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# Green norms in the workplace to promote environmental sustainability: the positive effect on green innovative work behaviors and person-environment relationship

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**Introduction:** This study explores the relevance of behavioral and psychological factors in contributing to organizational environmental sustainability in the workplace.

**Methods:** Data were obtained from 271 workers in 5 organizations operating in the manufacturing sector in Italy and analyzed through a regression methodology. We tested two models, in which the employees' perception of the work climate is derived from different sets of norms. In one model, we explored the influence of organizational policies and practices (injunctive norms). In another model, we explored the influence of peers' behavior (social, descriptive norms).

**Results:** The results show a positive impact of the employees' perception of their work climate on both their propensity to engage in innovative green behaviors and their sense of personal connection with the environment, via environmental commitment. Moreover, we found that the employee's organizational identification positively moderates the effect on green innovative behavior.

**Discussion:** This study underscores the relevance of creating and maintaining a pro-environment work climate in order to foster pro-environment innovative behavioral changes. Also, the results indirectly suggest that the influence on the sense of personal connection with the environment may generate a positive spill-over effect into the private life of workers.

## KEYWORDS

green workplace perception, environmental commitment, organizational identification, green innovative behavior, person-environment relationship

## 1 Introduction

As the global push toward sustainability accelerates, organizations are increasingly seen as key players in achieving environmental goals. The European Union, for instance, has identified corporate contributions to sustainable development as crucial to address its most pressing environmental challenges (EEA, 2020). However, understanding how these organizational policies translate into meaningful individual behaviors remains a critical, yet underexplored, aspect of this effort. The interdependence between organizational policies and individual behavior is essential to comprehend how sustainability goals can be achieved. Collective policies can shape individual actions, just as individual behaviors can either

reinforce or undermine organizational efforts toward sustainability. For example, employees' responses to their organization's environmental initiatives play a crucial role in determining the social and environmental value generated by these efforts (Rupp and Mallory, 2015). In other words, the actual effectiveness of organizational policies aimed at increasing sustainability significantly depend on the psychological and behavioral responses of the various actors involved, first and foremost the employees. As an example of the many possible ramifications of this issue, research shows that the moral concerns of employees seem to be affected by the moral actions of the firms (Lin et al., 2010).

A key challenge in understanding pro-environmental behavior lies in the diversity of contexts in which these behaviors occur, particularly the interaction between work and private life, where different sets of norms may play different roles. At the same time, one should also consider that there is a likely mutual influence between the two, as what happens in the workplace may affect the behaviors in private life, and vice versa. It is, indeed, a complicated puzzle, where a multitude of analytical levels, relevant variables and significantly different contextual settings all contribute to a complex phenomenon and, eventually, to our collective ability to achieve ambitious goals of sustainability. While the issue appears to be universally relevant, it seems to be even more so in the corporate world, as one of the main objectives of EU's environmental policies is to maximize the environmental and social value creation of businesses (EFRAG, 2021). This issue is not only relevant for practitioners and policy makers, but also for the academic debate. The phenomenological and the conceptual complexity are clearly correlated, in this case. As we will show in the following paragraphs, available theoretical frameworks seem to provide useful insights in order to improve our understanding of the relationship between organizational policies and individual behaviors, even in the specific context of environmental concerns, both inside and outside the workplace. However, we need more empirical evidence to test their conceptual relevance. In this paper, we attempt to contribute by focusing on how different organizational norms may affect desirable pro-environment employees' behaviors in the workplace and, at the same time, how the same norms also influence certain employees' mindsets and personal attitudes that may have significant consequences not just in the workplace but in their private life as well. More specifically, our study explores how green work climate — defined as the norms and expectations related to environmental sustainability within the organization—can foster pro-environmental behaviors. Available literature shows that green work climate has a strong, multifaceted influence on employees as individuals (Kuenzi and Schminke, 2009; Mehak and Batcha, 2024; Nusraningrum et al., 2024). However, current studies largely focus either on workplaces' negative effects on stress and psychological issues (Debrot et al., 2018) or on the adoption or extension of the domestic environmental behavior at work (Smith and O'Sullivan, 2012; Ciocirlan, 2016).

This study aims to contribute to this emerging field by examining how the perception of green workplace norms can enhance environmental commitment among employees. We propose that such positive influence not only promotes pro-environmental behavior in the workplace but also strengthens employees' personal environmental identities, which may extend beyond the workplace. Specifically, we test a moderated mediation model, hypothesizing that perceived green organizational norms influence employees' environmental commitment, which in turn fosters both green innovative work

behavior and a stronger person-environment relationship. We also investigate the role of organizational identification in moderating these relationships. Our general hypothesis is that employees who perceive strong green norms in the workplace are more likely to develop higher environmental commitment. This commitment is expected to positively influence both their workplace behaviors and their personal environmental identity, leading to potential spill-over effects outside the workplace. By examining the role of workplace green norms in shaping environmental commitment, our study provides valuable insights into how organizations can foster both pro-environmental behaviors at work and broader environmental engagement in employees' personal lives, ultimately contributing to the larger goal of sustainability.

## 2 Conceptual background and research hypotheses development

### 2.1 Green work climate perceptions, commitment to the environment, and person-environment relationship

Work climate refers to aspects of the work environment such as procedures, practices, and policies that guide employees' behaviors in line with organizational priorities (Schneider et al., 2013; Hicklenton et al., 2019). In every organization, multiple elements of work climate operate simultaneously and lead employees to understand how and why to behave in certain ways (Zohar and Luria, 2005; Hicklenton et al., 2019). According to the Theory of Normative Conduct (TNC) (Cialdini et al., 1990), individuals' behaviors are influenced by perceived social norms, defined as standards of behavior that are either implicitly or explicitly endorsed by a group. In the workplace, these norms can shape how employees perceive their role in supporting organizational goals, including environmental sustainability. Norton et al. (2014) applied this idea to the environmental dimension of social norms in organizations. They differentiate between injunctive norms, which are perceptions of what is required or expected by the organization, and descriptive norms, which are perceptions of the typical behavior exhibited by peers. In the case of injunctive norms, employees align their behavior with formal organizational expectations, while descriptive norms encourage employees to adopt behaviors that are perceived as shared and socially legitimized within the peer group (Brass and Burkhardt, 1993; Groth et al., 2002; Norton et al., 2015; Ruepert et al., 2015; Afsar and Umrani, 2019; Hicklenton et al., 2019; Kim et al., 2019).

Existing literature has shown that social norms significantly influence employees environmental concerns, especially when they are coupled with increased environmental commitment (Raineri and Paillé, 2016; Jaeger and Schultz, 2017; Jaich et al., 2023; Sampene et al., 2024). Commitment plays a key role in shaping environmental interest and intentions, and is often inspired by salient organizational norms. More specifically, according to Raineri and Paillé (2016), employees' environmental commitment in the workplace is “a frame of mind denoting both a sense of attachment and responsibility to environmental concerns in the workplace.” The authors consider the concept of commitment as comprehensive of the personal elements that can translate a person's beliefs into action (Raineri and Paillé, 2016), both outside and within the workplace context.

An important aspects of commitment production, according to Bicchieri and Mercier (2014), is the mutuality and credibility of

promises and reciprocal expectations. These elements may help to attain belief and norm change, which are likely to be both a cause and a consequence of the transition to sustainability by generating a circular production of environmental knowledge and culture. However, prior research on environmental commitment's function and development focuses only on the dimension of *commitment to behavior*, with Davis et al. (2009) being an exception. Our study broadens this scope by incorporating the *perceived relationship with the environment* (Davis et al., 2009), a deeper, more enduring psychological connection similar to interpersonal commitment (Rusbult, 1980). According to Davis et al. (2009), a "person-environment relationship" relates to the feeling of interconnectedness with the environment, and it is defined by the researchers as the "psychological attachment to and long-term orientation toward the natural world [...] To the degree that individuals perceive that they are dependent on the natural environment for their own well-being" (Davis et al., 2009, p. 174). Davis et al. (2009) have developed this definition based on the Interdependence Theory (Kelley and Thibaut, 1978), which aims to explain how relationships and interactions may affect motivation and behavior over time. When somebody is "committed to the environment," according to Davis et al. (2009), it means that the relationship between the individual and the natural world is strong, long-lasting, and identitarian. Most relevant to the present work, Davis et al. (2009) have showed an association between that the perception of personal dependence on the natural environment for one's well-being, and a personal commitment to the environment.

Building on these insights, we propose that green work climate perceptions, whether derived from injunctive organizational norms or descriptive norms induced by co-workers or peers behavior, can enhance employees' environmental commitment. This commitment, in turn, fosters a stronger psychological connection with the environment, or person-environment relationship. In the hypotheses, following the distinction and the terms proposed by Norton et al. (2014), we refer to the variable "Green work climate perception" in two different articulations: as "organization," when related to injunctive norms, or as "co-workers," when related to descriptive norms. It is worthwhile specifying that the term "co-workers" refers here to fellow employees (peers) within the same company, not to freelancers working within the context of coworking spaces.

Hypothesis 1a: *Green work climate perception (organization) has a positive indirect effect on the person-environment relationship via environmental commitment.*

Hypothesis 1b: *Green work climate perception (co-workers) has a positive indirect effect on the person-environment relationship via environmental commitment.*

## 2.2 Green work climate perceptions, commitment to the environment, and green innovative work behavior

Innovative work behaviors are generally conceived as intentional actions by employees aimed at applying or introducing new solutions, ideas, processes, or procedures within the workplace (Yuan and Woodman, 2010). In the context of environmental sustainability, green innovative work behaviors refer specifically to actions that promote the generation, promotion, and implementation of innovative

pro-environmental ideas and solutions (Aboramadan et al., 2021). Such behaviors are essential for organizations seeking to meet sustainability goals, as they encourage continuous improvement and adaptation to environmental challenges. Ramus and Steger (2000), in their study about eco-initiatives, show that one determinant factor that increases the likelihood that employees' will develop and share eco-initiatives is the existence of company's environmental policies.

Research suggests that both injunctive and descriptive norms can influence employees' environmental behaviors, but they do so in different ways. Injunctive norms, which reflect organizational policies and expectations, primarily influence existing task-related pro-environment behaviors (Norton et al., 2014). In contrast, descriptive norms, which arise from observing the behavior of peers, are more likely to foster more proactive and innovative environmental behaviors, especially when employees perceive strong environmental policies in the organization (Smith and O'Sullivan, 2012; Norton et al., 2014).

In this study, both injunctive and descriptive norms are assumed to influence the employee's environmental commitment that shapes employees' intention to engage in pro-environment behaviors. Perceived organizational support plays a key role in enhancing employees' environmental commitment, which, in turn, promotes innovative behaviors (Paillé et al., 2014). In organizations where management strategies emphasize environmental sustainability, employees are likely to feel supported and empowered to contribute new eco-friendly solutions workplace (Chen and Chang, 2013; Renwick et al., 2013; Paillé et al., 2014; Temminck et al., 2015). This support fosters a sense of security and trust, which is crucial for employees to take the risks associated with innovation. Thus, when employees perceive strong green support from their organization, they are more likely to engage in green innovative work behavior as an expression of their environmental commitment. Social Exchange Theory (SET) (Cropanzano and Mitchell, 2005) also provides valuable insights into the relationship between green work climate perceptions and innovative behaviors. According to SET, employees engage in reciprocal exchanges with their organization and peers based on perceived support and commitment. When employees perceive strong environmental commitment from their organization and peers, whether through organizational policies (injunctive norms) or peer behavior (descriptive norms), they feel a sense of obligation to reciprocate by contributing new ideas and solutions to environmental challenges (Karatepe et al., 2020). This trust-based relationship encourages employees to go beyond basic pro-environmental actions and engage in innovative behaviors. Based on these insights, we hypothesize the following:

Hypothesis 2a: *Green work climate perception (organization) has a positive indirect effect on green innovative behavior through environmental commitment.*

Hypothesis 2b: *Green work climate perception (co-workers) has a positive indirect effect on green innovative behavior through environmental commitment.*

## 2.3 The moderating effect of organizational identification

Organizational identification refers to the extent to which individuals identify as members of a particular organization and perceive themselves as psychologically intertwined with its fate,

experiencing its successes and failures as their own (Mael and Ashforth, 1992). According to Social Identity Theory, individuals are more likely to engage in activities that align with salient aspects of their identities and support institutions that embody those identities (Ashforth and Mael, 1989). Many different processes may increase organizational identification, for example vertical and horizontal communication (Bartels et al., 2010). In the context of environmental sustainability, employees who strongly identify with an organization that emphasizes green values may be more motivated to transform their environmental commitment into proactive behaviors, such as green innovation, and deepen their personal connection to the environment. Several authors (Mael and Ashforth, 1992; Dutton et al., 1994) also emphasize the emotional aspect of organizational identification, particularly the idea of sentimentality, or the perception of the organization as an extension of oneself. This emotional attachment to the organization may increase employees' motivation to act in ways that align with the organization's green values. For example, employees who feel emotionally connected to an environmentally responsible organization may be more likely to engage in innovative green behaviors and to experience a stronger personal connection with the environment, as their commitment is reinforced by their emotional bond with the organization.

Furthermore, Self-Expansion Theory (Aron and Aron, 1996) suggests that individuals are motivated to expand their self-concept by incorporating new identities and experiences. When employees strongly identify with an environmentally responsible organization, their sense of self may expand to include both the organization's green values and a personal connection with the natural environment. Schultz (2001) found that the inclusion of nature in the self is correlated with environmental behaviors and ecological worldviews, suggesting that when individuals feel interconnected with the environment, their personal identity and actions are likely to reflect this deeper bond.

Based on these insights, we propose that organizational identification strengthens the effects of green work climate perceptions, via environmental commitment, on both green innovative behavior and the person-environment relationship. Employees who feel a strong sense of belonging to an organization that prioritizes environmental sustainability are more likely to translate their environmental commitment into innovative actions and a deeper personal connection to the environment.

*Hypothesis 3: Organizational identification strengthens the indirect effect of H3a Green work climate perception (organization) and H3b Green work climate perception (co-workers) on Person-environment relationship through Environmental commitment.*

*Hypothesis 4: Organizational identification strengthens the indirect effect of H4a Green work climate perception (organization) and H4b Green work climate perception (co-workers) on Green innovative behavior through Environmental commitment.*

## 3 Materials and methods

### 3.1 Participants and procedure

The present study was carried out in 5 organizations operating in the manufacturing sector in Italy, with about 1,200 employees overall. We contacted several companies that could be potentially interested in

this study, and explained to them the goal of the study and the methodologies. Five of them volunteered to participate. A nonprobability sampling method was employed to select respondents from the population. We invited all workers to participate on a voluntary basis. Overall, we collected 271 fully completed questionnaires, which is above the minimum sample size recommended by the Raosoft sample size calculator (Raosoft, 2004). In each company, employees at different hierarchical levels (operators, supervisors, middle managers, and managers) were invited to take part in the research. After discussing the goals of the research with the companies' Human Resources Managers, we distributed paper-and-pencils questionnaires while guaranteeing anonymity and confidentiality about the publication of data to all participants. This study is part of a larger research program that began in 2022, while the data utilized for this particular analysis was collected in 2023. Data were collected from the same participants in three waves (T1, T2, T3), each separated by a month lag. In the first wave (T1), we collected data on demographic variables, hierarchical position, and Green work climate perception; in T2 we measured Environmental commitment and Organizational identification; in T3 we measured Green innovative behavior and Person-environment relationship. Collecting data at different time points alleviates common method variance (Podsakoff et al., 2003) and provides more robust evidence about the causal relationships.

In total, we distributed about 750 questionnaires. In T1, 602 were correctly filled out. Of these, 450 were also completely filled out in T2 and 271 in T3.

The average age of respondents was about 40 (SD = 11.45), with a minimum of 20 and a maximum of 62; about 56% were male. The average job tenure was 8.64 years (SD = 8.45). About 36.5% of respondents have a bachelor's degree or higher, 50.2% a high school diploma, and 13.3% a middle school diploma or lower. About 62.7% are workers with production duties, 25.1% are supervisors, 10.4% are middle managers, and 1.8% are higher-level managers.

## 3.2 Measurements

The respondents' native language was Italian; thus, each measuring scale was translated from English to Italian by a professional translator. To validate the translation, we used the back translation method (Brislin et al., 1973).

### 3.2.1 Green work climate perception

Green work climate perception was measured through an eight-item scale developed by Norton et al. (2014). This scale has two dimensions, (I) "organization" and (II) "co-workers," which measure the employees' perceptions of organizational policies and practices relating to environmental sustainability as demonstrated, respectively, by their employing organization and co-workers. The scale ranged from 1 (strongly disagree) to 5 (strongly agree). A sample item for the dimension "organization" was "Our company is worried about its environmental impact" (Alpha = 0.90). A sample item for the dimension "co-workers" was "In our company, employees care about the environment" (Alpha = 0.90).

### 3.2.2 Organizational identification

We measured Organizational identification by using a six-item scale adapted from Mael and Ashforth (1992). The scale ranged from

1 (strongly disagree) to 5 (strongly agree). A sample item was: “When someone criticizes (name of Organization), it feels like a personal insult.” The alpha was 0.97.

### 3.2.3 Environmental commitment

We measured Environmental commitment was measured through an eight-item scale developed by [Raineri and Paillé \(2016\)](#). The scale ranged from 1 (strongly disagree) to 6 (strongly agree). A sample item was: “I really care about the environmental concern of my company.” The alpha was 0.97.

### 3.2.4 Person-environment relationship

We measured Person-environment relationship through an eleven-item scale developed by [Davis et al. \(2009\)](#). The scale ranged from 1 (do not agree at all) to 8 (agree completely). A sample item was “feeling a connection with the environment is important to me.” The alpha was 0.97.

### 3.2.5 Green innovative work behavior

We measured Green innovative work behavior through the six-item scale used by [Aboramadan et al. \(2021\)](#) adapted from [Scott and Bruce \(1994\)](#). The scale ranged from 1 (strongly disagree) to 5 (strongly agree). A sample item was “I promote and champion green ideas with others.” The Cronbach's alpha for this scale was 0.95.

### 3.2.6 Control variables

Gender, age, job tenure, education, and hierarchical level were controlled for to rule out their potential confounding effect.

## 3.3 Analytical strategy

Since the inclusion of multiple Xs in a mediation model implies the possibility that highly correlated Xs will cancel out each other's effects, especially when they are highly correlated ([Hayes, 2013](#)), we preferred to develop two different models (see [Figure 1](#)). In order to test the mediation hypotheses, we used “Model 4” of the PROCESS macro for SPSS ([Hayes, 2013](#)) adopting the bootstrapping method with 5,000 replications; moderate mediation models were tested using “Model 14” of the same macro. We inspected the conditional indirect effects of Green work climate perception on Person-environment relationship and Green innovative behavior at low ( $-1$  SD) and high ( $+1$  SD) levels of Organizational identification, as well as the index of moderated mediation. The significance of the contingent effect is demonstrated if the index of moderated mediation (confidence interval) did not include 0.

In each of the models tested we used gender, age, position, tenure, and organization as control variables.

## 4 Results

### 4.1 Preliminary analyses

Before testing our hypotheses, we studied the structural validity of the scales used in the analysis. We performed a confirmatory factor analysis in AMOS. The proposed model, the six-factor model in which Green work climate perception (organization), Green work climate

perception (co-workers), Environmental commitment, Organizational identification, Person-environment relationship, and Green innovative behavior load on their respective factors exhibits an acceptable fit [ $\chi^2 = 1356.30$  ( $df = 650$ ), CFI = 0.94, IFI = 0.94, TLI = 0.93, RMSEA = 0.06].

Other competitive models, i.e., a five-factor model (in which all items related to Green work climate perception loaded on a single latent variable), [ $\chi^2 = 1849.91$  ( $df = 655$ ), CFI = 0.90, IFI = 0.90, TLI = 0.88, RMSEA = 0.08], and also a four-factor model where we constrained all items related to Green work climate perception to load on one factor, and Environmental commitment and Person-environment relationship to load on another factor [ $\chi^2 = 3935.79$  ( $df = 659$ ), CFI = 0.71, IFI = 0.71, TLI = 0.69, RMSEA = 0.14], show a poorer fit of the data.

Because the data were collected from self-reported questionnaires measured by a single source, there was a risk that the results might be influenced by common method bias. Thus, we performed Harman's one-factor test to address the CMV issue. The results of the factor analysis did not indicate a single-factor structure.

Means, standard deviations, correlations, and internal consistency reliabilities are reported in [Table 1](#).

## 4.2 Hypotheses testing

Results support hypothesis 1, as the indirect effect of Green work climate perception (organization) H1a) and Green work climate perception (co-worker) H1b) on Person-environment relationship through Environmental commitment is, respectively,  $\beta = 0.27$  [0.18, 0.40] and  $\beta = 0.25$  [0.15, 0.38]). Results also support hypothesis 2, as the indirect effect of Green work climate perception (organization) (H2a) and Green work climate perception (co-worker) (H2b) on Green innovative behavior through Environmental commitment is, respectively, ( $\beta = 0.32$  [0.22, 0.44] and  $\beta = 0.28$  [0.17, 0.39]).

Organizational identification moderated neither the indirect effect of Green work climate perception (organization) (index =  $-0.01$ ; CI = [ $-0.07$ ; 0.06]) nor the indirect effect of Green work climate perception (co-workers) (index =  $-0.01$ ; CI = [ $-0.07$ ; 0.05]) on Person-environment relationship via Environmental commitment. Thus, hypothesis 3 is not supported.

We found support for hypothesis 4, as Organizational identification strengthened the indirect effect of Green work climate perception (organization) (index = 0.05; CI = [0.01; 0.09]) and Green work climate perception (co-workers) (index = 0.04; CI = [0.01; 0.07]) on Green innovative behavior via Environmental commitment.

The results of moderated mediation analyses are reported in [Table 2](#).

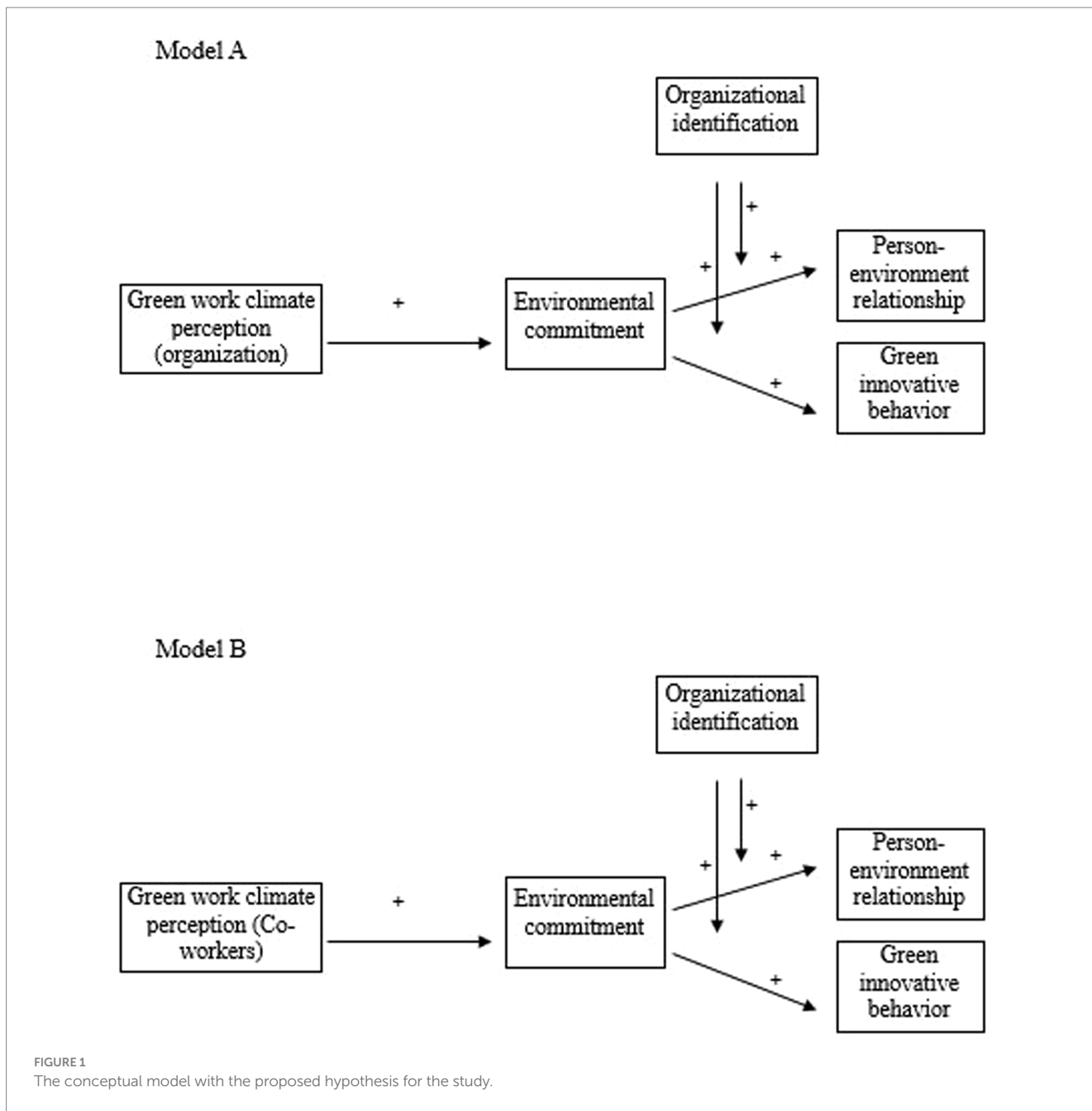
We used the Johnson-Neyman technique to plot the conditional indirect effect of Green work climate perception on Green innovative behavior via Organizational identification ([Figure 2](#)).

The next section will provide a more extensive explanation of the findings.

## 5 Discussion

### 5.1 Theoretical implications

This study provides empirical evidence that a salient perception of a 'green' work climate encourages both innovative green behaviors



(H2) and a deeper personal connection with the environment (H1), through an increased sense of individual environmental commitment. These findings underscore the crucial role that workplace norms play in shaping pro-environmental attitudes and actions. We found that these relationships hold true regardless of whether the green work climate perception is driven by injunctive norms, derived from a variety of organizational rules and policies, or descriptive norms, which arise from the observed behaviors of peers. Thus, our findings contribute to extending the Theory of Normative Conduct (TNC) (Cialdini et al., 1990) by illustrating its applicability in workplace contexts, specifically in fostering pro-environmental behaviors and psychological outcomes. The distinction between injunctive norms and descriptive norms underscores their complementary roles in shaping both observable behaviors and deeper psychological

constructs like environmental commitment and person-environment relationships.

Our results support the idea that organizational identification strengthens the relationship between environmental commitment and green innovative work behavior (H4). According to Social Exchange Theory (Cropanzano and Mitchell, 2005) employees reciprocate perceived organizational support by going beyond their basic role expectations. In organizations that promote green values, employees who strongly identify with their organization feel a sense of obligation to contribute new ideas and solutions to environmental challenges. This result aligns with social identity theory (Ashforth and Mael, 1989) by suggesting that when employees perceive alignment between their personal values and their organization’s green initiatives, they are more likely to engage in sustainability-driven innovations.

TABLE 1 Descriptive statistics and intercorrelations of the variables.

	Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.	Organization 1	0.31	–	–															
2.	Organization 2	0.22	–	–	–														
3.	Organization 3	0.23	–	–	–	–													
4.	Organization 4	0.13	–	–	–	–	–												
5.	Organization 5	0.11	–	–	–	–	–	–											
6.	Age	40.17	11.45	0.28***	–0.16**	–0.06	–0.21**	0.09	–										
7.	Gender	0.56	0.50	0.14*	–0.37**	0.23***	–0.07	0.04	0.04	–									
8.	Education	2.26	0.72	–0.19**	0.26***	–0.18**	0.14*	0.02	–0.26***	–0.32***	–								
9.	Job Tenure	8.64	8.45	0.25**	–0.14*	–0.14*	–0.12*	0.14*	0.55***	0.04	–0.25***	–							
10.	Position	1.51	0.75	0.11	–0.21	0.03	–0.02	–0.16*	0.11	0.13*	–0.02	0.08	–						
11.	Green work climate perception (organization)	3.70	0.92	–0.03	0.09	0.18**	0.01	–0.33***	–0.07	–0.15*	0.19**	–0.08	0.12*	(0.90)					
12.	Green work climate perception (co-workers)	3.42	0.90	–0.73	–0.04	0.36***	–0.12*	–0.20**	–0.06	–0.01	–0.07	–0.12	0.07	0.48***	(0.90)				
13.	Environmental commitment	3.34	1.25	–0.07	0.01	0.20**	–0.03	–0.14*	0.04	–0.09	0.05	0.08	0.23***	0.47***	0.38***	(0.97)			
14.	Organizational identification	3.17	0.94	–0.15*	0.06	0.18**	0.01	–0.11	–0.02	–0.02	0.14*	–0.07	0.21**	0.41***	0.21***	0.43***	(0.94)		
15.	Green innovative behavior	3.05	0.98	–0.06	0.23***	0.23***	–0.08	–0.15*	0.05	0.03	–0.03	0.03	0.25***	0.47***	0.34***	0.76***	0.46***	(0.95)	
16.	Person-environment relationship	5.34	1.38	–0.05	0.01	0.03	–0.09	0.11	0.14*	–0.07	0.12*	0.14*	0.12*	0.32***	0.17***	0.5***	0.27***	0.54***	(0.97)

$n = 271$ . Cronbach's alpha are listed in parentheses on the diagonal. Education: 1 = middle school diploma or less; 2 = high school diploma; 3 = bachelor degree or more. Position: 1 = production tasks; 2 = supervisory tasks; 3 = middle managers tasks; 4 = top managers tasks. Gender: male = 1; female = 0. \* $p < 0.05$  (2-tailed) \*\* $p < 0.01$  (2-tailed) \*\*\* $p < 0.001$  (2-tailed).

TABLE 2 Moderated mediation analyses: Green work climate perception (organization) predicting Person-environment relationship/Green innovative behavior, mediated by environmental commitment, moderated by organizational identification.

	Model A: Green work climate perception (organization) as independent variable						Model B: Green work climate perception (co-workers) as independent variable					
	Environmental commitment		Person-environment relationship		Green innovative behavior		Environmental commitment		Person-environment relationship		Green innovative behavior	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Intercept	-2.57***	0.50	4.08***	0.58	2.36***	0.30	-2.76***	0.56	4.65***	0.62	2.74***	0.32
Organization 1	-0.21	0.24	-0.96***	0.27	-0.07**	0.14	0.11	0.25	-0.76**	0.26	0.04	0.14
Organization 2	-0.17	0.27	-0.91**	0.28	0.10	0.15	0.16	0.27	-0.74*	0.29	0.19	0.15
Organization 3	0.31	0.27	-1.02***	0.29	-0.01	0.15	0.55*	0.27	-0.83**	0.29	0.11	0.15
Organization 4	-0.10	0.29	-1.10***	0.29	-0.12	0.16	0.28	0.29	-0.93**	0.31	-0.03	0.16
Age	-0.01	0.01	-0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.00
Gender	-0.23	0.15	0.04	0.16	0.22*	0.09	-0.29	0.16	0.01	0.17	0.19*	0.09
Tenure	0.02	0.01	0.01	0.01	-0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01
Education	-0.01	0.10	0.20	0.11	-0.09	0.06	0.17	0.11	0.25*	0.12	-0.06	0.06
Position	0.3**	0.09	0.03	0.10	0.01	0.01	0.33	0.09	0.03	0.10	0.05	0.05
Green work climate perception	0.59***	0.08	0.27**	0.10	0.14**	0.05	0.47***	0.08	0.06	0.09	0.01	0.05
Environmental commitment			0.46***	0.07	0.52***	0.05			0.51***	0.07	0.55***	0.04
Organizational identification			0.04	0.09	0.14**	0.05			0.10	0.09	0.17***	0.05
Environmental commitment x Organizational identification			-0.01	0.06	0.08**	0.03			-0.02	0.06	0.08**	0.03
R <sup>2</sup>	0.29		0.34		0.65		0.23		0.32		0.64	
F	10.63***		9.99***		37.13***		7.93***		9.15***		35.38***	

n = 271. Standard errors in italic. The dummy “Organization 5” is not included in the equations because it is redundant.  
 \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001.

Contrary to our expectations, organizational identification did not moderate the relationship between environmental commitment and person-environment relationship (H3). This suggests that while organizational identification is crucial for work-related behaviors, it may not significantly influence employees’ deeper, personal connections to the environment. Importantly, this finding implies that the spillover of environmental commitment from the workplace to personal life may be driven more by intrinsic factors rather than organizational variables, such as identification with the company. Intriguing questions about the independence of personal environmental identity from work-related factors seem to emerge. Indeed, our results suggest that workplace green norms may have lasting effects beyond organizational boundaries, as environmental commitment, once fostered in the workplace, might contribute to a stronger person-environment relationship, independent of organizational identification. This idea aligns with the concept of behavioral spillover, where pro-environmental behaviors in one context (such as the workplace) may influence similar behaviors in other areas of life (Truelove et al., 2014), highlighting the bidirectional

interaction between professional and private spheres. The absence of a moderating effect of organizational identification implies that such spillover may be driven more by internalized environmental values rather than by organizational factors, offering a promising avenue for future research on how workplace norms influence private behaviors.

The observed effects on the person-environment relationship highlight the importance of fostering intrinsic motivation for long-lasting environmental engagement. As Davis et al. (2009) suggest, a sense of interconnectedness with the environment is essential for creating an enduring ‘ecological self’. Similarly, Bragg (1996) and Bateson (1972) emphasize that developing an ‘ecology of mind’, where individuals perceive themselves as fundamentally connected to the natural world, can drive transformative, collective action. This underscores the potential limitations of top-down approaches, such as government enforcement or corporate mandates, which often rely on extrinsic motivational processes. In contrast, workplaces that cultivate intrinsic environmental commitment are more likely to see sustained pro-environmental behaviors that extend beyond the work environment (Paillé et al., 2014; Hicklenton et al., 2019).



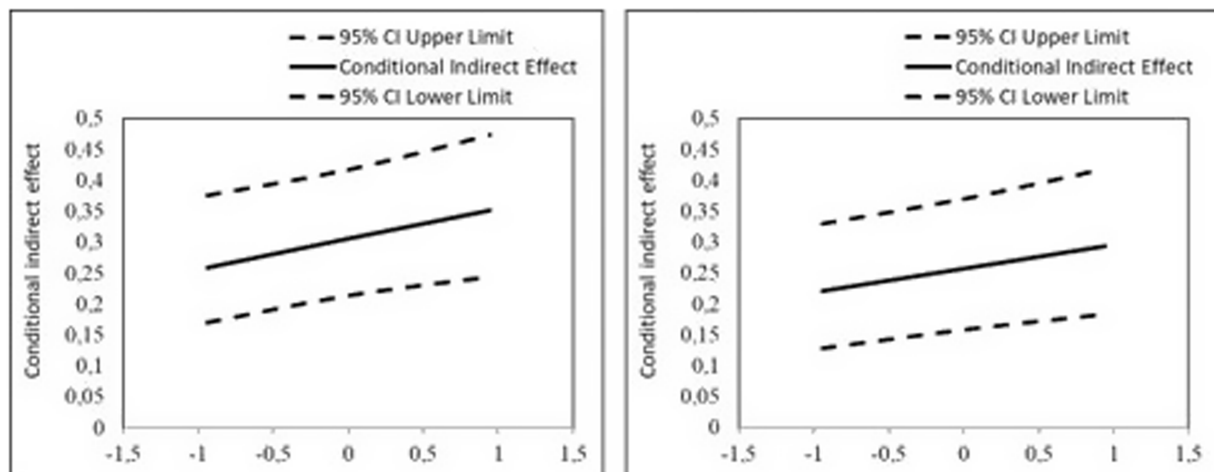


FIGURE 2

Conditional indirect effects of Green work climate perception on Green innovative behavior at values of Organizational identification. (A) Conditional indirect effect of Green work climate perception (organization) on Green innovative behavior (via Environmental commitment) at values of Organizational identification. (B) Conditional indirect effect of Green work climate perception (co-workers) on Green innovative behavior (via Environmental commitment) at values of Organizational identification.

Together, we submit that our findings contribute to solidify, through empirical evidence, the currently available theoretical foundations for our understanding of the interplay of norms, identity, and innovation in fostering sustainable workplace practices.

## 5.2 Practical implications

In today's world, organizations play a significant role not only in shaping consumer behavior but also in influencing the identity and values of their employees through workplace norms, rules, and practices. This influence extends to environmental values, where green work climates can help foster pro-environmental behaviors by shaping employees' personal environmental identities.

This study provides novel insights into how green work climates influence employees' personal environmental identities, which are key antecedents of pro-environmental behaviors. While previous studies have identified social norms as catalysts for green behaviors (Smith and O'Sullivan, 2012; Norton et al., 2014; Tian et al., 2020), our findings show that both organizational and social norms in the workplace serve as important drivers of environmental commitment and innovative green behaviors.

The practical implications of these findings suggest that organizations seeking to promote environmentally sustainable behaviors should focus on cultivating a green work climate through targeted human resource management policies (Paillé et al., 2020) leadership and supervisory styles (Paillé et al., 2022), corporate environmental policies (Rahman Khattak et al., 2021), organizational support (Temminck et al., 2015), environmental knowledge management practices (Zhang et al., 2021). Equally important is the alignment between an organization's environmental communication and its actual practices, as coherence between messaging and action can foster trust and engagement in green behaviors. Our results also indirectly suggest the relevance of

avoiding negative practices such as *greenwashing*. A growing body of research highlights the harmful effects of greenwashing on the development of green cultures in organizations. When companies promote environmental values without backing them up with concrete actions, employees may experience emotional exhaustion, increased intention to quit (Scheidler et al., 2018) and organizational cynicism (Li et al., 2022), with negative consequences on task performance, organizational citizenship behaviors (Li et al., 2022) and environmental performance (Miao et al., 2023). For example, in a study focused on the agri-inputs industry in Pakistan, Tahir et al. (2020) found that greenwashing practices have a deleterious effect on green work climate, with further negative consequences on employees' green behaviors. To avoid these pitfalls, organizations must ensure that their environmental communication is supported by tangible actions and investments, thereby fostering a positive green psychological climate that encourages employee engagement in pro-environmental behaviors. To strengthen the perception of organizational commitment to sustainability, companies should involve employees in the development and implementation of environmental initiatives. Transparent communication and visible actions—such as integrating sustainability goals into performance appraisals or fostering employee-led green initiatives—can reinforce trust and support the creation of a genuine green culture. These efforts are essential to enhance employees' environmental commitment and long-term engagement in pro-environmental behaviors.

Ultimately, the alignment between an organization's environmental messaging and concrete actions is critical to enhancing employees' positive attitudes toward sustainability. By fostering a coherent green work climate and avoiding practices like greenwashing, organizations can not only improve their environmental performance but also contribute to the personal environmental identity of their employees, leading to long-term sustainable behaviors both within and outside the workplace.

### 5.3 Limitations and further research

While this study offers valuable insights into the relationship between green work climate perceptions and pro-environmental behaviors, there are several limitations that should be addressed in future research. These limitations provide promising avenues for further exploration.

One limitation of this study is the relative homogeneity of the participant organizations, which were all drawn from a single country and industry (manufacturing sector). This may limit the generalizability of our findings to organizations with different cultural or industrial contexts. Future research should explore whether the observed relationships hold true across a more diverse range of industries and cultural settings to enhance the applicability of our results.

Another limitation is the lack of consideration for individual differences, which could play a critical role in moderating the relationship between green work climate perceptions and pro-environmental behavior. For instance, employees with strong personal environmental beliefs may be more committed to green behaviors than their organizations (Lee et al., 1995; Ciocirlan, 2016). Additionally, individual morality may shape how social norms influence personal environmental commitment, both inside and outside the workplace. Future research should explore how factors such as personal environmental values, moral identity, and other individual factors interact with organizational norms to influence behavior.”

A further limitation is that our study does not account for how employees’ perceptions and behaviors may change over long periods (Bissing-Olson et al., 2013). Longitudinal case studies would provide valuable insights into the long-term dynamics of green work climates, including how significant changes in organizational norms impact employees’ environmental commitment.

Finally, the rise of remote working presents another factor that may influence the observed phenomena. While work climate is fundamentally a psychological construct, the physical work environment may also play an important role in shaping social norms and behavior. Remote work could significantly alter how employees experience organizational norms and interact with peers, thereby changing the ways social norms impact environmental identity and behaviors. Future research should examine how remote or hybrid work environments influence the formation of green work climates and their effects on the behavior of employees.

### Data availability statement

The datasets presented in this article are not readily available because the participants of this study did not give written consent for

their data to be shared. Requests to access the datasets should be directed to [giovanni.masino@unife.it](mailto:giovanni.masino@unife.it).

### Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent from the [patients/ participants OR patients/participants legal guardian/next of kin] was not required to participate in this study in accordance with the national legislation and the institutional requirements.

### Author contributions

ID: Writing – original draft, Writing – review & editing. DB: Writing – original draft, Writing – review & editing. EM: Writing – original draft, Writing – review & editing. GM: Writing – original draft, Writing – review & editing.

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The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

### Generative AI statement

The author(s) declare that no Gen AI was used in the creation of this manuscript.

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## References

- Aboramadan, M., Kundi, Y. M., and Farao, C. (2021). Examining the effects of environmentally-specific servant leadership on green work outcomes among hotel employees: the mediating role of climate for green creativity. *J. Hosp. Market. Manag.* 30, 929–956. doi: 10.1080/19368623.2021.1912681
- Afsar, B., and Umrani, W. (2019). Corporate social responsibility and pro-environmental behavior at workplace: the role of moral reflectiveness, coworker advocacy, and environmental commitment. *Corp. Soc. Responsib. Environ. Manag.* 27, 109–125. doi: 10.1002/csr.1777
- Aron, E. N., and Aron, A. (1996). Love and expansion of the self: the state of the model. *Pers. Relat.* 3, 45–58. doi: 10.1111/j.1475-6811.1996.tb00103.x
- Ashforth, B., and Mael, F. (1989). Social identity theory and organization. *Acad. Manag. Rev.* 14, 20–39. doi: 10.2307/258189
- Bartels, J., Peters, O., de Jong, M., Pruyn, A., and van der Molen, M. (2010). Horizontal and vertical communication as determinants of professional and organisational identification. *Pers. Rev.* 39, 210–226. doi: 10.1108/00483481011017426

- Bateson, G. (1972). Steps to an ecology of mind: Collected essays in anthropology, psychiatry, evolution, and epistemology. Lanham, MD, US: Jason Aronson.
- Bicchieri, C., and Mercier, H. (2014). "Norms and beliefs: how change occurs" in The complexity of social norms. eds. M. Xenitidou and B. Edmonds (Switzerland: Springer International Publishing), 37–54.
- Bissing-Olson, M. J., Iyer, A., Fielding, K. S., and Zacher, H. (2013). Relationships between daily affect and pro-environmental behavior at work: The moderating role of pro-environmental attitude. *J. Organ. Behav.* 34, 156–175. doi: 10.1002/job.1788
- Bragg, E. A. (1996). Towards ecological self: deep ecology meets constructionist self-theory. *J. Environ. Psychol.* 16, 93–108. doi: 10.1006/jevp.1996.0008
- Brass, D., and Burkhardt, M. E. (1993). Potential power and power use: an investigation of structure and behavior. *Acad. Manag. J.* 36, 441–470. doi: 10.2307/256588
- Brislin, R. W., Lonner, W. J., and Thorndike, R. M. (1973). Cross-cultural research methods. New York, NY: Wiley.
- Chen, Y.-S., and Chang, C.-H. (2013). The determinants of Green product development performance: Green Dynamic capabilities, Green transformational leadership, and Green creativity. *J. Bus. Ethics* 116, 107–119. doi: 10.1007/s10551-012-1452-x
- Cialdini, R., Reno, R., and Kallgren, C. (1990). A focus theory of normative conduct: recycling the concept of norms to reduce littering in public places. *J. Pers. Soc. Psychol.* 58, 1015–1026. doi: 10.1037/0022-3514.58.6.1015
- Ciocirlan, C. (2016). Environmental workplace behaviors: definition matters. *Organ. Environ.* 30, 51–70. doi: 10.1177/1086026615628036
- Cropanzano, R., and Mitchell, M. (2005). Social exchange theory: an interdisciplinary review. *J. Manag.* 31, 874–900. doi: 10.1177/0149206305279602
- Davis, J. L., Green, J. D., and Reed, A. (2009). Interdependence with the environment: commitment, interconnectedness, and environmental behavior. *J. Environ. Psychol.* 29, 173–180. doi: 10.1016/j.jenvp.2008.11.001
- Debot, A., Siegler, S., Klumb, P., and Schoebi, D. (2018). Daily work stress and relationship satisfaction: detachment affects romantic couples' interactions quality. *J. Happiness Stud.* 19, 2283–2301. doi: 10.1007/s10902-017-9922-6
- Dutton, J. E., Dukerich, J. M., and Harquail, C. V. (1994). Organizational images and member identification. *Adm. Sci. Q.* 39, 239–263. doi: 10.2307/2393235
- EEA (2020). The European environment — State and outlook 2020: Knowledge for transition to a sustainable Europe, European Environment Agency. Available at: <https://www.eea.europa.eu/soer/publications/soer-2020> (Accessed March 01, 2023).
- EFRAG (2021). Proposals for a relevant and dynamic eu sustainability reporting standard setting. European Financial Reporting Advisory Group. Available at: [https://www.efrag.org/Assets/Download?assetUrl=%2Fsites%2Fwebpublishing%2FsiteAssets%2FEFRAG%2520PTF-NFRS\\_MAIN\\_REPORT.pdf](https://www.efrag.org/Assets/Download?assetUrl=%2Fsites%2Fwebpublishing%2FsiteAssets%2FEFRAG%2520PTF-NFRS_MAIN_REPORT.pdf)
- Groth, M., Goldman, B., Gilliland, S., and Bies, R. (2002). Commitment to legal claiming: influences of attributions, social guidance, and organizational tenure. *J. Appl. Psychol.* 87, 781–788. doi: 10.1037/0021-9010.87.4.781
- Hayes, A. F. (2013). Introduction to mediation, moderation, and conditional process analysis: A regression based approach. New York: The Guilford Press.
- Hickleton, C., Hine, D., and Loi, N. (2019). Can work climate foster pro-environmental behavior inside and outside of the workplace? *PLoS One* 14:e0223774. doi: 10.1371/journal.pone.0223774
- Jaeger, C., and Schultz, P. (2017). Coupling social norms and commitments: testing the underdetected nature of social influence. *J. Environ. Psychol.* 51, 199–208. doi: 10.1016/j.jenvp.2017.03.015
- Jaich, H., Jastram, S. M., and Blind, K. (2023). Spillover of social norms at work on employees' self-reported private sphere pro-environmental behaviour: a mixed method investigation. *Schmalenbach J. Bus. Res.* 75, 519–547. doi: 10.1007/s41471-023-00167-x
- Karatepe, O., Aboramadan, M., and Dahleez, K. (2020). Does climate for creativity mediate the impact of servant leadership on management innovation and innovative behavior in the hotel industry? *Int. J. Contemp. Hosp. Manag.* 32, 2497–2517. doi: 10.1108/IJCHM-03-2020-0219
- Kelley, H. H., and Thibaut, J. W. (1978). Interpersonal relations: A theory of interdependence. New York: Wiley New York.
- Kim, Y. J., Kim, W. G., Choi, H.-M., and Phetvaroon, K. (2019). The effect of green human resource management on hotel employees' eco-friendly behavior and environmental performance. *Int. J. Hosp. Manag.* 76, 83–93. doi: 10.1016/j.ijhm.2018.04.007
- Kuenzi, M., and Schminke, M. (2009). Assembling fragments into a Lens: a review, critique, and proposed research agenda for the organizational work climate literature. *J. Manage.* 35, 634–717. doi: 10.1177/0149206308330559
- Lee, Y.-J., de, R., and Marans, R. W. J. E. (1995). Factors influencing individual recycling behavior in office settings. *Environ. Behav.* 27, 380–403. doi: 10.1177/0013916595273006
- Li, W., Li, W., Seppänen, V., and Koivumäki, T. (2022). How and when does perceived greenwashing affect employees' job performance? Evidence from China. *Corp. Soc. Responsib. Environ. Manag.* 29, 1722–1735. doi: 10.1002/csr.2321
- Lin, C.-P., Lyau, N.-M., Tsai, Y.-H., Chen, W.-Y., and Chiu, C.-K. (2010). Modeling corporate citizenship and its relationship with organizational citizenship behaviors. *J. Bus. Ethics* 95, 357–372. doi: 10.1007/s10551-010-0364-x
- Mael, F., and Ashforth, B. E. (1992). Alumni and their alma mater: a partial test of the reformulated model of organizational identification. *J. Organ. Behav.* 13, 103–123. doi: 10.1002/job.4030130202
- Mehak, S. S., and Batcha, H. M. (2024). Analyzing the influence of green human resource practices on organizational sustainability: the role of green attitudes and performance of employees. *Environ. Dev. Sustain.* doi: 10.1007/s10668-024-05157-5
- Miao, G., Chen, G., Wang, F., and Das, A. K. (2023). The effect of corporate greenwashing on employees' environmental performance: person-organization values fit perspective. *Sustain. For.* 15:3498. doi: 10.3390/su15043498
- Norton, T., Parker, S., Zacher, H., and Ashkanasy, N. (2015). Employee Green behavior. *Organ. Environ.* 28, 103–125. doi: 10.1177/1086026615575773
- Norton, T. A., Zacher, H., and Ashkanasy, N. M. (2014). Organisational sustainability policies and employee green behaviour: the mediating role of work climate perceptions. *J. Environ. Psychol.* 38, 49–54. doi: 10.1016/j.jenvp.2013.12.008
- Nusraningrum, D., Rahmawati, A., Wider, W., Jiang, L., and Udang, L. N. (2024). Enhancing employee performance through motivation: the mediating roles of green work environments and engagement in Jakarta's logistics sector. *Front. Sociol.* 9:1392229. doi: 10.3389/fsoc.2024.1392229
- Paillé, P., Chen, Y., Boiral, O., and Jin, J. (2014). The impact of human resource management on environmental performance: an employee-level study. *J. Bus. Ethics* 121, 451–466. doi: 10.1007/s10551-013-1732-0
- Paillé, P., Mejía-Morelos, J. H., Amara, N., and Norrin, H. (2022). Greening the workplace through supervisory behaviors: assessing what really matters to employees. *Int. J. Hum. Resour. Manag.* 33, 1754–1781. doi: 10.1080/09585192.2020.1819857
- Paillé, P., Valéau, P., and Renwick, D. W. (2020). Leveraging green human resource practices to achieve environmental sustainability. *J. Clean. Prod.* 260:121137. doi: 10.1016/j.jclepro.2020.121137
- Podsakoff, P. M., Mac Kenzie, S. B., Lee, J.-Y., and Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *J. Appl. Psychol.* 88, 879–903. doi: 10.1037/0021-9010.88.5.879
- Rahman Khattak, S. R., Nouman, M., Fayaz, M., Cismaş, L. M., Negruţ, L., Negruţ, C. V., et al. (2021). Corporate social responsibility and employee Green behavior in the hospitality industry: a cross-country study. *Sustain. For.* 13:10534. doi: 10.3390/su131910534
- Raineri, N., and Paillé, P. (2016). Linking corporate policy and supervisory support with environmental citizenship behaviors. *J. Bus. Ethics* 137, 129–148. doi: 10.1007/s10551-015-2548-x
- Ramus, C., and Steger, U. (2000). The role of supervisory support behaviors and environmental policy in employee 'Ecoinitiatives' at leading edge European companies. *Acad. Manag. J.* 43, 605–626. doi: 10.2307/1556357
- Raosoft, I. (2004). Raosoft sample size calculator. Available at: <http://www.raosoft.com/samplesize.html>.
- Renwick, D. W. S., Redman, T., and Maguire, S. (2013). Green Human Resource Management: A Review and Research Agenda. *Int. J. Manage. Rev.* 15, 1–14. doi: 10.1111/j.1468-2370.2011.00328.x
- Ruepert, A., Steg, L., and Keizer, K. (2015). Theoretical basis for organizational pro-environmental research. New York: Oxford Academic.
- Rupp, D., and Mallory, D. (2015). Corporate social responsibility: psychological, person-centric, and progressing. *Annu. Rev. Organ. Psych. Organ. Behav.* 2, 211–236. doi: 10.1146/annurev-orgpsych-032414-111505
- Rusbult, C. E. (1980). Commitment and satisfaction in romantic associations: a test of the investment model. *J. Exp. Soc. Psychol.* 16, 172–186. doi: 10.1016/0022-1031(80)90007-4
- Sampene, A. K., Li, C., Wiredu, J., Agyeman, F. O., and Brenya, R. (2024). Examining the nexus between social cognition, biospheric values, moral norms, corporate environmental responsibility and pro-environmental behaviour. Does environmental knowledge matter? *Curr. Psychol.* 43, 6549–6569. doi: 10.1007/s12144-023-04832-6
- Scheidler, S., Edinger-Schons, L. M., Spanjol, J., and Wieserke, J. (2018). Scrooge posing as mother Teresa: how hypocritical social responsibility strategies hurt employees and firms. *J. Bus. Ethics* 157, 339–358. doi: 10.1007/s10551-018-3788-3
- Schneider, B., Ehrhart, M. G., and Macey, W. H. (2013). Organizational climate and culture. *Annu. Rev. Psychol.* 64, 361–388. doi: 10.1146/annurev-psych-113011-143809
- Schultz, P. W. (2001). The structure of environmental concern: concern for self, other people, and the biosphere. *J. Environ. Psychol.* 21, 327–339. doi: 10.1006/jevp.2001.0227
- Scott, S. G., and Bruce, R. A. (1994). Determinants of innovative behavior: a path model of individual innovation in the workplace. *Acad. Manag. J.* 37, 580–607. doi: 10.5465/256701

- Smith, A., and O'Sullivan, T. (2012). Environmentally responsible behaviour in the workplace: an internal social marketing approach. *J. Mark. Manag.* 28, 469–493. doi: 10.1080/0267257X.2012.658837
- Tahir, R., Athar, M. R., Afzal, A., and Palazzo, M. (2020). The impact of greenwashing practices on green employee behaviour: mediating role of employee value orientation and green psychological climate. *Cogent Bus. Manage.* 7:1781996. doi: 10.1080/23311975.2020.1781996
- Temminck, E., Mearns, K., and Fruhen, L. (2015). Motivating employees towards sustainable behaviour. *Bus. Strateg. Environ.* 24, 402–412. doi: 10.1002/bse.1827
- Tian, H., Zhang, J., and Li, J. (2020). The relationship between pro-environmental attitude and employee green behavior: the role of motivational states and green work climate perceptions. *Environ. Sci. Pollut. Res.* 27, 7341–7352. doi: 10.1007/s11356-019-07393-z
- Truelove, H. B., Carrico, A. R., Weber, E. U., Raimi, K. T., and Vandenbergh, M. P. (2014). Positive and negative spillover of pro-environmental behavior: an integrative review and theoretical framework. *Glob. Environ. Chang.* 29, 127–138. doi: 10.1016/j.gloenvcha.2014.09.004
- Yuan, F., and Woodman, R. (2010). Innovative behavior in the workplace: the role of performance and image outcome expectations. *Acad. Manag. J.* 53, 323–342. doi: 10.5465/AMJ.2010.49388995
- Zhang, W., Xu, R., Jiang, Y., and Zhang, W. (2021). How environmental knowledge management promotes employee Green behavior: an empirical study. *Int. J. Environ. Res. Public Health* 18:4738. doi: 10.3390/ijerph18094738
- Zohar, D., and Luria, G. (2005). A multilevel model of safety climate: cross-level relationships between organization and group-level climates. *J. Appl. Psychol.* 90, 616–628. doi: 10.1037/0021-9010.90.4.616