Ger J Exerc Sport Res 2021 · 51:29–38
<https://doi.org/10.1007/s12662-020-00700-8>
 Received: 8 October 2020
 Accepted: 8 December 2020
 Published online: 5 January 2021
 © The Author(s) 2020

Tim F. Thormann · Pamela Wicker

Department of Sports Science, Bielefeld University, Bielefeld, Germany

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 (CO₂) 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,

Viswesvaran, & Wiernik, 2012, p. 160). Pro-environmental behavior can be performed either publicly or privately and is characterized to be intentional as well as freely selected. Following previous research, this study applies two indicators of pro-environmental behavior: Pro-environmental actions (Diekmann & Preisendörfer, 2003) and carbon footprint (Wicker, 2019).

First, pro-environmental actions can be divided into four behavioral categories, namely recycling (waste), shopping (consumption), energy, and transportation behavior (Diekmann & Preisendörfer, 2003). Most commonly, those categories were studied separately from each other and not altogether (e.g., Casper, McCullough, & Pfahl, 2020). Within sport, recycling behavior was examined among sport spectators in college sports (Casper et al., 2020) and running event participants (Trail & McCullough, 2018). In contrast, energy and general consumption behavior has not been investigated in the sport context.

Second, an individual's carbon footprint is regarded as a quantitative indicator for pro-environmental behavior (Dolf & Teehan, 2015). It is defined as "a measure of the exclusive total amount of carbon dioxide emissions that is directly and indirectly caused by an activity or is accumulated over the life stages of a product" (Wiedmann & Minx, 2008, p. 4). In detail, the concept of carbon footprint allows the inclusion of different greenhouse gases (i.e., methane and nitrous oxide). These are converted into carbon dioxide equivalents (CO₂-e) which are accountable for 75% of all anthropogenic greenhouse gas emissions (IPCC, 2018). Following Wicker (2019), low emission levels reflect high levels of pro-environmental behavior.

Carbon footprint analysis needs clear organizational, temporal, and operational boundaries (Franchetti & Apul, 2013). In this study, the organizational boundary includes active, adult members of voluntary sport clubs with permanent residency in Germany, while the temporal boundary refers to one month. Concerning the operational boundary, three different scopes of emissions are distinguished. Scope 1 emissions are

direct emissions resulting from the individual itself through consumptions of fuel, i.e., driving to training sessions in the present research context. Scope 2 and 3 emissions are indirect emissions (i.e., energy usage in the sport club) which are important for a full life-cycle assessment of carbon footprint analyses. However, they cannot be easily observed or reported, making it impossible for participants to possess the needed information (Franchetti & Apul, 2013). Accordingly, only scope 1 emissions are included in this research.

With growing awareness of climate change as a global problem and the need for reducing greenhouse gas emissions in connection with CO₂ emissions trading, carbon footprint analysis has gained increased attention in the field of sport in recent years. Particularly, the carbon footprints of sport spectators (e.g., Collins, Munday, & Roberts, 2012), sport tourists (Wicker, 2018), and sport participants (e.g., Wicker, 2019) were investigated. For example, the average carbon footprint of spectators was estimated at 7.67 kg CO₂-e in the 2003/2004 FA Cup final (Collins, Flynn, Munday, & Roberts, 2007), 20.2 kg CO₂-e at the 2004 Wales Rally (Jones, 2008), 25.4 kg CO₂-e at the 2014 World Orienteering Championships (Scrucca, Severi, Galvan, & Brunori, 2016), and 50.5 kg CO₂-e for at the UK stages of the 2007 Tour de France (Collins et al., 2012). Carbon footprints were also estimated for different types of active sport participants, including members of sport teams (Chard & Mallen, 2012; Dolf & Teehan, 2015), snow sport tourists (Wicker, 2018), and general sport participants in different sports (Wicker, 2019). Looking at the sports included in this work, the latter study identified average annual carbon footprints from 243.1 kg CO₂-e (tennis) to 681.3 kg CO₂-e (basketball), with training-related traveling representing the largest contributor. Accordingly, this study uses the carbon footprint caused by traveling to the weekly training as indicator of pro-environmental behavior.

Determinants of pro-environmental behavior

While the role of different factors in explaining pro-environmental behavior has been mainly explored beyond sport (e.g., Leach, 2007; Nilsson & Küller, 2000), little research has been conducted within grassroots sport (Wicker, 2019). The next paragraphs discuss the anticipated effects of environmental consciousness, gender, and income on pro-environmental behavior.

The concept of environmental consciousness includes cognitive (e.g., knowledge about environmental consequences of behavior), conative (e.g., willingness to act and protect the environment), and emotional components (e.g., reaction to environmental damages; Diekmann & Preisendörfer, 2003). Since the connection between environmental attitudes, awareness, and pro-environmental behavior is complex in nature, multiple theoretical approaches were provided to explain what determines individuals' pro-environmental behavior (Kollmuss & Agyeman, 2002). The theory of planned behavior describes the link between behavioral intentions and actual behavior, with attitudes, subjective norms, and perceived behavioral control affecting the strength of behavioral intentions (Ajzen, 1991). This intention-behavior relationship was empirically confirmed through multiple experimental tests (Webb & Sheeran, 2006). Drawing on this theory, stronger environmental consciousness is expected to translate into pro-environmental behavior. The positive relationship between environmental consciousness and pro-environmental behavior is also supported by other theoretical models (Kollmuss & Agyeman, 2002).

However, empirical studies discovered mixed results. For example, Kennedy et al. (2015) showed that environmental consciousness is the strongest predictor of pro-environmental behavior beyond sport. Likewise, higher environmental consciousness was positively associated with environmentally friendly travel behavior (Nilsson & Küller, 2000). Within sport, a positive relationship was documented between environmental be-

T. Thormann · P. Wicker

Determinants of pro-environmental behavior among voluntary sport club members

Abstract

Environmental sustainability and climate change have become increasingly important in public debates and politics. This study examines the determinants of sport club members' pro-environmental behavior in Germany. Theoretically, we draw on the theory of planned behavior, ecofeminism, and the luxury good hypothesis to explain the effects of individuals' environmental consciousness, gender, and income on their pro-environmental behavior, respectively. Data collection took place in 2019 and 2020 via a nationwide online survey of active sport club members in five team/racket sports ($n = 3038$). Regression analyses were estimated to examine the determinants of two indicators of pro-environmental behavior, i.e., the monthly carbon footprint resulting from traveling to training sessions and pro-environmental actions. The results reveal that environmentally conscious members behave more environmentally friendly, supporting the theory of planned behavior. Women have a significantly higher carbon footprint, but only in the model including the interaction with environmental consciousness, indicating that female gender only works in conjunction with environmental attitudes. Income is associated with a significantly higher carbon footprint for training, while it has no effect on pro-environmental actions related to club sport. The findings have implications for sport managers and policy makers.

Keywords

Climate change · Environment · Carbon footprint · Nonprofit organization · Sustainability

liefs and pro-environmental behavioral intentions among spectators in collegiate athletics (Casper, Pfahl, & McCullough, 2014). In contrast, other studies suggested that environmental consciousness does not automatically turn into pro-environmental behavior. For example, investigations of athletic department members (Casper et al., 2014), sport tourists (Wicker, 2018), and participants in individual and nature sports (Wicker, 2019) revealed a gap between environmental consciousness and actual behavior which is called the “environmental value–action gap” (Blake, 1999, p. 268). Despite the mixed empirical evidence, the first hypothesis is in line with presented theoretical arguments:

H1. The higher an individual's environmental consciousness, the higher his/her level of pro-environmental behavior.

The role of gender has been widely discussed in environmental research, with several studies indicating that women act more environmentally friendly than men (e.g., Casper, Pfahl, & McCullough, 2017; Leach, 2007). This gender difference is explained by different conceptualizations of the world, resulting in the concept of ecofeminism (Sakellari & Skanavis, 2013). One component of this conceptualization is women's stronger altruism and a caring ethic that has its origin in role allocations within families and expanded into caring for the environmental nature (Leach, 2007).

Several studies confirmed the concept of ecofeminism empirically (e.g., Briscoe, Givens, Hazboun, & Krannich, 2019). For instance, women were found to express stronger environmental concern than men, yielding a higher engagement in pro-environmental behavior in private and public spheres (Briscoe et al., 2019). This concern translates not only into better recycling behavior (Longhi, 2013), but also into a higher likelihood of environmentally friendly shopping behavior (Lynn & Longhi, 2011). Moreover, women showed more environmentally friendly travel behavior than men (Briscoe et al., 2019; Nilsson & Küller, 2000). Within sport, female spectators rated environmental initiatives as an important factor for purchasing tickets and

improving the university's image, while they were also more likely to undertake environmental activities at home and during sport events (Casper et al., 2017). Even though some studies could not find gender differences in sport pro-environmental behavior (Wicker, 2018, 2019), the first part of the second hypothesis follows the theoretical arguments and large parts of the empirical evidence:

H2a. Women behave more environmentally friendly than men.

The environmental literature also stresses that women have stronger environmental attitudes and concern than men (e.g., Sakellari & Skanavis, 2013; Zelezny, Chua, & Aldrich, 2000). Even though gender differences are higher when it comes to actual pro-environmental behavior (Zelezny et al., 2000), environmental attitudes and concern represent important preconditions for behaving in an environmentally friendly manner (Kollmuss & Agyeman, 2002). The moderating role of environmental consciousness is reflected in the second part of the second hypothesis:

H2b. The association between female gender and pro-environmental behavior is moderated by environmental consciousness in the sense that environmentally conscious women behave more environmentally friendly.

Income also plays a role in explaining individuals' pro-environmental behavior, with two competing theoretical explanations being available regarding the anticipated effect (e.g., Brand & Preston, 2010; Clark, Kotchen, & Moore, 2003). On the one hand, the luxury good hypothesis holds that wealthier people are more likely to perform pro-environmental behavior which is typically costly, and only people with higher incomes can afford it (Preisendörfer, 1999). This assumption was empirically confirmed for purchasing environmentally friendly products (Laroche, Bergeron, & Barbaro-Forleo, 2001) and investing in energy efficient programs (Clark et al., 2003).

On the other hand, income was found to be negatively associated with pro-environmental *travel* behavior (e.g., Brand & Preston). This pattern is rooted in high

income classes having a higher demand for air travel (Brons, Pels, Nijkamp, & Rietveld, 2002) and car usage (Brand & Preston, 2010), resulting in more greenhouse gas emissions than individuals with lower income. Within sport, income was found to be positively associated with travel distances (Whitehead & Wicker, 2018), ultimately yielding higher carbon footprints for active sport tourists (Wicker, 2018)

and sport participants (Wicker, 2019). Given the diverse expectations for both indicators of pro-environmental behavior, the third hypothesis is two-fold:

H3a. Income is positively associated with pro-environmental actions.

H3b. Income is positively associated with an individual's carbon footprint.

Methods

Data collection

The data were gathered using a nationwide online survey of active sport club members in Germany in five different sports, including basketball, tennis, football, handball, and ice hockey. The minimum age for driving a car is 17 years in Germany. Hence, respondents had to be at least 17 years old, because the possibility of car usage is relevant for pro-environmental travel behavior. Separate online surveys were programmed for each sport on the platform www.soscsurvey.de. Data were collected June 2019 until March 2020, with the data collection ending due to pandemic-related closures of voluntary sport clubs in March 2020.

The survey links were distributed on various online channels, including social media platforms, sport-specific internet fora, and contact emails of sport clubs which forwarded the link to their members. This convenience and top-down snowball sampling procedure has already been used in previous research on sport club members (e.g., Kiefer, 2015). Altogether, 3329 respondents finished the online survey. However, 291 observations had to be deleted because of failing internal validity checks (e.g., activity years $\geq$ age) or rushing through the survey and providing the same answer to several consecutive questions. A final sample with $n = 3038$ respondents was left for the empirical analysis.

Questionnaire and variables

A standardized questionnaire asking about club members' pro-environmental behavior, environmental consciousness as well as sport, club, and socio-de-

mographic characteristics was adapted for each sport. **Table 1** provides an overview of all variables used in the empirical analysis.

Club members' pro-environmental behavior was assessed with two measures, a scale consisting of pro-environmental actions in four categories and the monthly carbon footprint caused by training-related travel. Concerning pro-environmental actions, the original scale from Diekmann and Preisendörfer (2003) was slightly adapted to fit the sport club context. It assessed respondents' behavior with eight items covering the categories waste, consumption, energy, and transportation (**Table 2**). Respondents were asked to state how frequently they performed the respective behavior in the last two weeks. Reliability tests suggested that reliability can be improved by excluding items 4 and 7. The resulting *Pro-environmental actions* index reflects the average of the remaining six items. With a Cronbach's alpha (α) of 0.654, it has moderate reliability (Hinton, McMurray, & Brownlow, 2004).

The carbon footprint resulting from traveling to training sessions was calculated from three questions, including club members' weekly frequency of training sessions, the one-way travel distance to the training facility, and the transportation mean they usually used to get to the facility. The transportation means offered in the survey match those of the Federal Environmental Office (2018), which provides the following average direct emissions (scope 1) for the following transportation means (in g CO₂-e): Passenger car (139); urban bus (75); short-distance (local) railway (60); long-distance railway (36); tram, underground, and city railway (64). The categories foot (0) and bike/E-bike (0) were added to the answer options. Based on these emission factors, travel distances can be converted into CO₂-e and carbon footprints, respectively. Specifically, the respective emission factor for the used transportation mean was multiplied by the weekly training frequency, the distance travelled * 2, and by 4.348 to obtain an individual's monthly carbon footprint from training-related travel (*CF training*).

Respondents' environmental consciousness was assessed by drawing on an existing scale (Diekmann & Preisendörfer, 2003) which comprised nine items (**Table 3**). The scale contains affective (items 1–3), conative (items 4+7+9), and cognitive (items 5+6+8) components and reflects respondents' general attitude about environmental protection (Diekmann & Preisendörfer, 2003). Construct reliability of the scale was assessed using Cronbach's α that suggests strong reliability with a value of 0.842 (Hinton et al., 2004). The final environmental consciousness index (*Environmental consciousness*) represents the average of the nine items. Since pro-environmental behavior is also determined by social norms and perceived behavioral control, as suggested by the theory of planned behavior (Ajzen, 1991), this study includes the variables *Social norms* and *Behavioral control*.

Turning to sport and club characteristics, respondents were asked about their average weekly number of hours they practice their sport (*Sport participation*) and their performance level. Performance level encompassed the following five performance categories (e.g., Wicker, 2019): *Occasional athlete* (irregular participation); *Leisure athlete* (regular participation); *Mass sport athlete* (local competitions); *Performance athlete* (regional competitions); and *Elite athlete* (national/international competitions). Since the performance level was self-assessed, the reported levels were compared to respondents' leagues (team sports) and performance class (tennis), respectively. Since clubs with environmentally friendly installments like water-saving water fountains provide a favorable environment for performing pro-environmental behavior, the study includes a measure for the environmental quality of the respondents' club (*Environmental quality*).

Several sociodemographic characteristics were captured following previous environmental and sport literature (Kennedy et al., 2015; Wicker, 2019), including gender (*Female*), age (*Age*), highest educational level (*Low education*; *A-levels*; *University*), personal monthly net income (*Income*), and postcode

Table 1 Overview of variables and descriptive statistics ($n = 3038$)

Variable	Description	Mean	SD
Pro-environmental actions	Pro-environmental actions index (1 = never; 5 = always; items see Table 2)	3.49	0.90
CF training	Monthly carbon footprint for training sessions (in kg CO ₂ -e)	34.39	67.35
CF tennis	Monthly carbon footprint for tennis (in kg CO ₂ -e)	10.08	22.89
CF ice hockey	Monthly carbon footprint for ice hockey (in kg CO ₂ -e)	46.40	60.45
CF basketball	Monthly carbon footprint for basketball (in kg CO ₂ -e)	24.35	42.19
CF handball	Monthly carbon footprint for handball (in kg CO ₂ -e)	38.61	63.93
CF football	Monthly carbon footprint for football (in kg CO ₂ -e)	52.47	96.92
Environmental consciousness	Environmental consciousness index (1 = not environmentally conscious at all; 5 = highly environmentally conscious; items see Table 3)	3.72	0.71
Social norms	Most people who are important to me think that I should behave environmentally friendly (1 = totally disagree; 5 = totally agree)	3.50	0.98
Behavioral control	Environmentally friendly behavior is easily possible in my club (1 = totally disagree; 5 = totally agree)	3.44	1.03
Sport participation	Number of weekly hours the sport is practiced	4.98	3.12
Occasional athlete	Athletes practicing irregularly, but not competing (1 = yes; 0 = no)	0.131	–
Leisure athlete	Athletes practicing regularly, but not competing (1 = yes; 0 = no)	0.288	–
Mass sport athlete	Athletes competing locally (1 = yes; 0 = no)	0.437	–
Performance athlete	Athletes competing regionally (1 = yes; 0 = no)	0.133	–
Elite athlete	Athletes competing (inter)nationally (1 = yes; 0 = no)	0.011	–
Environmental quality	Club's environmental quality (1 = very poor; 5 = very good)	3.38	0.86
Female	Respondent's gender (1 = female; 0 = male)	0.326	–
Age	Respondent's age (in years)	32.18	14.61
Age squared	Age * Age	1248.88	1246.24
Low education	Educational level is below A-levels (1 = yes; 0 = no)	0.224	–
A-levels	Educational level is A-levels (1 = yes; 0 = no)	0.405	–
University	Educational level is university or university of applied sciences degree (1 = yes; 0 = no)	0.371	–
Income	Personal monthly net income (in €)	1816.82	1263.25
Ice hockey	Ice hockey (1 = yes; 0 = no)	0.153	–
Basketball	Basketball (1 = yes; 0 = no)	0.208	–
Football	Football (1 = yes; 0 = no)	0.289	–
Handball	Handball (1 = yes; 0 = no)	0.124	–
Tennis	Tennis (1 = yes; 0 = no)	0.226	–
Postcode	Dummy variables for Germany's ten postcode regions	–	–

CF carbon footprint

Table 2 Pro-environmental actions scale ($n = 3038$)

No.	Dimension	Items (1 = never; 5 = always)	Mean	SD
1	Recycling	I separated plastic and paper waste	3.42	1.47
2	Recycling	I separated glass and bio waste	3.54	1.53
3	Consumption	I used reusable bottles while playing SPORT	3.56	1.54
4	Consumption	When buying SPORT articles, I relinquished the bags ^a	2.75	1.41
5	Energy	While putting on shampoo during the shower, I turned off the water	3.27	1.46
6	Energy	I turned off the lights, when leaving the locker room as the last person	3.91	1.50
7	Transportation	I used environmentally friendly transportation means (public transportation system) in order to get to training ^a	2.77	1.50
8	Transportation	I used carpooling in order to get to training	3.26	1.42
–	Pro-environmental actions (index)		3.49	0.90
–	Cronbach's α		0.654	–

SPORT was replaced by the respective type of sport in the survey

^aitem was removed for the calculation of the final pro-environmental actions index

Table 3 Environmental consciousness scale ($n = 3038$)

No.	Dimension	Items (1 = strongly disagree; 5 = strongly agree)	Mean	SD
1	Affective	It worries me when I think about the environmental circumstances under which our children and grandchildren have to live	3.90	1.10
2	Affective	When watching TV or reading newspaper article about environmental problems, I am often embarrassed and angry	3.66	1.05
3	Affective	If we continue our current style of living, we are approaching an environmental disaster	4.01	1.06
4	Conative	It is still true that politicians do not enough to protect the environment	4.12	0.99
5	Cognitive	There are limits of economic growth that our industrialized world has already passed or will reach soon	3.90	1.03
6	Cognitive	In my opinion, environmental problems are greatly exaggerated by proponents of the environmental movement (reverse coded) ^a	2.38	1.17
7	Conative	In favor of the environment, we all should be willing to reduce our current standard of living	3.74	1.01
8	Cognitive	Science and technology will solve many environmental problems without us having to change our way of life (reverse coded) ^a	2.67	1.08
9	Conative	Environmental protection measures should also be enforced when jobs are lost as a result	3.18	1.13
–	Environmental consciousness (index)		3.72	0.71
–	Cronbach's α		0.824	–

^aItem recoded into 1 = strongly agree to 5 = strongly disagree

(Postcode). Since the literature suggests a nonlinear relationship between age and pro-environmental behavior (Longhi, 2013), the squared term of age (*Age squared*) is also included in the study.

Statistical analysis

The empirical analysis started with a descriptive analysis to give an overview of the sample structure and sport-specific carbon footprints. Then two linear regression models were estimated with the pro-environmental actions scale and

the monthly carbon footprint as dependent variables. All other variables from **Table 1** served as independent variables. Since the carbon footprint variable was positively skewed, its natural logarithm was calculated and used in the analysis. For the same reason, the natural logarithm of income was built. To further explore the moderating role of gender (Cunningham & Ahn, 2019) and test H2b, the variable *Female* was interacted with *Environmental consciousness*. For each outcome variable, a second set of models is provided including the interaction term.

The independent variables were checked for multicollinearity using correlation analysis. Except for age and age squared, correlation coefficients were below the threshold of 0.8 and variance inflation factors were below the critical value of 10 (Hair, Black, Babin, & Anderson, 2010). Accordingly, multicollinearity should not be an issue. All models were estimated with heteroscedasticity-consistent standard errors. An α -level of 0.05 was used for all statistical tests.

Results

Table 1 gives an overview of the descriptive statistics. The average age of respondents is 32.2 years and 32.6% are female. Respondents' educational level is relatively balanced, with 22.4% having an educational level below A-levels, 40.5% reporting A-levels, and 37.1% having some type of university. Respondents' average net income amounts to 1817 € per month. In terms of performance level, 13.1% of respondents are occasional athletes, 28.8% reported being leisure athletes, 43.7% qualify as mass sport athletes, 13.3% are performance athletes, and only 1.1% consider themselves elite athletes.

Turning to environmental variables, average environmental consciousness is 3.72, with women ($M = 3.90$) reporting higher levels of environmental consciousness than men ($M = 3.64$). The mean values for social norms and behavioral control are 3.50 and 3.44, respectively. Travelling to the training facility caused an average monthly carbon footprint of 34.4 kg CO₂-e. While tennis club members accounted for the lowest

Table 4 Regression models for pro-environmental behavior ($n = 3038$)

	Pro-environmental actions		LN CF training	
	Model 1a	Model 1b	Model 2a	Model 2b
Constant	2.050***	2.073***	10.788***	10.019***
Environmental consciousness	0.084***	0.079**	-0.546***	-0.353**
Social norms	0.048**	0.048**	-0.265**	-0.252**
Behavioral control	0.122***	0.122***	-0.117	-0.118
Female	0.057	-0.031	0.284	3.120**
LN Income	0.009	0.008	0.299*	0.304*
Age	0.003	0.003	0.047	0.046
Age squared	-0.000	-0.000	-0.000	-0.000
Low education	0.026	0.025	-0.373	-0.343
A-levels	Ref	Ref	Ref	Ref
University	-0.082*	-0.082*	-0.360	-0.366
Occasional athlete	0.411***	0.411***	-2.265***	-2.270***
Leisure athlete	0.181***	0.181***	-1.204***	-1.186***
Mass sport athlete	0.107*	0.107*	-0.965***	-0.963***
Performance athlete	Ref	Ref	Ref	Ref
Elite athlete	-0.039	-0.039	-1.620	-1.624
Sport participation	0.030***	0.030***	0.108**	0.107**
Environmental quality	0.036*	0.036*	-0.140	-0.139
Football	-0.532***	-0.532***	-2.222***	-2.222***
Basketball	0.227***	0.228***	-3.184***	-3.200***
Handball	0.283***	0.284***	-1.452***	-1.487***
Tennis	0.270***	0.270***	-4.546***	-4.541***
Ice hockey	Ref	Ref	Ref	Ref
Female $\times$ Environmental consciousness	-	0.023	-	-0.761**
Postcode dummies	Yes	Yes	Yes	Yes
R^2	0.226	0.226	0.147	0.150
F	32.79	31.67	25.69	25.30

Displayed are the unstandardized coefficients

Ref. for postcode area is postcode area 9

All models estimated with robust standard errors

CF carbon footprint, LN natural logarithm, Ref. reference category

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

monthly carbon footprint with 10.1 kg CO₂-e, football club members caused the highest carbon footprint of 52.5 kg CO₂-e. The mean of 3.49 of the pro-environmental action index indicates that respondents behaved environmentally friendly between sometimes and often.

Table 4 summarizes the results of the regression analyses. The models explain between 14.7% (Model 2a) and 22.6% (Models 1a and 1b) of the variation in pro-environmental behavior. Environmental consciousness is positively associated with pro-environmental actions and negatively with monthly carbon footprint, suggesting that higher levels of consciousness are associated with more environmentally friendly behavior. There-

fore, H1 can be supported. Social norms are also significantly associated with more pro-environmental behavior, while behavioral control only affects pro-environmental actions.

Female gender has no significant association with pro-environmental actions, but a positive effect on carbon footprint. The moderation effect is insignificant in Model 2a, while it is significant and negative in Model 2b, indicating that environmentally conscious women have a lower carbon footprint than their male counterparts. Collectively, H2a cannot be confirmed, while H2b was partially supported for carbon footprint.

Hypothesis 3a proposes a positive association between an individual's income

and pro-environmental actions. Model 1 shows that the income effect on pro-environmental actions is positive, but insignificant. In contrast, Model 2 indicates that higher income is associated with more carbon emissions resulting in a higher monthly carbon footprint. Therefore, H3a is rejected and H3b can be confirmed.

Further variables are statistically significant. Specifically, occasional, leisure and mass sport athletes perform pro-environmental actions more frequently than performance athletes, while having a lower carbon footprint than athletes in the reference category. Moreover, clubs' environmental quality is a positive predictor of members' pro-environmental actions. Sport-specific differences in pro-environmental behavior are also evident.

Discussion

The purpose of this study was to assess determinants of pro-environmental behavior of members in German voluntary sport clubs. The underlying convenience sample was gathered by a nationwide online survey. Similar to previous studies, the sample structure is skewed towards males, younger, and more highly educated people compared to the German resident population (Federal Statistical Office, 2019; Wicker, 2019). Compared to other pro-environmental behavior studies in sport, the sample size can be considered large (Casper et al., 2014).

Concerning pro-environmental behavior, the training-related annual carbon footprint is larger with 412.6 kg CO₂-e compared to previous studies of active sport participants in team/racket sports (342.4 kg CO₂-e; Wicker, 2019). This difference is rooted in the latter study also including American football and field hockey players with above-average carbon footprints. Compared to Wicker (2019), this study revealed higher training-related carbon footprints for football (630.0 vs. 230.7 kg CO₂-e) and handball (463.2 vs. 218.6 kg CO₂-e), and a lower carbon footprint for basketball (292.2 vs. 441.7 kg CO₂-e). These differences between club members (this study) and the entirety of active sport participants (Wicker, 2019) compared to might be

rooted in different participation frequencies and different distances to the respective sport facilities. The mean score of the pro-environmental action index indicates that club-related pro-environmental behavior differs in frequency, but most people perform such pro-environmental behavior sometimes, evidently assigning some importance to this behavior.

The regression results regarding environmental consciousness, social norms, and perceived behavioral control confirm the main tenets of the theory of planned behavior (Ajzen, 1991). Hence, higher awareness and concern for environmental problems leads to more pro-environmental behavior in the sport club context. Moreover, social norms contribute to both types of pro-environmental behavior and perceived behavioral control facilitates pro-environmental actions, suggesting that such behavior is expected and at least partially possible in sport clubs. The finding for environmental consciousness is contrary to other sport-related travel studies (Wicker, 2018, 2019), suggesting that Blake's (1999) environmental value-action gap is not present in this study. This gap exists when environmental attitudes do not translate into pro-environmental behavior. This is often the case for high-cost situations, i.e., situations where the costs in terms of time, money, and convenience for acting environmentally friendly are perceived as too high (Diekmann & Preisendörfer, 2003). The present finding may be due to the increasing public debate about environmental problems in recent years, since one of the reasons for the value-action gap is people's perception that their environmental actions do not make a difference.

Gender differences were not evident for pro-environmental actions. This finding might be surprising at first glance, as the concept of ecofeminism and existing research suggested stronger pro-environmental behavior for women (e.g., Kennedy et al., 2015; Merchant, 2012). However, diminishing gender differences in pro-environmental behavior were also observed in previous sport pro-environmental-behavior stud-

ies (Wicker, 2018, 2019) that can be confirmed within the present sport club context. Importantly, many of the pro-environmental actions examined in this study include behaviors which are conducted in public (i.e., typically in front of other club members). Social role theory suggests that men are more likely to demonstrate pro-social behavior including pro-environmental behavior in public, while women are more likely to do so in the private sphere (Fyall & Gazley, 2015; Sakellari & Skanavis, 2013). Put differently, men might behave more environmentally friendly when they get public recognition for their behavior (Eagly & Crowley, 1986). Collectively, when the playing field is similar (i.e., the sport club context), gender differences in pro-environmental behavior might therefore disappear.

Women were found to have a significantly higher carbon footprint than men, but only in Model 2b including the interaction term, indicating that female gender only works in conjunction with environmental consciousness. The negative moderating effect suggests that environmentally conscious women produce fewer emissions and thus behave more environmentally friendly—in line with previous research (Sakellari & Skanavis, 2013; Zelezny et al., 2000).

Regarding the income effect on pro-environmental behavior, the divergent findings from the models reflect the varying results of existing research (e.g., Kennedy et al., 2015; Swierzy, Wicker, & Breuer, 2018). Compared to the average income of the German population, the average income of the sample was rather low (Federal Statistical Office, 2019). The basic precondition of the luxury good hypothesis is that financial resources are allocated towards pro-environmental behavior or products (Preisendörfer, 1999). However, this notion becomes challenging if the average income is rather low and might be a reason for the positive, but not significant income effect in Models 1a and 1b. In contrast, Models 2a and 2b confirm existing research in that higher income increases carbon emissions from travel behavior (Brand & Preston, 2010). This finding is also in line with previous carbon footprint studies

in sport (Wicker, 2018, 2019) and can be explained with increasing financial resources required to purchasing a car and financing its maintenance (Federal Statistical Office, 2020).

The findings of this study have implications for policy makers and club officials. The research context of grassroots sport clubs provides challenges, but also opportunities for reducing the use of natural resources and the environmental impact of active sport participation (Carmichael, 2020). While the reliance on voluntary work might represent a challenge to implement measures and facilitate organizational change (Thiel & Mayer, 2009), opportunities emerge from the broad distribution of grassroots sport clubs across the country and their large numbers—over 90,000 in Germany. Turning to concrete implications, the non-existing environmental value-action gap among sport club members indicates that policy makers and club officials can increase pro-environmental behavior by educating their members towards environmental problems and enhance their environmental consciousness. Since general educational levels seem to be less relevant in this study, environment-specific knowledge should be created. For example, members could be informed about and reminded of possible environmentally friendly actions that can be implemented at every training session, i.e., switching out lights in the locker room or using refillable water bottles.

Another implication is that sport clubs should make environmentally friendly investments that contribute to the clubs' environmental quality. Investing in environmentally friendly devices like green electricity or solar cells does not only reduce costs in the long-term, but might also encourage members to behave environmentally friendly. Lastly, clubs should promote the usage of public transportation or car sharing opportunities. This becomes even more important, the higher the share of performance athletes and high-income individuals in clubs since both characteristics were associated with increased carbon emissions through transportation behavior. Across the above recommendations,

collaborations between the sport sector and academia can be fruitful to help grassroots clubs become more environmentally sustainable (McCullough, 2018). Given the low, but increasing level of professionalization in the voluntary sport sector, such collaborations can represent a way to benefit from the academic knowledge on environmental sustainability. Also, partnerships with local stakeholders can help bridge the gap between a club's small resource base and its pro-environmental ambitions (McCullough, 2018).

The present study comes with some limitations that represent directions for future research. First, it is based on cross-sectional data. In future research, the effects of the ongoing public debate about environmental problems could be detected by using longitudinal data. Second, this study includes many self-reported measures. Even though social desirability bias was not found to represent a major issue in environmental research (Milfont, 2009), future research would benefit from drawing on observed and objective measures to a larger extent. For example, technology could be applied to track individuals' travel behavior and measure resulting emissions.

Conclusion

This study examined the determinants of pro-environmental behavior of voluntary sport club members across five different sports using comprehensive survey data from Germany. In recent years, climate change and environmental problems have fostered the public debate about pro-environmental measures, admitting the severity of environmental damages resulting from human behavior. Hence, environmental initiatives and pro-environmental behavior in the sport sector, including grassroots sport clubs, have also received public attention.

This study makes several contributions to the existing literature. It is among the first to examine pro-environmental behavior in grassroots sport clubs and of sport club members, respectively. Hence, the present study extends the small, but growing body of research which was largely conducted in the con-

text of elite sport events and professional sport organizations (Carmichael, 2020; Trendafilova & McCullough, 2018). Theoretically, it has attempted to explain an individual's level of pro-environmental behavior with factors that are both internal (e.g., environmental consciousness, gender, income) and external (e.g., club's environmental quality, social norms of club members) to the individual (Carmichael, 2020). Empirically, this study has applied an adjusted version of Diekmann and Preisendörfer's (2003) pro-environmental actions scale to the sport club context. The adapted scale showed good applicability and supported the relevance of the four areas where pro-environmental behavior can be performed, including waste, consumption, energy, and transportation. Thus, this study enhances our understanding of pro-environmental behavior in the sport club context.

Corresponding address

Pamela Wicker
Department of Sports
Science, Bielefeld University
Universitätsstr. 25,
33615 Bielefeld, Germany
pamela.wicker@uni-
bielefeld.de

Acknowledgements. The authors would like to thank the following students who assisted with data collection and data cleaning: Jannis Becker, Niklas Hunold, Marten Neppert, Felix Pföhler, Florian Pompino, and Simon Zimmermann.

Funding. Open Access funding enabled and organized by Projekt DEAL.

Compliance with ethical guidelines

Conflict of interest. T. Thormann and P. Wicker declare that they have no competing interests.

All procedures performed in studies involving human participants or on human tissue were in accordance with the ethical standards of the institutional and/or national research committee and with the 1975 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

Open Access. This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and re-

production in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
- Blake, J. (1999). Overcoming the 'value-action gap' in environmental policy: tensions between national policy and local experience. *Local Environment: The International Journal of Justice and Sustainability*, 4(3), 257–278.
- Brand, C., & Preston, J. M. (2010). '60-20 emission'—The unequal distribution of greenhouse gas emissions from personal, non-business travel in the UK. *Transport Policy*, 17(1), 9–19.
- Briscoe, M. D., Givens, J. E., Hazboun, S. O., & Krannich, R. S. (2019). At home, in public, and in between: gender differences in public, private and transportation pro-environmental behaviors in the US Intermountain West. *Environmental Sociology*, 5(4), 374–392.
- Brons, M., Pels, E., Nijkamp, P., & Rietveld, P. (2002). Price elasticities of demand for passenger air travel: a meta-analysis. *Journal of Air Transport Management*, 8(3), 165–175.
- Cantelon, H., & Letters, M. (2000). The making of the IOC environmental policy as the third dimension if the Olympic. *International Review for the Sociology of Sport*, 35(3), 294–308.
- Carmichael, A. (2020). Time for practice: sport and the environment. *Managing Sport and Leisure*. <https://doi.org/10.1080/23750472.2020.1757493>.
- Casper, J. M., McCullough, B. P., & Pfahl, M. E. (2020). Examining environmental fan engagement initiatives through values and norms with intercollegiate sport fans. *Sport Management Review*, 23, 348–360.
- Casper, J. M., Pfahl, M. E., & McCullough, B. (2014). Intercollegiate sport and the environment: examining fan engagement based on athletics department sustainability efforts. *Journal of Issues in Intercollegiate Athletics*, 7, 65–91.
- Casper, J. M., Pfahl, M. E., & McCullough, B. P. (2017). Is going green worth it? Assessing fan engagement and perceptions of athletic department environmental efforts. *Journal of Applied Sport Management*, 9(1), 106–134.
- Chard, C., & Mallen, C. (2012). Examining the linkages between automobile use and carbon impacts of community-based ice hockey. *Sport Management Review*, 15(4), 476–484.
- Clark, C. F., Kotchen, M. J., & Moore, M. R. (2003). Internal and external influences on pro-environmental behavior: participation in a green electricity program. *Journal of Environmental Psychology*, 23(3), 237–246.
- Collins, A., Flynn, A., Munday, M., & Roberts, A. (2007). Assessing the environmental consequences of

- major sporting events: The 2003/04 FA Cup final. *Urban Studies*, 44(3), 457–476.
- Collins, A., Munday, M., & Roberts, A. (2012). Environmental consequences of tourism consumption at major events: an analysis of the UK stages of the 2007 Tour de France. *Journal of Travel Research*, 51(5), 577–590.
- Cunningham, G. B., & Ahn, N. Y. (2019). Moderation in sport management research: room for growth. *Measurement in Physical Education and Exercise Science*, 23(4), 301–313.
- Diekmann, A., & Preisendörfer, P. (2003). Green and greenback: The behavioral effects of environmental attitudes in low-cost and high-cost situations. *Rationality and Society*, 15(4), 441–472.
- Dolf, M., & Teehan, P. (2015). Reducing the carbon footprint of spectator and team travel at the University of British Columbia's varsity sports events. *Sport Management Review*, 18(2), 244–255.
- DOSB (n.d.). Umwelt- und Naturschutz im Sportverein [Environment and nature protection in sport clubs]. https://cdn.dosb.de/alter_Datenbestand/fm-ehrenamtssport/Ehrenamt-im-Sport.de/Downloads/Rat_und_Tat/TOP2/2_21-Umweltschutz-im-Sportverein.pdf. Accessed 10 March 2020.
- Eagly, A. H., & Crowley, M. (1986). Gender and helping behavior: a meta-analytic review of the social psychological literature. *Psychological Bulletin*, 100(3), 283–308.
- Federal Environmental Office (2018). Emissionsdaten [Emission data]. https://www.umweltbundesamt.de/themen/verkehr-laerm/emissionsdaten#verkehrsmittelvergleich_personenverkehr. Accessed 29 May 2019.
- Federal Statistical Office (2019). *Statistisches Jahrbuch Deutschland und Internationales 2019* [Annual statistics book Germany and international 2019]. Federal Statistical Office.
- Federal Statistical Office (2020). Preise: Verbrauchpreisindizes für Deutschland – Jahresbericht [Prices: Consumer indexes for Germany—annual report]. <https://www.destatis.de/DE/Themen/Querschnitt/Jahrbuch/jb-verdienste-arbeitskosten.html>. Accessed 16 Apr 2020.
- Franchetti, M. J., & Apul, D. (2013). *Carbon footprint analysis. Concepts, methods, implementation, and case studies*. Abingdon: Taylor & Francis.
- Fyall, R., & Gazley, B. (2015). Applying social role theory to gender and volunteering in professional associations. *Voluntas*, 26, 288–314.
- German Government (2019). CO₂-Bepreisung [CO₂-prices]. <https://www.bundesregierung.de/breg-de/themen/klimaschutz/co2-bepreisung-1673008>. Accessed 19 Dec 2019.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th edn.). London: Pearson.
- Hinton, P. R., McMurray, I., & Brownlow, C. (2004). *SPSS explained*. London: Routledge.
- IPCC (2018). Global warming of 1.5 °C. https://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf (Created 10.2018). Accessed 13 August 2018.
- Jones, C. (2008). Assessing the impact of a major sporting event: the role of environmental accounting. *Tourism Economics*, 14(2), 343–360.
- Kennedy, E., Krahn, H., & Krogman, N. T. (2015). Are we counting what counts? A closer look at environmental concern, pro-environmental behaviour, and carbon footprint. *Local Environment*, 20(2), 220–236.
- Kiefer, S. (2015). Are riding club members willing to pay or work for overall quality improvement? *Managing Sport and Leisure*, 20(2), 100–116.
- Kollmuss, A., & Agyeman, J. (2002). Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8(3), 239–260.
- Laroche, M., Bergeron, J., & Barbaro-Forleo, G. (2001). Targeting consumers who are willing to pay more for environmentally friendly products. *The Journal of Consumer Marketing*, 18(6), 503–520.
- Leach, M. (2007). Earth mother myths and other ecofeminist fables: how a strategic notion rose and fell. *Development and Change*, 38(1), 67–85.
- Longhi, S. (2013). *Individual pro-environmental behaviour in the household context*. ISER Working Paper Series, Vol. 2013-21.
- Lynn, P., & Longhi, S. (2011). Environmental attitudes and behaviour: who cares about climate change? In S. L. McFall & C. Garrington (Eds.), *Understanding society: early findings from the first wave of the UK's household longitudinal study* (pp. 109–116). Institute for Social and Economic Research.
- Mallen, C., & Chard, C. (2011). A framework for debating the future of environmental sustainability in the sport academy. *Sport Management Review*, 14(4), 424–433.
- McCullough, B. (2018). Industry-academic collaborations to advance sustainability. *Sport and Entertainment Review*, 4(3), 64–69.
- McCullough, B. P., Orr, M., & Kellison, T. (2020). Sport ecology: conceptualizing an emerging subdiscipline within sport management. *Journal of Sport Management*, 34(6), 509–520.
- McCullough, B. P., Orr, M., & Watanabe, N. M. (2019). Measuring externalities: the imperative next step to sustainability assessment in sport. *Journal of Sport Management*. <https://doi.org/10.1123/jsm.2019-0254>.
- Merchant, C. (2012). *Radical ecology: the search for a livable world*. London: Routledge.
- Mesmer-Magnus, J., Viswesvaran, C., & Wiernik, B. M. (2012). The role of commitment in bridging the gap between organizational sustainability and environmental sustainability. In S. E. Jackson, D. S. Ones & S. Dilchert (Eds.), *The SIOP professional practice series. Managing human resources for environmental sustainability* (pp. 155–186). San Francisco: Jossey-Bass.
- Milfont, T. L. (2009). The effects of social desirability on self-reported environmental attitudes and ecological behaviour. *The Environmentalist*, 29(3), 263–269.
- Nilsson, M., & Küller, R. (2000). Travel behaviour and environmental concern. *Transportation Research Part D, Transport and Environment*, 5, 211–234.
- Preisendörfer, P. (1999). *Umwelteinstellungen und Umweltverhalten in Deutschland* [Environmental attitudes and pro-environmental behaviour in Germany]. Opladen: Leske + Budrich.
- Sakellari, M., & Skanavis, C. (2013). Environmental behavior and gender: an emerging area of concern for environmental education research. *Applied Environmental Education & Communication*, 12(2), 77–87.
- Scrucca, F., Severi, C., Galvan, N., & Brunori, A. (2016). A new method to assess the sustainability performance of events: application to the 2014 World Orienteering Championship. *Environmental Impact Assessment Review*, 56, 1–11.
- Steg, L., & Vlek, C. (2009). Encouraging pro-environmental behaviour: an integrative review and research agenda. *Journal of Environmental Psychology*, 29(3), 309–317.
- Swierzy, P., Wicker, P., & Breuer, C. (2018). Willingness-to-pay for memberships in nonprofit sports clubs: the role of organizational capacity. *International Journal of Sport Finance*, 13(3), 261–278.
- Thiel, A., & Mayer, J. (2009). Characteristics of voluntary sports clubs management: a sociological perspective. *European Sport Management Quarterly*, 9(1), 81–98.
- Trail, G., & McCullough, B. P. (2018). Differential effects of internal and external constraints on sustainability intentions: a hierarchical regression analysis of running event participants by market segment. *Journal of Management for Global Sustainability*, 6(2), 1–30.
- Trendafilova, S., & McCullough, B. P. (2018). Environmental sustainability scholarship and the efforts of the sport sector: a rapid review of literature. *Cogent Social Sciences*, 4(1), 1467256.
- United Nations (2017). Sports representatives and the UN pitch for climate action. <https://cop23.unfccc.int/news/sports-representatives-and-the-un-pitch-for-climate-action>. Accessed 14 September 2020.
- Webb, T. L., & Sheeran, P. (2006). Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychological Bulletin*, 132(2), 249–268.
- Whitehead, J. C., & Wicker, P. (2018). Estimating willingness to pay for a cycling event using a willingness to travel approach. *Tourism Management*, 65, 160–169.
- Wicker, P. (2018). The carbon footprint of active sport tourists: an empirical analysis of skiers and boarders. *Journal of Sport & Tourism*, 22(2), 151–171.
- Wicker, P. (2019). The carbon footprint of active sport participants. *Sport Management Review*, 22(4), 513–526.
- Wiedmann, T., & Minx, J. (2008). A definition of 'carbon footprint'. *Ecological Economics Research Trends*, 1, 1–11.
- Zelezny, L. C., Chua, P., & Aldrich, C. (2000). Elaborating on gender differences in environmentalism. *Journal of Social Issues*, 56(3), 443–457.