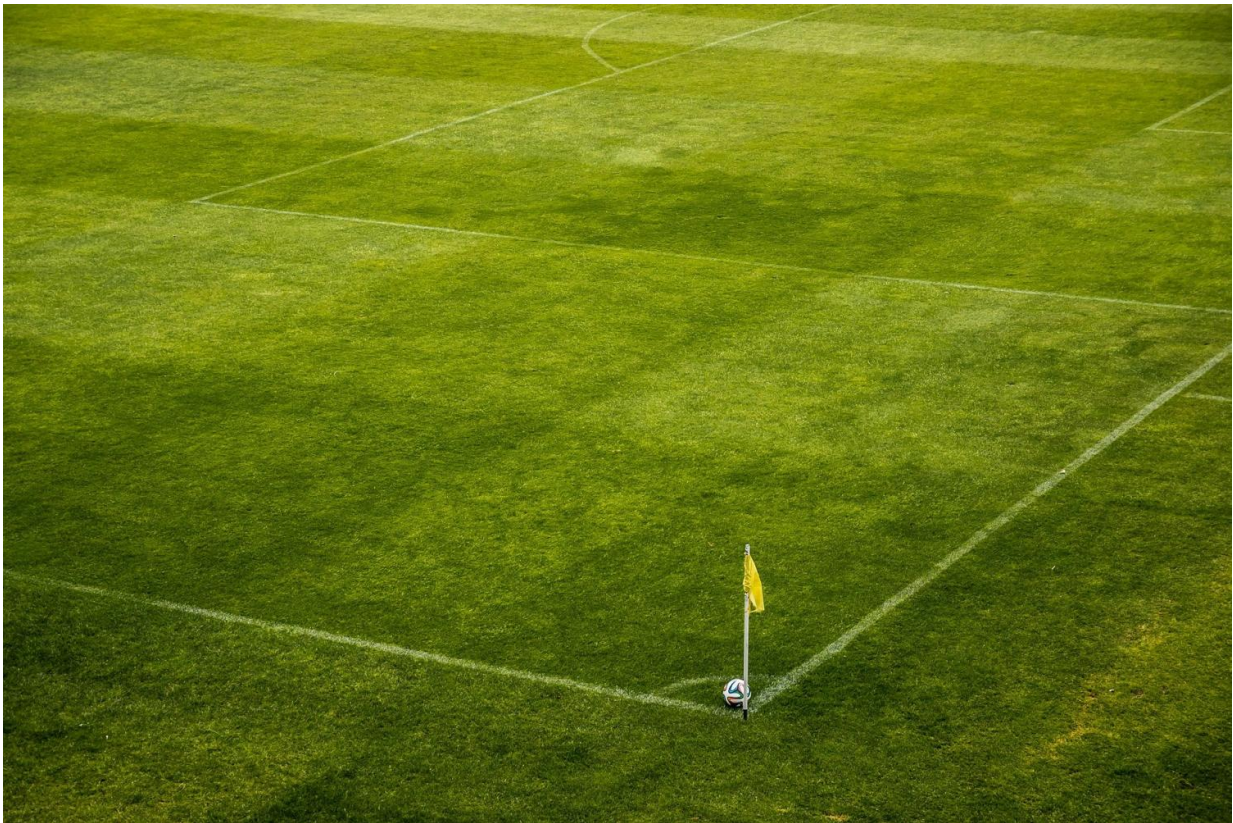


Are the world's highest paid football players overpaid? Big data says yes

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Some professional European football players are earning jaw-dropping salaries while other athletes on the same football pitch earn much less. This may lead many football fans, wondering if these athletes are worth

such high paychecks. For example, FC Barcelona superstar Lionel Messi earns some hundreds of thousands more than other players.

In a recent study published in the *International Journal of Computer Science in Sport*, computer scientists Lara Yaldo and Lior Shamir from Lawrence Technological University in Michigan used machine learning and data science to analyze the [salaries](#) of 6,082 professional European football players. The salary of each player during the 2016-2017 season was compared to a comprehensive set of 55 attributes that reflect each player's skillset. These attributes include measurements related to performance (such as scoring and passing accuracy), behavior (such as aggression and vision), and abilities (such as speed, acceleration, and ball control). The salaries and 55 attributes were combined into a single computational model that allowed the researchers to compute the salary of each player based on his skills, in comparison to the skills of all other players in the same field position.

The model showed that based on skills alone, Lionel Messi should be the world's highest paid football player, followed by Cristiano Ronaldo, Luis Suarez, Neymar, David De Gea, and Mesut Oezil. However, the model estimated Messi's salary at about €235,000, less than half his actual weekly wage. That gap made Messi the world's most overpaid football player in comparison to his colleagues. Following Messi in the list of most overpaid players in 2016-2017 are Angel Di Maria, Robin Van Persie, Ivan Rakitic, and Nicolas Otamendi.

The study notes that the model is based on skills and performance on the field, and does not consider many other financial aspects affecting players' salaries such as broadcasting rights and merchandise sales. These aspects can dramatically motivate teams to compete for the services of star players, thus compensating them more generously.

The same computational model also showed that some players were

fundamentally underpaid. Leading the list is Bernardo Silva, with over €100,000 difference between the salary computed by the model and his actual wage in Monaco during the season, before signing a new contract with Manchester City. Following Silva as most underpaid players during the 2016-2017 season are Harry Kane, Granit Xhaka, Timo Horn, and Paco Alcacer.

Observing the skills of the 100 most overpaid and underpaid players showed that underpaid players are superior to overpaid players in their agility, acceleration, speed, balance, and their ability to track the position of the other players. On the other hand, the only advantage of the overpaid players compared to the underpaid players was their strength, showing that stronger players tend to be overpaid in comparison to their skills.

The study also showed that different leagues appreciate different skills. For instance, the time required for the player to respond to an event has a strong correlation with the salary in all major European leagues, but penalties and vision are more respected in the Bundesliga, and the preferred foot is a matter of higher concern in England and France compared to other leagues. Players with superior finishing and volleys abilities are more appreciated in the Spanish La Liga, and the ability to perform a sliding tackle will generally lead to a higher salary in the Italian Serie A.

In all leagues, the model had a strong link between the skills and salaries, showing that in most cases better skills lead to higher compensation to the athlete. The only exception was the Ekstraklasa (the first football division in Poland), in which the link between skills and salary is significantly weaker, and the highest impact on the salary is in fact the team in which the footballer plays.

While the "superstar effect" of highly paid players bring in the fans and

contributes to the financial success of the team, increasing salary inequality is shown to have a negative effect on players' performances. The research suggests that if an objective quantitative method is used as a baseline and players know that the key for determining salaries is equal for everyone, it may have an impact on their performance. These methods may also help simplify the negotiation process and determine a uniform salary scale.

More information: L. Yaldo et al, Computational Estimation of Football Player Wages, *International Journal of Computer Science in Sport* (2017). [DOI: 10.1515/ijcss-2017-0002](https://doi.org/10.1515/ijcss-2017-0002)

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