

Abuse is not a Zero-Sum Game! The Case for Zero Tolerance of Match Official Physical and Verbal Abuse

Dr Peter Dawson*
School of Economics
Norwich Research Park
University of East Anglia
Norwich
UK
NR4 7TJ
Peter.Dawson@UEA.ac.uk
+44 (0)1603 597612

Dr Tom Webb
School of Sport, Health and
Exercise Sciences
University of Portsmouth
Portsmouth
UK
PO1 2ER
thomas.webb@port.ac.uk
+44 (0) 23 9284 3081

Professor Paul Downward
School of Sport, Exercise and
Health Sciences
Loughborough University
Loughborough
UK
LE11 3TU
p.downward@lboro.ac.uk
+44 (0)1509 226365

*Corresponding author

Abuse is not a Zero-Sum Game! The Case for Zero Tolerance of Match Official Physical and Verbal Abuse

Abstract

Emergent research has investigated the impact of abuse on the decision of match officials to leave their sport. The existing literature is largely descriptive and qualitative. Based on large surveys of football referees in France and the Netherlands, this paper investigates the factors that are associated with the verbal and physical abuse of the referees and also the association of this abuse with the intentions of referees to quit officiating. The associations are investigated by estimating the marginal effects from bivariate probit and probit models respectively. Bivariate probit estimation reveals a strong correlation between each form of abuse. Both, unsurprisingly, are also positively associated with years of experience of referees. Probit estimation reveals that both forms of abuse as well as intimidation from refereeing certain teams are associated with an increased consideration of referees to quit. As increased intention to quit is also associated with the experience of the referee it is likely that the effect of abuse on referee considerations of quitting increase through time. The main conclusions are that the alternative forms of abuse are not zero-sum and both should be targeted by governing bodies to reduce the decline in number of football referees. The data show that support of referees, for example through mentoring, can offset stated intentions to quit.

Keywords

Match officials, verbal abuse, physical abuse, intention to quit

Introduction

An essential human resource for all competitive sports is officials, who oversee and manage in-play competition (Wicker & Breuer, 2013). However sports face a serious problem due to the decline in their number (Cuskelly & Hoye, 2013). This is particularly the case in Football (Webb, 2017) where, in England for example, the number of referees fell by 6,700 from 31,735 by the end of 2018 (Slater, 2019). Simultaneously, the physical and verbal abuse of officials has been rising internationally and is prominent in mainstream news across Europe (BBC Sport, 2018; DW, 2019; The Local, 2019). To illustrate, a national sport officiating survey conducted throughout the United States with over 17,000 sports match officials, found that 87% of respondents had suffered verbal abuse (National Officiating Survey, 2017). This escalation in verbal and physical abuse has led to tragic incidents. For example, in 2012 in the Netherlands a volunteer assistant referee (linesperson), collapsed and died several hours after being assaulted by a number of players (Mohamed, 2013). These issues and incidents have occurred despite campaigns to protect referees by sports federations (Chaplin, 2012).

Drawing on two online surveys of referees in French and Dutch football, this paper examines the physical and verbal abuse of referees and the relationship between abuse and their expressed intentions to leave the sport.

Theoretically, as identified in Dawson et al. (2020) officials act as an agent in a Principal-Agent setting, with the governing body as the Principal. Officials have power delegated to them to ensure that the sports competition between the other agents – players – takes place in accordance with the rules of competition through a monitoring and enforcement role. Much research on match officials has thus tended to focus on their discretionary decision making with respect to play and, specifically, in the context of home-team advantage (Dohmen & Sauermann, 2016). However, there is a small and growing literature that has investigated motivation and the intentions of sports officials to remain or stay in their roles (Cuskelly & Hoye, 2013; Webb, 2020).

A range of different sports have been considered including Australian rules football, baseball and lacrosse where socialisation and a sense of community has been found to be important in official retention (Kellett & Shilbury, 2007; Kellett & Warner, 2011; Ridinger, 2015). In basketball a sense of organisational support has been found to be important to retention (Warner, Tingle, & Kellett, 2013), and the abuse of officials in rugby league, rugby union and cricket has led to arguments that officials need specific support with respect to this in order to retain officials (Webb, Rayner, & Thelwell, 2018; Webb, Rayner, & Thelwell, 2019). Moreover, research has also considered the constraints to match official continuation and what governing bodies might do in order to address these continuation rates (Tingle, Warner, & Sartore-Baldwin, 2014; Ridinger, Kim, Warner, & Tingle, 2017). In the context of football, some research provides descriptive and qualitative analysis of the abuse of referee's and their subsequent intentions to leave the sport (Dell, Gervis, & Rhind, 2016; Webb, Cleland, & O'Gorman, 2017; Webb, Dicks, Thelwell, van der Kamp, & Rix Lievre, 2020). However, only Giel and Breuer (2020) offer statistical testing and only in the context of Germany.

The contribution of the current paper is based on answering two unique research questions using multivariate statistical analysis based on the data that is analysed descriptively by Webb et al. (2020). The first research question is: 'To what extent are verbal and physical abuse related?' A relationship between them might be expected because the proximity of players and officials provides the opportunity for verbal abuse to escalate to physical violence. The second research question is 'are verbal and physical abuse associated with referee intentions to quit?' Answering these questions through statistical inference will not only provide a better understanding of the contribution of the abuse of officials to their expressions to quit, but also provide a more robust foundation for the development of better retention strategies.

Methods

Data

The data were collected by online questionnaires administered to football referees operating in France and the Netherlands between January and February 2018. Both active and non-active referees were sampled by the federations from their distribution lists. The French (FFF) database comprised of approximately 26,000 referees, whereas the Dutch (KNVB) database held the details for approximately 4,000 referees. Respondents represented referees at all levels from mass participation to those officiating in the top domestic divisions.

Numerous versions of draft questionnaires were sent via email to referee contacts and members of the FFF and KNVB. This triangulated process between the researchers, members of the federations and referees in each respective country facilitated the validation of the questionnaire prior to any wider dissemination (Birt, Scott, Cavers, Campbell, & Walter, 2016; Thomas, 2017). Suggested changes were considered and, if agreed, the questionnaires were amended. Any differences in the questionnaires reflected agreed colloquialisms and language or the specific referee infrastructures in both France and the Netherlands. Nonetheless, the difference in potential meaning due to cultural specificity of the questions through translation underpins a choice to analyse the data by each country separately (Chidlow et al., 2015). The dataset comprises a total of 4,637 observations, with 3,408 from France and 1,229 from the Netherlands. However once missing values have been removed these reduce to 3,085 and 1,210, respectively. This gives approximate response rates of 11.9% (France) and 30.25% (Netherlands).

Variables

Table 1 describes the variables and presents their mean values.¹ The variables measure the physical and verbal abuse of referees, their expression of intention to quit, their gender, years of

¹ Though the variables are measured on binary scales, the mean values are informative of the sample proportions of the expressed measured characteristics, so this provides a convenient exposition of the data. Multiplying the mean values by 100 gives the percentages referred to in the text.

experience refereeing as well as satisfaction with opportunities for personal development, aspects of their support (i.e. whether they have a referee coach) and concern about refereeing certain teams. The demographic variables as well as satisfaction, support and intimidation variables provide context around the relationship between abuse and intentions to quit. Gender is important given the growing desire to increase female engagement in football. The data show that almost 70% of French and just over 50% of Dutch referees faced verbal abuse, with approximately 17% and 15% of these referees also facing physical abuse respectively. Moreover, between approximately 22% of French referees and 12% of Dutch referees express that they are thinking of leaving the sport in the next 12 months.

Table 1 here

Table 1 also suggests that French referees have generally less years of experience than the Dutch, but that all of referees reveal similar levels of satisfaction with personal development. It should also be noted that the proportion of female officials in the sample of each country is small: 3.4% in France and 1.2% in the Netherlands, although these numbers are representative given that in 2018 female referee numbers in France totalled 825 (Tous Arbitres, 2018), whereas in 2019, 42 female referees were operating in the Netherlands (Dijkstra, 2019). Based on the approximate populations identified earlier these generate 3.17% and 1.05% which are consistent with the characteristics of the current sample.

Analysis

To explore the physical and/or verbal abuse of referees, given the potential relationships between the two types of abuse, a bivariate binary probit framework was estimated.

$$y_1 = x_1\beta_1 + \varepsilon_1 \quad (1a)$$

$$y_2 = x_2\beta_2 + \varepsilon_2 \quad (1b)$$

and

$$\begin{pmatrix} \varepsilon_1 \\ \varepsilon_2 \end{pmatrix} \sim N \left[\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} 1 & \rho \\ \rho & 1 \end{pmatrix} \right]$$

Where y_1 represents the observed outcome associated with verbal abuse and y_2 the observed outcome associated with physical abuse. The demographic covariates associated with gender and years of refereeing experience identified in Table 1 are included. Rho represents the conditional correlation between y_1 and y_2 . It measures the unobserved correlation between the forms of abuse. Importantly, it identifies if the forms of abuse are related through common factors that are not measured in the independent variables such as, say, a behavioural tendency of players. This statistic helps in the assessment of the connection between the forms of abuse.

To explore the impact of these two types of abuse on the likelihood of the official leaving the profession a probit estimator was used.

$$\mathbf{y}_3 = \mathbf{x}_3\boldsymbol{\beta}_3 + \boldsymbol{\varepsilon}_3 \quad (2)$$

Where y_3 represents a binary outcome associated with intention to leave. We use the same demographic covariates (gender and refereeing experience) included in equations 1a and 1b but also include attitudinal and satisfaction responses relating to satisfaction with opportunities for personal development, whether they have a referee coach or not and whether they feel intimidated when refereeing certain teams².

The probit estimators are appropriate for analysing dependent variables (incidence of types of abuse and intention to quit) that are binary. As regression models, moreover, the inclusion of sets of independent variables allows for the exploration of the multiple factors that

² Satisfaction with opportunities for personal development and response to whether feel more intimidated are measured on a likert scale (with more than two categories) in the original survey. We constructed these as binary (dummy) variables based on the nature of the categories and the distribution of responses. As a robustness check we also estimated versions of the models which included dummies for each category for these variables, but this did not materially affect the main findings of the investigation.

are associated with the forms of abuse, and the observable factors that confound the relationship between abuse and intentions to quit (Wooldridge, 2002). Because analysis is undertaken on cross section data, account is also taken of heteroscedasticity of the errors in the equation by drawing inferences based on robust standard errors (Cameron & Trivedi, 2009).

Results

Tables 2 and 3 present the results for the abuse and impact of abuse on referee's intentions. The tables present the marginal effects of the covariates because the coefficients at best only capture the sign of the relationship between the covariates and the dependent variables (Greene, 2003).

The marginal effects identified in Table 2 represent how a change in a covariate is associated with the change in the probability of the types of abuse given at the top of each column, where $V=0, P=0$ (V = verbal abuse and P = physical abuse) indicates that neither form of abuse has been faced and $V=1, P=1$ that both forms have etc. Table 2 illustrates three important sets of results. The first is the strong positive correlation between the forms of abuse. This is indicated by the rho statistic towards the bottom of the table. This statistic can lie between '-1' and '+1'. The estimated value indicate that there is greater than 60% positive commonality in unobserved factors that influence either form of abuse. This provides evidence, in answer to the first research question, that the forms of abuse should not be viewed as independent or isolated forms of behaviour. The second, related result, is that referees with more years of experience have encountered more abuse, and consistent with the first result this is particularly the case for both forms of abuse. This is expected since the longer the referee has been involved in officiating the more likely they are to have experienced either (or both) types of abuse. The final result of note is that female referees faced less abuse than males in France. Given the relatively nascent but rapid development of female football, exploring this difference is an important area for future research.

The marginal effects identified in Table 3, provide strong evidence of the increased years of experience of referees being connected with a higher probability of quitting. Whilst this might be expected as part of a natural ‘career’ progression in an activity that is physically and mentally demanding, it should also be recalled that such experience is likely to be correlated more highly with verbal and physical abuse as indicated in Table 2.

Tables 2 and 3 here

Further, and of most importance in this regard, the results show that verbal abuse and intimidation from certain teams are directly associated with increased intentions to quit. Moreover, because it is expected that the forms of abuse are related, a joint test of the association of both verbal *and* physical abuse with intention to quit is undertaken and suggests that we can reject the null hypothesis of no intention to quit for both countries, at the 10% level of significance for France and close to the 10% of significance for the Netherlands. Given, the unmeasured correlation of between 62% and 66% between the forms of abuse identified in Table 2, these results suggest, in answer to the second research question, that both forms of abuse coupled with intimidation are associated with referee’s expressions of intention to quit.

The results thus add statistical weight to the descriptive insights in the literature that abuse is leading to the loss of referees. Finally, the results also show that satisfaction with personal development can mitigate against the intention to quit in both countries.

Discussion

An important outcome of the research is the insight that that there should be a zero tolerance of any kind of abuse towards referees as these are strongly related. There is, thus, no ‘less-serious’ form of abuse to be tolerated implicitly or explicitly. The role of the football governing bodies in stamping out abuse is therefore crucial to providing an inviting environment

for future referee recruitment and in seeking to arrest the decisions of officials to quit football (Cuskelly & Hoye, 2013; Webb, 2017).

There are strong theoretical reasons for this. The official in sport can be understood to occupy a unique position that does not have a parallel in other organisations. Sport involves the ‘joint production’ of a competition, involving participants and teams, as well as governing bodies, for the benefit of the participants and/or spectators, depending on the evolution of the organisation of the sport and the level of competition taking place (Downward, Dawson, & Dejonghe, 2009). Though rarely identified as such, officials are an integral part of the joint production of sport and can be understood from a Principal and Agent theoretical perspective (Laffont & Martimort, 2002). From this perspective, officials, alongside other stakeholders such as players and their teams, act as an Agent of the governing body, which is the Principal, facilitating the on-field competition of their organisation by ensuring that sport is undertaken by the other Agents in accordance with the rules and norms of play.

There is, nonetheless, asymmetric information implied in this relationship because officials, relative to spectators, team officials and governing bodies, are on the field of play, and have authority to make decisions to sustain competition (Collins, 2010). The unique responsibility for decision making brings with it, however, the scrutiny of their decisions by other stakeholders (both the Principal and other Agents, as well as spectators) who monitor the decisions made by the officials.³

It is within this context that incentives to abuse officials arise and, with physical abuse particularly, is more likely to be the case the less distance there is of the official from other Agents and broader stakeholders in sport. As noted in the Introduction, players and spectators in amateur football have easier physical ‘access’ to officials, from which officials can be confronted face-to-face and physical abuse take place. Greater monitoring and less opportunities for the

³ In this regard unlike a more general Principal-Agent setting incentive contracts are not available to align objectives.

latter occurs at higher levels of competition. In contrast media, and particularly ease of access to social media, might exacerbate the verbal abuse of officials by facilitating, broadcasting and amplifying other stakeholders' disputes over official's decisions. Mediation of interest in sport from the media has long been recognised as important (Neale, 1964). In this regard sport is different from other organisational and commercial activity, because sport operates at multiple levels traversing both individuals and society, whilst abuse and aggression in other workplaces tends to be either hidden or has impacts on immediate peers only (Coakley, 2009; Dunning, 1999; Hershcovis & Barling, 2009).

Several theoretical insights can add some nuance to this understanding. Firstly, it should be recognised that within sport there is a demand for violence and aggression from both spectators and other stakeholders. Turning upon referees is consequently a way in which such aggressive behaviour can become manifest and indeed the behaviour of players can, in turn, influence such behaviour in spectators (Dunning, 1983; Jones, Stewart, & Sunderman, 1996; Spaaij, 2014). Secondly, Becker (2016) has argued that violence or abusive (i.e. criminal) behaviour takes place when the costs of the activity to individual perpetrators are less than the benefits that they obtain from their behaviour. The above discussion suggests that abuse is more likely the less costly it is for other stakeholders to access officials particularly with abuse also communicated through the media. Moreover, these insights strongly suggest that despite the policy pronouncements of governing bodies, they retain some responsibility for concurrent abuse. They create a moral hazard problem because of their lack of effective monitoring and sanction of one of the Agents relative to the others. The costs of the inappropriate behaviour of abuse are met by the officials through governing bodies not redirecting sufficient costs to the players or other agents to act as a deterrent to them. The danger from this moral hazard is the increased likelihood of being unable to hold sporting competitions because of the lack of officials. Significantly, however, the research also shows that governing bodies can implement policies that mitigate officials' intentions to quit. The results show that the presence of a mentor for referees can counter these

intentions, and the results also show that satisfaction with personal development can mitigate against the loss of referees. This indicates that policy intervention has the potential to arrest the loss of referees to football. The key finding of the research, thus, is that all forms of abuse needs to be sanctioned and policed by governing bodies, with more support being offered to referees than is the case currently. In this regard our results show support for the result of Giel and Breuer (2020) in Germany across other countries but additionally show that the forms of abuse that referees face are strongly related.

There are limitations of the current research that could be addressed in future work. The first is that football is examined rather than other sports. Analysis of other sports would help to distinguish between football specific and general influences on referee or match official intentions to quit. The second is that the data are only collected at one point in time. This means that the cumulative impact of abuse cannot be identified nor when, for example, abuse reaches a point at which referees quit. Leading on from this, the current research asks whether the respondent has “ever experienced abuse” and is captured as simply a yes/no response. A more continuous scale together with abuse variables that have a more specific timescale could begin to unpick the extent to which referees with more years of experience are more (or less) likely to have encountered abuse more recently, for example. This research also only identifies associations. Whilst it seems unlikely that a referee’s intentions to quit could influence the abuse they receive, nonetheless, future longitudinal research could help with exploration of these issues and help to identify causes. Finally, the research also cannot identify the specific decision or set of decisions that led to abuse. Being able to isolate this in future research would be informative in fine-tuning sanctioning and supportive strategies.

Declaration of Interest Statement

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

References

- BBC Sport. (2018). *Referee's jaw broken after attack in Irish amateur league - BBC Sport*.
<https://www.bbc.co.uk/sport/football/46180452>
- Becker, G. S. (2016). *Crime and Punishment: An Economic Approach* Author (s): Gary S. Becker
 Published by: The University of Chicago Press Stable URL : <http://www.jstor.org/stable/1830482>
 Accessed : 07-06-2016 12 : 44 UTC Your use of the JSTOR archive indicates your accept. 76(2), 169–217.
- Birt, L., Scott, S., Cavers, D., Campbell, C., & Walter, F. (2016). Member checking: A tool to enhance trustworthiness or merely a nod to validation? *Qualitative Health Research*, 26(13), 1802–1811. <http://dx.doi.org/10.1177/1049732316654870>.
- Cameron, A. C., & Trivedi, P. K. (2009). *Microeconometrics Using Stata*. Statacorp LP.
- Chaplin, M. (2012). *EURO Respect campaign launched | Inside UEFA | UEFA.com*.
<https://www.uefa.com/insideuefa/social-responsibility/news/0254-0d7de525d633-bc8a31d550d8-1000--euro-respect-campaign-launched/?referrer=%2Finsideuefa%2Fnews%2Fnewsid%3D1807947>
- Chidlow, A., Ghauri, P. N., Yenyurt, S., & Cavusgil, S. T. (2015). Establishing rigor in mail-survey procedures in international business research. *Journal of World Business*, 50(1), 26–35.
<https://doi.org/10.1016/J.JWB.2014.01.004>
- Coakley, J. (2009). *Sports in society: Issues and controversies* (10th ed.). Boston: McGraw-Hill.
- Collins, H. (2010). The Philosophy of Umpiring and the Introduction of Decision-Aid Technology. *Journal of the Philosophy of Sport*, 37(2), 135–146.
<https://doi.org/10.1080/00948705.2010.9714772>
- Cuskelly, G., & Hoye, R. (2013). Sports officials' intention to continue. *Sport Management Review*, 16(4), 451–464. <https://doi.org/10.1016/j.smr.2013.01.003>
- Dawson, P., Massey, P., & Downward, P. (2020). Television match officials, referees, and home

- advantage: Evidence from the European Rugby Cup. *Sport Management Review*, 23(3), 443–454. <https://doi.org/10.1016/j.smr.2019.04.002>
- Dell, C., Gervis, M., & Rhind, D. J. A. (2016). Factors influencing soccer referee's intentions to quit the game. *Soccer and Society*, 17(1), 109–119. <https://doi.org/10.1080/14660970.2014.919275>
- Dijkstra, W. (2019). Oranje maakt naam op WK, maar waar zijn onze scheidsrechters? Retrieved November 24, 2019, from <https://www.ad.nl/wk-vrouwenvoetbal/oranje-maakt-naam-op-wk-maar-waar-zijn-onze-scheidsrechters~af98ba2c/Dijkstra> (2019)
- Dohmen, T., & Sauermann, J. (2016). Referee bias. *Journal of Economic Surveys*, 30(4), 679–695. <https://doi.org/10.1111/joes.12106>
- Downward, P., Dawson, A., & Dejonghe, T. (2009). *Sports economics*. Routledge.
- Dunning, E. (1999). *Sport matters: Sociological studies of sport, violence and civilization*. London: Routledge.
- Dunning, E. (1983). Social Bonding and Violence in Sport: A Theoretical-Empirical Analysis. In *Sports Violence* (pp. 129–146). Springer New York. https://doi.org/10.1007/978-1-4612-5530-7_8
- DW. (2019). *Attacks on referees on the rise in German amateur soccer leagues* | News | DW | 09.07.2019. <https://www.dw.com/en/attacks-on-referees-on-the-rise-in-german-amateur-soccer-leagues/a-49530305>
- Giel, T., & Breuer, C. (2020). The determinants of the intention to continue voluntary football refereeing. *Sport Management Review*, 23(2), 242-255. <https://doi.org/10.1016/j.smr.2019.01.005>
- Greene, W. H. (2003). *Econometric analysis*, 5th. Ed..Upper Saddle River, NJ.
- Hershcovis, M. S., & Barling, J. (2009). Towards a multi-foci approach to workplace aggression: A meta-analytic review of outcomes from different perpetrators. *Journal of Organizational Behavior*, 31(1), 24–44. <https://doi.org/10.1002/job.621>

- Jones, J. C. H., Stewart, K. G., & Sunderman, R. (1996). From the Arena Into the Streets: Hockey Violence, Economic Incentives and Public Policy. *American Journal of Economics and Sociology*, 55(2), 231–243. <https://doi.org/10.1111/j.1536-7150.1996.tb03203.x>
- Kellett, P., & Warner, S. (2011). Creating communities that lead to retention: The social worlds and communities of umpires. *European Sport Management Quarterly*, 11(5), 471–494. <http://dx.doi.org/10.1080/16184742.2011.624109>.
- Kellett, P., & Shilbury, D. (2007). Umpire participation: Is abuse really the issue? *Sport Management Review*, 10(3), 209–229. [https://doi.org/10.1016/S14413523\(07\)70012-8](https://doi.org/10.1016/S14413523(07)70012-8)
- Laffont, J.-J., & Martimort, D. (2002). *The theory of incentives : the principal-agent model*. Princeton University Press. https://books.google.co.uk/books?hl=en&lr=&id=Yf1TwtIuNf8C&oi=fnd&pg=PP1&dq=principal+agent+theory&ots=5w092-Ka4E&sig=NUnrA_vaGIO78XMA9GtXHSVgTfg#v=onepage&q=principal+agent+theory&f=false
- Mohamed, M. (2013). *Richard Nieuwenhuizen death: Six teenagers and 50-year-old father convicted of manslaughter in shocking case of referee killed over a game of football*. Retrieved from <https://www.independent.co.uk/news/world/europe/richard-nieuwenhuizen-death-six-teenagers-and-50-year-old-father-convicted-of-manslaughter-in-8662177.html>
- National Officiating Survey. (2017). *17,487 officials had something to say*. Retrieved from <https://www.naso.org/survey/>
- Neale, W. C. (1964). The Peculiar Economics of Professional Sports: A Contribution to the Theory of the Firm in Sporting Competition and in Market Competition. *The Quarterly Journal of Economics*, 78(1), 1–14. <https://doi.org/10.2307/1880543>
- Ridinger, L. L. (2015). Contributors and constraints to involvement with youth sports officiating. *Journal of Amateur Sport*, 1(2), 103–127. <http://dx.doi.org/10.17161/jas.v1i2.4946>.
- Ridinger, L. L., Kim, K. R., Warner, S., & Tingle, J. K. (2017). Development of the referee

- retention scale. *Journal of Sport Management*, 31(5), 514 <https://doi.org/10.1123/jsm.2017-0065> doi:10.1123/jsm.2017-0065
- Spaaij, R. (2014). Sports crowd violence: An interdisciplinary synthesis. *Aggression and Violent Behavior*, 19(2), 146–155. <https://doi.org/10.1016/J.AVB.2014.02.002>
- The Local. (2019). *French village footballer gets six months jail for attack on referee - The Local*. <https://www.thelocal.fr/20190327/french-amateur-footballer-gets-six-months-for-attack-on-referee>
- Thomas, D. R. (2017). Feedback from research participants: Are member checks useful in qualitative research? *Qualitative Research in Psychology*, 14(1), 23–41. <http://dx.doi.org/10.1080/14780887.2016.1219435>.
- Tingle, J. K., Warner, S., & Sartore-Baldwin, M. L. (2014). The experience of former women officials and the impact on the sporting community. *Sex Roles*, 71(1-2), 7–20. <https://doi.org/10.1007/s11199-014-0366-8>
- Tous Arbitres. (2018). Barometre arbitrage. Retrieved November 24, 2019, from <https://www.tousarbitres.fr/jna2018-le-barometre-annuel-de-larbitrage-et-les-chiffres-clefs-2018/>
- Warner, S., Tingle, J. K., & Kellett, P. (2013). Officiating attrition: The experience of former referees via a sport development lens. *Journal of Sport Management*, 27(4), 316–328. <http://dx.doi.org/10.1123/jsm.27.4.316>.
- Webb, T. (2017). *Elite Soccer Referees*. Routledge. <https://doi.org/10.4324/9781315656809>
- Webb, T. (2020). Sports match official research: An evolving narrative, positioning future research. *Managing Sport and Leisure*. <https://doi.org/10.1080/23750472.2020.1762304>
- Webb, T., Cleland, J. & O’Gorman, J. (2017). The distribution of power through a media campaign: *The Respect programme, referees and violence in association football*. *The Journal of Global Sport Management*, 2(3), 162-181. doi: 10.1080/24704067.2017.1350591
- Webb, T., Dicks, M., Thelwell, R., van der Kamp, G. J. & Rix Lievre, G. (2020). An analysis of

soccer referee experiences in France and the Netherlands: Abuse, conflict, and support.

Sport Management Review, 23(1), 52-65. doi: 10.1016/j.smr.2019.03.003

Webb, T., Rayner, M. & Thelwell, R. (2018). An explorative case study of referee abuse in English Rugby League. *Journal of Applied Sport Management*, 10(2), doi: 10.18666/JASM-2017-V10-12-8834.

Webb, T., Rayner, M. & Thelwell, R. (2019). An examination of match official's perceptions of support and abuse in rugby union and cricket in England. *Managing Sport and Leisure*, 24(1-3), 155-172. doi: 10.1080/23750472.2019.1605841

Wicker, P., & Breuer, C. (2013). Understanding the Importance of Organizational Resources to Explain Organizational Problems: Evidence from Nonprofit Sport Clubs in Germany. *Voluntas*, 24(2), 461–484. <https://doi.org/10.1007/s11266-012-9272-2>

Wooldridge, J. M. (2002). *Econometric Analysis of Cross Section and Panel Data*. MIT Press Cambridge Massachussets.

Table 1. Variable Definitions and Means

Variable Name	Definition	Means	
		France	Netherlands
Dependent Variables^a			
Verbal	= 1 if respondent has ever been a victim of verbal abuse as a referee; 0 otherwise	0.699	0.507
Physical	= 1 if respondent has ever been a victim of physical abuse as a referee; 0 otherwise	0.165	0.147
Intention to Leave	= 1 if respondent is thinking of leaving refereeing in the next 12 months; 0 otherwise	0.217	0.119
Other Covariates			
Female	= 1 if respondent is Female; 0 = Male	0.034	0.012
Experience			
0-2 years (base category)	= 1 if respondent has 2 or less than 2 years of experience; 0 otherwise (base case).	0.199	0.04
3-5 years	= 1 if respondent has between 3 and 5 years of experience; 0 otherwise.	0.246	0.199
6-10 years	= 1 if respondent has between 6 and 10 years of experience; 0 otherwise.	0.205	0.223
11-15 years	= 1 if respondent has between 11 and 15 years of experience; 0 otherwise.	0.146	0.127
16-20 years	= 1 if respondent has between 16 and 20 years of experience; 0 otherwise.	0.097	0.093
Over 20 years	= 1 if the respondent has over 20 years of experience; 0 otherwise.	0.107	0.317
Attitudinal Responses			
Satisfaction with Personal Development	= 1 if satisfied with opportunities for personal developed; 0 otherwise	0.515	0.558
Personal coach or mentor	= 1 if respondent has a personal coach or mentor; 0 otherwise	0.085	0.233
Intimidation	= 1 if agree feel more intimidated when refereeing certain teams; 0 otherwise.	0.396	0.207

Note: French Sample = 3,085; Dutch Sample = 1,210. ^a Verbal and physical variables also used as covariates in the intention to leave model.

Table 2. Likelihood of Verbal and Physical Abuse

Variable	France				Netherlands			
	V = 0; P = 0	V = 1; P = 0	V = 0; P = 1	V = 1; P = 1	V = 0; P = 0	V = 1; P = 0	V = 0; P = 1	V = 1; P = 1
Marginal Effect								
Female	0.113*** (0.041)	0.058 (0.059)	-0.005* (0.0033)	-0.165*** (0.051)	-0.099 (0.114)	0.091 (0.162)	-0.008 (0.025)	0.016 (0.076)
<u>Experience</u>								
3-5 years	-0.138*** (0.022)	0.024 (0.028)	0.001 (0.0015)	0.113*** (0.024)	-0.166** (0.073)	0.071 (0.104)	0.004 (0.019)	0.091 (0.075)
6-10 years	-0.234*** (0.022)	0.059** (0.029)	0.001 (0.0014)	0.175*** (0.024)	-0.224*** (0.072)	0.108 (0.104)	0.003 (0.019)	0.113 (0.075)
11-15 years	-0.271*** (0.025)	0.035 (0.030)	0.003** (0.0016)	0.232*** (0.024)	-0.250*** (0.075)	0.051 (0.106)	0.018 (0.019)	0.181** (0.076)
16-20 years	-0.308*** (0.030)	0.028 (0.035)	0.004** (0.0019)	0.276*** (0.026)	-0.252*** (0.079)	0.038 (0.108)	0.021 (0.019)	0.193** (0.077)
Over 20 years	-0.367*** (0.030)	0.068** (0.034)	0.0030* (0.0017)	0.296*** (0.025)	-0.188*** (0.070)	-0.057 (0.102)	0.034 (0.019)	0.211*** (0.074)
Rho	0.624*** (0.035)				0.659*** (0.041)			
n	3,085				1,210			

Notes: V = verbal abuse and P = Physical abuse. Coefficients represent marginal effects. Robust standard errors in parentheses. *, **, *** denotes significance at 10%, 5% and 1% levels respectively.

Table 3. Intention to Leave

Covariate	Leave next 12 months?	
	France	Netherlands
Female	-0.015 (0.042)	0.085 (0.072)
<u>Experience</u>		
3-5 years	0.062*** (0.023)	0.075 (0.081)
6-10 years	0.064*** (0.024)	0.151* (0.079)
11-15 years	0.067** (0.026)	0.153* (0.081)
16-20 years	0.075** (0.030)	0.200** (0.081)
over 20 years	0.113*** (0.029)	0.168** (0.080)
Satisfaction with personal development	-0.107*** (0.014)	-0.088*** (0.018)
Personal coach or mentor	-0.069** (0.029)	0.031 (0.022)
Verbal	0.036** (0.017)	0.040** (0.019)
Physical	0.008 (0.020)	-0.018 (0.026)
Intimidation	0.080*** (0.015)	0.051*** (0.021)
F-test (verbal and physical abuse)	4.98 (p-value = 0.0827)	4.51 (p-value = 0.105)
n	3,085	1,210

Notes: Robust standard errors in parentheses. *, **, *** denotes significance at 10%, 5% and 1% levels respectively.

