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Analysis of goals scored and offensive play style adopted in the English Premier League (2019-2020 season)

Hamici Abdennour ^{1*}, Mahmood Fakhro ²

¹ Higher School of Sports Science and Technology, (Algeria)

hamiciabdennour@gmail.com

² Dartfish certified instructor, Dartfish Middle-East, (Bahrain)

mf2511@gmail.com

Abstract:

Aim: Analyze the goals scored, and play styles adopted by players of the English Premier League (2019-20) season. **Method:** The sample consisted of 1034 goals scored after offensive actions selected as a result of open play, which was estimated at 761 goals and set pieces with 273 goals, the scored goals were analyzed from the moment of recovery of ball possession. Using an observational methodology and create a tagging panel for Dartfish software, we can study variables (counterattack, quick attack, and positional attack). **Results:** The results revealed that teams using positional attack spend more time building an offensive game, when compared to counterattack and quick attack. **Conclusion:** The results indicate that the goals scored following a quick attack from the opponent's half camp are the most approved at English Premier League 2019-2020.

Keywords: Match performance analysis in Soccer; Goals scored; Play Style; English Premier League; Dartfish software.

* *Corresponding author*

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1. INTRODUCTION

The English Premier League is currently ranked first in the ranking of the best football leagues in Europe according to the UEFA rankings (UEFA, 2021) and compared to other domestic competitions, the English Premier League seems to have a more direct style of play (Sarmiento H et al., 2018, p32) and faster pace and level of play (Oberstone.J 2009, p19), than other major European leagues. In recent years, this competition has evolved both tactically and physically by increasing the number of passes, passing cadence, passing accuracy and running different speeds at high intensity (Barnes.C et al., 2014,p1098).

This development appears to be imposed in particular by higher-ranked clubs with more financial resources to recruit the best players, which apply a more possession-based approach than lower-ranked clubs, and still play in a more direct fashion (Bradley.P et al., 2015, p984).

However, although many scientific studies on the English Premier League have focused on physical requirements, there is a lack of studies describing playing styles and their effectiveness in achieving offensive performance in this league (Sarmiento.H et al., 2013, p778). With the emergence of modern technologies that use automated media programs and video analysis programs, they allow valid and reliable studies in the field of analysis of the tactical activity of play, which is characterized by the interrelationship between individual players' skills, team cooperation, game plans, and competitor behaviors (Vilar.L et al., 2012, p2).

Tactical activity analysis allows the use of quantitative and qualitative data to guide specific training. The effect of this training adapted to these features allows indicative of the tactical and capabilities of the players during the match. However, this data says nothing about the most important fact for a footballer in the Premier English League: How are goals scored?

The development of football playing style in terms of the increase of the performance speed index for each of the players' movement within the field and their exchange of positions with each other, as well as the speed of the ball's transfer in the process of building a pressing or counterattack from one third of the defense or one third of the midfield to one third of the attack for the purpose of scoring goals led to the emergence of the concept. What is new in football literature relates not only to how to build the attack and its goal only, but also to

the ability to implement the tactical duty in the shortest time possible to carry out this attack compared to the speed of the opposing team in the process of rebuilding and organizing its defensive lines.

This concept, which imposed itself strongly on the way of thinking of many coaches at their different levels, led to their renewed attempts to search for new methods of executing attacks in the shortest possible time, while maintaining the factor of accuracy in terms of receiving and delivering the ball, as well as the accuracy and strength of scoring in its multiple forms.

Regarding the offensive phase of the game, teams can basically play three offensive styles: counterattack, quick attack, and positional attack (Fig. 1).

A counterattack refers to an offensive situation with the following characteristics:

- 1- The transition from defense to attack occurs quickly in a short period of time;
- 2- The opposing team's defense is unbalanced;
- 3- Actions are executed at high speed and with fewer passes - especially depth passes.

The quick attack is also characterized by a quick transition from defense to attack, but the opponent's defensive system is more organized than the counterattack and passes are executed in depth and width. Positional attack is an offensive method often used by teams with high technical and tactical qualities, in which players spend more time building offensive play and directing the team's collective behavior with a homogeneous and compact mass.

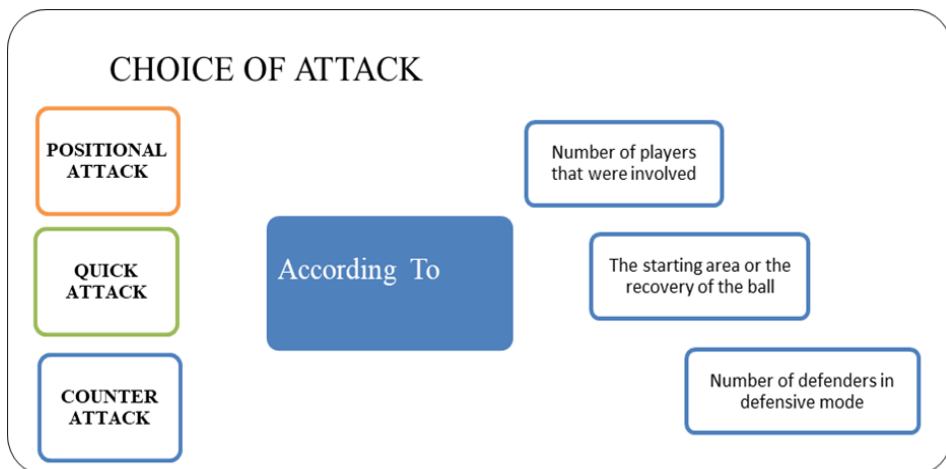


Fig.1. Attack logic (Mombaerts.E, 1996, p93)

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During the 2002 World Cup, 51.8% of goals were scored from cross, more than 23% of passes and combinations were made using short passes and 5.8% of long passes (Jacquet et al., 2002, p21). Crosses are really key elements when the defensive block is in place. It is necessary to transcend and lose balance in order to find ideal positions for application. However, we should note that 18.7% of the goals were scored through individual actions, whether in a stampede inside the penalty area or scoring against the goal.

The positional attack sequence of more than fifteen seconds allowed 31% of the goals to be scored in 2002 and 29% in 2002 (Jacquet et al, 2002, p24). The team's ability to develop and find solutions increases in the use of positional attack in order to create scoring opportunities. The majority of goals are scored after offensive sequences of ten seconds or more.

For goals scored on set pieces, during various major international competitions more than one out of every three set goals are scored, the percentage of goals scored from set pieces was 34% in 2002, 40% in 1998 and 36.1% in 1994 (Jacquet et al., 2002, p25).

Selecting an attacking method over another may take into account many types of information, such as coaches' ideas, players' skills, and club playing philosophy. In addition, coaches need to continually evaluate tactical performance to understand whether the methods used have been modified according to the characteristics of the team and use similar analyses for this purpose through observational methodology.

While the number of studies related to the analysis of sports performance has increased over the past few years, it is still not clear whether the offensive approaches and behavior's adopted in high-level football are related to offensive efficiency, according to (Tenga. A et al. 2010, p 275) and that the offensive sequence with fewer passes increases the chances of scoring compared to the positional attack. In contrast, (Lago.C-Penas et al. 2011, p470) found that winning teams had significantly higher average passing and ball possession than losing teams.

This information may help coaches in identifying methods and indicators that can be used as references during sports training (Garganta.J et al.1997, p249). One of the most important aspects of the sports training process is the analysis of individual and team performance (Ali, 1988, p307), and match analysis provides a means to measure some performance variables. The purpose of this research is to

analyze the source of the goals scored, and the offensive tactics used in the English Football League for the 2019-2020 seasons.

2. METHODS

2.1 Sample

1034 goals scored in 380 matches played at the English Premier League players for the 2019-2020 seasons were analyzed. That started on (09 August 2019) and ended on (26 July 2020). We chose 761 goals as a result of open play and 273 goals of set play distributed as follows: (122 corners, 76 penalties, free kicks 72, 03 throw in). The scored goals were analyzed, obtaining the sequence of actions from the moment of recovery of ball possession.

Using observational methodology and Dartfish 10 Pro S software, a custom monitoring tool was created with the following variables: 'Number of Players involved in the attack', 'Passes' and 'Time duration'. Then, offensive actions were categorized into three offensive game modes: counterattack, quick attack, and positional attack.

2.2 Procedures:

The methodology used for this study was observational descriptive or match analysis. Matches have been downloaded from Wyscout and InStat Scout platforms. These platforms are a private video database that allows football coaches and analysts to watch and download all matches from multiple tournaments around the world. After that, Dartfish Pro 10, (Hamici, A. 2016, p53) Process selected events from matches and build a list of game actions. Each can be qualified with a set of monitoring keys that allow their own identification.

This process not only allows us to easily track actions, but also allows us to extract matching stats by locating and displaying the appropriate video clip; this software opens up prospects for quantitative and qualitative sports performance analytics.

By creating a panel according to the variables to be studied, this program contributes to the analysis of the skill and tactical performance of English Premier League football players for the 2019/2020 season (Figure 2).

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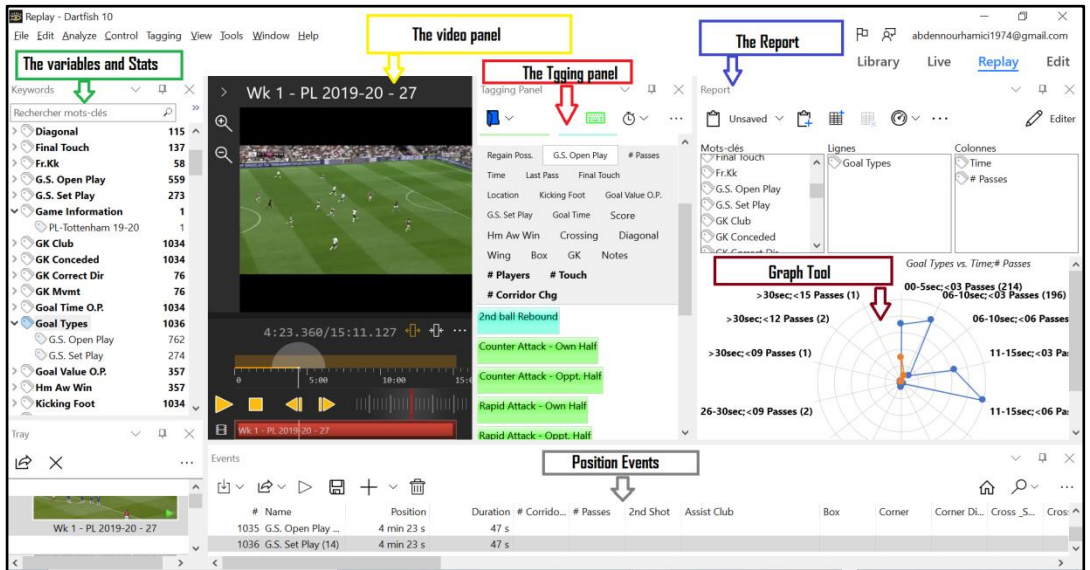


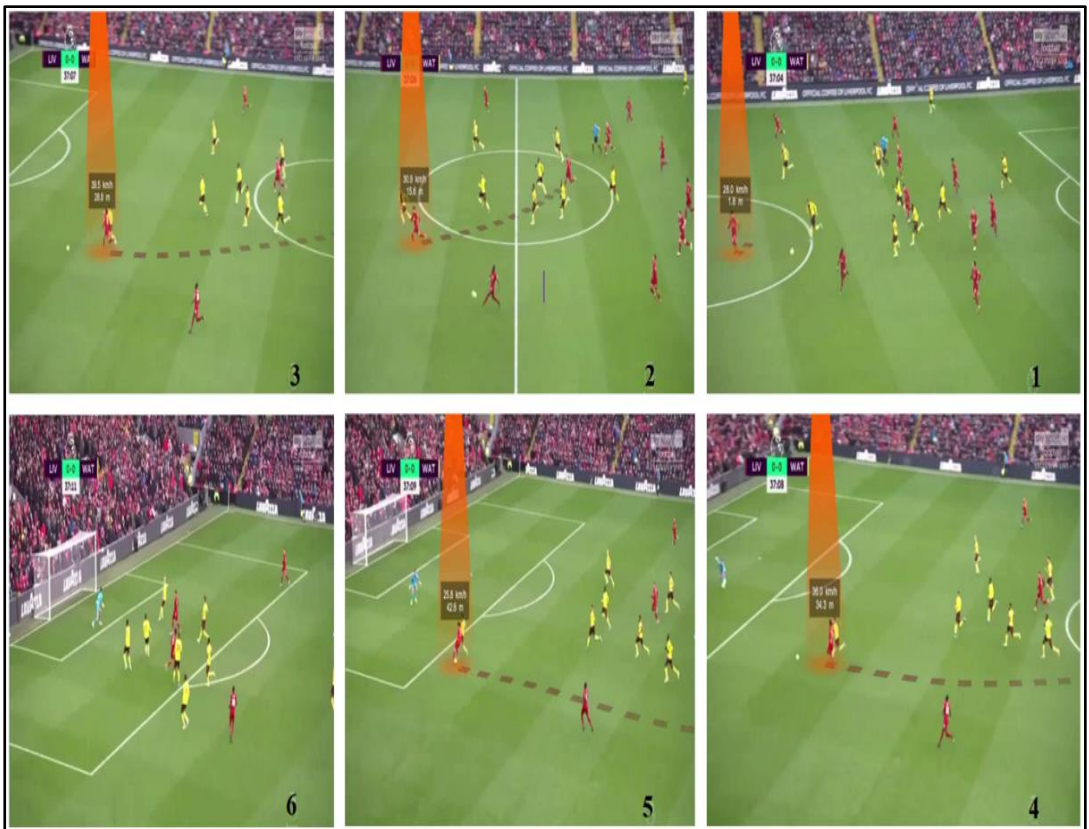
Fig.2. Screen capture from Dartfish® Pro10 software with the categorical event used in the study.

Only the offensive actions which ended in finalization were selected, as suggested by Almeida33. The variables used to create the categorical matrix were proposed by Garganta29 and Almeida33, and are presented in Table 1

Table 1 Categories of offensive actions. Borges, PH et al. (2019, p2)

Variables	Description
Player Involved	Number of players that were involved, touching the ball during the offensive action.
Passing	Total number of passes made with any part of the body that was received by the attacking partner and continued the offensive phase of the team.
Duration	The duration of the offensive phase, from the interception of the ball, to the end of the offensive action.
Corridor Changes	Number of times that the ball changed field corridors during the offensive action, taking into account the division of the field into 3 corridors (left, central, and right)

All offensive sequences in which players scored a goal were considered as successful sequences, and the following figure 3 shows a model of an attack sequence following a counterattack.



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Fig.3. A model of an attack sequence after a counterattack (Liverpool vs Watford) using the Dartfish software

All sequences where players scored a goal were considered as successful sequences, and those sequences which finished with kick out or goalkeeper's defense were classified as a failure. The characterization of the offensive game method proposed by (Garganta, 1997, p247), and presented in Table 2 was used to identify the different playing styles during the offensive actions: counterattack (CA), quick attack (QA), and positional attack (PA).

Table 2 Characteristics of offensive play styles. (Garganta.1997, p248) and Borges, PH et al. (2019, p3).

Counterattack (CA)	Quick attack (QA)	Positional attack (PA)
Ball recovered in any area of the playing field	Ball recovered in any area of the playing field	Ball recovered in any area of the playing field
Performs equal or less than 5 passes	Performs a maximum of 7 passes	Performs more than 7 passes
Offensive sequence duration equal to or less than 12 seconds	Offensive sequence duration equal to or less than 18 seconds	Offensive sequence duration exceeding 18 seconds
Opponent team advanced on the pitch and defensively unbalanced	Opponent team balanced defensively	Opponent team balanced defensively
Ball circulation more in depth than width	Ball circulation in width and depth	Ball circulation more in width than depth
High play intensity	High play intensity	Cadenced play intensity

3. RESULTS

Figure 4 presents the observed offensive play styles: counterattack, quick attack, and positional attack according to their starting areas on the field. The results showed that the percentage of goals scored after the positional attack is relatively less compared to the quick attack that starts from the middle of the opponent's field, and to a relatively lesser degree than that starts from the attacking team's half of the field. In addition, the positional attack sequences provided a longer duration, taking into account the execution time in seconds.

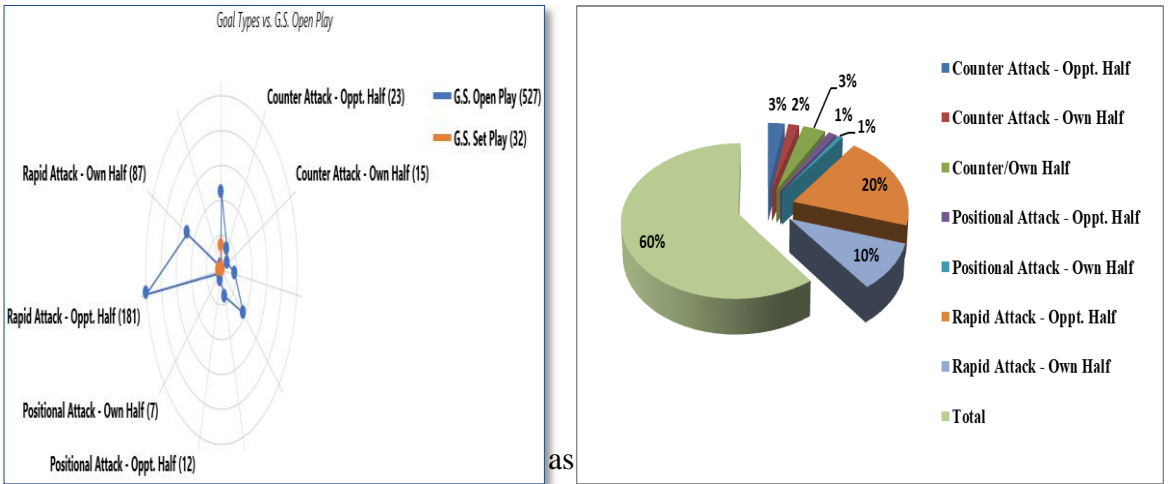
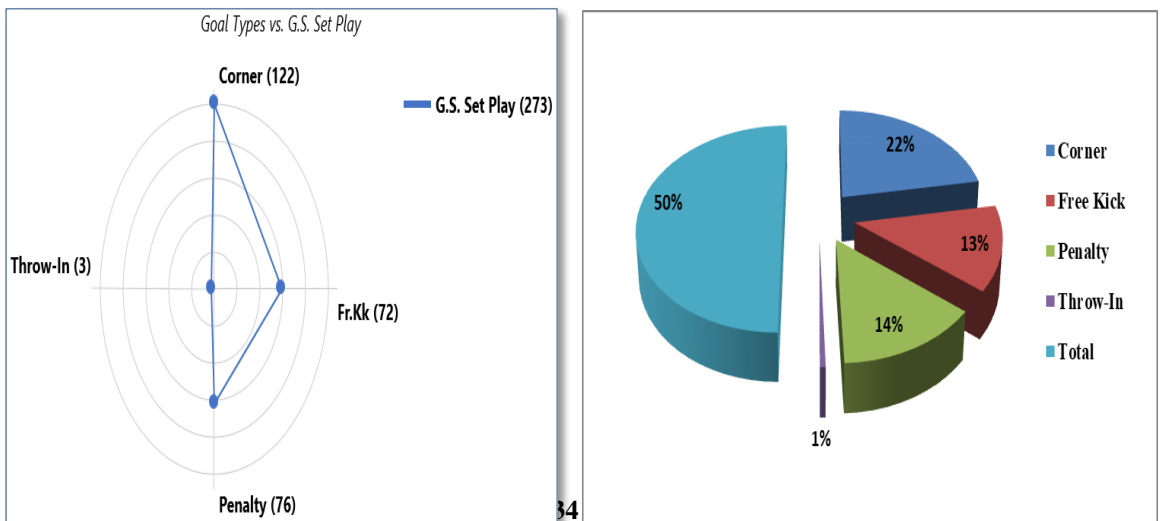


Figure 5 shows the percentage of goals scored from set pieces, and the results showed that the percentage of goals scored after corner kicks is relatively the highest in the Premier League for the 2019-2020 season.



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Fig.5. Goals scored as a result Set Play

Regarding Figure 6, which shows the goals scored according to the number of passes used during the offensive sequences. The results show that the most goals scored are the result of less than 03 passes and the least are the goals scored after 15th pass only.

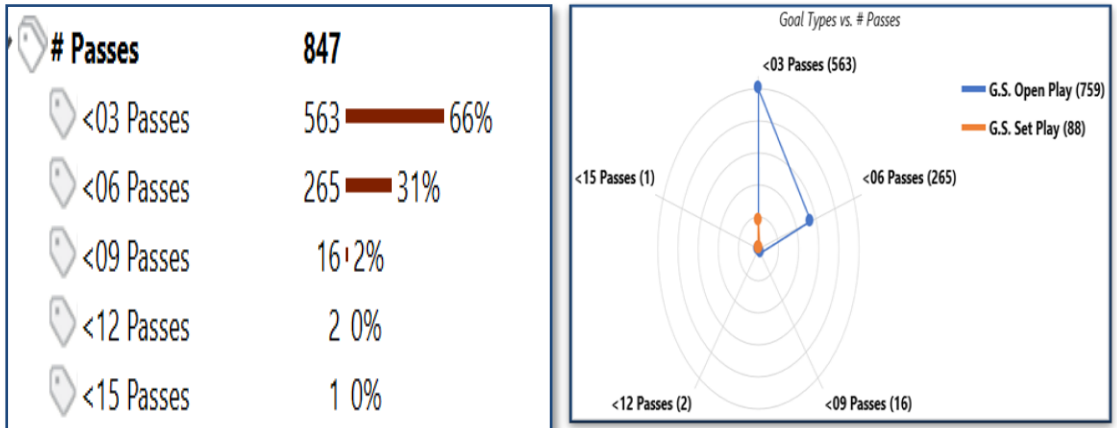


Fig.6. Number of Goals scored originating from passes, divided by type of play.

Figure 7 shows how long the offensive sequence takes before a goal is scored. The results show that most of the goals scored provided a time period between 11 and 15 seconds, and in contrast, only 04 goals were scored after an offensive sequence of more than 30 seconds.

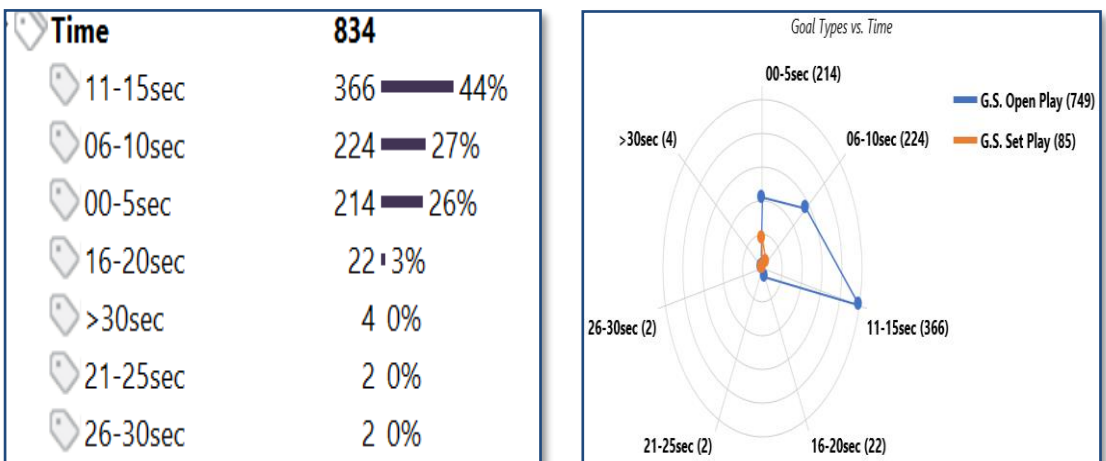


Fig.7. Duration of the offensive sequence before goals scored, divided by type of play.

Figure 8 shows that the majority of attacks used to score goals pass through the Central Area. We also note a similar distribution for the other corridors. As a result, we can conclude that the majority of goals in the Premier League for the 2019-2020 seasons pass from the central area, whatever of play style use.

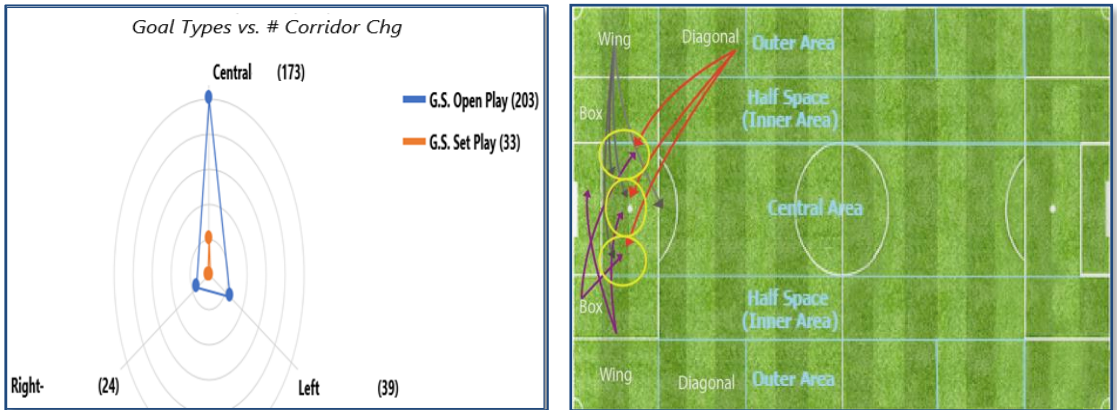


Fig.8. Corridor change before the Goal is scored, divided by type of play.

4. DISCUSSION

The study aimed to analyze the scoring reality of the English Football League for the 2019-2020 seasons. The results showed that there is no equal in achieving the goals scored in the offensive sequence according to the play styles used. Through the examination of 38 rounds, these indicators are supported by a study (Hughes M. et al, 2005, p512) which indicates that different methods of offensive construction can be equally effective. As long as it is well executed and disciplined. The best performing teams are able to enforce and maintain a consistent level, in regard less of the opponent's strength, playing area, or possible situational changes during a match.

Regarding the attack method used while scoring goals, we found that the quick and counterattack are presented as the majority, and the most effective while the positional attack showed a lower incidence as shown in (Fig. 4). This is consistent with the study of Armatas.V et Yiannakos, A., (2010, p124); it was found that the rate of repetition of the quick and counterattack in a football match is weak and equal to (4.9%), but it is considered more effective than the positional attack. The following percentages support this result: (16.9%) of the quick and

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counterattack leads to a goal, compared to (11.1%) of the positional attack only.

It is believed that teams seeking to build an offensive with a positional attack are technically superior, preferring to control play, It dictates tempo rather than give initiative to the competitor, and are therefore more conservative, with a greater tendency to maintain possession of the ball, and play an indirect game. Some studies have suggested that these behaviors can help teams win the game. On the other hand, two explanations may help explain why a counter-attack and a quick attack are less than the "players involved," "passes," "duration" and "corridor changes" of positional attack;

- First, both methods are characterized by a rapid transition from defense to attack, with teams making deep passes to reach the opposing goal quickly. Due to the risks associated with sending the ball into areas mainly occupied by teams competing, loss of possession of the ball is often observed.
- Second, even when playing with high intensity and quick offensive moves, teams organize their offensive phase with a few passes and players involved.

The transition is the moment when a team should seek to advance on a competitor in order to take advantage of the loss of defensive balance. (Viscidi, 2009,p35) was show by statistical stud that goals scored often come from a recovered ball in the opponent's half of the field followed by a quick movement (3 to 5 seconds) and a limited number of players (2 to 3). This is in line with the results of our study. Coming back to the recorded statistics, most of the goals were scored after less than 3 passes, in the sense of involvement of 3-4 players, of which 215 goals were scored less than 5 seconds.

Also, Rapid movement with a change in direction, quick starts and stops, constant duels with the opponent to keep the ball, are essential factors in the strength of speed, and they are necessary if we want to reach the highest levels of excellence and sporting success. (Hedjab. I, 2018, p37).

Gonzalez-Rodenas.J et al. (2020, p9) described some tactical characteristics from EPL matches. In this regard, 3 out of 4 team possessions started against defensive pressure and 43.1% tried to penetrate over the opponent during the first three seconds. For the possession development, fast and direct attacks comprised nearly 60% of the offensive sequences and 3 out of 4 attacks lasted less than 20 seconds. These results agree with previous studies that highlighted the fast game tempo and direct style of play of EPL.

According to (Cassia, 2011, p33), improving the ability to implement speed in the game is important, because with fast play, by constant pressure on the opposing team, the spaces will be reduced, and, accordingly, running in different directions will take place alternating with acceleration and deceleration phases. In the offensive transition, there is little time to make the most of the advantages of space after recovery of the ball. And for this, the use of the central corridor contributes to entering the (area 14) and the so-called golden area to score goals.

According to the Horn et al. (2002,p32), teams were more than 4 times more likely to score goals by playing directly into the penalty area than playing laterally to the wings. In other words, fewer goals would be scored through possession, leaving zone 14 to the wide areas. Possession time is another reason why the ball leaving zone 14 should be passed into the penalty area directly. Horn et al. (2002, p33) found that the ball was kept in zone 14 for 2.7 seconds in average in order to score a goal. If the possession lasts over 8 seconds, then it won't produce an attempt on goal. That means quick attack is a key point in using zone 14.

There is no doubt that moving and rotating the ball sideways instead of depth leads to more passes and a longer period in possession of the ball, and this is what favors the choice of passing from the central area for English Premier League players for the 2019-2020 seasons, and this is consistent with the results of our study.

Mombarets.E. (1991, p79-80) considers the counterattack to be an offensive style of play that starts from all areas of the field but is highly effective in recovering the ball high in the opponent's half. Counterattack is the most offensive form of play that is done quickly, a procedure that requires moving from one defensive tactical form to another attack as quickly as possible, where numerical superiority, accuracy and speed of movement are truly essential to its success. Today, effective play is that of teams that know how to quickly take advantage of the right time after getting the ball back.

Casais, L. et Lago, J. (2006, p15) mentions that of the total goals scored in a football match, we find between 25-40% as a result of set-pieces, and 50% of the goals as a result of open play in the transition stages (quick attack and counterattack) against the rest of the positional attacks. This causes the need to provide teams with the rules of organizing play in transition situations: to quickly restore the balance of defense, and to make maximum use of the opponent's disorganization to carry out the attack.

As for the goals scored after set-pieces, Eriksson et al. (2003, p125) indicates that more than 1 out of every 3 goals were scored during the various

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major international competitions, the majority of which were direct and indirect offenses as well as corners, and the percentage of goals was as follows (34%) in 2002, (40%) in 1998 and (36.1%) in 1994, according to analyzes (Jacquet et al, 2002, p28).

The results of the current study are also reinforced by Liu, H et al. (2016, p515) and Kite, C et al. (2017, p160) who concluded that successful teams make more passes in shorter duration during offensive sequences, indicating greater success of high-speed ball-moving movements. Moreover, successful sequences are those in which players develop their tactical intentions and skill.

And in another study that supports and may explain the results of the current study, (Acar, MF et al.2009, p240) states that some of the indicators that led to scoring goals in the 2006 World Cup, are due to the use of fewer passes and fewer touches with the ball and a decrease in the number of participating players. In the attack and the economy in the execution period, this results in more scoring opportunities.

Making the decision not only in passing and shooting on the goal, sending crosses and recovery possession ball, but also moving consciously to cover some gaps or to create gaps in the opponent's areas, and this requires a great technical and tactical awareness among the players, and therefore they must be trained to understand; the style of play and the tactics to be implemented. It takes some training to reach a state of mental and muscular harmony, where the implementation is carried out as soon as the decision is made directly.

According to Souidi, R. et Chriet, MH. (2021, p 387), the coaches' in the soccer teams be preparing a plan that includes electronic programs such as the kinetic and tactical analysis program during the application of the training session.

Learning and mastering tactical behavior does not require the player to form rigid patterns of behavior; Rather, it requires the ability to change his behavior and modify it according to the changing playing situations during the competition towards the speed of recalling the experiences of the previous situations he went through, hence the importance of rapid decision-making based on the data on the ground and previous experiences that help the player to make the decision taking into account the general interest of the team .

5. CONCLUSION:

The following conclusions can be drawn about the source of the goals scored, and play styles used in EPL 2019-2020 in this study:

- 66% of goals were scored from attacking sequences using less than 3 passes;
- 44% of the goals were scored in a time period ranging between 11 and 15 seconds;
- 20% of goals scored from quick attacks after recovering the ball in the opponent's midfield field;
- 22% of goals scored from corners;
- 60% of goals scored as a result of open play;
- 36% of the scored goals pass through the Central Area;

In light of these conclusions, we suggest that coaches consider that there is no single play style for building the offensive sequence during the match. All adopted offensive methods can provide effective results. Player characteristics, coaches' ideas, playing model, training methods and mental aspects can be factors that affect playing performance, and from here it can be asserted that the technical means and tactical choices that were adopted by the English Premier League players for the 2019-2020 seasons to score goals can be summarized in the following characteristics:

After interception of the ball, the first pass is forward – always looking for attacking depth;

- The good spread of players and their concentration in the three corridors of the field, which gives additional options for the player carrying the ball from the sides or from the depth and overload the half spaces and the 14 area;
- Make good use of the weak area by switching play and changing the tempo;
- Excellent timing in requesting the ball and running at the required speed - kinetic speed with and without the ball;
- Running forward at full speed, which assures excellent physical fitness;
- Concentration in effective areas to finish the attack;
- Creating an increase in the number of midfielders and wings with support from the full back;
- Focus on the second ball offensively;
- Moving and rotation to deliver and receive the ball;
- Superiority in 1v1 offensive positions, whether on the ground or in the air;
- Good positioning between the lines and inside the penalty area;

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- Depth play with “Long balls” is more successful, as they require fewer decisions;
- The importance of goalkeepers in playing the first ball towards the advanced striker in the opponent's area, which requires accuracy in the skill of passing and playing with the foot and making the best decisions.

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