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**Uncertainty of outcome, team quality or star players? What drives TV audience demand for UEFA Champions League football?**

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## **Abstract**

**Research Question:** This is the first article to empirically examine what drives TV audience demand for the UEFA Champions League (UCL) in major European markets. It then asks: How well does the tournament structure meet the preferences of TV viewers?

**Research Methods:** The article analyses the UCL from 2013/14 to 2018/19, considering TV viewing figures for all televised games from the group stages through to the finals in six nations – France, Germany, Italy, the Netherlands, Spain and the UK. It then analyses match data in the UCL since its most recent tournament restructure in 2003/04, along with Ballon d’Or results and UEFA Club Coefficient rankings, to assess the efficiency of the current tournament structure.

**Results and findings:** Uncertainty of outcome is not significantly associated with the size of TV audiences for the UCL, but both the presence of star players and team quality are. However, analysis of match data reveals that the current structure of the UCL does not maximise the number of star players or top clubs that progress to the latter stages of the tournament.

**Implications:** These findings enable UEFA and other sport competition organisers to make evidence-informed decisions about how to structure competitions, while balancing the needs of multiple stakeholders. They also contribute to the small but growing body of empirical work that seeks to identify the key drivers of TV demand for sport – increasingly the dominant form of revenue for many sport organisations.

**Keywords:** Uncertainty of outcome, competitive balance, team quality, star players, television demand, UEFA Champions League football.

The Union of European Football Association's (UEFA) new five-year strategy 'Together for the Future of Football', launched in February 2019, called on all of football's stakeholders to come together for the good of the European game, in a spirit of co-operation and togetherness. However, the different factions within European football appear far from united on their plans for the future of the UEFA Champions League (UCL). Proposals from UEFA to move the tournament towards a promotion and relegation system, with only a quarter of places based on domestic success, and the remaining 24 spots allocated to teams already in the UCL, revealed sharp divisions among football's stakeholders (Panja, 2019).

On one side, Europe's football leagues and smaller clubs argue that UEFA must protect competitive balance within the game. For example, Lars-Christer Olsson, President of European Leagues, the Association of European professional football leagues, criticised the proposed UCL changes as anti-competitive and stated that UEFA should instead look to improve competitive balance, so that success is not concentrated among rich clubs (Conn, 2019). Similarly, Javier Tebas, the president of La Liga in Spain, claimed that the plans for a UCL restructure would generate more money for the biggest clubs, but less for national leagues (Hammond, 2019). On the other side of the argument, it is claimed that Europe's largest football clubs consider that, as they are the clubs with the best players and most supporters, the UCL ought to be restructured to better suit their needs (Conn, 2019).

This debate is live and increasingly fractious. Indeed, 'tri-party discussions', involving UEFA, the national leagues and the clubs were postponed in September 2019 due to the lack of consensus (Ahmed, 2019). Fundamentally, however, this debate concerns two vital questions that have preoccupied academic researchers for decades, namely: what drives spectator demand for professional sport; and how

should sporting competitions best be designed? Indeed, although they do not use the phrase explicitly, the arguments of the national leagues and smaller clubs are based on the ‘uncertainty of outcome hypothesis’ (Rottenberg, 1956), which claims that the more balanced a competition, the greater the interest of spectators and the higher the attendance. Conversely, the arguments of the largest clubs are based on the belief that it is more important to ensure the involvement of the best teams and players in sporting competitions than to maximise uncertainty of outcome – something examined in the academic literature from Noll (1974) onwards.

This paper seeks to assess these vital questions and so contribute not only to the specific debate around the structure of the UCL, but also to the wider academic debate on what drives spectator demand in sport and how best to design sporting competitions. In considering spectator demand, the analysis will focus on television demand, rather than match-day attendance, and it does this for two reasons. First, 85.8 percent of UEFA’s income is generated through broadcasting rights (2018/19 UEFA Financial Statement) and the UCL represents more than three quarters of UEFA’s broadcasting rights’ value. Therefore, it is crucial for UEFA to understand the specific preferences of TV viewers, when deciding how best to structure the UCL. This also applies more broadly: for many professional sport leagues, tournament organisers and individual sport organisations, television is already the dominant revenue stream, and for others, it is rapidly becoming so. Second, as discussed below, there is much less academic research on TV demand than on live match attendance, so more research in this area is needed.

The article is structured as follows. The next section reviews the academic literature on what drives spectator demand in sport, examining the ‘uncertainty of outcome hypothesis’ and the impact of ‘team quality’ and ‘star players’, and provides

further contextual detail on the UCL. The following section sets out the data and methods used in the analysis. The subsequent section presents the key findings in two parts: first, what drives TV demand for the UCL; and second, how well does the current structure of the UCL meet that demand. Following this, there is a discussion, which draws out the specific implications of the findings for UEFA and other sport competition organisers and the more general implications for theory and practice in this area.

## **Literature review**

### ***Uncertainty of outcome hypothesis***

The debate over consumer demand for sporting events began with Rottenberg (1956), who claimed ‘uncertainty of outcome is necessary if the consumer is going to be willing to pay admission to the game’ (p. 246). This ‘uncertainty of outcome hypothesis’ (UOH) was supported by the research of Neale (1964) and El Hodiri and Quirk (1971), who agreed that there were externalities peculiar to professional sports that justify the need to balance playing strengths between teams. As Neale (1964, p. 2) put it, ‘The stronger the contender the larger the profits from fighting him...since doubt about the competition is what arouses interest’. However, further academic research has not unanimously supported this hypothesis. Indeed, a number of studies across different sports and different time periods have found that spectators may be less interested in an evenly matched contest than the UOH suggests and instead have alternative reasons for watching sport events (Buraimo, Tena, & de la Piedra, 2018; Coates, Frick, & Jewell, 2014; Hoehn & Szymanski, 1999; Hogan, Massey, &

Massey, 2017; Jennett, 1984; Peel & Thomas, 1988; Storm, Nielsen, & Jakobsen, 2018; Sloane, 1971; Szymanski, 2003).

Within this stream of research, work specifically on football in different European countries presents a somewhat mixed picture. For example, Pawlowski's (2013) study shows that 70 percent of German Bundesliga fans care about competitive balance, whereas Czarnitzki and Stadtmann (2002) find outcome uncertainty to be overestimated and argue German football attendance is impacted more by consumer loyalty and geographical distribution of fans. Meanwhile, Buraimo and Simmons (2008) found that increased match uncertainty in the English Premier League actually led to lower gate attendances and so concluded that home fans prefer to watch their team win, rather than to see a competitively balanced contest.

To date, most of this research on consumer demand has looked at attendance at live sporting events, rather than TV viewership, in part because live attendance used to be the dominant revenue stream for sport organisations and in part because data on TV viewership is often difficult to access. However, some more recent studies have examined the impact of uncertainty of outcome on TV demand for football in different European countries and here again the picture is somewhat mixed. For example, Forrest, Simmons, and Buraimo (2005), Buraimo and Simmons (2009) and Cox (2015), examining the English Premier League (EPL) and Spanish La Liga, found that the UOH did hold true, with consumers preferring to watch a game where the result was less predictable. Conversely, Alavy, Gaskell, Leach, and Szymanski's (2010) analysis of minute-by-minute TV figures in English football showed that viewers were more likely to switch channels when there was a higher probability of a draw and Di Domizio's (2010) analysis of the 2008/9 season in Italy's Serie A found the effect of uncertainty of outcome on TV demand to be relatively small.



As a result of these ambiguous findings about the UOH, research suggested that additional efforts be made to understand other potential drivers of consumer demand for sporting events (Coates & Humphreys, 2010, 2012; Fort & Quirk, 2010, 2011; Mills & Fort, 2014; Pawlowski, 2014). Recently, Scelles (2017) considered the impact of sporting intensity on TV audiences in the EPL, measured in terms of a team's potential to either win the league or qualify for the UCL. This was found to have a positive impact on TV audiences, suggesting that uncertainty does not come only from the result of a standalone game, but that the impact of the result on positions in the league and the prizes on offer can also have an effect on interest levels. Bond and Addesa (2019) also found competitive intensity to have a small but positive impact on TV audiences in the Italian Serie A, showing overall league competitiveness to be important to interest levels. However, both Scelles (2017) and Bond and Addesa (2019) found that although competitive intensity has a positive impact, the most influential factor on TV audiences was something else, namely the impact of star power.

### ***Star players and team quality***

Researchers are increasingly seeking to assess the impact of star players and team quality on demand for sporting events. Noll (1974) was the first to do this, finding that the number of star players in a team had a considerable impact on home attendance in National Basketball Association (NBA), American Basketball Association (ABA) and Major League Baseball (MLB) games, and a number of subsequent studies have produced similar findings (Baade & Tiehen, 1990; Berri & Schmidt, 2006; Berri, Schmidt, & Brook, 2004; Hansen & Gauthier, 1989; Hausman

& Leonard, 1997; Jane, 2014; Mullin & Dunn, 2002; Rivers & DeSchrive, 2002; Yang & Shi, 2011).

A number of studies have specifically looked at football matches to measure the impact of star players and team quality on attendance (Brandes, Franck, & Nuesch, 2007; DeSchrive, 2007; Franck & Nuesch, 2012; Gasparetto & Barajas, 2018; Jewell, 2015; Lawson, Sheehan, & Stephenson, 2008; Kang, 2016; LeFeuvre, Stephenson, & Walcott, 2013; Lucifora & Simmons, 2003; Parrish, 2013).

Kang's (2016) analysis of Major League Soccer from 2004 to 2014 found that star players, defined as the top 30 earning players in the league, exhibited a positive impact on match attendance, while Brandes et al. (2008) found a similar relationship in German Bundesliga gate attendances, with 'local heroes' enhancing home game attendance and 'star players' increasing attendance on the road. Gasparetto and Barajas' (2018) examination of broadcast demand in Brazilian men's football found that, among other factors, match quality (measured as the sum of both teams' points prior to the match) had a positive impact on TV audiences in both regions analysed. Serrano, García-Bernal, Fernández-Olmos and Espitia-Escuer (2015) analysed match attendance in four major European football leagues during the 2012/13 season and found the most important variable determining match attendance was the quality of the event, measured by the value of the players taking part, while uncertainty of income had no influence over consumer demand.

Again, the vast majority of this research has looked at stadium attendance, meaning that the impact of star players and team quality on TV audiences has been less thoroughly investigated. The first to examine this were Hausman and Leonard (1997), who found that the presence of a 'superstar' in an NBA team had a substantial incremental effect on TV ratings and, further, that a team with at least one All-Star

player (voted by fans as one of the top 24 players in the NBA) had a five percent higher rating than a team with no All-Stars. Recent research by Reams and Shapiro (2017) on Ultimate Fighting Championship matches also found that demand was most influenced by matches featuring the league's highest ranked fighters, as well as current and former champions.

Research on the impact of star players and team quality on TV demand in European football is relatively limited, although it has increased in the last decade. Fedderesen and Rott (2011) analysed all the broadcasts of the German national soccer team from 1993 to 2008 and found that German viewers prefer a national team with established star players and high-quality opponents. Subsequently, Buraimo and Simmons (2015) analysed television ratings from 2000/01 to 2007/08 in the EPL and found that the biggest driver of audience demand was the playing talent on show, rather than uncertainty of outcome: specifically, if the quality of players on show improved by one standard deviation, this led to an increase of 11.1 percent in TV audience size. They also noted a shift in consumer interest over time, moving away from uncertainty of outcome in earlier seasons towards playing talent in later seasons. Scelles (2017) built directly on this research in the EPL and showed there was a significant positive impact on TV viewership from both star players and team quality, measured in terms of the sum of the two teams' relative wages and the sum of the two teams' points per game. Caruso, Addesa, and Di Domizio (2017) found the same demands for TV viewers of the Italian Serie A. Their analysis between 2008/09 and 2014/15 showed that Italian viewers were attracted by the aggregate quantity of talent and the matches involving teams at the top of the table. Their research found that a one percent increase in the combined payrolls of teams led to an increase of between 0.56 percent and 0.96 percent of TV viewers. Finally, Bond and Addesa (2019) also

found star quality, measured, as in Scelles's (2017) study, as the two teams' relative wages, to be the most important factor affecting TV audiences in the Italian Serie A. All of these studies found that uncertainty of outcome did not significantly influence TV viewing figures.

In summary, recent research on the demands of TV audiences in European football suggests that the UOH may not be the primary interest for viewers and that consumers instead show a preference for star players and team quality. However, the authors of these studies all note that research remains relatively limited. Indeed, all of the studies to date have looked at national leagues in individual countries; none, therefore, have looked at international competitions. In particular, none have explored the demands of TV audiences for the UCL, despite this being arguably the most prestigious international club competition in the world. This article seeks to provide this first insight into TV viewing preferences in the UCL, in order to assess the relative impact of uncertainty of outcome, team quality and the presence of star players. It then examines competition data, in order to evaluate how well the competition is designed to match these preferences. Before moving to the analysis, though, the article provides further context on the UCL, in particular its structure and the relative decline in broadcasting revenue it has seen over recent years.

### ***UEFA Champions League: Broadcasting revenue in relative decline***

The UEFA Champions League (UCL) is an annual continental competition contested by top-division European clubs. In 1992, the UCL replaced the previous European Champion Club's Cup, which had run since 1955, introducing a group phase and expanding from 8 to 32 teams. Today the UCL is one of the most prestigious football

tournaments in the world, played by the national league champions of the UEFA national associations, as well as many of the other strongest European club teams.

The UCL final is one of the most watched annual sporting events worldwide. For example, the 2014 Lisbon final was aired in more than 200 countries, with a global reach of 380 million viewers (Ashby, 2014). The annual global audience of the UCL across all matches is 1.7 billion, giving it the second largest global audience of any annual sporting event after the Tour de France (Shazi, 2018). It is for this reason that broadcasters are willing to pay such large amounts in order to show UCL games. From 2000 to 2015, the UCL broadcasting rights fees have increased at an annual growth rate of 5.4 percent and were worth £2.4bn for the 2018/19 season (2018/19 UEFA Financial Statement).

While this appears a positive picture, this growth rate is actually being outpaced by many of the major European national leagues, including the EPL, which has an annual media rights growth of 16 percent (Oliver & Ohlbaum, 2016). As a result, the relative importance of UCL revenue to major European clubs is actually diminishing. For the average participant club, UCL revenue accounts for around 20 percent of their income, growing to over 25 percent for clubs from smaller European leagues (Oliver & Ohlbaum, 2016). However, in the 'Big 5' leagues (UK, Germany, Spain, Italy and France), it ranges from 15 percent for Italian Serie A clubs to just seven percent for a top English Premier League (EPL) club (Oliver & Ohlbaum, 2016).

Therefore, the UCL is currently in a situation where its financial importance to the largest clubs from the biggest European leagues is declining, driven predominantly by a stagnation in its broadcasting revenue relative to the domestic league rights in these nations. This makes the threat of those clubs breaking away to

form a European ‘Super League’ more credible. It also means it is crucial for UEFA to understand what drives TV viewership of the UCL and whether the current structure of the competition aligns well with the preferences of TV viewers.

## **Analysis Part 1: What drives TV demand for UEFA Champions League football?**

### ***Data and model***

This study analyses television ratings in the UCL from 2013/14 to 2018/19, with a focus on six markets – the UK, Germany, Spain, Italy, France and the Netherlands. Our analysis includes all televised matches in these six countries from the group stage of the tournament through to the final. The format of the competition has remained consistent throughout this period, with the eight winners and runners-up from the group stage qualifying for the knockout stage, which comprises a round of 16, quarter-finals, semi-finals and the final. In total there are 2,323 separate data points heterogeneously distributed across the six countries: Italy 665 observations, Germany 644, UK 409, Spain 294, Netherlands 200 and France 111.

Therefore, each country is analysed individually in order to capture different trends by nation, as well as to overcome any issues related to using the same match numerous times in the same regression. Different separate OLS log-linear estimations are used to model the TV audience for a UCL match involving teams  $i$  and  $j$  in season  $t$ ,

$$\ln(\text{audience}_{ijt}) = \alpha X_{ijt} + \beta S + \gamma Z + e_{ijt},$$

where our dependent variable, *audience*, is the total number of viewers per match,  $X_{ijt}$  is a vector of independent variables,  $S$  is a vector of season fixed effects,  $Z$  is a vector of dummy variables,  $\alpha$ ,  $\beta$ , and  $\gamma$  are the associated coefficients, and  $e_{ijt}$  is the disturbance term. Due to the limited number of observations, bootstrapping (1000 replications) was applied to the analysis of French audience data in order to minimise potential bias associated with sampling error (Efron & Tibshirani, 1986). A Breusch–Pagan–Godfrey test was conducted, and the results revealed the presence of heteroscedasticity. Therefore, our models were corrected to obtain robust standard errors.

The first independent variable is *outcome\_uncertainty*. Betting odds are used to measure this, because they are strong predictors of match outcomes, and also capture a number of relevant factors that may affect team performance, including player injuries, suspensions and team form. As a result, betting odds represent potential match outcomes with a high degree of efficiency. This article uses the betting odds of William Hill, obtained from issues of ‘Racing Post’. Betting odds have been used as a measure of outcome uncertainty in several related studies, including Buraimo and Simmons (2015), Scelles (2017) and Caruso et al. (2017).

*outcome\_uncertainty* is measured as the absolute difference in the two teams’ probability of winning the match. The sum of adjusted probabilities (home win, away win, draw) in all matches is 1. Therefore, a value of 0 represents a match with the highest possible degree of uncertainty and a value of 1 represents a match where the match result was certain. The values for outcome uncertainty in the matches studied in this article range from 0 to 0.81, which shows enough variation to capture any effect of uncertainty of outcome on TV audience.

The second variable included to account for the degree of competitiveness of a match is *competitive\_intensity\_knockout*, measured as in Valenti, Scelles and Morrow (2020) as the absolute goal difference after the first leg for the second leg games. When aggregate scores are equal the ‘away goal’ rule applies, meaning that any goals scored away count double. This measure is intended to capture the potential for score reversals after the first leg games. For all matches other than second leg ties this variable is equal to 0. Moreover, we have included a further variable – *competitive\_intensity\_group\_stage* – to account for the lack of intensity of some games towards the end of the group stage, where some teams may have already qualified to the UCL last 16, or been relegated to the Europa League, or eliminated. This variable takes a value of 1 where there is no qualification at stake (to either the UCL or Europa League knockout stage) for either team, and a value of 0 for all other scenarios. We expect that matches with a larger gap in the score between the two teams after the first leg, and matches involving at least one team that has no qualification at stake would attract fewer viewers.

*team\_quality* has been measured in different ways in previous studies. For example, Buraimo and Simmons (2015), Caruso et al. (2017) and Scelles (2017) used teams’ wage bills and the sum of the two teams’ points per game to capture the quality of the two teams. We explored various options and it proved difficult to find a measure that covered such a large range of clubs (as some of the clubs involved in the group stages are from small nations). We tried the ‘odds to win the tournament’ measure as an alternative to show current team quality, but this proved not to be a good measure, as many of the smaller clubs were ‘lumped together’ with the same long odds (e.g., 10 teams all priced at 50/1, which suggests they are exactly the same



quality). In the end, after exploring other options, we drew on the UEFA Club Coefficient to assess team quality.

The UEFA Club Coefficient is used to rank individual clubs for seeding in European competitions and so is the best indicator of each team's quality within the competition. The club coefficients are determined by the results of the clubs in the UCL and other European competitions over the last five seasons, as well as by the coefficient of the club's association. As UEFA has slightly altered the formula by which they measure the club coefficient over the past 27 years, we use the *rank* of each club's coefficient within that year's competition, rather than the specific coefficient figure, in order to keep each year comparable. Furthermore, in assessing team quality for each match, we use the sum of the two clubs' coefficient rankings. So, for example, a match involving the club with the highest coefficient figure in that year's competition and the club with the third highest coefficient figure would have a *team\_quality* measure of 4. This would be a match with better *team\_quality* than one with a measure of 20 (e.g., the club ranked ninth highest versus the club ranked eleventh highest). Therefore, a negative coefficient would indicate a positive impact of *team\_quality* on the UCL TV audience.

The star players' variables mainly draw on the results of the Ballon d'Or – an annual competition, which involves football journalists voting on the male player deemed to have performed the best over the previous year. Having started in 1956, this is generally recognised as the most prestigious individual award for players. Since 1995 it has recognised players of all nationalities active at European clubs (further expanded to all clubs worldwide from 2007) and consequently represents an ideal measure for the star players competing in the UCL. The use of Ballon d'Or results is unique in research on player quality, but is directly comparable to studies in the North

American context, such as Hausman and Leonard's (1997), which assessed player quality by drawing on 'All-Stars', the top NBA players in any given season, as voted for by fans. Different measures have been used to account for star players involvement: 1) *bd\_winner* is a dummy variable equal to 1 if the current winner of the Ballon d'Or was involved in the game; 2) *bd\_winner\_1* is a dummy variable equal to 1 if the previous year's winner of the Ballon d'Or was involved in the game; 3) *bd\_3* measures how many players voted in the top three of that year's Ballon d'Or were involved in the game; 4) *bd\_3vs* is a dummy variable equal to 1 if at least two players voted in the top three of that year's Ballon d'Or were involved in the game and did not play for the same team; 5) *BD\_10* measures how many players voted in the top ten of that year's Ballon d'Or were involved in the game; 6) *BD\_10vs* is a dummy variable equal to 1 if at least two players voted in the top ten of that year's Ballon d'Or were involved in the game and did not play for the same team; and 7) *top\_100* measures how many players present in that year's Forbes 'The World's 100 Highest-Paid Athletes' list were involved in the game. This last variable is consistent with the previous literature suggesting that players' wages are a proxy for star quality (Bond & Addesa, 2019; Caruso et al., 2017; Falter & Pérignon, 2000; García & Rodríguez, 2002) and, unlike the aforementioned articles, focuses only on individual players' earnings and not on the overall teams' payroll.

The model also includes a number of control variables to take account of other factors influencing the television audience. The five dummy variables *group\_stage*, *last\_16*, *quarter\_final*, *semi\_final* and *final* account for the stage of the competition. We would expect TV audiences to increase as the competition progresses and the potential for sporting prizes increases.

*substitute* measures the number of matches being broadcast at the same time, with a value of 0 when no other matches are played up to a value of 7, for example during the group stages, when as many as eight games can be broadcast in the same country at the same time. The greater the number of matches broadcast, and thus the greater choice of matches to watch, the more negative impact we would expect on TV audiences.

*broadcaster* is a dummy variable equal to 1 if a game is shown on free-to-air channels and 0 if a game is shown only on subscription channels. It should be noted that this measure is not present in the Netherlands analysis, as all games were broadcast on free-to-air channels. As free-to-air channels have a larger viewership than subscription channels, which are only available to those paying a fee, we would expect audiences to be larger when shown on these broadcasters.

*domestic* measures if none, one or two domestic teams were involved in a match to account for the preference of viewers to watch teams from their own nation, who they are likely to more avidly support than foreign based teams.

*derby* is a dummy variable taking account of matches where there was an intense local rivalry, which might have led to higher than normal audiences. This is in line with previous studies (e.g., Buraimo & Simmons, 2015; Forrest et al., 2005). For the UCL, we have defined a ‘derby’ as a match between two teams from the same nation. Previous studies of TV data have suggested that derby matches have no significant effect on TV audiences, as those audiences are drawn from a wider population than those who attend matches in the stadium (Buraimo & Simmons, 2015; Forrest et al., 2005). Still, it was felt important to examine it in this new context. (Please see Appendix 1, in the online supplemental file that contains all appendices, for a description of the summary statistics.)

## *Empirical results*

### Uncertainty of outcome, team quality and star players

The headline results of the OLS estimates in each nation are shown in Appendices 2 to 7 and descriptive statistics for each nation are also provided in Appendices 8 to 13 (all appendices are in the online supplemental file).

The analysis shows that uncertainty of outcome does not have a significant impact on the size of TV audiences for the UCL in five out of the six countries tested. Only in our analysis of Italian TV audiences does outcome uncertainty show any level of significance in some specifications, which suggests that Italian TV viewers are more attracted to evenly balanced UCL games than viewers from the other four nations. These results are different from Caruso et al. (2017) and Bond and Addesa (2019), who found Italian fans are more attracted to less balanced games in the domestic competition. This may hint at the fact that Italian viewers have a different behaviour when dealing with an international competition compared to the domestic league, as the former involves mainly foreign teams, which reduces the significance of concepts such as strong fan commitment to a specific club or the ‘David vs. Goliath’ hypothesis – the notion that TV spectators are attracted by matches played between differently talented teams, as they hope for the less talented/lower-ranked team to win (Bond & Addesa, 2019; Buraimo & Simmons, 2008; Caruso et al., 2017). Overall, however, the non-significance in five out of the six countries, as well as the non-significance in most specifications in Italy, suggests that outcome uncertainty does not significantly impact TV audiences in the UCL. This finding supports the recent work of Buraimo and Simmons (2015) and Scelles (2017) in the EPL.

*competitive\_intensity\_knockout* turns out to be not significant in all the model specifications for all the six countries, which indicates that the gap between the two teams before the second leg does not influence football fans' decision to watch the game. This is likely due to the fact that the knockout stage is the most entertaining and unpredictable phase of the competition, and attracts fans' interest regardless of the result of the first leg. This result is not very different from Valenti et al. (2020), that is the only previous work to test competitive intensity among the determinants of stadium attendance in an international competition (UEFA Women's Champions League), finding only a very weak positive impact. It does not, however, support the results of Scelles (2017) in the EPL.

Different results are obtained for *competitive\_intensity\_group\_stage*. This variable shows no impact in the Netherlands and Spain, and a negative impact in Italy and UK. This suggests, as expected, that matches involving at least one team that has no qualification at stake attract fewer viewers. However, *competitive\_intensity\_group\_stage* shows positive coefficients in France and Germany. Close examination showed that in two out of the three matches broadcast in France and in seven out of the 13 matches broadcast in Germany with at least one team having no qualification at stake, at least one of the teams involved was competing for first place in the group. So, it could be that German and French viewers are still interested in matches where there is only the first place in the group at stake. We tested this possible explanation by conducting new regressions with a modified *competitive\_intensity\_group\_stage* variable, where we treated those matches like matches with at least one team having qualification at stake. The results – available upon request – show that *competitive\_intensity\_group\_stage* becomes not significant

in both countries, whereas no significant variation emerges with respect to all the other variables.

The two variables that have the largest impact on TV audiences in the UCL are *domestic* and *broadcaster*. This is unsurprising. The *domestic* variable shows that viewers have a preference for watching teams based in that nation, while the *broadcaster* variable shows higher TV audiences for matches broadcast on free-to-air channels compared to subscription-based channels, which are only available to those willing to pay a fee. The *substitute* variable also has a significant negative impact on TV audiences, showing that the more matches shown the more the TV audience is split across matches. This suggests that it is not possible for broadcasters to show games concurrently without harming individual match ratings. The impact of the *derby* variable is mixed, having no significant impact in the Netherlands and limited impact in France, but showing a significant positive impact in all other nations.

The key finding of this paper is the robust evidence of the significant positive impact of the star players' variables. There are variations across countries: Italian viewers seem to be the most sensitive to the 'star player effect', as shown by the highest value of the coefficients of the different star players' variables, whereas French and Dutch fans seem to be the least sensitive. There are also variations across measures: *BD\_winner*, *BD\_3* and *BD\_10vs* show the highest coefficients, whereas *BD\_3vs* and *BD\_winner\_1* are the least significant. Nonetheless, there is a clear trend showing a positive and substantial impact of the presence of star players on the TV audience of UCL games in all the countries under investigation. The positive significance of *top\_100* in all six countries, as an alternative measure to the Ballon d'Or, reinforces the interest in individual star players in matches. In addition, the significance of variables such as *BD\_3vs* and *BD\_10vs* also provides some evidence

of a particular interest in watching star players directly compete against one another. This suggests that the loss of a Ballon d'Or winner, or other star players, at an early stage of the tournament could have a large impact on TV audiences for that year's competition, greatly impacting the return on investment for broadcasters. These results are supported by the fact that in five of the six countries analysed (all but Germany) there are at least three specifications where *team\_quality* has a significant positive impact on UCL TV audiences, even though with much lower **standardised** coefficients, which indicates that the presence of star players has a bigger impact than the combined quality of the two teams involved in a game.

In summary, the first part of this analysis suggests that UCL TV viewers are interested in the presence of star players and team quality more than in uncertainty of outcome or competitive intensity. These results support the research of Hausman and Leonard (1997), Buraimo and Simmons (2015), Scelles (2017) and Caruso et al. (2017), who all found that matches with better quality teams and/or star players led to increased TV audiences.

## **Analysis Part 2: Does the current structure of the UEFA Champions League meet the preferences of TV viewers?**

In this part, we move on to examine the UCL in more detail. We start by examining the whole history of the UCL from 1992/93 onwards, in order to illustrate the uniqueness of the tournament. Then, we look more closely at how the current tournament structure and outcomes fit with the preferences of the TV viewers established above.

### *The unique position of the UCL*

First, we drew again on the UEFA Club Coefficient rankings and the Ballon d'Or Top 3 to assess the distribution of top teams and players across European leagues. Across the 27-year history of the UCL (from 1992/93 to 2018/19), the top two ranked clubs were from the same national league in only nine years (33 percent of the time). This means that for 67 percent of the time, the only competition in which people could watch the two top ranked teams in Europe compete was the UCL. Further analysis shows that the top five ranked clubs were spread across three national leagues 63 percent of the time and four national leagues 26 percent of the time. This displays the unique position of the UCL as the only competition in which all of the best clubs compete. (Appendix 14, in the online supplemental file, provides all the relevant data.)

Analysis of the Ballon d'Or data from 1992 to 2018 found that, without exception, every Ballon d'Or Top 3 player was registered to a European club at the time and therefore had the potential to compete in the UCL. However, those top three players only competed in the same national league in six of the 27 years. This means that 78 percent of the time, the only possible way for people to watch all of Europe's top three players compete in the same club competition was in the UCL.

It is clear, therefore, that the UCL is in a unique position as the only football club competition that allows viewers to see Europe's top ranked clubs and the world's best players compete against each other. However, the next stage of the analysis shows that the UCL is not currently structured towards maximising these unique selling points and so UEFA is arguably not maximising its potential TV audience for the competition.



### *Frequency of UCL matches with star players and top clubs*

In order to assess the efficiency of the current UCL tournament structure, we analysed match data in the UCL from 2003/04 to 2018/19, cross-referenced with UEFA Club Coefficient rankings and Ballon d'Or data. The 2003/04 season was chosen as the starting point, as this was the year of the most recent significant change to the tournament structure, which saw the establishment of a single group stage, with eight groups of four teams, followed by the knockout stages, involving a round of 16, quarter-finals, semi-finals and a final matches. We specifically examined semi-finals and finals, i.e., the latest stages of the competition, to establish how many Top 5 ranked clubs and Top 3 Ballon d'Or players were involved. In total, this means 48 matches were analysed across the 16-year period (see Appendix 15 in the online supplemental file).

It might be thought that, in any given year, the semi-finals and final would involve multiple Top 5 ranked clubs and multiple Top 3 Ballon d'Or players, as these matches are the pinnacle of the tournament. However, less than half of the clubs (48.4 percent) involved in the semi-finals were Top 5-ranked clubs and only just over half of the Top 3 Ballon d'Or players (52.1 percent) were involved in the semi-final stage. This pattern is even more apparent in finals, where only 14 of the 32 clubs involved (43.7 percent) were Top 5 clubs and only 13 of the 48 Top 3 ranked players (27.1 percent) featured. This suggests that the current UCL structure does not facilitate as many appearances of the highest-ranked clubs and star players as might be expected.

It is interesting to note that since the implementation of Financial Fair Play (FFP), which came into force at the start of the 2011/12 season, the likelihood of a

Top 5 club reaching the latter stages of the tournament has increased. From 2011/12 to 2018/19, 62.5 percent of clubs involved in semi-finals and 56.2 percent of clubs involved in final games were Top 5 ranked clubs. This suggests that the implementation of FFP, which stops a club spending more than they earn in the pursuit of success, might have contributed to increasing the dominance of higher ranked clubs and, in turn, made it easier for these clubs to succeed in the UCL. However, the impact of FFP on the presence of Ballon d'Or Top 3 players in the latter stages of the tournament is more mixed. Over the same time period there was an increase in the number of Top 3 Ballon d'Or players reaching semi-finals (58.3 percent), but a decrease in the number making final matches (20.8 percent).

In summary, the second part of this analysis suggests that the current structure of the UCL is not meeting TV viewers' demands to the extent it could. The first part of the analysis identified that TV viewers were primarily interested in the presence of star players and, to a lesser extent, highly-ranked clubs, with evidence that there was even more interest when star players directly competed against one another. This second part of the analysis has shown that these star players and highly-ranked clubs are making it to the latter stages of the tournament less often than might be expected.

## **Discussion**

### ***Managerial implications***

The obvious implication of the analysis in this article is that, if UEFA wish to meet the preferences of TV viewers of the UCL, they might consider restructuring the tournament to enable more meetings of the very top players and top clubs. It might

seem difficult to engineer more matches involving Top 3 players and Top 5 clubs in the latter stages of the competition. However, we conducted further analysis on the UEFA Club Coefficient rankings and the Ballon d'Or data from 1992/93 to 2018/19 and identified an interesting trend. During the early stages of the competition's history (1992/93 to 2002/03), the top three players were only registered to a top five-ranked club 45.5 percent of the time (15 of 33 players). However, since the UCL's most recent restructure (2003/04 to 2018/19), they were registered to a top five-ranked club 77.1 percent of the time (37 of 48 players).

This suggests, quite simply, that UEFA do not need to develop different policies in order to facilitate more meetings of top clubs and top players in the latter stages of the tournament. Instead, by developing a structure that makes it more likely the continent's top clubs will remain in the competition longer, UEFA will in turn achieve the aim of having more Ballon d'Or Top 3 players involved in games too.

Currently, the UCL draw for the group stage of the tournament is managed, with the top eight ranked clubs deliberately kept apart to avoid creating a 'group of death'. This reduces the chances of a top ranked club being knocked out during the group stage and, in turn, as shown by our above analysis, ensures highly ranked players also remain in the tournament for the knockout stage. However, the draws for the knockout rounds of the UCL are not currently managed in the same way. Instead, the group stage winners are kept apart during the round of 16 draw. One possibility is for UEFA to somehow incorporate teams' rankings, as well as their group stage positions, when organising the draw for the knockout stages. This may be difficult to manage, but would improve the chances of top-ranked clubs making it to the latter stages of the tournament and, in turn, ensure that the very best players are involved in as many UCL games as possible each year. Of course, any such move would need to

be managed carefully to ensure there was sufficient incentive for clubs to perform as well as possible in the group stages of the competition. However, given the mixed results from the *competitive\_intensity\_group\_stage* variable in our analysis, it is likely that any such change would be positive for UCL viewers.

It has previously been suggested that the creation of a European Super League would be a logical next step for the continent's top clubs, due to the lack of competitive balance in Europe's national leagues, which are becoming increasingly disparate in terms of talent and wealth (Hoehn & Szymanski, 1999; Vrooman, 2007). Scelles (2017) has claimed that the recent evidence of the importance of star power in the EPL further supports the case for the creation of a European Super League, although the author acknowledges that this conclusion based on television audience contradicts that of Scelles et al. (2016) based on stadium attendance. As explained earlier in this paper, the UCL's broadcasting revenue is in relative decline compared to the major national European leagues. If UEFA wishes to combat this situation, to stave off the threat of a European Super League, it may be time to start prioritising TV viewers' demands in order to evolve and remain relevant.

Of course, there are multiple factors to be considered here. As noted at the start of the article, UEFA is in a difficult position, seeking to balance the demands of multiple stakeholders – the largest European clubs and the smaller clubs and national leagues. As such, it may wish not to prioritise the interests of TV viewers. Still, the analysis conducted here enables evidence-based decision making on the part of UEFA and other competition organisers, who are seeking to ensure their sporting competitions satisfy the demands of TV viewers, among other important stakeholders.

### ***Wider implications for theory and practice***

The foregoing analysis sought to establish two things: first, whether TV viewers of the UCL were more interested in uncertainty of outcome, competitive intensity, team quality or the presence of star players; and, second, whether the current structure of the UCL reflects these interests. The analysis suggests that TV viewers are interested in star players and, to a lesser extent, team quality, but not uncertainty of outcome (except in limited circumstances, in one of the six countries examined), nor competitive intensity. The analysis also demonstrated empirically that while the UCL has a unique position as the only competition in which all of Europe's top football clubs and players compete regularly, the best teams and players actually progress to the latter stages of the tournament less often than would be expected.

Our findings here make a direct contribution to the small, but growing, number of studies that have explicitly compared the impact of uncertainty of outcome, competitive intensity, team quality and the presence of star players on TV demand for football in European countries (Bond & Addesa, 2019; Buraimo & Simmons, 2015; Caruso et al., 2017; Scelles, 2017). Like these previous studies, the analysis here indicates that TV viewers are interested in both the presence of star players and team quality, but not uncertainty of outcome. This, however, is the first study to examine this on a continental level, looking at a pan-European competition and drawing on TV viewing data from multiple European countries. Moreover, as the first study in this context, it developed bespoke measures of team quality and star players at a European level, drawing respectively on the UEFA Club Coefficient rankings and Ballon d'Or voting data, that can be used in future studies.

The findings also contribute to the broader literature on TV demand for sport. As noted earlier, there has been much less empirical analysis of TV demand than of

live match attendance, partly because the economic contribution of TV viewership has only recently begun to outstrip live attendance in many sports and partly because TV viewing data is much harder to access. The empirical picture from the research so far is mixed. In football, there is both support for the uncertainty of outcome hypothesis (Buraimo & Simmons, 2009; Cox, 2015; Di Domizio, 2010; Forrest et al., 2005) and studies that find no impact, or only negligible impact (Alavy et al., 2010; Di Domizio, 2010). Our study aligns with the latter group, finding that uncertainty of outcome has negligible impact on TV demand for the UCL. It also adds to the growing number of studies that indicate TV viewers' preferences for team quality and/or the presence of star players in other sports, including basketball (Hausman & Leonard, 1997) and Ultimate Fighting Championship (Reams & Shapiro, 2017).

### **Limitations and future research**

The analysis conducted here, like any empirical analysis, has certain limitations. There are substantially more observations available over this period for UCL matches shown in Italy (665), Germany (644) and the UK (409) than there are for Spain (294), the Netherlands (200) and France (111). However, while there are fewer observations in these nations, we feel there are still enough to draw reliable conclusions, particularly given the strength of correlation shown in viewers' preferences across the different nations.

Future research could also consider TV audience data in other broadcasting markets. This article focused on UCL TV audiences within the larger European nations as these markets represent the vast majority of the UCL's broadcasting revenue. However, it would also be of interest to see whether the same trends are

apparent in the UCL's emerging markets, such as the USA and Singapore. Previous research (e.g., Oliver & Ohlbaum, 2016) has indicated that fans in these markets show an even stronger tendency towards matches involving top clubs, so it is possible that these preferences will be even stronger with TV audiences in these markets.

Future research could also be undertaken to see whether the same trend of TV viewers' preferences for watching star players is apparent in other major football leagues. Buraimo and Simmons (2015), Scelles (2017), Caruso et al. (2017) and Bond and Addesa (2019) have all focused on aggregate team talent, thereby examining a broader measure of team quality, rather than individual star players. However, individual national leagues also have competitions similar to the Ballon d'Or to identify the best players in the league every year (e.g., the PFA Player of the Year in the EPL and the Serie A Footballer of the Year in the Italian Serie A). Data from these competitions could be used to measure the influence of star players, rather than aggregate team talent, on TV audience demand.

## **Conclusion**

This article has provided the first empirical analysis of what drives TV demand for the UEFA Champions League and the first empirical analysis of TV demand for continental club football. It has found that TV viewers are not primarily interested in uncertainty of outcome, but are interested in star players and team quality, with some evidence of a particular interest in watching star players directly compete against one another. The article has also provided the first empirical analysis of UCL match data, Ballon d'Or results and UEFA Club Coefficient rankings to assess how well the current structure of the UCL meets the preferences of TV viewers. The analysis found

that the very top clubs and players actually progressed to the latter stages of the UCL less than might be expected. This has implications for UEFA and, by extension, other sport competition organisers, as they seek to design competitions to balance the needs of multiple stakeholders, including the top clubs, players, national leagues, TV audiences and match-going fans.

More broadly, this article has provided further evidence that TV audiences are less interested in competitive balance than the uncertainty of outcome hypothesis advanced by Rottenberg (1956) more than 60 years ago would suggest. Indeed, along with several recent studies of football (Bond & Addesa, 2019; Buraimo & Simmons, 2015; Caruso et al., 2017; Feddersen & Rott, 2011; Scelles, 2017) and studies of other sports, such as basketball (Hausman & Leonard, 1997) and UFC (Reams & Shapiro, 2017), this article suggests that TV viewers' primary interests are star players and team quality. Whether these trends continue, how competition organisers respond to them and whether and how top professional sports teams are able to leverage these findings remain open questions.

### **Disclosure Statement**

No potential conflict of interest was reported by the authors.

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