

How to evaluate player performance?

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Introduction

This research note lays out the approach developed by the CIES Football Observatory research team to evaluate player performance. It outlines the methodological choices used in order to be able to compare footballers on an objective and reliable basis.

Several stages are necessary to analyse the technical performance of players in a pertinent manner. Our starting point was to categorise technical gestures employed by players in six different areas of the game. These gestures have been selected and assembled in such a way that, when aggregated at team level, they positively correlate to the results.

In order to gain even more relevance, the technical gestures carried out were analysed in the wider context of the rapport of collective strength between teams. It was also necessary to go beyond the technical aspects so as to highlight the players whose presence on the pitch allows the team to surpass itself.

Finally, the transition from the evaluation of players by area of the game to an indicator of general strength has necessitated the establishment of methods of calculation that are applicable to the different existing player profiles without penalising any position or style of play.

First step: indicators by area of play

The first stage in our approach consists in creating the performance indicators according to the area of play. In order to do this, we have identified the technical gestures that outfield players must accomplish so that their team may win.

The composite indicators thus developed are perfectly comparable both on the spatial and temporal levels. To maximise their relevance, they combine as much as possible the volume of actions carried out (productivity) and their outcome (efficiency).

From a defensive point of view, the indicator for rigour highlights players who are able to prevent adversaries from creating chances by their strength in duels. The capacity to avoid errors is also integrated into the calculation. This area showcases players who are the best in terms of marking, which necessitates qualities such as physical force, timing and concentration.

Continuing on a defensive level, recovery measures the ability of players to minimise the opponents' chances by intercepting their passes. This domain highlights footballers who are the most able when it comes to anticipating the offensive actions of their adversaries. It involves skills such as positional awareness, tactical intelligence and stamina.

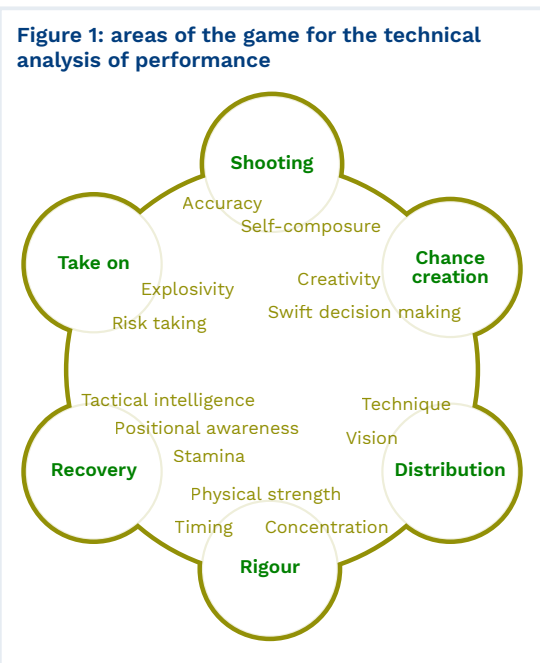
Distribution, the third domain, highlights players who are particularly skilful in keeping the ball moving. This area of competence is very important insofar as it enables teams to control the game. As for individual qualities associated with this domain, technique and vision are of key importance.

From an attacking point of view, take on measures the ability of players to challenge successfully adversaries. Without footballers able to create an effect of outnumbering, any team would have difficulty creating chances for itself. Apart from technique, necessary qualities in order to excel in this area include taking risks and explosive power.

Chance creation defines the ability to put teammates in a favourable position to shoot. This domain highlights players who are the most able when it comes to making a final pass. Besides qualities already mentioned such as technique and vision, chance creation requires additional skills like creativity and swift decision making.

Finally, the domain of shooting measures the ability of players to shoot successfully at the opponent's goal. In a sport such as football, where the number of goals is very low, having players who are able to take advantage of opportunities is a luxury that few teams can afford. Apart from the above-mentioned skills, shooting relies heavily on accuracy and self-composure.

The six indicators mentioned above are reduced by half in the context of the evaluation of performances at the level of a single match: defensive activity, distribution and attacking activity. This reduction is necessary so as to take into account a sufficiently large number of gestures to allow for a solid statistical analysis.



Second stage: from specific indicators to a general one

Depending on the position played and the team's style of play, footballers have the possibility to perform well in one or more areas of the game. At one extreme, certain strikers focus only on shooting. At the other, box-to-box midfielders are often involved in all areas of the game.

These differences must be taken into account to go from indicators by domain of the game to an indicator that measures the overall strength of a footballer. If this was not the case, the comparability between players would be greatly compromised. To avoid this problem, we have come up with different modalities of calculation that can be applied to all types of player profiles.

The specialist profile corresponds to players who concentrate on one area of the game, most often shooting. The twin skill profile applies especially to centre backs of dominated teams (rigour and recovery). That of the triple skill refers mainly to offensive footballers of teams who lack possession (take on, chance creation, shooting) and to centre backs of dominating teams (rigour, recovery, distribution).

The fourth profile concerns well-rounded players who take part actively in four areas of the game. This profile includes different combinations of skills associated with all the positions except for centre backs. The final profiles are those for multi-skilled players active in at least five areas. These concern primarily box-to-box midfielders and wing backs in tactical formations with three defenders such as the 3-5-2.

At match level, players are evaluated according to their ability to rise above the average level of performance measured for all of the footballers in at least one of the three areas considered: defensive activity, distribution and attacking activity. This procedure also guarantees good comparability between players with different profiles.

Figure 2: player profiles for general index



Conclusion

Individual performance of players in a collective sport such as football must always be understood within the specific context within which it is produced. The underestimation of the collective conditions of production of individual performance explains numerous failures in the case of transfers.

Geared towards the contextualised profiling of players, our approach is particularly useful for scouting. It facilitates the assembly of a squad made up of players with complementary characteristics. Beyond individual talent, the complementarity between squad members within the context of a given style of play is a key success factor.

In the same vein, our approach can also be used when it comes to choosing which footballers to field. It is also a helpful tool in decision making permitting the favourable development of a team's tactical plan, both with respect to the characteristics of players available and those of the opponents.