

**The Influence of Environmental Identity on Pro-environmental Behavior in the
Workplace**

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PSB3E-BT15: Bachelor Thesis

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June 24, 2024

Abstract

This study explores the influence of environmental identities on pro-environmental behavior in the workplace. The research question addresses how environmental group-identity influences the relationship between environmental self-identity and pro-environmental behavior in the workplace. A total of 125 participants (n =125) completed a questionnaire measuring environmental self and group identity and the related behaviors in the personal and organizational context. Consistent with the prediction, environmental self-identity is positively associated with pro-environmental behavior in the workplace, as well as in personal life. However, no interaction effect was found between environmental self-identity and environmental group-identity. Thus, the impact of environmental self-identity on pro-environmental behavior in organizations is not stronger at low levels of environmental group-identity than at high levels. This study contributes to the broader understanding of the factors that encourage pro-environmental behavior in different roles. Future research should focus on environmental group identity between different organizational contexts, potentially leading to more effective strategies for fostering pro-environmental actions at organizations.

Keywords: environmental identity, pro-environmental behavior, organizational role

The Influence of Environmental Identity on Pro-environmental Behavior in the Workplace

For numerous years society has recognized that climate change is a problem we can no longer deny. The global temperature is currently 1,1 degrees higher than in 1850, posing a threat to a liveable planet for the human population (IPCC, 2023). The effects of climate change, such as intense droughts, water scarcity, melting polar ice, rising sea levels, flooding, and biodiversity decline, are evident in our daily lives and the news. The main driver of climate change is human activities, mostly due to using fossil fuels like coal, oil, and gas (Nielsen et al., 2021). As a result greenhouse gas emissions are produced, which raise temperatures by trapping the sun's heat (IPCC, 2023). A significant part of the problem of climate change is rooted in the behavior of people (Steg et al., 2014). To tackle climate change, society must start acting pro-environmental and change their daily habits and activities.

Pro-environmental behavior (PEB) refers to acts that improve environmental quality (Steg et al., 2014). Examples of this behavior includes using public transportation instead of flying, eating vegetarian, recycling, and, conserving water (Van der Werff et al., 2013). However, according to the IPCC (2023) assessment, people fail to engage in PEB globally. Current climate actions are insufficient to reach the climate goals and more PEB is required at all levels of society (Bouman et al., 2021). Despite the urgency, many people fail to engage in PEB, due to feelings of insufficient responsibility or capability to take climate action (Fielding et al., 2008). Previous research has looked into how people can adopt PEB in diverse roles (Nielsen et al., 2021). This paper aims to build on these studies by investigating in which roles individuals feel more motivated, responsible, and capable of taking climate action, as well as the causes for these feelings.

Different Roles

Individuals can take climate action on an individual level, and within this level, they can also act in various roles (Nielsen et al., 2021). It is important to examine these different roles because understanding why people's behavior varies between roles can provide valuable insights into identifying the key factors that drive pro-environmental behavior (Nielsen et al., 2021). Hampton and Whitmarsh (2023) defined six distinct roles that individuals can play in climate action, and emphasized that effective climate action requires a comprehensive approach that targets various roles.

Nielsen et al. (2021) classified people with high-socioeconomic-status into five roles: consumers, role models, investors, citizens, and organizational participants. Individuals in these roles can behave differently in pro-environmental ways and have varying impacts on greenhouse gas emissions. Personal sphere roles include the consumer and the citizen role. The consumer role focuses on individuals making environmentally conscious decisions in their daily lives, such as purchasing eco-friendly items, and choosing sustainable transport options (Nielsen et al., 2021). Citizens can influence greenhouse gas emissions at the system level by demonstrating, voting, and participating in social movements (Nielsen et al., 2021). Therefore, political and advocacy behaviors are particularly examined in this role. An example of a work sphere role is the organizational role, which considers how people behave inside their organization (Nielsen et al., 2021). Examples of PEB in the workplace include eating less meat, conserving energy, recycling, consuming sustainably, and traveling sustainably to work (Mouro et al., 2021).

This study will focus on two roles: personal and organizational roles because individuals in both roles can have a significant impact on the environment (Stern, 2000). Furthermore, organizations play an important role in encouraging PEB among their employees (Yuriev et al., 2020). The purpose of this study is to explain the different factors

that influence individuals' behavior in the organizational role and compare this to the personal role. Different roles have specific motives and responsibilities. Understanding these can help to develop role-specific strategies. According to Van der Werff et al. (2013), one of the most important predictors of PEB is environmental identity.

Identity

A factor that might influence individuals in different roles is identity, which can be divided into self-identity and group-identity (Bouman et al., 2021). *Self-identity* is used as a label for individuals to describe themselves, while *group-identity* is used as a label to describe the group individuals belong to (Bouman et al., 2021). In this study, it is relevant to examine *environmental identity*, which means where one's self-concept is constructed through a connection to nature, leading to behaviors that positively impact the environment (Dedman and Lee, 2023). An important predictor of environmental identity is biospheric values because they reflect people's concern for the environment, which leads them to perceive themselves as environmentally friendly (Van der Werff et al., 2013). *Environmental self-identity* refers to how an individual considers themselves as a person who does not harm nature, making them more likely to engage in PEB on a personal level (Van der Werff et al., 2013). Similarly, environmental identity can arise at the group level. *Environmental group-identity* occurs when one perceives or describes one's group as environmentally friendly (Wang et al., 2021).

The identity theory explains how different types of identities influence individuals' self-perception, which leads to specific behaviors (Fielding et al., 2008). Identity motivates action, and failure to engage in role-appropriate behavior can lead to internal tension because of the conflict between identity and behavior (Fielding et al., 2008). The more important and salient an environmental identity is, the more likely a person will act by the label that they use to describe themselves, resulting in PEB (Bouman et al., 2021). This concept describes how identity functions on a personal level. In contrast, the Social Identity Model of Pro-

environmental Behavior by Fritsche et al. (2018), focuses on how social identity influences individuals' PEB within a group context (Dedman and Lee, 2023). This model contains social identity theory, which describes how a person's self-concept is shaped by their membership in a social group (Dedman and Lee, 2023). Group identification is crucial for pro-environmental actions, as long as these specific groups have pro-environmental goals and norms that influence individuals' to engage in PEB (Ucar et al., 2023). For example, organizational values have been shown to increase employees' PEB, especially when they identify with the organization (Wang et al. 2021).

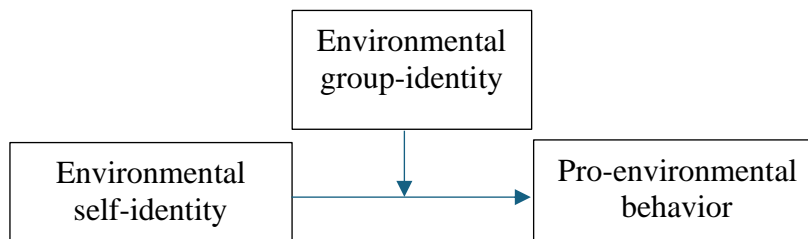
Environmental self-identity and environmental group-identity both influence individuals' behavior. According to research, these factors might interact. For example, Ruepert et al. (2017) explored how the contextual factor, Cooperate Environmental Responsibility (CER), affects people with weak and strong biospheric values. They discovered that perceived CER was positively associated with PEB among individuals with weak biospheric values, whereas those with strong biospheric values were likely to engage in PEB regardless of the perceived CER (Ruepert et al., 2017). This could imply that the impact of environmental group-identity is smaller for people who have a strong environmental self-identity. Bouman et al. (2020) investigated the interaction between perceived biospheric group values and biospheric personal values. Their findings suggest that environmental group-identity can particularly motivate individuals who do not have a strong environmental self-identity. Making people aware that others strongly value the environment could be an effective strategy for motivating climate action, especially among those who are not personally strongly motivated (Bouman et al., 2020). Fielding et al. (2008) also stated in their research that when an environmental social identity is salient, group-related social variables have a greater influence on PEB intentions than personal variables. In their study, Fielding et al. (2008) investigated an interaction effect to test whether self-identity is a greater predictor

of intentions for people with lower levels of group membership compared to those with higher levels. The results revealed a significant effect, implying that group influence can be a strong factor in shaping individual behavior.

In this study, it is proposed that PEB may be more influenced by environmental group-identity, especially when it is sufficiently salient, among individuals with low levels of environmental self-identity than those with higher levels. However, it is unclear how environmental group-identity influences individual behavior within their organizational roles. To this point, research has mostly focused on the impact of personal values on PEB, but environmental group-identity may also enhance PEB in the workplace (Wang et al., 2021). Understanding the dynamics of organizational roles can help bridge this gap. Therefore, the research question of this paper is: *How does environmental group-identity influence the relationship between environmental self-identity and pro-environmental behavior in the workplace?* Based on the evaluated literature, the following hypotheses are formed to address this research topic.

Hypothesis 1. Environmental self-identity is positively correlated with pro-environmental behavior in the workplace.

Hypothesis 2. The effect of environmental self-identity on pro-environmental behavior in the workplace is stronger at low levels of environmental group-identity than at high levels of environmental group-identity. This suggests that there is an interaction effect between environmental self-identity and environmental group-identity on pro-environmental behavior and that environmental group-identity is a moderator in the relationship between environmental self-identity and pro-environmental behavior (Figure 1).

Figure 1*Moderation of environmental group-identity*

The findings of this study will contribute to the general knowledge on this subject and provide insights into how to target PEB. The questionnaire used in this study assesses the relationship between environmental self-identity and PEB in the workplace and examines how environmental group-identity influences this relationship. By understanding these dynamics, strategies to motivate PEB can be targeted more effectively in both personal and professional contexts.

Methods**Participants and Design***Participants*

Respondents to the survey included students and other European citizens aged 18 and above. A total of 125 individuals completed the questionnaire ($n = 125$), comprising 65% women ($n = 82$), 32% men ($n = 40$), and 1.6% identifying as non-binary ($n = 2$) or choosing not to report gender (0.8%, $n = 1$). Age distribution ranged from 18 to 71, with a mean age of 27. Predominantly, participants affiliated themselves with the education sector (49.6%, $n = 62$), while the remaining respondents represented diverse occupational backgrounds. Participants who did not pass the attention check ($n = 5$) or expressed disbelief in climate change were automatically transferred to the end of the study and excluded from further analysis.

Design

The research employed a within-subject design and the data was collected through a survey. The design incorporated an experimental manipulation to control for potential order effects, which could bias the results. All participants encountered all questions, but the order of the two main blocks was randomized. Thus, half of the participants first responded to questions regarding their organizational role, followed by questions about their personal role, while the other half completed the questions in reverse order. We conducted a power analysis for a one-sample paired t-test to compare whether responses differ between personal and professional roles (two-sided). To detect a small effect size (0.3) with 80% power and 0.05 significance, we need a sample size of 90 respondents.

Procedure

Participants for the survey were recruited through two methods. First, researchers employed snowball sampling by distributing the survey link via university group chats, to friends and family, and through social media platforms such as Instagram. Second, first-year students at the University of Groningen were invited to participate in exchange for course credit. The study received ethical approval from the University of Groningen ethics committee before survey distribution. The survey was conducted using Qualtrics to ensure the complete anonymity of the participants. After entering the survey and reading introductory information, participants were asked to provide informed consent to participate. They then encountered a control question assessing their belief in climate change, followed by a brief explanation of the personal and organizational roles involved in the study. To avoid anchoring effects, participants were randomly assigned to view either the questions focusing on the personal or the organizational role first. Each question block was clearly labeled with the respective role using terms such as “In your organization...” or “In your personal role...”. For the questions about values and identity, respondents were informed that they did not need to

respond from their organizational or personal role, which we made clear by stating this before these questions. Demographics, including age and gender, were assessed at the very end of the questionnaire. Lastly, after the demographics, the participants had the opportunity to leave feedback for the researchers.

Measures

The order of the manipulation conditions was randomized. The variable category order was kept the same in both conditions. All items were assessed with a 7-point Likert scale (1= *never* to 5= *many*), except for the variables “Personal Behavior” and “Advocacy Behavior”, which were assessed with a 5-point Likert scale (1= *never* to 5=*many*). An attention check was included in the middle of the survey, asking participants to select “Once” on the scale. Lastly, three open-ended questions prompted the participants to answer what pro-environmental actions can be taken in their personal and organizational role and what they believe to be the main barriers in our society that need to be removed to achieve climate goals.

Behavior

Personal behavior was measured as the dependent variable, indicating the participants’ level of pro-environmental behavior. A 5-point Likert scale (1= *never* to 5= *always*) was used. The scale includes items such as how often participants engaged in specific actions in their personal or organizational role over the last 12 months, such as saving energy, traveling sustainably, and consuming/eating sustainably.

Advocacy behavior was also measured using a 5-point Likert scale (1= *never* to 5= *always*). This scale includes items on how often participants encouraged others to help limit climate change, such as joining public demonstrations (only for the personal role), signing petitions, and boycotting companies. Participants answered these questions for both their

personal and organizational roles. At the beginning of the organizational role condition, the work sector was assessed using a multiple-choice question with 12 answer options.

Identity

Three types of identity were assessed using a 7-point Likert scale (1= *strongly disagree* to 7= *strongly agree*). Firstly, environmental self-identity was measured with three items from Wang et al. (2021). The following questions were included. “*I am the type of person who acts environmentally friendly.*”, “*Acting environmentally friendly is an important part of who I am.*” and “*I see myself as an environmentally friendly person.*”(Wang et al., 2021). The internal consistency for this measure is excellent ($\alpha = .91$).

Secondly, to measure social group-identity the following three items were used. “*I feel like I belong to my organization*”, “*I find it important to be a member of my organization.*” and “*I feel similar to other members of my organization.*” The internal consistency is good ($\alpha = .81$).

Lastly, environmental group-identity was measured similarly to environmental self-identity, but in this context, referring to their organization. Two items from Wang et al. (2021) were used: “*Acting environmentally friendly is an important part of who my fellow coworkers/students are.*” and “*I see my fellow coworkers/students as environmentally friendly.*” (Wang et al., 2021). The internal consistency for this measure is sufficient ($\alpha = .69$).

Results

Assumptions

After collecting the data, the assumptions for the linear regression were checked before analyzing the data. The following assumptions are checked: linearity, homoscedasticity, normality, no multicollinearity, and independence of observations. All assumptions were met.

To test the hypotheses, the data were analyzed using linear regression. The dependent variable is organizational pro-environmental behavior (OrgBehavior). This variable consists of the average of the 8 items related to personal and advocacy behavior in the organizational role and has a sufficient internal consistency ($\alpha = .78$). The two independent variables, environmental self-identity (SelfEnvidentity) and environmental group-identity (GroupEnvidentity) were also computed as the averages of their respective items.

Descriptive Statistics

Table 1 presents the means and standard deviations for the measured variables. The data indicates that the reported mean of environmental self-identity was higher than the reported environmental group-identity. Additionally, participants reported engaging in more PEB in their personal lives compared to their PEB in the workplace (Table 1).

Table 1

Descriptive data (means, standard deviations, correlations)

Variable	<i>M</i> (n=125)	<i>SD</i>	1	2	3	4	5
1. OrgBehavior	2.651	0.790	-				
2. SelfEnvidentity	4.821	1.296	0.576**	-			
3. GroupEnvidentity	4.328	1.181	0.371**	0.345**	-		
4. PersBehavior	3.007	0.762	0.658**	0.724**	0.230*	-	
5. SocialGroupIdentity	4.576	1.227	0.228*	0.112	0.341**	0.026	-

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

Main analysis

The first hypothesis stated that environmental self-identity is positively correlated with pro-environmental behavior in the workplace. The results support the hypothesis, showing a significant correlation ($r = .58$). The linear regression confirmed this with a significant effect ($R^2 = .37$, $F(2, 122) = 35.10$, $\beta = 0.51$, $p < .001$). To compare how environmental self-identity

differs between the roles, another linear regression was assessed to see if environmental self-identity is related to pro-environmental behavior at the personal level. Pro-environmental behavior at the personal level (PersBehavior) was derived from an average score of the items of personal and advocacy behaviors, showing high internal consistency ($\alpha = .85$). The correlation between environmental self-identity and pro-environmental behavior at the personal level is strong and positive ($r = .72$). The linear regression also showed a significant effect ($R^2=.52, F(2,122) =67.18, \beta=0.73, p <.001$). This indicates that a higher degree of environmental self-identity is therefore associated with a higher degree of pro-environmental behavior in both personal and professional contexts. However, environmental self-identity is more strongly correlated with pro-environmental behavior in the personal context than in the workplace.

The second hypothesis proposed that the effect of environmental self-identity on pro-environmental behavior at work would be stronger at low levels of environmental group-identity than at high levels. This suggests that there is an interaction effect between environmental self-identity and environmental group-identity. To test this, both items were centered to facilitate an understanding of the direction and magnitude of the interaction effect. The linear regression analysis (Table 2) did not find a significant interaction effect ($R^2=.38, F(3,121) =24.62, \beta=0.12, p=.10$).

Table 2

Coefficients linear regression interaction effect

Model		Unstandardized	SE	Standardized	t	p
H ₀	(Intercept)	2.651	0.071		37.542	< .001
H ₁	(Intercept)	2.611	0.059		44.038	< .001

Model	Unstandardized	SE	Standardized	t	p
SelfEnvidentity	0.313	0.047	0.514	6.728	<.001
GroupEnvidentity	0.139	0.051	0.208	2.713	0.008
SelfEnvidentity *					
GroupEnvidentity	0.057	0.035	0.118	1.638	0.104

Thus, environmental group-identity does not moderate the relationship between environmental self-identity and pro-environmental behavior in the workplace. However, the linear regression analysis showed that both environmental self-identity ($\beta=0.51$, $p <.001$) and environmental group-identity ($\beta=0.21$, $p =.01$) had significant positive effects on pro-environmental behavior at the workplace (Table 2). This suggests that higher degrees of environmental self-identity and environmental group-identity are both associated with a higher degree of pro-environmental behavior at work, but there is no interaction effect between environmental self-identity and environmental group-identity.

Exploratory Analysis

Social group-identity (SocialGroupIdentity) is composed of an average score from three belonging items. Table 1 presents the mean and standard deviation of this variable. To test if social-group identity is associated with pro-environmental behavior in the workplace, the correlation is calculated ($r =.23$). This suggests that social group-identity is not strongly positively correlated with PEB in the workplace.

Discussion

This study aimed to examine the relationship between environmental self-identity and PEB in the workplace, as well as the moderating role of environmental group-identity in this relationship. The results confirm the first hypothesis, higher levels of environmental self-

identity were associated with higher levels of pro-environmental behavior at work. Also, the results found the same effect for pro-environmental behavior in the individual role. In contrast, no significant effect was found for the second hypothesis, which proposed that environmental group-identity moderates the relationship between environmental self-identity and pro-environmental behavior in the workplace. Both identities independently contributed to higher PEB, but there is no interaction effect between environmental self-identity and environmental group-identity. Thus, the effect of environmental self-identity on pro-environmental behavior in the workplace is not stronger at low levels of environmental group-identity than at high levels.

The results are consistent with the study by Van der Werff et al. (2013) and support the first hypothesis, which states that environmental self-identity positively correlates with PEB in the workplace. Their results showed that environmental self-identity is related to a broad range of PEBs (Van der Werff et al., 2013). The relationship can be explained by role-appropriate behavior, as failing to engage in PEB can create internal tension for people with a strong environmental self-identity (Fielding et al., 2008).

The findings of this study show that the relationship between environmental self-identity and PEB is stronger in personal settings than in the workplace. One possible explanation is that individuals believe that they care more about the environment than others, which can inhibit climate action in their organizational role because they perceive weaker environmental values and identities in groups compared to their personal beliefs (Bouman et al., 2021). As a result, activating their environmental self-identity at work may make individuals less likely to engage in climate action compared to when their environmental self-identity is activated in their personal lives (Bouman et al. 2021). The Self-Determined theory provides an additional explanation for the difference between the personal and work contexts. Individuals can experience more autonomy and fewer external constraints in personal

contexts, allowing their environmental self-identity to drive more strongly in this context than in their organizational context (Barszcz et al., 2022).

Knowing that environmental self-identity predicts PEB at work confirms that fostering a strong environmental self-identity among employees can be an effective strategy for organizations to enhance their pro-environmental practices.

The second hypothesis was not confirmed, in contrast to the study of Fielding et al. (2008), which found that environmental group membership moderated the relationship between self-identity and intentions in environmental activism. Several factors explain this difference. Firstly, the type of behavior studied varies significantly. Environmental activism is more extreme and less common than the PEBs we measured in this study, which include private sphere environmentalism and other environmentally significant behaviors (Stern, 2000). These types of PEB are less extreme and more common than environmental activism (Stern, 2000).

Another explanation for the divergence in findings could be the differences in the measured constructs. This study focused on environmental group-identity, which reflects perceptions of the group's environmental values, whereas Fielding et al. (2008) examined environmental group membership, which indicates a sense of belonging to the group. According to Udall et al. (2021), if individuals feel a sense of belonging to their social group, they will act in ways that are motivated by the group. This is why measuring group membership in the study of Fielding et al. (2008) could have led to a moderation effect. Terry et al. (1999) also found that a sense of belonging influences intentions. According to the social identity theory, the norms of a significant social group have an impact on intentions, but only for people who identify strongly with the group (Terry et al., 1999). This could explain why this study did not find a significant effect, as the data analysis did not take into consideration participants' feelings of belonging to their organization. Participants in this

study reported feeling a moderate sense of belonging to their group ($M = 4.6$). Furthermore, the results show that social group-identity is not strongly positively correlated with PEB in the workplace (Table 1).

The absence of a significant interaction effect could potentially be attributed to the fact that environmental group-identity is not sufficiently salient among the participants. According to Fielding et al. (2008), the salience of the social identity is important to influence individuals' intentions more by group-related social variables than personal-level variables. Many of the participants in our study were students and the university served as their organizational setting. It is possible that environmental group-identity is not highly salient within the university. When the environmental group-identity of the university is salient individuals will act in line with the values and norms of this group, resulting in PEB (Ucar et al., 2023).

The findings for our second hypothesis also contrast with Bouman et al. (2020), who found that environmental group-identity can particularly motivate individuals who lack a strong environmental self-identity. A possible explanation for the discrepancy in our study could be the high average score of environmental self-identity among participants (Table 1). It is challenging to assess the impact of environmental group-identity without participants with low environmental self-identity scores.

These previous points indicate that it is crucial to make environmental group-identity more salient within organizations, and reinforcing a sense of belonging among the employees can be beneficial in supporting PEB in the workplace.

Limitations

Several limitations should be considered in this study. Firstly, the representativeness of the sample is a concern. Participants were primarily drawn from a homogeneous group, such as family and friends of the researchers and first-year psychology students, who likely

share similar education levels and socio-economic backgrounds. This homogeneity limits the generalizability of the findings, as the results may not correctly reflect the diversity of the broader population. Secondly, participants' responses are subjective. Responses may have been influenced by social desirability, leading participants to report behaviors and attitudes that do not represent their actual actions and thoughts. For example, participants may overestimate their PEB due to the tendency to see themselves in a positive light (Udall et al., 2021). Thirdly, there are several limitations regarding the questions about the organizational context, which were insufficiently detailed. We did not collect information on the size of the organizations or the participants' roles within them, which could have influenced their PEB. This information could be crucial in understanding why some people feel a stronger need to act pro-environmentally. For example, a leader may feel a greater responsibility to behave in an environmentally conscious manner due to their role as a model for others (Cheng et al. 2022) Lastly, previous research by Yuriev et al. (2020) suggested that it is more effective to focus on one type of environmental behavior rather than a broad range. This approach can provide more precise insights because focusing on a wide variety of behaviors makes it difficult to develop interventions that account for specific behaviors, responsibilities, and tasks of the employees that influence PEB (Yuriev et al., 2020).

Future Research

Future research should focus on several areas to better understand PEB within organizations. First, studies should aim to include more diverse and representative samples to enhance the generalizability of the findings. To achieve this, other methods beyond snowballing should be employed. Second, it is important to investigate whether the culture of the organization influences how individuals perceive their environmental group-identity and their behavior within the organization. For example, if an organization has a strong leader who promotes PEB in the workplace and encourages employees, this could lead to more PEB

at work (Kim et al., 2014). Additionally, focusing on more specific PEB will help to gain more detailed information on how to promote PEB in the workplace. Understanding the impact of organizational context on environmental group-identity and PEB could help tailor strategies to different settings. Last, future studies should examine the role of employees' sense of belonging to their organization in promoting PEB.

Conclusion

In conclusion, this study investigates the significant role of environmental self-identity in encouraging PEB in the workplace, while also examining the influence of environmental group-identity on this relationship. The results of this study show that environmental self-identity is positively related to PEB at work, as well as on a personal level. The effect of environmental group-identity should be researched further to understand when it is beneficial in promoting PEB in the workplace and how individuals contribute to PEB through various roles.

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