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**Gender Bias in Perceived Quality. An Experiment with Elite  
Soccer Performance**

Carlos Gomez-Gonzalez, Helmut Dietl, David Berri, and Cornel  
Nessler

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University of Zurich, Plattenstrasse 14, CH-8053 Zurich,  
<http://www.business.uzh.ch/forschung/wps.html>



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**Contact Details**

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**Carlos Gomez Gonzalez**

University of Zurich

Department of Business Administration

Plattenstrasse 14, CH-8032 Zurich, Switzerland

[carlos.gomez@business.uzh.ch](mailto:carlos.gomez@business.uzh.ch)

Tel.: +41 44 634 53 14

## **Gender Bias in Perceived Quality. An Experiment with Elite Soccer Performance**

### **Abstract**

Whether one looks at revenue, investment, or coverage, men's sports do better than women's. Many assume that the differences are driven by absolute differences in quality of athletic performance. However, the existence of stereotypes should alert us to another possibility: What if perceived quality is filtered through gender stereotypes? We perform an experiment showing participants video clips of elite female and male soccer players. In the control group, participants evaluated normal videos where the gender of the players was clear to see. In the treatment group, participants evaluated the same videos but with gender obscured by blurring. We find that participants only rated men's videos higher when they knew they were watching men. When they didn't know who they were watching, ratings for female and male athletes did not differ significantly. The findings are consistent with the interpretation that gender bias plays a role in the evaluation of athletic performance. Implications for research and the sports industry are discussed.

**Keywords:** experiment; evaluation; gender bias; fans; soccer; women's sport

## 1. Introduction

Stereotypical judgments and misperceptions influence the slow professional advancement of women (Ellemers, 2018; Valian, 1999). Research shows that negative gender stereotypes about women's performance exist in business (Gupta & Turban, 2012; Heilman, 2001), education (Boring, 2017; Mengel et al., 2019), politics (Dolan & Sanbonmatsu, 2009; Lawless, 2009), science (Moss-Racusin et al., 2012; Régner et al., 2019; Witteman et al., 2019), and sports (Burton, 2015; Gomez-Gonzalez et al., 2019). In male-dominated occupations, women routinely need to deal with criticism of their talent and hardiness (Leslie et al., 2015; Morganson et al., 2010).

In sports, the abilities of female athletes are constantly questioned by some fans and reporters on TV, Twitter, Facebook, and other media outlets (Hyde, 2019; Sheadler & Wagstaff, 2018; Trolan, 2013). Investment and media coverage differences are evident and striking as women's sports continue to get very little attention (Cooky et al., 2013; Kassouf, 2020; Matheson, 2021; UNESCO, 2021). Men's professional sports leagues outperform their women's counterparts in economic terms, including demand figures, broadcasting revenue, franchise value, and athlete pay (Zimbalist, 2019).<sup>1</sup>

From a managerial perspective, the question is why this difference exists and what can be done. Literature on objective and perceived quality offers helpful insights into this question (Mitra & Golder, 2006). While objective quality of a product is based on measurable attributes,

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<sup>1</sup> For example, in December 2019 it was announced that David Tepper had paid \$325 million for a new Major League Soccer (MLS) franchise in Charlotte, North Carolina (Negley, 2019). Just a few months later, it was thought the expansion fee for a new National Women's Soccer League (NWSL) team in Sacramento, California, was between \$1 and \$2 million (Kassouf, 2020). That same year, the Seattle Reign—an existing NWSL team—sold to French investors for less than \$4 million. These disparities in private investment are also seen with respect to public investment (Matheson, 2021).

perceived quality is based on subjective judgments. It certainly is the case that women's and men's soccer are different and that, for example, female soccer players run slower than male players (Cheuvront et al., 2005). However, it is debatable that physical differences are what drives demand. The objective quality of women's and men's games is difficult to measure, and impossible for managers to influence.

Perceived quality, however, has considerable managerial implications. Managers can influence perception, and perception influences demand (García & Rodríguez, 2002; Pawlowski et al., 2018). Stakeholders change the perception of quality among sports fans through, for example, coverage, promotion, and engagement strategies. We argue that those watching men's and women's soccer today have a gender bias that influences the perception of quality. Men's soccer appears more often on TV and players get paid more (Cooky et al., 2013; Zimbalist, 2019); therefore, fans tend to believe that the men's version is better.

We performed an experiment to analyze the influence that gender stereotypes may have on the perceived quality of women's and men's soccer. Participants were shown videos of professional women's and men's soccer players scoring goals. In the control group, videos were unmodified. In the treatment group, the gender of the players was blurred, making it impossible for a viewer to know if they were watching men or women. Participants were then asked to evaluate the overall performance of the players. The results show that when participants could identify the gender of the players, male players were rated higher. When the gender of the players could not be ascertained, however, no significant differences between ratings of female and male athletes were detected. The results have implications for the coverage of women's sports in the media and how the performance of female athletes is perceived (Fink, 2015).

The approach adopted here has been used in other research settings. For example, in the hiring process, research shows that employers tend to discriminate less when the gender of the candidate is hidden (Åslund & Skans, 2012; Goldin & Rouse, 2000; Krause et al., 2012). The concept of blinding identity features to improve decisions has also been explored in science (Budden et al., 2008; Johnson & Kirk, 2020), education (Hinnerich et al., 2015), and criminal justice (Sah et al., 2015). To our knowledge, ours is the first study to empirically analyze the effect of blinded decision-making in the context of gender bias and professional sports.

The paper is structured as follows. Section 2 reviews the literature and presents the theoretical framework on hegemonic masculinity and gender imprinting. Section 3 describes the experimental design and method; Section 4 the results. Section 5 discusses implications and limitations, and concludes the paper.

## **2. Theoretical framework and literature review**

To date, research on women's sports has developed some key theoretical questions (Cunningham, 2013; Fink, 2013). Specific topics have been studied such as the underrepresentation of women in leadership roles (Burton, 2015; Darvin et al., 2021; Gomez-Gonzalez et al., 2019), group diversity and team and organizational outcomes (Lee & Cunningham, 2018; Taylor et al., 2022; Wicker et al., 2019), and demand and consumption (Funk et al., 2003; Valenti et al., 2020). Thomson et al. (2022) argue advancing women's professional sports further may benefit from multidisciplinary research.

Women's sports leagues are experiencing remarkable growth in attention and consumption, supporting athletes competing at the highest level (Litchfield & Kavanagh, 2019; Pegoraro et al., 2018; Taylor et al., 2020). In 2020, in the US, the National Women's Soccer League broke its viewership records by nearly 300% (Gao, 2020). The NCAA Women's

Gymnastics Championship and the Women's National Basketball Association are other North American leagues with record-breaking viewership figures. In Europe, the trend is similar. FC Barcelona Femení has recently registered world-record attendance figures in soccer, with crowds of over 90,000 spectators (Burhan, 2022).

Despite this growth and its business potential, women's sports have no shortage of detractors (Hyde, 2019; Scheadler & Wagstaff, 2018; Trolan, 2013). Negative comments target women's physical attributes (Burch et al., 2018), sexuality (Cavalier & Newhall, 2018), athletic skills (Joncheray et al., 2016), and overall value (Micelotta et al., 2018). Even female fans are not immune to detrimental perceptions (Sveinson et al., 2019). This negative notion about women's sports may have an influence on the perception of quality. The negativity surround women's sports should, we argue, be understood within a context of hegemonic masculinity (Hindman & Walker, 2020; Hoerber & Kerwin, 2013) and gender imprinting (Gisladottir & Reid, 2021; Micelotta et al., 2018).

## **2.1. Hegemonic masculinity**

Hegemonic masculinity refers to practices and beliefs that establish and reinforce men's control and status over other groups, including women (Connell & Messerschmidt, 2005). Scholars argue that stereotypical attributes of men (e.g., strength, competitiveness, and risk preferences) are overemphasized in sports (Englis, 2017). The lack of these attributes is often cited in social media critiques of women's athletics (Hyde, 2019) and as justifications for the underrepresentation of women in sports leadership positions (Burton, 2015).

In sports management research, scholars have discussed the relationship between hegemonic masculinity and the role of women in sports at the organizational level (Burton, 2015;

Hoeber & Kerwin, 2013). For example, Hindman and Walker (2020) argue that gender stereotypes result in disadvantages for women in hiring, promotion, and evaluation.

Such gender stereotypes require women to deal with criticisms of their talent and strength, and lead people to believe that men are a better fit for the job. Men are often perceived as more competent and evaluated better than women with equal qualifications for sport-related positions (Burton et al., 2012). However, the gender stereotypes that reward masculinity traits go beyond the organizational culture of specific institutions (LaVoi & Dutove, 2012). They have the power to influence the public's perception of women's performance.

## **2.2. Gender imprinting**

Micelotta et al. (2018) introduced the concept of “gender imprinting” in the context of sports. Broadly, this concept refers to embedded sociocultural gender attributes that define values, norms, and beliefs in specific industries. The gender imprinting of the sports industry is rooted in its origin, when hegemonic masculinity shaped organizational norms, defined the sports culture, and desired practices (Gisladottir & Reid, 2021; Micelotta et al., 2018). Therefore, gender imprinting is closely related to the global level of hegemonic masculinity (Connell & Messerschmidt, 2005).

Although some societies and industries are taking steps to advance gender equity (Mendoza & Zurka, 2021; United Nations, 2022), gender stereotypes and prejudices are likely to influence behavior today. For example, Micelotta et al. (2018) show that cultural barriers negatively affect the capacity of new ventures to acquire symbolic and material support in women's sports. The sociocultural level of women's sports is imprinted with prejudices about athletes' abilities, which determine the capacity to compete with the dominant male sports culture (Scheidler & Wagstaff, 2018).



Constant exposure to negative comments about women’s attributes, athletic skills, and overall value—imprinted within the industry and embedded in society—can negatively influence the views and perceptions of fans (Travers, 2008). We argue that gender stereotypes negatively influence perceived quality among fans who watch women’s games, highlights, or any other sport-related content. We hypothesize that most fans would not perceive any differences in quality between top male and female players—if the gender was not clear to see.

H1. Fans evaluate women’s performance lower only if the gender of the players is clear to see.

### **3. Method**

#### **3.1. Experimental videos**

An experiment tested this hypothesis. We selected 10 videos from women’s and men’s club and national team matches in 2019. The videos were between 5 and 14 seconds each. We used goal-scoring plays that were chosen by either UEFA or FIFA as highlights for the season. Sports highlights are an increasing touchpoint to connect with the younger generations, who prefer short-form content to consume and share on social media platforms (Silverman, 2020). All videos featured highly skilled players and contained some of the most-watched goals on TV and social media. Appendix Table A1 provides information about the match, scoring player, and length of the videos.

To conceal the gender of the players, we manipulated every video frame. Appendix 2 shows the parameters of the manipulated videos in Adobe Premiere Pro. The same mask feather, opacity, and expansion levels were used for each frame; then the number of blocks (for blurriness) were selected. The lowest level of blurriness that still allowed us to effectively conceal the gender of the players was used. We blurred all human-related parts (players and fans). Although this approach creates noise of its own for the evaluation of the play, pretests

showed that blurring only critical areas such as players' heads was not enough to effectively conceal gender. Figure 1 shows an example of the two versions of the videos, original and blurred.

[Figure 1 near here]

Two groups were created. In the control group, 290 participants evaluated a sequence of 10 videos in which nothing was blurred (similar to Figure 1, left panel) In the treatment group, 323 participants evaluated the same sequence but with blurred videos (similar to Figure 1, right panel). Thus, the only difference between groups was the blurriness of players and fans. Each sequence consisted of five women's and five men's soccer videos, presented in random order (see Appendix Table A2).

### **3.2. Participants and survey structure**

The Amazon Mechanical Turk (AMT) was used to recruit participants. AMT is an online marketplace in which workers exchange their labor for a monetary reward. AMT results in heterogeneous samples (e.g., in nationality and age). Outcomes do not significantly differ from traditional methods (Arechar et al., 2018; Snowberg & Yariv, 2021) and are not affected by monetary incentives (Snowberg & Yariv, 2021). Employers decide payment and may specify additional worker qualifications.

In our experiment, the task was to complete a survey estimated to take 5 minutes. There were no qualification requirements; the pay was \$1.00. Relative to most AMT tasks, the workload was low and the payment high. A sample of 613 participants was recruited (276 women, 337 men; mean age 34 years). The geographic breakdown was Africa (4), Asia (10), Europe (225), North America (322), Oceania (2), and South America (39). Eleven participants did not report their nationality.

Each participant was given a task labeled “Answer a survey about soccer” with the description “Evaluate soccer performance (about 5 minutes).” We added the keywords *survey*; *sport*; *soccer*; *video*. Participants answered questions in survey screens. Before evaluating the videos, each participant was asked to provide information regarding age, gender, and country. Participants were also asked to answer the following questions with binary response possibilities: “Do you watch soccer?”; “Do you watch soccer daily (highlights or matches)?”; and “Do you prefer men’s or women’s soccer?”

These questions were chosen because people who watch soccer regularly could show different behavior when evaluating women’s and men’s soccer. Additionally, research suggests that behavior may be moderately influenced by explicit beliefs and values (Crandall & Eshleman, 2003; Devine et al., 2017). Therefore, we may find a relationship between the preference for women’s or men’s soccer and the evaluation of the groups, especially when the videos are unmodified and the gender visible.

In the subsequent screens, after every video, we asked participants (1) to rate the performance of the players on a 5-point scale: “Overall, the performance of the players is” (1 = *poor*; 5 = *excellent*) and (2) to indicate whether they would pay to watch the match: “Would you pay to watch the match?” (*yes/no*). The videos and questions were shown on subsequent survey screens, and participants had to submit the final task on the last screen. Participants could take up to 20 minutes to complete the survey and go back and forth among the screens.<sup>2</sup>

#### **4. Results**

Considering first the individual videos, 9 of 10 received a lower rating when they were blurred (see Figure 2). Three unblurred men’s videos received an average evaluation  $> 4$ ; none of the

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<sup>2</sup> In a small subsample, we found no differences when the demographic questions were asked after evaluating the videos rather than before.

unblurred women's videos did so. As expected, blurred videos received lower evaluations ( $M = 3.52$ ) than the blurred ones ( $M = 4.22$ ). We expected this result as the blurred videos can create some noise in perceived quality. Whether blurred or unblurred, the video evaluations show similar trends. The key point for our research, however, is how participants evaluate men's and women's soccer videos within the two different experimental groups.

[Figure 2 near here]

As shown in Figure 3, when the videos were not blurred and hence the gender visible, participants rated men's performance significantly higher than women's (men's videos,  $M = 4.012$ ; women's videos,  $M = 3.839$ ; average treatment effect (ATE) = 0.173; Mann-Whitney  $U$ ,  $z = 3.429$ ,  $p = 0.00$ ,  $N = 580$ ). However, when the videos were blurred and hence gender not visible, participants' ratings did not differ significantly between men's ( $M = 3.583$ ) and women's ( $M = 3.556$ ) videos (ATE = 0.027; Mann-Whitney  $U$ ,  $z = 0.846$ ,  $p = 0.398$ ,  $N = 646$ ).

[Figure 3 near here]

To verify that the results are robust, we controlled for various covariates. Table 1 shows the regression results with the ratings for unblurred videos as the dependent variable. We included all control variables stepwise. Model 1 presents only the evaluation of women's and men's videos. Model 2 includes participant demographics. Model 3 includes participants' preference for women's or men's soccer (omitted responses are scored as no preference). Model 4 includes control variables for different sequences and participant country. Most control variables had no statistically significant influence, although participants who watch soccer daily made lower ratings overall. Nonetheless, the control variables throughout the models do not influence the participants' higher evaluation of men's videos.

[Table 1 near here]

Table 2 shows the regression results with the ratings for blurred videos as the dependent variable. Participants no longer rate men's and women's videos differently. This result is consistent across all models that include the controls. Participants who prefer men's soccer evaluated the blurred videos significantly lower. Women evaluated the blurred videos significantly higher than men. We lost 84 observations in Model 3 as we made a coding error with the question regarding participants' preference for male or female soccer. Omitting these observations in Models 1 and 2 has no significant impact.

[Table 2 near here]

In Appendix Table A3, we tested the interaction between video gender and participant gender to examine if women and men participants evaluate unblurred videos differently. Men evaluated female videos significantly lower than male videos, but for women there was no difference between men's and women's videos. Consistent with the results reported in Tables 1 and 2, although smaller in magnitude, when the players' gender is visible (Table A4), fans report to be significantly less likely to pay to watch a women's match; when gender not visible (Table A5), the effect disappears.

## **5. Discussion and Conclusions**

Many factors contribute to gender disparities in professional advancement (Ellemers, 2018; Valian, 1999). In many fields, women need to cope with stereotypes that question their ability to succeed (Leslie et al., 2015; Morganson et al., 2010). Their representation and visibility are severely limited. For example, in sports, the media seldom cover men and women equally (Cooky et al., 2013). While 40% of all sports participants are women, women's sports receive only around 4% of the total coverage (UNESCO, 2021).

Some research suggests that preferences drive the type of content displayed by the media (Gentzkow & Shapiro, 2006). Thus, fans prefer watching male sports because they derive a higher utility. However, there is reason to suspect that fans are not evaluating men's and women's sports by the same criteria. For example, fans of men's sports seem quite comfortable with evaluating male athletes relative to their competition. As we see in boxing, absolute differences are often not even considered. When comparing men and women, though, absolute differences are often cited.

The results presented here support the hypothesis that gender stereotypes play a role in perceived quality. Differences between men's and women's performance are perceived only when the gender of the players is visible. When the gender of the players is no longer distinguishable, men's higher ratings disappear. Conceptually, the phenomenon may be summed up by saying that gender biases "imprinted" in the sports context influence how fans perceive women's and men's professional sports (Micelotta et al., 2018).

This finding is relevant for players, managers, and broadcasters alike. Men's soccer is omnipresent throughout societies, through television and social media (Cooky et al., 2013; Kassouf, 2020; Matheson, 2021; UNESCO, 2021). It is a common assumption that differences in physiology between men's and women's soccer result in recognizable differences in quality. However, our results show that this assumption must be reevaluated as gender bias may play an important role. This bias in sports consumption is consistent with discourses of global hegemonic masculinity (Burton, 2015; Connell & Messerschmidt, 2005; Hindman & Walker, 2020; Hoerber & Kerwin, 2013) and gender imprinting (Gisladdottir & Reid, 2021; Micelotta et al., 2018).

Moderator factors regarding participants' demographics, preferences, and habits influence overall evaluation, but do not cancel out the gender bias. For example, participants who watch

soccer daily rated both blurred and original videos lower than other participants; apparently, the more you watch soccer, the more it takes to impress you. We did not find the expected influence of explicit beliefs and values on behavior (Crandall & Eshleman, 2003; Devine et al., 2017). Participants who express a preference for men's or women's soccer do not show a consistent bias when evaluating the unblurred videos.

### **5.1. Limitations and Future Research**

The findings from the experiment are robust but should be interpreted cautiously. This study has limitations that suggest opportunities for future research. First, we selected videos that show only elite performance, which could lead to a ceiling effect. The videos had already been filtered through the choices of sports media broadcasters and pushed to the top of the list by people who are not part of our study. Therefore, the focus on popular highlights limits the extent of the implications. Other videos involving less skilled players could potentially prompt different evaluations.

Second, we used exclusively goal plays. Modern sports consumption trends show a growing preference for brief highlights, especially among millennials and Gen Z (Silverman, 2020). However, a soccer match consists of various scenes that can also be interesting for viewers (e.g., tackles, corners, free kicks, penalty kicks), and many enjoy watching whole matches. Third, the experimental design includes only 10 videos because of the time needed to modify the videos to conceal gender (2–6 weeks each). A larger number of videos would ensure higher variability and allow us to draw more conclusions.

Finally, we cannot rule out the possibility that other variables explain better the observed relationship. For example, we did not control for the atmosphere in the stadium. Participants watched the videos without any sound as commentators frequently reveal the gender of the

player. People often go to the stadium or watch a match not because of the quality but because of the atmosphere. Future research can also explore other sports and exploit new experimental designs. Artificial intelligence and machine learning algorithms have the potential to contribute to this line of research.

## **5.2. Implications and Concluding Remarks**

As societies advance in women's rights, equity, and equality (Mendoza & Zurka, 2021; United Nations, 2022), the exposure of future generations to gender stereotypes will decrease. In the absence of a gender bias, our study shows that the perceived quality of men's and women's elite soccer may not differ. This result has managerial implications, as investments in women's team sports in terms of money and coverage should become highly attractive.

Perceived quality is a subjective dimension that managers and leagues can deliberately influence. This dimension is essential for sports consumption because how fans perceive quality drives demand (García & Rodríguez, 2002; Pawlowski et al., 2018). The current trends in women's sports consumption should be sending signals to managers. The perceived quality of women's sports is already changing; fans are breaking attendance records and demanding more coverage of women's soccer (Burhan, 2022; Gao, 2020).

In theory, online communication forms and new consumption trends should allow more women's sports coverage (Kian & Hardin, 2009; Pegoraro et al., 2021). Our results should persuade sports consumers and managers to be mindful of biases when evaluating men's and women's sports and making decisions about their promotion. Of course, consumers cannot suddenly change the way they perceive sports, and gender bias will not disappear overnight (Burton, 2015; LaVoi & Dutove, 2012; Micelotta et al., 2018). Nevertheless, the lack of differences in perceived quality and the willingness to pay to watch a match are instructive.



### **Disclosure statement**

The authors report there are no competing interests to declare.

### **Data availability**

The data that support the findings of this study is publicly available in HarvardDataVerse, <https://doi.org/10.7910/DVN/P12G8I> (only accessible upon publication). We deleted individual identifiable information.

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### **References**

Arechar, A. A., Gächter, S., & Molleman, L. (2018). Conducting interactive experiments online. *Experimental Economics*, 21(1), 99–131. <https://doi.org/10.1007/s10683-017-9527-2>

- Åslund, O., & Skans, O. N. (2012). Do anonymous job application procedures level the playing field? *Industrial and Labor Relations Review*, 65(1), 82–107.  
<https://doi.org/10.1177/001979391206500105>
- Boring, A. (2017). Gender biases in student evaluations of teaching. *Journal of Public Economics*, 145, 27–41. <https://doi.org/10.1016/j.jpubeco.2016.11.006>
- Budden, A. E., Tregenza, T., Aarssen, L. W., Koricheva, J., Leimu, R., & Lortie, C. J. (2008). Double-blind review favours increased representation of female authors. *Trends in Ecology and Evolution*, 23(1), 4–6. <https://doi.org/10.1016/j.tree.2007.07.008>
- Burch, L., Billings, A., & Zimmerman, M. (2018). Comparing American soccer dialogues: Social media commentary surrounding the 2014 US men’s and 2015 US women’s world Cup teams. *Sport in Society*, 21(7), 1047–1062.  
<https://doi.org/10.1080/17430437.2017.1284811>
- Burhan, A. (2022, April 2022). Barcelona Femení set another women’s world record attendance at Camp Nou. *Forbes*. Available at:  
<https://www.forbes.com/sites/asifburhan/2022/04/22/barcelona-femen-set-another-womens-world-record-attendance-at-camp-nou/?sh=5b6a87694fc4Forbes>
- Burton, L. J. (2015). Underrepresentation of women in sport leadership: A review of research. *Sport Management Review*, 18(2), 155–165. <https://doi.org/10.1016/j.smr.2014.02.004>
- Burton, L. J., Borland, J., & Mazerolle, S. M. (2012). “They cannot seem to get past the gender issue”: Experiences of young female athletic trainers in NCAA Division I intercollegiate athletics. *Sport Management Review*, 15(3), 304-317.  
<https://doi.org/10.1016/j.smr.2012.01.001>

- Cavalier, E., & Newhall, K. (2018). “Stick to soccer”: Fan reaction and inclusion rhetoric on social media. *Sport in Society*, 21(7), 1078–1095.  
<https://doi.org/10.1080/17430437.2017.1329824>
- Chevront, S. N., Carter, R., DeRuisseau, K. C., & Moffatt, R. J. (2005). Running performance differences between men and women. *Sports Medicine*, 35(12), 1017-1024.  
<https://doi.org/10.2165/00007256-200535120-00002>
- Connell, R. W., & Messerschmidt, J. W. (2005). Hegemonic masculinity: Rethinking the concept. *Gender and Society*, 19(6), 829–859. <https://doi.org/10.1177/0891243205278639>
- Cooky, C., Messner, M. A., & Hextrum, R. H. (2013). Women play sport, but not on TV. *Communication & Sport*, 1(3), 203–230. <https://doi.org/10.1177/2167479513476947>
- Crandall, C. S., & Eshleman, A. (2003). A justification-suppression model of the expression and experience of prejudice. *Psychological Bulletin*, 129(3), 414–446.  
<https://doi.org/10.1037/0033-2909.129.3.414>
- Cunningham, G. (2013). Theory and theory development in sport management. *Sport Management Review*, 16(1), 1–4. <https://doi.org/10.1016/j.smr.2012.01.006>
- Darvin, L., Holden, J., Wells, J., & Baker, T. (2021). Breaking the glass monitor: examining the underrepresentation of women in esports environments. *Sport Management Review*, 24(3), 475-499. <https://doi.org/10.1080/14413523.2021.1891746>
- Devine, P. G., Forscher, P. S., Cox, W. T. L., Kaatz, A., Sheridan, J., & Carnes, M. (2017). A gender bias habit-breaking intervention led to increased hiring of female faculty in STEM departments. *Journal of Experimental Social Psychology*, 73(August), 211–215.  
<https://doi.org/10.1016/j.jesp.2017.07.002>

- Dolan, K., & Sanbonmatsu, K. (2009). Balance in government. *American Politics Research*, 37(3), 409–428. <https://doi.org/10.1177/1532673X08322109>
- Ellemers, N. (2018). Gender stereotypes. *Annual Review of Psychology*, 69, 275–298. <https://doi.org/10.1146/annurev-psych-122216-011719>
- English, C. (2017). Toward sport reform: Hegemonic masculinity and reconceptualizing competition. *Journal of the Philosophy of Sport*, 44(2), 183-198. <https://doi.org/10.1080/00948705.2017.1300538>
- Fink, J. (2013). Theory development in sport management: My experience and other considerations. *Sport Management Review*, 16(1), 17–21. <https://doi.org/10.1016/j.smr.2011.12.005>
- Fink, J. S. (2015). Female athletes, women’s sport, and the sport media commercial complex: Have we really “come a long way, baby”? *Sport Management Review*, 18(3), 331-342. <https://doi.org/10.1016/j.smr.2014.05.001>
- Funk, D. C., Ridinger, L. L., & Moorman, A. M. (2003). Understanding consumer support: Extending the Sport Interest Inventory (SII) to examine individual differences among women’s professional sport consumers. *Sport Management Review*, 6(1), 1–31. [https://doi.org/10.1016/S1441-3523\(03\)70051-5](https://doi.org/10.1016/S1441-3523(03)70051-5)
- Gao, M. (2020, December 13). Women’s soccer set viewership records in 2020 — now it needs to keep them watching. CNBC. Available at: <https://www.cnbc.com/2020/12/13/womens-soccer-viewership-records-paving-expansion.html>

- García, J., & Rodríguez, P. (2002). The determinants of football match attendance revisited: Empirical evidence from the Spanish football league. *Journal of Sports Economics*, 3(1), 18-38. <https://doi.org/10.1177/152700250200300103>
- Gentzkow, M., & Shapiro, J. M. (2006). Media bias and reputation. *Journal of Political Economy*, 114(2), 280–316. <https://doi.org/10.1086/499414>
- Gisladottir, T., & Reid, P. A. (2021). Gender imprinting. In P. M. Pedersen (Ed.), *Encyclopedia of Sport Management* (pp. 210-211). Cheltenham: Edward Elgar Publishing.
- Goldin, C., & Rouse, C. (2000). Orchestrating impartiality: The impact of “blind” auditions on female musicians. *American Economic Review*, 90(4), 715–741. <https://doi.org/10.1257/aer.90.4.715>
- Gomez-Gonzalez, C., Dietl, H., & Nessler, C. (2019). Does performance justify the underrepresentation of women coaches? Evidence from professional women’s soccer. *Sport Management Review*, 22(5), 640–651. <https://doi.org/10.1016/j.smr.2018.09.008>
- Gupta, V. K., & Turban, D. B. (2012). Evaluation of new business ideas: Do gender stereotypes play a role? *Journal of Managerial Issues*, 24(2), 140–156. <https://www.jstor.org/stable/43488130>
- Heilman, M. E. (2001). Description and prescription how gender stereotypes prevent women ascent up. *Journal of Social Issues*, 57(4), 657–674. <https://doi.org/10.1111/0022-4537.00234>
- Hindman, L. C., & Walker, N. A. (2020). Sexism in professional sports: How women managers experience and survive sport organizational culture. *Journal of Sport Management*, 34(1), 64-76. <https://doi.org/10.1123/jsm.2018-0331>

- Hinnerich, B. T., Höglin, E., & Johannesson, M. (2015). Discrimination against students with foreign backgrounds: Evidence from grading in Swedish public high schools. *Education Economics*, 23(6), 660–676. <https://doi.org/10.1080/09645292.2014.899562>
- Hoeber, L., & Kerwin, S. (2013). Exploring the experiences of female sport fans: A collaborative self-ethnography. *Sport Management Review*, 16(3), 326-336. <https://doi.org/10.1016/j.smr.2012.12.002>
- Hyde, M. (2019, June 12). Pity the poor man who's had the Women's World Cup shoved down his throat. *The Guardian*. Available at: <https://www.theguardian.com/football/blog/2019/jun/12/womens-world-cup-shoved-down-mens-throats>
- Johnson, S. K., & Kirk, J. F. (2020). Dual-anonymization yields promising results for reducing gender bias: A naturalistic field experiment of applications for hubble space telescope time. *Publications of the Astronomical Society of the Pacific*, 132(1009), 34503. <https://doi.org/10.1088/1538-3873/ab6ce0>
- Joncheray, H., Level, M., & Richard, R. (2016). Identity socialization and construction within the French national rugby union women's team. *International Review for the Sociology of Sport*, 51(2), 162–177. <https://doi.org/10.1177/1012690213517108>
- Kassouf, J. (2020, August 19). Sacramento closes in on the NWSL, again. *The Equalizer*. <https://equalizersoccer.com/2020/08/19/sacramento-republic-nwsl-expansion-2021-report/>
- Kian, E. M., & Hardin, M. (2009). Framing of sports coverage based on the sex of sports writers: Female journalists counter the traditional gendering of media coverage. *International Journal of Sport Communication*, 2, 185–204. <https://doi.org/10.1123/ijsc.2.2.185>

- Krause, A., Rinne, U., & Zimmermann, K. F. (2012). Anonymous job applications in Europe. *IZA Journal of European Labor Studies*, 1(1), 1–20. <https://doi.org/10.1186/2193-9012-1-5>
- Lawless, J. L. (2009). Sexism and gender bias in election 2008: A more complex path for women in politics. *Politics and Gender*, 5(1), 70–80. <https://doi.org/10.1017/S1743923X09000051>
- Lee, W., & Cunningham, G. B. (2018). Group diversity’s influence on sport teams and organizations: a meta-analytic examination and identification of key moderators. *European Sport Management Quarterly*, 19(2), 139-159. <https://doi.org/10.1080/16184742.2018.1478440>
- Leslie, S. J., Cimpian, A., Meyer, M., & Freeland, E. (2015). Expectations of brilliance underlie gender distributions across academic disciplines. *Science*, 347(6219), 262–265. <https://doi.org/10.4135/9781483392240.n8>
- Litchfield, C., & Kavanagh, E. (2019). Twitter, team GB and the Australian Olympic team: Representations of gender in social media spaces. *Sport in Society*, 22(7), 1148–1164. <https://doi.org/10.1080/17430437.2018.1504775>
- Matheson, D. (2021, July 7). Bridge-building time for women’s soccer. CBC. <https://www.cbc.ca/playersvoice/entry/diana-matheson-bridge-building-time-for-womens-soccer>
- Mendoza, C., & Zurka, K. (2021, December 17). The summit for democracy: Advancing gender equity and equality for representative societies. U.S. Department of State. Available at:

<https://www.state.gov/dipnote-u-s-department-of-state-official-blog/the-summit-for-democracy-advancing-gender-equity-and-equality-for-representative-societies/>

Mengel, F., Sauermann, J., & Zölitz, U. (2019). Gender bias in teaching evaluations. *Journal of the European Economic Association*, 17(2), 535–566. <https://doi.org/10.1093/jeea/jvx057>

Micelotta, E., Washington, M., & Docekalova, I. (2018). Industry gender imprinting and new venture creation: The liabilities of women's leagues in the sports industry. *Entrepreneurship Theory and Practice*, 42(1), 94–128.

<https://doi.org/10.1177/1042258717732778>

Mitra, D., & Golder, P. N. (2006). How does objective quality affect perceived quality? Short-term effects, long-term effects, and asymmetries. *Marketing Science*, 25(3), 230-247.

<https://doi.org/10.1287/mksc.1050.0175>

Morganson, V. J., Jones, M. P., & Major, D. A. (2010). Understanding women's underrepresentation in science, technology, engineering, and mathematics: The role of social coping. *Career Development Quarterly*, 59(2), 169–179.

<https://doi.org/10.1002/j.2161-0045.2010.tb00060.x>

Moss-Racusin, C. A., Dovidio, J. F., Brescoll, V. L., Graham, M. J., & Handelsman, J. (2012). Science faculty's subtle gender biases favor male students. *Proceedings of the National Academy of Sciences of the United States of America*, 109(41), 16474–16479.

<https://doi.org/10.1073/pnas.1211286109>

Negley, C. (2019, December 16). Charlotte's MLS expansion fee reportedly a record \$325m -- two-thirds more than recent expansions. *Yahoo Sports*. <https://sports.yahoo.com/charlotte->



[will-reportedly-become-30th-mls-franchise-for-record-325-m-twothirds-more-than-recent-expansions-212710659.html](https://doi.org/10.1111/ecin.12462)

Pawlowski, T., Nalbantis, G., & Coates, D. (2018). Perceived game uncertainty, suspense and the demand for sport. *Economic Inquiry*, 56(1), 173-192. <https://doi.org/10.1111/ecin.12462>

Pegoraro, A., Comeau, G. S., & Frederick, E. L. (2018). # SheBelieves: The use of Instagram to frame the US Women's Soccer Team during# FIFAWWC. *Sport in Society*, 21(7), 1063-1077. <https://doi.org/10.1080/17430437.2017.1310198>

Pegoraro, A., Kennedy, H., Agha, N., Brown, N., & Berri, D. (2021). An analysis of broadcasting media using social media engagement in the WNBA. *Frontiers in Sports and Active Living*, 3, 658293. <https://doi.org/10.3389/fspor.2021.658293>

Régner, I., Thinus-Blanc, C., Netter, A., Schmader, T., & Huguet, P. (2019). Committees with implicit biases promote fewer women when they do not believe gender bias exists. *Nature Human Behaviour*, 3(11), 1171–1179. <https://doi.org/10.1038/s41562-019-0686-3>

Sah, S., Robertson, C. T., & Baughman, S. B. (2015). Blinding prosecutors to defendants' race: A policy proposal to reduce unconscious bias in the criminal justice system. *Behavioral Science & Policy*, 1(2), 69–76. <https://doi.org/10.1353/bsp.2015.0013>

Scheidler, T., & Wagstaff, A. (2018). Exposure to women's sports: Changing attitudes toward female athletes. *The Sport Journal*, 20(11), 1–14.

Silverman, A. (2020, September 28). The sports industry's Gen Z problem. Available at: <https://morningconsult.com/2020/09/28/gen-z-poll-sports-fandom/>

Snowberg, E., & Yariv, L. (2021). Testing the waters: Behavior across participant pools. *American Economic Review*, 111(2), 687–719. <https://doi.org/10.1257/aer.20181065>

- Sveinson, K., Hoerber, L., & Toffoletti, K. (2019). “If people are wearing pink stuff they’re probably not real fans”: Exploring women’s perceptions of sport fan clothing. *Sport Management Review*, 22(5), 736-747. <https://doi.org/10.1016/j.smr.2018.12.003>
- Taylor, E. A., Ward, R. M., Huml, M. R., & Darvin, L. (2022). Examining intercollegiate athletic department employees’ workplace behaviors using latent profile analysis. *Sport Management Review*, 25(1), 162-187. <https://doi.org/10.1080/14413523.2021.1899720>
- Taylor, T., Fujak, H., Hanlon, C., & O’Connor, D. (2020). A balancing act: Women players in a new semi-professional team sport league. *European Sport Management Quarterly*, 1-21. <https://doi.org/10.1080/16184742.2020.1815821>
- Travers, A. (2008). The sport nexus and gender injustice. *Studies in Social Justice*, 2(1), 79–101. <https://doi.org/10.26522/ssj.v2i1.969>
- Trolan, E. J. (2013). The impact of the media on gender inequality within sport. *Procedia - Social and Behavioral Sciences*, 91, 215–227. <https://doi.org/10.1016/j.sbspro.2013.08.420>
- UNESCO. (2021). Gender equality in sports media. Available at: <https://en.unesco.org/themes/gender-equality-sports-media>
- United Nations (2022). Empower women in the workplace, marketplace and community. United Nations Global Compact. Available at: <https://www.unglobalcompact.org/what-is-gc/our-work/social/gender-equality>
- Valenti, M., Scelles, N., & Morrow, S. (2020). The determinants of stadium attendance in elite women’s football: Evidence from the UEFA Women’s Champions League. *Sport Management Review*, 23(3), 509–520. <https://doi.org/10.1016/j.smr.2019.04.005>
- Valian, V. (1999). *Why so slow? The advancement of women*. The MIT Press.

Wicker, P., Cunningham, G. B., & Fields, D. (2019). Head coach changes in women's college soccer: An investigation of women coaches through the lenses of gender stereotypes and the glass cliff. *Sex Roles*, 81(11), 797-807. <https://doi.org/10.1007/s11199-019-01022-2>

Witteman, H. O., Hendricks, M., Straus, S., & Tannenbaum, C. (2019). Are gender gaps due to evaluations of the applicant or the science? A natural experiment at a national funding agency. *The Lancet*, 393(10171), 531–540. [https://doi.org/10.1016/S0140-6736\(18\)32611-4](https://doi.org/10.1016/S0140-6736(18)32611-4)

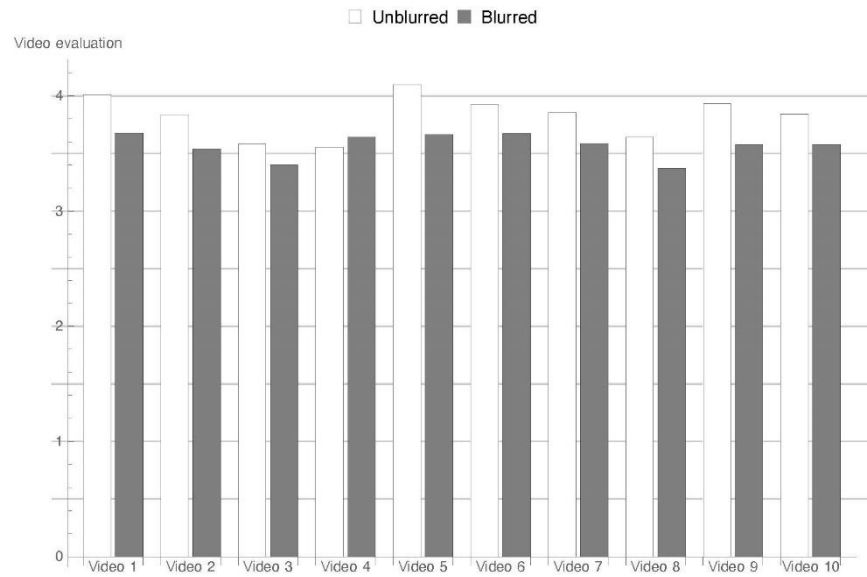
Zimbalist, A. (2019, April 10). Female athletes are undervalued, in both money and media terms. *Forbes*. Available at: <https://www.forbes.com/sites/andrewzimbalist/2019/04/10/female-athletes-are-undervalued-in-both-money-and-media-terms/?sh=696e28be13ed>

**Figure 1.** Example of unblurred videos (L) and blurred videos (R)



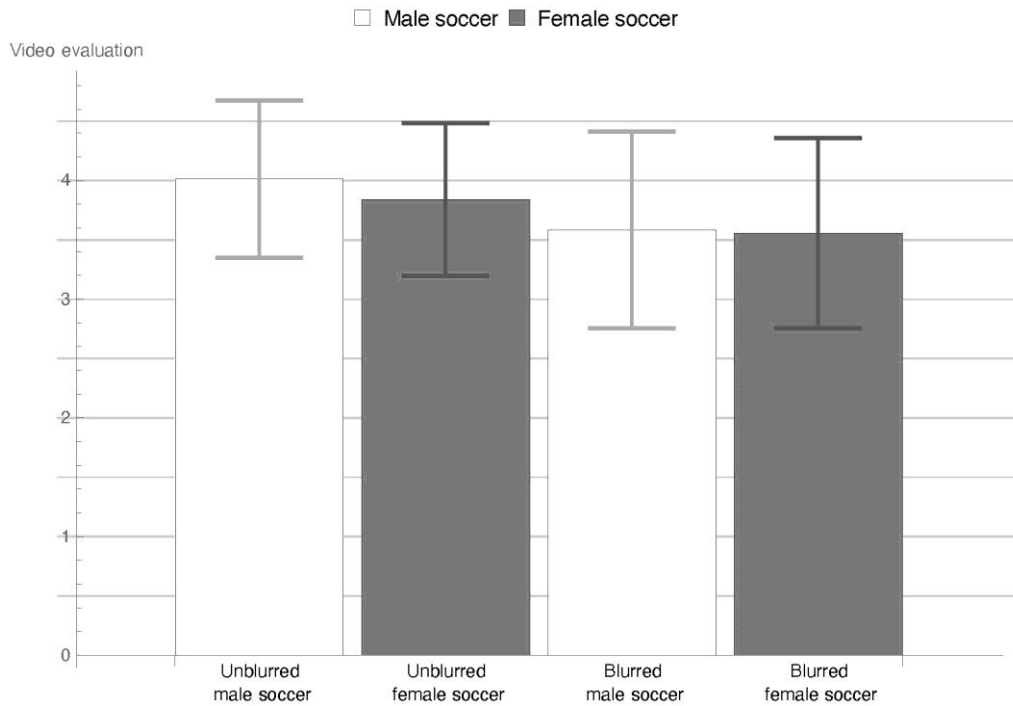
Note: a. The left image represents the characteristics of the unblurred condition (the gender of the players is clear to see). The right image represents the characteristics of the blurred condition (the gender of the players is concealed). b. These images are not extracted from the videos in the sample, which omit plays that involve corners, free kicks, penalty kicks, or tackles.

**Figure 2.** Evaluation for all videos under the two experimental conditions (average values)



Note: The unblurred condition represents the original videos where the gender of the players is clear to see (control group). The blurred condition represents the blurred videos where the gender of the players is concealed (treatment group). The outcome variable is the evaluation of the overall performance of the players (1 = *poor*; 5 = *excellent*).

**Figure 3.** Differences in evaluation between female and male soccer videos under the two experimental conditions (average values)



Note: a. The unblurred condition represents the original videos where the gender of the players is clear to see (control group). The blurred condition represents the blurred videos where the gender of the players is concealed (treatment group). b. The outcome variable is the evaluation of the overall performance of the players (1 = *poor*; 5 = *excellent*).

**Table 1.** Regression results. Responses to unblurred videos

	Dependent variable: Video evaluation			
	Model 1	Model 2	Model 3	Model 4
Female video	-0.17*** (0.054)	-0.17*** (0.054)	-0.17*** (0.053)	-0.17*** (0.053)
Gender of participant (female)		0.048 (0.054)	0.042 (0.054)	0.085 (0.062)
Age of participant		0.002 (0.003)	0.002 (0.03)	0.002 (0.003)
Participant watches often			0.23* (0.14)	0.22 (0.14)
Participant watches daily			-0.30*** (0.073)	-0.26*** (0.073)
Participant has no preference			omitted	omitted
Participant prefers female soccer			0.094 (0.090)	0.14 (0.091)
Participant prefers male soccer			-0.056 (0.11)	0.012 (0.11)
Sequence control				Yes
Continent control				Yes
Constant	4.01*** (0.038)	3.92*** (0.11)	3.89*** (0.17)	3.87*** (0.50)
Observations	580	580	580	570
<i>Adj. R</i> <sup>2</sup>	0.016	0.017	0.049	0.090

Note: a. The outcome variable is the evaluation of the overall performance of the players (1 = *poor*; 5 = *excellent*).

b. Standard errors in parentheses \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

c. Model 4 drops 10 observations from participants who did not report their place of residence.

**Table 2.** Regression results. Responses to blurred videos

	Dependent variable: Video evaluation			
	Model 1	Model 2	Model 3	Model 4
Female video	-0.027 (0.064)	-0.027 (0.063)	-0.023 (0.064)	-0.018 (0.059)
Gender of participant (female)		0.21*** (0.064)	0.19*** (0.065)	0.20*** (0.066)
Age of participant		0.013*** (0.003)	0.011*** (0.003)	0.024 (0.021)
Participant watches often			-0.032 (0.18)	-0.25 (0.17)
Participant watches daily			-0.25*** (0.086)	0.023 (0.085)
Participant has no preference			omitted	omitted
Participant prefers female soccer			-0.10 (0.10)	-0.081 (0.10)
Participant prefers male soccer			-0.57*** (0.13)	-0.35** (0.14)
Sequence control				Yes
Continent control				Yes
Constant	3.58*** (0.045)	3.00*** (0.13)	3.49*** (0.24)	3.13*** (0.52)
Observations	646	646	562	550
<i>Adj. R</i> <sup>2</sup>	0.000	0.041	0.102	0.214

Note: a. The outcome variable is the evaluation of the overall performance of the players (1 = *poor*; 5 = *excellent*).

b. Standard errors in parentheses \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

c. Model 3 drops 84 observations due to a coding error for the question about participants' preference for male or female soccer. Model 4 drops some additional observations from participants who did not report their place of residence. Omitting these observations does not significantly change the results in Models 1, 2 and 3.



**Appendix 1.** Additional information and analyses

**Table A1.** Videos in the experiment

<b>Video</b>	<b>Match</b>	<b>Scoring Player</b>	<b>Length (in sec)</b>	<b>Female</b>
1	Tottenham – Barcelona	Ivan Rakitić	14	No
2	Argentina - Croatia	Luka Modrić	6	No
3	Liverpool - Bayern	Sadio Mané	14	No
4	Manchester City -	Raheem Sterling	9	No
5	Russia - Croatia	Denis Cheryshev	9	No
6	Chelsea - Lyon	Erin Cuthbert	6	Yes
7	Norway – England	Lucy Bronze	5	Yes
8	Netherlands – Sweden	Jackie Groenen	7	Yes
9	Nigeria – Korea Republic	Asisat Oshoala	13	Yes
10	United States - Thailand	Alex Morgan	5	Yes

**Table A2.** Allocation of female and male videos in subsequent screens (S) across sequences

(Seq.)

	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
Seq. 1	♂	♂	♀	♂	♂	♀	♀	♂	♀	♀
Seq. 2	♀	♀	♀	♀	♂	♂	♂	♂	♂	♀
Seq. 3	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂
Seq. 4	♀	♂	♀	♂	♂	♂	♀	♂	♀	♀
Seq. 5	♀	♂	♀	♀	♂	♂	♂	♀	♀	♂
Seq. 6	♀	♀	♀	♀	♂	♂	♂	♂	♂	♀
Seq. 7	♂	♀	♀	♀	♂	♀	♂	♂	♀	♂

Notes: ♀ female video; ♂ male video

**Table A3.** Regression results. Responses to unblurred videos. Interaction terms

	Dependent variable: Video evaluation			
	Model 1	Model 2	Model 3	Model 4
Male video # Male participant	omitted	omitted	omitted	omitted
Male video # Female participant	0.0059 (0.077)	-0.015 (0.077)	-0.000 (0.076)	0.048 (0.082)
Female video # Male participant	-0.21*** (0.076)	-0.21*** (0.076)	-0.21*** (0.075)	-0.21*** (0.074)
Female video # Female participant	-0.12 (0.077)	-0.14* (0.077)	-0.13* (0.076)	-0.087 (0.082)
Age of participant		0.002 (0.003)	0.002 (0.003)	0.001 (0.003)
Participant watches often			0.23* (0.14)	0.22 (0.14)
Participant watches daily			-0.30*** (0.073)	-0.26*** (0.073)
Participant has no preference		omitted	omitted	omitted
Participant prefers female soccer		0.041 (0.090)	0.094 (0.090)	0.14 (0.091)
Participant prefers male soccer		-0.15 (0.11)	-0.056 (0.11)	0.012 (0.11)
Sequence control				Yes
Continent control				Yes
Constant	4.01*** (0.054)	3.96*** (0.139)	3.91*** (0.172)	3.89*** (0.50)
Observations	580	580	580	570
<i>Adj. R</i> <sup>2</sup>	0.015	0.021	0.046	0.087

Note: a. The outcome variable is the evaluation of the overall performance of the players (1 = *poor*; 5 = *excellent*).

b. Standard errors in parentheses \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

c. Model 4 drops 10 observations from participants who did not report their place of residence.

**Table A4.** Regression results. Responses to unblurred videos. Willingness to pay

	Dependent variable: Willingness to pay			
	Model 1	Model 2	Model 3	Model 4
Female video	-0.07** (0.029)	-0.07** (0.029)	-0.07** (0.027)	-0.07** (0.027)
Gender of participant (female)		0.049* (0.029)	0.048* (0.027)	0.016 (0.032)
Age of participant		-0.003** (0.002)	-0.004** (0.002)	- 0.005*** (0.002)
Participant watches often			0.16** (0.07)	0.19*** (0.07)
Participant watches daily			0.24*** (0.036)	0.22*** (0.037)
Participant has no preference			omitted	omitted
Participant prefers female soccer			0.10** (0.045)	0.085* (0.046)
Participant prefers male soccer			0.11** (0.054)	0.075 (0.057)
Sequence control				Yes
Continent control				Yes
Constant	0.79*** (0.020)	0.87*** (0.059)	0.47*** (0.085)	0.34*** (0.25)
Observations	579	579	579	569
<i>Adj. R</i> <sup>2</sup>	0.009	0.021	0.158	0.178

Note: a. The outcome variable is if a respondent would be willing to pay to see the whole match (0 or 1).

b. Standard errors in parentheses \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

c. Model 4 drops 10 observations from participants who did not report their place of residence.

**Table A5.** Regression results. Responses to blurred videos. Willingness to pay

	Dependent variable: Willingness to pay			
	Model 1	Model 2	Model 3	Model 4
Female video	-0.006 (0.029)	-0.006 (0.029)	-0.001 (0.030)	-0.001 (0.030)
Gender of participant (female)		-0.027 (0.030)	-0.032 (0.031)	-0.042 (0.033)
Age of participant		0.000 (0.002)	0.003** (0.002)	-0.012 (0.011)
Participant watches often			0.25*** (0.087)	0.27*** (0.087)
Participant watches daily			0.15*** (0.041)	0.15*** (0.043)
Participant has no preference			omitted	omitted
Participant prefers female soccer			0.10** (0.048)	0.13** (0.052)
Participant prefers male soccer			0.064 (0.062)	0.091 (0.070)
Sequence control				Yes
Continent control				Yes
Constant	0.69*** (0.021)	0.70*** (0.059)	0.17 (0.11)	0.24 (0.26)
Observations	646	646	562	550
<i>Adj. R</i> <sup>2</sup>	0.000	0.001	0.066	0.116

Note: a. The outcome variable is if a respondent would be willing to pay to see the whole match (0 or 1).

b. Standard errors in parentheses \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

c. Model 3 drops 84 observations due to a coding error for the question about participants' preference for male or female soccer. Model 4 drops some additional observations from participants who did not report their place of residence. Omitting these observations does not significantly change the results in Models 1, 2, and 3.

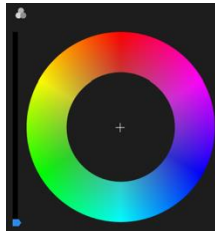
## Appendix 2. Parameters of the manipulated videos in Adobe Premiere Pro

### Mosaic function parameters:

- Feature details:
  - Stands and Fans (Surroundings):
    - Mask feather: 10.0; Mask Opacity: 100.0 %; Mask Expansion: 0.0 – 10.0
    - Horizontal Blocks: 10; Vertical Blocks: 10
    - Sharp Colors: No
  - Players:
    - Mask feather: 10.0; Mask Opacity: 100.0 %; Mask Expansion: 0.0 – 10.0
    - Horizontal Blocks: 100; Vertical Blocks: 100
    - Sharp Colors: Yes

### Lumetri Color function parameters:

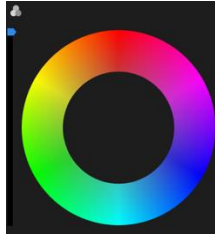
- Feature details:
  - “Black” Team:
    - HSL Secondary
    - Key
      - “Set Color” and “Add Color” with pipette in Video (select surroundings of players); Invert Mask: Yes
      - Correction:
      -



- Temperature: -100.0
- Tint: 100.0
- Contrast: 100.0
- Sharpen: 0.0
- Saturation: 0.0

- “White” Team:
  - HSL Secondary
  - Key
    - “Set Color” and “Add Color” with pipette in Video (select surroundings of Players); Invert Mask: Yes

- Correction:
- 



- Temperature: 100.0
- Tint: -100.0
- Contrast: 100.0
- Sharpen: 0.0
- Saturation: 0.0