

Technical Profile and Impact Score: methodology

Drs Raffaele Poli, Loïc Ravenel and Roger Besson

Profile

The technical profile of players is determined from their level of activity in eight areas of play comprising eleven variables as shown in Figure 1.

For each area, the activity of the players is measured in relation to their teammates in order to highlight the role played within the team. Since the technical gestures selected are not distributed unequivocally among the players in a team, some being more concentrated than others, the deviations from the mean were standardised and then transformed into reduced centred values.

The technical profile is defined on the basis of the first and second game areas for which players deviate most positively from their teammates. With some grouping for atypical playing profiles, for example players who are very active in shooting (finishing) but otherwise defensively oriented (recovery, ground defence or air defence), thirteen technical profiles were finally retained.

Figure 1 - Areas of play and variables

	Domains	Variables
1	Air defence	Air challenges won - defence
2	Ground defence	Ground challenges won - defence
3	Recovery	Picking-ups
4	Distribution	Interceptions
5	Take on	Passes
6	Chance creation	Crosses
7	Shooting	Successful dribbles
8	Air attack	Key passes (for chances)

Figure 2 - Technical profiles

Profile	Related domains
Air-to-ground blocker	Air defence and Recovery
Ground-to-air blocker	Ground defence and Recovery
Blocker playmaker	Air or ground defence and high build up
Filter man playmaker	Distribution and recovery
Defensive infiltrator	Take on and a defensive indicator
Playmaker infiltrator	Distribution and take on
Playmaker creator	Distribution and chance creation
Defensive shooter	Shooting and a defensive indicator
Infiltrator creator	Take on and chance creation
Shooter infiltrator	Shooting and take on
Shooter creator	Shooting and chance creation
Allrounder target man	Air attack and a indicator (except shooting and air defence)
Target man shooter	Air Attack and shooting

Impact Score

The Impact Score is based primarily on the average sporting level of matches played by a footballer. The level of a match is calculated on the basis of the experience capital of players lined up in proportion to their playing time. The experience capital considers minutes played by footballers in official matches played during the last year, weighted by the level of the competitions and results.

To compute the Impact Score, the average level of matches played is corrected by bonuses/malus of up to + or - 15% for two additional criteria: the number of minutes in official matches (clubs or national teams) during the last year, as well as the playing statistics compared to those of teammates, opponents and players of the same technical profile.

In terms of playing time, the neutral value is 2,500 minutes, corresponding to the general average for professional players in the most competitive leagues over the arc of a year. Above 4,000 minutes, we apply a bonus of +15%, while below 1,000 minutes we attribute the maximum malus of -15%. Between these two values, the bonus/malus is progressive.

As far as performance is concerned, the bonus/malus is measured against both teammates and opponents. For each individual and type of ratio, we measure the median of the two best values, the four best, the four worst, and all eight indicators, for a total of eight measures: four compared to teammates and four compared to opponents.

Each of these values is compared to those of footballers with the same technical profile and the one with the greatest positive difference is assigned to the player. This process ensures that versatile profiles and players are not prejudiced against others. The bonuses/malus are capped according to a distribution centred around the average and standard deviation of the index category (average: 0%, +15% above 1.5 standard deviations, -15% below 1.5 standard deviations).

Finally, the Impact Score is transformed to a base of 100 for each group of profiles (defence, midfield, infiltrator, attack, target), which allows us to bring the average values even closer and make the metric more comparable.

Similar players

Players with a similar technical profile are defined using a supervised learning technique calculating the statistical Euclidean distance between players based on their activity in relation to teammates and other players of the league in each of the eight areas of play mentioned above. The values are combined with Impact Score, which allows to associate primarily footballers of an equivalent level of play, without however preventing wider spectrum associations.

References

Monthly Report 70, Ranking players according to their match experience: the CIES Football Observatory method, December 2021. [Download the report.](#)

Monthly Report 72, Technical profiling of football players, February 2022. [Download the report.](#)

Monthly Report 74, Players' technical profiles: a role-based approach, April 2022. [Download the report.](#)