Men and women react differently to a lack of sport audience

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Without an audience, men run slower and women run faster. The lack of spectators during the coronavirus pandemic appears to have had a noticeable effect on the performance of athletes at the 2020 Biathlon

World Cup, a new study by Martin Luther University Halle-Wittenberg (MLU) in *Psychology of Sport and Exercise* shows. According to the new analysis, women also performed better in complex tasks, such as shooting, when an audience was present while men did not.

Social facilitation theory states that a person's performance is impacted if other people watch them. The mere presence of an audience improves the performance of simple tasks, especially those that require stamina. "The studies have been relatively clear so far, but the results are more heterogeneous when it comes to more complex coordinative tasks," explains Amelie Heinrich from the Institute of Sports Science at MLU. In general, it is assumed that performance tends to deteriorate when there is an audience.

Heinrich is a sports psychology expert who coaches Germany's junior biathlon squad. In her new study she took advantage of the special situation in sport caused by the coronavirus. "The pandemic offers a unique opportunity to study an audience's influence outside of experimental conditions in the real world," says Heinrich. She compared the running times and shooting successes of male and female biathletes from the 2018/2019 season with their performances in the 2020 season in the sprint and mass start events. "The men's results were as expected: they ran faster with an audience present, but performed more poorly in shooting," says Heinrich. While cross-country skiing mainly requires stamina, shooting is a coordinative task. "Interestingly, it was the other way around for women." They ran slower in the presence of spectators, but on average, it took them an entire second less to make their shot and, at least in the sprint, their scoring performance was five per cent higher. The researchers believe the results are not only due to a fluctuation in the athletes' performance. The study had a good basis of evidence, with 83 (sprint) and 34 (mass start) World Cup biathletes, and the same tendency was shown for both disciplines.

"To our knowledge, this is the first time that a study was able to show a different effect of the audience on men and women," says Professor Oliver Stoll, head of the sports psychology section at MLU. Most of the previous studies on the topic have been conducted with men mostly. "Our study raises questions about the generalisability of the social facilitation theory and indicates there might be a previously unknown difference between men and women," says Heinrich. She says that this should be investigated more thoroughly in further studies for other sports that also contain both stamina-related and coordination-related elements.

So far, the researchers can only speculate about the reasons for the possible gender-specific performance differences in response to audiences or the lack of one. "It is possible that gender-specific stereotypes play a role," says Heinrich. For example, men are considered to be physically stronger—a stereotype that could be reinforced by the presence of spectators. Some studies also show that women react more sensitively to feedback. In any case, according to Heinrich, the findings show once again that gender should be taken into account in psychological studies as a possible influencing factor.

More information: Amelie Heinrich et al, Selection bias in social facilitation theory? Audience effects on elite biathletes' performance are gender-specific, *Psychology of Sport and Exercise* (2021). DOI: 10.1016/j.psychsport.2021.101943

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