Original Article

Analysis of shooting and goal scoring patterns in the 2019 France Women's World Cup

SI HANG WANG¹, YANG QIN²

¹School of Physical Education, Tianjin University of Sport, Tianjin, CHINA,

²School of Physical Education, Tianjin University of Sport, Tianjin, CHINA

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Abstract

The purpose of this study is to identify the characteristics of shooting and goal scoring in the 2019 Women's World Cup soccer tournament that was held in France. All shots and goals scored during the match were analyzed using the video analysis system. The obtained results showed that 1330 shots (open play: 68.2%, set play: 31.8%) and 146 goals (open play: 65.9%, set play: 34.1%) were performed during the matches ($P < 0.001$). Most shots (50.3%) and goals (48.4%) were performed as one-touch shot during an open play; the main type of set play for all shots was free kick (42.3%), followed by corner kick (35.9%); while penalty kick (38.3%), followed by free kick (31.9%) resulted in goals. More shots (56.2%) and goals (57.5%) were scored in the second half, and the time peaks of shooting is 46--60 minute periods, the goal scoring is the last 15--min in the second half. A total of 49.9% of shots and 69.2% of goals were initiated from the central zone; no difference was observed between right and left zones. A total of 74.2% of shots and 80.1% of goals were scored within 0--4 passes; 20.2% of shots, and 14.5% of goals were accomplished within 5--8 passes. Most shots (68.2%) and goals (79%) were performed in the penalty box, specifically in the area between penalty spot and goal zone; 30.5% of shots were finished in this area, 35.9% of goals were scored in the same area. Finally, forwards had the most shots (57%) and goals (63.1%). The practical implication of this study is that soccer coaches need to learn the trends of shooting and goal scoring characteristics, focus on improving the technical and tactical build up into the penalty area, and enhance the ability for goal scoring of set pieces.

Key words: soccer; goal analysis; set play; tactics

Introduction

Women's football is an important part of the football field, which developed very slowly due to the historical and cultural factors. However, entering the 21st century, women's football developed rapidly and became an indispensable sport in world competitive arena. As the success of several women's world cups, the popularity of watching the game is increasing, and the latest tournament attracted over one billion viewers, which verified the notation that women's football is one of the sports with the biggest momentum for the coming century.

Match performance analysis is a cognitive activity that applies concrete data to reflect the quantitative relationship and characteristics between physical, technical, and tactical variables performed in training or games (Konstadinidou & Tsigilis, 2017). It is an information feedback system in the motor training control system, the basis for checking whether the training targets were achieved, correcting training deviation, improving the training process, and adjusting match strategies.

In a football matches, a successful attack means that a team can create an shoot opportunity, whether it can goal scoring or not (Mahony et al., 2012). Scoring goals is the critical technical indicator of successful football team performance, although it accounts for only 1% of the ball possessions in professional competitions (Oghonyon et al., 2020). However, only analyzing the goal scoring is not enough to reflect the offensive and defensive characteristics of teams. Because the outcome of match is the combination of many elements including technical, tactical, physical, and psychological interaction between the two teams (Burwitz, 1997). However, what are the technical and tactical indicators closely related to the success of the game, such as passing accuracy, the number of goals, the number of shots on target, the number of passes, the percentage of ball possession, success rate of crosses and corners kicks. These indicators constitute an ideal profile that is present in the match to achieve success, and it can also be used to predict future behavior in a variety of team sports activity (Jose, Volossovitch, & Carita, 2017).

Passing sequence length has been researched for a long time at the elite level teams. Reep & Benjamin (1968) studied more than three thousand soccer games to identify the characteristics of goal scoring in English 1st division league and World Cup competitions, and found that 80% of goals was achieved from three passes or less. They also reported that the frequency of the shorter passing sequence would create more efficient

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attack than longer passing sequence, the proportion of shooting to goal scoring is 10%. Silvan (2018) revealed that approximately 80% of goals and shots was performed from shorter passing sequences (four or less consecutive passes). Hughes and Franks (2005) studied three consecutive World Cups from 1990 to 1998 and found that direct attack style is still the most effective playing style and 80%, 77%, and 80% of shots and goals was achieved by this way in the 1990, 1994 and 1998 World cups respectively. Garratt et al (2017) studied the passing and goal scoring characteristics in Australian A-League football and found that, the proportion of goals were scored from a higher passing sequence (five or more passes) was much higher than the shorter passing sequence(three or less passes), 46% of ball possessions of the team was zero-length passing sequence. The direct playing style promotes the application of long-distance passes rather than short distance passes, the number of shots and goals made by long passes is twice that of short-distance passes. However, there exists a significant difference between the effective offensive conversion rate of short-sequence passing and long-sequence passing. The shorter passing sequences had higher conversion rates that pass into goals than longer passing sequences.

There have been many previous studies focused on the scoring time during the national and club leagues matches. They commonly divide the full matches into 15-minute segments and analyze it. Michalis (2012) demonstrated that 57.9% of the goals were created in the second half of the match in the 2012 European Champions League, and most of them goal scoring during the 75--90 min period. Armatas (2010) held the same viewpoint, the result revealed that the more goals scored between the 75th and 90th minute in the matches of 2006 FIFA World Cup. Armatas (2007) recorded that 60.8% of goals were achieved in the second half in World Cup 1998, 58% of goals were accomplished in the second half in World Cup 2002, 52.5% of goals were performed in the second half in World Cup 2006, and the scoring time of both three World Cups was concentrated in the last 15 minutes. This may be caused by the fatigue of athletes. Excessive fatigue will have a negative impact on players' decision making ability, which will slow down response speed of player, add more difficulties to concentrate mind, reduce their physical fitness and deform their technical movements (Lames and Martin, 2019)

The playing styles of offense are defined as an offensive tactical strategy adopted by a team in order to create the shots and goals opportunities (Christian et al., 2015). Michalis (2012) found that 72.2% of the goals were scored during open play, 27.8% of the goals were scored from set pieces, among them, the most common forms of set-pieces are free kicks and corner kicks. Liu et al (2015) regarded that counter attacks produce more goals than any other forms of attacking play in 2014 World Cup. However, Armatas (2010) had a converse opinion, he found that 47.1% of goals were finished under the playing style of elaborate attacks, 32.6% from set pieces and 20.3% originated from counter attacks during the 2006 World Cup tournament. Kubayi (2020) recorded that 169 goals (60.9%) were performed in the open play, and 82.5% of goals were scored from positional attacks, 18 goals (17.5%) came from counter attacks.

In the concept of football the Women's World Cup is incontrovertible the greatest prize that can offer a valuable opportunity to compare the best teams and female players around the world. Therefore, the aim of this study is to identify the relationship between the application of tactical, characteristics of shoot attempts and goal scoring. This information will help coaches to design shooting training in different situations, so as to improve the shooting ability of different playing positions in different field areas and time area, imitate the playing style, technical and tactical arrangements of goal scoring, thus enhancing the chances of team success (Lovaglio et al., 2016).

Material and methods

Sample

All the soccer matches (52) from the final phase of 2019 Women's World Cup were analyzed. The tournament was hosted by France between 7th June to 7th July 2019. Twenty four teams have created 1330 shooting opportunities and 146 goals in 52 game, including 8 own goals.

Procedures

The data collection process is to download and record the relevant data of the 2019 Women's World Cup by logging in to the official website of FIFA. In addition, the data were verified and gathered by watching the videos of women's football matches. The systematic observation method was followed by Lames (1994) to analyze all goals. And then all the data was output to SPSS 22.0 for the subsequent data analysis.

Performance variables

All the performance indicators are consisted of the following aspects: (1) the time distribution of shoot attempt and goal scoring during a 15-min interval (1--15min, 16--30 min, 31--45 min, 46--60 min, 61--75 min, 75--90 min, 90+ min), (2)the impact of the first goal on the outcome of the match(win, drawn, loss), (3)the type of play (open play, set play), (4) the initiation zone of the attack that leading up to shot attempt and goal scoring(attack half, defend half, left zone, right zone, central zone), (5)the number of passes before shooting attempt and goal scoring(1, 2, 3, 4, 5, 6, 7, 8+), (6) the playing style that causes shoot attempt and goal scored(positional play, counter attack, direct play), (7) the type of set plays(free kick, corner-kick, throw-in, penalty), (8) the zone distribution of shooting attempt and goal scoring, (9) the action of leading up to shot and goal according to the different type of possession (direct shot, control and shot, control, dribble and shot, header, other), (10) the

foot of shot attempt and goal scoring(left foot, right foot), (11) the playing position of the player who finish the shot attempt and goal scoring (striker, winger, midfielder, defender).

Statistical Analysis

At first, the normal distribution test of data and observation of its graph is carried out by using Kolmogorov-Smirnov test. The Levene's test was used for examining the homogeneity of the variances. And a descriptive analysis was carried out on the data (average, standard deviation and frequency). At the meanwhile, the average of the data was compared by the means of one-way ANOVA and t-test. The inter-rater reliability of separate observations was calculated to guarantee the quality of the observation system, and the reliability index was 0.96 by going through observation (intra-class correlation coefficient and kappa index). All statistical analyses were conducted by using SPSS 22.0 for Windows and the level of significance was set at $p < 0.05$.

Result

During the 2019 Women's World Cup, a total of 146 goals were scored in 52 matches, including 106 in the group stage and 40 in the knockout stage, which was the same as the number of goals scored in the 2015 Canada Women's World Cup. Twenty-four teams have created 1330 shooting opportunities, of which the number of shots on target is 453, and the rate of shot on target is 34.6%, the rate of goal scoring is 10.98%. All the shots and goals were analyzed, the number of shots and goals were 25.58 ± 3.16 and 2.81 ± 1.34 per match, only two of the match failed to score goals. 65.7% of shots and 72.6% of goals were created during the group stage ($P < 0.001$). In regard to the influence of the first goal, it should be noted that scoring the first goal of the match was critical for this tournament, as 87% of the games were won by the team that goal first, among the teams that scored first, only 7.6% could not achieve the victory of the game. In addition, during the game, 58.2% (774) of shots and 57.6% (84) of goals were achieved in the second half. most shots (20.8%) took placed in the last 15-min period, but most goals (19.2%) were scored in the 46--60min period as presented in Figure 1 and Figure 2.

Figure 1: The time distribution of shooting attempt by 45 and 15 minute periods.

Figure 2: The time distribution of goal scoring by 45 and 15 minute periods.

As shown in Figure 3. The most shoot attempts (68.2%) and goals (65.9%) were achieved in the open play ($P<0.001$), the playing style which created the most shots and goals was the direct play, among them, the percentage of shooting is 44.7%, followed by counter attack (32.2%). 59.1% of goals were finished by adhere to the direct play, followed by positional attack (20.8%). However, in the types of set pieces, more shots were created in free kick (42.3%), followed by corner kick (35.9%), but the most goals (38.3%) were performed in penalty kick, followed by free kick (31.9%). As for the initiation zone of the attack, as Table 1 and Table 2 presented that 34.9% of shoot attempts and 46.2% of the goals was launched in defend half, 65.1% of shots and 53.8% of the goals began from the attack half, while 49.9% of shots and 69.2% of the goals started from the central zone. No significant difference was found between the right and left zone, 26.7% of shot attempts and 16.5% of the goals launched in the left zone of the pitch, 23.4% of shot attempts and 14.3% of the goals initiated from the right side.

Figure 3: Type of play that lead to shots and goals.

Table 1: Initiation zone of attack that leading up to shot attempt

Starting Zone	Attack half		Defend half		Total	
	N	%	N	%	N	%
Right Zone	245	18.4	66	4.9	311	23.4
Central Zone	386	29	278	20.9	664	49.9
Left Zone	235	17.7	120	9.1	355	26.7
Total	866	65.1	464	34.9	1330	100

Table 2: Initiation zone of attack that leading up to goal scoring.

Starting Zone	Attack half		Defend half		Total	
	N	%	N	%	N	%
Right Zone	10	10.9	3	3.3	13	14.3
Central Zone	28	30.8	35	38.5	63	69.2
Left Zone	11	12.1	4	4.4	15	16.5
Total	49	53.8	42	46.2	91	100

Table 3 shows the number of passes before the shots and goals. The attacks with fewer passes can create more shots and goals, 74.2% of shots and 79% of goals were finished by 0--4 passes, and 20.2% of shots and 15.2% of goals were performed by 5--8 passes. Besides, most shots (20.4%) and goals (25.4%) were completed with only one pass, followed by the prowess control ability of players. It is worth mentioning that 37.1% of the goals were scored by their left foot, while 43.8% of goals were scored by right foot, 50.8% of shots were performed by the right foot, 33.8% of shots were finished by the left foot. In addition, the area distribution of shooting attempt and goal scoring as presented in Figure 3 and Figure 4. 68.2% of the shots and 81.9% of the goals were accomplished in the penalty area, and the area between penalty spot and goal zone had the highest frequency of shooting (30.5%) and goal scoring (35.6%).

The distribution of shooting actions that cause shoots and goals is showing in Table 4 and Table 5. In the open play, most shots (50.3%) and goals (48.4%) were scored by the means of direct shot ($P<0.001$). In set play, especially in free kicks, most shots (41.3%) were completed by one--touch shot, 40.6% of the shots are finished with their head in the corner kick. Besides, 40% of goals were scored by their excellent heading prowess, and no goals were scored by throw--in. Finally, the playing position of the player who finished the shots and goals as shown in Table 6, the most number of shots(57%) and goals (63.1%) were achieved by forwards, 28.6% of shots and 28.2% of goals were created by midfielders, 14.4% of shots and 8.7 % of goals were finished by defenders.

Table 4: The action of leading up to shot attempt according to the different type of possession

Action lead to shot	Possession type				
	Open play N(%)	Free kick N(%)	Corner kick N(%)	Throw--in N(%)	Penalty N(%)
Shot (one touch)	456(50.3%)	74(41.3%)	45(29.4%)	16(23.5%)	24(100%)
Control+dribble+shot	183(20.2%)	25(13.9%)	18(11.7%)	32(47.1%)	0
Control+shot	89(9.8%)	22(12.4%)	26(16.9%)	11(16.2%)	0
Header	70(7.7%)	56(31.3%)	62(40.6%)	9(13.2%)	0
Others	5(0.6%)	2(1.1%)	1(1.4%)	0	0

Table 5: The action of leading up to goal scoring according to the different type of possession

Action lead to goal	Possession type			
	Open play N(%)	Free kick N(%)	Corner kick N(%)	Penalty N(%)
Shot (one touch)	44(48.4%)	4(26.7%)	3(21.4%)	18(100%)
Control+dribble+shot	19(20.9%)	2(13.3%)	3(21.4%)	0
Control+shot	14(15.4%)	2(13.3%)	1(7.1)	0
Header	13(14.3%)	6(40%)	7(50%)	0
Others	1(0.7%)	1(6.7%)	0	0

Table 6: The playing position distribution of players who finished shooting and goal scoring

Positions	Shots	%	Goals	%
Striker	424	31.9	55	39.9
Winger	334	25.1	32	23.2
Midfielder	380	28.6	39	28.2
Defender	192	14.4	12	8.7

Discussion

The aim of this study was to identify the characteristics of goal scoring in the 2019 France Women's World Cup, considering many technical performance indicators related to goal scoring.

Although there are great differences between male football players and female football players in physical fitness, technical level, tactical accomplishment and playing style. However, with the continuous development of the masculinization trend in women's soccer, and the lack of useful information related to the characteristics of shooting attempt and goal scoring for women's football team, which has great practical significance to improve the shooting ability and offensive efficiency of male and female football players.

Game period was regarded as one of the factors that related to team performance (Gauriot, & Page, 2018). The result about the time period of shooting and goal scoring, the current study concluded that the number of shots and goals in second half was higher than the former half. If we divided the whole match into 15--minute period, the 15--minutes near to the end of the game created most shots opportunities, most goals were scored in the beginning period of the second half of the games. And the result was almost in line with the previous finding such as Mitrotasios (2012) pointed out that the number of goals in the first and last 15 minutes of the match is significant higher than other time period in the 2012 UEFA Champions League. Armatas (2010) revealed that the more goals scored in the last 15--minute in 2006 FIFA World Cup. After studying the three consecutive World Cup matches, Armatas et al (2007) recorded that the number of goals created in the second half was higher than the first half.

From the perspective of sports physiology, many studies have pointed out that with the increase of competition time, players will have different degrees of fatigue, which will lead to the decline of players' physical fitness, distraction and greatly increase the probability of players' mistakes. (Coutinho et al., 2016). In this way, when the player was in a state of fatigue, which will slow down their running speed and decrease the number of high--intensity movements. According to Pullinger et al (2019), the fatigue state is particularly obvious in the second half, especially in the last time of the second half. The athletes who are in a state of fatigue will make it harder for them to concentrate on the competition, their technical actions will be easily deformed, and their jumping, sprinting and intermittent running abilities will become worse. On the other hand, the tactical arrangement of the coach in the second half and the adaptation to the opponent's tactics are also the factors that lead to more goals in the second half (Gai, Volossovitch & Gomez. 2019). Additionally, as the competition

comes to an end, for the sake of reverse the goal line, the lagging teams are more inclined to desperate to push forward to create scoring opportunities, thus scoring goals or conceding more goals (Anderson et al., 2016) .

The temporary lead does not mean the team won the game. Football is a game of at least 90 minutes, which is a challenge for the player's physical fitness, mentality, endurance and willpower. However, most football matches end up with three or less goals. Therefore, the team that scored or conceded first will have a big influence on the players' psychological status (increasing self-confidence or growing demoralisation), which will affect the team's cohesion, self-confidence and match performance in subsequent games (Trequattrini et al., 2015). The results of the present study show the vital importance of first goal. It was shown that 87% of the teams who scored first will win the game. In previous studies it was presented that 71% of teams won in 2015 Women's World Cup, 67% in 2011 Women's World Cup. With the increase of the time, the probability of winning the match for the team scored first shows a very obvious upward trend, which shows how resiliently teams protect their leads.

The effectiveness of playing style influence the success rate of teamwork activities and individual actions (Reep & Benjamin, 1968). The previous study showed that the offense efficiency of counterattack tactics is much higher than that of positional attack. At the same time, the research (Mitrotasios, 2018) found that the successful teams scored more goals than unsuccessful teams in the playing style of counter attack, mainly due to the tactical characteristic of counter attack is to push the ball to the attack half quickly after regaining the ball possession, depend on the speed advantage, form an unbalanced defense and attack situation, and seize the opponent's defensive weakness to strike a fatal blow. However, successful counter attacks require players to have accurate passing ability in high-speed running and the brilliant movement ability to find space, which rarely appear in unsuccessful teams. The present study presented that both most shots and goals were created in open plays (shots: 68.2%, goals: 65.9%). This coincides with the results of Mitrotasios (2012), Kubayi (2020) and Joaquin et al (2019) who showed that about 60%--75% of all goals have been scored on open plays, but there are certain differences in the main styles of play in open play, which is probably due to the lower technical skill and defensive ability that women's play have. At the meanwhile, the play style of women's football is more straightforward than the men's, as Table 3 presented, 74.2% of passing sequence lead to shot attempts is 0--4 passes, 79% of passing sequence lead to goal scoring is 0--4 passes, the most common way to shot and goal scoring in open play is one-touch shot (shots: 50.3%, goals: 48.4%), which reflected it is often not need to much passes to defeat the defensive line of opponent, and 14.8% of shots and 17.8% of goals were created by excellent heading prowess, which demonstrated that with the development of women's football, the defect of heading technique for women's player is not longer exist. Furthermore, 41.6% of the shot opportunity was created by crossing. The result was similar to the previous study reported that crossing accounted for between 30 and 40% of total goal assists (Durlak 2014; Mitrotasios, 2012). Gamble et al (2019) pointed out that the number of crosses can contribute to differentiating successful and unsuccessful teams. In this sense, the current study found that as the champion of the 2019 World Cup, the American Women's Football team has the highest success of crossing (29%), which is the precise cross technique and aerial goal scoring prowess that cannot often be seen from the unsuccessful team.

The current finding that 31.8% of total shots came from set plays, among them, the number of shots completed through free kicks accounted for the highest proportion of 42.3%, and penalty kicks accounted for the lowest proportion of 5.7%. Besides, 34.1% of goals were scored in set play, of which the highest is the penalty kick (38.3%), the lowest is throw-in (0%). However, some previous studies recorded different value, such as Mitrotasios (2012) the number of goals in set-pieces was the highest through corner kicks (47.6%), followed by free kick (33.3%). And Njororai (2013) reported that in 2018 World Cup, the most goals created from penalty (34.9%), corner kick account for 31.8% and free kick is 30.3% from set plays, besides, Njororai (2013) emphasized that corner kicks were the most efficient way to score in the set piece during 2010 World Cup tournaments, and the present study revealed that, on average, 36 corner kicks were needed to lead to a single goal scored, which was less efficient than the 28 per scored one in the 2015 Women's World Cup. The result was similar to the studies in the English Premier League, Baranda et al (2012), Robins (2013), Pulling et al (2015) found the effectiveness value of corner kicks were 2.6%, 2.2%, 2.7% respectively. One of the reasons for the difference of set plays could be the introduction of Video Assistant Referees (VARs) in 2019 Women's World Cup. The referee can watch the video repeated and finally make the accurate decision, which greatly reduces the occurrence of misjudgment. On the other hand, this reflects that the defensive skills and caution of women football players in the penalty area need to be improved.

In the study of initiate zone of attack (Redwood, B. 2008; Sergio et al., 2011), such as Jose et al (2009) presented that most attacks that scored goals are initiated in the attack zone, 38.3% of goals began from central zone, 28.8% of goals launched from defend zone, 31.2% of goals initiated from final third in 2008 European championship. Mitrotasios (2012) reported that 52.6% of goals began from the central zone while no differences were found in the left and right zone, which the result is similar to the present study, while the present study showed that 69.2% of goals initiated from the central zone, 14.3% and 16.5% of goals began from the right and left side, 49.9% of shots began from the central zone, 23.4% and 26.7% of shots was launched from the right and left zone. The high playing effectiveness in the central zone could be the area has wide space, players can have a wide field of vision to make a variety of passing choices, and the shooting angle can be easily adjusted according

to the position of the goalkeeper. In return, when the attacks were blocked in the central zone, the opponent's attack will naturally start from the central zone.

The result of current study recorded that 68.2% of shots and 81.9% of goals were performed in the penalty area, the value is lower than the 87% recorded by Wright et al (2010) in English domestic league, 83.4% of the 2006 FIFA World Cup by Armatas (2010). Hughes & Franks put forward that the concept of 'prime target area', where was defined as the area composed of the length of six--yard box, and it is within two--yard from the penalty spot to six--yard frame. Caring et al (2005) found that 37% of goals were scored from this area in the 2002 FIFA World Cup. Mitrotasious (2012) stated that 42.1% of goals accomplished in the same area. The present study reported that 30.5% of shots and 35.6% of goals came from the same area, but the shooting frequency from a long distance outside the penalty area is relatively higher. The high shooting efficiency in this area is caused by the interaction between the large shooting angle and the wide distance between the goalkeepers. For this reason, the coaches always train the shooting skill of players in that area, so the reason for the increasing shooting efficiency in the area.

Regarding the playing position of scoring player, the present study reported that 57% of shots and 63.1% of goals were executed by forwards. Among them, strike account for 31.9% of total shots and 39.9% of goals, winger take up for 25.1% and 23.2%. Both Tokul et al (2018) and Mitrotasious (2012) pointed out that 55%--70% of goals were scored by forwards. In addition, the trend of goals are scored by other positions is also uprising because of the continuous evolution of modern football tactics, the division of labor between different playing positions becomes more and more flexible. In elite football matches, it is no longer rare for defenders to dash forward to deliver assists and complete goals frequently, and it is more and more common for strikers to take the ball back to midfielder after attracting defense.

Conclusion

The purpose of this study was to analyze the characteristics of shooting attempts and goal scoring during the 2019 Women's World Cup tournament in France. And the present findings will provide some tactical strategies and latest playing style at the highest level of women's soccer tournament, which will be beneficial to coaches and players to implement specific tactical issues and training guidelines to achieve the success of the matches. The results revealed that most shots and goals emerged the similar characteristics, such as the type of play, the beginning of the attack area, the passes sequence before the shots and goals, the area of shooting and scoring, the playing position of shooting and scoring. Specifically, among all the shots, no matter whether the shots can achieve goal or not, there are more shots and goals performed in open play than set--pieces, in the attack that causes shooting or scoring, most of the launching areas are in the attack half, besides, the pass sequence that lead up to most shots (74.2%) and goals (80.1%) is 0--4 passes, most shots (50.3%) and goals (48.4%) were executed with one touch shot, 68.2% of shots and 81.9% of goals were performed in the penalty box, 57% of shots and 59.6% of goals were completed by forwards. However, there are significant differences in the time distribution and the type of set pieces, most shots were conducted in the first 15 minutes at the second half, but most goals were scored in the last 15--min at the second half. In set plays, most shots (42.3%) were completed in free kicks, but most goals (38.3%) were scored in penalty.

Over all, the 8th Women's World Cup is no longer relies on individual ability or follows the traditional formation, but pays more attention to the technical and tactical arrangements of free kick and corner kick. Although this study has not solved the limitation of not analyzing goals in different competing contexts, this study has analyzed many detailed variables related to goals, and these findings will help coaches and players pay more attention to developing original technical and tactical strategies of set play, more inclined to goal attempt within the penalty box. Furthermore, during the halftime, the coach should adjust the tactical arrangement of the team in the second half in time according to the performance of both sides in the first half, so as to improve the chances of winning the team.

Disclosure statement

No potential conflict of interest was reported by the authors.

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