

Article

Organizational Environmental Policies and Pro-Environmental Behaviors: The Sequential Mediating Role of Organizational and Co-Worker Green Climates

Luca Radassao ¹ and Salvatore Zappalà ^{1,2,*}

¹ Department of Psychology “Renzo Canestrari”, Alma Mater Studiorum, University of Bologna, 40126 Bologna, Italy; luca.radassao2@unibo.it

² Interdepartmental Centre for Industrial Agrifood Research (CIRI Agrifood), Alma Mater Studiorum, University of Bologna, 47521 Cesena, Italy

* Correspondence: salvatore.zappala@unibo.it

Abstract: This study investigates the relationship between employees’ perceptions of organizational environmental policies (EPs) and two dimensions of organizational citizenship behaviors for the environment (OCBEs), namely eco-civic engagement (ECE) and eco-initiatives (EIs). In addition, this study examines whether these relationships are sequentially mediated by the organizational and co-worker dimensions of the green work climate (GWC) scale. An online questionnaire was used to collect data from 323 employees working in three different plants of an Italian agri-food company. The results indicate that organizational GWC was related to co-worker GWC, and both dimensions sequentially mediated the relationship between EP and OCBE. Co-worker GWC emerged as a crucial factor that increased employees’ ECE and proposal of EIs. The findings highlight the relevant role of environmental policies in fostering a sustainable organizational climate. By enabling employees to engage in green behaviors and propose green initiatives, organizations can align organizational sustainability goals with employee-driven initiatives. Finally, this study provides new insights into the interplay between organizational and team climate factors and contributes to the literature on green work behaviors. Practical implications for enhancing sustainability in workplace contexts are presented.

Keywords: organizational citizenship behavior for the environment (OCBE); employee green behaviors; green work climate (GWC); organizational climate; environmental policy

Academic Editors: Muhammad Ikram and Rajesh Kumar Jyothi

Received: 11 November 2024

Revised: 22 January 2025

Accepted: 29 January 2025

Published: 31 January 2025

Citation: Radassao, L.; Zappalà, S. Organizational Environmental Policies and Pro-Environmental Behaviors: The Sequential Mediating Role of Organizational and Co-Worker Green Climates. *Sustainability* **2025**, *17*, 1165. <https://doi.org/10.3390/su17031165>

Copyright: © 2025 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Environmental sustainability has become a critical issue for European organizations, driven by regulatory requirements and evolving market expectations. The European Union’s regulatory frameworks, such as the Taxonomy Regulation and the Non-Financial Reporting Directive [1,2], highlight national and supranational organizations’ efforts to drive organizational change toward environmental sustainability [3,4]. Also, consumer preferences, increasingly shifting toward sustainable products, are compelling companies to integrate eco-friendly practices into their business strategies [5]. These external influences stimulate companies to modify production, organizational processes, and the presentation of products [3]. The creation, acquisition, and implementation of technologies designed to decrease the environmental impact of the production, use, and disposal of products have been labeled green technologies [6]. Such green technologies aim, for

instance, to reduce emission, save energy, better manage environmental resources such as water, and, in general, manage the negative environmental impacts of firms [6]. However, other environmental initiatives taken by firms also include green human resource initiatives, such as providing green training to employees, considering green behaviors in performance appraisal, or rewarding employees' green behaviors [7]. Such managerial green initiatives, alongside leaders who are committed to sustainability, affect employees' proactive environmental behaviors [8]. In the long term, adopting green technologies and/or implementing green human resource initiatives enhances a company's green reputation, which serves as a signal not only to external consumers but also to internal managers and employees, motivating them to adopt pro-environmental behaviors [9].

To provide meaning to these actions, especially when implemented concurrently, typically, top managers introduce organizational policies that align such new actions with the company's mission, organizational structure, and employees' daily routines [10]. In response, workers, influenced by these sustainability initiatives, adjust their perception of the organization's commitment to sustainability, thereby strengthening their own dedication to environmental causes [11]. Moreover, they are encouraged—either voluntary or through regulatory measures—to adopt behaviors that reduce both their individual and the organization's environmental impact [11,12]. Building on these observations, many scholars have explored how environmental policies influence pro-environmental behaviors, with a particular focus on the role of various organizational factors in strengthening this relationship. In addition to the factors mentioned above [6,8,9], research has also explored broader variables such as the role of human resource management [13], leadership styles [14,15], and the environmental sustainability climate within organizations [16].

This study builds upon the work of Ramus and Steger [17], who explored the relationship between perception of environmental policies (EPs) and employees' eco-initiatives, defined as the actions taken by employees to improve the environmental performance of their company. We enrich the Ramus and Steger study [17] by including the mediating role of a green work climate (GWC), defined as "employees' shared perceptions of their organizations' pro-environmental policies, procedures and practices" [16]. Organizational climate theory suggests that employees collectively interpret how much attention the organization gives to specific topics; such collective interpretation shapes employees' attitudes and motivation and guides their behavior [18]. Thus, building on this theory, we argue that a green work climate represents employees' perception and interpretation of organizational environmental policies, and, depending on the impression they have about the importance attributed to the environment by those policies, consequentially, they may implement pro-environmental behaviors. Thus, we argue that a green work climate may be one potential mechanism explaining why environmental policies affect employees' green behaviors.

The green work climate has been measured using a scale composed of two dimensions: organizational green work climate and co-worker green work climate [19]. Scholars have recognized the importance of the GWC construct and showed that it is closely related to organizational progress in environmental sustainability [20–23]. However, although the green work climate has often been considered as a single, overarching construct [16], previous studies either focused only on the organizational dimension of the GWC [24,25] or integrated the co-worker and organizational dimensions into a single factor [26–28]. At present, no study has considered the inter-relationships between these two variables. Thus, the present study explores whether the GWC mediates the well-established relationship between the perception of EPs and pro-environmental behaviors, here operationalized as the organizational citizenship behavior for the environment (OCBE). However, unlike Norton et al. [16], for whom the two dimensions of GWC are independent and have distinct effects on different dependent variables, in this study, we assume that the

organizational green work climate is not only related to but can also serve as a predictor of the co-worker green work climate. This interdependence would highlight a potential hierarchical relationship between the two dimensions, and, in this study, we address this aspect that is underexplored in the literature. Thus, we propose a theoretical model in which the two dimensions of the GWC scale sequentially contribute to mediate the relationship between EP and organizational citizenship behavior for the environment (OCBE). Specifically, this study investigates whether the perception of EP is related to organizational GWC, which, in turn, is related to co-worker GWC, which, finally, is related to OCBE. This approach provides new insights into the relationship between higher-level organizational climate and lower-level group climate and how much they shape pro-environmental work behaviors.

The other focus of this study—green or pro-environmental behaviors—considers the recommendations of scholars who recently examined this phenomenon [11,29,30]. Specifically, this study does not focus on specific behaviors (e.g., recycling) that workers may engage in, but on OCBE. This is because pro-environmental work behaviors may vary greatly depending on the work or task context. For example, avoiding electricity waste in production departments by turning off lights cannot be managed in the same way as in-office settings where administrative staff, differently from production staff, are expected to turn off lights. Following this consideration, this study examines workers' general predisposition to adopt and propose sustainability initiatives, focusing on behaviors which reflect a readiness for action, regardless of contextual factors. Given the distinct nature of the adoption of pro-environmental behaviors and the proposal of initiatives to promote pro-environmental behaviors, as highlighted by the authors [31], we tested the same mediation model on two separate behaviors: adopting pro-environmental initiatives (eco-civic engagement) and proposing pro-environmental initiatives (eco-initiatives). Figure 1a,b describe the models used in this study. This approach allows us to examine whether the two components of green climate (organizational and co-worker GWC) are differentially related to the two components of OCBE. This focus extends prior studies by examining the unique contributions of each climate dimension to specific types of green behaviors. Building on the theoretical framework of social information processing theory [32], we argue that the organizational green work climate might have a stronger influence on adopting pro-environmental initiatives than the other dimension, while the co-worker green work climate will be more related to proposing pro-environmental initiatives.

This study was conducted in a single organization, with a sample which included employees from various branches and different production departments. We believe that this single-company approach, providing a comprehensive view across different sectors and levels of the company, is particularly interesting because workers share the same organizational climate and, thus, in principle, should report the same opinions or show the same perceptions about the organization. The same applies to their perception of environmental policies, as the same policies are applied consistently across the organization, and employees should, in principle, perceive them in the same way. This study addresses two critical gaps in the literature and aims to (1) understand the hierarchical relationship between organizational and co-worker GWC and (2) examine whether these two dimensions sequentially, and differentially, mediate the relationship between EP and two components of OCBE, respectively, eco-civic engagement and eco-initiatives.

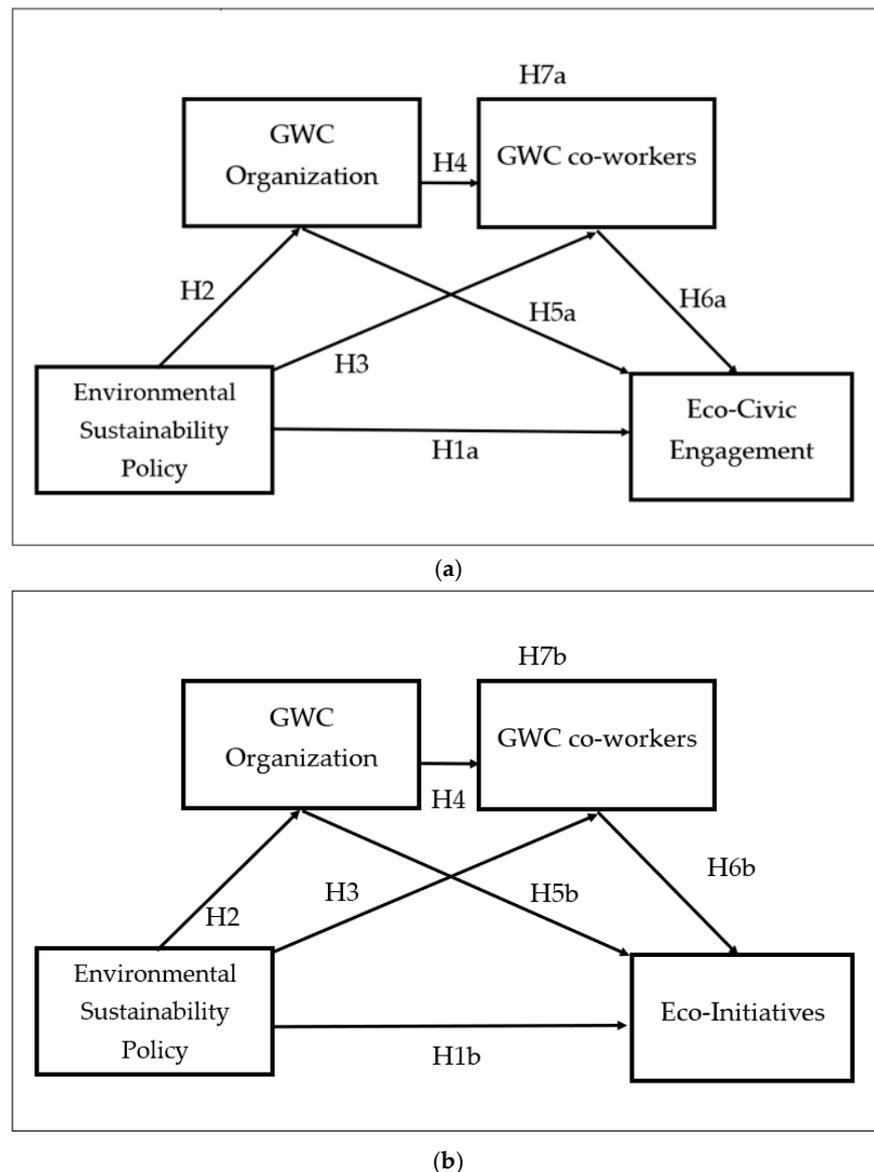


Figure 1. (a) Sequential mediation model with eco-civic engagement as a dependent variable. Note: Hypotheses H1a, H2–H4, H5a–H6a indicate direct effects, while Hypothesis H7a refers to the sequential mediation of GWC variables between environmental sustainability policies and eco-civic engagement. (b) Sequential mediation model with eco-initiatives as the dependent variable. Note: Hypotheses H1b, H2–H4, H5b–H6b indicate direct effects, while Hypothesis H7b refers to the sequential mediation of GWC variables between environmental sustainability policies and eco-initiatives.

1.1. Organizational Citizenship Behavior for the Environment

The construct of organizational citizenship behaviors for the environment (OCBEs) refers to behaviors that fall within the broader category of pro-environmental behaviors or employee green behaviors (EGBs) but differ from them in their voluntary nature and their indirect contribution to the organization’s environmental impact [31]. Unlike, for example, recycling, which directly affects organizational performance, an OCBE refers to the willingness to use a new recycling method or participate in a car-sharing campaign promoted by the organization. Due to their more general nature, these behaviors can be measured independently of the organizational context. Boiral [33] defines these behaviors as “voluntary and discretionary actions that are not formally acknowledged but contribute to corporate environmental effectiveness”. In a later paper, Boiral and Paillé [31] proposed a scale that

measures OCBEs as constituted by three dimensions—eco-civic engagement (ECE), eco-initiatives (EIs), and eco-helping (EH)—which, although interrelated, are considered independent dimensions. Eco-civic engagement focuses on the active participation of employees in existing sustainability initiatives, eco-initiatives refer to proactive efforts in proposing new environmental solutions, and eco-helping refers to assisting colleagues in adopting environmental behaviors [34]. As noted by Tsai et al. [35], eco-helping primarily involves the voluntary encouragement of colleagues to adopt pro-environmental behaviors, and it is driven by factors such as individual environmental concern and intrinsic pro-social tendencies. Mi et al. [36] observed that eco-helping is more strongly influenced by personal traits and interpersonal motivations rather than external organizational or cultural influences, and thus, it diverges in nature from the organizational and co-worker climates central to this study. In contrast, eco-civic engagement (ECE) and eco-initiatives (EIs) represent behaviors more strongly interwoven with a structured and proactive participation in pro-environmental initiatives and the active proposal of this type of initiatives, and, thus, both of them are more coherent with the organizational and group processes investigated in this study. Our interest in green behaviors that may be more susceptible to organizational and social determinants convinced us to focus only on eco-civic engagement and eco-initiatives, without considering eco-helping.

Research shows that both eco-civic engagement (ECE) and eco-initiatives (EIs) are strongly influenced by organizational and group-level factors. Organizational support and a corporate commitment to sustainability are crucial in boosting participation in ecological initiatives, strengthening employee bonds, and encouraging active engagement [35]. Similarly, an organizational culture [34] focused on sustainability and leadership support [37] provides employees with the necessary resources and legitimacy to propose and implement environmental initiatives, highlighting the importance of institutional backing. At the workers' level, peer support and shared ecological norms further drive participation in both ECE and EIs. Peer support from colleagues fosters active involvement in ecological initiatives [38], while group norms stimulate creativity and innovation, providing a fertile environment for developing new solutions [39]. Additionally, peer support within groups enhances engagement in existing initiatives, promoting collaboration and participation [29]. It is clear, then, that organizational and group-level factors influence both ECE and EIs. However, it becomes necessary to explore how these two behaviors might be influenced differently by these factors, a gap which remains underexplored in the current literature.

1.2. Environmental Sustainability Policy

Environmental policy (EP) refers to the strategic direction set by top management, establishing the formal rules and standards which an organization must follow to mitigate its environmental impact [3]. These policies provide a framework for compliance and guide organizational sustainability efforts [40]. EPs are critical in conveying corporate commitment to sustainability, fostering an environmentally oriented organizational culture, and promoting sustainable behaviors among employees [17]. In addition to setting the overall direction, EPs have a tangible impact on daily operations by implementing eco-initiatives. These initiatives can be categorized into structured and spontaneous actions. Structured eco-initiatives are often linked to specific roles, such as R&D engineers, or specific actions arranged with top management, such as eco-friendly packaging [40]. These actions are integrated into corporate environmental policies and receive managerial support [41]. In contrast, spontaneous eco-initiatives emerge from voluntary employee behaviors, such as suggesting or using reusable water bottles instead of plastic ones, exemplifying a bottom-up approach (like the definition proposed by Boiral and Paillé [31]).

Employees' perception and comprehension of EPs play a crucial role in determining the effectiveness of these policies [17]. Employee knowledge of EPs directly impacts their organizational commitment, particularly through their identification with the company and its aims [37]. When EPs are perceived as strong and supported by management, employees tend to strengthen their bond with the organization, perceiving that corporate values align with their own values [42]. This alignment fosters a sense of belonging, which increases motivation to actively contribute to the company's sustainability efforts [43]. Studies have shown that the perception of EPs is associated with increased job satisfaction and organizational loyalty [44]. In this context, well-communicated environmental policies positively influence organizational performance and proactive, environmentally friendly behaviors [31]. Employee knowledge of EPs significantly influences group dynamics [45]. Workers who perceive their company as promoting credible EPs tend to collaborate more effectively, engaging in collective initiatives to reduce environmental impact [45]. This co-workers' cohesion fosters a collaborative climate where environmental responsibility becomes a shared commitment [42]. Moreover, studies show that the perception of EPs promotes cooperative behavior within teams, leading to a more sustainability-oriented work environment [46]. In summary, a positive perception of EPs is a strong predictor of both the development of eco-civic engagement—the voluntary participation in broader environmental initiatives—and eco-initiatives, concrete employee actions aimed at improving environmental performance. Thus, we posit the following hypothesis:

H1a. *Employees' perceptions of organizational environmental policy positively correlate with OCBE, particularly with eco-civic engagement.*

H1b. *Employees' perceptions of organizational environmental policy positively correlate with OCBE, particularly with eco-initiatives.*

1.3. Green Work Climate Perception

The organizational climate refers to employees' shared perceptions of the policies, practices, and procedures promoted within their workplace [47]. Initially considered a unified construct, research later recognized the existence of distinct sub-climates focused on specific goals or areas, such as organizational climate of safety [48], service [18], or ethics [49]. Building on this, Norton et al. [19] introduced the concept of a green work climate (GWC), focusing on employees' perceptions of the procedures and practices related to environmental sustainability, demonstrated by the organization and co-workers. In a later study, Norton et al. [16] developed a scale to assess the GWC, dividing it into two dimensions: organizational-level GWC (Org GWC), capturing employees' perceptions of the organization's practices and procedures related to environmental sustainability and co-worker-level GWC (Cow GWC), assessing eco-friendly practices and procedures shown by co-workers.

Norton et al. [16] showed that employees' perceptions of environmental policies (EPs) positively influence both organizational and co-worker GWC. This effect is driven by the clear and effective communication of EPs, highlighting the importance of sustainability. Supporting this relationship, Dumont et al. [20] found that well-communicated EPs enhance organizational GWC, and Rubel et al. [21] demonstrated that these policies promote a more collaborative and sustainability-oriented group climate (Cow GWC). The mediating role of a GWC has been highlighted in group dynamics. For example, Bhutto et al. [25] and Liu and Yu [50] showed that inclusive green leadership fosters employees' green creativity through the mediation of GWC, further validating the role of GWC as a key driver in sustainability initiatives. Thus, we propose the following hypotheses:

H2. *Workers' perception of environmental policy has a direct positive effect on organizational GWC.*

H3. *Workers' perception of environmental policy has a direct positive effect on co-workers' GWC.*

In their conceptualization, Norton et al. [16] treated organizational GWC and co-worker GWC as separate dimensions, reflecting distinct organizational and colleague dynamics. While this separation is theoretically valid and useful for understanding different layers of sustainability perception, in our study, we explore whether organizational GWC—which, in principle, should be uniform across the organization—is related and influences co-worker GWC. Given that all employees share the same organizational context, it is plausible that a strong organizational GWC should shape the eco-friendly attitudes and behaviors of employees, which would thus be collectively perceived within individual teams. Previous research demonstrated that organizational-level climates influence group-level climates: Zohar and Luria [51] found that organizational safety climate impacts team safety practices; Griffin [52] highlighted that broader organizational climates filter down to shape group behaviors; finally, Schyns and Van Veldhoven [53] showed that leadership climates influence group dynamics, reinforcing the role of organizational commitment in team-level climates. Thus, we hypothesize the following:

H4. *Organizational GWC has a direct and positive effect on co-workers' GWC.*

Following this theoretical linkage between organizational GWC and co-worker GWC, we examined whether these dimensions drive pro-environmental behaviors. Norton et al. [16] highlighted that organizational GWC appears to shape more normative behaviors, such as adopting formal recycling practices, and that co-worker climate is associated with the proactive and voluntary OCBE. All this suggests that broader organizational factors can influence both normative and proactive, or mandatory and voluntary, behaviors. Based on this evidence, we propose the following hypotheses:

H5a. *Organizational GWC is positively related to eco-civic engagement (ECE).*

H5b. *Organizational GWC is positively related to eco-initiatives (EIs).*

H6a. *Co-worker GWC is positively related to eco-civic engagement (ECE).*

H6b. *Co-worker GWC is positively related to eco-initiatives (EIs).*

Building on previous findings, we also expect organizational GWC to have a direct impact on co-worker GWC, because we argue that employees' perception of organizational efforts is, in turn, followed by employees' perception of co-workers pursuing and implementing practices and procedures related to environmental sustainability. Given the above, it is reasonable to expect that the impact of organizational GWC on pro-environmental behaviors is not only direct but also mediated by co-worker GWC. In other words, organizational GWC creates the conditions for sustainability-oriented co-workers, fostering spontaneous and structured environmental behaviors. This sequential process reflects how perceptions of organizational practices and procedures aimed at sustainability filter down to teams, ultimately driving to OCBE. Thus, we propose the following hypothesis:

H7a. *Organizational and co-worker green work climates sequentially mediate the indirect relationship between environmental policies and of eco-civic engagement.*

H7b. *Organizational and co-worker green work climates sequentially mediate the indirect relationship between environmental policies and of eco-initiatives.*

While research has examined the impact of GWC on OCBE, the responsiveness of eco-civic engagement (ECE) and eco-initiatives (EIs) to organizational versus co-worker factors remains unclear. Social information processing theory (SIPT) suggests that the social environment provides cues that individuals use to construct and interpret events [32]. SIPT also proposes that the social context orients the attentional processes of individuals, making aspects of the environment more or less salient [32]. We hypothesize that the two GWC dimensions distinctly influence ECE and EIs, as organizational and co-worker climates may underline different aspects of the environment, and orient the attention of employees toward specific and different aspects in the work setting. Specifically, organizational-level GWC may mainly address formal environmental decisions and initiatives that are valid for the whole or specific sectors (or branches) of the organizations and that, thus, address a global engagement with the sustainability topic. For instance, an energy-saving machine might be installed in a specific branch or sector of the company, mainly impacting a generic attitude toward sustainability in employees less involved with that technology. On the contrary, co-worker GWC may primarily shape sustainability attitudes and behaviors that are closely tied to specific team tasks and experiences, reflecting the immediate social context in which employees operate. For instance, ES policies may foster team members reasoning and discussing how to implement said policies in their work environment and, in the end, develop innovative ways to promote ES within their specific role or in the tasks performed by their team or team members.

We think this reasoning advances the understanding of differentiated pathways through which GWC dimensions may shape ES workplace attitudes and behaviors, and, thus, we hypothesize the following:

H8. *Eco-civic engagement (ECE) is more strongly associated with organizational-level green work climate, whereas eco-initiative (EI) behaviors are more strongly related to a team's green work climate.*

2. Materials and Methods

2.1. Procedure

Participation in this study was proposed to a large Italian agri-food company in the dairy sector. This study was conducted in the headquarter (HQ) and two other plants located in different cities in Northern Italy. An online questionnaire, available on the Qualtrics platform, was proposed to participants through an email sent by the HR office to the employees of the three examined plants via the intranet system. In some cases, a paper-and-pencil version of the questionnaire was made available to employees with limited or no opportunity to complete the online questionnaire. Plant managers were solicited to encourage employees to participate in this study, and some posters, describing the initiative, were displayed on the boards of the plant, with a QR code to the questionnaire. Employees could answer the questionnaire in their free time, during the coffee break, or outside of work. Anonymity was guaranteed, and the possibility of interrupting the survey was also possible. Informed consent was requested, and no incentive or prize was given to participants. Ethical approval was obtained from the Ethics Committee of the corresponding authors' university. The questionnaire took approximately 20 min to complete.

2.2. Participants

The participants worked in three different branches of the company. The total number of employees in the three sites was 842, and 323 answered the questionnaire, with a

response rate of 38.4%. Regarding gender, 62.3% of the respondents were male; the average age was 46.6 years old (S.D. = 9.99), with almost 70% of the participants between 40 and 59 years old. The average seniority was 16.3 years of service (S.D. = 10.6), and 57% of the respondents had a high school diploma. The sample characteristics are shown in Table 1.

Table 1. Sample characteristics.

Variable	Description	N	Percentage
Gender (N = 313)	Male	195	62
	Female	118	38
Age (N = 307)	20–29 age	21	7
	30–39 age	57	19
	40–49 age	98	32
	50–59 age	108	35
	60–70 age	23	7
Education (N = 317)	Elementary School	3	1
	Middle School	47	15
	High School	181	57
	Bachelor’s degree	9	3
	Master’s Degree	77	24
Coordination Role (N = 284)	Coordinator	81	29
	Non-coordinator	203	71

2.3. Measures

Most of the measures used in this study were not available in Italian. Brislin’s [54] back-translation procedure was followed, with the original English version of the measures translated into Italian by a bilingual researcher and then back-translated into English by another bilingual researcher. Discrepancies between the original and the back-translated versions were discussed and solved by the researchers involved. The following measures were used:

Environmental Policy: The 13-item scale, developed by Ramus and Steger [17], was used to measure employees’ perceptions of the environmental policies implemented by the organization, including the following two examples: “(The company) ... publishes an environmental policy; ... applies environmental considerations to purchasing decisions”. The response scale was a 5-step Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), with 3 defined as “I don’t know”.

Green Work Climate Perception: The eight items of the scale developed by Norton et al. [16] were used. The scale assesses employees’ perceptions of policies, procedures, and practices related to environmental sustainability and implemented by their organization and co-workers. Examples of the items for the two dimensions are: “Our company is worried about its environmental impact” and “In our company, employees are concerned about acting in environmentally friendly ways”. The response scale ranged from 1 (strongly disagree) to 5 (strongly agree).

Organizational Citizenship Behavior for the Environment (OCBE): Seven items of the Boiral and Paillé [31] OCBE scale were used: four items assesses the eco-civic engagement dimension, while three items assessed the eco-initiative dimension. Eco-civic engagement assessed voluntary participation in organizational environmental programs and activities. An example item was the following: “I actively participate in environmental events organized in and/or by my company”. The eco-initiative dimension captured employees’ discretionary behaviors and suggestions to improve environmental practices and performance. An example item was the following: “I voluntarily carry out environmental

actions and initiatives in my daily work activities". The response scale ranged from 1 (strongly disagree) to 5 (strongly agree).

2.4. Data Analysis Strategy

Descriptive, reliability, correlation, t-test, and ANOVA statistics were computed using SPSS version 23 [55]. A confirmatory factor analysis (CFA) was run using Jaspersoft software, version 0.18.3 [56], and the maximum-likelihood estimation technique. This technique assumes a normal distribution of responses, assessed by computing if the skewness and kurtosis indices are within the acceptable range of normality (−1.5, 1.5), thereby supporting the assumption of multivariate normality required for maximum-likelihood estimation [57]. To interpret the results of the CFA, model fit was assessed using the chi-square statistic and four widely used model fit indices: the root mean square error of approximation (RMSEA; [58]), the comparative fit index (CFI; [59]), the Tucker–Lewis index (TLI; [60]), and the standardized root mean square residual (SRMR; [59]). RMSEA values of about 0.08 or less would indicate a fair fit or a reasonable approximation error. The values of the CFI range from 0 to 1, and values above 0.90 are adopted as an indication of an adequate model fit. TLI values near 0 indicate poor fit, whereas values near 1.0 indicate good fit, and a threshold value of 0.90 is reasonably conventional to indicate good model fit. A value of zero on the SRMR index indicates a perfect fit. A value lower than 0.08 is generally considered an indicator of good fit [61]. Additionally, Wheaton et al. [62] suggest that the fit could be considered reasonable if the chi-square/df ratio is less than 5. Other researchers (e.g., Carmines & McIver [63]) propose that a ratio lower than 3 or even 2 is more acceptable, with a ratio of 2 indicative of an excellent fit [64]. We only reported the fundamental CFA results to improve readability and focus on the most relevant comparisons. Instead of presenting all the models, we reported the 1-factor, 3-factor (a/b), and 4-factor models, which offer the most meaningful insights for this study. This approach avoided unnecessary complexity while providing a comprehensive view of the key model; the authors can share the entire analysis if requested.

To examine the mediating roles of organization and co-worker GWC in the relationship between EPs and the outcomes of EIs and ECE, we used the PROCESS macro for SPSS. Specifically, we used Model 6 in PROCESS [65] to test the sequential mediation effect, where organizational GWC acts as the first mediator (M1) and co-worker GWC as the second sequential mediator (M2). We ran the model twice, the first time with eco-civic engagement as the dependent variable and the second time with eco-initiatives as the other dependent variable. To assess the significance of the indirect effects, we used the bootstrapping method with 5000 resamples to compute bias-corrected 95% confidence intervals. An indirect effect was considered statistically significant if the confidence interval did not include zero.

3. Results

The descriptive statistics of the scales used in the study indicated that the skewness coefficients fell within the acceptable range proposed by Forero et al. [57], with values between −1.5 and +1.5, confirming the assumption of multivariate normality required for maximum-likelihood estimation. We conducted confirmatory factor analyses (CFAs) to compare the fit of the two different models, separately for the model with ECE and the one with the EIs as the dependent variables. The models we tested included the following: (1) the one-factor model, with all variables considered as one factor; (2) the three-factor model A, with organizational and co-worker GWC considered a single factor, while keeping EP and ECE (or EI) as separate factors; (3) the three-factor model B, keeping organizational and co-worker GWC as separate factors while grouping EP with either ECE (or EI);

and (4) the four-factor model, whereby the four scales (organizational and co-worker GWC, EP, and ECE or EI) were considered as separate factors.

Table 2, which reports the results of the CFA, shows that the one-factor model had a poor fit for both models. For the model with ECE, the one-factor model produced unsatisfactory fit indices, with a CFI of 0.661, a TLI of 0.629, an SRMR of 0.092, and an RMSEA of 0.160. Similarly, for the model with EI, the one-factor model yielded a CFI of 0.664, a TLI of 0.632, an SRMR of 0.009, and an RMSEA of 0.162 (90% CI [0.156, 0.168]). For the model with ECE, the four-factor model provided the best fit, achieving a CFI of 0.900, a TLI of 0.887, an SRMR of 0.058, and an RMSEA of 0.088 (90% CI [0.082, 0.094]). This model outperformed the three-factor models, particularly the three-factor model A, which showed a better fit than model B and had a CFI of 0.898, a TLI of 0.886, an SRMR of 0.059, and an RMSEA of 0.088. For the model with EI, the four-factor model again demonstrated the best fit, with a CFI of 0.893, a TLI of 0.878, an SRMR of 0.063, and an RMSEA of 0.093 (90% CI [0.087, 0.100]). Among the three-factor models, the three-factor model B performed better than the three-factor model A, with a CFI of 0.868, a TLI of 0.854, an SRMR of 0.102, and an RMSEA of 0.102, compared to the three-factor model A, which had a CFI of 0.798, a TLI of 0.775, an SRMR of 0.126, and an RMSEA of 0.126. The results confirm that the four-factor model best fit both model 1 and model 2, supporting the distinctiveness of the four latent constructs (organizational and co-worker GWC, EP, and ECE/EI).

Table 2. Model fit evaluation for CFA.

Model	X ²	df	X ² /df	SRMR	CFI	TLI	RMSEA	90% CI RMSEA
<i>Model with ECE</i>								
One-factor model	2340	252	9.29	0.092	0.661	0.629	0.160	[0.154, 0.166]
Three-factor model A	948	269	3.52	0.059	0.898	0.886	0.088	[0.082, 0.094]
Three-factor model B	1595	272	5.87	0.088	0.800	0.780	0.123	[0.117, 0.129]
Four-factor model	1025	249	4.12	0.058	0.900	0.887	0.088	[0.082, 0.094]
<i>Model with EI</i>								
One-factor model	2385	252	9.46	0.009	0.664	0.632	0.162	[0.156, 0.168]
Three-factor model A	1383	227	6.09	0.126	0.798	0.775	0.126	[0.119, 0.132]
Three-factor model B	1088	249	4.37	0.102	0.868	0.854	0.102	[0.096, 0.108]
Four-factor model	919	242	3.80	0.063	0.893	0.878	0.093	[0.087, 0.100]

Note: CFI = comparative fit index; TLI = Tucker–Lewis index; SRMR = standardized root mean square residual; RMSEA = root square error of approximation; and CI = confidence interval. ECE = eco-civic engagement; and EI = eco-initiative.

Table 3 presents the descriptive statistics, reliability coefficients, and Pearson’s correlations for the study variables. All the scales demonstrated high internal consistency, with Cronbach’s Alpha values ranging from 0.743 to 0.955, indicating acceptable reliability across the constructs.

Table 3. Descriptive statistics, reliability coefficients, and correlation matrix for the study variables.

Variable	Alpha	N	Mean	SD	1	2	3	4	5
1. EP	0.944	306	3.56	0.92	—				
2. Org GWC	0.931	323	3.92	1.09	0.69 ***	—			
3. Cow GWC	0.955	323	3.81	1.11	0.65 ***	0.65 ***	—		
4. ECE	0.852	293	3.09	1.01	0.54 ***	0.46 ***	0.41 ***	—	
5. EI	0.743	294	3.98	0.82	0.49 ***	0.49 ***	0.44 ***	0.57 ***	—

Note: *** $p < 0.001$. EP = environmental policy; Org GWC = organizational green work climate; Cow GWC = co-worker green work climate; ECE = eco-civic engagement; and EI = eco-initiative.

The correlation matrix revealed significant and positive correlations between all variables. Specifically, organizational and co-worker GWC were highly correlated ($r = 0.65$, $p < 0.001$). The EP also showed strong correlations with both organizational ($r = 0.69$, $p < 0.001$) and co-worker ($r = 0.65$, $p < 0.001$) GWC. When examining the outcomes, eco-civic engagement and eco-initiatives were strongly correlated between them ($r = 0.57$, $p < 0.001$) and with the other variables of the model. Both outcome variables, ECE and EI, showed consistent relationships with organizational and co-worker GWC and EP, suggesting the relevant association between OCBE dimensions and green work climate, and environmental policies.

3.1. Model with Eco-Civic Engagement as Dependent Variable

Table 4 shows the mediation analysis results run with PROCESS, model 6, with two sequential mediators. Table 4 shows that environmental policy was significantly related to organizational GWC ($\beta = 0.68$, $p < 0.001$), which confirms the strong relation between environmental policy and perceptions of the organization's environmental procedures and practices.

Table 4. Results of mediation analyses—eco-civic engagement.

Variable	Mediator 1 (Org GWC)				Mediator 2 (Cow GWC)				Dependent Variable (ECE)			
	β	SE	t	p	β	SE	t	p	β	SE	t	p
EP	0.68	0.18	5.06	0.000	0.39	0.07	6.7	0.001	0.39	0.08	5.54	0.000
Org GWC	-	-	-	-	0.36	0.06	6.2	0.000	0.01	0.07	0.20	0.836
Cow GWC	-	-	-	-	-	-	-	-	0.19	0.06	2.89	0.004
R ²	0.47				0.48				0.31			
F	255.13				131.82				43.12			

Note: Org GWC = green work climate (organization); Cow GWC = green work climate (co-worker); EP = environmental policy; and ECE = eco-civic engagement.

Additionally, both EP and organizational GWC were significantly related to co-worker GWC (respectively, $\beta = 0.39$ and $\beta = 0.36$), and this model explained 48% of the variance in co-worker GWC. Finally, eco-civic engagement was significantly related to environmental policy and co-worker GWC (respectively, $\beta = 0.39$ and $\beta = 0.19$). However, organizational GWC was not significantly related to ECE ($\beta = 0.01$) (Figure 2). This model explained approximately 31% of the variance in ECE, highlighting that perception of co-worker environmental practices and behaviors, rather than organizational ones, played a key role in driving engagement in environmental behaviors.

Table 5 provides a comprehensive summary of the effects. The total effect of EP on ECE was significant ($\beta = 0.59$), indicating that the overall EP strongly influenced employees' ECE behaviors. The direct effect of EP on ECE, controlling for the mediators, remained substantial and significant ($\beta = 0.44$), suggesting that, even without the mediation of GWC, the policy itself played a critical role in promoting ECE. The total indirect effect, which captures the combined mediation through organizational and co-worker GWC, was also significant ($\beta = 0.13$). When examining specific indirect effects, the mediation through organizational GWC did not yield a significant effect on ECE ($\beta = 0.01$); in contrast, both the mediation effect through co-worker GWC and the sequential mediation effect through organizational and co-worker GWC were, respectively, $\beta = 0.07$ and $\beta = 0.04$.

Table 5. Summary of effects of mediation with ECE as the dependent variable.

Effect	St. Coeff.	Boot SE	Boot 95% CI
Total Effect	0.59	0.055	[0.48, 0.69]
Direct Effect	0.44	0.079	[0.28, 0.60]
Total Indirect Effect	0.13	0.055	[0.03, 0.25]

Specific Indirect Effects			
EP → Org GWC → ECE	0.01	0.063	[-0.13, 0.11]
EP → Cow GWC → ECE	0.07	0.034	[0.03, 0.17]
EP → Org GWC → Cow GWC → ECE	0.04	0.022	[0.02, 0.11]

Note: Org GWC = green work climate (organization); Cow GWC = green work climate (co-worker); EP = environmental policy; ECE = eco-civic engagement; St. Coeff. = standardized coefficient; boot SE = bootstrapped standard error; CI = confidence interval.

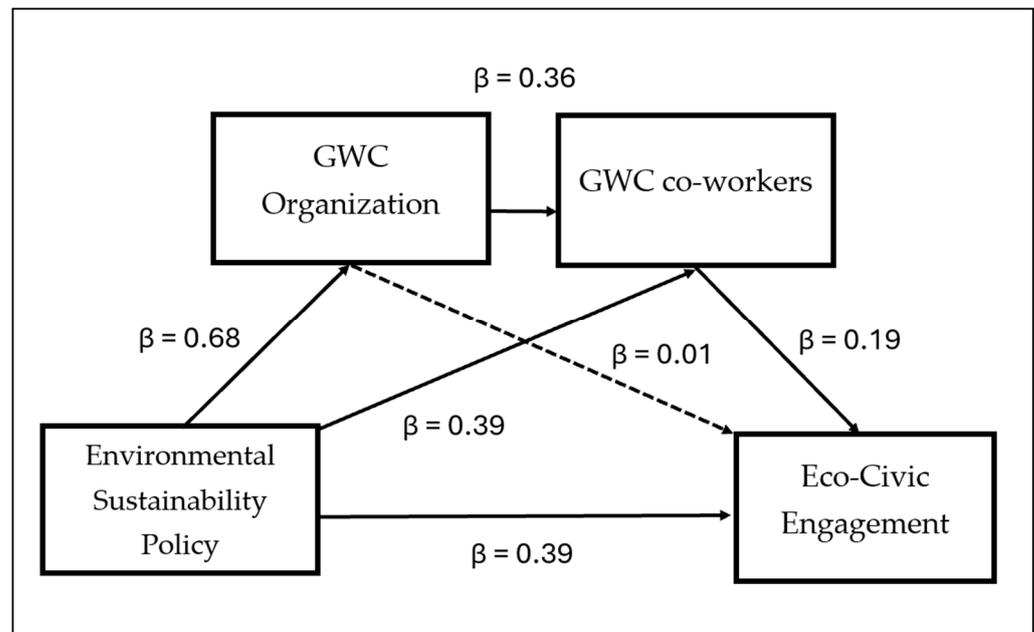


Figure 2. Model summary with eco-civic engagement as the dependent variable. The dashed line indicates the only non-significant relationship while solid arrows represent significant direct effects with standardized regression coefficients (β) reported for each path.

3.2. Model with Eco-Initiative as Dependent Variable

The results of the model in which EP predicts EIs are reported in Table 6. Table 6 shows that EPs significantly predicted organizational GWC (β = 0.68), explaining approximately 47% of the variance in organizational GWC. Additionally, EP significantly predicted co-worker GWC (β = 0.39), and organizational GWC also significantly predicted co-worker GWC (β = 0.37). This model explained about 48% of the variance in co-worker GWC.

Table 6. Results of mediation analyses—eco-initiatives.

Variable	Mediator 1 (Org GWC)				Mediator 2 (Cow GWC)				Dependent Variable (EI)			
	β	SE	t	p	β	SE	t	p	β	SE	t	p
EP	0.68	0.05	15.92	0.000	0.39	0.07	6.7	0.001	0.25	0.07	3.5	0.0005
Org GWC	-	-	-	-	0.37	0.06	6.2	0.000	0.10	0.05	1.48	0.140
Cow GWC	-	-	-	-	-	-	-	-	0.26	0.05	3.76	0.0002
R ²	0.47				0.48				0.30			
F	253.71				132.33				40.5			

Note: Org GWC = green work climate (organization); Cow GWC = green work climate (co-worker); EP = environmental policy; EI = Eco-initiatives.

Finally, EP remained a significant predictor of EI (β = 0.25), as well as co-worker GWC (β = 0.26). However, organizational GWC did not significantly predict EI (β = 0.10) (Figure 3). This model explained approximately 30% of the variance in EI, highlighting that

perception of co-workers' environmental practices, rather than organizational ones, played a key role in driving engagement in pro-environmental behaviors.

The total effect of EPs on EIs was significant ($\beta = 0.49$), indicating that environmental policies were strongly related to employees' involvement and proposal of green initiatives. The direct effect of EPs on EIs, controlling for the mediators, remained substantial and significant ($\beta = 0.23$), suggesting that, even without a mediating work climate, the policies themselves played a critical role in promoting EIs. The total indirect effect, which captured the combined mediation of organizational and co-worker GWC, was also significant ($\beta = 0.23$) (Table 7).

Table 7. Summary of effects of mediation with eco-initiatives.

Effect	St. Coeff.	Boot SE	Boot 95% CI
Total Effect	0.49	0.05	[0.35, 0.53]
Direct Effect	0.23	0.07	[0.10, 0.36]
Total Indirect Effect	0.23	0.06	[0.11, 0.36]
Specific Indirect Effects			
EP \rightarrow Org GWC \rightarrow EI	0.07	0.06	[-0.04, 0.2]
EP \rightarrow Cow GWC \rightarrow EI	0.10	0.03	[0.04, 0.17]
EP \rightarrow Org GWC \rightarrow Cow GWC \rightarrow EI	0.06	0.02	[0.02, 0.11]

Note: St. Coeff. = standardized coefficient; Org GWC = green work climate (organization); Cow GWC = green work climate (co-worker); EP = environmental policy; EI = eco-initiative; Boot SE = bootstrapped standard error; CI = confidence interval.

When examining specific indirect effects, the organizational climate alone did not significantly mediate the relationship between EPs and EIs ($\beta = 0.07$). In contrast, the mediation effect through co-worker GWC was significant ($\beta = 0.10$), and, additionally, the sequential mediation effect through organizational and co-worker GWC was also significant ($\beta = 0.06$), highlighting a pathway where the organizational climate was related to the team climate, which was related to employees' proposal of green initiatives.

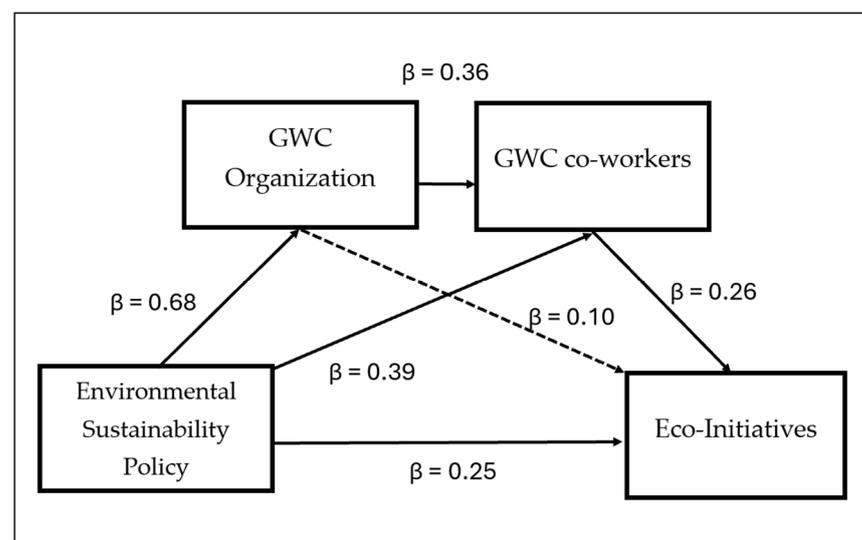


Figure 3. Model summary with eco-initiatives as the dependent variable. The dashed line indicates the only non-significant relationship while solid arrows represent significant direct effects with standardized regression coefficients (β) reported for each path.

4. Discussion

The study hereby presented investigated the sequential mediation effect of organizational GWC and co-worker GWC in the relationship between employees' perception of organizational environmental policies (EPs) and the implementation of two pro-environmental behaviors, namely eco-civic engagement (ECE) and the proposal of pro-environmental eco-initiatives (EIs). The mediation model was tested twice, once for each pro-environmental behavior.

The results of the CFA support, both for the ECE and for the EI model, the four-factor model, with fit indices indicating good data representation. The choice of the four-factor model, which considered organizational and co-worker GWC as two distinct constructs of the green work climate scale, aligned both with theoretical and empirical results [16,27]. Although the three-factor model which combined these two constructs also showed a good fit, we decided to use the four-factor model based on the literature and our data.

H1a, H1b, H2, and H3 examined the direct effect of EPs, respectively, on eco-civic engagement, eco-initiatives, organizational GWC, and co-worker GWC. The results confirmed that EP was significantly related and explained a good percentage of variance in ECE (33%) and EI (30%). Moreover, EP was significantly related to both organizational GWC and co-worker GWC, suggesting that perception of environmental policies directed employees' attention to sustainability practices not only of the overall organization but also of co-workers. These findings align with Norton et al. [16] and support the relevant role of EPs in shaping both organizational and co-worker climates.

H4 explored the direct effect of organizational GWC on co-worker GWC, addressing a gap in the literature on hierarchical climate transfer. While prior research [26–28] often examined these climates as independent constructs, our findings highlighted the interconnectedness of these constructs. This is particularly significant as it reinforces theories of hierarchical climate transfer, suggesting that perceptions of organizational commitment to sustainability filter down to shape team-level communication and discussions about sustainability, which, over time, result in co-workers' shared perception of team GWC. Our results support the cascading nature of organizational climates observed in other domains, such as safety and innovation, where top-level climates influence local team norms and practices [18,66]. Specifically, organizational GWC significantly predicted co-worker GWC, suggesting that organizational climate for sustainability not only establish a broad framework in itself but also permeates everyday team interactions. This is coherent with previous studies [51,52] and particularly relevant in a case study like ours, where these two climates were measured simultaneously and on respondents belonging to the same organization, and it suggests that perception of organizational commitment to sustainability enhances the perception according to which co-workers follow and prioritize green practices. This result highlights the role of organizational GWC as a foundation of employees' behavior, as suggested in the literature [18], and that this effect may be indirectly fostered through lower-level climates as, in this case, co-worker GWC.

H5a and H5b were not supported, as organizational GWC was related neither to ECE nor to EIs. While interesting, this result was not entirely surprising, considering that Norton et al. [16] found no direct effect of organizational GWC on ecological citizenship behaviors. In contrast, H6a and H6b showed that co-worker GWC was significantly related to both ECE and EIs. These results suggest that perceiving that colleagues implement pro-environmental procedures and practices is essential for promoting proactive and participative OCBE. This result suggests that perceptions of co-workers and team processes are closer determinants of employees' behaviors [51] than organizational processes.

Moving to H7a and H7b, the mediation analysis revealed that the indirect effect of EP through co-worker GWC was significant for the two OCBE dimensions hereby examined. In contrast, mediation through organizational GWC was not significant, confirming

that co-worker GWC seemed to be the primary mechanism through which EP influenced pro-environmental behaviors. Furthermore, the sequential mediation—EP, organizational GWC, and co-worker GWC—was significant, although the effects were weaker compared to direct mediation through co-worker GWC. H8 examined whether the two OCBE dimensions were more influenced by the organizational (organizational GWC) or contextual (co-worker GWC) dimensions of green work climate. The hypothesis was partially confirmed because the direct effect of organizational GWC was not supported, whereas we observed that co-worker GWC was related to both ECE and EIs. This indicated that neither ECE nor EIs were directly mediated by organizational GWC, suggesting that the broader organizational context may have had a less immediate influence compared to the team-level context.

Drawing on SIPT, this finding can be interpreted through the salience of social cues at the team level. Co-worker GWC provides immediate, context-specific signals that facilitate sensemaking processes, especially for behaviors requiring collaboration and trust. While organizational GWC establishes overarching norms, it may lack the immediacy and interpersonal interactions necessary to shape behaviors such as EIs. For EIs, the stronger reliance on co-worker GWC observed in the model suggests that proposing and implementing new initiatives depend heavily on a participatory and psychologically safe environment. This aligns with evidence that innovation and idea generation are fostered by trust and collaboration among peers who share similar values and attitudes [50]. In contrast, ECE, being a more voluntary and collective behavior, appears less reliant on these interpersonal dynamics, though it remains influenced by team-level interactions. Although this interpretation does not emerge directly from the numerical comparison of the models, SIPT offers a framework to hypothesize that team-level dynamics, as reflected by co-worker GWC, are more impactful for EIs than for ECE. The lack of a mediating role for organizational GWC highlights that employees likely prioritize signals from their immediate social environment over those from formal organizational structures, particularly when engaging in behaviors requiring interpersonal collaboration and innovation. This discussion suggests that future research should explore the nuanced pathways through which different dimensions of a green work climate influence sustainable behaviors, further examining the interplay between organizational and team-level cues in light of SIPT.

4.1. Study Limitations

This study has several limitations that have to be acknowledged. First, the cross-sectional design limits the ability to draw causal conclusions. Indeed, the temporal dynamics between organizational and co-worker GWC may play a critical role in shaping employee perceptions and behaviors, and longitudinal designs would allow researchers to observe how quickly policies and initiatives are fully implemented and how the mediation effect of GWC strengthens organizational practices. Second, while this study focused on the role of GWC, other factors, such as individual attitudes or leadership styles, may also play a critical role in influencing ECE and EIs. Including these variables in future models could provide a more comprehensive understanding. Moreover, the relatively low mediation effect observed in this study suggests that additional mediators, or moderators, may be influencing the relationship between environmental policies and employee behaviors. For instance, constructs like perceived organizational support, leader–member exchange, or trust in policies could offer further insight into the mechanisms underlying GWC. Third, this study was conducted in a specific organizational context, which may limit the generalizability of the findings. Broader, cross-industry studies would help validate the applicability of the results. Fourth, it is also worth noting that the standardized scale used to measure environmental policies, while widely validated, might not fully capture the nuances of the organizational context examined. This choice, aimed at ensuring

generalizability, may have inadvertently overlooked specific perceptions or knowledge about local initiatives, potentially contributing to the high correlation observed between organizational GWC and initiative scales. Fifth, we observed high correlations among our study variables. The CFA suggested the independence of the measures we used, and the lack of common method bias. This result may thus be attributed to a certain theoretical overlap across these constructs that should be considered in future studies. Finally, in relation to this last point, “having environmental policies” is an indicator of an organizational green work climate, and, in fact, these two variables exhibited the highest correlation in our data set. However, it is also possible to argue that policies do not automatically guarantee a green climate if said policies are neither communicated nor implemented. In addition, different indicators were used to measure the two concepts. The high correlation could also reflect a perception bias, in which the existence of policies is interpreted as equivalent to an organizational commitment to sustainability. This highlights the importance of exploring additional pathways, such as, for instance, how policies are communicated and enacted, to better understand how policies foster a green climate. Future research should consider incorporating both standardized (or general) and context-specific measures to balance generalizability with adherence to a specific organizational setting.

4.2. Theoretical Implications

This study enhances the understanding of a green work climate by demonstrating the hierarchical relationship between organizational GWC and co-worker GWC. The findings confirm that GWC.O indirectly influences sustainable behaviors through GWC.T, providing empirical support for the cascading effect of organizational signals on team-level dynamics. This result advances prior research by emphasizing the interconnectedness between the two GWC dimensions rather than treating them as independent constructs. Additionally, the results underline the importance of environmental policy awareness as a formal organizational signal that shapes perceptions of GWC and indirectly drives employee behaviors. While hypothesis H8 was not fully supported, as GWC.O did not affect eco-civic engagement (ECE) or eco-initiatives (EI), the findings highlight the stronger role of GWC.T in fostering behaviors requiring interpersonal engagement, such as EIs. By applying social information processing theory (SIPT), this study suggests that proximal social cues at the team level are more influential than broader organizational signals in driving both ECE and EIs. These insights provide a foundation for future research to explore the interaction of organizational and team-level variables, such as leadership behaviors or external pressures, to deepen our understanding of how sustainability is cultivated across levels within organizations.

4.3. Practical Implications

The findings offer valuable insights for organizations seeking to foster sustainable behaviors, particularly EIs and ECE, which are critical for achieving long-term sustainability goals. While ECE is often perceived as a voluntary, participatory behavior, this study reveals that it, too, is influenced by organizational and team-level contexts. This insight highlights the importance of creating a supportive environment to encourage not only formal initiatives but also broader participation in sustainability efforts. First, the strong correlation between environmental policy awareness and organizational GWC underlines the need for effective internal communication. Organizations should ensure that environmental policies are clearly articulated and integrated into daily operations. Practical measures may include visual campaigns, interactive training, or team discussions to embed sustainability into the organizational culture. Building on studies such as Cai et al. (2024), which emphasize the importance of green reputation, our findings highlight the

critical role of internal communication. By incorporating elements of green reputation into internal messaging—such as showcasing achievements in sustainability and involving employees in the success stories of environmental policies—organizations can align internal perceptions with external commitments. This alignment fosters stronger employee engagement in pro-environmental behaviors, suggesting that the advantages of external green reputation efforts can be effectively mirrored internally to drive meaningful behavioral outcomes. For instance, linking policy awareness with concrete actions, such as team-level recycling programs or resource-saving initiatives, can enhance both engagement and accountability.

Second, the demonstrated influence of co-worker GWC on both ECE and EIs highlights the critical role of team-level dynamics. Practitioners should prioritize building collaborative and psychologically safe environments where employees feel encouraged to engage and innovate. Facilitated brainstorming sessions, peer-led sustainability projects, and team-driven initiatives can cultivate the trust and collaboration necessary for behaviors like EIs, which depend on creativity and active participation. Finally, the hierarchical relationship between organizational GWC and co-worker GWC reinforces the importance of a multi-level approach. While organizational policies set the foundation, their success depends on how they resonate within specific teams. This finding suggests that practitioners should design interventions that align top-down directives with localized team efforts, ensuring that sustainability goals are supported at both levels. For example, HR officers could emphasize how broader organizational initiatives translate into actionable team-level changes, fostering alignment and integration across the organization. These insights provide HR officers and practitioners with a framework for enhancing both participatory and structured sustainability behaviors. By addressing both organizational and team-level dynamics, organizations can create an environment that not only supports ECE but also empowers employees to propose and implement innovative eco-initiatives, driving sustainable practices at all levels.

5. Conclusions

This study highlights the importance of both organizational and co-worker GWC in driving sustainable behaviors. While EPs have a strong direct impact on ECE, co-worker GWC plays a key role in fostering proactive behaviors like EIs. The findings suggest that, to enhance sustainability, organizations should not only implement clear environmental policies but also foster strong team dynamics that support peer collaboration. By addressing both organizational and group-level factors, companies can better align their sustainability goals with employee actions, promoting both participation in structured initiatives (ECE) and innovation through EIs.

Author Contributions: Conceptualization, S.Z.; Methodology, L.R.; Validation, S.Z.; Investigation, L.R.; Writing—original draft, L.R.; Writing—review & editing, S.Z.; Visualization, L.R. and S.Z.; Supervision, S.Z.; Project administration, S.Z. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: This study was conducted in accordance with the Declaration of Helsinki and approved by the Ethical Committee of the University of Bologna (protocol number 0132703, approved on 17 May 2023).

Informed Consent Statement: Informed consent was obtained from all the subjects involved in this study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author.

Acknowledgments: The authors express their gratitude to Andrea Bruini and Sebastiano Piaggi for their support and collaboration in facilitating the data collection process. Their contributions were instrumental in the completion of this research.

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. European Commission. *Europe 2020: A Strategy for Smart, Sustainable and Inclusive Growth*; European Commission: Brussels, Belgium, 2010.
2. Brühl, V. Green finance in Europe—Strategy, regulation and instruments. *Intereconomics* **2021**, *56*, 323–330. <https://doi.org/10.1007/s10272-021-1011-8>.
3. Biscione, A.; Caruso, R.; De Felice, A. Environmental innovation in European transition countries. *Appl. Econ.* **2021**, *53*, 521–535. <https://doi.org/10.1080/00036846.2020.1808185>.
4. Agovino, M.; Garofalo, A.; Mariani, A. Institutional quality effects on separate waste collection: Some evidence from Italian provinces. *J. Environ. Plann. Manag.* **2018**, *61*, 1487–1510. <https://doi.org/10.1080/09640568.2017.1353958>.
5. Liobikienė, G.; Mandravickaitė, J.; Bernatoniene, J. Theory of planned behavior approach to understand the green purchasing behavior in the EU: A cross-cultural study. *Ecol. Econ.* **2016**, *125*, 38–46. <https://doi.org/10.1016/j.ecolecon.2016.02.008>.
6. Ikram, M.; Sadki, J.E. Resilient and sustainable green technology strategies: A study of Morocco’s path toward sustainable development. *Sustain. Futures* **2024**, *8*, 100327. <https://doi.org/10.1016/j.sftr.2024.100327>.
7. Luu, T.T. Integrating green strategy and green human resource practices to trigger individual and organizational green performance: The role of environmentally-specific servant leadership. *J. Sustain. Tour.* **2020**, *28*, 1193–1222. <https://doi.org/10.1080/09669582.2020.1729165>.
8. Rafiq, M.; Cham, T.H.; Tapsir, S.H.; Mansoor, A.; Farrukh, M. How does globally responsible leadership promote pro-environmental behavior through green management initiatives? *J. Glob. Responsib.* **2024**, *15*, 466–484. <https://doi.org/10.1108/JGR-06-2023-0093>.
9. Cai, H.H.; Abbass, K.; Lu, Q.; Shi, V. Probing the CSR-pro-environmental behavior linkage: Insights into green reputation and chief sustainability officer influence. *J. Environ. Manag.* **2024**, *369*, 122300. <https://doi.org/10.1016/j.jenvman.2024.122300>.
10. Howard-Grenville, J.; Bertels, S.; Lahnehan, B. Sustainability: How it shapes organizational culture and climate. In *The Oxford Handbook of Organizational Climate and Culture*; Schneider, B., Barbera, K.M., Eds.; Oxford University Press: New York, NY, USA, 2014; pp. 257–274.
11. Zacher, H.; Rudolph, C.W.; Katz, I.M. Employee green behavior as the core of environmentally sustainable organizations. *Annu. Rev. Organ. Psychol.* **2023**, *10*, 465–494. <https://doi.org/10.1146/annurev-orgpsych-120920-050421>.
12. Tian, Q.; Robertson, J.L. How and when does perceived CSR affect employees’ engagement in voluntary pro-environmental behavior? *J. Bus. Ethics* **2019**, *155*, 399–412. <https://doi.org/10.1007/s10551-017-3497-3>.
13. Sabokro, M.; Masud, M.M.; Kayedian, A. The Effect of Green Human Resources Management on Corporate Social Responsibility, Green Psychological Climate and Employees’ Green Behavior. *J. Clean. Prod.* **2021**, *313*, 127963. <https://doi.org/10.1016/j.jclepro.2021.127963>.
14. Khan, K.; Shams, M.S.; Khan, Q.; Akbar, S.; Niazi, M.M. Relationship Among Green Human Resource Management, Green Knowledge Sharing, Green Commitment, and Green Behavior: A Moderated Mediation Model. *Front. Psychol.* **2022**, *13*, 924492. <https://doi.org/10.3389/fpsyg.2022.924492>.
15. Tuan, L.T. Catalyzing employee OCB in tour companies: Charismatic leadership, organizational justice, and pro-environmental behaviors. *J. Hosp. Tour. Res.* **2019**, *43*, 682–711. <https://doi.org/10.1177/1096348018817582>.
16. Norton, T.; Zacher, H.; Ashkanasy, N. On the Importance of Pro-Environmental Organizational Climate for Employee Green Behavior. *Ind. Organ. Psychol.* **2012**, *5*, 497–500. <https://doi.org/10.1111/j.1754-9434.2012.01487.x>.
17. Ramus, C.A.; Steger, U. The roles of supervisory support behaviors and environmental policy in employee “eco-initiatives” at leading-edge European companies. *Acad. Manag. J.* **2000**, *43*, 605–626.
18. Schneider, B.; Ehrhart, M.G.; Macey, W.H. Organizational climate and culture. *Annu. Rev. Psychol.* **2013**, *64*, 361–388. <https://doi.org/10.1146/annurev-psych-113011-143809>.

19. Norton, T.; Zacher, H.; Ashkanasy, N.M. Organisational Sustainability Policies and Employee Green Behaviour: The Mediating Role of Work Climate Perceptions. *J. Environ. Psychol.* **2014**, *38*, 49–54. <https://doi.org/10.1016/j.jenvp.2013.12.008>.
20. Dumont, J.; Shen, J.; Deng, X. Effects of Green HRM Practices on Employee Workplace Green Behavior: The Role of Psychological Green Climate and Employee Green Values. *Hum. Resour. Manag.* **2017**, *56*, 613–627. <https://doi.org/10.1002/HRM.21792>.
21. Rubel, M.R.B.; Kee, D.M.H.; Rimi, N.N. Green Human Resource Management and Supervisor Pro-Environmental Behavior: The Role of Green Work Climate Perceptions. *J. Clean. Prod.* **2021**, *313*, 127669. <https://doi.org/10.1016/j.jclepro.2021.127669>.
22. Das, A.K.; Biswas, S.R.; Jilani, M.M.A.K.; Uddin, M.A. Corporate Environmental Strategy and Voluntary Environmental Behavior-Mediating Effect of Psychological Green Climate. *Sustainability* **2019**, *11*, 3123. <https://doi.org/10.3390/su11113123>.
23. Saleem, M.; Qadeer, F.; Mahmood, F.; Han, H.; Giorgi, G.; Ariza-Montes, A. Inculcation of Green Behavior in Employees: A Multilevel Moderated Mediation Approach. *Int. J. Environ. Res. Public Health* **2021**, *18*, 331. <https://doi.org/10.3390/ijerph18010331>.
24. Gao, L.; Yang, F. Do resource slack and green organizational climate moderate the relationships between institutional pressures and corporate environmental responsibility practices of SMEs in China? *Environ. Dev. Sustain.* **2023**, *25*, 13495–13520. <https://doi.org/10.1007/s10668-022-02628-5>.
25. Bhutto, T.A.; Farooq, R.; Talwar, S.; Awan, U.; Dhir, A. Green inclusive leadership and green creativity in the tourism and hospitality sector: Serial mediation of green psychological climate and work engagement. *J. Sustain. Tour.* **2021**, *29*, 1716–1737. <https://doi.org/10.1080/09669582.2020.1867864>.
26. Costa, A.; Mouro, C.; Duarte, A.P. Waste separation—Who cares? Organizational climate and supervisor support’s role in promoting pro-environmental behaviors in the workplace. *Front. Psychol.* **2022**, *13*, 1082155. <https://doi.org/10.3389/fpsyg.2022.1082155>.
27. Dahiya, R. Does organisational sustainability policies affect environmental attitude of employees? The missing link of green work climate perceptions. *Bus. Strat. Dev.* **2020**, *3*, 395–403. <https://doi.org/10.1002/bsd2.110>.
28. Hadi, H.K.; Kautsar, A.; Fazlurrahman, H.; Rahman, M.F.W. Green HRM: The link between environmental and employee performance, moderated by green work climate perception. *Int. J. Sustain. Dev. Plan.* **2023**, *18*, 1573–1580. <https://doi.org/10.18280/ijstdp.180528>.
29. Francoeur, V.; Paillé, P.; Yuriev, A.; Boiral, O. The Measurement of Green Workplace Behaviors: A Systematic Review. *Organ. Environ.* **2021**, *34*, 18–42. <https://doi.org/10.1177/1086026619837125>.
30. Lo, S.H.; Peters, G.J.Y.; Kok, G. A review of determinants of and interventions for pro-environmental behaviors in organizations. *J. Appl. Soc. Psychol.* **2012**, *42*, 2933–2967. <https://doi.org/10.1111/j.1559-1816.2012.00969.x>.
31. Boiral, O.; Paillé, P. Organizational Citizenship Behaviour for the Environment: Measurement and Validation. *J. Bus. Ethics.* **2012**, *109*, 431–445. <https://doi.org/10.1007/s10551-011-1138-9>.
32. Salancik, G.R.; Pfeffer, J. A Social Information Processing Approach to Job Attitudes and Task Design. *Adm. Sci. Q.* **1978**, *23*, 224. <https://doi.org/10.2307/2392563>.
33. Boiral, O. Greening the Corporation Through Organizational Citizenship Behaviors. *J. Bus. Ethics* **2009**, *87*, 221–236. <https://doi.org/10.1007/s10551-008-9881-2>.
34. Paillé, P.; Raineri, N. Linking Perceived Corporate Environmental Policies and Employees Eco-Initiatives: The Influence of Perceived Organizational Support and Psychological Contract Breach. *J. Bus. Res.* **2015**, *68*, 2404–2411. <https://doi.org/10.1016/j.jbusres.2015.02.021>.
35. Tsai, C.C.; Stritch, J.M.; Christensen, R.K. Eco-Helping and Eco-Civic Engagement in the Public Workplace. *Public Perf. Manag. Rev.* **2016**, *40*, 336–360. <https://doi.org/10.1080/15309576.2016.1216001>.
36. Mi, L.; Sun, Y.; Gan, X.; Yang, H.; Lv, T.; Shang, K.; Qiao, Y.; Jiang, Z. Promoting Employee Green Behavior Through the Person-Organization Fit: The Moderating Effect of Psychological Distance. *Front. Psychol.* **2020**, *11*, 568385. <https://doi.org/10.3389/fpsyg.2020.568385>.
37. Raineri, N.; Paillé, P. Linking Corporate Policy and Supervisory Support with Environmental Citizenship Behaviors: The Role of Employee Environmental Beliefs and Commitment. *J. Bus. Ethics* **2016**, *137*, 129–148. <https://doi.org/10.1007/s10551-015-2548-x>.
38. Kim, A.; Kim, Y.; Han, K.; Jackson, S.E.; Ployhart, R.E. Multilevel Influences on Voluntary Workplace Green Behavior: Individual Differences, Leader Behavior, and Co-worker Advocacy. *J. Manag.* **2017**, *43*, 1335–1358. <https://doi.org/10.1177/0149206314547386>.

39. Weidner, K.L.; Nakata, C.C. Sustainable initiatives: The antecedents of organizational learning and unlearning. In *Ideas in Marketing: Finding the New and Polishing the Old*; Developments in Marketing Science: Proceedings of the Academy of Marketing Science; Kubacki, K., Ed.; Springer: Cham, Switzerland, 2015; pp. 82–86. https://doi.org/10.1007/978-3-319-10951-0_23.
40. Carrillo-Hermosilla, J.; del Río, P.; Könnölä, T. Diversity of Eco-Innovations: Reflections from Selected Case Studies. *J. Clean. Prod.* **2010**, *18*, 1073–1083. <https://doi.org/10.1016/j.jclepro.2010.02.014>.
41. Ramus, C.A. Encouraging innovative environmental actions: What companies and managers must do. *J. World Bus.* **2002**, *37*, 151–164. [https://doi.org/10.1016/S1090-9516\(02\)00074-3](https://doi.org/10.1016/S1090-9516(02)00074-3).
42. Chou, C.J. Hotels' environmental policies and employee personal environmental beliefs: Interactions and outcomes. *Tour. Manag.* **2014**, *40*, 436–446. <https://doi.org/10.1016/j.tourman.2013.08.001>.
43. Jaich, H. Linking Environmental Management and Employees' Organizational Identification: The Mediating Role of Environmental Attitude. *Corp. Soc. Responsib. Environ. Manag.* **2022**, *29*, 305–315. <https://doi.org/10.1002/csr.2201>.
44. Norton, T.A.; Parker, S.L.; Zacher, H.; Ashkanasy, N.M. Employee Green Behavior: A Theoretical Framework, Multilevel Review, and Future Research Agenda. *Organ. Environ.* **2015**, *28*, 103–125. <https://doi.org/10.1177/1086026615575773>.
45. Soon-Yew, J.; Kamarudin, D.B.; Ramayah, T.; Azizan, N.A. Relationship between organizational environmental management practices and employees' organizational citizenship behaviour toward the environment: The influence of affective commitment toward the environment. *J. Sci. Manag. Res.* **2017**, *5*, 2600–2738.
46. Paillé, P.; Mejía-Morelos, J.H.; Marché-Paillé, A.; Chen, C.C.; Chen, Y. Corporate Greening, Exchange Process Among Co-Workers, and Ethics of Care: An Empirical Study on the Determinants of Pro-Environmental Behaviors at Co-workers-Level. *J. Bus. Ethics* **2016**, *136*, 655–673. <https://doi.org/10.1007/s10551-015-2537-0>.
47. Schneider, B.; Bartlett, C.J. Individual Differences and Organizational Climate: The Research Plan and Questionnaire Development. *Pers. Psychol.* **1968**, *21*, 323–333. <https://doi.org/10.1111/j.1744-6570.1968.tb02033.x>.
48. Zohar, D. A Group-Level Model of Safety Climate: Testing the Effect of Group Climate on Microaccidents in Manufacturing Jobs. *J. Appl. Psychol.* **2000**, *85*, 587–596. <https://doi.org/10.1037/0021-9010.85.4.587>.
49. Victor, B.; Cullen, J.B. The Organizational Bases of Ethical Work Climates. *Adm. Sci. Q.* **1988**, *33*, 101. <https://doi.org/10.2307/2392857>.
50. Liu, X.; Yu, X. Green Transformational Leadership and Employee Organizational Citizenship Behavior for the Environment in the Manufacturing Industry: A Social Information Processing Perspective. *Front. Psychol.* **2023**, *13*, 1097655. <https://doi.org/10.3389/fpsyg.2022.1097655>.
51. Zohar, D.; Luria, G. A Multilevel Model of Safety Climate: Cross-Level Relationships between Organization and Group-Level Climates. *J. Appl. Psychol.* **2005**, *90*, 616–628.
52. Griffin, M.A.; Mathieu, J.E. Modeling Organizational Processes across Hierarchical Levels: Climate, Leadership, and Group Process in Work Groups. *J. Organ. Behav.* **1997**, *18*, 731–744. [https://doi.org/10.1002/\(SICI\)1099-1379\(199711\)18:6<731::AID-JOB814>3.0.CO;2-G](https://doi.org/10.1002/(SICI)1099-1379(199711)18:6<731::AID-JOB814>3.0.CO;2-G).
53. Schyns, B.; Van Veldhoven, M.J.P.M. Group Leadership Climate and Individual Organizational Commitment: A Multilevel Analysis. *J. Person. Psychol.* **2010**, *9*, 57–68. <https://doi.org/10.1027/1866-5888/a000005>.
54. Brislin, R.W. The wording and translation of research instruments. In *Field Methods in Cross-Cultural Research*; Lonner, W.J., Berry, J.W., Eds.; SAGE Publications: Beverly Hills, CA, USA, 1986; pp. 137–164.
55. IBM Corp. *IBM SPSS Statistics for Windows*, Version 23.0; IBM Corp.: Armonk, NY, USA, 2015.
56. JASP Team. *JASP (Version 0.18.3)* [Computer Software]. Available online: <https://jasp-stats.org/> (accessed on 15 April 2024).
57. Forero, C.G.; Maydeu-Olivares, A.; Gallardo-Pujol, D. Factor Analysis with Ordinal Indicators: A Monte Carlo Study Comparing DWLS and ULS Estimation. *Struct. Equ. Model.* **2009**, *16*, 625–641. <https://doi.org/10.1080/10705510903203573>.
58. Steiger, J.H. Structural Model Evaluation and Modification: An Interval Estimation Approach. *Multivar. Behav. Res.* **1990**, *25*, 173–180. https://doi.org/10.1207/s15327906mbr2502_4.
59. Bentler, P.M. Comparative Fit Indexes in Structural Models. *Psychol. Bull.* **1990**, *107*, 238–246. <https://doi.org/10.1037/0033-2909.107.2.238>.
60. Tucker, L.R.; Lewis, C. A Reliability Coefficient for Maximum Likelihood Factor Analysis. *Psychometrika* **1973**, *38*, 1–10. <https://doi.org/10.1007/BF02291170>.
61. Hu, L.; Bentler, P.M. Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria versus New Alternatives. *Struct. Equ. Model.* **1999**, *6*, 1–55. <https://doi.org/10.1080/10705519909540118>.
62. Wheaton, B.; Muthen, B.; Alwin, D.F.; Summers, G.F. Assessing Reliability and Stability in Panel Models. *Sociol. Methodol.* **1977**, *8*, 84. <https://doi.org/10.2307/270754>.

63. Carmines, E.G.; McIver, J.P. Analyzing Models with Unobserved Variables: Analysis of Covariance Structures. In *Social Measurement: Current Issues*; Bohrnstedt, G.W., Borgatta, E.F., Eds.; Sage: Beverly Hills, CA, USA, 1981; pp. 65–116.
64. Brooke, P.P.; Russell, D.W.; Price, J.L. Discriminant Validation of Measures of Job Satisfaction, Job Involvement, and Organizational Commitment. *J. Appl. Psychol.* **1988**, *73*, 139–145. <https://doi.org/10.1037/0021-9010.73.2.139>.
65. Hayes, A.F. *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*, 3rd ed.; The Guilford Press: New York, NY, USA, 2022.
66. Glisson, C.; James, L.R. The cross-level effects of culture and climate in human service teams. *J. Organ. Behav.* **2002**, *23*, 767–794. <https://doi.org/10.1002/JOB.162>.

Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.