

Social identity in environmental protection engagement: How are different kinds of identity related to different types of engagement?

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Abstract

Social approaches can contribute to clarifying environmental issues. For instance, social identity theory can help to comprehend people's motivations for getting involved in environmental protection. However, the kind of social identity best suited for predicting environmental protection engagement remains unclear. This study examines different categories of social identity in relation to different types of environmental protection engagement. The predictive power of identification with environmentalists, as well as with politicized and non-politicized environmental groups, are considered separately. Furthermore, environmental protection engagement is divided into pro-environmental behavior and two different demanding forms of pro-environmental collective action—participatory environmental action and leadership environmental action. Data collected online from 985 respondents involved in environmental protection were analyzed using structural equation modeling. The results showed that while environmental group identification was not significantly related to any kind of environmental protection engagement, environmentalist identification emerged as a predictor of participatory environmental action, leadership environmental action and pro-environmental behavior. Moreover, these connections were stronger for participants belonging to a politicized environmental group than for those belonging to a non-politicized environmental group and those not belonging to any environmental group. These results support and extend previous findings on the role of social identity in pro-environmental collective action and pro-environmental behavior.

1 | INTRODUCTION

Global warming is changing living conditions on Earth (Intergovernmental Panel on Climate Change, 2023). According to the World Meteorological Organization (2021), the number of weather-related disasters caused by climate change has increased rapidly in the last few decades. As a result, sustainability and environmental protection are attracting more political

attention, as reflected by the Paris Agreement. This has had an impact at the societal level as well. In September 2019, 7.6 million people took to the streets to participate in global climate strikes (De Moor et al., 2020). Given that such engagement can drive sustainable change (Stern, 2000), understanding its underlying motivational factors has drawn significant interest (Bouman et al., 2021). Notably, considering that the ecological crisis is the result of complex collective processes (Fritsche et al., 2018)

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and that societal transformation appears to be the most appropriate way to solve it (Rees & Bamberg, 2014), social approaches to environmental protection engagement have been receiving increasing attention (Masson & Fritsche, 2021). One factor that seems to play an overarching role in this context is identity (Vesely et al., 2021), with several studies considering social identity a predictor of environmental protection engagement (for reviews, see Masson et al., 2017; Udall et al., 2020). However, the predictive power of social identity seems to depend on its corresponding social categories and the kind of environmental protection engagement it intends to predict (Schulte et al., 2020).

This study aims to conduct a detailed investigation by considering social identity as a predictor and environmental protection engagement as a criterion in a differentiated way. The differences in the predictive power of social identity based on its corresponding social category are examined. This means that identification with a broader unit—in this case, environmentalists—and smaller units—in this case, specific environment protection groups with politicized and non-politicized orientations—are considered separately. In addition, different types of environmental protection engagement, both individual and collective, are considered.

2 | TYPES OF ENVIRONMENTAL PROTECTION ENGAGEMENT

With regard to environmental protection engagement, research has usually distinguished between pro-environmental behavior and environmental activism (Dono et al., 2010). Pro-environmental behavior encompasses practises carried out in the private sphere, such as individual consumption patterns or household energy use (Kollmuss & Agyeman, 2002). In contrast, environmental activism tends to be more public, such as participating in demonstrations (Stern, 2000), and it aims at systemic change (Alisat & Riemer, 2015). While many measurement tools (for a review, see Lange & Dewitte, 2019) and explanatory approaches (for reviews, see Bamberg & Möser, 2007; Gifford & Nilsson, 2014; Kollmuss & Agyeman, 2002; Steg & Vlek, 2009) have been proposed to assess pro-environmental behavior, the field of environmental activism has remained both less recognized and less structured (Lange & Dewitte, 2019).

According to Curtin and McGarty (2016), activism refers to social and political commitment of individuals to a cause and the endeavor to win others over to this cause. Such a broad definition of activism actually allows or even requires a wide range of activities to be labelled as activist (Kende, 2016). In the context of the environmental domain, SGuin et al. (1998) considered various behaviors with social impact, such as participation in events organized by environmental groups or supporting green parties in elections, within environmental activism. In contrast, Stern et al. (1999) differentiated genuine activism, such as participation in demonstrations, from nonactivist public-sphere behaviors that demand less effort—for instance, signing a petition. Owing to its social dimension, environmental activism may be understood as collective action (Lubell, 2002). Notably, collective action refers to the activities performed by an individual as a representative of a group to

which he or she belongs, with the intention of improving the conditions of this group (Wright et al., 1990). Some studies argue in favor of using the term 'pro-environmental collective action' rather than 'environmental activism' (Schulte et al., 2020), since the former emphasizes the collective and social dimensions involved in such activities and accounts for the fact that public environmental protection engagement can take place at different levels (Alisat & Riemer, 2015). As a result, this terminology is used in the following sections.

According to Alisat and Riemer (2015), pro-environmental collective action can be of two types. On the one hand, participatory environmental actions refer to less ambitious supportive activities, such as raising awareness about environmental issues by talking to people or via social media. Such actions are often carried out by individuals in the initial stages of their pro-environmental collective action engagement. On the other hand, leadership environmental actions refer to highly ambitious activities that are complex or require more effort, such as organizing an educational event to foster awareness about environmental issues or participating in a demonstration. Leadership environmental actions create more political pressure than participatory environmental actions and are mainly carried out by people who are extremely committed to pro-environmental collective action. Effectively, these two types of pro-environmental collective action differ in terms of involvement, effort and complexity. This fact may play a role in determining relevant predictors for pro-environmental collective action. For instance, in a study on collective action for forest protection, Landmann and Rohmann (2020) found that emotions and injustice appraisals are relevant to effortless collective forest protection action, but less significant in the case of nonnormative collective forest protection action. This leads to the assumption that predictors of pro-environmental collective action may operate differently for participatory and leadership environmental actions, implying the need to consider these two types of pro-environmental collective action separately.

Although pro-environmental behavior is conceptually distinct from pro-environmental collective action, it nonetheless includes a collective dimension (Masson & Fritsche, 2021). Practices that are summarized under pro-environmental behavior focus on minimizing one's harmful impact on the environment (Kollmuss & Agyeman, 2002). Such behavior can have a significant impact and bear transformative power if carried out simultaneously by a sufficient number of people (Fritsche et al., 2018). For example, the pro-environmental behavior of an individual who uses a bicycle instead of a car on their way to work may be considered part of the collective task of reducing CO₂ emissions in the mobility sector. Therefore, from this perspective, more research is necessary to embed such behavior into a collective approach (Masson et al., 2017).

3 | SOCIAL IDENTITY AS A PREDICTOR OF ENVIRONMENTAL PROTECTION ENGAGEMENT

Social identity as a predictor of environmental protection engagement, especially pro-environmental collective action, can be derived from research on protest movements (Van Zomeren et al., 2008).

Social identity is the part of one's self-concept that is formed by belonging to a particular group and experiencing the esteem and emotional attachment associated with it (Tajfel, 1978). In other words, social identity means defining oneself "in terms of 'We' instead of 'I'" (Masson et al., 2017, p. 13). According to the social identity theory (Tajfel & Turner, 2004), individuals think and act as members of the group to which they feel they belong based on commonly shared underlying beliefs and norms (Masson & Fritsche, 2021). If the group membership is relevant in a certain context, it is activated (Bouman et al., 2021). Members then engage in collective action—for example, in the form of protests—to protect the needs of the group (Van Zomeren et al., 2008; Wright et al., 1990) or, as proposed by Masson and Fritsche (2021), because they see that there is a common task to be accomplished.

Recent research in the environmental domain has addressed both social identity and environmental protection engagement. In a study by Brick and Lai (2018), identification with environmentalists was found to be a reliable predictor of environmental protection engagement. Social identity, measured as membership in an environmental group, emerged as a strong predictor of the intention to engage in environmental activism in a study by Fielding et al. (2008). Furthermore, Schmitt et al. (2019) found a link between identification with activists and the intention to engage in environmental activism, as well as environmental activism itself. Identification with a specific environmental group was found to predict the intention to join the group (Bamberg et al., 2015; Rees & Bamberg, 2014) and was also related to past participation in group-related activities (Keshavarzi et al., 2021). Furlong and Vignoles (2021) arrived at similar results in the context of civil disobedience. Along the same lines, Brügger et al. (2020), as well as Wallis and Loy (2021), showed that identification with Friday for Future strikers was a predictor for participation in Fridays for Future demonstrations.

Notably, in these studies, the term 'social identity' is used in different ways. Some authors refer to a broader sense of identification, such as identification with environmentalists (Brick & Lai, 2018) or activists (Schmitt et al., 2019), while others refer to smaller units, such as identification with specific environmental groups and neighborhood initiatives (Rees & Bamberg, 2014). Studies in the environmental field that explore different categories of social identity have shown that they are closely linked to different types of environmental protection engagement. For instance, in a study by McCright and Dunlap (2015), identification with environmentalists was observed to be more closely related to political actions, such as signing petitions, than identification with the environmental movement, which was found to be more closely related to joining an environmental organization and pro-environmental behaviors, such as recycling. Furthermore, in a study by Sparks et al. (2020), identification with environmentalists was recognized as a predictor of pro-environmental collective action, such as contacting officials to complain about environmental issues, whereas identification with an environmental movement predicted pro-environmental behavior, such as water saving. Therefore, it is evident that certain kinds of identities are relevant to different types of environmental protection engagement (see also Udall et al., 2020).

These differences may be attributed to the degree of politicization inherent in the group associated with an identity. Stürmer and Simon (2004) revealed that the link between social identity and collective action becomes particularly salient when identification is politicized. The term 'politicized' indicates that a group is actively seeking to change its position in society or in a system (Simon & Klandermans, 2001). In this context, Stürmer and Simon (2004) showed that identification with a social movement for gay people predicted collective action for gay rights, while identification with gay people in general did not. Therefore, the orientation of a social group seems to be crucial in determining whether social identity contributes to the prediction of collective action (Vesely et al., 2021).

Since different environmental groups pursue different goals, it may be assumed that these groups are not characterized by the same degree of politicization, either among themselves or in relation to environmentalists in general. Recently, environmental groups that are strongly focussed on systemic change, such as Extinction Rebellion or Fridays for Future, have emerged. These groups employ eye-catching campaigns to put pressure on governments to create sustainable and more environmentally friendly conditions (cf. Extinction Rebellion, 2023). These groups can be considered politicized. In addition to these groups, there are traditional environmental protection groups that, although they make demands on politicians, mainly focus on the practical implementation of species and nature conservation projects and environmental education programmes (cf. Naturschutzbund Deutschland, 2023). Therefore, they can be regarded as rather non-politicized. Finally, there are also people who identify with environmentalists in general but do not belong to any specific environmental group and whose orientation, therefore, is not obvious.

In conclusion, there is strong evidence suggesting that social identity is closely related to environmental protection engagement. However, the ways in which different environmental group affiliations affect the predictive power of social identity on environmental protection engagement has thus far remained understudied. Addressing this gap in the literature, the aim of this study is to analyze different dimensions of social identity in terms of their predictive power for environmental protection engagement. Therefore, identification with a broad category—the one of environmentalists—and identification with specific environmental groups—politicized and non-politicized—are considered separately. Furthermore, considering the context of environmental protection engagement, pro-environmental behavior and pro-environmental collective action are studied. In addition, since pro-environmental collective action can occur at different levels, participatory environmental action and leadership environmental action are considered separately.

4 | METHOD

4.1 | Sample

The study sample comprised 985 participants from Germany interested in environmental protection (564 female, 371 male, 15 nonbinary and 35

did not provide information on their gender). The age of the participants ranged from 16 to 78 years ($M_{age} = 29.62$ years, $SD_{age} = 15.89$ years). About half of the participants were students at school (34%) or university (19%), 27% were employees, 4% were retired, and about 2% each were either engaged in volunteering, vocational education and housekeeping or were unemployed. A majority of the participants (804) classified themselves as being part of an environmental protection group. Among them, 704 belonged to groups pursuing a politicized approach and 100 belonged to groups pursuing traditional environmental protection. Moreover, 181 of the 985 participants stated that they did not belong to any environmental group.

4.2 | Procedure

As the first step, the homepages of major environmental groups in Germany were searched to gather the contact details of their local groups. Next, these local groups were contacted by email and, as an additional step, over social media. An invitation to participate in a survey was sent to them, which included information on the content of the survey, the voluntary nature of their participation, age restriction (at least 16 years old) and data protection, along with a link to an online survey. Addressees of acquaintances and friends who were also engaged or interested in environmental protection were sought from the invitees to ensure a wider reach for the survey. No reward was offered for participation. The link to the survey, which remained active for 3 months, was opened 3075 times, with 1356 individuals beginning the survey and 1024 completing it.

Since the data provided by careless responders, such as extreme responders, could negatively influence the quality of models (Goldammer et al., 2020; Ward & Meade, 2023; Weijters et al., 2010), the data sets of the participants who consistently ticked only one extreme even for inversely formulated items (Weijters et al., 2013) were removed. Furthermore skipping questions is a strategy that may indicate that participants are not fully committed to answering a questionnaire (Barge & Gehlbach, 2012; Vriesema & Gehlbach, 2021). Additionally, questionnaires with many unanswered items are usually completed in a remarkably short time. A short completion time is one of the clearest indicators of careless and insufficient processing of a survey (Leiner, 2019; Ulitzsch et al., 2024). Following that, participants whose responses contain several missing answers may also be regarded as careless responders (Gottfried, 2024). Therefore, questionnaires in which less than three-quarters of all questions had been answered were also removed from the data set. Finally, 985 questionnaires remained.

The determination of which groups should be considered politicized and non-politicized was carried out by reviewing the homepages of the groups named by the survey participants. Information on aims and self-image was available on the groups' websites. Groups were classified as politicized if, first, their main concern was to place demands on governments and economic systems and, second, they called on members and interested individuals to participate in protests and campaigns. In contrast, groups were classified as traditional and non-politicized if, first, their main concern was practical nature

conservation work, that is, protection of habitats and environmental education, and second, members and interested individuals were called upon to participate in voluntary activities, such as biotope conservation, or to support the organization through membership fees. Based on this system, most groups could be easily categorized as politicized (e.g. Fridays for Future, Extinction Rebellion) or non-politicized (e.g. Naturschutzbund Deutschland). Groups for which this systematization was not immediately discernible (e.g. Greenpeace, WWF—World Wide Fund For Nature) were categorized after a discussion. A table listing which groups have been assigned to which orientation is available online as supplementary material.

4.3 | Instrument

A self-report questionnaire seeking demographic data, information on group memberships and scales of participatory environmental action, leadership environmental action, pro-environmental behavior, environmentalist identification and environmental group identification was developed. German translations of previously published scales were carried out by three researchers. The researchers independently translated the scales from English to German, after which an English native speaker translated the final version back into English to validate the German translation.

4.3.1 | Environmentalist identification and environmental group identification

An instrument implemented by Mael and Ashforth (1992), which originally measured identification with an organization, was employed to estimate environmentalist identification (EI) and environmental group identification (EGI). It consisted of six items, including questions such as "When I talk about <name of the organization>, I usually say 'we' rather than 'they'". To measure EI in the current study, the gap <name of the organization> was filled using the terms "environmentalists" or "climate protectors". To measure EGI, participants were asked to fill this gap with the name of the environmental group they belonged to (e.g., Greenpeace). Only those participants who stated that they were members of an environmental group were asked to respond to the EI and EGI scales, while all other participants were asked to only respond to the EI scale. For both scales, the items had to be rated on a five-point response scale, ranging from *strongly agree* to *strongly disagree*. The rating scales' reliabilities were $\alpha_{EI} = 0.69$ and $\alpha_{EGI} = 0.67$.

4.3.2 | Participatory environmental action and leadership environmental action

Two subscales of the Environmental Action Scale (EAS; Alisat & Riemer, 2015) were employed to measure participatory environmental action (PEA) and leadership environmental action (LEA).

The PEA scale comprised ten items (e.g. talking to people about environmental issues), while the LEA scale comprised eight items (e.g. organizing a community event on environmental issues). All items were introduced with the question, “In the last twelve months, how often, if at all, have you engaged in the following environmental activities and actions?”, and they had to be answered on a five-point response scale that ranged from *never* to *frequently*. Two changes were made to the original subscales of the EAS. Considering the circumstances under which the survey took place—the COVID-19 pandemic and the restrictions that had to be adhered to during this time in Germany—the time period that the participants were asked to consider was extended from the original 6 months to 12 months. This change was implemented to ensure that the participants who wanted to engage in environmental action during the period referred to in the survey actually had the opportunity to do so. Furthermore, the term “climate issue” was added along with the term “environmental issue”. For example, while the original version of the questionnaire asked how often someone had participated in a protest on an “environmental issue”, in the current study, the question was modified to ask how often someone had participated in a protest on an “environmental issue” or a “climate issue”. This change was implemented because even though environmental issues comprise climate issues, it was important to ensure that the members of groups dealing primarily with climate issues also felt addressed. The rating scales' reliabilities were $\alpha_{PEA} = 0.82$ and $\alpha_{LEA} = 0.80$.

4.3.3 | Pro-environmental behavior

A modification of the Short Impact Based Pro-environmental Behavior Scale (Geiger et al., 2019) was employed to measure pro-environmental behavior (PEB). Five subdomains of pro-environmental behavior concerning mobility, consumption patterns, waste, living and eating were measured using 16 items. Two items related to social issues present in the original version of the scale were removed because they were already covered by the EAS items. Participants were asked to indicate the frequency at which they performed 12 daily pro-environmental behaviors within the last 12 months on a five-point response scale ranging from *never* to *always*. Electricity provision was measured using two dichotomous items that were combined into one five-point scale item (Geiger et al., 2019). Furthermore, car use was measured using five options concerning annual

driving distance, while flight behavior was estimated from the responses to five options concerning annual flight frequency. The rating scale reliability was $\alpha_{PEB} = 0.69$.

5 | RESULTS

5.1 | Descriptive analyses

IBM SPSS Statistics (Version 26) was used for the descriptive analyses conducted in this study. Table 1 presents the correlations, means and standard deviations of the measured variables in the entire data set. The mean value of participatory environmental action was slightly above the scale midpoint, which means that, on average, participants performed less ambitious supporting pro-environmental collective action activities more often than occasionally. On the other hand, leadership environmental actions, which require more effort and commitment, were rarely carried out. Furthermore, both forms of pro-environmental collective action were found to be highly correlated. In terms of pro-environmental behavior, the average was observed to be substantially high, indicating that the participants behaved in an environmentally friendly manner on an individual and everyday level very often. Moreover, while associations between pro-environmental behavior and both forms of pro-environmental collective action were moderate, environmentalist identification and environmental group identification were found to be highly correlated. Associations between both kinds of social identity and all three types of environmental protection engagement were moderate, although they were stronger for participatory and leadership environmental actions than pro-environmental behavior.

5.2 | Main analyses

To test the relationship between the predictors (EI, EGI) and the dependent variables (PEA, LEA, PEB), structural equation modeling was conducted using the statistical software R (Version 4.0.5). Only the data drawn from the participants belonging to an environmental group who had responded to both identity scales were considered since questions on both environmentalist identification and environmental group identification were accounted for in this analysis. All variables were considered latent variables and were modelled accordingly.

TABLE 1 Means, standard deviations and correlations for all variables.

Variable	M	SD	1	2	3	4
1. Participatory environmental action (PEA)	3.26	0.84	-			
2. Leadership environmental action (LEA)	2.21	0.85	.75	-		
3. Pro-environmental behavior (PEB)	4.11	0.41	.40	.36	-	
4. Environmentalist identification (EI)	3.08	0.71	.33	.33	.22	-
5. Environmental group identification (EGI)	3.25	0.67	.29	.27	.17	.65

Note: All variables had a theoretical range from 1 to 5. Correlations were not tested for significance due to alpha error cumulation.

To estimate the model, the maximum likelihood method was used. The model comprised 100 parameters and 707 observations, showing good RMSEA and SRMR values (model fit: $\chi^2 [935] = 3936.71, p < .001$; RMSEA = 0.067; SRMR = 0.074; CFI = 0.68). Although the chi-square model test was not expected to be significant, the size of the sample may have contributed to a significant result in this study, since the test becomes significant more quickly when using large samples (Heene et al., 2011). Furthermore, the low CFI value may be attributed to the high correlations between the initial items (Rigdon, 1996).

The loadings of the items on the latent variables ranged from low to high (EI: $\lambda = 0.26$ to $\lambda = 0.75$; EGI: $\lambda = 0.29$ to $\lambda = 0.72$; PEA: $\lambda = 0.32$ to $\lambda = 0.71$; LEA: $\lambda = 0.32$ to $\lambda = 0.76$; PEB: $\lambda = 0.20$ to $\lambda = 0.74$). Except for two items of PEB, all loadings were significant ($p < .01$).

Notably, significant paths were observed from environmentalist identification to participatory environmental action ($\beta = 0.27$), leadership environmental action ($\beta = 0.35$) and pro-environmental behavior ($\beta = 0.35$) (all $p \leq .05$). However, the paths from environmental group identification to the three dependent variables were not significant, with only a trend emerging from environmental group

identification to participatory environmental actions ($\beta = 0.21$). Environmentalist identification and environmental group identification explained 22% of the variance in participatory environmental action, 15% of the variance in leadership environmental action and 11% of the variance in pro-environmental behavior in this model. The relationships between the variables are illustrated in Figure 1.

The initial model showed that environmentalist identification and environmental group identification were strongly correlated. Subsequently, another analysis was carried out using only environmentalist identification as the predictor, while also accounting for the group membership of the participants. This group comparison offered the opportunity to integrate another group into the analysis that could not be considered before—people involved in, or at least interested in, environmental protection who do not belong to any environmental protection group. Multigroup structural equation modeling was conducted to investigate whether membership in a politicized group, a non-politicized group and no such membership exhibited differential patterns in the relationships between environmentalist identification and participatory environmental action, leadership

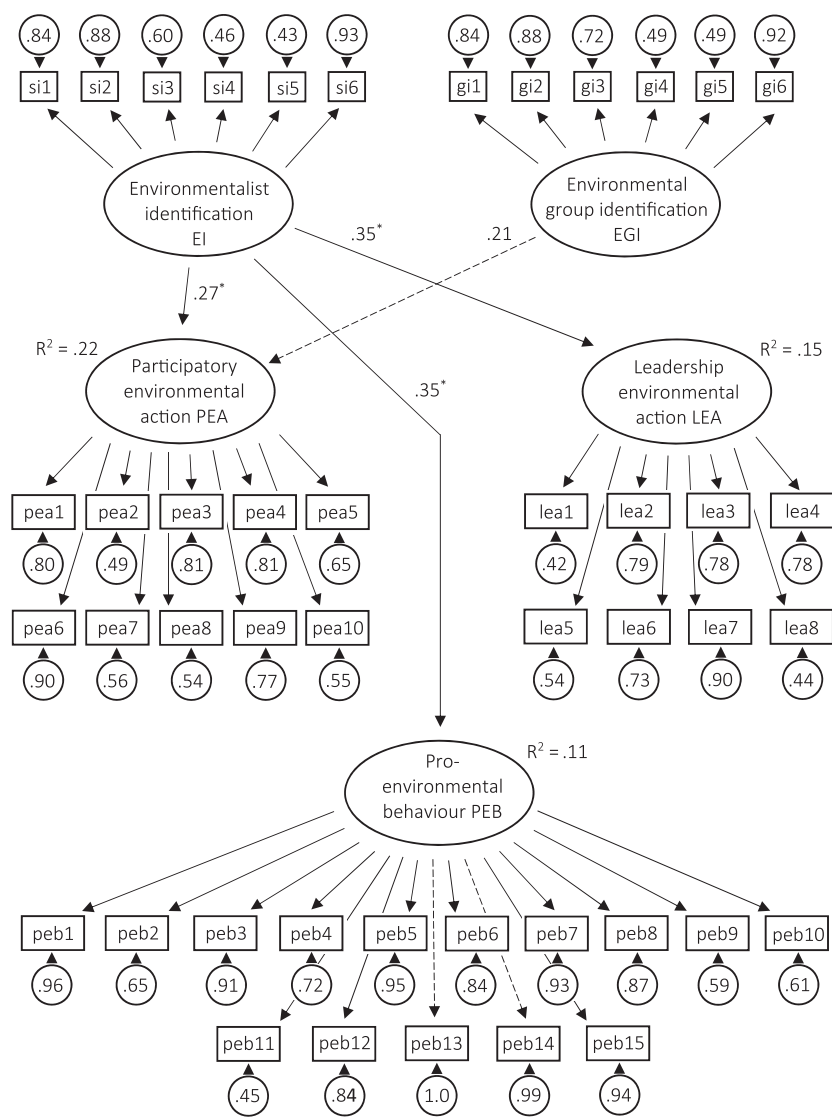


FIGURE 1 Structural equation model testing environmentalist identification (EI) and environmental group identification (EGI) as predictors of different kinds of environmental protection engagement (PEA, participatory environmental action; LEA, leadership environmental action; PEB, pro-environmental behaviour). Values are standardized path coefficients. Dashed lines represent insignificant paths. * $p \leq .05$.

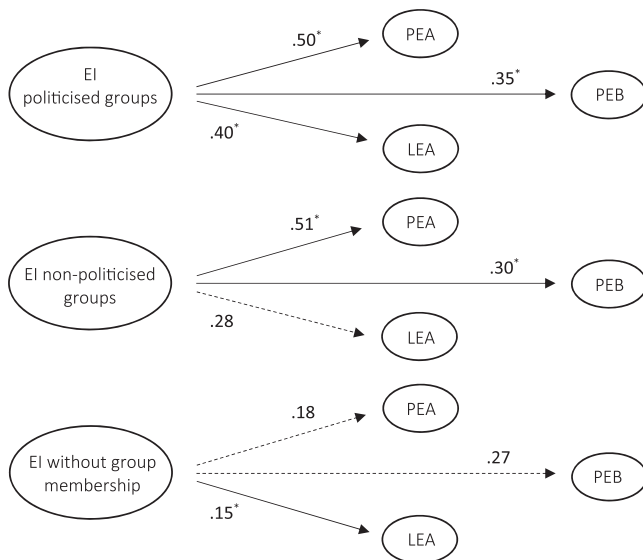


FIGURE 2 Parts of multigroup analysis in structural equation modeling testing environmentalist identification (EI) in different groups as predictor of participatory environmental action (PEA), leadership environmental action (LEA), and pro-environmental behavior (PEB). Dashed lines represent insignificant paths. $*p \leq .05$.

environmental action and pro-environmental behavior. Measurement invariance analysis was conducted by comparing models with and without parameter restrictions for loadings and intercepts between the groups. The analyses identified the presence of metric measurement invariance, with the lowest BIC achieved in the fully restricted model with equal loadings and intercepts. This allowed for a comparison of the regression weights between the groups (Millsap, 2012; see Figure 2). The model comprised 377 parameters and 627 observations in the politicized group, 89 in the non-politicized group and 163 in the no membership group (model fit: $\chi^2 [2228] = 5222.79$, $p < .001$; RMSEA = 0.068; SRMR = 0.084; GFI = 0.98). Environmentalist identification emerged as a significant predictor of all types of environmental protection engagement only for the group of participants belonging to politicized groups. In this group, the influence of environmentalist identification was high for participatory environmental action ($\beta = 0.50$), moderate to high for leadership environmental action ($\beta = 0.40$) and moderate for pro-environmental behavior ($\beta = 0.35$). In the group of participants belonging to non-politicized groups, the relation of environmentalist identification with participatory environmental action ($\beta = 0.51$) and pro-environmental behavior ($\beta = 0.30$) was similar to those observed for the politicized group, but was weaker and not significant for leadership environmental action ($\beta = 0.28$). Finally, for the group of participants who did not belong to any kind of environmental protection group, environmentalist identification emerged as a rather weak predictor of leadership environmental action ($\beta = 0.15$), while the paths to participatory environmental action ($\beta = 0.18$) and pro-environmental behavior ($\beta = 0.27$) were not significant.

Multigroup structural equation modeling was also conducted using environmental group identification as the predictor. For this

analysis, the no membership group was excluded. Only the politicized and non-politicized groups were investigated to determine whether they influence the predictive power of environmental group identification with regard to the various types of environmental engagement. The results showed no significant difference between the politicized and non-politicized groups. This finding was arrived by a model comparison speaking for the model that did not differentiate between the groups rather than for the model that assumed different regression weights for every group (model fit difference: $\Delta\chi^2 [766] = 1148.8$, $p < .001$; $\Delta\text{RMSEA} = 0.004$; $\Delta\text{SRMR} = 0.008$; $\Delta\text{GFI} = 0.003$).

6 | DISCUSSION

The aim of this study was to analyze the relationships between different categories of social identity involved in the environmental domain and different types of environmental protection engagement. In particular, the predictive power of identification with environmentalists and with specific environmental groups for participatory environmental action, leadership environmental action and pro-environmental behavior were analyzed. Among these, only identification with environmentalists proved to be a relevant predictor of all three types of environmental protection engagement considered in this study. However, these relations varied depending on whether the participants belonged to a politicized environmental group, a non-politicized environmental group or no such group at all, with the strongest relationship observed for politicized environmental groups.

Notably, the observation made in this study that identification with an environmental group is not significantly related to any type of environmental protection engagement is not consistent with previous findings that have observed specific group identification to be a particularly good predictor of pro-environmental collective action (Furlong & Vignoles, 2021; Keshavarzi et al., 2021). One possible explanation for this finding is the comprehensive approach to the construct of pro-environmental collective action adopted in the present study. Previous studies that confirmed the importance of identification with environmental groups have usually focused on actions that have a clear group reference, such as participation in certain demonstrations (Wallis & Loy, 2021) or the intention to join a particular environmental group (Bamberg et al., 2015). In the present study, subscales of the EAS (Alisat & Riemer, 2015) were employed to measure pro-environmental collective action. These subscales include activities detached from a specific group affiliation, such as individual education about environmental issues. Since the orientation of a group as well as common beliefs and norms determine the group-related activities undertaken (Masson & Fritsche, 2021; Schulte et al., 2020), a broad conceptualization of social identity as identification with environmentalists might bear better predictive power than group-specific identification, especially when focusing on a broad range of pro-environmental collective actions. This could also be the reason for finding no differences in the multigroup structural

equation model with regard to the predictive power of environmental group identification for politicized and non-politicized groups.

Despite these findings, it can be established that the orientation and goals of a group are reflected in the content of an identity (Vesely et al., 2021), as indicated by the findings of the group-specific analysis conducted in this study. In the politicized and non-politicized groups, identification with environmentalists was found to be strongly related to participatory environmental action. Meanwhile, in the group of people who did not belong to an environmental protection group, this relation was weak and not significant. Presumably, it is evident that people engaged in environmental protection groups associate different aspects with the identity of an environmentalist than people who are solely committed to environmental protection. Moreover, group-related norms and the expectations of others also play a role in whether a person behaves in accordance with a group (Bouman et al., 2021). Turner (1982) stated that social identity can be based on group members being emotionally connected or on cognitive categorization within a group. People who assign themselves to a broad social category, such as environmentalists, do not necessarily have to be connected to the members of this category because the identification process takes place primarily in the mind. In contrast, identification processes can also be based on the experience of interacting with others in smaller units (Henry et al., 1999), which may be the case when someone is actively involved in an environmental protection group. The specific actions associated with the identity of an environmentalist may become more apparent in a group whose members interact with each other, and perhaps form emotional bonds, than if one feels only loosely connected to other environmentalists.

Furthermore, in the politicized group, the relation between environmentalist identification and leadership environmental action was medium to strong. This connection highlights the most obvious difference between participants belonging to the politicized and non-politicized groups. While the associations of environmentalist identification with participatory environmental action and pro-environmental behavior were similar in both groups, the association between environmentalist identification and leadership environmental action was only moderate and not significant in the non-politicized group. This result supports the finding that politicized identity is a particularly good predictor of pro-environmental collective action (Stürmer & Simon, 2004; Van Zomeren et al., 2008). However, in this case, politicized identity was found to be a reliable predictor of only effortful pro-environmental collective actions. This suggests that pro-environmental collective action actually involves varying levels of difficulty (Alisat & Riemer, 2015), meaning that it would be beneficial to analyze such actions separately in terms of predictors.

The results of this study suggest that social identity is related to different forms of environmental protection engagement to varying degrees, depending on the content of the identity and the type of environmental protection engagement to be predicted. In particular, this study shows that social identity is a powerful predictor of two different types of pro-environmental collective action. In addition, social identity proved to be a moderate predictor of pro-environmental behavior. These results further support the idea that a

social approach can help explain pro-environmental behavior (Fritsche et al., 2018). Nevertheless, activities in the context of pro-environmental behavior are often associated with increased effort, e.g. environment-friendly mobility (Diekmann & Preisendörfer, 1998). Therefore, in addition to social identity, external factors, such as the ability to perform such demanding behaviors, are likely to play a crucial role in this context. Overall, the results of this study emphasize the social component involved in environmental protection engagement, which requires collective action, regardless of whether it is carried out together on the street or alone at home.

One limitation of the survey conducted in this study is that its results were correlative in nature, and the direction of influence between the involved variables is theoretical. Although previous research is consistent with the causalities assumed in this study (Van Zomeren et al., 2008), the possibility that behavior has an influence on identity rather than the other way around cannot be ignored. In this context, longitudinal studies have identified reinforcing processes in both directions (Klandermans et al., 2002). Therefore, additional qualitative surveys should be conducted to assess participants' perceptions of the relationship between these constructs. Another limitation of this study is that all types of environmental protection engagement were measured using self-report questionnaires, which often do not adequately reflect actual behavior, since people tend to overestimate their engagement (Kormos & Gifford, 2014). Nonetheless, self-report questionnaires were employed to attain a comprehensive understanding of environmental protection engagement and not just focus on only singular aspects, such as participation in demonstrations. Finally, it must be noted that the scales used to measure social identity, although proven to be effective in previous research (Liu & Perry, 2016; Miao et al., 2019; Pugliese et al., 2024; Sun et al., 2023; Van Dijk et al., 2015), did not perform very well in the present study. Notably, the young age of the participants may have influenced the results. A similar effect was observed with regard to the scale that measured pro-environmental behavior. This could be due to the fact that young people, for example, usually do not have the opportunity to consciously and actively decide for or against the use of a car. Since it is largely young people who are currently engaging in active participation in environmental protection, further research tailored to this specific age group is necessary.

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CONFLICT OF INTEREST STATEMENT

The authors declare 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.

ETHICS STATEMENT

An ethics vote was not required by the local Ethics Committee for this study, as we have taken strict care to ensure that the survey

cannot entail any hazard or risk of an ethical, professional, or personal nature for the subjects. The most important aspects of social science surveys from an ethical point of view are the voluntary nature of participation as well as strict compliance with the applicable data protection guidelines. Professional and legal standards on these issues were maintained under the strictest quality criteria.

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