

## The Importance of Goals in Soccer: A Comparison of Goals Scored in the Last Five World Cups in Terms of Different Parameters

Mehmet Ali Armağan AĞYOL\*<sup>1</sup> 

<sup>1</sup>Kafkas University, Institute of Health Sciences, Department of Physical Education and Sports

### Keywords

FIFA World Cup  
Goal Analysis  
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### ABSTRACT

This study aimed to compare the goals scored in the FIFA World Cups organized in 2006 Germany, 2010 South Africa, 2014 Brazil, 2018 Russia, 2022 Qatar in terms of different parameters. For the research, the data obtained by the Matchball analysis company as a result of the analysis of the FIFA World Cups held in 2006 Germany, 2010 South Africa, 2014 Brazil, 2018 Russia, and 2022 Qatar were used. The SPSS analysis program was used to analyze the data obtained in the research. In the study, it was determined that a total of 804 goals were scored in the last five world cups, and the highest number of goals scored in the last five world cups was in the 2022 World Cup with 172 goals. It was determined that the tournament with the highest ratio of goals scored in the last five World Cups to the total number of goals scored was the 2022 World Cup with an average of 2.69 goals per match. It was determined that the most 44 (29.93) of the goals scored in the last five World Cups were scored between 76-90th minutes in the 2006 World Cup. As a result of the research, it was determined that 38 (49,35) of the goals scored in the last five World Cups were scored as a result of free kicks in the 2006 World Cup, 94 (54,98) of the goals scored in the 2014 World Cup, 159 (92,44) of the goals scored by strikers inside the penalty area in the 2014 World Cup and 143 (83,13) of the goals scored with the foot in the 2022 World Cup.



## 1. INTRODUCTION

The FIFA World Cup, organized by the Union of International Football Associations (FIFA), which carries out its activities as the highest-level governing body of football in the international arena, is an international football tournament organized every 4 years with the participation of the national teams of 211 countries that are members of the Union of International Football Associations (FIFA).

As per the FIFA World Cup statute, qualifying stage matches are played during the three years before the tournament starts. The national teams of 211 FIFA member countries are eligible to participate in the knockout stage, and the teams that qualify are eligible to compete in the FIFA World Cup finals. A total of 32 national teams take part in the FIFA World Cup finals, including the host country, which qualifies directly for the tournament due to hosting the tournament that year. In the tournament, which consists of eight groups of four teams each, the teams play matches

against the other teams in their groups in the first stage matches according to the single-circuit league method. The teams that finish in the top two places in their groups after the first stage group matches are eligible to compete in the second round stage, which is organized with a single-match knockout system. The winner of the match between the teams that reach the final is crowned champion, while a third-place match is played between the two teams that lost the semi-final matches to determine the third-place team. [1]

The first tournament in the history of the FIFA World Cup was hosted by Uruguay in 1930, while the tournaments planned for 1942 and 1946 could not be held due to World War II. Since 1930, when the tournament was first organized, 21 tournaments have been organized and 8 different teams have taken the trophy to their museums in these tournaments. Brazil, the only team that has qualified for all the tournaments organized until today, is the team that has won the most

\*Corresponding author: : Mehmet Ali Armağan AĞYOL

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\*([mehmetaliarmaganagyl@hotmail.com](mailto:mehmetaliarmaganagyl@hotmail.com)) ORCID ID 0000-0001-8350-5853

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championships in the tournaments with 5 championships. Brazil is followed by Italy and Germany with four titles each, Argentina with three titles, France and Uruguay with two titles each, and England and Spain with one title each. [2]

Football teams are examining how they can score goals in matches with their studies. Goals scored during football matches can be scored in different ways. However, the goals scored during football matches are scored as a result of positions where the attacking team has more advantage than the defending team in football, and these positions are rare during football matches. Corners and free kicks are examples of these positions that are rarely encountered during football matches.

The research aims to compare a total of 804 goals scored in the FIFA World Cups organized in 2006 in Germany, 2010 South Africa, 2014 Brazil, 2018 Russia, 2022 Qatar in terms of different parameters, to provide guiding information to technical directors, coaches, and match and performance analysis coaches working in professional and amateur football teams by comparing a total of 804 goals scored in the FIFA World Cups held in 2006 Germany, 2010 South Africa, 2014 Brazil, 2014 Brazil, 2018 Russia, 2022 Qatar in terms of different parameters. In addition, it is thought that it will be an important basic resource for scientists who plan to carry out scientific studies in the field of football, as well as trainers and other football participants.

### 3. RESULTS

**Table 1.** Total Goals Scored in the Last Five World Cups

	2006 World Cup		2010 World Cup		2014 World Cup		2018 World Cup		2022 World Cup		Total	
	f	%	f	%	f	%	f	%	f	%	f	%
<b>Goal Scored</b>	147	18,29	145	18,03	171	21,27	169	21,02	172	21,39	<b>804</b>	<b>100</b>

According to the findings obtained in Table 1, when the total number of goals scored in the last five World Cups is analyzed, 172 (%21,39) were scored in the 2022 World Cup, 171 (%21,27) in the 2014 World Cup, 169 (%21,02) in the 2018 World

## 2. MATERIALS AND METHODS

### 2.1. Research Data

The data of the study consists of a total of 804 goals scored in 320 matches played in the FIFA World Cups organized in 2006 Germany, 2010 South Africa, 2014 Brazil, 2018 Russia, 2022 Qatar.

### 2.2. Study Design

The research was conducted in a descriptive retrospective design with a statistical design [3].

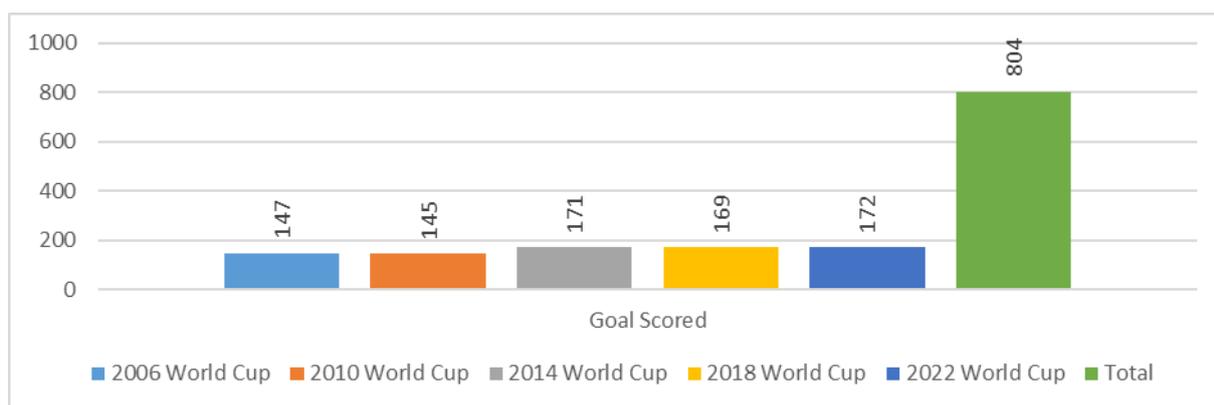
### 2.3. Data Collection

To obtain the data within the scope of the research, the data obtained by the Posiscope & Mathball match analysis company as a result of the analysis of the FIFA World Cups was used.

### 2.4. Statistical Analysis

To perform statistical analysis of the data obtained within the scope of the research, the SPSS 23.00 package program was used in the computer environment. In the analyses made with the SPSS statistical program, the frequency analysis technique, which is a statistical technique that explains the percentage distribution of the data obtained, was used. The data obtained were shown with the help of graphs and tables and the current situation was tried to be explained.

Cup, 147 (%18,29) in the 2006 World Cup and 145 (%18,03) in the 2010 World Cup.



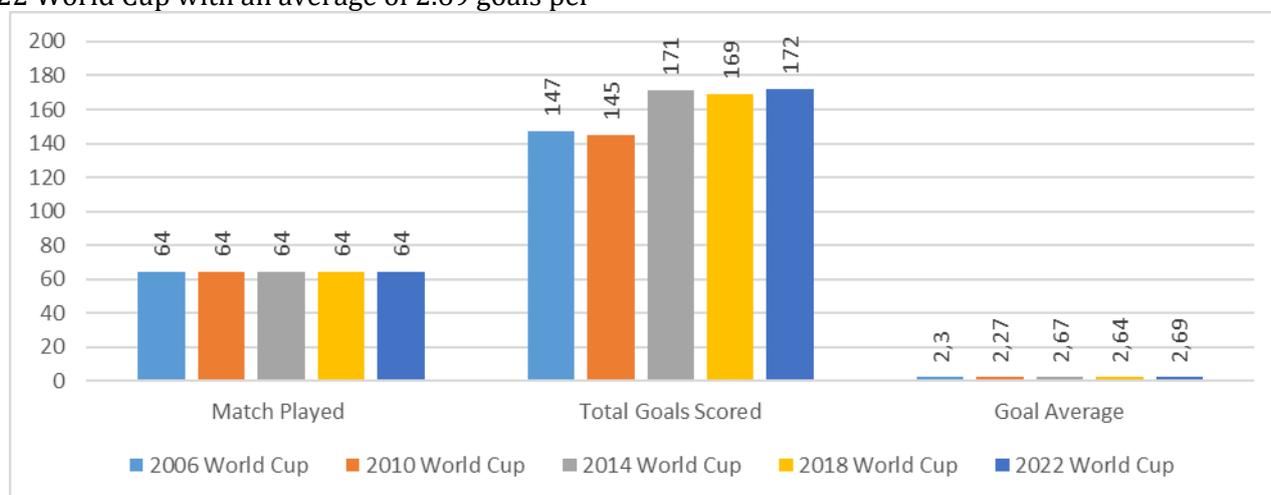
**Graph 1.**Total Goals Scored in the Last Five World Cups

**Table 2.** Ratios of Goals Scored to Total Goals Scored in the Last Five World Cups

	2006 World Cup	2010 World Cup	2014 World Cup	2018 World Cup	2022 World Cup
Match Played	64	64	64	64	64
Total Goals Scored	147	145	171	169	172
Goal Average	2,30	2,27	2,67	2,64	2,69

According to the findings obtained in Table 2, when the ratio of goals scored in the last five World Cups to the total number of goals scored is analyzed, it is found that the tournament with the highest ratio of goals scored in the last five World Cups to the total number of goals scored is the 2022 World Cup with an average of 2.69 goals per

match. However, the 2022 World Cup was followed by the 2014 World Cup with a 2.67 goals per match average, the 2018 World Cup with a 2.64 goals per match average, the 2006 World Cup with a 2.30 goals per match average, and the 2010 World Cup with 2.27 goals per match average.



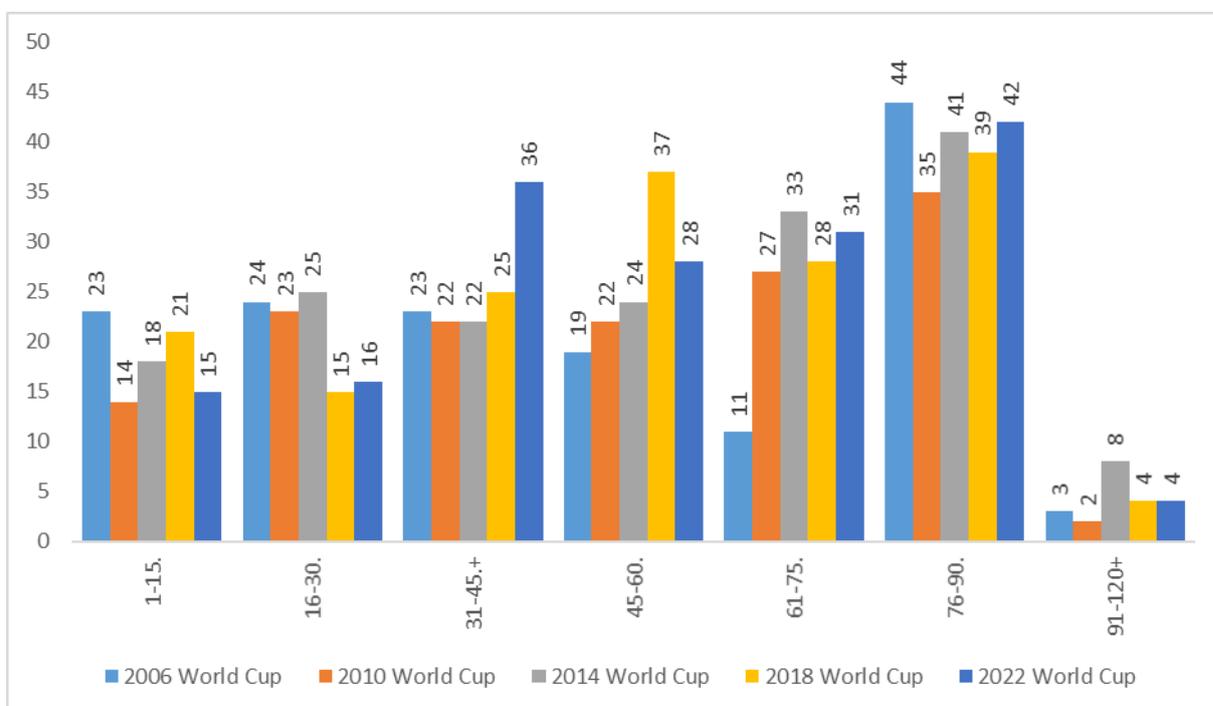
**Graph 2.** Ratio of Goals Scored to Total Goals Scored in the Last Five World Cups

**Table 3.** Minutes of Goals Scored in the Last Five World Cups

	2006 World Cup		2010 World Cup		2014 World Cup		2018 World Cup		2022 World Cup	
	f	%	f	%	f	%	f	%	f	%
1-15. Minutes	23	15,65	14	9,65	18	10,52	21	12,42	15	8,73
Minutes 16-30	24	16,32	23	15,87	25	14,62	15	8,88	16	9,30
31-45+ Minutes	23	15,65	22	15,17	22	12,87	25	14,80	36	20,93
Minutes 45-60	19	12,93	22	15,17	24	14,03	37	21,89	28	16,28
Minutes 61-75	11	7,48	27	18,62	33	19,30	28	16,57	31	18,02
Minutes 76-90	44	29,93	35	24,14	41	23,98	39	23,07	42	24,41
91-120+ Minutes	3	2,04	2	1,38	8	4,68	4	2,37	4	2,33
<b>Total</b>	<b>147</b>	<b>100</b>	<b>145</b>	<b>100</b>	<b>171</b>	<b>100</b>	<b>169</b>	<b>100</b>	<b>172</b>	<b>100</b>

According to the findings obtained in Table 3, when the minutes of the goals scored in the last five World Cups were analyzed, it was determined that the most 44 (29.93) of the goals scored in the last five World Cups were scored between the 76th and 90th minutes in the 2006 World Cup. However, 42 (%24,41) of the goals scored between 76-90th minutes were scored in the 2022 World

Cup, 41 (%23,98) in the 2014 World Cup, 39 (%23,07) in the 2018 World Cup and 35 (%24,14) in the 2010 World Cup. In addition, when the scoring times of the goals scored in the last five World Cups were analyzed, it was found that the least number of goals scored in the tournaments were scored in the additional periods added to the half-hour period in the overtime period.



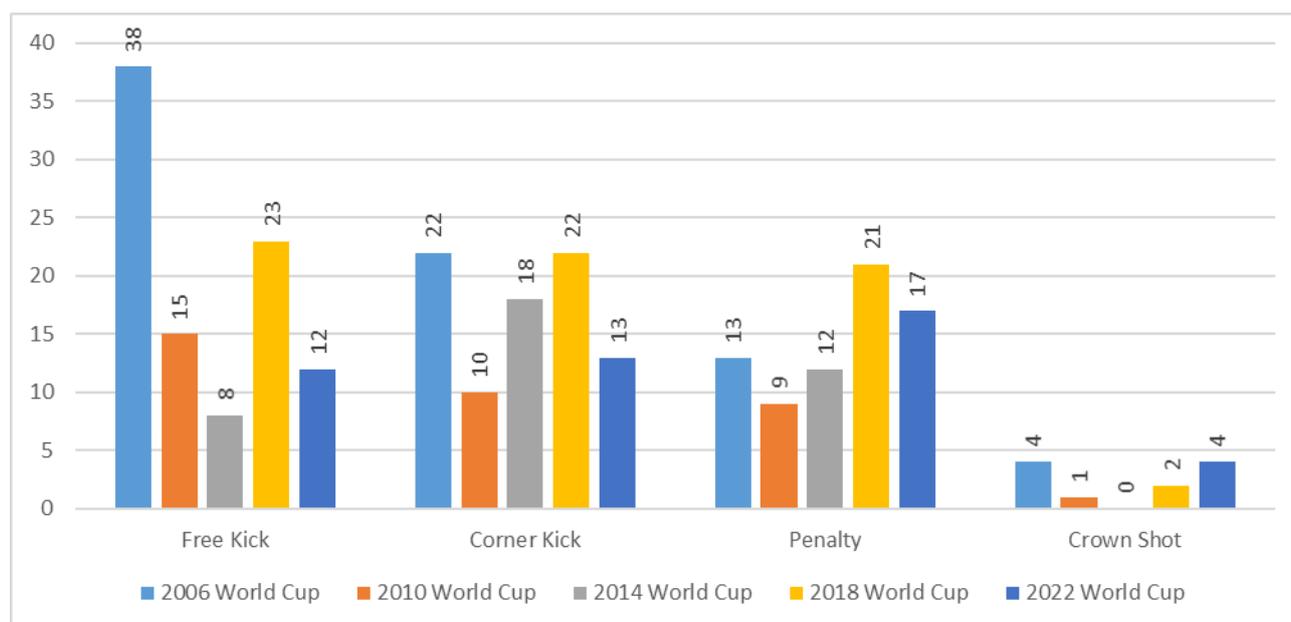
**Graph 3.** Minutes of Goals Scored in the Last Five World Cups

**Table 4.** Goals scored from set-pieces in the last five World Cups

	2006 World Cup		2010 World Cup		2014 World Cup		2018 World Cup		2022 World Cup	
	f	%	f	%	f	%	f	%	f	%
Free Kick	38	49,35	15	42,85	8	21,06	23	33,83	12	26,08
Corner Kick	22	28,58	10	28,60	18	47,36	22	32,35	13	28,26
Penalty	13	16,88	9	25,70	12	31,58	21	30,88	17	36,96
Crown Shot	4	5,19	1	2,85	0	-	2	2,94	4	8,70
<b>Total</b>	<b>77</b>	<b>100</b>	<b>35</b>	<b>100</b>	<b>38</b>	<b>100</b>	<b>68</b>	<b>100</b>	<b>46</b>	<b>100</b>

According to the findings obtained from Table 4, when the scoring patterns of the goals scored from set-pieces in the last five World Cups are analyzed, it is determined that the most 38 (%49,35) of the goals scored from set-pieces in the last five World Cups were scored as a result of free kicks in the 2006 World Cup. On the other hand, it was determined that maximum 22 (%32,35) and

22 (%28, 58) of the goals scored as a result of corner kicks were scored in 2006 and 2018 World Cups, maximum 21 (%30,88) of the goals scored as a result of penalty kicks were scored in 2018 World Cup and maximum 4 (%8,70) and 4 (%5,19) of the goals scored as a result of crown kicks were scored in 2022 and 2006 World Cups.



**Graph 4.** Goals scored from set-pieces in the last five World Cups

**Table 5.** Player Positions Scoring Goals in the Last Five World Cups

	2006 World Cup		2010 World Cup		2014 World Cup		2018 World Cup		2022 World Cup	
	f	%	f	%	f	%	f	%	f	%
Striker	79	53,74	77	53,10	94	54,98	61	36,09	83	48,26
Midfield	47	31,98	50	34,49	56	32,74	59	34,92	59	34,30
Defense	17	11,56	18	12,41	21	12,28	40	23,67	30	17,44
Other	4	2,72	-	-	-	-	9	5,32	-	-
<b>Total</b>	<b>147</b>	<b>100</b>	<b>145</b>	<b>100</b>	<b>171</b>	<b>100</b>	<b>169</b>	<b>100</b>	<b>172</b>	<b>100</b>

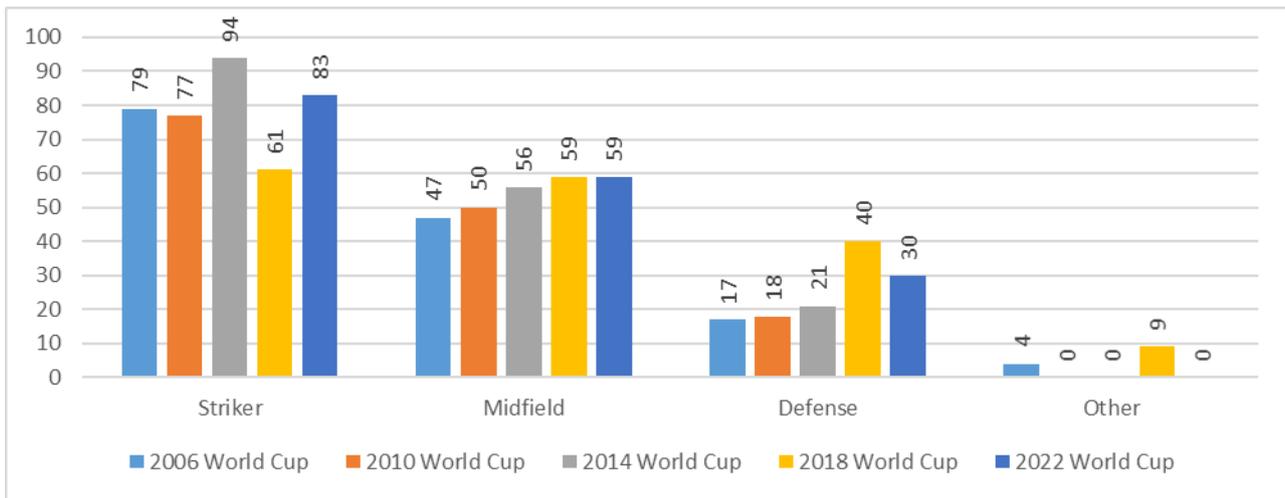
According to the findings obtained in Table 5, when the positions of the players who scored the goals in the last five World Cups are analyzed, it is determined that the highest number of 94 (%54,98) goals scored in the last five World Cups was scored by strikers in the 2014 World Cup. However, when the positions of the players who scored the goals scored in other tournaments were analyzed, it was determined that 83 (%48,26) of the goals scored in the 2022 World Cup, 79 (%53,74) of the goals scored in the 2006 World Cup, 77 (%53,10) of the goals scored in the 2010 World Cup and 61 (%36,09) of the goals scored in the 2018 World Cup were scored by strikers.

When the positions of the players who scored the goals in the last five World Cups are analyzed, it is found that most 59 (%34,92) and 59 (%34,30) of the goals scored in the last five World Cups were scored by midfielders in the 2018 and 2022 World Cups. 56 (%32,74) of the goals scored in

the 2014 World Cup, 50 (%34,49) of the goals scored in the 2010 World Cup and 47 (%31,98) of the goals scored in the 2006 World Cup were scored by midfielders.

When the positions of the players who scored the goals in the last five World Cups are analyzed, it is determined that the most 40 (%23,67) of the goals scored in the last five World Cups were scored by defenders in the 2018 World Cup. 30 (%17,44) of the goals scored in 2022 World Cup, 21 (%12,28) of the goals scored in 2014 World Cup, 18 (%12,41) of the goals scored in 2010 World Cup and 17 (%11,56) of the goals scored in 2006 World Cup were scored by defenders.

When the positions of the players who scored the goals in the last five World Cups are analyzed, it is found that 9 (%5,32) of the goals scored in the 2018 World Cup and 4 (%2,72) of the goals scored in the 2006 World Cup were scored by others.



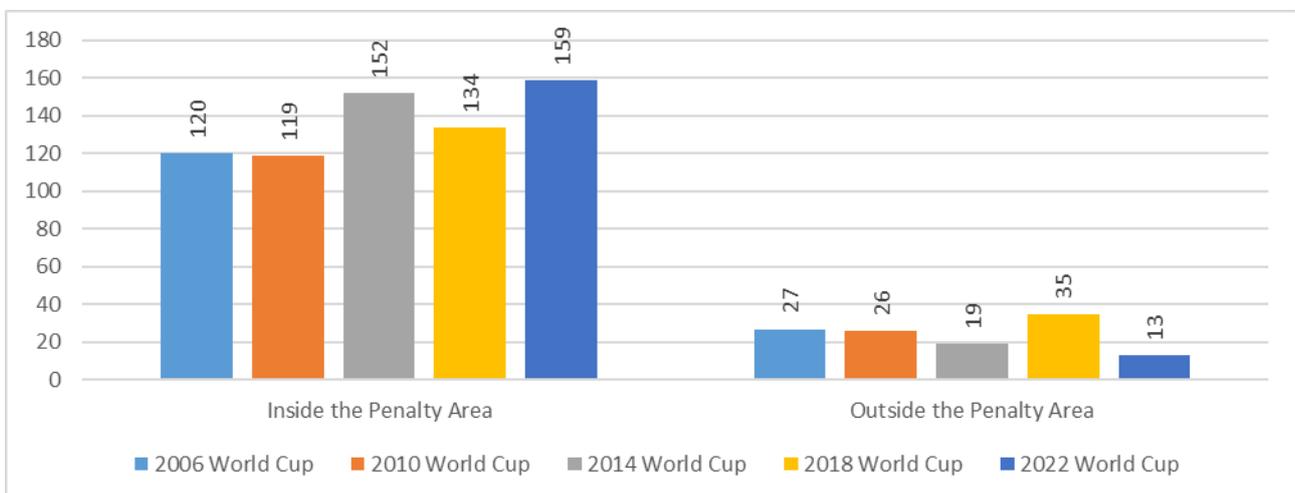
**Graph 5.** Position of Players Scoring Goals from Set Pieces in the Last Five World Cups

**Table 6.** Goal Scoring Regions in the Last Five World Cups

	2006 World Cup		2010 World Cup		2014 World Cup		2018 World Cup		2022 World Cup	
	f	%	f	%	f	%	f	%	f	%
Inside the Penalty Area	120	81,64	119	82,06	152	89,00	134	79,28	159	92,44
Outside the Penalty Area	27	18,36	26	17,94	19	11,00	35	20,72	13	7,56
<b>Total</b>	<b>147</b>	<b>100</b>	<b>145</b>	<b>100</b>	<b>171</b>	<b>100</b>	<b>169</b>	<b>100</b>	<b>172</b>	<b>100</b>

According to the findings obtained in Table 6, when the regions where the goals were scored in the last five World Cups are analyzed, it is determined that 159 (%92.44) of the goals scored from inside the penalty area in the last five World Cups were scored in the 2022 World Cup. However, when the regions where the goals scored in other tournaments were analyzed, 152 (%89.00) of the goals scored in the 2014 World Cup, 134 (%79.28) of the goals scored in the 2018 World Cup, 120 (%81.64) of the goals scored in the 2006 World Cup and 119 (%82.06) of the goals scored in the

2010 World Cup were scored from inside the penalty area. When the regions where the goals scored in the last five World Cups are analyzed, it is found that 35 (%20,72) of the goals scored from outside the penalty area were scored in the 2018 World Cup. However, when the regions where the goals were scored in other tournaments were analyzed, it was found that 27 (%18,36) of them were scored from outside the penalty area in the 2006 World Cup, 26 (%17,94) in the 2010 World Cup, 19 (%11,00) in the 2014 World Cup and 13 (%7,56) in the 2022 World Cup.



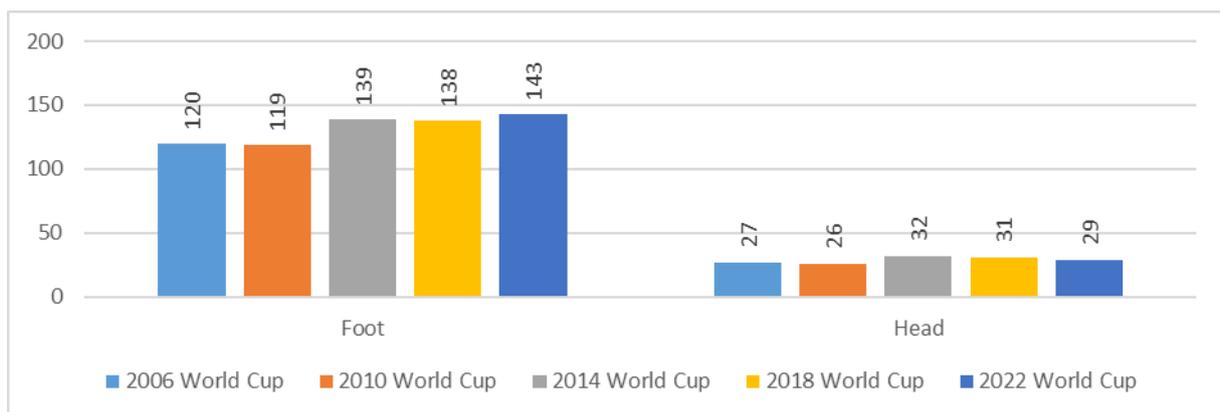
**Graph 6.** Goals scored from set-pieces in the last five World Cups

**Table 7.** Striking Techniques of Goals Scored in the Last Five World Cups

	2006 World Cup		2010 World Cup		2014 World Cup		2018 World Cup		2022 World Cup	
	f	%	f	%	f	%	f	%	f	%
Foot	120	81,64	119	82,06	139	81,29	138	81,66	143	83,13
Head	27	18,36	26	17,94	32	18,71	31	18,34	29	16,87
<b>Total</b>	<b>147</b>	<b>100</b>	<b>145</b>	<b>100</b>	<b>171</b>	<b>100</b>	<b>169</b>	<b>100</b>	<b>172</b>	<b>100</b>

According to the findings obtained in Table 7, when the striking techniques of the goals scored in the last five World Cups are analyzed, it is determined that 143 (%83,13) of the goals scored with the foot in the last five World Cups were scored in the 2022 World Cup. However, when the goals scored in other tournaments were analyzed, it was determined that 139 (%81.29) of the goals scored in the 2014 World Cup, 138 (%81.66) of the goals scored in the 2018 World Cup, 120 (%81.64) of the goals scored in the 2006 World Cup and 119 (%82.06) of the goals scored in the 2010 World Cup

were scored with the foot. When the striking techniques of the goals scored in the last five World Cups were analyzed, it was found that 32 (%18,71) of the goals scored with the head were scored in the 2014 World Cup. However, when the goals scored in other tournaments were analyzed, it was determined that 32 (%18,71) of the goals scored in the 2018 World Cup, 29 (%16,87) of the goals scored in the 2022 World Cup, 27 (%18,36) of the goals scored in the 2006 World Cup and 26 (%17,94) of the goals scored in the 2010 World Cup were scored with the head.

**Graph 7.** Striking Techniques of Goals Scored in the Last Five World Cups

#### 4. Discussion

In the study conducted by Mızrak [4] on the 2010, 2014, and 2018 FIFA World Cups, it was found that 145 goals were scored in the 2010 World Cup, 171 goals in the 2014 World Cup, and 169 goals in the 2018 World Cup.

In the study conducted by Acar et al. [5] on the goals scored in the 2006 FIFA World Cup, it was found that 147 goals were scored in 64 matches in the tournament.

In the study conducted by Mızrak [4] on the 2010, 2014, and 2018 FIFA World Cups, when the goal per match averages in the tournaments were examined, it was found that 2.26 goals per match in the 2010 World Cup, 2.67 goals per match in the 2014 World Cup and 2.64 goals per match in the 2018 World Cup.

In the study conducted by Güneri [6] on the goals scored in the 2012 European Football Championship, it was found that 76 goals were scored in 31 matches and an average of 2.45 goals were scored per match.

In the study conducted by Blut et al. [7] on the goals scored in the English Premier League in 8 seasons between 2012 and 2019, it was determined that the highest number of goals scored in the English Premier League in 8 seasons was 1620 goals scored between 76-90 minutes of the matches.

In the study conducted by Erdoğan and Kerkez [8] between 2015-2018 on the standings of England, France, Germany, Italy, Spain, and Turkey Super Leagues, it was determined that the teams ranked in the top three in their leagues scored the most goals between 76-90 minutes of the matches.

In a study conducted by Sönmeymen et al. [9] on the goals scored in England, Spain, Italy, Turkey, and Germany football leagues in the first half of the 2016-2017 season, it was determined that the most goals were scored between 76 and 90 minutes of the matches, including the extra minutes of the matches.

In the study conducted by Gülen [10] on the analysis of the goals scored in Brazil's 2014 World Cup, it was determined that 50 goals scored in 64 matches played in the tournament were scored as a result of set-pieces, 26 of these goals were scored as a result of corner kicks, 12 as a result of penalties and 12 as a result of free kicks.

In the study conducted by Leite [11] on the analysis of goals scored in the Euro 2012 European Football Championship held in Poland and Ukraine, it was found that 22 (28.95%) of the 76 goals scored during the tournament and in the study conducted by Njororai [12] on the analysis of goals scored in the 2010 World Cup held in South Africa, it was found that 35 (24.14%) of the 145 goals scored during the tournament were scored as a result of set-pieces.

In the study conducted by Armatas and Yiannakos [13] on the analysis of goals scored during the tournament in the 2006 World Cup in Germany, it was found that 32.6% of the goals scored during the tournament were scored as a result of the penalty, corner kick, free kick, and throw-in.

Alibeyoğulları [14] conducted a study on the analysis of goals scored during the Euro 2016 European Football Championship and found that 51.43% of the goals scored during the tournament were scored by strikers, 37.14% by midfielders, and 11.43% by defenders.

Durlik and Bieniek [15] in a study conducted on the analysis of goals scored in the English Premier League in 2014, found that nearly half of the 942 goals scored in the English Premier League were scored by attackers, 18.6% by midfielders, 11.1% by right-wingers, 10.7% by defenders and 10.4% by left-wingers.

In the study conducted by Mićović et al. [16] on 14 FIFA World Cups organized between 1966 and 2018, it was found that (54.7%) of the goals scored during the tournaments were scored from inside the penalty area, (21.3%) from inside the goal area and (15.6%) from outside the penalty area.

In a study conducted by Kubayi and Toriola [17] on goals scored in five FIFA World Cups between 1998 and 2014, it was found that 426 (%53.6%) of the goals scored during the tournaments were scored from inside the penalty

area, 116 (%14.6) from outside the penalty area and 189 (%23.8) from inside the goal area.

In the study conducted by Gürkan [18] on the goals scored in the 2016 European Football Championship, it was determined that (%71.1%) of the goals scored during the tournaments were scored from inside the penalty area, (%21.1%) from the goal area and (%7.9%) from outside the penalty area.

In a study conducted by Mićović et al. [16] on goals scored in 14 FIFA World Cups between 1966 and 2018, it was found that %79.6 of the goals scored during the tournaments were scored with the foot and 17.8% with a header.

In the study conducted by Çobanoğlu [19] on the goals scored in the 2018 World Cup, it was determined that 124 (%78.97) of the goals scored during the tournament were scored with the foot and 33 (%21.01) were scored with a header.

In the study conducted by Yiannis [20] on the goals scored in the 2014 World Cup, it was found that 115 (%67.3%) of the goals scored during the tournament were scored with the foot and 31 (%18.1%) were scored with a header.

In the study conducted by Yolgörmez and Tütüncü [21] on the analysis of goals scored in the 2022 Qatar World Cup, it was determined that 77.33% of the goals scored in the tournament were scored in the flowing game and 22.67% were scored as a result of set-pieces. It was determined that 41.03% of the goals scored as a result of set-pieces were scored as a result of penalties, 33.33% as a result of corners, and 25.64% as a result of free kicks.

## 5. Conclusion

When the goals scored in the last five World Cups are compared in terms of different parameters, the situations that took place in the tournaments show that the rapid developments in today's football have enabled more goals to be scored in the tournaments held in recent years, and that the teams have played a more pressured game against their opponents in the last quarter hour period because they want to prevail over their opponents in the matches played and leave the match victorious. And as a result, it can be said that they scored more goals, the teams received more balls into the penalty area as a result of their organized attacks, and as a result, they scored more goals from the penalty area.

## Conflict of Interest

No conflict of interest is declared by the authors. In addition, no financial support was received

## Author Contributions

First author: all contribution

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