,6	1,2

The teams that took most shots were arranged as Belgium, France, Brazil, Argentina, Germany, Netherlands, Colombia and Cost Rica, respectively. However, the team that took the most shots from box on target was Germany.

Table 6. Accurate passes

Teams	Accurate passes	Short accurate passes	Middle accurate	Long accurate	Non-attacking accurate	Attacking accurate	Extra attacking accurate	Key accurate
	%	%	%	%	%	%	%	%
Germany	86,43	87,57	87,92	62,86	98,71	77,23	66,67	43,00
Argentina	83,83	84,17	86,33	57,14	98,91	71,08	62,86	41,43
Netherlands	82,95	82,61	86,39	56,25	98,74	70,22	65,00	52,00
Brazil	82,94	81,90	86,27	65,79	98,03	71,66	62,86	44,29
Colombia	80,79	80,90	82,88	68,75	97,73	71,55	79,17	48,00
France	85,09	87,30	86,74	64,52	99,06	76,71	75,00	46,67
Belgium	82,32	82,52	85,04	63,04	99,45	72,67	77,27	45,00
Costa Rica	79,25	84,44	82,01	55,10	97,53	68,58	64,71	40,00

When the accurate pass distributions were examined, it was determined that the results were in line with the first three ranks of the championship.

Table 7. Challenges of the teams

Teams	Air challenges	Ground challenges	Defensive challenges	Attacking challenges
	%	%	%	%
Germany	59,09	48,65	54,76	45,83
Argentina	55,81	50,38	56,67	46,51
Netherlands	50,00	52,59	56,10	46,91
Brazil	53,19	51,24	54,65	49,38
Colombia	50,98	49,14	52,50	47,67
France	56,25	51,89	60,53	46,75
Belgium	60,78	53,13	62,50	48,48
Costa Rica	40,82	46,28	51,16	38,55

When the tackling of teams was examined, we can say that Belgium and Argentina were the most contentious teams. Germany may seem unsuccessful as static in tackling but when the matches were observed, it can be seen that German players do not tackle much and this was the part of their game tactics.

Table 8. Dribbling of the teams

Teams	Total	Successful	Ratio
	f	f	%
Germany	14	8	57,14
Argentina	26	18	69,23
Netherlands	19	13	68,42
Brazil	25	16	64,00
Colombia	23	13	56,52
France	17	11	64,71
Belgium	24	14	58,33
Costa Rica	13	7	53,85

The least dribbling teams were Costa Rica and Germany. Most dribbling teams were Argentina and Brazil.

Table 9. Fouls

Teams	Fouls	In own field	Yellow card	Red card
	f	f	f	f
Germany	13	5	6	-
Argentina	11	6	8	-
Netherlands	18	9	11	-
Brazil	17	8	14	-
Colombia	17	10	5	-
France	12	6	5	-
Belgium	17	6	7	-
Costa Rica	19	10	10	1

Teams that committed the most fouls were Costa Rica, Netherlands, Belgium and Colombia. Moreover, teams that committed most fouls in its own field were Colombia, Costa Rica and Netherlands. However, the team with the least fouls was Germany.

Table 10. Goal keeper performances

Goal keeper	Minutes in played	Conceded goals	Saved goals	Saved shoots	Interception and challenge of Goal Keeper	Attacking passes	Pinpoint pass
		f	f	%	f	f	%
Neuer, Germany	729	4	7	75	34	11	90
Romero, Argentina	773	4	6	76	11	10	76
Cillessen, Netherlands	737	4	6	75	19	15	82
Cesar, Brazil	700	14	4	73	14	10	92
Ramirez, Colombia	465	4	6	76	15	16	82
Lloris, France	481	3	3	79	18	11	85
Courtois, Belgium	513	3	4	76	15	13	76

When the goalkeeper's contribution to the game is examined, it can be seen that the goalkeeper of Germany, Neuer, was the most successful in terms of saving the goal, interception and challenge, and pinpoint pass ratio.

DISCUSSION AND CONCLUSION

This study was performed with the aim of analyzing eight football teams that made it to quarter finals in 2014 FIFA World Cup in terms of different variables and understanding how the future of the football and players should be. The champion of 2014 World Cup was Germany, Argentina took the second place and Netherlands had the third place. As a result of the analysis, it was seen that the ranking should also be like this and the following observations and comments can be made on both the team and player basis.

Defensive strategies of Germany are identified as effective press at the second zone with tactical application of 4-2-3-1 formation, defense press done withdrawal up to the first zone time to time, sense of compact defense and narrowed distances, offensive press according to score, quick press after ball lost, if the opponent team get rid of the press, get back with the team as a whole instead of compact stand, participation of the goal keeper as a free back, obstruction of diagonal balls thrown behind the defense by the goal keeper.

Offensive strategies of Germany are identified as set up controlled and targeted play from behind, controlled counter-attack after the ball gain (free of risk offensive conception), pass combination towards to the offensive plan, play of same player in different positions (position flexibility), efficient usage of depth and wideness as tactic, assured pass variation

with the players who have high technical capacity.

Defensive strategies of Argentina are identified as controlled 4-4-2 compact formation in the first zone and defense press with eight players such as cut across pass variation of the opponent team with the help of Messi and Higuain, short time individual press without applying group and team tactics.

Offensive strategies of Argentina are identified as applying defense set up with three players and shifting the tempo at the opening and setting the game up despite the sense of defense with four players, occasional contribution of fullbacks to the attacks, fast forward passes as getting started to attack, effective individual contribution of Messi and Di Maria to the attacks, the sense of compact defense with other players when the team starts counter-attack with two or three players.

Defensive strategies of Netherlands are identified as 3-5-2 compact defense formation and the sense of defense in the first zone with double free back, man-to-man follow-up and game strategies against some players, defense applied with five players up to middle zone with man-to-man game sensation (30 meters running space), blocking the game set up of the opponent team via offensive press according to the score.

Offensive strategies of Netherlands are identified as persistent application of the one offensive strategy and lack of offensive variations, making the game opening with three defenders and letting wide spaces behind, slow game with excessive preparation passes in the offense, shifting the triple defense when starting the attacks and the usage of long diagonal passes frequently, continuous contribution of free backs to the attacks and glorifying individual actions done by Arjen Robben.

Trends of 2014 world cup are summarized as the following; big tactical changes in the game organizations of high-level teams, comeback of the defense with triple and the five, changing the game strategies from match to match, increasing the alteration of game strategies during the game, fewer usage of 4-2-3-1 set up strategy especially by the successful teams, preference of 4-2-3-1, 5-4-1, 4-1-4-1, 4-4-2, 4-5-1, 5-3-1-1, 4-3-2-1, 4-3-1-2, 5-3-2, 3-4-3 set up strategies commonly, different usage of game strategies by various teams at the defense and offense, goal oriented straight play without turning the ball excessively, fast and effective attacking strategies to different zones when the ball is won, simple continuous preparatory passes and then long passes to the offense zone in order to send

diagonal passes, fabulous individual quality in dribbling, keeping the ball, quality of the passes and one to one man skipping [14].

Goalkeepers should observe the match carefully throughout the game, and be able to interpret changing positions quickly and warn the defense by immediate and correct decision. They should have continuous attention and concentration skills [16], exceptional tactical knowledge, know when to enter the ball into game by foot or by hand, when to catch the ball or punch it, take good position and provide assured ball catching and have exceptional reaction speed [14,15].

Wing backs and stoppers should be fast and have reaction times and reflex skills, high attention and concentration skills, high perception [16], technical and tactical knowledge, physical superiority in tackles, successful in air balls and head shots, they should be able to control the ball, opponent and zone, perform exceptional field and player marking, have a good sensation of directing the opponent and level of the game, dribble, swing and shoot fast, deep playmaking and support the attacks [14,15].

Middle field players should be athletic, strong, enduring [16], creative, they should be able to observe the field widely, read the game, have exceptional offensive and defensive abilities, top level technical and tactical capacity, be able to perform tactics with or without the ball in very high--level, have a complete shooting, swinging and using dead balls skill [14,15].

Offensive players have combined technique, good physical strength and stamina, quick-endurance [16], have proper final attempts, perform requirements of collective play, they are able to perform field and player marking, good feints and dribbling, hold up the ball in third zone, shoot hard and accurate, prevent or slow down deep playmaking of the opponent[14,15,16].

In conclusion, we can say that from the analysis and observations of 2014 FIFA World Cup, success is not coincidence. If the aim is to train good players and build up a successful team in the future, it is very important to plan and program well before, and fundamental training regarding individual, group and team tactics should be provided very well. Moreover, the teams composed of players with high technical-tactical skills and perceptions who have played together for a long time and adopted themselves to collective football will be successful at the end. It is certain that not only the players or technical committee, but

also all of the football coaches in the country should contribute to the national team success in the championship as the Germans did.

REFERENCES

1. Adamczyk G, Luboinski L. Epidemiologia of football, related Injuries Part I. Acta Clinica, 2002; (2):236-50.

2. Helgerud J, Engen LC, Wısløff U, Hoff J. Aerobic endurance training improves soccer performance. Medicine & Science in Sports and Exercise, 2001; 33(11): 1925–1931.

3. Manna I, Khanna GL, Dhara PC. Effect of training on morphological, physiological and biochemical variables of U-19 soccer players. Baltic Journal of Health and Physical Activity, 2011; 3(4): 237-27.

4. Sajadi N, Rahnama N. Analysis of goals in 2006 FIFA World Cup, VIth World Congress on Science and Football, Book of Abstracts, January 15-20, Antalya, Turkey; 2007.

5. Shafizadeh M, Taylor M, Lago Peñas C. Performance consistency of international soccer teams in Euro 2012: a time series analysis. Journal of Human Kinetics, 2013; 38: 213-225.

6. Hughes M, Bartlett R. What is performance analysis? In: Hughes M, Franks IM, editors, The Essentials of Performance Analysis: An introduction. London: Routledge; 2008.

7. Carling C, Williams AM, Reilly T. Handbook of soccer match analysis: a systematic approach to improving performance, Abington, London- UK: Routledge; 2005.

8. Clemente F, Couceiro M, Martins F, Mendes R. Team's performance on FIFA U17 World Cup 2011: study based on notational analysis. Journal of Physical Education and Sport, 2012; 12(1): 13-17.

9. Araya JA, Larkin P. Key performance variables between the top 10 and bottom 10 teams in the English Premier League 2012/13 season. Human Movement, Health and Coach Education (HMHCE), 2013; 2: 17-29.

10. Castellano J, Casamichana D, Lago C. The use of match statistics that discriminate between successful and unsuccessful soccer teams. Journal of Human Kinetics, 2012; 31: 139-147.

11. Moura FA, Martins LEB, Cunha SA. Analysis of football game-related statistics using multivariate techniques. Journal of Sports Sciences, 2013; 1-7.

12. Hughes MD, Bartlett RM. The use of performance indicators in performance analysis. Journal of Sports Sciences, 2002; 20(10): 739-754.

13. Collet C. The possession game? A comparative analysis of ball retention and team success in European and international football, 2007–2010. Journal of Sports Sciences, 2013; 31(2): 123-136.

14. Stöber B, Wormuth F. Analyse der fußball-weltmeisterschaft 2014. BDFL Bund Deutscher fussball-lehrer, Internationaler Trainer-Kongress, 2014; 6-11.

15. Bloomfield J, Polman R, O'Donoghue P. Physical demands of different positions in FA premier league soccer. Journal of Sports Science and Medicine, 2007; 6:63-70.

16. Reilly T. Motion analysis and physiological demands. In: Science and Soccer. Eds: Williams AM, Reilly T. 2nd Edition, London; E & FN Spon; 2003.