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# Determinants of pro-environmental behavior among voluntary sport club members

## Introduction

In recent years, environmental sustainability and climate change have become an increasingly important issue in the public debate (Mallen & Chard, 2011). The average global temperature has increased over 1.5°C over the past decades and will continue to increase if greenhouse gas emissions are not reduced immediately (Intergovernmental Panel on Climate Change [IPCC], 2018). Changes of components in the climate system cause severe weather events such as cyclones, floods, and droughts to occur more frequently (Mallen & Chard, 2011). As a consequence, the German government will put a price on carbon dioxide (CO<sub>2</sub>) in the form of certificate trading in 2021 (German Government, 2019), ultimately hoping to encourage pro-environmental behavior of the population.

Sustainability questions and pro-environmental behavior reached the sport industry as early as the 1992 Winter Olympic Games in Albertville (Cantelon & Letters, 2000). Since then, the International Olympic Committee (IOC) and other professional sport organizations have developed sustainability strategies to face public criticism. However, sport policies, especially on the club level, continue to primarily focus on health and social outcomes and largely neglect pro-environmental initiatives (Wicker, 2019). However, to initiate change and facilitate pro-environmental behavior, knowledge about the factors contributing or restricting such behavior is important (e.g., Kennedy, Krahn, & Krogman, 2015). Within sport, studies

examining the environmental impacts of sport and issues of environmental sustainability have just emerged during the last decade (McCullough, Orr, & Watanabe, 2019; McCullough, Orr, & Kellison, 2020).

This scarcity of sport research mismatches the United Nations' view of sport as a possible touchpoint for engaging individuals in climate change issues and promoting sustainable behavior at sport events and in people's everyday lives (United Nations [UN], 2017). Since voluntary sport clubs represent the heart of the organized sport system in Germany, they represent an important organizational context for demonstrating environmentally sustainable behavior. Specifically, the clubs' environmental sustainability largely depends on their members' willingness to act in a responsible and pro-environmental manner (Steg & Vlek, 2009). At the sport policy level, pro-environmental behavior is encouraged by the German Olympic Sports Confederation (DOSB) which provides consultancy for clubs in this regard (DOSB, n.d.). From a government perspective, no specific incentives or grants are currently provided for sport clubs to behave in a pro-environmental manner. However, the extension of the carbon tax to transport and buildings (e.g., heating; German Government, 2019) will also affect grassroots sport clubs and might represent an incentive to save money. For club management and policy advice, information is needed about the factors that contribute to showcasing pro-environmental behavior (Steg & Vlek, 2009).

This study aims to enhance our understanding of sport club members' pro-environmental behavior in five team/racket sports. Specifically, this study investigates factors associated with two measures of pro-environmental behavior, including the carbon footprint caused by traveling to weekly training sessions and pro-environmental actions in different areas. The research context of sport clubs is selected because club members were found to behave less environmentally friendly in terms of travel behavior than non-club sport participants (Wicker, 2019). The authors advance the following research question: What factors affect the pro-environmental behavior of voluntary sport club members? This research question is answered using data from a nationwide online survey of active, adult sport club members in basketball, football, handball, ice hockey, and tennis clubs. This study contributes to the existing knowledge on environmental sustainability in sport by looking at the context of voluntary sport clubs.

## Theoretical framework and literature review

### Indicators of pro-environmental behavior

As an integral part of the environmental sustainability concept, pro-environmental behavior increasingly attracts scholarly attention (Kennedy et al., 2015). It is defined as “individual behaviors contributing to environmental sustainability (such as limiting energy consumption, avoiding waste, recycling, and environmental activism)” (Mesmer-Magnus,