ANALYSIS OF SCORED GOALS DURING WORLD CUP 2022 IN QATAR

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ABSTRACT
For the first time, the FIFA World Cup was organized during the winter period, which was a very interesting contextual factor. Performance analysis of major tournaments like the World Cup is of fundamental importance for planning the training process and developing training strategies in the moments of the football game for preventing chances and scoring goals. The aim of this research is to analyze the areas of the goals scored and the player's action before the finishing shot. We used observation and analysis to collect and discuss available data from the tournament, and employed descriptive statistics to draw conclusions. A quantitative observational analysis of all 172 goals from the 64 matches was conducted, categorizing each goal by scoring method, assist type, and spatial origin. The analysis revealed that 44% of all goals were scored with one touch, and 36% resulted from crosses, with narrow zones proving most effective. Only 5% of goals were scored from outside the penalty area.
In conclusion, the findings highlight a tactical emphasis on creating high-probability chances from wide areas and within the penalty box, providing objective data for modern coaching practices.

Keywords: *World Cup, football, goals, analysis*

INTRODUCTION

The FIFA World Cup 2022™ was one of the most exciting editions of the event in its illustrious history. The tournament produced a series of compelling, elite-quality contests, with the game's greatest talents rising to the occasion on the grandest stage of all (fifa.com, 2023).

Performance analysis is now a central element of sports science support for soccer coaches and therefore research has undergone rapid expansion over recent years, with studies investigating performance indicators related to possession, tactical behavior, positional demands, set plays and the match location (Stone et al., 2021; Zhao, Zhang, 2019; Yue et al., 2014; Dimov, Atanasov, 2022; Clark et al., 2024).

Modern football has implemented various technologies to enhance the quality of existing matches, benefiting both players and spectators. One of these technologies is the sensor inside the ball. Indonesian scientists analyzed how the ball-tracking system used in the FIFA World Cup Qatar 2022™ works, particularly from an electronic perspective (Dwinanto & Karyadi, 2025).

Korean scientists analyzed the physical activity demands of referees and assistant referees during the 2022 FIFA World Cup through a structured secondary analysis. A triangulation approach was employed to synthesize validated institutional and academic sources, given the absence of individual tracking data (Dong-Geun et al., 2025). The quick and timely movement of referees on the playing field is extremely important in terms of the proximity of the game situation and the areas from which the most goals are scored.

Other authors have investigated differences in the match physical and technical/tactical performance of teams across various competitive levels in international soccer, including the FIFA Men's World Cup Qatar 2022 (MWC), the FIFA U20 World Cup Argentina 2023 (U20WC), and the FIFA U17 World Cup Indonesia 2023 (U17WC). They conclude that as the competitive level increases, so do the physical demands, advanced technical skills, and tactical fluidity/adaptability (Ju et al., 2025)

A team of authors analyzed the influence of the FIFA World Cup Qatar 2022 on match running performance in the First Spanish soccer league, considering the players' participation. They studied a total of 11,530 individual match observations from 582 professional soccer players competing in the First Spanish soccer league (n = 370 matches) over the 2022/23 season, which were collected (Calvo et al., 2025)

Taha & Orlov (2025) proposed a geometric measure of directness (DIR) using the ratio between the

straight-line distance from the point where possession begins to the centre of the goal, and the total distance covered by the ball during that possession. Using 128 matches from the 2018 and 2022 Men's World Cups, they analyzed the influence of directness (DIR), speed of the ball traveling towards the goal (SPG), and the starting position of the possession (XPOS) on the likelihood of shots and goals.

A key challenge in utilizing the expected goals on target (xGOT) metric is the limited public access to detailed football events and positional data, as well as other advanced metrics. In their study, they developed the xGOT model to evaluate goalkeeper (GK) performance based on the probability of successful actions, considering not only the outcomes (saves or goals conceded) but also the difficulty of each shot faced (Torres et al., 2025)

Numazu et al (2024) in their study measured and analyzed shot situations according to location, shot situation, and the number of ball touches in combination with GK actions to examine the relationship between shot situations and GK actions. Even in the 2022 FIFA World Cup in Qatar tournament, areas near the center and close to the goal were dangerous areas where shot-stopping was difficult for GKs. In areas such as AN, near the center of the goal, and close to the goal, a high frequency of one-touch shots from the crosses was observed. Conversely, in the far areas, where the distance to the goal increased, a higher frequency of shots was observed from passes with two or more touches.

The fact is that in modern football, the demands on goalkeepers are extremely high, posing a significant challenge to these players and their performance. A detailed examination and analysis of the goals conceded in these international tournaments would help the goalkeepers' game to raise its level, which in turn would inevitably have a positive impact on the game actions and performances of the other players.

Penalty kicks in FIFA World Cups often play a decisive role in determining match outcomes. Sixty-four in-match penalties from the 2014, 2018, and 2022 FIFA Men's World Cups were analyzed, focusing on player running behaviors (fluent vs. non-fluent) to investigate the prevalence of specific penalty strategies during these tournaments. Penalty strategy (keeper-independent and keeper-dependent), situational (tournament year, tournament stage, match period, match status), individual (footedness), and performance indicators (shoot direction, goalkeeper's action, outcome) were collected from the three successive World Cups (Han et al., 2025)

Degrenne, Carling (2024) summarized that goal-scoring patterns largely differed between the two most recent World Cup tournaments: Russia 2018 and Qatar 2022.

This research, which analyzes the pattern of goals scored at the 2022 World Cup, shows that most goals are scored as a result of a sequence of eight or more passes. The teams that score the first goal are more likely to win their matches, and wingers are favored to score goals. There has been a dramatic reduction in the number of goals scored from set pieces in this World Cup (Yolgörmez & Tütüncü, 2023).

From the studies presented, it is evident that scoring a goal has a significant impact on the game during a match, and to a large extent, the team that is ahead in the score typically wins. There is a growing belief that set pieces are a crucial part of football, and teams that effectively utilize these positions will have a significant advantage during the game.

Aim and Objectives

The aim of this research is to analyze the areas and patterns of the goals scored before the finishing shot. In order to achieve this, the following tasks were implemented:

1. To quantify the primary methods of goal scoring (e.g., one-touch finishes, headers) and determine their prevalence across the tournament's stages.
2. To map and evaluate the effectiveness of different crossing zones in creating successful goal-scoring opportunities.
3. To determine the proportion of goals scored from set pieces versus open play.
4. To analyze the spatial distribution of goals, focusing on shots taken inside versus outside the penalty area.

METHODOLOGY

The present research was conducted from March 2023 to March 2025. We observed 64 World Cup Qatar matches in which 172 goals were scored. For the purposes of this research, we defined key indicators, which are described below. We used modern software programs to conduct this research: the Wyscout platform and TacticalPad. We determined the percentage value of a 100% ratio using Excel.

Table 1. *Indicators and definitions*

Indicator	Definition	Source/ Justification
1 (ONE touch)	A goal scored with a single touch of the ball by the scorer	Operational Definition
Header	A goal scored directly with the player's head	Operational Definition
2+ touches	All goals scored with two or more touches	Operational Definition
Own goals	That a player accidentally scores against his own team	Operational Definition
Direct free kick	A goal scored directly from a free kick	Law 13 (IFAB, 2025)
Penalties	A penalty kick is awarded if a player commits a direct free kick offence inside their penalty area or off the field as part of play, as outlined in Laws 12 and 13	Law 14 (IFAB, 2025)
Corners	A corner kick is awarded when the whole of the ball passes over the goal line, on the ground or in the air, having touched a player of the defending team, and a goal is not scored	Law 17 (IFAB, 2025)
Free kick (indirect)	The referee indicates an indirect free kick by raising the arm above the head; this signal is maintained until the kick has been taken and the ball touches another player, goes out of play, or it is clear that a goal cannot be scored directly	Law 13 (IFAB, 2025)
Outside penalty box	The penalty area or 18-yard box is an area of an association football pitch. We observed the goals outside the penalty box	Operational Definition

RESULTS

During the group stage, 120 goals were scored. Of these, 57 goals, or 47,5 %, were scored with one touch. Additionally, 29 goals were scored after two or more touches before the shot on target, accounting for 24% of all goals during the group stage of the tournament. Goals scored from crosses from different zones totaled 45, or 38% of all goals scored.

Table 2. *Summary of goals in the group stage*

Games	Goals	1 touch	Header	2+ touches	Own goals	Direct Free Kick	Penalties	From corners	From Free kick	Outside penalty box
MD 1	41	18	7	9	0	0	7	0	0	0
MD 2	40	18	9	11	0	1	1	2	1	5
MD 3	39	21	5	9	1	2	1	3	0	2
Total	120	57	21	29	1	3	9	5	1	7

Of all the teams' first matches played – match day one (MD1), 41 goals have been scored. Eighteen of them were scored with one touch, which gives us the right to think that the defender should try to win the duel with the attacker before him to prevent the chance. In the third matches (MD3) of the group stage, teams scored even more goals, 21, which allows us to recommend that coaches use reality-based training drills.

Figure 1 presents the different crossing zones. We used them to analyze the goals after crossing during the World Cup in Qatar. Figure 2 presents the number of goals scored after crossing from the zones on the field.

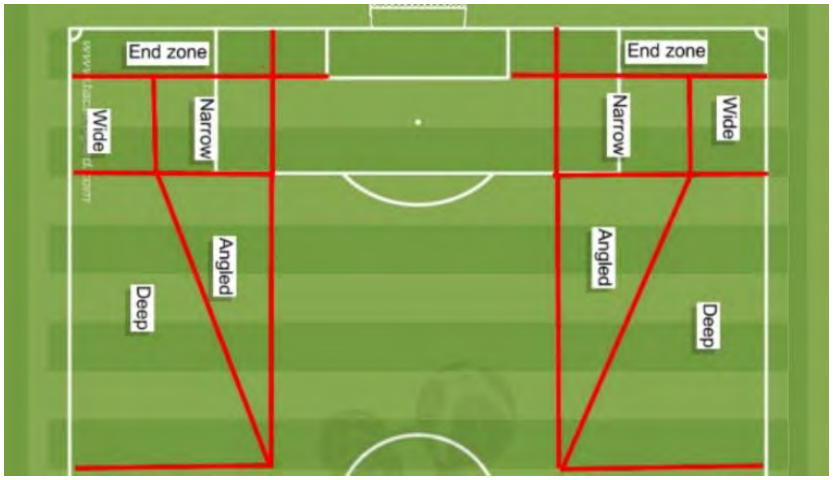

Figure 1. *Crossing zones*

A total of 14 goals after crossing were scored during MD1 in the group phase. Nine of the goals were scored after crosses from the left zone of the pitch, and five were scored after crosses from the right zone of the pitch. This shows that one flank zone was better protected than the other. The relationships between the individual players in the zone were much stronger.

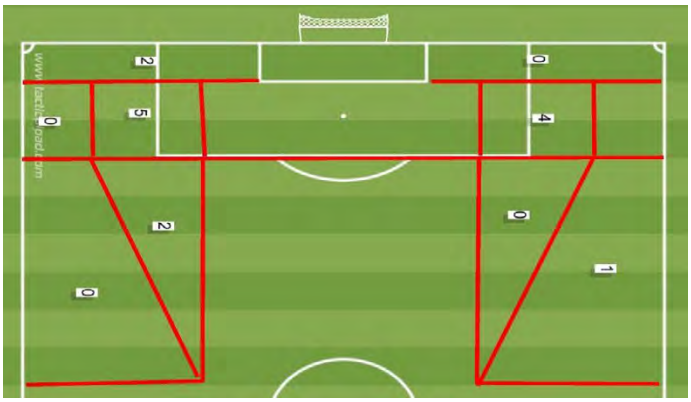

Figure 2. *Number of goals from different crossing zones in MD1 in the group phase*

A total of 18 goals after crosses from different zones were scored during the MD2 in the group stage. Ten of the goals were scored after crosses from the left side of the pitch, and eight goals were scored after crosses from the right side. Again, the left zone is busier, with 4 of the goals coming from the deep zone, which is related to the lack of pressure on the player with the ball in the same zone.

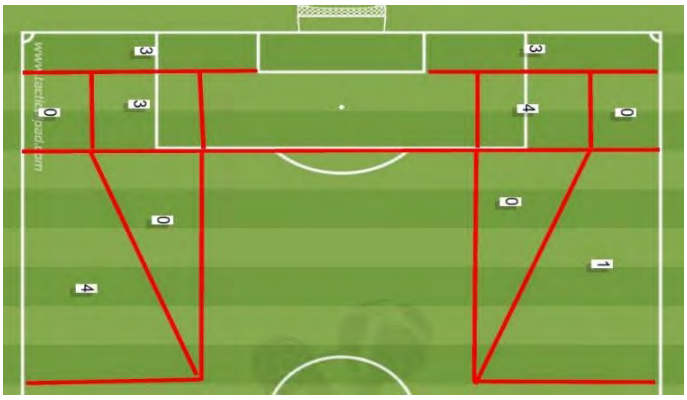

Figure 3. *Number of goals from different crossing zones in MD2 in the group phase*

During the third match day (MD3), a total of 13 goals were scored after crosses. Five goals were scored from the left side of the pitch, and eight were scored from the right side of the pitch. Here, we see the right zone more congested, with 4 of the goals coming from the parallel passing zone (end zone), which indicates a lack of synchronization between the defenders and the goalkeeper in preventing goals.

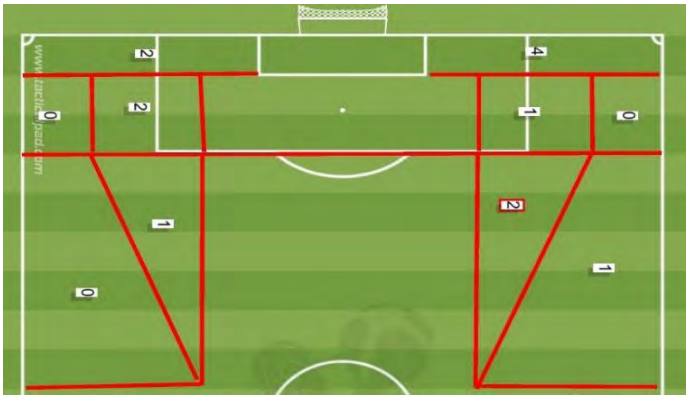

Figure 4. *Number of goals from different crossing zones in MD3 in the group phase*

Figure 5 is a summary of all goals scored after crosses from different zones.

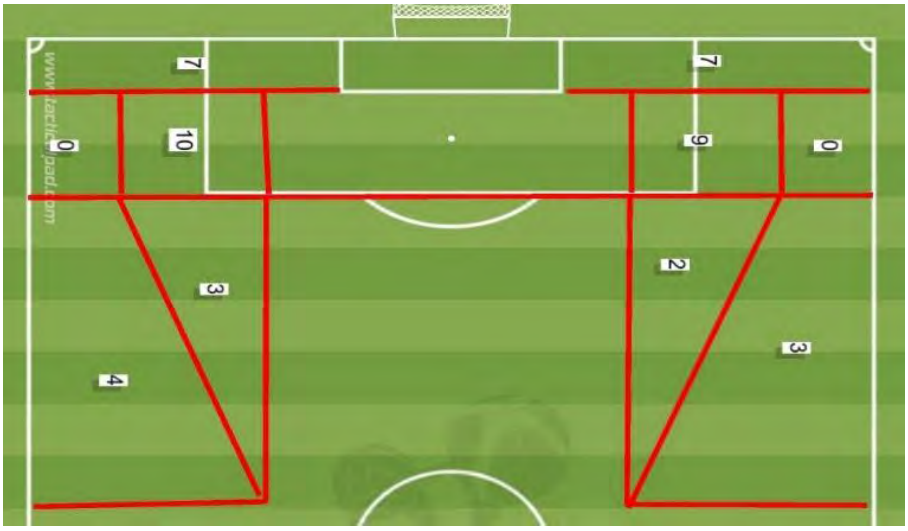

Figure 5. *Summary of all goals scored after crosses in the group stage of the tournament*

As shown in Figure 5, most goals were scored after crosses from narrow zones – 19 goals. Moreover, because goals after corners were calculated, end zones also have an important impact. This finding underscores the tactical importance of attacking the half-spaces, a key principle in modern elite football for bypassing compact defensive blocks.

Table 3. *Tournament goals summary*

Games	Goals	1 touch	Header	2+ touches	Own goals	Direct Free Kick	Penalties	From corners	From Free kick	Outside penalty box
Groups	120	57	21	29	1	3	9	5	1	7
Last 16	28	10	2	13	1	0	2	2	0	1
QF	10	1	3	4	0	0	2	0	1	1
SF	5	3	0	1	0	0	1	0	0	0
3-rd/ 4-th	3	1	2	0	0	0	0	0	0	0
Final	6	3	0	0	0	0	3	0	0	0
Total	172	75	28	47	2	3	17	7	2	9

During the tournament, a total of 172 goals were scored. One hundred twenty goals were scored during the group phase, and 52 more were scored in the phase of direct elimination. Seventy-five goals, or 44% of all goals, were scored with one touch. 28 goals or 23,3 % were scored with a head. Only nine goals, or 5% were scored from outside the penalty box area. Seventeen goals were scored after a penalty kick, or 10% of all goals.

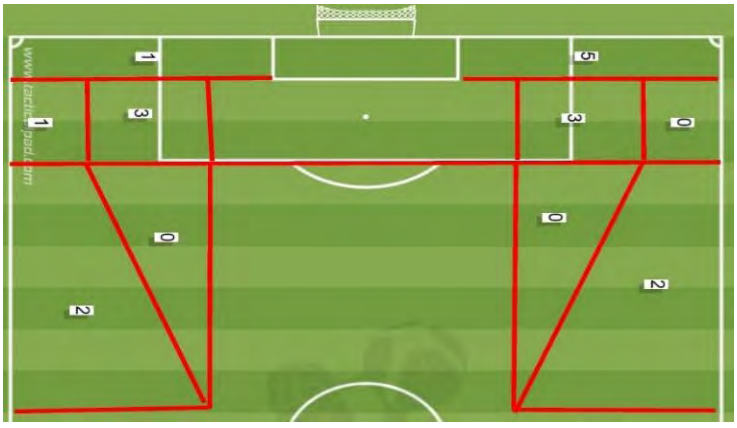

Figure 6. *Summary of all goals scored after crosses in the final stages of the tournament*

In the final phase of the tournament, 17 goals were scored after crosses from different zones. Figure 6 shows information about goals scored after crosses.

DISSCUSSION

The FIFA World Cup is the world's largest football tournament. Analyzing the game during the major competition is useful because it reveals new trends in all aspects of football.

The aim of Micovic et al. (2023) was to clarify the pattern of attacking actions that lead to goal scoring during the 14 FIFA World Cups from 1966 to 2018. The study examined 1881 goals scored in a total of 732 matches. Our finding that only 5% of goals were scored from outside the penalty area contrasts with Micovic et al. (2023) 's analysis of earlier World Cups. This may reflect a modern tactical shift toward creating higher-quality chances closer to the goal, rather than attempting low-probability long-range shots.

Based on the one-touch goals scored, 75 goals, we believe that a short route to the opponent's goal should be sought with fewer passes and fewer touches of the ball. Otherwise, the defending team has time to organize in defense.

Analysis of scored goals revealed that most goals were scored after a one-touch shot on target from the penalty box area. 62 goals, or 36% of all goals, were scored after crosses from different zones on the football pitch. This fact highlights the important role of wide areas and their effective use, especially in tournaments where most of the teams are trying to close the central part of the pitch. A small number of goals were scored with shots outside the penalty area – only nine goals.

The golden age of footballers was still very real in contributing to the creation of goals in the World Cup. It was evident that 2/3 of the World Cup goals were created by players under 30 years old.

This information can be used in various ways to prepare the teams and players. These trends show that the goalkeeper`s training program should include more situations with exercises from a short distance, focusing on one-touch shots after crosses. Additionally, technical and tactical scenarios for center forwards are similar to the previously described patterns. Positioning and zone defending for defenders are also influenced by these trends.

Figure 7. *Goal of the Tournament*

CONCLUSION

Based on the research conducted, we can observe that during the World Cup, teams frequently used wide areas of the pitch to create goal opportunities and convert them into goals.

The results strongly suggest that defensive coaching should prioritize drills focused on preventing crosses from narrow zones and defending one-touch finishes inside the penalty area. Conversely, attacking strategies should focus on creating overloads in these key areas to maximize scoring probability.

Most of the goals were scored from inside the penalty box area. We recommend an integrated approach to the training process, rather than an isolated one, utilizing real players in the penalty area during exercises instead of dummies, among other methods.

In view of the rapid development of the game of football in recent years, the expected indicators are expected to increase, forming the basis for our future research in this area of the game. Analyzing the details of scoring goals in leading international tournaments is the basis for developing training programs for top-level teams, which sets the trends and introduces new models and principles of play.

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