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Watching football highlights on YouTube: the determinants of demand for short videos

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ABSTRACT

Research Questions: Digital transformations have brought changes to the consumption of football. Traditionally live televised football matches commanded total attention of viewers. With the proliferation of new media channels fans are now afforded to consume games anytime and anywhere, specifically by watching short highlights on-demand videos.

Research Methods: We employ a three-stage least squares (3SLS) model to address endogeneity and estimate the determinants of viewership and engagement. The analysis, based on 2,268 observations, explores engagement metrics, video characteristics, and sport elements influencing demand. Additionally, we incorporate match attendance and comment volume as instruments for the number of likes on each video.

Research and Findings: The model explains about 89% of the variance of the demand. The results indicate a significant positive association between views and likes, length of the videos, total number of red cards, total number of own goals, and uncertainty of outcome level, as well as the number of goals scored and the goal differences. A significant quadratic relationship between views, goals scored, and goals difference was observed, suggesting that the positive impact from both variables diminishes and, beyond a certain point, turns negative.

Implications: We hold that YouTube highlights are an important aspect of the consumption of football. On-demand highlight clips have both continuations and transformations to traditional demand models. Its free availability on YouTube and the data affordances constitute a potential change in the mediatisation of sport, having deeper implications for monetisation and financial models.

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Introduction

The last twenty years have seen a shift in the sport media ecology, from what Hutchins and Rowe (2009) conceptualised as content scarcity and attention abundance to content

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abundance and attention scarcity. This is particularly true for the current media environment in which platforms, such as the ones operated by the big five infrastructure platforms – namely Alphabet Inc. (e.g. Google, YouTube), Microsoft, Meta (e.g. Instagram, Facebook), Amazon (e.g. Prime, Twitch), and Apple (TV+) – have gained dominance over more traditional media channels (van Dijck et al., 2018). This growing dominance of platforms has profound repercussions on the cultural industries (Duffy et al., 2019; Nieborg & Poell, 2018; Poell et al., 2022) where content producers enter new platform dynamics as complementors, and therefore accept to have their content to be contingent to specific platform mechanisms (e.g. datafication, algorithm selection). Sport, as one important popular cultural industry, has not been immune to the changes identified by van Dijck et al. (2018) and Poell et al. (2022), and researchers have been attuned to the impacts on the once sedimented symbiotic relationship between media and sport (Rowe, 2004). For instance, Lee Ludvigsen and Petersen-Wagner (2023) by focusing on one specific platform (YouTube) and one specific content creator (the *International Olympic Committee* – IOC) have shown how platformisation have afforded the organisation to maintain a constant contact with its audience by bypassing traditional media channels and that the '[…] *Olympic experience* on YouTube is uniquely designed to be instant, selective and to alter how consumers and media stakeholders watch, engage and learn about the Olympics […]' (Lee Ludvigsen & Petersen-Wagner, 2023, p. 628, emphasis on original).

As platforms become even more central to the production and consumption circuits of sport mega-events (Lee Ludvigsen & Petersen-Wagner, 2022, 2023; Petersen-Wagner & Lee Ludvigsen, 2023a), arguably the pinnacle of mediatisation and spectacularisation, its ramifications are also experienced across the wide gamut of professional and amateur sport. For instance, sport leagues such as the big five European football leagues have entered new platform dynamics by commonly sharing non-rival and low marginal cost content such as television-repurposed video highlights to complement their media and audience reach (Petersen-Wagner & Lee Ludvigsen, 2023b). While at *prima facie* repurposed short highlight videos can be considered as non-rival to the most valued content for sport – the live television broadcast – in a media environment in which rights owners and right holders are anxious about the deeper transformations stemming from digitalisation (Hutchins & Rowe, 2012), and where users are arguably drawn to shorter bite-size formats (Newman, 2010), it is important to question what is the demand for – and implicitly what is the value of – the different media properties owned by clubs, leagues, national and international federations.

To this matter, Turner (2007, p. 338) argued that '[t]here are numerous issues that can be identified in the context of sport economics. One of the most critical to emerge during this time has been in the area of sport broadcasting', specifically on how digitalisation – and our argument platformisation – has reshaped the sport media market. This is particularly true as broadcasting rights for media properties across the spectrum – from the most important ones such as the Olympic Games or the FIFA Men's World Cup to more national and local ones such as particular sport leagues – have experienced steady growth and are now worth 62 billion US Dollars annually (Statista, 2023a). Hence, as Fujak et al. (2017) have argued, questions of valuation and demand are of central importance to sport management scholarship, particularly because potential audience size – a traditional measurement of demand and therefore of valuation –

covers only one element that comprises the total valuation of media properties. Furthermore, while traditional demand studies and, therefore, valuation frameworks have commonly focused on the most common sport media property – the live full game – digital transformations such as the ones stemming from platformisation have the potential to alter the once sedimented market dynamics (see Fujak et al., 2024). For Fujak et al. (2024) those transformations are seen in respect of platforms (e.g. number of streams or unique users), formats (e.g. total audience across content or viewer minutes), and timeframes (e.g. live or on-demand).

In this paper, we seek to engage with and contribute to Fujak et al.'s (2024) conceptual framework by empirically shedding light on the determinants of demand for short-format content (games' highlights) to one sport league (Brazilian Serie A and Serie B football between 2020 and 2023) on one platform (YouTube). Therefore, our research expands recent papers on streaming demand that exclusively focused on esport (Gasparetto & Safronov, 2023; Ryu et al., 2023; Wang, 2023; Watanabe et al., 2022), and studies of demand for YouTube highlights of the English Premier League during the Covid-19 pandemic and behind closed door events (Butler & Butler, 2023). Hence, this study advances our understanding of consumption patterns of short-format highlight videos by focusing on a distinct league and market that goes beyond traditional Global North leagues (e.g. Butler & Butler, 2023; Petersen-Wagner & Lee Ludvigsen, 2023b), and because of the panel nature of our data, we are able to complement Butler and Butler (2023) by demonstrating the complementary nature of freely accessible highlight videos in relation to in-person attendance and the distinctive nature of consumption between the two tiers in Brazilian football league structure.

Taken together, our findings contribute to debates on platform, determinants of demand, and sport management and media studies by extending our understanding of the impacts of digital transformations and continuations have on the mediatisation of sport, and consequently on monetisation and financial models to right owners and right holders.

Literature review

Demand in traditional media environment

In his book *On Television*, Pierre Bourdieu (1996) reserves a chapter for sport where he puts forward the argument that the spectacle is produced twice; first in the stadium in the presence of an audience, and second in media – and particularly live television – through its distinct production techniques that hide and show specific aspects to the different viewers around the world. This double production of sport – as Bourdieu (1996) alludes to – can be credited to the popularisation and massification of television and its subsequent dominant position within the mediatisation of sport. This is particularly true for football, once considered to be a truly global cultural phenomenon (Giulianotti & Robertson, 2009), in which its relationship with television has been characterised as a 'love affair' and 'match-made in heaven' (Galily & Tamir, 2014; Rowe, 1996). This media environment of domination by television as the main medium for consuming and producing the sport spectacle – and particularly global football – was characterised by a scarcity of channels and content, and an abundance of attention (Hutchins & Rowe,

2009). This monopolistic position of television as a medium, and subsequently specific channels that controlled the broadcasting rights to valuable global and national properties, had deeper implications for monetisation and financial models in the industry which mutated from mainly free-to-air channels with advertisements to subscription models (pay-to-view), as exemplified by the creation of the English Premier League and its association with BSkyB in the early 1990s (Millward, 2017; Turner, 2007).

In this environment of abundance of attention and scarcity of content in which the live television game dominated the cultural consumption of football, there are a wide range of studies that sought to explain what the main determinants of demand are – and therefore how larger audiences could be attracted to games. The first studies mainly focused on outcome uncertainty, which since the seminal works of Rottenberg (1956) and Neale (1964) has been considered the key determinant of the demand for live sport. Nevertheless, the evidence that emerged from those early studies was somewhat ambiguous. For instance, the studies conducted by Forrest et al. (2005) and Cox (2015) on the English Premier League (EPL), and by Buraimo and Simmons (2009) on the Spanish La Liga confirmed the validity of the outcome uncertainty hypothesis, as their results show a preference by English and Spanish fans towards games where the result was less predictable. Moreover, Di Domizio (2010) found that the effect of outcome uncertainty on the Italian Serie A viewers in the 2008/09 season was positive, although relatively small. However, Buraimo (2008) and Buraimo and Simmons (2015) found no significant impact of outcome uncertainty on TV audiences for EPL games, Alavy et al. (2010) showed a certain tendency of the EPL viewers to stop watching games with a higher probability of a draw, and Caruso et al. (2019) highlighted that Serie A (Italy) viewers preferred watching less balanced games, hinting at a certain inclination towards games involving teams at the top of the table and with higher player quality. Other studies focused on the existence of the David versus Goliath effect, when *smaller* clubs would face *bigger* ones (Buraimo & Simmons, 2008).

Hence, more recent studies focused on other aspects of what Borland and MacDonald (2003) categorised as the sporting contest; in particular, match significance and player quality. Match significance was initially conceptualised by Jennett (1984) and subsequently adopted by Kringstad and Gerrard (2004, 2005, 2007) through their notion of competitive intensity, which implies that football leagues are generally multi-prize competitions – for example, in the context of the European domestic leagues, title race, qualification for UEFA Champions League, UEFA Europa League and UEFA Conference League, and battle to avoid the relegation – and a higher number of teams in contention for these prizes will lead to higher demand. Research conducted by Scelles (2017) and Buraimo et al. (2022) on the EPL, and Bond and Addesa (2019) on the Italian Serie A supports the positive impact of competitive intensity on TV audience, as viewers turn out to be more attracted by games where at least one team is in contention for one of the abovementioned sporting prizes. Scelles (2017) and Bond and Addesa (2019) also found that the most significant determinant of TV audience was the impact of star power. As shown by Macedo et al. (2023), research on the impact of star players and team quality on TV football demand in European leagues has significantly increased in recent years and shows that TV viewers' interest increases with the presence of more qualitative and popular players and teams (Bond & Addesa, 2019; Buraimo & Simmons, 2015; Caruso et al., 2019; Feddersen & Rott, 2011; Scelles, 2017; Wills et al.,

2022). Li et al. (2025) found comparable patterns in the Chinese Super League, suggesting these effects extend beyond European football contexts.

Demand in the new media environment

While those earlier works regarding determinants of demand focused on the live televised football game as the main object for research, which inherently involves fans making decisions before the games are played, in a digitally transformed media environment in which football fans have multiple competing and complementary media channels (see Gantz & Lewis, 2014) at their disposal the situation might be distinct. For instance, Hutchins and Rowe (2012) acknowledged that while the live televised game still held primacy in terms of consumer choice, other options such as archives, highlights, and behind-the-scenes also provided fans with an entertainment value, and therefore those *properties* became a target for possible monetisation by the media industry. Furthermore, as argued by Boyle (2014), this current fragmented media environment where live free-to-air, pay-tv, social media platforms, and on-demand content are competing for audiences' limited attention points to a potential shift to ways in which media organisations try to capture and retain maximum audience. Hence, it is in this new environment characterised by an abundance of content and lack of attention (Hutchins & Rowe, 2009) that we start to witness a potential transformation in viewing and audience behaviour to on-demand consumption. As Whannel (2014) argued:

> The appeal of live-ness and immediacy contrasts with the *growing use of view-on-demand*. It could be that the ability to access the back catalog, combined with the expectation that any important event anywhere in the world can be seen live right now, *is producing new forms of audience behavior*. (p. 771, emphases added)

Compounded by this potential shift from on-demand content in *competition* to the live televised football game is the perception in the media industry that younger generations are being drawn to bite-sized content (Hutchins & Rowe, 2012; Newman, 2010). Therefore, in the last decades the sport media industry witnessed the repurposing and remediation (see Deuze, 2006) of live broadcast football games – or other live events such as the UEFA Euros, Olympic and Paralympic Games – into different bite-sized content to be distributed and monetised in different media channels (Lee Ludvigsen & Petersen-Wagner, 2022, 2023; Petersen-Wagner & Lee Ludvigsen, 2023a). As Petersen-Wagner and Lee Ludvigsen (2023b) have shown in terms of the five biggest European football leagues, namely the EPL, Bundesliga (Germany), La Liga, Ligue 1 (France), and Serie A, and their presence on YouTube – arguably the main alternative to television and possibly its future substitute (see Lee Ludvigsen & Petersen-Wagner, 2023) – the most common content being remediated are *shorter* format highlights. Those highlights that are present in four out of the five leagues' official YouTube channels – the one absent being the EPL – draw substantial attention and engagement through viewing, commenting and liking functions afforded by the platform, with some early indications that more traditional determinants of demand such as star players' performance and the presence of more popular players and teams play a role in affecting those different forms of engagement.

Moreover, Butler and Butler (2023) conducted the first empirical investigation into the determinants of demand for YouTube football highlights, providing valuable insights

into the factors driving online audience engagement. Their pioneering study, mainly aimed at verifying whether English Premier League (EPL) games played behind closed doors during the COVID period were associated with a significant increase in streaming views, identifies various motivators that drive fans to seek post-game content, including pre-game and in-game characteristics as well as scheduling factors, and establishes an important foundation for understanding digital football consumption on YouTube, highlighting the relevance of post-match engagement and the factors that sustain fan interest beyond the live event. Their findings show that match characteristics – such as exceptional goals, critical errors, penalties, and foul play – along with the presence of star players significantly influence viewership of EPL highlights, whereas pre-game features mostly do not. Moreover, unexpected match outcomes appear as a significant driver of post-game fan engagement, and a range of scheduling effects also emerges, as Friday and Monday games are viewed more, as well as matches placed behind a double pay wall.

Building upon this groundwork, our study extends the investigation into a different football landscape by examining highlight viewership in the Brazilian football league (Serie A and Serie B). Brazil's deep-rooted football tradition (Mason, 1995), its status as the most successful nation in World Cup history (Kittleson, 2014), and its vast population (IBGE, 2023) contribute to a unique environment for football consumption. Additionally, with Brazil being one of the largest global audiences on YouTube (Statista, 2023b), exploring engagement patterns within this setting allows us to assess whether the determinants identified in prior research hold across different football markets. By expanding the scope beyond the dominant European leagues, our study contributes to a broader understanding of digital football consumption and demand in varying economic and media landscapes.

The Brazilian football league structure

As argued by Kittleson (2014), Brazil is commonly seen as the 'country of football' because of 'the championships it has won and the exuberance and creativity its players have displayed in their victories' (Kittleson, 2014, p. 1). While Brazil maintained this historical international image, its national league structure reflected the country's political-economic situation, to a point in which its national competition reached up to 94 teams competing for the Brazilian national title in 1979 (Kittleson, 2014). It was only in 2003 that the national competition changed to a format where all clubs play against each other home and away (round-robin), with a final change to the structure taking place in 2006 when there was a reduction in clubs participating from 24 to 20 (UOL, 2023). Currently, both Serie A and Serie B are contested by 20 clubs, with the top four from Serie B being promoted to Serie A, and the bottom four relegated to Serie C (CBF, 2025a). Following a similar format to the Serie B, in the Serie A the four bottom clubs are relegated to Serie B, whereas the champion, second, third and fourth places qualify directly to the group stage of the CONMEBOL Libertadores, the 5th and 6th to the preliminary stage of the CONMEBOL Libertadores, and between 7th-12th qualify for the CONMEBOL Sul-Americana (CBF, 2025b). There are exceptions to this sporting prizes' structure, especially when clubs also qualify to the CONMEBOL Libertadores via other routes (e.g. winning the previous Libertadores or Sul-Americana, and/or

winning the Brazilian Cup), meaning that the structure changes accordingly and gives extra prizes to clubs finishing below in the league (CBF, 2025b).

Methods

Departing from a digital sociological perspective that takes digital spaces as important places in which consumption practices happen (Lee Ludvigsen & Petersen-Wagner, 2023; Lupton, 2014), our work applies what Caliandro et al. (2024) conceptualise as *follow the traces* in terms of platform studies. As Caliandro et al. (2024) argue, users when engaging through different social media platforms *leave traces* that are akin to traditional observational data that can become objects of research. For instance, when end-users engage in our chosen units of analysis – YouTube highlights videos – there are transactional data left as *traces* such as the number of likes, views, and comments on each highlight video. At the same time, there are user-generated-data left as *traces* by the publisher of the videos – in our case the GE channel (YouTube, 2023) – such as the length in seconds, day and time the videos were posted, and information contained in the title of each video such as the teams contesting the game and the final score of the game.

On the 11th of December 2023, both types of *traces* were automatically collected by connecting to YouTube's Application Programming Interface (API v.3) (YouTube, 2024a) through YouTube Data Tools (Rieder, 2015), and, subsequently, Python was used to automatically extract and compute the score of the game, away and home goals, and away and home teams. To contextualise, GE is the sport' newscast of TV Globo, the largest free-to-air television network in Brazil and the Brazilian Leagues' broadcast rights holders for both free-to-air (Globo), subscription (SporTV), pay-per-view (Premiere), and digital for the period of our data collection. To complement the YouTube traces dataset, we have further scraped data from transfermarkt (red cards, own goals, penalty kicks) (Transfermarkt.com, 2024a, 2024b), checkbestodds (home, away, draw odds) (CheckBestOdds.com, 2024), and fbref (xG home team and xG away team, attendance) (FBref.com, 2024). Below we describe the variables added to our regression models.

Variables

The dependent variable (v) is the total number of views of each video. Given that YouTube videos are freely accessible, the demand for these videos can be effectively measured by the number of views they receive, as this metric directly reflects user interest. The variables of interest are divided into three groups: Engagement (E), Video Characteristics (C), and sport Elements (S), along with a set of control variables (CV).

The Engagement (E) in the videos is measured by the number of likes in a video (l). However, likes are firstly regressed by the comments count (c) and match attendance (att). The inclusion of these metrics into the modelling is based on their ability to measure user interaction and involvement with the content, which are critical indicators of viewer demand and engagement on the platform (see YouTube, 2022). The video characteristics (C) is represented by its length in seconds (s). Its inclusion is essential, as length is related to viewer preferences.

The sport elements matrix (S) integrates sportive aspects that tend to impact consumption. This group of variables comprises the total number of red cards, the total number of penalty kicks, and the total number of own goals scored by both teams in the given match, assuming that these factors can influence the decision to watch a YouTube highlight. Additionally, the number of goals scored (*gs*), the goals difference in each match (*gd*), the Theil Index (*theil*), the ex-ante adjusted probability of the actual outcome of the match (*shock*), and the tier dummy (d) are included. The rationale lies in the fact that the number of goals tends to influence the attractiveness of football highlights, while the goal difference serves as a proxy for match competitiveness – where smaller differences in goals could suggest balanced contests. Nonetheless, we acknowledge that very large number of goals may not be tempting for certain football fans, whereas a great goal difference could motivate some fans to watch the highlights of a given match. Therefore, the model includes the second order of both variables. Moreover, assuming that fans from both clubs – as well as casual viewers – can watch YouTube videos, we included the Theil Index to examine whether the level of outcome uncertainty influences viewership rates, as it serves as an optimal metric of competitiveness for this setting. Since neutral fans might be more attracted by games with a surprising result, we also used the ex-ante adjusted probability of the actual outcome of the match as a measure of the audience surprise – the lower the ex-ante adjusted probability, the more unexpected the match outcome. Lastly, the tier dummy accounts for potential audience differences between top and lower divisions.

The control variables (CV) include the age of the video in days (a), the day of the week and the month when a given match was played. Home, away, and season fixed effects are also included in the modelling. These elements are included to account for temporal variations in viewership as well as to control for team-specific and seasonal effects that could impact the number of views independently of the other factors.

Modelling and econometric approach

To account for the endogeneity between likes and views, a three-stage least squares (3SLS) model is estimated. This approach accommodates the simultaneity between engagement and views by modelling likes as an endogenous regressor. The system of equations is specified as follows:

$$E_{it} = \alpha_0 + \alpha_1 c_{it} + \alpha_2 att_{it} + \varepsilon_{it}$$

$$\ln(v_{it}) = \beta_0 + \delta_1 \hat{E}_{it} + \theta_2 C_{it} + \varphi_3 S_{it} + \gamma_4 CV_{it} + \upsilon_{it}$$

Where $\hat{E}$ represents the fitted values from the first equation (instrumented), $(\varepsilon_{it},\ \upsilon_{it})' \sim N\ (0,\Sigma)$ where $\boldsymbol{\Sigma}$ is a variance-covariance matrix capturing cross-equation error correlation, i is a given match, t is a given season, and ε and υ are the random terms.

In the first equation, likes are modelled as a function of comment count and match attendance. In the second equation, views are modelled as a function of likes, video characteristics, sport elements, and control variables. The identification strategy relies on the exclusion restrictions, with comments count and match attendance serving as instruments of number of likes. The choice of these variables as instruments is based on their correlation with engagement but lack of direct influence on video views,

satisfying instrument validity conditions. Comments reflect user interaction without necessarily driving viewership, making it an ideal predictor of likes. Match attendance serves as a proxy for real-world fan engagement, capturing overall interest in the match without directly affecting YouTube algorithms.

Several tests confirm the validity and strength of these instruments. The Durbin-Wu-Hausman test rejects the null hypothesis of exogeneity ($p < 0.01$), confirming the necessity of the instrumental variables approach. The first-stage F-statistic (945.28) and minimum eigenvalue statistic indicate that the instruments are strong, exceeding conventional critical thresholds. Overidentification tests (Sargan and Basmann) suggest that the instruments are valid, as their p-values (0.7339 and 0.7410, respectively) indicate no evidence of correlation with the error term. Table 1 below displays the instrumental variable diagnostics.

Additionally, robustness checks are performed by replacing goals scored and goal difference with the sum of expected goals (xG) and absolute difference of xG between the teams, along with their squared terms in an alternative specification. These models aim to check whether the curiosity of fans to watch YouTube highlights would go beyond the scored goals in a given match. This is particularly important as the final game result explicitly appears in the title of every single highlight video.

Table 2 presents the descriptive statistics of the continuous variables. Due to the left-skewed distribution of the dependent variable, a log transformation was applied to normalise it. While some other variables (e.g. likes, comments, age) show considerable variation in their distributions, they do not violate the assumptions of linear models and were thus included in their original form in the analysis.

Results

As displayed in Table 2 above, the dataset consists of 2,268 observations and offers a detailed look at various aspects of the Brazilian Leagues' (Série A and Série B) highlight football videos on YouTube. On average, these videos have been viewed approximately 428,690 times, although this number varied widely, with some videos receiving as few as 107 views and others over 6.6 million. Each video typically received around 13,530

Table 1. First-stage instrumental variable diagnostics.

Test	Statistic	*p*-value	Interpretation
First-Stage F-Statistic	945.28	0.000	Instruments are strongly correlated with the endogenous regressor.
Partial R^2	0.4628	–	Indicates substantial explanatory power of instruments for the endogenous variable.
Minimum Eigenvalue Statistic	945.28	–	Exceeds weak instrument critical values, confirming instrument strength.
Durbin-Wu-Hausman Test	$\chi^2(1) = 63.5305$ (Durbin) $F(1,2144) = 7878$ (Wu-Hausman)	0.000	Rejects the null that the endogenous regressor is exogenous, justifying the use of IV estimation.
Sargan Overidentification Test	$\chi^2(1) = 0.1155$	0.7339	Fails to reject the null, suggesting instruments are valid (uncorrelated with the error term).
Basmann Overidentification Test	$\chi^2(1) = 0.1092$	0.7410	Confirms instrument validity (consistent with Sargan test).

Table 2. Descriptive statistics.

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
Views	2,414	419517	566669.4	107	6635557
(ln) Views	2,414	12.20391	1.293296	4.67	15.71
Likes	2,414	13192.94	17221.09	3	161317
Comments	2,414	895.74	1163.812	0	14753
Attendance	2,414	10656.04	14692.14	0	69997
Age (days)	2,414	572.26	357.47	4	1207
Length (s)	2,414	203.67	23.53	90	453
Total Red Cards	2,414	0.16	0.44	0	4
Total Penalty Kicks	2,414	0.22	0.47	0	3
Total Own Goals	2,414	0.06	0.25	0	2
Goals Scored	2,414	2.26	1.49	0	10
Abs. Goals Difference	2,414	1.12	1.01	0	6
Sum xG	1,312	2.51	0.90	0.6	6.8
Abs. Diff. xG	1,312	0.84	0.677	0	5.1
Theil Index	2,269	0.23	0.29	0.00	1.86
Shock	2,269	3.75	1.43	0.65	8.38

likes and 919 comments, highlighting their level of engagement. The videos are generally about 204 s long, ranging from just a minute and a half to over seven minutes. The age of these videos averages around 581 days (Série A highlights consist of four entire seasons between 2020 and 2023, and Série B highlights consist of three entire seasons between 2021 and 2023) indicating that the dataset includes a mix of both newer and older content, which is expected due to the panel nature of the data. In terms of sport content, the matches in the videos feature an average of 2.26 goals, although the most-scored match reached 10 goals in total. Lastly, while the goal difference average is 1.12, which may indicate several competitive matches in the sample, the match with the largest goal difference displays 6 goals between competitors.

Table 3 presents the outputs of our three-stage least squares (3SLS) model. The first equation examines the determinants of video likes. The results indicate that comments have a substantial and significant impact on likes, with each additional comment generating approximately 12 additional likes. Match attendance also demonstrates a positive relationship with likes, suggesting that matches with higher in-stadium attendance generate more engagement on digital platforms, with a 0.18% increase in likes for each additional attendee. Firstly, this suggests that clubs with larger supporters' base tend to attract more viewers – and hence engagement – on YouTube, and games that were deemed to be more attractive to in-person attendance had also impact on digital consumption. Hence, it can be suggested that there is a strong complementarity between in-person and digital consumption of football content.

The second equation analyses the factors influencing the demand for football highlights on YouTube for Brazilian League matches, explaining 89% of the variance. The empirical results demonstrate that engagement metrics significantly influence viewing patterns. Specifically, likes show a strong positive relationship with views – an increase of approximately 40,000 likes is associated with a 1% increase in views, highlighting the substantial role of user engagement in driving video popularity. This is important, as the circulation of videos in the platform is influenced by YouTube's recommendation system (algorithm) that *reward* different forms of engagement (e.g. views, likes, comments, shares) when ranking videos in the homepage and 'up next' panel (YouTube, 2021).

Table 3. 3SLS model output.

Variables	Likes	(ln) Views
Comments	12.22***	
	(0.154)	
Attendance	0.177***	
	(0.0121)	
Likes		2.49e-05***
		(1.47e-06)
Length (s)		0.00282***
		(0.000438)
Total Red Cards		0.0513**
		(0.0213)
Total Penalty Kicks		−0.0272
		(0.0207)
Total Own Goals		0.111***
		(0.0372)
Goals Scored		0.236***
		(0.0185)
Goals Scored^2		−0.0206***
		(0.00303)
Goals Difference		0.192***
		(0.0243)
Goals Difference^2		−0.0401***
		(0.00637)
Theil Index		0.329***
		(0.0485)
Shock		−0.00540
		(0.00803)
Tier Two (Serie B)		−0.256***
		(0.0492)
Control Variables		
Post Age (days)	No	Yes
Weekday Dummies	No	Yes
Month Dummies	No	Yes
Season FE	No	Yes
Home Club FE	No	Yes
Away Club FE	No	Yes
Constant	382.3*	11.27***
	(232.0)	(0.391)
Observations	2,268	2,268
R-squared	0.785	0.890

Standard errors in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Video characteristics and temporal factors demonstrate significant associations with viewership. The length of the video shows a positive relationship with demand: an increase of approximately 3.53 s in video length is associated with a 1% increase in views. The post age of the video shows a negative relationship, with each additional day reducing views by approximately 0.11%, suggesting an increase in the platform penetration in the cultural consumption of football in Brazil.

The sporting elements of the matches play a crucial role in determining viewership. Match events such as red cards and own goals show positive associations with views, increasing them by 5.13% and 11.2% respectively per occurrence. However, penalty kicks do not show a statistically significant relationship with viewership.

The relationship between goals and demand exhibits non-linear patterns. For goals scored, the linear coefficient (0.236) and quadratic coefficient (−0.0206) are both statistically significant. This implies that each additional goal initially increases views by 23.6%, but this positive effect diminishes as the number of goals increases, reaching a maximum

at approximately 5.73 goals. Beyond this point, additional goals begin to negatively impact viewership.

Similarly, the goals difference exhibits a non-linear relationship with demand, as indicated by the linear (0.192) and quadratic (−0.0401) coefficients. The positive impact of goal difference peaks at approximately 2.39 goals, after which larger goal differences start to decrease viewership, suggesting that highly unbalanced matches are less attractive to viewers.

The model reveals that competitive balance, measured by the Theil Index, has a significant relationship with views. Since the Theil Index ranges from 0 to 1, with higher values indicating greater competitive balance, we can interpret that a 10% increase in competitive balance is associated with a 3.3% increase in views. Additionally, the tier effect is significant, with Serie B matches experiencing approximately 25.7% lower demand compared to Serie A matches, *ceteris paribus,* whereas the variable *shock* is not significant, which indicates that unexpected match outcomes do not have any significant impact on the number of views.

Robustness check

To validate our main findings and explore additional dimensions of match attractiveness, we estimated alternative specifications using expected goals (xG) data. These models examine whether the probability of scoring, rather than actual goals, influences viewership patterns. Due to data availability constraints, these analyses focus solely on Serie A matches, reducing our sample to 1,215 observations.

The first alternative specification replaces goals scored and goals difference with the sum of expected goals (Sum xG) and the absolute difference in expected goals between teams (Abs. Diff xG). The results demonstrate that the sum of expected goals has a significant positive relationship with viewership – a one-unit increase in total xG is associated with a 7.73% increase in views. However, the absolute difference in xG between teams shows no statistically significant relationship with viewership. Table 4 below displays the outputs.

The second specification introduces quadratic terms for both xG measures to test for non-linear effects. The results reveal a non-linear relationship between the sum of expected goals and viewership. The linear term (0.0773) and quadratic term (−0.0217) are statistically significant, suggesting that the positive impact of expected goals on viewership diminishes at higher levels. This relationship peaks at approximately 4.59 expected goals, after which additional expected scoring opportunities begin to negatively impact views. The absolute difference in expected goals, however, shows no significant linear or quadratic relationship with viewership.

The instrumental variables maintain their significance and magnitude across both specifications. Comments and attendance remain strong predictors of likes in the first stage, while likes continue to show a substantial positive relationship with views. Video characteristics such as length and the presence of own goals maintain their significant associations with viewership, though the post age and red cards lose their statistical significance in these specifications.

The variable *shock* is still not significant, whereas competitive balance, measured by the Theil Index, maintains its positive relationship with viewership, albeit with a

Table 4. Robustness checks. 3SLS models outputs.

Variables	Likes (xG Model)	(ln) Views (xG Model)	Likes (Non-Linear xG Model)	(ln) Views (Non-Linear xG Model)
Comments	11.81***	–	11.81***	–
	(0.229)	–	(0.229)	–
Attendance	0.187***	–	0.187***	–
	(0.0184)	–	(0.0184)	–
Likes		2.77e-05***		2.79e-05***
		(1.41e-06)		(1.41e-06)
Length (s)		0.00324***		0.00311***
		(0.000559)		(0.000563)
Total Red Cards		0.0254		0.0256
		(0.0298)		(0.0298)
Total Penalty Kicks		0.0296		0.0285
		(0.0293)		(0.0293)
Total Own Goals		0.174***		0.171***
		(0.0564)		(0.0564)
Sum xG		0.0773***		0.199***
		(0.0187)		(0.0703)
Sum xG^2		–		−0.0217*
		–		(0.0121)
Abs. Diff xG		0.0102		−0.0161
		(0.0224)		(0.0514)
Abs. Diff xG^2		–		0.0106
		–		(0.0182)
Theil Index		0.103		0.105
		(0.0655)		(0.0655)
Shock		0.0157		0.0146
		(0.00989)		(0.00991)
Tier Two (Serie B)		–		–
Control Variables				
Post Age (days)	No	Yes	No	Yes
Weekday Dummies	No	Yes	No	Yes
Month Dummies	No	Yes	No	Yes
Season FE	No	Yes	No	Yes
Home Club FE	No	Yes	No	Yes
Away Club FE	No	Yes	No	Yes
Constant	1,853***	11.35***	1,853***	11.27***
	(484.4)	(0.434)	(484.4)	(0.435)
Observations	1,215	1,215	1,215	1,215
R-squared	0.725	0.791	0.725	0.791

The number of observations is reduced due to the lack of available xG data for Serie B. Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

smaller magnitude than in our main specification. A 10% increase in competitive balance is associated with a 1.03% to 1.05% increase in views in the alternative models.

These robustness checks support our primary findings regarding the importance of match events and competitive balance in driving viewership, while also suggesting that fans' interest extends beyond actual goals to potential scoring opportunities. The non-linear relationship between expected goals and viewership parallels our main findings regarding actual goals, indicating that the attractiveness of matches peaks at moderate levels of scoring probability.

Discussion

In a fragmented and highly competitive media environment in which myriads of channels and platforms contest for the limited audiences' attention (Hutchins & Rowe, 2009),

YouTube – because of its affordances – becomes an important and potential substitute to linear television in terms of the production and consumption circuit of professional football (Butler & Butler, 2023; Petersen-Wagner & Lee Ludvigsen, 2023b). While YouTube, apart from a few exceptions across the sport media industry (see Forbes, 2019; The Guardian, 2022), has been predominantly used for repurposing *non-live* television content such as the short highlight videos that are central to our analysis, it still commands an important level of attention and therefore can generate a captive audience that is monetisable. For instance, while on average on our dataset there were around 400k views for each highlight video, figures show that live broadcasted games in two of the main Brazilian markets (Rio de Janeiro and São Paulo) attracted between 300k and 570k viewers (Gasparetto & Barajas, 2018), meaning that YouTube situates itself alongside the most important medium to sport: television. It is important to note that we are not directly comparing television audiences and YouTube views due to the inherent differences in their nature, with television offering live broadcasts and YouTube providing – mostly – recorded content (see also Fujak et al., 2024 for the nuances in measuring demand in different media formats). Nonetheless, the substantial viewership numbers achieved on YouTube highlight its potential role as an important medium in the sport media ecology.

While on television the monetisation models have evolved to encompass both traditional advertisements – selling captive audiences to advertisers (see Wu, 2016) – and subscription or pay-per-view models, it is important to question how YouTube can become another source of revenue for leagues and clubs as right owners, and media organisations as right holders. Whilst YouTube affords multiple monetisation models within their Partner Program (YPP) (YouTube, 2024b) encompassing both traditional (e.g. advertisements and pay-to-access) and platform-specific (e.g. shopping, super chat, super stickers) models (and from inspecting the GE channel it appears that only the former is used), and according to Rieder et al. (2023) a channel the size of GE (Gold, between 1 and 10 million subscribers) would on average have an ad revenue of around 165,000 US Dollars per year, we contend that there is an important by-product that can become an important source of future revenue for both right owners and right holders: data. As alluded to by Petersen-Wagner and Lee Ludvigsen (2023b) and Read and Smith (2023), data as a *by-product* of user engagement should be considered central to potential monetisation strategies by content creators. Datafication, as one of the key elements of platformisation (van Dijck et al., 2018), means that having access to user data becomes an important asset for further commodification of the value offered by content holders and content owners. This is particularly true in the sport media ecosystem: as argued by Fujak et al. (2024), data should be at the centre of any valuation model used by right owners and potential right holders when commercialisation opportunities arise.

As we argue, the opportunities for datafication are plausibly the reason for GE to create short highlight clips that are *freely* shared on YouTube. While for GE there is only marginal cost in the production of such material – the main costs come from acquiring the rights and originally producing the television material (e.g. commentators, camera, broadcasting) – there are important potential gains in sharing them on the second most accessed website in Brazil with a projected user base of over 166 million users by 2025 (Statista, 2023b, 2024). To put this figure into perspective, this amounts

to around 80% of the current Brazilian population according to the last census data (IBGE, 2023). By adding this extra marginal cost in the production of short highlight videos and *freely* sharing them on YouTube, GE can access important real-time data – and therefore actionable information – on their audiences' preferences and cultural consumption habits that can be used for informing future content strategies that go beyond our platform of analysis. Further, GE can use this real-time data when engaging with right owners during bidding processes for future rights of the Brazilian leagues' linear and digital properties. This is particularly important in the current Brazilian football media environment where *two competing* groups of clubs formed leagues that have different approaches to the division of media rights income.

Nevertheless, while on television demand was primarily concerned with the number of viewers – or the size of the audience to a particular live game – for YouTube the recommendation system (algorithm) also values active forms of engagement such as comments and likes (see YouTube, 2021, 2022). As our data shows, an increase of approximately 40,000 likes is associated with a 1% increase in views, which might indicate how the algorithm works by *pushing* highly engaged videos to further users either in the homepage or 'up next' panel. This is important as content selection is commonly contingent to platform mechanisms that are designed to *privilege* specific content that generates further engagement (Duffy et al., 2019; Nieborg & Poell, 2018; Poell et al., 2022). For content creators, this becomes a piece of important information, even more so for GE who at *prima facie* relies solely on traditional forms of monetisation, who can then design their content to please algorithm gatekeepers – meaning the algorithm itself and end-users who feed the algorithm (see Petersen-Wagner & Lee Ludvigsen, 2023a, 2023b).

Based on our analysis, end-users are significantly interested in highly entertaining matches. Our findings indicate that fans are particularly drawn to matches with multiple goals, with peak interest observed when six goals are scored. However, interest tends to diminish when the goal difference exceeds 2.5 goals, suggesting that fans prefer more competitive and closely contested matches. These empirical findings provide relevant insights into sport economics literature. While YouTube channels – such as GE in our case – cannot control the outcome of matches in terms of goals nor the attractiveness of a match such as through xG or number of cards, they can manage other aspects of the videos, such as their length and visual elements, which might enhance engagement, and ultimately views. While the correlation between the number of goals or xG and video length is weak, our results still indicate that longer videos are associated with higher view counts. Therefore, channels should consider slightly extending their content even when the sporting aspects of the game are less than ideal, as longer videos might be promoted to wider audiences due to algorithm that values views and other forms of engagement. Additionally, visual enhancements could encourage direct viewer engagement through likes and comments, ultimately increasing the number of views.

Our results also demonstrate the complexity of sport fans' behaviour. Previous research using Brazilian football data revealed that live fans were not particularly interested in competitive matches, with significantly higher attendance when home teams were either clear favourites or underdogs, and lower attendance for competitive matches (Gasparetto & Barajas, 2020). A different pattern emerged for TV audiences in Brazil: football fans in Rio de Janeiro were more attracted to matches where their clubs were favourites, exhibiting loss aversion behaviour, while in São Paulo fans

preferred certain matches and watched significantly less of the unpredictable ones (Gasparetto & Barajas, 2018). However, our findings indicate the opposite behaviour on YouTube. Brazilian fans on this platform value competitiveness, showing reduced interest if the goal difference between teams exceeds 2.44. This is further confirmed by the positive Theil Index relationship with views in both models. This evidence suggests an avenue for further research in other contexts to understand the differences in fan behaviour across in-person attendance, media channels, and platforms.

Furthermore, our results provide empirical support for the classical Uncertainty of Outcome Hypothesis proposed by Rottenberg (1956) and Neale (1964). Even accounting for the fact that viewers of the highlights we have analyzed potentially know the final scores as it is explicitly stated in all videos' titles – or because they have seen the result through another media channel – our findings still indicate that viewers are interested in highly competitive matches that extend beyond the number of goals scored and xG to other factors that were included in the Theil Index (Pawlowski & Anders, 2012). Moreover, differently from Butler and Butler (2023), our results interestingly showed that shock was not a determinant of demand for views in either of the models: therefore, unexpected match outcomes are not more attractive to Brazilian viewers.

In summary, while there are some similarities to how determinants of demand exist in the traditional medium of television, particularly with the long live content format, short-content formats such as remediated on-demand highlight videos are unique in the way they attract engagement either through viewing, commenting or liking. We contend that this uniqueness will become ever more important in a media environment in which platforms are the dominant media type in terms of cultural consumption habits (see Statista, 2022), further demanding adaptations from rights owners and rights holders.

Limitations and future research

Our research has a few limitations that could be addressed further. While our findings and discussion point to specific ways in which rights holders and rights owners can further monetise their content on *freely*-accessible platforms such as YouTube, there are some caveats to be made. Firstly, our data comes from a historically competitive football league (Da Silva et al., 2018; Gasparetto & Barajas, 2016). For instance, the current data shows that only 0.95% of the matches had more than 6 goals scored, and only 2.34% of the matches experienced more than 3 goals difference. In this sense, it is unclear whether a similar pattern will be observed in other leagues where there are a few dominant football clubs. Further research is encouraged to explore those patterns across different sport leagues in the world.

Second, the lack of granular data afforded by the YouTube API to researchers means that it is unknown how long users have watched each video – an important element to YouTube's recommendation system (see YouTube, 2021, 2024c) – or how many unique viewers watched each of the highlight videos, or when users have watched the video (e.g. straight after being posted, one day after, etc.). Additionally, there is also a lack of granular information about the viewers (e.g. age, gender, race, and socioeconomic aspects) which would represent valuable information for demand-based studies. Therefore, in case content creators were willing to share the information available to them, future research would benefit from such detailed metrics, offering a better understanding

of viewer behaviour, and the factors that contribute to video popularity, viewer retention and engagement. Moreover, although our modelling approach follows platform logic and addresses potential endogeneity, we acknowledge the challenge in definitively establishing the directionality between likes, comments, and views. Future research could explore alternative modelling strategies to better delineate these relationships. In addition, the current study does not account for the impact of match significance or competitive intensity, which may influence viewer engagement and content performance. This presents a valuable direction for future research.

Conclusion

As postulated by Lee Ludvgisen and Petersen-Wagner (2023), platformisation has transformed the sport media industry by affording right owners and right holders the opportunity to *multiply* the production of the sporting event. This multiple production has commonly come through repurposing and remediating the televised spectacle, with short bite-size highlights as a common exponent (Petersen-Wagner & Lee Ludvigsen, 2023b). Hence, our findings and discussion contribute to ongoing debates within the wider field of sport management, demonstrating how new channels – as in our case YouTube – and *new* content – the repurposed bite-size highlight – are now integral elements in professional sport' production and consumption circuits. The new avenues for monetisation practices and new financial models for right owners and right holders that stem from this digitally innovative practice (Ratten, 2016) contributes to changes in the way platforms – and here specifically YouTube – are situated in the wider media channels' management (see Naraine & Parent, 2017a; 2017b). Additionally, the presence of freely available repurposed content that has a minimal marginal cost for creators offers them great returns via access to real-time audience data, contributing to the ongoing debate regarding the role of big data and analytics in management strategies (see Watanabe et al., 2021).

Hence, our study sought to contribute to sport management, platform and media studies, and sport economics literature by capturing the nuances of bite-size content remediation and its demand. We argue that the demand for on-demand highlight videos shares patterns of continuities and discontinuities compared to traditional live television broadcasting, showing the uniqueness of the content and the specificities of the platform and its mechanisms. Thus, this article offers an original contribution to the literature on the determinants of demand for repurposed on-demand content, which is becoming increasingly central to the platformised cultural consumption of sport.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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References

Alavy, K., Gaskell, A., Leach, S., & Szymanski, S. (2010). On the edge of your seat: Demand for football on television and the uncertainty of outcome hypothesis. *International Journal of Sport Finance*, *5*(2), 75–95.

Bond, A., & Addesa, F. (2019). TV demand for the Italian Serie A: Star power or competitive intensity? *Economics Bulletin*, *39*(3), 2110–2116.

Borland, J., & MacDonald, R. (2003). Demand for sport. *Oxford Review of Economic Policy*, *19*(4), 478–502. https://doi.org/10.1093/oxrep/19.4.478

Bourdieu, P. (1996). *On television* (P. P. Ferguson, Trans.). The New Press.

Boyle, R. (2014). Television sport in the age of screens and content. *Television & New Media*, *15*(8), 746–751. https://doi.org/10.1177/1527476414529167

Buraimo, B. (2008). Stadium attendance and television audience demand in English league football. *Managerial and Decision Economics*, *29*(6), 513–523. https://doi.org/10.1002/mde.1421

Buraimo, B., Forrest, D., McHale, I. G., & Tena, J. D. D. (2022). Armchair fans: Modelling audience size for televised football matches. *European Journal of Operational Research*, *298*(2), 644–655. https://doi.org/10.1016/j.ejor.2021.06.046

Buraimo, B., & Simmons, R. (2008). Do sports fans really value uncertainty of outcome? Evidence from the English Premier League. *International Journal of Sport Finance*, *3*(3), 146–155.

Buraimo, B., & Simmons, R. (2009). A tale of two audiences: Spectators, television viewers and outcome uncertainty in Spanish football. *Journal of Economics and Business*, *61*(4), 326–338. https://doi.org/10.1016/j.jeconbus.2008.10.002

Buraimo, B., & Simmons, R. (2015). Uncertainty of outcome or star quality? Television audience demand for English Premier League football. *International Journal of the Economics of Business*, *22*(3), 449–469. https://doi.org/10.1080/13571516.2015.1010282

Butler, D., & Butler, R. (2023). Ghost games and ex-post viewing preferences for the English Premier League: Evidence from YouTube highlights. *Sports Economics Review*, *2*, 100012. https://doi.org/10.1016/j.serev.2023.100012

Caliandro, A., Gandini, A., Bainotti, L., & Anselmi, G. (2024). *The platformisation of consumer culture: A digital methods guide*. Amsterdam University Press.

Caruso, R., Addesa, F., & Di Domizio, M. (2019). The determinants of the TV demand for soccer: Empirical evidence on Italian Serie A for the period 2008–2015. *Journal of Sports Economics*, *20*(1), 25–49. https://doi.org/10.1177/1527002517717298

CBF. (2025a). *REC: Regulamento Específico da Competição—Brasileiro Série B*, *2025* [REC: Specific Regulations of the Competition – Brazilian Serie B, 2025]. Retrieved June 23, 2025, from https://objectstorage.sa-saopaulo-1.oraclecloud.com/n/grsa9ybqykir/b/portalcbf/o/REC%20-%20Brasileiro%20Série%20B%202025.pdf.

CBF. (2025b). *REC: Regulamento Específico da Competição—Brasileiro Série A*, *2025* [REC: Specific Regulations of the Competition – Brazilian Serie A, 2025]. Retrieved June 23, 2025, from https://objectstorage.sa-saopaulo-1.oraclecloud.com/n/grsa9ybqykir/b/portalcbf/o/REC%20SERIE%20A%20-%2027.02.2025.pdf.

CheckBestOdds.com. (2024). *Brazil - historical betting odds*. Retrieved October 18, 2024, from https://checkbestodds.com/football-odds/archive-brazil/.

Cox, A. (2015). Spectator demand, uncertainty of results, and public interest: Evidence from the English Premier League. *Journal of Sports Economics*, *19*(1), 3–30. https://doi.org/10.1177/1527002515619655

Da Silva, C. D., Abad, C. C. C., Macedo, P. A. P., Fortes, G. O. I., & Do Nascimento, W. W. G. (2018). Competitive balance in football: A comparative study between Brazil and the main European leagues (2003–2016). *Journal of Physical Education*, *29*(1), e2945.

Deuze, M. (2006). Participation, remediation, bricolage: Considering principal components of a digital culture. *The Information Society: An International Journal*, *22*(2), 63–75. https://doi.org/10.1080/01972240600567170

Di Domizio, M. (2010). Competitive balance e audience televisiva: una analisi empirica dalla Serie A italiana [Competitive balance and TV audience: An empirical analysis on the Italian Serie A]. *Rivista di Diritto ed Economia dello Sport*, *6*(1), 27–57.

Duffy, B. E., Poell, T., & Nieborg, D. (2019). Platform practices in the cultural industries: Creativity, labor, and citizenship. *Social Media + Society*, *5*(4), 1–8. https://doi.org/10.1177/2056305119879672

FBref.com. (2024). *Campeonato Brasileiro Série A* [Brazilian Championship Série A]. Retrieved October 18, 2024, from https://fbref.com/en/comps/24/Serie-A-Stats.

Feddersen, A., & Rott, A. (2011). Determinants of demand for televised live football: Features of the German national football team. *Journal of Sports Economics*, *12*(3), 352–369. https://doi.org/10.1177/1527002511404783

Forbes. (2019). *BT Sport to show UEFA Champions League final for free on YouTube*. Retrieved June 30, 2024, from from https://www.forbes.com/sites/stevemccaskill/2019/05/21/bt-sport-to-show-uefa-champions-league-final-for-free-on-youtube/?sh=237fe9b2423a.

Forrest, D., Simmons, R., & Buraimo, B. (2005). Outcome uncertainty and the couch potato audience. *Scottish Journal of Political Economy*, *52*(4), 641–661. https://doi.org/10.1111/j.1467-9485.2005.00360.x

Fujak, H., Frawley, S., & Bush, S. (2017). Quantifying the value of sport broadcast rights. *Media International Australia*, *164*(1), 104–116. https://doi.org/10.1177/1329878X17698051

Fujak, H., Karg, A., & Whitburn, D. (2024). Sport media has an audience measurement problem. *European Sport Management Quarterly*, *24*(3), 582–602. https://doi.org/10.1080/16184742.2022.2153376

Galily, Y., & Tamir, I. (2014). A match made in heaven?! Sport, television, and new media in the beginning of the third millennia. *Television & New Media*, *15*(8), 699–702. https://doi.org/10.1177/1527476414541553

Gantz, W., & Lewis, N. (2014). Sports on traditional and newer digital media. *Television & New Media*, *15*(8), 760–768. https://doi.org/10.1177/1527476414529463

Gasparetto, T., & Barajas, A. (2016). Reanalizing the competitiveness in football leagues: Accumulated points difference. *Revista de Administração de Empresas*, *56*(3), 288–301. https://doi.org/10.1590/S0034-759020160303

Gasparetto, T., & Barajas, A. (2018). Fan preferences: One country, two markets and different behaviours. *European Sport Management Quarterly*, *18*(3), 330–347. https://doi.org/10.1080/16184742.2017.1394346

Gasparetto, T., & Barajas, A. (2020). Management in a complex scenario: World Cup, alternative stadiums and demand for tickets. *Managerial and Decision Economics*, *41*(6), 1071–1083. https://doi.org/10.1002/mde.3160

Gasparetto, T., & Safronov, A. (2023). Streaming demand for eSports: Analysis of counter-strike: Global offensive. *Convergence*, *29*(5), 1369–1388. https://doi.org/10.1177/13548565231187359

Giulianotti, R., & Robertson, R. (2009). *Globalization and football* (1st ed.). Sage.

The Guardian. (2022). *YouTube's NFL deal turns up the heat in battle for sports rights*. Retrieved June 30, 2024, from https://www.theguardian.com/media/2022/dec/23/youtube-nfl-deal-turn-up-heat-battle-for-sports-rights.

Hutchins, B., & Rowe, D. (2009). From broadcast scarcity to digital plenitude. *Television & New Media*, *10*(4), 354–370. https://doi.org/10.1177/1527476409334016

Hutchins, B., & Rowe, D. (2012). *Sport beyond television: The Internet, digital media and the rise of networked media sport*. Routledge.

IBGE. (2023). *De 2010 a 2022, população brasileira cresce 6,5% e chega a 203,1 milhões* [From 2010 to 2022, the Brazilian population grew by 6.5% and reached 203.1 million]. Retrieved July 1,

2024, from https://agenciadenoticias.ibge.gov.br/agencia-noticias/2012-agencia-de-noticias/noticias/37237-de-2010-a-2022-populacao-brasileira-cresce-6-5-e-chega-a-203-1-milhoes.
Jennett, N. (1984). Attendances, uncertainty of outcome and policy in Scottish league football. *Scottish Journal of Political Economy*, *31*(2), 176–198. https://doi.org/10.1111/j.1467-9485.1984.tb00472.x
Kittleson, R. (2014). *The country of football: Soccer and the making of modern Brazil*. University of California Press.
Kringstad, M., & Gerrard, B. (2004). The concepts of competitive balance and uncertainty of outcome. In G. T. Papanikos (Ed.), *The economics and management of mega athletic events: Olympic games, professional sports and other essays* (pp. 115–130). ATINER.
Kringstad, M., & Gerrard, B. (2005, June). Theory and evidence on competitive intensity in European soccer. In *IASE Conference Papers* (No. 0508). International Association of Sports Economists.
Kringstad, M., & Gerrard, B. (2007). Beyond competitive balance. In Slack & Parent (Eds.), *International perspectives on the management of sport* (pp. 149–172). Routledge.
Lee Ludvigsen, J. A., & Petersen-Wagner, R. (2022). *The UEFA European football championships: Politics, media spectacle, and social change*. Routledge.
Lee Ludvigsen, J. A., & Petersen-Wagner, R. (2023). From television to YouTube: Digitalised sport mega-events in the platform society. *Leisure Studies*, *42*(4), 615–632. https://doi.org/10.1080/02614367.2022.2125557
Li, S., Kim, K., Ryu, Y., & Kim, H. (2025). Demand for Chinese super league broadcast: An analysis of broadcasters' match selection and TV ratings. *European Sport Management Quarterly*, *25*(1), 24–40. https://doi.org/10.1080/16184742.2023.2283448
Lupton, D. (2014). *Digital sociology*. Routledge.
Macedo, A., Ferreira Dias, M., & Mourão, P. R. (2023). European men's club football in the eyes of consumers: The determinants of television broadcast demand. *Journal of Sports Economics*, *24*(5), 579–623. https://doi.org/10.1177/15270025221143982
Mason, T. (1995). *Passion of the people? Football in South America*. Verso.
Millward, P. (2017). A whole new ball game: The English Premier League and television broadcast rights. In R. Elliott (Ed.), *The English Premier League: A socio-cultural analysis* (pp. 33–48). Routledge.
Naraine, M., & Parent, M. (2017a). Examining social media adoption and change to the stakeholder communication paradigm in not-for-profit sport organizations. *Journal of Amateur Sport*, *3*(2), 55–81. https://doi.org/10.17161/jas.v3i2.6492
Naraine, M., & Parent, M. (2017b). This is how we do it: A qualitative approach to national sport organizations' social-media implementation. *International Journal of Sport Communication*, *10*(2), 196–217. https://doi.org/10.1123/IJSC.2017-0006
Newman, M. (2010). New media, young audiences and discourses of attention: From Seasame Street to 'snack culture'. *Media, Culture & Society*, *32*(4), 581–596. https://doi.org/10.1177/0163443710367693
Nieborg, D., & Poell, T. (2018). The platformization of cultural production: Theorizing the contigent cultural commodity. *New Media & Society*, *20*(11), 4275–4292. https://doi.org/10.1177/1461444818769694
Pawlowski, T., & Anders, C. (2012). Stadium attendance in German professional football – the (un)importance of uncertainty of outcome reconsidered. *Applied Economics Letters*, *19*(16), 1553–1556. https://doi.org/10.1080/13504851.2011.639725
Petersen-Wagner, R., & Lee Ludvigsen, J. A. (2023a). The Paralympics on YouTube: Alternative content creation and the digital consumption of the Paralympics. *International Review for the Sociology of Sport*, *58*(7), 1154–1173. https://doi.org/10.1177/10126902231155572
Petersen-Wagner, R., & Lee Ludvigsen, J. A. (2023b). Digital transformations in a platform society: A comparative analysis of European football leagues as YouTube complementors. *Convergence: The International Journal of Research into New Media Technologies*, *29*(5), 1330–1351. https://doi.org/10.1177/13548565221132705
Poell, T., Nieborg, D., & Duffy, B. E. (2022). *Platforms and cultural production*. Polity Press.

Ratten, V. (2016). Sport innovation management: Towards a research agenda. *Innovation*, *18*(3), 238–250. https://doi.org/10.1080/14479338.2016.1244471

Read, D., & Smith, A. (2023). Data as capital and ethical implications in digital sport business models. *Convergence: The International Journal of Research into New Media Technologies*, *29*(5), 1389–1408. https://doi.org/10.1177/13548565231176384

Rieder, B. (2015). *YouTube data tools*. In (Version 1.22) https://tools.digitalmethods.net/netvizz/youtube/.

Rieder, B., Borra, E., Coromina, Ò, & Matamoros-Fernández, A. (2023). Making a living in the creator economy: A large-scale study of linking on YouTube. *Social Media + Society*, *9*(2), 1–20. https://doi.org/10.1177/20563051231180628

Rowe, D. (1996). The global love-match: Sport and television. *Media, Culture & Society*, *18*(4), 565–582. https://doi.org/10.1177/016344396018004004

Rowe, D. (2004). *Sport, culture and the media: The unruly Trinity* (2nd ed.). Open University Press.

Ryu, Y., Hwang, H., Jeong, J., Jang, W., Lee, G., & Pyun, H. (2023). Missed a live match? Determinants of League of Legends Champions Korea highlights viewership. *Frontiers in Psychology*, *14*, 1213600. https://doi.org/10.3389/fpsyg.2023.1213600

Scelles, N. (2017). Star quality and competitive balance? Television audience demand for English Premier League football reconsidered. *Applied Economics Letters*, *24*(19), 1399–1402. https://doi.org/10.1080/13504851.2017.1282125

Statista. (2022). *Average daily time spent per person with traditional and digital media in the United Kingdom from 2016 to 2024*. Retrieved July 1, 2024, from from https://www.statista.com/statistics/1230381/time-spent-media-by-type-united-kingdom/.

Statista. (2023a). *Value of sports media rights worldwide from 2019 to 2026*. Retrieved July 1, 2024, from https://www.statista.com/statistics/1453558/global-sports-media-rights/#:~:text=In%202023%2C%20the%20value%20of,recorded%20in%20the%20previous%20year.

Statista. (2023b). *Forecast of the number of YouTube users in Brazil from 2017 to 2025*. Retrieved June 11, 2024, from https://www.statista.com/forecasts/1145585/youtube-users-in-brazil.

Statista. (2024). *Leading websites in Brazil from September to November 2023, by total visits*. Retrieved July 1, 2024, from https://www.statista.com/statistics/1307300/most-visited-websites-total-visits-brazil/.

Transfermarkt.com. (2024a). *Campeonato Brasileiro Série A* [Brazilian Championship Série A]. Retrieved October 18, 2024, from https://www.transfermarkt.com/campeonato-brasileiro-serie-a/startseite/wettbewerb/BRA1.

Transfermarkt.com. (2024b). *Campeonato Brasileiro Série B* [Brazilian Championship Série B]. Retrieved October 18, 2024, from https://www.transfermarkt.com/campeonato-brasileiro-serie-b/startseite/wettbewerb/BRA2.

Turner, P. (2007). The impact of technology on the supply of sport broadcasting. *European Sport Management Quarterly*, *7*(4), 337–360. https://doi.org/10.1080/16184740701717055

UOL. (2023). *Turno e returno, sem final* [Home and away matches, no finals]. Retrieved June 23, 2025, from https://www.uol.com.br/esporte/reportagens-especiais/brasileirao-chega-a-20-edicao-dos-pontos-corridos.

van Dijck, J., Poell, T., & de Waal, M. (2018). *The platform society: Public values in a connective world*. Oxford University Press.

Wang, W. (2023). Returning for skill or popularity? The demand for eSports match replay. *International Journal of Sports Marketing and Sponsorship*, *24*(2), 295–310. https://doi.org/10.1108/IJSMS-07-2022-0146

Watanabe, N., Shapiro, S., & Drayer, J. (2021). Big data and analytics in sport management. *Journal of Sport Management*, *35*(3), 197–202. https://doi.org/10.1123/jsm.2021-0067

Watanabe, N. M., Xue, H., Newman, J. I., & Yan, G. (2022). The attention economy and eSports: An econometric analysis of Twitch viewership. *Journal of Sport Management*, *36*(2), 145–158. https://doi.org/10.1123/jsm.2020-0383

Whannel, G. (2014). The paradoxical character of live television sport in the twenty-first century. *Television & New Media*, *15*(8), 769–776. https://doi.org/10.1177/1527476414551180

Wills, G., Tacon, R., & Addesa, F. (2022). Uncertainty of outcome, team quality or star players? What drives TV audience demand for UEFA Champions League football? *European Sport Management Quarterly*, *22*(6), 876–894. https://doi.org/10.1080/16184742.2020.1836010
Wu, T. (2016). *The attention merchants: The epic scramble to get inside our heads*. Alfred A. Knopf.
YouTube. (2021). *On YouTube's recommendation system*. Retrieved March 12, 2025, from https://blog.youtube/inside-youtube/on-youtubes-recommendation-system/.
YouTube. (2022). *YouTube search & discovery: 'The algorithm' and performance FAQs*. Retrieved May 11, 2023, from https://www.youtube.com/watch?v=fApg7tzlLjY.
YouTube. (2023). *GE*. Retrieved 11/12/2023 from https://www.youtube.com/@geglobo.
YouTube. (2024a). *Data API*. Retrieved June 11, 2024, from https://developers.google.com/youtube/v3.
YouTube. (2024b). *Choose how you want to monetise*. Retrieved July 1, 2024, from https://support.google.com/youtube/answer/94522?hl=en-GB.
YouTube. (2024c). *Growing your channel*. Retrieved July 1, 2024, from https://www.youtube.com/intl/en_uk/creators/how-things-work/content-creation-strategy/.