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Racial bias in the stands? Investigating customer-based discrimination in European soccer

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ABSTRACT

This study investigates the presence and impact of customer-based racial discrimination in Europe's top five professional soccer leagues. While prior research in European sports has focused mainly on wages or nationalities rather than race, this paper employs a market test approach to assess the influence of racial preferences on stadium attendance. The study analyzes data from the 2008/09 to 2018/19 seasons of the European Big-5 soccer leagues and finds evidence of customer-based discrimination, which varies in degree and nature across the five countries and leagues. The research addresses a significant gap in the European sports economics literature, which has been extensively investigated in North American sports since the 1980s.

I. Introduction

In June 2020, FSV Mainz 05, a soccer club competing in Germany's top-tier soccer division, the Bundesliga, received a letter from a discontent fan revoking his club membership with the following lines:

> I haven't been able to identify with this club for months! I have the impression that I am witnessing the Africa Cup and not the German Bundesliga. I know what's coming now, but no, I am in no way a racist - I won't stand that. But what is too much is too much (…) If the club's starting squad is composed of nine (!!!) dark-skinned players for weeks and young German talents are given almost no chance, then this is no longer the club that has grown so dear to me over the years (…) . (Mainz05.de 2020).

A week later, the club responded to the fan publicly, stating that they could not express regret for losing a member who held discriminatory views. The club rejected the notion that diversity was a problem and emphasized that it values people who share their values of inclusion and respect.

Discrimination by fans against non-White players is a common issue in European soccer. Incidents have been reported across various leagues in Europe, including fans throwing bananas at players of African origin during Serie A matches in Italy, accompanied by ape noises (Doidge 2015), as well as incidents of racist songs in English soccer (Holland 1995). These examples highlight the persistence of racial discrimination in soccer and raise questions about the impact of a team's racial and ethnic composition on soccer demand in Europe.

Discrimination against minority groups in sports has been extensively studied in various academic fields, including management, economics, law, sociology, and history (e.g. Bopp, Vadeboncoeur, and Turick 2020). Previous research on employer- and consumer-based discrimination in sports has primarily focused on North American Major Leagues, particularly the National Basketball Association and Major League Baseball (Foley and Smith 2007).[1] Studies have examined fan preferences, trading card markets, and all-star team voting behaviour (e.g. Broyles and Keen 2010; Depken and Ford 2006; e.g.; Depken and Ford 2006; Hersch 2010). In contrast, research on discrimination in European sports leagues has predominantly explored employer-based discrimination, such as salary disparities between Black and non-Black athletes (e.g. Szymanski 2000), career trajectories of

[1]For spectators attending baseball or basketball games, the ethnicity of athletes is usually obvious, in contrast to a sport like American football, where the viewers' distance from the playing field and the players` equipment often disguises the race of individual athletes.

minority players (e.g. Goddard and Wilson 2009), and customer-based discrimination with a focus on nationality (e.g. Pedace 2008).

Our study examines the impact of the ethnic composition of sports teams on ticket demand in European soccer. Specifically, this study aims to determine whether the number of Black players, sub-Saharan Africans, or foreigners in a soccer squad impacts spectator demand. To address these research questions, we collected seasonal attendance data for the five biggest soccer leagues in Europe – the English Premier League, the German Bundesliga, the Spanish La Liga, the Italian Serie A, and the French Ligue 1 – over 11 seasons, from 2008/09 to 2018/19. In addition to variables that measure the attractiveness of matches, economic factors, and stadium quality, our study utilizes the percentage of Black players, sub-Saharan Africans, and foreigners as our primary explanatory variables. We find empirical evidence for customer-based discrimination in European soccer, which varies in degree and nature depending on the unique circumstances of each league.

In addition to doping (Eber 2008) and corruption (Stathopoulou, Quansah, and Balabanis 2021), racism and discrimination are two major challenges in modern professional sports (Andreff and Szymanski 2006, 755–794). Our study contributes to the existing research on racism in sports and enhances our understanding of the economic impact of customer-based discrimination by investigating whether the percentage of Black players, sub-Saharan Africans, or foreign players affects ticket demand. The paper is relevant not only to academia but also to stakeholders in the sports industry, including clubs, to evaluate their player acquisition strategies and to sports federations and governmental organizations engaged in promoting the integration of ethnic minorities.

II. Literature review

Discrimination, racial prejudice, and racism

Discrimination is characterized by the differential treatment of individuals or groups considered equal (Lang and Lehmann 2012). It focuses on observable behaviour (Quillian 2006) which can be motivated by various factors, including prejudice, stereotypes, ideologies, or economic considerations, without presuming a singular underlying cause. Contemporary manifestations of discrimination often take subtle and covert forms due to significant shifts in social norms (Chang et al. 2019), posing challenges in conceptualizing and measuring it in the social sciences (Pager and Shepherd 2008).[2]

In the economics literature, discrimination is categorized into taste-based and statistical discrimination (Neilson and Ying 2016). Taste-based discrimination emphasizes prejudice or racial animosity as driving forces (Rivera and Tilcsik 2016). It occurs when individuals or organizations discriminate based on personal preferences or beliefs (Pager and Quillian 2005). Becker (1971) suggests that employers who engage in discriminatory practices by limiting the pool of potential workers based on factors like ethnicity may face negative consequences in the labour market, affecting their financial performance. Such behaviour leads to higher labour costs, lower profitability, and increased competition from non-discriminatory market players, potentially eradicating taste-based discrimination in the long term (Lang and Lehmann 2012).

Statistical discrimination can occur even in the absence of explicit bias. It focuses on productivity as the main factor driving discriminatory behaviour and potentially explains different labour market outcomes (Aigner and Cain 1977). Employers may use group membership as a proxy for productivity-related traits, leveraging expected variations in group-level averages to compensate for incomplete information about individual productivity (Lundberg and Startz 1983). This approach simplifies decision-making for managers and addresses information asymmetries common in labour market transactions (Rissing and Castilla 2014).

Discrimination can be classified into four forms: employer-based, employee-based, government-based, and customer-based (Becker 1971). In the context of sports, customer-based discrimination occurs when fans are willing to pay higher prices

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[2]Theoretical frameworks such as 'symbolic racism', 'modern racism', and 'laissez-faire racism' illustrate the disparity between principled attitudes (e.g. endorsing racial equality as an aspirational concept) and policy-related attitudes (e.g. supporting governmental measures aimed at realizing these ideals), thus suggesting a limited transformation in fundamental racial attitudes.

to avoid watching athletes with certain traits or forfeit an entertainment experience due to characteristics like colour, race, or gender (Meier and Leinwather 2013).

Customer-based discrimination in sports economics research

Several studies have examined discrimination against ethnic minority groups in professional team sports using different econometric tools and datasets (e.g. Price and Wolfers 2010). While some studies find evidence of discrimination against minority groups like Black or Latino athletes, others do not, and some even identify evidence in favour of minorities (Depken and Ford 2006).

Concerning customer-based discrimination, Nardinelli and Simon (1990) found evidence for discrimination against Latinos in Major League Baseball (MLB) trading card prices. Similarly, Andersen and Croix (1991) found evidence for discrimination against Black athletes using comparable data. Gabriel et al. (1999) expanded these studies, finding that while race and ethnicity did not significantly impact card prices at the start of a player's career, non-White players experienced lower prices upon retirement compared to similar White players. However, Stone and Warren (1999) found no evidence of customer racial discrimination in basketball trading card prices, though they observed differences in the effect of career length on card prices for White and Black players. A more recent study by Broyles and Keen (2010) suggests that discrimination may no longer exist, as they found no evidence of price differences based on race and/or ethnicity in the trading card market.

Kanazawa and Funk (2001) analysed the impact of the racial composition of NBA teams on television ratings and discovered that viewers prefer games with a higher percentage of Caucasian players. Similarly, research on Major League Baseball ticket demand suggests that consumer discrimination persisted in North American sports until the early 1990s. For instance, Foley and Smith (2007) observed that in certain regions of the US, attendance decreased when baseball teams added Latin players to their rosters. However, Hersch (2010) found no evidence of comparable

customer-based discrimination in her study on the impact of Black pitchers on stadium attendance.

Maennig and Mueller (2022) examined consumer discrimination, racial matching strategies, and employer discrimination in Major League Baseball (MLB) from 1985 to 2016. Their study provides empirical evidence for the presence of consumer and employer discrimination in the league. Racial preferences of fans and team owners differ across athlete groups and change over time together with the regional racial composition. While baseball franchises seem to employ particular racial matching strategies, employer-based discrimination is not primarily driven by fans' racial preferences.

Research on all-star voting ballots has examined potential customer-based discrimination as well. Hanssen and Andersen (1999) discovered that, even after controlling for player performance, Black players received fewer votes compared to comparable White players during the 1970s and 1980s, indicating discrimination against Black players at that time. Subsequent studies, like Depken and Ford (2006), investigated voting results by geographical regions and found significant disparities in fan behaviour. Some areas exhibited no or low levels of discrimination, while others displayed noticeable differences in the votes for Black and White players.

Race, ethnicity, and nationality are complex social constructs that can change over time and vary across different societies, thus evidence of customer-based discrimination in the North American sports market cannot be directly generalized to the European context, as attitudes towards discrimination differ significantly among countries (Stefan et al. 2018).

Unlike North American Major League sports, the focus of research on discrimination in European sports has been primarily on employer-based rather than customer-based discrimination. Specifically, studies have examined discrimination based on nationality. Wilson and Ying (2003)analysed data from the top five European soccer leagues between 1997 and 2000 and found that games featuring a higher percentage of non-domestic players attracted more spectators, suggesting the absence of nationalistic preferences among fans. Pedace (2008) discovered that English Premier League teams with a higher percentage of South

American players between 1997 and 2002 had larger attendances, despite poorer performance, indicating that fans were not deterred by players from a specific region. Preston and Szymanski (2000) investigated the impact of the racial composition of English soccer teams from 1974 to 1993 on financial and sporting performance. They found that the number of Black players positively affected a team's on-pitch performance without impacting attendance figures. This suggests that discrimination against Black players is not driven by customer preferences.

In a recent study, Caselli et al. (2023) used the COVID-19 pandemic as a natural experiment to investigate how the absence of spectators during football matches in Italy affected player performance. The study found that African players, often targeted by racial harassment, showed improved performance when fans were absent. A similar, though less significant, effect was observed among Black players. The authors used official records of racist incidents by fans to demonstrate that the performance improvement was most noticeable in teams whose players experienced discrimination prior to the lockdown.

III. Data and empirical model

Data and variables

Our dataset includes all 20 teams in the English Premier League, the French Ligue 1, the Spanish La Liga, the Italian Serie A, and the 18 teams in the German Bundesliga, covering the period from 2008/09 to 2018/19. We chose to focus on the 11 seasons preceding the COVID-19 outbreak in Europe, as the pandemic had a significant impact on stadium attendance. The dataset comprises a total of 1,078 observations, with each team in each season serving as the unit of observation.

Our dependent variable is *capacity utilization*, which we consider more appropriate than attendance, as many matches in the Big-5 leagues are sold out (especially in the Premier League and the Bundesliga), as can be seen in Figure A.1 in the Online Appendix A. Capacity utilization in soccer stadiums refers to the percentage of occupied seats

and standing areas during games. It is calculated by dividing the number of spectators by the stadium's total capacity. Attendance data and stadium capacity information were sourced from worldfootball. net and official club websites. No-show behaviour information is generally not publicly available (Schreyer 2019; Schreyer, Schmidt, and Torgler 2018).

The empirical analysis uses the following independent variables: The *percentage of Black players*, *sub-Saharan African players*, and *foreign players* in the squad.[3] A squad member is classified as a foreigner if he is ineligible to play for the national team of the country in which he is playing (Gürtler, Lang, and Pawlowski 2015). To obtain the necessary data on the racial composition of the teams in the Big-5 leagues, we manually examined each of the 38,775 player photos obtained from transfermarkt.com of the 1,078 squads belonging to 177 clubs in the five leagues and classified them into the categories 'Black' and 'non-Black'. In cases of doubt, we consulted additional player images and bibliographic details. For example, we considered ethnic sub-Saharan Africans and their descendants in other parts of the world as 'Black', while North Africans of Arab or Barber ancestry were counted as 'non-Black'.

A club's wage bill is considered an indicator of the team's quality and strength, assuming efficient or quasi-efficient markets (Simmons and Berri 2009; Simmons and Forrest 2004). Previous research has used wage costs as a proxy for a squad's quality and found a positive impact on ticket and TV demand (Késenne 2015). Since wage bills are only available for clubs in the Premier League, Ligue 1, and Serie A, we use the *average players' market values* as a substitute, as they are excellent proxies for wage bills (Prockl and Frick 2018). Player market values reflect current market prices for player contracts, considering factors such as past performance, team performance, age, position, and prevailing market conditions (Quansah et al. 2021). We obtained player market values from transfermarkt.com. The average player value of a squad is the sum of all individual player values divided by the number of squad

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[3]We conducted a robustness check to address the potential overlap between sub-Saharan African players and foreigners. Excluding sub-Saharan players from the group of foreigners in the regression models, we obtained virtually identical results (see Online Appendix B).

members. According to Simmons (2007), player market value is closely linked to playing success and significantly impacts stadium attendance.

Club reputation plays a vital role in influencing demand and we quantify it by using the rank model developed by Czarnitzki and Stadtmann (2002). This model assesses a team's performance over the previous 20 years to establish its reputation and goodwill. We use the variable *reputation rank* where higher ranks are assigned to well-established and successful teams, while lower ranks are given to recently promoted or underperforming teams.

The dummy variable *recently promoted* indicates whether a team was promoted to the top division in the previous season (*t-1*). Promotion and relegation can have essential spillover effects in sports leagues, impacting the competitiveness and revenue of teams, as well as the overall structure and organization of the league (Dietl et al. 2015).

The dummy variable *new stadium* indicates whether a team's stadium is less than five years old. Teams playing in newer facilities often attract more fans to the stadium than teams that play in older venues (Coates and Humphreys 2005). The novelty effect is the change in attendance after a team moves into a new stadium (Love et al. 2017). Several studies have documented a significant increase in attendance after teams move into new venues (Coates and Humphreys 2005). In European soccer, this novelty effect lasts about five years (Moulard, Lang, and Dermit-Richard 2022).

The dummy variable *multipurpose stadium* indicates teams with stadiums featuring running tracks, which result in a greater distance between spectators and players. Consequently, this configuration can negatively influence the event atmosphere and reduce spectator appeal (Love et al. 2017).

The dummy variable *market overlap* indicates the presence of other professional clubs competing in the first or second division within a 5-mile radius of the home ground of the respective club. This variable helps us measure the level of competition and potential market saturation near the club's location.

The variable *population* denotes the population residing within a 5-mile radius of the club's home ground. We obtained this information using GIS mapping techniques.

The dummy variable *UEFA club competitions* takes the value of 1 for teams that earned a spot in the UEFA Champions League or the UEFA Europa League tournament in the previous season. It is a significant achievement for clubs to participate in these prestigious European competitions, and the prestige associated with them can attract more fans to attend league games (García and Rodríguez 2002).

To address the non-normal distribution of the data and to increase the validity of our findings, we opted to use the logarithmic form for some of our independent variables.

Empirical model

To address potential censoring at 1 in many cases, especially in the Premier League and the Bundesliga, where sold-out stadiums are common, we employed a series of Tobit models. These models were estimated with an upper-censoring limit set at 0.98. This adjustment allows us to accurately account for the unique circumstances in these leagues where reaching capacity is prevalent.[4]

Our regression model is of the following general form:

$$CU_{i,t} = \alpha + \beta X_{i,t} + \sum SD + \varepsilon_{i,t}$$

where $CU_{i,t}$ is capacity utilization of team i in season t, $X_{i,t}$ denotes a vector of explanatory variables with β indicating a vector of coefficients and $\sum SD$ a vector of season dummies. Finally, $\varepsilon_{i,t}$ represents the error term, which is independent, normally distributed with a mean value of 0 and constant variance.

Table 1 presents the summary statistics for the main variables included in the analysis.

The data presented in Table 1 reveals that the percentage of Black players in a given squad ranges from 0% to 75%, with a mean of 22%. Additionally, the percentage of sub-Saharan Africans in the squad ranges from 0% to 66%, with a mean of 14%. For teams participating in the Big-5 European soccer

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[4]To ensure the robustness of our findings, we conducted additional tests using upper-censoring limits of 0.95 and 0.99, in addition to the limit of 0.98 that we use in our estimations. All three models yielded virtually identical results, indicating the consistency of our findings. Furthermore, we estimated OLS models in the Online Appendix B, which produced coefficients that were virtually identical for the relevant variables, further supporting our main conclusions.

Table 1. Summary statistics.

Variable	Mean	Std. Dev.	Min	Max
Capacity utilization	0.75	0.17	0.24	1
Percentage Black players	0.22	0.16	0	0.75
Percentage sub-Saharan players	0.14	0.13	0	0.66
Percentage foreigner players	0.5	0.16	0	1
Recently promoted	0.14	0.35	0	1
New stadium	0.08	0.27	0	1
Multipurpose stadium	0.17	0.37	0	1
Market overlap	0.42	0.75	0	4
UEFA club competitions	0.3	0.46	0	1
Population (in 1000)	426.49	381.47	11.96	1819.33
Average player value (in €M)	4.15	4.21	0.46	26.36
Reputation rank	17.82	206.04	0	976.45

The table displays data from the Big-5 European soccer leagues (the English Premier League, the German Bundesliga, the Spanish La Liga, the Italian Serie A, and the French Ligue 1) covering the period from 2008/09 to 2018/19. The dataset comprises a total of 1078 observations, with each team in each season serving as the unit of observation.

leagues, the percentage of foreign players is notably higher and sometimes even reaches 100%, with an average of 50%. Meanwhile, capacity utilization ranges from 25% to 100%, with a mean of 75%.

IV. Results

Percentage of Black players in Europe's big-5 leagues

In this section, we analyse the representation of Black players in Europe's Big-5 leagues for the 2018/19 season. Figure 1 illustrates the percentage of Black players, sub-Saharan Africans and foreigners in these leagues. Additionally, Table 2 provides data on the proportion of Black individuals in the total population, along with the highest and lowest shares of Black players among teams in each league during the 2018/19 season in France, the United Kingdom, Germany, Spain, and Italy.[5]

To understand the variation in the percentage of Black players in the Big-5 leagues, it is vital to consider each country's historical and social contexts. For instance, countries like England and France, as former colonial powers, have had
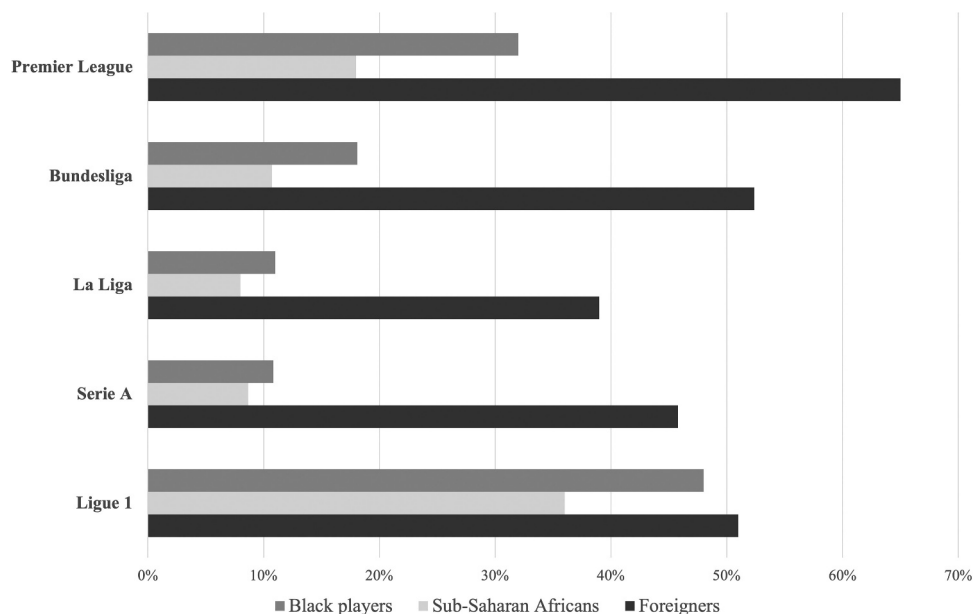
Figure 1. Percentage of black players, sub-Saharan Africans, and foreigners in the Big-5 leagues in the season 2018/19. It's important to note that there can be overlap among the classifications of players as sub-Saharan Africans, Blacks, and foreigners. This means that a player can belong to all three categories simultaneously. For example, a player could be a Nigerian national of Black ethnicity.

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[5]For a supplementary analysis of the trends in the number and percentage of Black players in Europe's Big-5 leagues from 2008/09 to 2018/19, please refer to the Online Appendix C for a more detailed examination.

Table 2. Percentage of black people in overall population and in soccer teams.

Country	France	United Kingdom	Spain	Germany	Italy
Population (2020)	67.8 m	67.3 m	47.4 m	83.7 m	58.9 m
Estimated share of Black people among population	7.4%	3.7%	2.8%	1.2%	0.8%
Team with the highest share of Black athletes (2018–19)	Lille OSC (66%)	Watford FC (49%)	Rayo Vallecano (25%)	1.FSV Mainz (31%)	FC Turin (19%)
Team with the lowest share of Black athletes (2018–19)	Nimes Olympique (23%)	Burnley FC (9%)	Athletic Bilbao (3%)	SC Freiburg (0%)	Genoa CFC (4%)

significant immigration from their former colonies, which has impacted the composition of their populations and, in turn, the number of Black players in their leagues. Additionally, differences in squad registration and player eligibility rules for non-EU players, with France being the most liberal among the five leagues, can also contribute to differences in the share of Black players. Moreover, the extent of stereotyping and discrimination in society has also been suggested as a potential driver of differences in the percentage of Black or sub-Saharan African players in the leagues (Stefan et al. 2018).

While there have been studies suggesting the existence of racial discrimination by soccer clubs in England (Szymanski 2000), the under-representation of Black players at some clubs in the Big-5 European leagues is not in itself proof of employer-based discrimination. Although coaches and sporting directors may exercise their own discriminatory preferences when selecting players, it is also possible that unbiased administrators may choose not to hire Black players in anticipation of customer-based discrimination, which may negatively affect attendance and revenues, or to maintain social cohesion within the team (Bachan, Reilly, and Witt 2014). Moreover, research shows that managers often strive to match the racial composition of their team to that of the city they represent (Burdekin, Hossfeld, and Smith 2005). In addition to scouting networks and regional focus, some soccer clubs have made it part of their identity to only sign players from their region. For example, clubs like Real Sociedad and Athletic Bilbao in the Basque region of Spain take pride in only sourcing regional talent (Littlewood, Mullen, and Richardson 2011).

Measuring the impact of Black players on capacity utilization

This section explores the relationship between the percentage of Black players, sub-Saharan Africans, and foreign players on capacity utilization, which we consider our preferred proxy for ticket demand in the Big-5 leagues. To do so, we proceed in two steps: First, we estimate the relationship using the entire sample (presented in Table 3), and second, we then estimate regression models for each Big-5 league separately (Tables 4 and 5).

The econometric findings presented in Table 3 reveal that the coefficient for the percentage of Black players in a squad has a positive sign but is not statistically significant at conventional levels. This suggests that the percentage of Black players does not appear to impact capacity utilization in the Big-5 leagues. The results also demonstrate that the percentage of sub-Saharan Africans has a positive effect on capacity utilization, but the effect is again not statistically significant. In contrast, the percentage of foreigners in a squad is statistically (weakly) significant, indicating that a higher number of foreigners in the squad negatively impacts capacity utilization in the Big-5 leagues.

All control variables have the expected sign. For example, the average value of players has a positive and highly significant impact on capacity utilization, which is consistent with the idea that fans are drawn to high-quality players. Similarly, being promoted to the top division has a positive and significant effect on capacity utilization in the current season. The coefficient of the multipurpose dummy variable is negative and highly significant, indicating that fans prefer soccer-specific stadiums without a running track around the pitch. The negative sign of the

Table 3. Impact of black, sub-Saharan and foreign players on capacity utilization in the Big-5 leagues (pooled Tobit regression).

	(1)	(2)
Variables	Capacity utilization	Capacity utilization
Percentage Blacks	0.0222	—
	(0.0487)	
Percentage sub-Saharans	—	0.0742
		(0.0548)
Percentage foreigners	−0.0588*	−0.0661**
	(0.0338)	(0.0334)
Log average player value	0.0849***	0.0856***
	(0.00900)	(0.00897)
Log population	−0.0104*	−0.0111*
	(0.00570)	(0.00575)
Log reputation rank	−0.00978***	−0.00974***
	(0.00189)	(0.00189)
Recently promoted	0.0441***	0.0449***
	(0.0122)	(0.0122)
UEFA club competitions	0.0165	0.0171
	(0.0111)	(0.0111)
New stadium	0.0220	0.0220
	(0.0148)	(0.0148)
Multipurpose stadium	−0.0940***	−0.0930***
	(0.0118)	(0.0117)
Bundesliga		Ref.
Premier League	−0.0258*	−0.0261**
	(0.0139)	(0.0133)
La_Liga	−0.223***	−0.224***
	(0.0116)	(0.0116)
Serie_A	−0.240***	−0.240***
	(0.0135)	(0.0135)
Ligue 1	−0.197***	−0.209***
	(0.0196)	(0.0190)
Intercept	1.031***	1.039***
	(0.0716)	(0.0719)
Season dummies	Yes	Yes
Market overlap dummies	Yes	Yes
Observations	1,078	1,078

The unit of observation is a team. Coefficients are estimated by Tobit regression models. Robust standard errors are in parentheses. The dependent variable is capacity utilization.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

reputation coefficient may seem counterintuitive. Still, it can be explained by the fact that larger clubs with a better reputation often play in larger stadiums, which may not be fully utilized.[6]

To eliminate the possibility that the absence of customer-based discrimination regarding Black and sub-Saharan African players in the Big-5 leagues is due to conflicting effects across different leagues, we now present the results of the above model separately for each of the five leagues (Tables 4 and 5).

The results indicate that, in contrast to the whole sample, the percentage of Black players in a squad has a statistically significant and positive impact on capacity utilization in La Liga and Ligue 1. Although the coefficients of this variable are not statistically significant in the other leagues, the sign of the corresponding coefficient is positive for the Premier League and the Bundesliga but negative for the Serie A.

The estimations utilizing the percentage of sub-Saharan Africans on capacity utilization yield mixed results. Here, the results presented in Tables 4 and 5 suggest that the impact of sub-Saharan Africans on capacity utilization is positive and highly significant in La Liga and Ligue 1 but negative in Serie A. The corresponding coefficient in the remaining two leagues is not statistically significant.

Furthermore, our findings suggest that the percentage of foreigners has a highly significant and negative impact on capacity utilization in Ligue 1 while having a weakly significant and positive impact in La Liga. The percentage of foreigners does not have any effect on capacity utilization, and thus ticket demand, in the Bundesliga, the Serie A, and the Premier League.

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[6]Please refer to Tables B.5-B.7 in the Online Appendix where we included stadium capacity as an additional independent variable for analysis.

Table 4. Impact of black and foreign players on capacity utilization in the Big-5 leagues (league-specific Tobit regression).

Variables	(1) Capacity utilization (Bundesliga)	(2) Capacity utilization (Premier League)	(3) Capacity utilization (La Liga)	(4) Capacity utilization (Serie A)	(5) Capacity utilization (Ligue 1)
Percentage Blacks	0.110	0.0206	0.364***	−0.248*	0.190**
	(0.105)	(0.0850)	(0.132)	(0.138)	(0.0820)
Percentage foreigners	−0.0960	0.116	0.125**	−0.0903	−0.373***
	(0.0866)	(0.0788)	(0.0549)	(0.0713)	(0.0595)
Log average player value	0.0783***	0.0464*	0.0798***	0.0689***	0.0544**
	(0.0160)	(0.0266)	(0.0135)	(0.0226)	(0.0227)
Log population	0.00978	−0.0544***	0.0102	0.0272*	−0.0143
	(0.0109)	(0.0188)	(0.00924)	(0.0145)	(0.0108)
Log reputation rank	−0.0113**	0.000332	−0.0121***	−0.00779**	−0.0127***
	(0.00466)	(0.00400)	(0.00323)	(0.00336)	(0.00362)
Recently promoted	−0.00750	0.0824***	0.0854***	−0.0150	0.0387
	(0.0289)	(0.0269)	(0.0220)	(0.0250)	(0.0305)
UEFA club competitions	−0.0175	0.0650**	0.0233	−0.000151	0.0595**
	(0.0186)	(0.0306)	(0.0179)	(0.0173)	(0.0261)
New stadium	0.0244	−0.0417	0.0376**	0.252***	−0.0189
	(0.0179)	(0.0555)	(0.0166)	(0.0269)	(0.0241)
Multipurpose stadium	−0.111***	—	−0.0773***	−0.0799***	−0.0687***
	(0.0325)		(0.0257)	(0.0149)	(0.0242)
Intercept	0.815***	1.402***	0.496***	0.404**	0.989***
	(0.155)	(0.242)	(0.122)	(0.174)	(0.139)
Season Dummies	Yes	Yes	Yes	Yes	Yes
Market overlap dummies	Yes	Yes	Yes	Yes	Yes
Observations	198	220	220	220	220

The unit of observation is a team. Coefficients are estimated by Tobit regression models. Robust standard errors are in parentheses. The dependent variable is capacity utilization.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The average player value, an indicator of player quality on the roster, has a positive impact on capacity utilization in all leagues except for the Premier League. Participation in a European club competition has a positive and significant effect on capacity utilization in two of the five top divisions, the Premier League and Ligue 1. Consistent with the overall model's results, reputation has a negative impact on capacity utilization in most countries, except for the Premier League. On the other hand, promotions lead to higher capacity utilization in the Premier League and La Liga but not in the remaining three leagues. Regarding stadium infrastructure, the results reveal that multipurpose stadiums negatively affect capacity utilization in all countries except for the Premier League, where not a single club plays in a multipurpose stadium. Finally, the findings show that new stadiums only seem to improve capacity utilization in Serie A, where the infrastructure is deemed outdated since most of the stadia were built or renovated for the 1990 World Cup.

V. Discussion and conclusions

This study investigates the relationship between the percentage of Black, sub-Saharan African, and foreign players on stadium attendance in the five major European soccer leagues between 2008/09 and 2018/19.

The primary findings of this study do not support the notion that the percentage of Black players or foreigners has a statistically significant and negative impact on capacity utilization and, by extension, stadium attendance in European soccer. This suggests that customer-based discrimination is either not a significant factor in European soccer or that club managers are aware of the descriptive social norms for diversity and their fans' discriminatory preferences and respond to the possibility of negative scrutiny regarding the diversity of the team (Chang et al. 2019) by hiring a socially desired number of Black players to ensure that capacity utilization and, thus, ticket demand remain unaffected.[7] Alternatively, the 'zero effect' of

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[7]However, our analysis of the within and between variation of the share of Black players in the different leagues suggests that the variation within teams over time is much higher than that between teams across time. This finding indicates that managers do not appear to strategically vary the number of Black players in their roster based on league-specific factors such as fan preferences or market considerations.

Table 5. Impact of sub-Saharan African and foreign players on capacity utilization in the Big-5 leagues (league-specific Tobit regression).

Variables	(1) Capacity utilization (Bundesliga)	(2) Capacity utilization (Premier League)	(3) Capacity utilization (La Liga)	(4) Capacity utilization (Serie A)	(5) Capacity utilization (Ligue 1)
Percentage sub-Saharans	0.0356	0.172	0.498***	−0.393**	0.238***
	(0.0953)	(0.124)	(0.165)	(0.168)	(0.0866)
Percentage foreigners	−0.0752	0.101	0.122**	−0.0956	−0.382***
	(0.0863)	(0.0759)	(0.0561)	(0.0696)	(0.0619)
Log average player value	0.0821***	0.0434	0.0867***	0.0649***	0.0565**
	(0.0164)	(0.0267)	(0.0139)	(0.0221)	(0.0224)
Log population	0.0102	−0.0583***	0.00821	0.0291**	−0.0171
	(0.0109)	(0.0196)	(0.00872)	(0.0142)	(0.0112)
Log reputation rank	−0.0116**	0.000775	−0.0123***	−0.00824**	−0.0117***
	(0.00467)	(0.00400)	(0.00319)	(0.00326)	(0.00359)
Recently promoted	−0.00548	0.0856***	0.0867***	−0.0165	0.0425
	(0.0288)	(0.0279)	(0.0218)	(0.0248)	(0.0305)
UEFA club competitions	−0.0185	0.0699**	0.0184	−0.00186	0.0595**
	(0.0187)	(0.0303)	(0.0182)	(0.0171)	(0.0257)
New stadium	0.0243	−0.0455	0.0370**	0.249***	−0.0175
	(0.0183)	(0.0548)	(0.0171)	(0.0273)	(0.0240)
Multipurpose stadium	−0.112***	—	−0.0737***	−0.0808***	−0.0671***
	(0.0327)		(0.0250)	(0.0150)	(0.0231)
Intercept	0.808***	1.444***	0.529***	0.384**	1.030***
	(0.156)	(0.247)	(0.114)	(0.171)	(0.141)
Season dummies	Yes	Yes	Yes	Yes	Yes
Market overlap dummies	Yes	Yes	Yes	Yes	Yes
Observations	198	220	220	220	220

The unit of observation is a team. Coefficients are estimated by Tobit regression models. Robust standard errors are in parentheses. The dependent variable is capacity utilization.

***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Black players on capacity utilization could stem from conflicting effects in the five different leagues, a possibility that we address by analysing capacity utilization in the five leagues separately.

Looking in more detail, however, there is evidence of both positive and negative discrimination in specific leagues. La Liga and Ligue 1 exhibit positive fan discrimination towards Black players and sub-Saharan Africans, while Serie A shows discrimination against sub-Saharan African players. The Bundesliga and Premier League do not provide evidence for discrimination.

France has the highest percentage of Black and sub-Saharan African players among the Big-5 leagues (as depicted in Figure 1) and the highest percentage of Black people in its population in Europe (Pattieu, Sibeud, and Stovall 2022, 2). As a result, France has a sizable Black fan base among its stadium visitors, and the positive impact of Black and sub-Saharan African players on capacity utilization should not be surprising. Evidence from North American Major Leagues suggests that African-American athletes are favoured in regions and cities with a large share of African-Americans in the population (e.g. Ogden and Hilt 2003), while teams with Caucasian athletes are preferred in areas with a predominantly Caucasian population (e.g. Foley and Smith 2007). Team managers in the North American Major League typically consider these preferences in their draft and trading strategies (Burdekin, Hossfeld, and Smith 2005).

It might have been reasonable to expect a similar positive effect in the Premier League, given the country's relatively large share of Black people in its population. However, the difference can be attributed to the popularity of different sports in the two countries. While English sports fans follow various sports like cricket, rugby, golf, horse racing, and tennis, soccer remains the national sport and the most popular entertainment activity (Walvin 2014, 3). In contrast, France is known as a Rugby nation (e.g. Fleuriel and Vincent 2007), and many French people still consider it their national sport. Soccer is the preferred sport for many minorities and second and third-generation immigrants, suggesting that the share of Black and other minority fans in France is higher than in England. Therefore, our findings are consistent with previous studies that found no racial preferences among fans in the Premier League (Preston and Szymanski 2000).

The positive impact of Black and sub-Saharan players on capacity utilization in La Liga is

somewhat surprising, particularly in light of recent anecdotal evidence that has raised concerns about racial discrimination in the league.[8] La Liga has the smallest percentage of Black players and the lowest percentage of foreigners among the Big-5 leagues. A plausible explanation for this unexpected finding is that the big clubs in La Liga, such as FC Barcelona, Real Madrid, and Atletico Madrid, sign Black superstars not only from South America but also from France and England, which then translates into higher attendance figures. However, since our analysis controlled for player values and club reputation, this finding warrants further investigation. Moreover, the positive impact of foreign players on capacity utilization in La Liga adds to the complexity of the issue.

To further explain the negative impact of sub-Saharan African players on capacity utilization in Serie A, it is worth noting that Italian society is still struggling to come to terms with multiculturalism and racial diversity, with issues such as the exploitation of migrant workers and discrimination against ethnic minorities being widely reported in the media (e.g. Bacci 2000). Giorgia Meloni, leader of the far-right political party Brothers of Italy, became the Italian Prime Minister in September 2022, signalling a growing right-wing presence in Italy. Her party is seen as a successor to World War II fascist organizations (Zack 2023). Meloni openly supports Marine Le Pen, a right-wing leader in France, and Viktor Orbán, an authoritarian figure known for his racist views in Hungary. She advocates strict measures to control African immigration, claiming it leads to insecurity, crime, and societal decline (Di Carlo, Schulte-Cloos, and Saudelli 2018; Zack 2023). The negative attitudes of some fans towards Black players may also be reinforced by the media's negative portrayal of immigrants and minorities, perpetuating stereotypes and contributing to a general sense of distrust and hostility towards them (e.g. Testa and Armstrong 2008). It is, therefore, not surprising that the presence of sub-Saharan African players has a statistically significant and negative impact on capacity utilization in Serie A, given the broader socio-cultural context in Italy.

In Ligue 1, we observe a negative relationship between the percentage of foreign players and capacity utilization, consistent with previous research by (Wilson and Ying 2003) revealing discrimination against players from South America and Eastern Europe. In contrast, we find that foreign players positively affect capacity utilization in La Liga.

Our study identifies two stadium-related factors that impact capacity utilization: the positive influence of new stadiums and the negative effect of multipurpose venues. The presence of running tracks in stadiums significantly reduces capacity utilization in all leagues except the Premier League, where not a single stadium has a running track. These findings are consistent with previous research by Love et al. (2013), indicating that soccer spectators perceive running tracks as negatively affecting the entertainment value due to the increased distance from the pitch. Modern stadiums are now designed as dedicated soccer venues or employ innovative transformation techniques to accommodate various sports without compromising viewing quality, as exemplified by the Tottenham Hotspur stadium in London (Amphlett 2020).

The positive impact of new stadiums on capacity utilization, as observed in Serie A, is not surprising. These modern venues offer improved safety, comfort, and attractive amenities that appeal to infrequent match-goers. State-of-the-art operation centres, entrance systems, comfortable seating, weather protection, family zones, and enhanced gastronomy are among the features that draw diverse fans and increase attendance (Quansah 2022). This effect is particularly noticeable in countries like Italy, where due to outdated stadium infrastructure from the 1990 World Cup, modern facilities are missing.

Theoretical contribution

Pedace (2008) suggested studying the relationship between race and nationality discrimination in sports once reliable player race data becomes available. Our study fills this gap by examining the impact of athlete race and ethnicity on ticket demand in major European soccer leagues. Previous studies focused

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[8]Real Madrid's Vinicius Jr. faced his tenth instance of racial abuse during a match against Valencia in May 2023. This led to a Twitter exchange between the player and Javier Tebas, president of La Liga. Vinicius claimed that racism is common in Spain and La Liga, while Tebas countered by denying any racist tendencies in Spain and Spanish football (Grez 2023).

on North American leagues and used outdated data, which restricted the understanding of the current situation. Building on previous research in the Premier League, our study provides a more nuanced picture across five different countries. We find that the percentage of Black and/or sub-Saharan African players, as well as the percentage of foreigners on teams, elicit varying fan reactions. These findings call for further analyses to better understand the underlying factors and implications.

Practical implications

Our study reveals that, with the exception of Serie A, the presence of Black or sub-Saharan African players does not have a negative influence on stadium capacity utilization in the other four major European leagues. This observation highlights that the racial composition of soccer teams does not negatively influence attendance, once we consider other potential factors that impact attendance. Surprisingly, team diversity can even have a positive impact on attendance, as demonstrated in La Liga and Ligue 1. These encouraging results should motivate club managers to reconsider their player selection criteria. Instead of focusing on race or ethnicity, managers should prioritize players' past performance, potential for future growth, and their ability to contribute effectively to the team (Quansah et al. 2021). Such a shift in selection approach represents a significant departure from past practices, which have been criticized for being unduly influenced by discriminatory attitudes, as documented by Willsher (2018). This change could, therefore, mark a significant step towards more equitable practices in soccer management, by prioritizing talent and performance over racial or ethnic backgrounds.[9]

Limitations and future research

While our study provides insights into the relationship between the racial composition of soccer teams and capacity utilization, it is important to acknowledge several limitations. Visual inspection of player photos may be prone to errors and not fully capture the complexity of social constructs like 'race' and 'ethnicity'. Although our findings suggest that customer-based discrimination based on race does not significantly affect stadium attendance in most of the Big-5 European leagues, incidents of racism and discrimination by fans are well-documented (Cleland and Cashmore 2014). Our study aims to provide a nuanced understanding of discrimination's impact on attendance, not to deny its existence. Further research is needed to better understand the causes and dynamics of discrimination in soccer.

Moreover, some important data is not available. We cannot adequately control for the racial composition of cities hosting clubs, which may impact player selection and retention. Differences in the racial and ethnic composition of the population in France may, for example, affect local fans' attitudes towards Black players. Distinguishing between season-ticket holders and matchday-ticket buyers may also be important, as preferences and biases may differ. Apart from these limitations, our study provides valuable insights into the relationship between racial composition and stadium attendance in the five major European leagues.

Future research should address these limitations and explore related areas. Using actual attendance figures instead of ticket sales data is a promising avenue for investigating discrimination in sports. Additionally, studying playing times of Black or sub-Saharan players and their impact on consumer preferences would be intriguing. Extending the findings to other team sports like basketball or rugby, and non-team sports like tennis, would also deepen our understanding of the presence (or absence) of discriminatory preferences in different parts of a country's population. Examining discrimination against other minority groups is also important. Investigating variations in discriminatory fan behaviour at the team level within a league, as observed in previous studies (Benz, Brandes, and Franck 2009; Maennig and Mueller 2023; Mills and Fort 2018) might lead to additional insights into fan behaviour and discrimination in sports dynamics.

Disclosure statement

9In 2018, French football club Paris St-Germain admitted to racially profiling young players.

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