

## The effect of audience presence on home advantage: An analysis of two seasons in the Moroccan professional soccer league

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### Abstract:

The home advantage in soccer is often attributed to the presence of spectators. The recent pandemic, which led to matches being played without audiences, provides a unique opportunity to explore this hypothesis in the Moroccan professional soccer league. This study aims to analyze the impact of audience presence on match outcomes by comparing two seasons: 2018/2019 (with spectators) and 2020/2021 (without spectators, during the SARS-CoV-2 pandemic). The goal is to determine whether the absence of an audience significantly affects team performance at their home stadium. The study presents an analysis of the results of 390 soccer matches that were played over the course of two seasons. The variables examined include the number of wins, losses, and draws, as well as the number of goals scored and conceded. A two-factor analysis of variance (ANOVA II) was employed to assess the impact of audience presence and match location.

**Key Words:** Football matches, Professional competition, Audience influence, Home advantage, COVID-19

### Introduction

In late December 2019, a series of cases of atypical pneumonia in the Chinese province of Hubei in Wuhan led to the identification of a novel coronavirus, severe acute respiratory syndrome-coronavirus 2 (SARS-CoV-2), which rapidly disseminated globally, resulting in a significant public health crisis (Bisciotti et al., 2020). The dissemination of this virus in 2020 had a significant impact on the training and competitive activities of team sports. Upon the resumption of activities, soccer was confronted with considerable challenges, including the necessity to maintain fitness, game-specific abilities and decision-making proficiency in order to minimise the risk of injury when returning to training and competition (Stokes et al., 2020). In light of the aforementioned circumstances, sports medicine professionals have been tasked with formulating recommendations for the resumption of training and competition following the period of confinement (Bisciotti et al., 2020).

The global spread of the SARS-CoV-2 virus has necessitated the cancellation of matches at all levels of the sport, with spectators prohibited from attendance. Consequently, the reinstatement of footballing activities without the presence of spectators – fans or supporters – has introduced a series of challenges for numerous clubs, jeopardising their continued existence and future prospects (Bond et al., 2022). Conversely, the phenomenon of playing at home has been the subject of considerable research within the field of competitive team sports. The evidence would suggest that teams are more likely to emerge victorious in a game played on their home turf than in an away fixture (Baumeister & Steinhilber, 1984). A number of explanations have been proposed to account for this phenomenon of home advantage. One of the most widely accepted explanations is the presence of fans. This situation offers a unique opportunity to conduct a comprehensive evaluation of the influence of public absence on the outcomes of home and away teams, as well as on the overall quality of the soccer experience.

The objective of this study is to examine the influence of the absence of spectators during the 2020/2021 season of the Moroccan first division professional soccer championship on the quality of the sporting event, in comparison with the 2018/2019 season when spectators were present. This study aims to assess whether the absence of fans has led to a reduction in the attractiveness of matches, as evidenced by a drop in wins, an increase in draws and a reduction in goals scored. In addition, it seeks to analyze the extent to which the presence of the public explains the traditional home advantage, defined as the ability of teams to achieve superior results at home compared to away matches. The objective is to ascertain whether the absence of the public detracts from the appeal of the soccer spectacle, as evidenced by a decline in victories, an increase in draws, and a reduction in goals scored. Furthermore, the aim is to ascertain the extent to which the presence of the public helps to explain home advantage, defined as the ability of teams to win more games and points and score more goals at home than away.

It is a widely accepted tenet of sporting theory that playing at home confers an advantage on the home team. The relationship between the venue in which a match is played and the performance of the teams involved has been studied from a multitude of perspectives. Indeed, an analysis of the impact of the public on the

performance of teams playing at home has led to the statistical specification of the advantage of playing at home (Schwartz & Barsky, 1977). In order to ascertain whether this advantage is confirmed, it is necessary to consider a percentage of home wins greater than 50% of the total number of matches played at home (Courneya & Carron, 1992). The conceptual model proposed by Courneya and Carron identifies five factors that contribute to the advantage of playing at home. "The location of the game, factors associated with the location, psychological aspects, behavioural aspects and measures of performance" (Courneya & Carron, 1992). It can be demonstrated that teams and individuals playing at home enjoy a significant advantage over their visiting opponents or visiting teams, across all sports and under all conditions (Jamieson, 2010). A substantial body of research has subsequently sought to validate, delineate and elucidate this advantage in both collective and individual endeavours, across diverse populations and across a range of scenarios (Lapointe, 2014).

A study of 240 Belgian football matches revealed that visiting players were more likely to be penalised by referees for displaying aggressive behaviour than those representing the home team. Furthermore, the study revealed that home teams exhibited greater levels of aggression than their away counterparts. (Aupetit, 2008). Nevertheless, the English football association maintains that the home advantage is of greater consequence in football than in other sports. (Pollard, 1986). Conversely, it is observed that decisions made by referees are seven times more likely to be unfavorable to teams that are playing away from their home venue. (Glamser, 1990). Research into school sport, particularly at high school (McCutcheon, 1984), and university level (Snyder & Purdy, 1985), as well as in professional sport (Acker, 1997), has confirmed the omnipresence of this advantage in most sporting activities. In the context of national teams, research findings indicate that of the 32 teams participating in the 1998 FIFA World Cup in France, only one team did not have home advantage. This conclusion was reached through an analysis of all matches played by these teams over a 10-year period. Additionally, he posits that "the greater the distance travelled by a team to reach a match and the fewer days between matches, the poorer the team's performance tends to be" (Brown Jr. et al., 2002).

One study undertook a comprehensive analysis of the advantages associated with playing at home, which enabled it to divide its work into three distinct areas of investigation. The study aimed to quantify the advantage of playing at home, identify the factors contributing to this advantage, and examine how sports players perceive this advantage (Aupetit, 2008). It reports that the work under the first heading "aims to assess, in percentage terms, the advantage of local players". In various sports (team and individual sports), for different populations (high school students, university students and professionals, women and men at different levels) and during specific events (Olympic Games, opening matches) (Aupetit, 2008). The second line of research is designed to verify the explanatory clues or 'factors' put forward by previous studies by attempting to isolate them. The objective is to ascertain the significance of one of these factors in elucidating the home advantage. The third line of research is an attempt to identify and quantify the importance of factors contributing to the phenomenon of home advantage by administering questionnaires to athletes and coaches. The overarching objective is to gain insight into the rationale behind the home advantage, as perceived by athletes and coaches. (Aupetit, 2008).

Although there is consensus on the existence and permanence of a home advantage for local teams and athletes, there is no consensus on the factors that explain this advantage or on the relative importance of each factor in relation to the others and to performance as such. A study conducted by the magazine "Sports Illustrated" revealed that the crowd, travel route, familiarity with the venue, and even the aggressive behaviour of visiting teams do not contribute to this phenomenon. The magazine reports that the decisions taken by referees, which are often inadvertently favourable to the home teams, are a key factor in the prevalence of this advantage. The findings of research conducted in 2002 corroborate this perspective. The evidence suggests that, when subjected to public scrutiny, referees are more inclined to penalise visiting teams, thereby conferring an advantage upon teams playing at home (Nevill et al., 2002).

## **Material & methods**

### *Participants*

This study analysed the results of 390 football matches from 13 teams in the national first division affiliated to the Royal Moroccan Football Federation over two seasons: the 2018/2019 season, which was played in front of a crowd, and the 2020/2021 season, which was played without a crowd due to the impact of the global pandemic caused by the SARS-CoV-2 virus. The data were obtained from the official website of the Royal Moroccan Football Federation subsequent to the approval of the matches. The following criteria were employed in the selection of teams and matches for analysis in this study: the teams were required to have participated in the 2018/2019 and 2020/2021 seasons; the matches were required to have been played alternately at home and away; the matches were required to have been played on the same day of the week (Sunday) and at the same time, in order to control for variations due to temporal factors.

### *Data collection and variables*

The results of the matches were obtained from the official website of the Royal Moroccan Football Federation following the requisite approval process. Each team participated in 30 matches per season, resulting in a total of 390 matches per season for the 13 teams (195 home matches and 195 away matches per season). The database thus comprises 780 match results for the two seasons in question. The dependent variables analysed for

each team and each season were as follows: the number of wins, the number of draws, the number of defeats, the number of goals scored, the number of goals conceded, the goal difference (calculated by subtracting the number of goals conceded from the number of goals scored), and the points awarded for results (awarded as two points for a win, one point for a draw, and one point for a defeat). The aforementioned variables were measured on a separate basis for both home and away matches, as well as for those involving and not involving an audience.

*Data analysis*

A two-factor analysis of variance (ANOVA II) was employed to ascertain the influence of match location and crowd presence/absence on the various parameters. This was employed to ascertain whether the independent variables and their interaction (match venue and crowd presence/absence) exerted a statistically significant effect (with a p-value of less than 0.05) on the dependent variables (wins, draws, losses, goals scored, goals conceded, goal difference and points). The data are presented in tabular form, with means and standard deviations, as well as Fischer's F values and partial squares ( $\eta^2$ ).

**Results**

*Effect of the public on match results*

The analysis of the effects of the presence of spectators on the results of the matches presented in Table 1 shows non-significant differences in the performance parameters. Defeats (mean:  $4.31 \pm 2.15$  with crowd,  $5 \pm 2.15$  without crowd;  $\eta^2 = 0.037$ ) and draws ( $5.69 \pm 1.81$  with crowd,  $4.62 \pm 2.15$  without crowd;  $\eta^2 = 0.072$ ) show weak effects. Wins ( $5 \pm 2.70$  with spectators,  $5.38 \pm 2.33$  without spectators;  $\eta^2 = 0.009$ ) and other parameters such as goals scored ( $\eta^2 = 0.0$ ) and goals conceded ( $\eta^2 = 0.015$ ) have no significant effect.

**Table 1.** Effect of audience presence on match results: analysis of performance parameters. Data are presented in terms of means and standard deviations (sd).

Parameters	Presence Public	Average $\pm$ sd*	Average difference	F	p value	Partial square state
Losses	With	$4.31 \pm 2.15$	-0.692	1.829	NS	0.037
	Without	$5 \pm 2.154$				
Draws	With	$5.69 \pm 1.806$	1.077	3.745	.059	0.072
	Without	$4.62 \pm 2.155$				
Wins	With	$5 \pm 2.698$	-0.385	0.416	NS	0.009
	Without	$5.38 \pm 2.334$				
Goals Scored	With	$17.35 \pm 6.273$	-0.038	0.001	NS	0
	Without	$17.38 \pm 5.5$				
Goals Scored	With	$16.04 \pm 4.591$	-0.885	0.742	NS	0.015
	Without	$16.92 \pm 3.989$				
Goal difference	With	$1.31 \pm 7.858$	0.846	0.217	NS	0.005
	Without	$0.46 \pm 7.495$				
Points	With	$20.69 \pm 7.143$	-0.077	0.003	NS	0.000
	Without	$20.77 \pm 6.108$				
Losses difference of 2 Goals or less	With	$3.88 \pm 2.104$	-0.615	1.527	NS	0.031
	Without	$4.5 \pm 1.924$				
Losses by 3 goals or more	With	$0.42 \pm 0.578$	-0.077	0.218	NS	0.005
	Without	$0.5 \pm 0.648$				
Wins by 2 goals or less	With	$4.38 \pm 2.192$	-0.538	1.126	NS	0.023
	Without	$4.92 \pm 2.058$				
Wins by 3 goals or more	With	$0.62 \pm 1.061$	0.154	0.393	NS	0.008
	Without	$0.46 \pm 0.706$				

NS. Not significant, significance  $p < .05$ , \*The average shows the number of results (e.g. defeats or wins) for all matches played by all teams, with or without spectators. Data are presented as mean and standard deviation (SD).

*Effect of match venue on results (home vs away matches)*

Analysis of variance (ANOVA) of match results shows significant differences between home and away matches (Table 2). The mean number of victories is markedly higher ( $p < 0.001$ ) by 59.6% at home than away ( $6.38 \pm 2.282$  vs  $4 \pm 2.154$ ,  $\eta^2 = .250$ ). A statistically significant difference was observed in the number of goals scored by teams at home and away ( $p < 0.025$ ). The mean number of goals scored at home was  $19.19 \pm 6.4$ , while the mean number of goals scored away was  $15.54 \pm 4.658$ . The effect size was estimated to be  $\eta^2 = .100$ . Additionally, it was observed that matches won by a margin of one or two goals were significantly ( $p < 0.001$ ,  $\eta^2 = .230$ ) 52.1% more frequent at home than away. However, no significant difference was observed. It was observed that there was a significant difference in the number of wins by a margin of three goals or more between home and away matches ( $0.77 \pm 1.142$  vs  $0.31 \pm 0.471$ ,  $\eta^2 = .069$ ). Conversely, losses by a margin of one or two goals were markedly less prevalent at home (34.8%) than away (5.08). When the difference was three goals or more ( $0.27 \pm 0.452$  vs  $0.65 \pm 0.689$ ,  $p = 0.024$ ), defeats exhibited a statistically significant reduction of

59.2%. For draws, no statistically significant difference was observed between home and away games ( $5.04 \pm 1.8$  vs  $5.27 \pm 2.29$ ,  $\eta^2 = .004$ ).

**Table 2.** Effects of match venue on home vs away team scores by ANOVA. Data are presented in terms of means and standard deviations (sd).

Parameters	Location	Average $\pm$ sd*	Average difference	F	p value	Partial square state
Losses	Home	3.58 $\pm$ 1.901	-2.154	17.701	.000	<b>.269</b>
	Outside	5.73 $\pm$ 1.867				
Draws	Home	5.04 $\pm$ 1.8	-.231	.172	NS	.004
	Outside	5.27 $\pm$ 2.29				
Wins	Home	6.38 $\pm$ 2.282	2.385	15.983	.000	.250
	Outside	4 $\pm$ 2.154				
Goals Scored	Home	19.19 $\pm$ 6.4	3.654	5.353	.025	.100
	Outside	15.54 $\pm$ 4.658				
Goals Scored	Home	14.31 $\pm$ 3.259	-4.346	17.905	.000	<b>.272</b>
	Outside	18.65 $\pm$ 4.118				
Goal difference	Home	4.88 $\pm$ 7.372	8.00	19.427	.000	<b>.288</b>
	Outside	-3.12 $\pm$ 5.538				
Points	Home	24.19 $\pm$ 5.967	6.923	20.825	.000	<b>.303</b>
	Outside	17.27 $\pm$ 5.273				
Losses difference of 2 Goals or less	Home	3.31 $\pm$ 1.914	-1.769	12.620	.001	.208
	Outside	5.08 $\pm$ 1.742				
Losses by 3 goals or more	Home	.27 $\pm$ .452	-.385	5.455	.024	.102
	Outside	.65 $\pm$ .689				
Wins by 2 goals or less	Home	5.62 $\pm$ 1.722	1.923	14.368	0	<b>.230</b>
	Outside	3.69 $\pm$ 2.074				
Wins by 3 goals or more	Home	.77 $\pm$ 1.142	.462	3.541	NS	.069
	Outside	.31 $\pm$ .471				

NS. Not significant, significance  $p < .05$ , \*The average shows the number of results (e.g. defeats or wins) for all matches played by all teams, home or away. Data are presented as mean and standard deviation (SD).

*Interactions between match venue and public presence on match results*

The variations in the results of home and away matches according to the presence or absence of the public are shown in Table 3. The analysis of the data using ANOVA II demonstrated a statistically significant increase ( $p=0.048$ ,  $\eta^2=0.079$ ) in the number of goals scored at home by all teams in the presence of the public, with an observed increase of 23%. In the absence of a crowd, the observed difference was not statistically significant. The goal difference between the opposing teams is more favourable at home, both when there is a crowd ( $p < 0.001$ ,  $\eta^2 = 0.246$ ) and when there is no crowd ( $p = 0.027$ ,  $\eta^2 = 0.098$ ). Consequently, the number of points gained by the teams increased significantly by 40% at home in the presence of the public ( $p < 0.001$ ,  $\eta^2 = 0.325$ ). In the absence of the latter, the difference was not statistically significant. Indeed, our results demonstrated that in the presence of the public, home wins exhibited a notable increase ( $p < 0.001$ ,  $\eta^2 = 0.285$ ) by 54% in comparison to those played away, particularly when the difference was between one and two goals ( $p < 0.001$ ,  $\eta^2 = 0.277$ ). In the absence of a home crowd, the observed difference in the number of wins between home and away matches was not statistically significant. Additionally, our findings indicate that there is no statistically significant difference in the number of wins by a margin of three goals or more, whether or not a crowd is present. In other words, when the public is present, home teams lose significantly fewer games than away teams ( $p < 0.001$ ,  $\eta^2 = 0.254$ ), particularly for a difference of one to two goals. With regard to draws, no statistically significant difference was observed in the presence or absence of a crowd.

**Table 3.** Interaction of the effects of match venue and audience presence on match results). The data are presented in terms of means and standard deviations (sd).

Results variables	Public	Location	Average $\pm$ sd*	Average difference	F	p value	Partial square state
Defeats	With	Home	2.85 $\pm$ 1.519	-2.923	16.301	.000	<b>0.254</b>
		Outside	5.77 $\pm$ 1.641				
	Without	Home	4.31 $\pm$ 2.016	-1.385	3.658	NS	0.071
		Outside	5.69 $\pm$ 2.136				
Draws	With	Home	5.31 $\pm$ 1.494	-0.769	0.955	NS	0.020
		Outside	6.08 $\pm$ 2.06				
	Without	Home	4.77 $\pm$ 2.088	0.308	0.153	NS	0.003
		Outside	4.46 $\pm$ 2.295				
Wins	With	Home	6.85 $\pm$ 2.23	3.692	19.160	.000	<b>0.285</b>
		Outside	3.15 $\pm$ 1.676				
	Without	Home	5.92 $\pm$ 2.326	1.077	1.630	NS	0.033
		Outside	4.85 $\pm$ 2.304				

Goals scored	With	Home	19.62 ±6.886	4.538	4.129	.048	0.079
		Outside	15.08 ±4.838				
	Without	Home	18.77 ±6.126	2.769	1.537	NS	0.031
		Outside	16 ±4.619				
Goals cashed	With	Home	13.23 ±3.419	-5.615	14.945	.000	<b>0.237</b>
		Outside	18.85 ±3.891				
	Without	Home	15.38 ±2.815	-3.077	4.487	.039	0.085
		Outside	18.46 ±4.484				
Difference Goals	With	Home	6.38 ±7.309	10.154	15.648	.000	<b>0.246</b>
		Outside	-3.77 ±4.4				
	Without	Home	3.38 ±7.411	5.846	5.187	.027	0.098
		Outside	-2.46 ±6.603				
Points	With	Home	25.85 ±5.684	10.308	23.082	.000	<b>0.325</b>
		Outside	15.54 ±4.054				
	Without	Home	22.54 ±5.995	3.538	2.720	NS	0.054
		Outside	19 ±5.916				
Loss difference 2 goals or less	With	Home	2.62 ±1.66	-2.538	12.990	.001	<b>0.213</b>
		Outside	5.15 ±1.725				
	Without	Home	4 ±1.958	-1.00	2.016	.162	0.040
		Outside	5 ±1.826				
Loss difference 3 goals or more	With	Home	0.23 ±0.439	-0.385	2.727	NS	0.054
		Outside	0.62 ±0.65				
	Without	Home	0.31 ±0.48	-0.385	2.727	NS	0.054
		Outside	0.69 ±0.751				
Win by 2 goals or less	With	Home	5.92 ±1.553	3.077	18.391	.000	<b>0.277</b>
		Outside	2.85 ±1.573				
	Without	Home	5.31 ±1.888	0.769	1.149	NS	0.023
		Outside	4.54 ±2.222				
Win by 3 goals or more	With	Home	0.92 ±1.382	0.615	3.148	NS	0.062
		Outside	0.31 ±0.48				
	Without	Home	0.62 ±0.87	0.308	0.787	NS	0.016
		Outside	0.31 ±0.48				

NS. Not significant, significance  $p < .05$ , \*The average indicates the number of results for all matches played by all teams, with or without spectators. Data are presented as mean and standard deviation (SD).

## Discussion

The presence or absence of spectators does not seem to have a significant impact on results in general. In fact, if we disregard the location of the matches, we find that there is no statistically significant difference between the results with and without spectators. There are no more victories or goals scored in the presence of spectators than in the absence of spectators. Other studies have attempted to characterise home advantage by quantifying the impact of various factors associated with it. Among the factors that explain this advantage are familiarity with local facilities (Schwartz & Barsky, 1977). The home advantage in the absence of spectators, due to COVID-19, has not developed in the same way in the major European championships: significantly higher in France and Italy, stable in Portugal, Spain and England, while it has completely disappeared in Germany (Almeida & Leite, 2021). It should be noted, however, that in the absence of spectators there was a decrease in the proportion of draws (37.95% of matches with spectators and 30.77% without) and an increase in the proportion of wins (33.33% of matches with spectators and 35.90% without) and losses (28.72% of matches with spectators and 33.33% without). The number of goals scored per match was almost identical (1,156 with spectators and 1,159 without), as were the number of goals conceded (1,069 with spectators and 1,128 without). We also note a decrease in victories with a difference of 3 goals or more (12.31% of victories with an audience and 8.57% without), against an increase in those with a difference of 2 goals or less (87.69% of victories with an audience and 91.43% without). Research has concluded that although there is a drop in home advantage, the phenomenon does not disappear in the absence of the public. This suggests that, although fans play a definite role in home advantage, their presence is not the only explanation (Wunderlich et al., 2021).

In terms of where the matches were played, out of 390 matches (780 results) in the two seasons analysed, the home advantage is largely confirmed, with a percentage of over 50% confirming this advantage (Courneya & Carron, 1992). This is in line with the results of a study of national team matches (UEFA Nations League 2018-2019 with spectators and 2020-2021 without spectators), which concluded that home advantage in the presence of spectators is absent in matches played behind closed doors, demonstrating the positive impact of spectators on the results of teams playing at home. Of the 61.48% of wins, 87.95% were by 2 goals or less and only 12.05% were by 3 goals or more (Sors et al., 2023). Similarly, 55.26% of goals have been scored at home. As for points, 58.35% are collected at home. This means that teams score more points at home than on the road. This is in line with the conclusions of the Ferraresi study, they analysed the difference in points won by teams playing at home and away from home in France, Germany, Italy, Spain and the United Kingdom. (Ferraresi &

Gucciardi, 2020). The study shows that "home team performance is halved when stadiums are empty, with this effect being more pronounced for teams whose attendance was very high and for those with no international experience" (Ferraresi & Gucciardi, 2020). In line with the findings of a study by sports illustrated magazine and the results of the majority of matches, the absence of spectators has not had a significant impact on home advantage (Wunderlich et al., 2021).

An analysis of home advantage according to the presence or absence of spectators shows that home advantage is much clearer for matches with spectators than for matches without spectators. In the same vein, a study comparing home advantage for 3 seasons before COVID-19 and 1 season after COVID-19 produced remarkable results, showing that home advantage was negatively affected during the 2019/2020 season, especially after the break due to the COVID-19 pandemic without public support (Correia-Oliveira & Andrade-Souza, 2022). In fact, the percentage of home wins with the crowd present is 68.62% compared to 55% with the crowd absent. Similarly, the percentage of goals scored at home is 56.54% compared to 53.98% away from home. As for points, the percentage of points scored at home is 62.45% compared to 54.26% away from home. The presence of spectators influences the home advantage, but it is not the only explanatory factor. If we look at the results in relation to the total number of matches, we can see that, in the absence of spectators, home defeats have increased (18.97% with spectators and 28.72% without), while away defeats have remained almost unchanged (38.46% with spectators and 37.95% without). Draws were down both at home and away, with a much greater drop away (40.51% with an audience and 29.74% without) than at home (35.38% with an audience and 31.79% without). Home wins decreased (45.64% with an audience and 39.46% without). Wins away from home increased (21.03% with an audience and 32.31% without an audience).

There was no change in goals scored per game, either at home (1.31 with spectators and 1.25 without) or away (1.01 with spectators and 1.07 without), confirming the results of a previous study (Duhautois & Eyssautier, 2016). On the other hand, the number of goals conceded per home game increased (0.88 with supporters and 1.03 without), while there was little change away from home (1.26 with supporters and 1.23 without). In terms of points, there was a slight increase in points per game away from home (1.04 with supporters and 1.27 without) and a slight decrease at home (1.72 with supporters and 1.50 without). The fact that home advantage is confirmed with and without the presence of spectators allows us to confirm the permanence of this phenomenon, but above all to confirm that it is not the only factor determining it. It is evident that the presence of the public exerts a profound influence on the capacity of teams playing at home to avoid defeat. This phenomenon is less pronounced in its effect on their ability to secure victories and concede draws. Research has elucidated the phenomenon of home advantage in terms of familiarity with the pitch and reduced travel fatigue (Aupetit, 2008).

In contrast, the lack of a home crowd has a significantly greater impact on the ability of away teams to win games than it does on their ability to lose them. Furthermore, the absence of a home crowd impacts the ability of teams to achieve a draw. The lack of pressure from the home crowd reduces psychological obstacles, enabling teams to play more relaxed and effective football (Samuel Clark, 2022), this can be attributed to a playing environment that is more akin to neutral territory, where the influence of external factors is diminished (Bryson et al., 2021). The number of goals scored per game is unaffected by the presence or absence of a home or away crowd. In the presence of an audience, home teams tend to concede fewer goals per game. The number of points scored at home or away does not appear to be contingent on the presence or absence of a crowd. The available evidence indicates that the number of points scored, whether at home or away, is not significantly influenced by the presence or absence of a crowd. The data indicates that teams continue to score a similar number of points, which suggests that other factors, such as playing strategy and player quality, have a more significant impact on the outcome of the game (Bryson et al., 2021; Wang & Qin, 2023).

## Conclusions

The COVID19 pandemic provided an opportunity to analyze Moroccan first division football championship matches in the absence of the public. This study allowed us to see the extent to which the public does not have a significant impact on the quality of the football spectacle in terms of imbalances (the more wins/losses (imbalances) and the fewer draws (parity)) and the more goals scored/conceded, the more attractive the football spectacle and the more goals scored. It also allowed us to see that the public is not the only factor that can explain the advantage of the field. We were able to see that this phenomenon persists even in the absence of crowds, albeit to a lesser extent. We also showed that the presence of the crowd caused teams to lose fewer games at home, while the absence of the crowd caused them to win more away from home. The absence of the crowd led to more draws and fewer high-scoring wins.

**Conflicts of interest:** The authors have no conflicts of interest.

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