

# Chapter 77

## Gender Differences, Social Loss Aversion and Sports Performance in Japanese Schoolchildren

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### ABSTRACT

*In this paper, we investigated the relationship between social loss aversion and the competitive sports performance. We found that social loss aversion significantly affected the competitive sports performance in a homogeneous group of male students, but not female students, and that these effects were consistent across various sports drills. In particular, the gender of a reference person was pivotal to determining the effects of social loss aversion. We also showed that social risk aversion did not significantly affect performance in competitive sports drills.*

### 1. INTRODUCTION

So far, economic preferences and performance in competitive sports activities have been treated in isolation. Alternatively, in determining whether individuals enter into a competition or not, some studies have examined the role of preferences and have shown gender differences (Cason et al., 2010; Cárdenas et al., 2012). In this paper, we used field data of competitive sports drills to investigate the relationship between preferences and performance in sports competition, and whether gender differences in this impact exist or not.

A growing body of experimental literature studies how children perform sport under different type of incentive schemes. Gender differences have been widely observed in the performance changes between solo and paired competition. For example, existing studies have indicated that men or boys enjoy

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competing with others (e.g., Gneezy & Rustichini, 2004) in that they can attain better records in paired rather than individual competition. More recent studies (e.g., Dreber et al., 2011; C'ardenas et al., 2012) have corroborated this finding in "masculine" sports actions such as the 50-m run, but not in "feminine ones" such as skipping rope.

However, as argued in Niederle and Vesterlund (2011), most studies do not find gender differences in competitiveness as measured from sport competitions, and stated two reasons why gender differences cannot be seen: *First, sports competitions are typically within gender,...the gender gap in competitiveness is smaller or absent in single-sex competitions. Second, performance in a sport competition is rather precisely measured. Hence gender differences in overconfidence may be smaller in these environments, resulting in a smaller gender gap in competitiveness.* In fact, these factors are commonly observed in almost all sports activities; therefore, it might be intuitively difficult to confirm gender differences in sports competitions.

From viewpoints of gender issues, the sexual selection theory of "young-male syndrome" posits that resources map onto fitness differently for males and females, which shows that males take more risk on average than females, and in male-male environment males tend to take more risk (see Wilson and Daly 1985, Farthing 2005, Fischer & Hills, 2012). Considering that sport environment is a kind of winner-takes-all environment, and is generally held by single-sex competitions, gender differences might be based on young-male syndrome, predicting that young-male syndrome stimulates sports performance in males but not in females. Some studies offer evidence that supports this prediction (e.g., Fink et al., 2010; Hugill et al., 2011). For example, Fink et al. (2010) confirmed a significant positive relationship between handgrip strength and sensation-seeking scores in men. That is, men with stronger degrees of young-male syndrome performed better in competitive sports activities.

As for economic preferences, Daly and Wilson (2001) mentioned that the economic preferences elicited in *choice problems* may be an alternative variable of the young-male syndrome because a conception of risk-taking can be regarded as a payoff variance in the choice problems. That is, since in the choice problems, one must choose between a safe lottery and a risky one that might yield a higher payoff but with a lower probability than the safe lottery (see Holt & Laury, 2002), obtaining greater gain in a choice problem would be similar to winning in a game or race. For example, many studies have found that women are more risk averse than men in the vast field of economic decisions. (See review by Croson & Gneezy, 2009; and Niederle & Vesterlund, 2011). Schmidt and Traub (2002) reported that women exhibited a high degree of loss aversion. Then, Daly and Wilson (2001) focused on loss aversion (per Kahneman & Tversky, 1979), not risk aversion, as an appealing preference related to young-male syndrome because a loss (resp., gain) from one reference point corresponds to losing (resp., winning) in a game, while they did not examine the correlation between loss aversion and human-being behavior related to the young male syndrome.

In this paper, when we treated the performance of competitive sport drills as a variable related to the young male syndrome, we examined the relationship between the loss aversion and the young male syndrome. In particular, our paper elicited the degrees of *social* loss aversion, which is a preference in comparison with a reference person. The reason why we focus on the social loss aversion, not the loss aversion, is that the degree of social loss aversion would reflect the characteristics of young male syndrome more clearly than the degree of loss aversion. That is, the degree of loss aversion means the degree to which people dislike losing from own reference point, which does not include the element of losing or winning others; and alternatively, the degree of social loss aversion in a male-on-male choice problem shows the degree to which a male dislikes losing a reference male. As a result, if the social loss

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