

Scharfenkamp, Katrin; Wicker, Pamela; Frick, Bernd

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RESEARCH ARTICLE

Female representation at the national level and women sport volunteering in European countries

Katrin Scharfenkamp¹  | Pamela Wicker¹  | Bernd Frick² 

¹Department of Sports Science, Bielefeld University, Bielefeld, Germany

²Management Department, Paderborn University, Paderborn, Germany

Correspondence

Katrin Scharfenkamp, Department of Sports Science, Bielefeld University, Universitaetsstr. 25, 33615 Bielefeld, Germany.

Email: katrin.scharfenkamp@uni-bielefeld.de

Abstract

This study examines the moderating effects of national female labor force participation, women in sport leadership positions, and female medalists in recent Olympic Games on women's probability to volunteer in sport. Based on social role theory and the similarity attraction paradigm, we predict that all three factors result in a higher probability of women to volunteer in sport, but with differences among age groups. Linear probability models before and after applying coarsened exact matching were estimated using data from the 2017 Eurobarometer ($n = 18,529$). The results show that women have a significantly lower probability to volunteer in sport in countries with high female labor force participation and a high share of women in leadership positions in sport organizations. The likelihood of women volunteering in sport is significantly higher in countries with a high share of female Olympic medalists. The age group-specific analysis asking whether volunteering should be considered an investment in human capital by younger women and/or an acquisition of social capital by older women, reveals that a high presence of women among leaders in sport organizations and

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Olympic medalists is significantly positively correlated with the probability for young women to volunteer in sport. Managers and leaders of nonprofit sport organizations learn from our study that volunteering should be perceived as an investment in human capital by younger women rather than an attempt to acquire social capital by older women.

KEYWORDS

employee generations, leadership, nonprofit organizations, social roles, sport volunteering, women

1 | INTRODUCTION

Similar to other non-profit areas (Cnaan et al., 1996), sport volunteering is considered any freely chosen, formally organized activity for which individuals do not get any payments apart from a reimbursement of their expenses (Orlowski & Wicker, 2015). Although employees have labor contracts with their employers, volunteers rather have psychological contracts assuming that there is a reciprocal relationship between the volunteer and the organization (Hoye & Kappelides, 2020). Sport volunteers fulfill administrative, sport, and operational roles (Thormann et al., 2022). Administrative roles include being a board or committee member, chairperson, or social secretary, while sport roles include coaching, officiating, or refereeing. Operational roles include organizing an event, providing transport, raising or handling money, and maintaining sport facilities (Orlowski & Wicker, 2015; Thormann et al., 2022; Wicker & Downward, 2020). Volunteering typically takes place in the context of nonprofit sport organizations (NPSO) and sport events, with volunteers representing a critical resource to the successful operation of both (Wicker, 2017). On average, volunteers invest about 12 to even over 20 hours per month to this activity (Orlowski & Wicker, 2015; Sport England, 2019; Swierzy et al., 2018; Taylor et al., 2012).

The successful operation of sport organizations and events is determined by the volunteers' quality (Wicker, 2017). Hence, it is important for NPSOs to attract qualified and talented women and benefit from their skills, experience, and ideas (Wicker et al., 2022). So far, volunteering in grassroots sport is rather male dominated (Nichols & Shepherd, 2006). However, not only the sport sector might miss out on women, as labor markets across countries also fail to adequately integrate women into their talent pool (WEF, 2015).

Women's labor force participation shapes national gender equality and is defined as "women having the same opportunities in life as men" (Vasiljevic et al., 2017, pp. 9–10). Gender (in)equality is created by discrimination of women, stereotypes, family obligations, and labor market segregation, yielding worse opportunities for women and ultimately resulting in an inequality of life outcomes (Vasiljevic et al., 2017). However, gender inequality in paid labor might not automatically spill over to the voluntary sector, since volunteering is not paid and thus an individual choice on how to spend free time (Rotolo & Wilson, 2007).

Gender equality among (voluntary) leaders is particularly interesting for nonprofit organizations across sectors since the exchange within the board of directors (Hoye, 2004, 2006) and the role ambiguity of board directors and their performance (Doherty & Hoye, 2011) were previously discussed. Further, women are still under-represented in non-profit executive leadership (Lee, 2019), e.g. as board directors, board chairs, or chief executives in sport governance (Adriaanse, 2016). Even though studies have outlined the benefits of the presence of female chief executive officers (CEOs) (Lee, 2019) and female board members within (Wicker et al., 2022) and beyond sport (Bozhinov et al., 2021), only few sport organizations have a critical mass of 30% women leaders (Adriaanse, 2016). Since leaders in NPSOs are mainly volunteers, exploiting the possible link between women leaders and the probability of women to volunteer in grassroots sport might be of particular interest to the management of NPSOs.

Sport volunteering might also be affected by successful professional female athletes who are visible to the broad population via the media. Visibility is particularly high in the Olympic Games because this event receives lots of media attention all over the world, with successful medalists becoming well-known to the broad population in their respective home countries. Several studies show that the share of women participating in the Olympic Games has increased over time (Fink, 2015) and that female athletes have won more medals than men in some countries (Wicker, 2019). Since there are spillover effects from Olympic medal successes on grassroots sport participation in the medalists' hometowns (Potwarka et al., 2021), spillover effects might also occur when it comes to sport volunteering. Hence, this study exploits potential (spillover) effects from the presence of women in the national labor force, among leaders in national sport federations, and among recent Olympic medalists on volunteering in grassroots sport.

Given the apparently limited ability of both, the labor market and NPSOs to fully integrate women into their respective workforces and as leaders, the question for the management of NPSOs is whether gender disparities at the national level translate into gender differences in sport volunteering. As leaders of organizations pursue the overarching goal of gender equality in all areas of sport organizations (International Olympic Committee [IOC], 2018; Knoppers et al., 2021), this equality might spill over to women volunteering in grassroots sport. Hence, investigating the role of national gender equality might enhance our understanding of the factors driving women's voluntary engagement in sport and the importance of women as leaders in NPSOs. Most sport and volunteering studies examined individual determinants of volunteering like motivation and socio-economic characteristics (Hallmann, 2015; Leonard et al., 2004; Taylor et al., 2012), while few studies looked at organizational-level factors (Schlesinger & Nagel, 2013; Swierzy et al., 2018), leaving the role of the national context largely unexplored.

This study analyzes three national factors (i.e., the ratio of female labor force participation, the share of women among sport leaders, and the share of recent female Olympic medalists) to explain the individual probabilities of women to volunteer in sport. These three factors were selected because they reflect gender equality in terms of economic participation, (voluntary) leadership in NPSOs, and among professional athletes in one of the most important international competitions. Moreover, we investigate if the effects of these three factors differ between generations regarding the importance of developing human and social capital from volunteering. Our study contributes to the literature investigating higher-level determinants of volunteering in NPSOs and to the body of research examining gender-specific determinants of volunteering (also beyond sport). From our findings, managers and leaders of NPSOs learn how to improve the recruitment of female volunteers of different generations.

2 | THEORETICAL FRAMEWORK AND HYPOTHESES

2.1 | Social role theory and volunteering (in sport)

Following Fyall and Gazley (2015) and drawing on social role theory (Eagly & Crowley, 1986; Eagly & Wood, 1991), we explain gender differences in volunteering. This theory holds that an individual's gender is decisive for the expectations people have about what behavior is appropriate, and these expectations are ascribed to gender roles (Eagly & Crowley, 1986). Relevant to this study are expectations about helping behavior like volunteering.

The male and female gender role is associated with different helping behaviors (Eagly & Crowley, 1986; Metzendorf & Cnaan, 1992). Specifically, females' helping behavior is more altruistic and long-term oriented, primarily addressing close relationships, typically in the family context, which are less observable by the public. By contrast, men's helping behavior is more heroic, occurs also in relations with strangers, and is, therefore, better publicly observable. Overall, men were found to help more than women, yielding a more generous discussion of the male gender role (Eagly & Crowley, 1986).

Since volunteering is one form of helping behavior that tends to be observable, men are expected to volunteer more. Even though some studies found women to have a higher probability to volunteer (Einolf, 2011; Themudo, 2009) or identified no gender difference between married women and men (Hook, 2004), the majority of studies document a lower probability of women to volunteer (Fyall & Gazley, 2015; Wemlinger & Berlan, 2016). This gender difference in favor of men is also pertinent among voluntary leaders (Rotolo & Wilson, 2007; Schreiner et al., 2018) and among sport volunteers (Hallmann, 2015; Wicker, 2017), a sector which is historically dominated by men (Cunningham, 2008). In light of the theoretical underpinning and the empirical evidence, we predict the following:

H1: Women have a significantly lower probability to volunteer in sport than men.

2.2 | National-level factors: Social roles, role incongruities, similarity attraction, and spillover effects

Existing research has documented that the national context is important to volunteering (Schlesinger & Nagel, 2013; Swierzy et al., 2018; Wicker, 2017), with national gender equality aspects being particularly relevant to women's probability to volunteer. For example, a women's probability to volunteer is higher in gender-equal societies, but only in traditionally female organizations (i.e., religious, health, and social welfare organizations), while the probability to volunteer is lower in traditionally male organizations (i.e. [local] political organizations, unions) (Wemlinger & Berlan, 2016). Further, there is a significant positive relationship between national female empowerment (including women's representation in parliaments, management, and professional positions) and female volunteering (Themudo, 2009). However, the impact of women's economic participation in a country on their probability to volunteer has not yet been explored—neither in the general nonprofit literature, nor in nonprofit sport research.

From a theoretical perspective, we draw on social role theory (Eagly & Wood, 1991) and the similarity attraction paradigm (Byrne, 1971) to outline how the national context might affect

individual (sport) volunteering. Social role theory suggests that people have different expectations of the attributes, with women being ascribed communal attributes and men agentic attributes (Eagly & Wood, 1991). Hence, people tend to generalize from observable socio-demographic characteristics (like gender) to personal traits because of efficiency and lack of information (Heilman & Caleo, 2018).

As outlined earlier, the society people live in and the respective cultural background shape people's attitudes, including the work and family situation in a country. Importantly, women's attributes originate from family roles and men's attributes from occupational roles (Eagly & Wood, 1991). Hence, the gender distribution in paid work and domestic work within a society affects the social roles that are ascribed to each gender (Miller et al., 2015). This means that when women are adequately represented in the labor market, then the social roles that are ascribed to them might change as well.

The first national-level factor is female labor force participation. The more women participate in the national labor force, the lower is the male dominance in the labor market (WEF, 2015). A higher female labor force participation is likely accompanied by a shift in expectations from the female to the male gender role, meaning that the attributes prescribed to women now emerge more from occupational roles and to a lesser extent from family roles. This shift can translate to sport volunteering as it is evaluated as a positive job market signal in the CV of female sport volunteers (Scharfenkamp et al., 2022). Consequently, we assume spillover effects from the labor market to sport volunteering, which are reflected in our second hypothesis:

H2: The higher female labor force participation in a country, the higher a woman's probability to volunteer in sport.

Furthermore, the share of women among (voluntary) leaders in NPSOs represents the second national-level factor, suggesting that the presence of women at the top might impact the probability of women to volunteer in sport.

According to the similarity attraction paradigm (Byrne, 1971), demographic similarity, for example, regarding gender increases interpersonal liking and therefore interpersonal interaction. Hence, perceived similarities based on gender provide a basis for (more) group interactions (e.g., Tsui et al., 1992) among sport volunteers. When women perceive a large number of women leading national NPSOs and thus a lower male dominance (Cunningham, 2008), this effect might trickle down to the grassroots levels of the organizations (Wicker & Kerwin, 2022) which, in turn, leads them to volunteer in a (more) gender diverse group.

When women act as role models or mentors and actively support the promotion of lower-ranked women, these gender spillovers from top to bottom might be positive. The consequent notion is that male dominance in business leadership positions is self-perpetuating, but might be gradually reduced if more women reach higher job levels (Kunze & Miller, 2017). The same mechanism might be at work in sport volunteering, where NPSOs are predominantly led by men (Rotolo & Wilson, 2007; Schreiner et al., 2018). Thus, our third hypothesis reads as follows:

H3: The higher the representation of women in leadership positions of NPSOs in a country, the higher a woman's probability to volunteer in sport.

Similarly, we assume that a high percentage of successful female athletes can generate positive spillover effects on sport volunteering. Olympic medalists tend to be present in the media, and this media coverage signals that female athletes are not only successful, but also receive attention and recognition, thus reducing the male dominance in sport (Cunningham, 2008). The visibility and perception of women as successful athletes in the most important international sport competition might spill over to grassroots sport. Hence, adequate female representation and visibility in professional sport might lead women to volunteer in a (more) gender diverse group in the sport sector. Thus, our fourth hypothesis reads as follows:

H4: The higher the share of female Olympic medalists in a country, the higher a woman's probability to volunteer in sport.

2.3 | Age-specific effects on women's probability to volunteer in sport

Volunteering activities are a specific form of investment in human capital (Becker, 1962; Hackl et al., 2007) which can be obtained through informal learning like knowledge sharing between volunteers or through formal training (Fullwood & Rowley, 2021). Human capital is defined as an investment in the acquisition of individual skills, abilities, and knowledge that can be either general or specific and thus increase the productivity of the individual in only one particular or many job(s) and organization(s) (Becker, 1962).

(Sport) volunteering can be considered an investment in individuals' human capital (Duerrenberger & Warning, 2019; Hackl et al., 2007) by acquiring experiences and knowledge like leadership, public speaking, or communication skills (Green & Brock, 2005; Peterson, 2004) in administrative roles like committee members or chairpersons, operational roles like marketing and event organization, or sport roles like coaching or refereeing (Thormann et al., 2022). Thus, (young) sport volunteers list it in their applications (Kay & Bradbury, 2009) because they hope that hiring managers evaluate it as a positive signal for the applicant's qualification, ultimately increasing the probability for a job interview or a higher salary offer (Wallrodt & Thieme, 2020). In sport and beyond, volunteering was found to improve volunteers' productivity, thus significantly increasing earnings in the paid job (Barros & Barros, 2005; Day & Devlin, 1998).

The older an individual is and the closer a person is to retirement, the lower the probability that this person will invest in human capital as the amortization period will be rather short (Becker, 1962), implying that the incentives to volunteer are lower for older than for younger people (Hackl et al., 2007). Although a high national female labor force participation emphasizes the importance of further investments in human capital for (young) women that might have positive spillover effects on the paid job market, a high presence of women among sport leaders might even be an additional motivation to engage in sport volunteering to invest in the acquisition of (additional) leadership and communication skills.

Volunteering can also represent an investment in social capital (e.g., social networks, relationships, resourcefulness; Bourdieu, 1986). Social capital has been defined differently by Bourdieu (1986), Coleman (1988), and Putnam (1995). Bourdieu assumes that social capital is based on the act of exchange between two individuals resulting in social relationships. Coleman (1988), in turn, focuses on trust between the interacting individuals. Requirements for social capital to emerge are a certain network intensity, expectations

about behavior, norms shared by the interacting individuals, and social mechanisms sanctioning the exploitation of trust. Finally, Putnam (1995) and Putnam et al. (1993) assume that social capital like, for example, hiring motivated volunteers might improve the performance of institutions. According to Bourdieu (1986), sport volunteering might generate relationships with other volunteers within a NPSO, fostering the emergence of social capital.

Sport volunteering was found to contribute to both types of skill acquisition, thus increasing an individual's stock of general human capital in terms of, for example, self-confidence and transferable social skills (Kay & Bradbury, 2009), and the development of social capital by stabilizing an individual's personal involvement (Cuskelly, 2008). The extension of social networks, resulting in more social capital (Kay & Bradbury, 2009) and the enforcement of norms among community members (Morgan, 2000) ultimately yield a wage premium for volunteers in their regular job (Hackl et al., 2007). However, if sport volunteering primarily serves as a means to extend social capital, the probability of sport volunteering is also likely to be high among individuals approaching retirement. According to Putnam (1995) and Putnam et al. (1993), old volunteers (beyond sport) perceive their voluntary engagement to help other people and to make a difference in the lives of others (Morrow-Howell et al., 2009). Following Bourdieu (1986), older individuals approaching retirement, (consequently losing their job-related network and social capital), might have high(er) returns from a new network that they can join after retirement (Hackl et al., 2007). Beyond sport, this assumption is supported by the finding that older volunteers seem to provide new information and knowledge from their voluntary work to their family (Morrow-Howell et al., 2009). Moreover, the opportunity costs of (sport) volunteering decrease as individuals no longer invest in their human capital and labor market careers (Hallmann, 2015). In other words, the results for the different age groups can at least partially be interpreted as a critical test between human capital and social capital theory.

Empirical evidence on the relationship between age and volunteering is inconclusive. Young individuals were found to have the highest probability to volunteer in sport (Taylor et al., 2012). Other research, however, shows that individuals aged between 35 and 59 years represent the majority among sport volunteers (Taylor et al., 2012).

Studies distinguishing between age and gender simultaneously regarding volunteering also yield inconclusive results. Fyall and Gazley (2015) do not report any gender differences of individuals of advanced age and who work full-time. By contrast, Bonnesen (2018) finds that among younger individuals, gender differences in volunteering are smaller than in older cohorts. In addition, she shows that higher education is significantly positively related to young individuals' volunteering and hence more important than for older adolescents. Downward et al. (2005) find that particularly young women volunteer at sport events to connect with others and thus to increase their social capital by seeking integration in specific networks. Skirstad and Hanstad (2013) echo this finding, highlighting the importance of investing in social capital for young women through sport volunteering.

In this study, we follow Cennamo and Gardner (2008) and distinguish four generations with different values regarding work and leisure time: (1) millennials or generation Y (born between 1980 and 2000), (2) generation X (1962–1979), (3) Baby Boomers (1946–1961), and the silent generation (1925–1945). The classification of generations is based on age and year of birth, respectively, considering that individuals born in a specific period

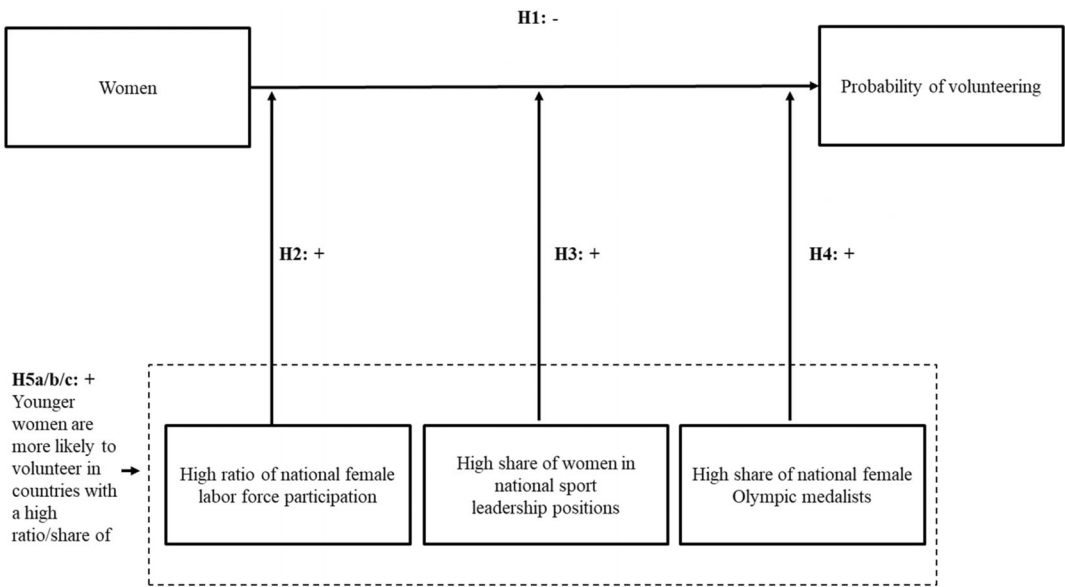


FIGURE 1 Predicted relationship between women and sport volunteering moderated by three national-level factors

have experienced similar critical life events which shape their values, and behavior (Cennamo & Gardner, 2008).

Referring to possible differences in the individual probability to volunteer, Cennamo and Gardner (2008) show that younger generations have a significantly higher interest in freedom to work than older generations. In addition, generation Y is known to value a good work-life balance and career development more than Baby Boomers or the silent generation (Zemke et al., 2000). Likewise, individuals of generation X place more value on work-life balance than on status and tenure and favor skill development and skills productivity (Smola & Sutton, 2002). These work values indicate that these generations are interested in a career that combines work and family. A stronger generational focus on family life combined with career development of generations Y and X might thus imply that more women work (after maternity leave), but also more men support women to (get back to) work. Hence, if more women of a generation focus on their career development by improving their human and/or social capital, women are more motivated to volunteer (in sport) as a means to foster career development and improve work-life balance by pursuing a hobby. Consequently, we predict the following:

H5a: Younger women (of generation Y or generation X) are more likely to volunteer in sport in countries with high female labor force participation.

H5b: Younger women (of generation Y or generation X) are more likely to volunteer in sport in countries with more women in sport leadership positions.

H5c: Younger women (of generation Y or generation X) are more likely to volunteer in sport in countries with a high percentage of female Olympic medalists.

Figure 1 visualizes the conceptual model and the postulated relationships.

3 | METHOD

3.1 | Data sources and collection

The empirical analysis combines individual-level survey data with country-level data. The survey data stem from the Eurobarometer 88.4, which was collected in December 2017. Since 1973, the Eurobarometer is a survey commissioned by the European Commission with residents in all EU member countries being surveyed on a regular basis. The data are gathered by TNS Opinion (2017) using computer-assisted personal interviews. Respondents are selected based on a multi-stage, random probability sampling procedure, yielding a sample of $n = 28,031$. After removing cases with missing values on core variables, the final sample comprises 18,529 respondents from 28 EU countries. These individual-level data were merged with national-level data on women's labor force participation from the Global Gender Gap Reports (WEF, 2015, 2016), women in sport leadership from the European Institute for Gender Equality (EIGE, 2015), and the number of medals won in the 2016 Olympic Games (Olympics, 2016).

3.2 | Variables

Respondents were asked to state if they engage in voluntary work that supports sporting activities, yielding the binary variable *Volunteering_i*. The explanatory variable of interest is respondent's gender (*Woman_i*), which is coded '1' if the respondent is a woman.

The national-level variables include female labor force participation in 2015 and 2016 (WEF, 2015, 2016), women in sport leadership positions in national sport federations based on a sample of the top 10 most funded Olympic sports in each country in 2015 (EIGE, 2015), and female medalists in 2016 (Olympics, 2016). Female labor force participation is captured by a ratio setting the female value in relation to the male value. For example, a country with 45% female labor force participation is assigned a value of 81.8 ($=45/55$). Hence, the final scores represent the gap between women and men rather than females' attainment levels themselves (WEF, 2015).

Further explanatory variables include the share of women in national sport leadership positions in 2015 (calculated as a mean of the share of women as board directors, head of boards, vice presidents, or presidents in national sport federations) and the share of female Olympic medalists in 2016. The share of female medalists is calculated as the number of medals won by women in female single-sex competitions divided by the sum of medals won by athletes in female or male single-sex competitions (hence excluding mixed-gender competitions like mixed relays) at the 2016 Olympic Games.

In line with previous research (Hallmann, 2015; Metzendorf & Cnaan, 1992; Taniguchi, 2006), we control for individual sport participation (*Doing sports_i*) which is captured by the number of hours a respondent engaged in physical activity of different intensities (vigorous, moderate, or walking as light-intensity activity) in the week prior to the survey. The variable is obtained by multiplying the number of days per week with the average number of minutes per day and dividing the product by 60 to obtain weekly hours. We further control for several socio-demographic factors, including respondents' age, the presence of children in the household (dummy), difficulties to pay bills (dummy) as a proxy for earnings, perception of belonging to a middle or high social class (dummy), and the

urbanization degree of the place of residence (dummy variable equal to 1 for respondents living in a big city).

3.3 | Empirical analysis

A set of linear probability estimations using ordinary least squares regressions with standard errors clustered at the country level are estimated to explain the probability of respondents to volunteer in five consecutive steps. The first regression equation is as follows:

$$\begin{aligned} \text{Volunteering}_i = & \beta_0 + \beta_1 \text{Woman}_i + \beta_2 \text{Female LFP}_{t-2} + \beta_3 \text{Share women in sport leadership}_{t-2} \\ & + \beta_4 \text{Female LFP}_{t-2} \times \text{Woman}_i + \beta_5 \text{Share women in sport leadership}_{t-2} \\ & \times \text{Woman}_i + \beta_6 X_i + u_i \end{aligned} \quad (1)$$

where *Volunteering_i* is firstly explained by the respondent's gender (*Woman_i*). Second, the ratio of female to male labor force participation (*Female LFP_{t-2}*) and the share of women in national sport leadership positions in 2015 (*Share women in sport leadership_{t-2}*) are included in the estimations as two-year lagged explanatory variables. Third, we interact the respondent's gender with the ratio of female to male labor participation (*Female LFP_{t-2} × Woman*) and separately with the share of women in sport leadership (*Share women in sport leadership_{t-2} × Woman*). We control for previously mentioned individual characteristics of our respondents (*X_i*). The error term (*u_i*) measures further unobserved information. Fourth, we repeat these estimations for the share of female Olympic medalists in 2016 and the corresponding female labor force participation in 2016. The regression equation then reads as follows:

$$\begin{aligned} \text{Volunteering}_i = & \beta_0 + \beta_1 \text{Woman}_i + \beta_2 \text{Female LFP}_{t-1} + \beta_3 \text{Share female Olympic medalists}_{t-1} \\ & + \beta_4 \text{Female LFP}_{t-1} \times \text{Woman}_i + \beta_5 \text{Share female Olympic medalists}_{t-1} \\ & \times \text{Woman}_i + \beta_6 X_i + u_i \end{aligned} \quad (2)$$

Fifth, we then repeat the estimations of steps 3 and 4 separately for the age-specific subsamples (following Cennamo & Gardner's, 2008 definition of generations) to test hypotheses H5a, H5b, and H5c.

The independent variables were tested for multicollinearity. Female labor force participation in 2015 and the share of women in sport leadership positions (in 2015) are only moderately correlated ($r = 0.463$) and can thus be included in one model specification. Likewise, female labor force participation in 2016 and the share of female Olympic medalists are weakly correlated only ($r = 0.259$). However, we estimate separate models for 2015 and 2016, since the ratios of female to male labor force participation in these two adjacent years are highly correlated ($r = 0.982$).

We address the issue of potential self-selection of respondents into sport volunteering by applying coarsened exact matching (CEM) (Iacus et al., 2012). This procedure yields a more balanced sample of respondents in the treatment group (women) and the control group (men) by excluding outliers that can be easily identified using socio-demographic characteristics. CEM has several advantages compared to other matching procedures like propensity score or Mahalanobis matching. The latter procedures are known for equal-percentage bias

reduction and do not ensure a particular degree of imbalance reduction in a given data set under a set of normally unverifiable assumptions about the data generation process so that the properties apply only on average across samples. Thus, and contrary to the intention of using matching procedures, the application of these matching procedures might even raise imbalance in the data. The advantage of CEM is that it requires no assumptions about the generation of the sample and that it works in the sample. By inverting the process, CEM ensures that the imbalance between the matched treated and control groups will not

TABLE 1 Descriptive statistics (n = 18,529)

	Mean	SD	Min	Max
Volunteering (in sport)	0.086	—	0	1
Woman	0.528	—	0	1
Female LFP _{t-2}	0.865	0.062	0.610	0.950
Female LFP _{t-1}	0.869	0.060	0.630	0.970
Share of women in sport leadership _{t-2}	0.123	0.072	0.010	0.361
Share of female Olympic medalists _{t-1}	0.430	0.289	0	1
Doing sports	8.291	8.033	0	47.25
Age	50.105	17.717	15	99
Children	0.367	—	0	1
Diff. paying bills_most_occ	0.297	—	0	1
Social class_middle_high	0.776	—	0	1
Area city_gen	0.713	—	0	1

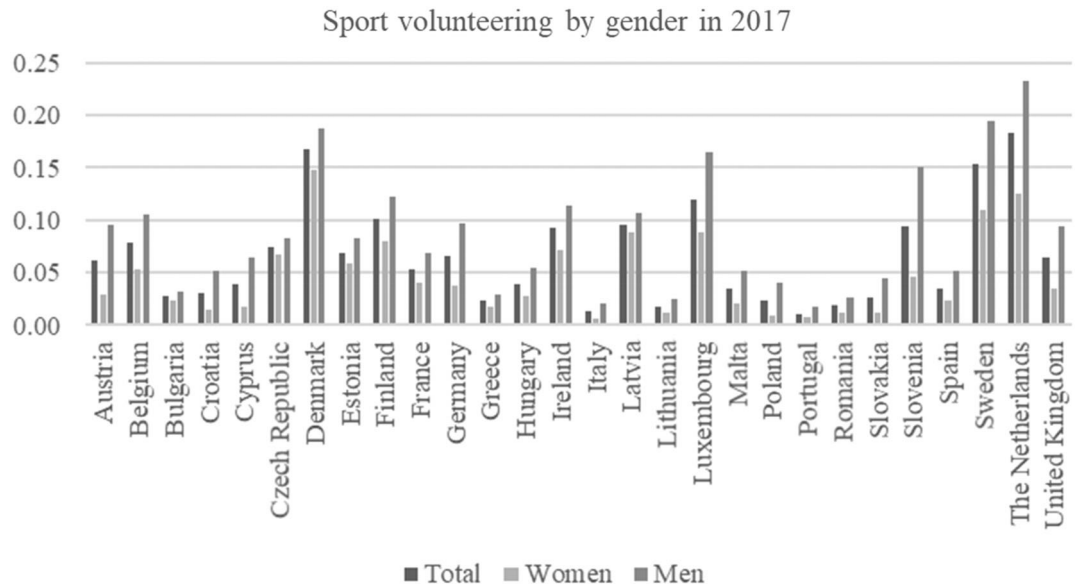


FIGURE 2 Sport volunteering by gender in Europe in 2017 (share of respondents)

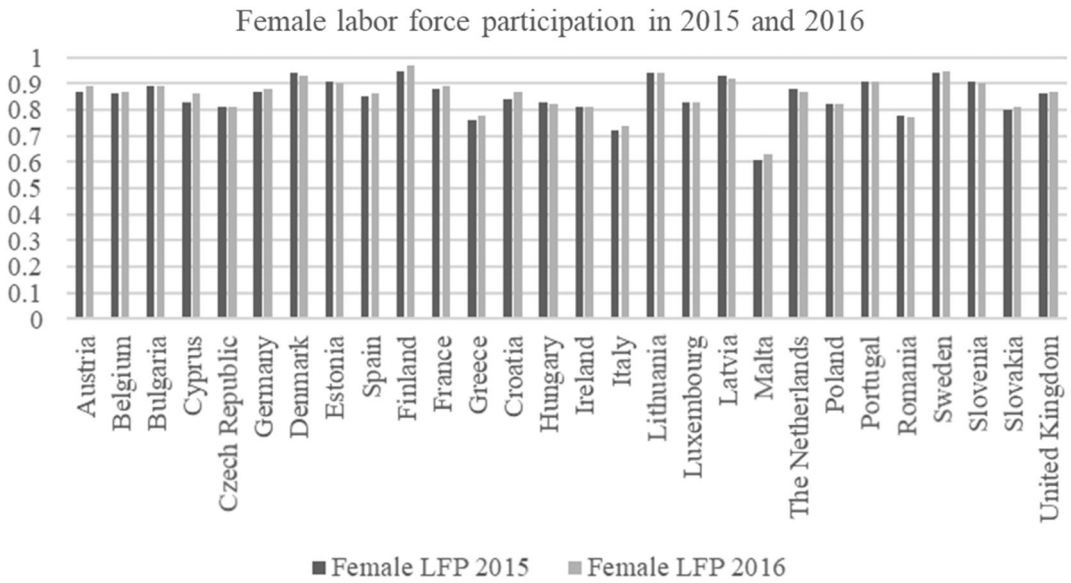


FIGURE 3 Ratio of female labor force participation by country in 2015 and 2016

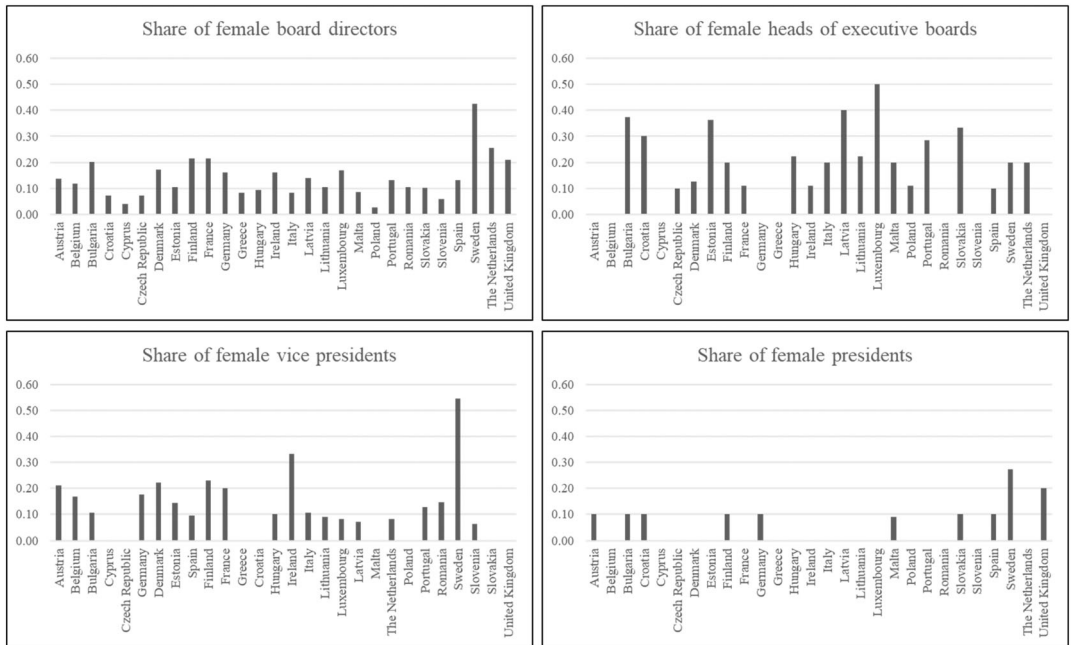


FIGURE 4 Panel of shares of female board directors, heads of executive boards, vice presidents, and presidents in national sport organizations in 2015

increase compared to the ex-ante group. Like other monotonic imbalance bounding procedures, the application of CEM is advantageous for our dataset since we can improve and exploit the balance for one covariate without influencing the maximum imbalance of each of the other covariates (Iacus et al., 2012).

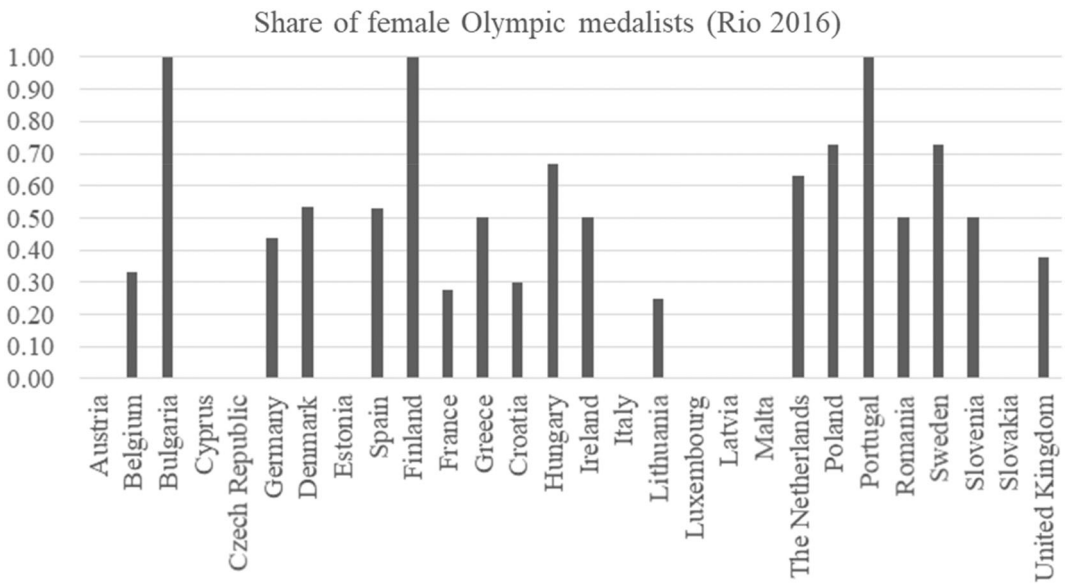


FIGURE 5 Share of female Olympic medalists (Rio 2016)

We use the slightly smaller dataset after CEM to document the robustness of our initial linear probability models. We first estimated the target regression functions (see equations 1 and 2) explaining the probability for a respondent to volunteer in sport. Then, we matched women and men respondents in our sample on all explanatory and control variables as pre-treatment variables (excluding volunteering). After this matching procedure and receiving our matched subsample, we re-estimated the target regression functions including the weights that we gained from the matching procedure. The pre- and post-matching L_1 distance statistics measure the overall imbalance of the tested datasets. While this standardized measurement in case of “0” indicates an exact overlap of the data distribution, ‘1’ indicates a complete separation of the two distributions (Iacus et al., 2012). For all models, the L_1 measurement decreased after each CEM procedure, indicating an improvement in the sense of resulting in a higher percentage of overlap between the distributions.

4 | RESULTS

4.1 | Descriptive results

Table 1 reports the summary statistics. Altogether, 8.6% of respondents volunteered in sport and 52.8% of them are women. Among sport volunteers, 3.4% fulfill administrative roles, 33.4% sport roles, and 65.5% operational roles, indicating that the suggested typology of volunteering roles is also present in our sample. Recall that sport volunteers can fulfill multiple roles so that the cumulative percentages exceed 100%. Respondents are on average 50 years old and 36.7% have at least one child. Nearly one-third of the respondents state they often have difficulties paying bills and 77.6% feel they belong to the middle or higher social class of society. Approximately 71% live in cities (compared to rural areas).

TABLE 2 Testing hypotheses H1, H2, and H3: Linear probability estimations before and after CEM for the probability to volunteer in sport

	(1) before CEM	(2) after CEM	(3) before CEM	(4) after CEM	(5) before CEM	(6) after CEM
Woman	-0.051*** (0.007)	-0.503*** (0.007)	0.056 (0.063)	0.157* (0.084)	-0.041*** (0.013)	-0.025*** (0.126)
Female LFP _{t-2}	0.266** (0.132)	0.344** (0.148)	0.330** (0.150)	0.469*** (0.163)	0.265** (0.132)	0.344** (0.148)
Share of women in sport leadership _{t-2}	0.198*** (0.080)	0.236*** (0.074)	0.197** (0.080)	0.236*** (0.074)	0.138*** (0.045)	0.337*** (0.085)
Female LFP _{t-2} × Woman			-0.124 (0.076)	-0.239** (0.099)		
Share of women in sport leadership _{t-2} × Woman					-0.008 (0.075)	-0.194*** (0.065)
Doing sports	0.002*** (0.001)	0.003*** (0.001)	0.002*** (0.001)	0.003*** (0.001)	0.002*** (0.001)	0.003*** (0.001)
Age	-0.001*** (0.001)	-0.001** (0.001)	-0.001*** (0.001)	-0.001** (0.001)	-0.001*** (0.001)	-0.001** (0.001)
Children	0.033*** (0.012)	0.050*** (0.018)	0.033** (0.012)	0.051*** (0.018)	0.033*** (0.012)	0.051*** (0.018)
Diff. paying bills_most_occ	-0.025*** (0.008)	-0.039*** (0.011)	-0.025*** (0.008)	-0.039*** (0.011)	-0.025*** (0.008)	-0.039*** (0.011)
Social class_middle_high	0.042*** (0.007)	0.041*** (0.012)	0.042*** (0.007)	0.041*** (0.012)	0.042*** (0.007)	0.041*** (0.012)
Area city_gen	-0.018*** (0.006)	-0.029*** (0.009)	-0.018*** (0.006)	-0.029*** (0.009)	-0.018*** (0.006)	-0.029*** (0.010)
Constant	-0.153 (0.108)	-0.231* (0.126)	-0.208 (0.124)	-0.340** (0.1438)	-0.158 (0.108)	-0.244* (0.126)
Observations	18,529	9886	18,529	9886	18,529	9886
Adjusted R ²	0.033	0.042	0.033	0.042	0.033	0.042
Pre-Matching L ₁		.846		.846		.846
Post-Matching L ₁		.768		.768		.768

Note: Robust standard errors in parentheses.

*** $p < 0.01$. ** $p < 0.05$. * $p < 0.1$.

Figure 2 illustrates the distribution of sport volunteering across Europe separately for men and women. In the Netherlands, 18% of the population volunteer in sport, while the respective share is only 1% in Portugal. However, the share of female sport volunteers is lower than that of men in the Netherlands, while women volunteer more often than men in Portugal. The highest share of female sport volunteers (15%) is observed in Denmark. The smallest gender difference

TABLE 3 Testing hypotheses H1, H2, and H4: Linear probability estimations before and after CEM for the probability to volunteer in sport

	(1) before CEM	(2) after CEM	(3) before CEM	(4) after CEM	(5) before CEM	(6) after CEM
Woman	−0.050*** (0.006)	−0.047*** (0.007)	0.063 (0.062)	0.147 (0.089)	−0.054*** (0.007)	−0.052*** (0.008)
Female LFP _{t-1}	0.322** (0.124)	0.393*** (0.137)	0.390** (0.142)	0.510*** (0.161)	0.298** (0.118)	0.359*** (0.129)
Share of female Olympic medalists _{t-1}	0.012 (0.023)	0.032 (0.025)	0.012 (0.023)	0.032 (0.025)	0.011 (0.023)	0.031 (0.025)
Female LFP _{t-1} × Woman			−0.130* (0.073)	−0.223** (0.102)		
Share of female Olympic medalists _{t-1} × Woman					0.001*** (0.001)	0.001*** (0.001)
Doing sports	0.002*** (0.001)	0.003*** (0.001)	0.002*** (0.001)	0.003*** (0.001)	0.003*** (0.001)	0.003*** (0.001)
Age	−0.001*** (0.001)	−0.001 (0.001)	−0.001*** (0.001)	−0.001 (0.001)	−0.001*** (0.001)	−0.001* (0.001)
Children	0.032*** (0.012)	0.049*** (0.017)	0.032*** (0.012)	0.049*** (0.017)	−0.028*** (0.009)	0.048*** (0.017)
Diff. paying bills _{most_occ}	−0.029*** (0.00892)	−0.039*** (0.014)	−0.029*** (0.009)	−0.039*** (0.014)	0.042*** (0.007)	−0.038** (0.014)
Social class _{middle_high}	0.043*** (0.007)	0.036*** (0.012)	0.042*** (0.007)	0.036*** (0.019)	−0.018*** (0.006)	0.035*** (0.012)
Area city _{gen}	−0.016*** (0.006)	−0.025** (0.009)	−0.016*** (0.006)	−0.025** (0.009)	−0.164 (0.102)	−0.027*** (0.009)
Constant	−0.188* (0.107)	−0.264** (0.120)	−0.246* (0.124)	−0.367** (0.141)	−0.028*** (0.009)	−0.230** (0.111)
Observations	18,529	9993	18,529	9993	18,529	9993
Adjusted R ²	0.030	0.035	0.031	0.035	0.031	0.037
Pre-Matching L ₁		.861		.861		.861
Post-Matching L ₁		.795		.795		.795

Note: Robust standard errors in parentheses.

*** $p < 0.01$. ** $p < 0.05$. * $p < 0.1$.

of 1 percentage point is evident for Greece, Portugal, Lithuania, Bulgaria, and Romania, while the gender difference is highest in the Netherlands with 11 percentage points.

The average ratio of female to male labor force participation is 0.865 in 2015 and 0.869 in 2016 (Table 1). The distribution of female labor force participation (Figure 3) indicates that many European countries have a ratio above 0.8, with Malta, Italy, Greece, and Romania having the lowest ratios. The average share of women in national sport leadership positions in 2015

TABLE 4 Summary of age-specific results (including H1, H5a, H5b, and H5c)

Age group in years	Sport			Key variable	Share women in sport leadership		Share female Olympic medalists		
	Volunteering rate (in %)	Administrative roles (in %)	Operational roles (in %)		Before CEM	After CEM	Before CEM	After CEM	
Generation Y: 17–37 (<i>n</i> = 4958)	8.6	26.2	36.9	64.7	Woman	–	–	–	–
Generation X: 38–55 (<i>n</i> = 5698)	10.1	31.4	37.3	68.8	FLFP × Woman	n.s.	n.s.	n.s.	n.s.
					WIS × Woman	n.s.	+	+	+
Baby Boomers: 56–71 (<i>n</i> = 5346)	7.8	47.0	27.5	63.6	Woman	–	–	–	–
					FLFP × Woman	–	–	–	–
Silent generation: ≥72 (<i>n</i> = 2342)	6.1	34.3	23.1	62.9	WIS × Woman	–	n.s.	n.s.	n.s.
					Woman	–	–	–	–
					FLFP × Woman	n.s.	n.s.	n.s.	n.s.
					WIS × Woman	–	–	+	+

Note: Percentages in columns 3–5 do not sum up to 100% as sport volunteers fulfill multiple roles simultaneously; +, significantly positive; –, significantly negative; n.s., not significant; FLFP, Female Labor Force Participation; WIS, Women in Sport (either share of women in sport leadership, or share of female Olympic medalists in 2016).

is 12.3% (Table 1). Specifically, women are underrepresented as board directors (15.0%), vice presidents (13.5%), heads of sport boards (15.7%), and presidents (5.0%) (Figure 4). Across EU countries, Sweden has the highest share of women in leadership positions. On average, 43% of the medals at the 2016 Rio Olympics were won by women (Table 1). In Austria, Cyprus, Estonia, Luxembourg, Latvia, Malta, and Slovakia, no woman won an Olympic medal, while women from Bulgaria, Finland, and Portugal won all the medals of their country (Figure 5).

4.2 | Empirical models

Tables 2 and 3 display the linear probability estimations before and after CEM. The empirical results reveal that women have a significantly lower probability of 4.7 to 5.1 percentage points to volunteer in sport than men (models 1 and 2). Thus, hypothesis H1 is supported. Women living in countries with high female labor force participation in both years have a statistically significant lower probability to volunteer in sport, ranging between 13 to 23.9 percentage points (Table 2: model 4; Table 3: models 3 and 4). Thus, hypothesis H2 cannot be supported. A higher share of women in national sport leadership positions is significantly negatively associated with the probability for a woman to volunteer in sport by 19.4 percentage points (after CEM) (model 6, Table 2). Hence, hypothesis H3 cannot be supported either.¹ Conversely, a higher share of female Olympic medalists is significantly positively associated with the probability for a woman to volunteer in sport. Hence, hypothesis H4 is supported.

Table 4 summarizes the age-specific results (the detailed findings are available upon request) including volunteering rates and the distribution of volunteer roles by generation. While the sport volunteering rate is approximately 9–10% among respondents of generations Y and X, this rate is only 6% for the silent generation. Most sport volunteers fulfill (multiple) operational roles across all generations, with more volunteers performing sport roles for the generations younger than 56 years. The percentage of sport volunteers in administrative roles increases with each generation from 26.2% for sport volunteers of generation Y to a maximum of 47% for Baby Boomers. Across all age groups, women have a significantly lower probability to volunteer than men, supporting hypothesis H1. Moreover, women of generations Y and the silent generation have no significantly different probability to volunteer if they live in countries with high female labor force participation. Women of generation X (after CEM) and the Baby Boomer generation living in a country with high female labor force participation show a significantly lower probability to volunteer. Thus, the empirical findings do not support hypothesis H5a for women of any generation.

Hypothesis H5b suggests that younger women living in a country with a higher representation of women in national sport leadership have a higher probability of sport volunteering. The corresponding results (Table 4) show only a significantly higher probability for women of generation Y (after CEM). These women have (on average) a 46.8 percentage points higher probability to volunteer in sport if the presence of women in national sport leadership is high. For all other age groups, the impact of a higher female representation in national sport leadership on the probability of women to volunteer in sport is insignificant (for generation X in the majority of the models) or even negative (Baby Boomers and the silent generation). Hence, hypothesis H5b is only partially supported for women of generation Y.

Hypothesis H5c states that younger women living in a country with a high share of female Olympic medalists have a significantly higher probability to volunteer in sport. Our results show that women of generation Y, generation X, and the silent generation have a significantly

higher probability to volunteer if they live in a country with a high share of female Olympic medalists. No significant effects are found for women of the Baby Boomer generation (Table 4). Hence, hypothesis H5c is supported.

5 | DISCUSSION AND CONCLUSION

This research investigated whether gender equality in the national labor market, women in national sport leadership positions, and success of women in recent Olympic Games affects a woman's probability to volunteer in sport using data from all EU member states. Generally speaking, our key findings are that female labor force participation, and women among sport leaders are positively linked to the likelihood of sport volunteering, but not specifically among women. By contrast, a high share of female Olympic medalists is positively associated with the probability of women to volunteer in sport. Another key finding of our generational analysis is that only women of generation Y have a consistently higher probability to volunteer in sport if they live in a country with a high share of women among sport leaders and among Olympic medalists.

The findings support the notion that a gender gap in favor of men still exists in sport volunteering across Europe. Drawing on social role theory, men and women are expected to showcase differences in helping behaviors which were also evident in volunteering beyond sport (Fyall & Gazley, 2015). The present study indicates for European countries that these gender differences also extend to the sport sector, respectively.

Importantly, these differences are not only shaped by individual factors, but also by the national context where sport volunteering takes place. Women in the national labor market, in national sport leadership positions, and among Olympic medalists shape the attitudes that people have toward women's knowledge, and skills. Consequently, perceived role incongruities between the female gender role and the sport volunteering role might be attenuated.

The negative effect of female labor force participation indicates that social role incongruities lead to significant gender differences in the probability to volunteer. Insignificant effects of national female labor force participation are particularly evident for women of generation Y and the silent generation conversely to women of the Baby Boomer generation. This finding can be interpreted from two perspectives. On the one hand, women of generation Y tend to have less work and life experience, hence considering sport volunteering as a way to improve their human capital. In countries with higher gender equality in the labor market, women of generation Y value career (Zemke et al., 2000) and skills development (Smola & Sutton, 2002) through sport volunteering, as an efficient way to maintain an adequate work-life-balance. On the other hand, although women have the opportunity to push their careers by sport volunteering, the opportunity costs of doing so increase in the age between 17 and 37 years with the arrival of a child. This circumstance might explain the insignificant conditional effect for women of generation Y in countries with high female labor force participation on their probability to volunteer. Further, women of the silent generation might be less affected by a high national female labor force participation since they are retired already. Hence, their decision to volunteer in sport does not depend on gender equality in the labor force. Likewise, the significantly negative impact of a high female labor force participation on the probability of women belonging to the Baby Boomer generation to volunteer in sport might be linked to the fact that they are approaching retirement and

probably feel pushed out not only of the labor market by younger women, but also out of volunteer work.

Female presence in national sport leadership positions is significantly negatively associated with the women's probability to volunteer in sport, thus indicating no empirical support for the similarity attraction paradigm. The age-specific analysis indicates that these negative effects are driven by women of the Baby Boomer and the silent generation. Hence, sport volunteering among women might rather be seen as an investment in human capital since we find significantly positive effects only for women of generation Y. For women older than 37 years, the impact of national gender equality on the share of women among sport leaders is negative, hence indicating that sport volunteering is less of an investment in human capital. This result may be due to historical developments offering poorer opportunities to participate in organized sports to older women, who, then, are not interested in investing their leisure time in sports today. Another reason could be that respondents older than 37 years have a higher probability to have (already) reached the peak in their career, reducing individuals' incentives to invest in the acquisition of social capital. Thus, the opportunity costs of volunteering are higher and make this leisure activity less attractive. Although athletes who are successful in the Olympic Games are typically widely appreciated by the media and the public, we only find a rather small marginal spillover effect of female athletes' Olympic success on the probability for women to volunteer in sport.

The regression models explain between 3% and 4% of the variation in sport volunteering. While the share of explained variance might be considered low, it is typical for studies attempting to explain human behavior with cross-sectional data (Wicker & Downward, 2020). Other studies explaining sport volunteering also reported R^2 -values well below 10% (Hallmann, 2015; Taylor et al., 2012).

The present findings have implications for promoting women's volunteering in sport. Although policy makers and club officials cannot change gender equality neither in the national labor market nor in national sport organizations or sport competitions, they should be aware of the cultural environment it creates, especially regarding the perception of women. The age-specific findings suggest a sport volunteering potential particularly among young women. Management and leaders of NPSOs learn from our findings that especially women of generation Y might be motivated to volunteer by (1) actively communicating the presence of women in leadership positions or among Olympic medalists and (2) outlining (further) possibilities on how to invest in human capital by explicitly stating the skills and abilities required to foster one's career. Hence, volunteering programs for and positions in NPSOs should provide opportunities for human capital development regarding, for example, leadership or communication skills for these women. Moreover, our findings indicate that less effort is necessary to recruit younger—as opposed to—older women for sport volunteering activities. Sport organizations and policy makers might recruit older female volunteers and generate an expected benefit of this leisure activity by ensuring that their missing experience with organized sports is compensated through the provision of adequate training and volunteer programs (Morrow-Howell et al., 2009). These options should be exploited given the existing problems regarding the recruitment and retention of sport volunteers expressed by representatives across almost all sport institutions (Wicker, 2017).

The present research makes a number of contributions to the body of work on volunteering in general and in sport in particular. First, this study extends the body of research by considering national-level factors rather than only individual-, organizational-, or community-level factors, which were the focus of existing research (Wicker, 2017). By extending social role theory

to the national context, this study presents a theoretical foundation for these national-level factors and explains how and why the national context might affect women's probability of volunteering in sport. It also provides theoretical explanations for differences in female sport volunteering between generations and the impact of the respective national context based on human capital and social capital theories. Hence, this study extends existing theoretical approaches by adding another level to sport volunteering.

The second contribution relates to the consideration of moderating factors which have only rarely been used to explain individual behavior in sport (Cunningham & Ahn, 2019). In the present case, they help identify that not only individual factors and not only gender per se, but also the country-specific labor market and women in national sport leadership positions play an important role in explaining gender differences in sport volunteering. Also, the examination of the behavior of particular age groups provides a more nuanced analysis of sport volunteering over the life span. Hence, the study contributes to the management and leadership of non-profit (sport) organizations by demonstrating that sport volunteering is not only affected by factors that can be shaped by organizational leaders, but also by external factors that are beyond their control.

A third primarily empirical contribution lies in the application of a matching procedure to address issues arising from self-selection and unobserved heterogeneity. The results obtained with CEM confirm and in some cases even strengthen the existing findings, suggesting that sport volunteering is not only a matter of individual behavioral preferences or self-selection into specific roles, but also a matter of the context where behavior takes place.

This study has some limitations that represent avenues for future research. Since the data of this study are cross-sectional, our results reveal correlations rather than causal effects. Future research might analyze our research question with panel data for European countries and also include additional countries. Moreover, future research might explore the role of other national-level factors and how they affect (women's) sport volunteering. Also, future studies should examine the perceptions of a high ratio of women among sport leaders by volunteers. Such research will yield new insights on the reasons for individuals' decision to (not) volunteer in sport that in turn might lead to a more focused approach to especially promote women as sport volunteers. Such studies will further contribute to the management and leadership of non-profit (sport) organizations.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ORCID

Katrin Scharfenkamp  <https://orcid.org/0000-0002-3923-9735>

Pamela Wicker  <https://orcid.org/0000-0001-5818-8470>

Bernd Frick  <https://orcid.org/0000-0001-6430-0959>

ENDNOTE

¹ Women as board directors are significantly positively associated with the probability for women to volunteer in sport after CEM. Women as head of boards have no significant impact. We find that a higher share of women as vice presidents or presidents is significantly negatively associated with the probability of women to volunteer in sport after CEM.

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AUTHOR BIOGRAPHIES

Katrin Scharfenkamp is a postdoctoral researcher at the Department of Sports Science (Bielefeld University). She was awarded a PhD in Economics from the University of Münster. Her research focuses on gender diversity in (sport) organizations and teams, and in particular on the mechanisms in corporate boards, political economy, and sports economics. Her recent work centers on the effects of socio-demographic as well as functional differences in groups on the individual or team outcome. Her research has been published in leading journals such as the *European Journal of Political Economy*, *Managerial and Decision Economics*, and the *International Journal of Sport Finance*. Katrin Scharfenkamp is an Editorial Board member of *European Sport Management Quarterly*.

Pamela Wicker is a Professor for Sport Management and Sport Sociology at the Department of Sports Science at Bielefeld University, Germany. Previously, she was employed at the German Sport University Cologne and at Griffith University, Australia. She holds Associate Editor positions at the *Journal of Sports Economics*, *Sport Management Review*, *European Sport Management Quarterly*, and *European Journals for Sport and Society*, and the *Journal for Study and Teaching in Sport Science*, and is an Editorial Board member of another six international journals. Her main research interests include sport organizations (incl. gender research); societal relevance of sport; sport participation, well-being, and public health; and sport and environmental sustainability. She has published over 170 articles in peer-reviewed journals.

Bernd Frick is a Professor of Organization, Media, and Sports Economics in the Management Department at Paderborn University, Germany. Before taking his current position, he was a Professor of Organizational and Personnel Economics at Ernst-Moritz-Arndt University Greifswald and held the Reinhard Mohn-Chair in Organizational Economics and Business Ethics at Witten/Herdecke University. He studied sociology, economics, and political science at the University of Trier and at Clark University, Worcester, MA. He received both, his Ph.D. and his Habilitation in Business Economics at the University of Trier (the former with a dissertation in labour economics and the latter with a comparative study in industrial relations). In the meantime, he has published more than 90 papers in refereed journals.

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