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**United for and by the environment: toward a reassessment of the role of co-workers as part of an integrated multisource model of perceived support for environmental initiatives**

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**Abstract.** Previous research has shown the influence of perceived organizational and supervisor support for environmental initiatives (environmental support) on employees' organizational citizenship behavior for the environment (environmental citizenship behavior). Extending this construct to co-workers, the present research aims to understand how these three sources of perceived support for environmental initiatives combine into united action. Drawing on a target similarity framework and research on corporate social responsibility programs, we examine the mediating role of employees' affective commitment to organization, supervisor and co-workers in the above relationships. The results indicate that organizational environmental support, supervisor environmental support and co-worker environmental support each have a distinct and complementary effect on environmental citizenship behavior; that employee commitment to the source of environmental support mediates this effect; and that organizational commitment mediates the effect of commitment to supervisor and co-workers on environmental citizenship behavior. We discuss the implications of these findings for the development of uniting and united action for the environment involving all actors and groups within the organization.

**Keywords:** perceived support for environmental initiatives; organizational citizenship behavior for environment, organizational commitment, commitment to supervisor, commitment to co-workers.

### **Introduction**

Over the years, management research has developed a series of constructs to study the specificity of environmental behavior in the organizational context. Perceived support for environmental initiatives (environmental support), in particular, examines the extent to which employees' contributions toward environmental protection are explicitly valued (Lamm et al., 2015). Although initially inspired by Eisenberger et al.'s (1986) perceived support, environmental support is different

in nature because it targets employees' environmental initiatives rather than employees' well-being (Lamm et al., 2015). environmental support differs from social exchange and reciprocation principles in that employees are invited to develop environmental initiatives because they believe environmental protection is intrinsically important. environmental support explicitly and directly encourages employees to join the organization's (Cantor et al., 2012; Lamm et al., 2015) and their supervisor's (Cantor et al., 2012; Paillé et al., 2019) environmental efforts. Environmental support introduces environment as a third party beneficiary target.

The present research aims to understand how perceived support for environmental initiatives from different sources can combine and lead to united action. Based on the responses of 384 employees of different ages and professional backgrounds, our study aims to extend current literature on environmental management in four ways. First, this research is the first to examine perceived co-worker support for environmental initiatives. Previous studies by Raineri et al. (2016) and Paillé et al. (2016) examined co-worker support for employee's well-being, but not co-worker support for environmental initiatives. The latter is fundamentally different in nature as it does not directly target employees' well-being, but invites them to take action to protect the environment. We explore to what extent this non-institutional peer-to-peer way of promoting environmental issues, along with organizational and supervisor support, may increase employees' environmental initiatives. Second, this study proposes an integrated model of environmental support, allowing for the exploration of the distinct and complementary effects of different sources of support. Third, combining Lavelle et al.'s (2007) target similarity framework and recent research on the inspirational effect of corporate social responsibility programs (Farooq et al., 2014; Grant et al., 2008; Turker, 2009), our study is also the first to contend that affective commitment to the source of environmental support mediates the relationship between environmental support and environmental citizenship. Fourth, drawing on a multifoci approach to commitment (Hunt and Morgan, 1994; Lavelle et al., 2007; Vandenberghe et al., 2004), we argue that affective organizational commitment constitutes "*a key mediating construct*" between commitment to supervisor, commitment to co-workers and environmental citizenship

behavior.

This paper is structured as follows: the first section introduces our constructs, theoretical framework and hypotheses. The second section presents our research design. The third section details our results. In section four, we discuss our findings and their practical utility.

## **1. Theoretical framework and hypotheses**

### *1.1. The relationship between perceived support for environmental initiatives and environmental citizenship behavior*

Environmental management research uses a number of terms to describe employees' behavior voluntarily contributing to environmental protection: organizational citizenship behavior for the environment (e.g. Daily et al., 2009), pro-environmental behavior at work (e.g. Tian and Robertson, 2019), environmental behavior (Cantor et al., 2015), voluntary workplace environmental behavior (e.g. Kim et al., 2014), or eco-initiatives (e.g. Ramus and Steger, 2000). In this research, we remain committed to the notion of "citizenship" and use the term organizational citizenship behavior for the environment (environmental citizenship), the latter refers to behavior such as two-sided printing, turning off power and lights, using green packaging, recycling and cycling to work or carpooling. In our view, this terminology best reflects the ethical nature of the phenomena involved. It also highlights the organizational dimension of the construct, since environmental citizenship refers to voluntary action and initiatives that occur within the context of the organization with the aim of reducing its ecological footprint. These behaviors contribute to environmental performance at the organizational level (Paillé et al., 2013).

A first series of studies on environmental citizenship behavior uses Eisenberger et al.'s (1986) perceived organizational support (Paillé and Raineri, 2016, Paillé et al., 2013). This research draws on Blau's (1964) social exchange theory. Perceived organizational support is defined by Eisenberger et al (1986, p. 500) as employees' "*global beliefs concerning the extent to which the organization values their contributions and cares about their well-being*". Perceived organizational support and organizational citizenship behavior are connected as part of a social exchange framework in which

gifts create a social obligation for reciprocation (Blau, 1964). In the context of organizations implementing a corporate environmental policy (Berry and Rondinelli, 1998, Raineri and Paillé, 2016; , 2015; Roy et al., 2013), employees will reciprocate the support they receive by performing environmental citizenship behavior. Previous research confirms the relationship between perceived organizational support and environmental citizenship behavior (Paillé et al., 2015; Paillé and Reineri, 2016), but also between perceived supervisor support (Paillé et al., 2013; Ramus and Stengers, 2000) and perceived co-worker support and environmental citizenship behavior (Paillé et al., 2016). Raineri et al. (2016) recently developed an integrative model showing that organization, supervisor and co-workers provide distinct forms of perceived support, which have additional effects on environmental citizenship behavior as part of the same workplace social exchange network.

A major turn in environmental management literature has been the exploration of a more specific form of perceived organizational support for environmental initiatives (organizational environmental support). The definition of organizational environmental support used in this research is that of Lamm et al. (2015, 209), who describe it as « *the specific beliefs held by employees concerning how much the organization values their contributions toward sustainability* ». Lamm et al (2015) refer to a social exchange process where organization and employees both already share the same concerns about the environment. organizational environmental support will therefore mainly reinforce employees for whom the protection of the environment is already in line with their own goals and values. Cantor et al (2012), on the other hand, argue that organizational environmental support conveys a specific and explicit signal about the value the organization places on environmental behavior, thus providing clarification of the “performance-reward expectancy”. Although we develop a slightly different “other-oriented” framework (see next section), we draw on this literature to argue that organizational environmental support is a “shifting of the intended target of support” from employees’ well-being to environment protection (Cantor et al , 2012, p 34). organizational environmental support appears to be fundamentally different from perceived organizational support in that it includes the environment as a third party beneficiary. Cantor et al. (2012) and Lamm et al.

(2015) both found a significant relationship between organizational environmental support on environmental citizenship behavior.

Over the past few years, perceived supervisor support for environmental initiatives (supervisor environmental support) has received almost as much attention as organizational environmental support. Drawing on Bass (1988), Ramus and Stanger's seminal study evoked the influence of supervisor support for innovation on environmental citizenship behavior. Cantor et al. (2012) more explicitly and specifically define environmental support as "*the employee's belief that the supervisor provides subordinates with the resources and feedback needed to participate in environmental initiatives*". In the present study, in order to develop a coherent multisource environmental support construct, we adapt Lamm's definition of organizational environmental support to supervisor environmental support as follows: "*the specific beliefs held by employees regarding how much their supervisor values their contributions toward sustainability*". Cantor et al. (2012 ; 2015) describe the supervisor as an influent social agent playing a crucial role in promoting environmental citizenship behavior. Cantor et al. (2015) found that supervisor environmental support mediates the effect of corporate environmental policy on both environmental citizenship behavior. Cantor et al (2012) showed that supervisor environmental support has a positive effect on organizational environmental support and employees' environmental commitment. Paillé et al. (2019) view supervisor environmental support as a form of social approbation that encourages employees to take initiatives for the environment, with its effect on environmental citizenship behavior depending on how much they trust the supervisor. Together these studies have lent support to the hypothesis of a relationship between supervisor environmental support and environmental citizenship behavior

To date, no study has ever examined the effect of perceived co-worker support for environmental initiatives (co-worker environmental support) on environmental citizenship behavior. For the purposes of this research, we apply Lamm's definition to co-worker environmental support as follows: "*the specific beliefs held by employees regarding how much their co-workers value their contributions toward sustainability*". We draw on Paillé et al. (2016) and Raineri et al. (2016) to examine the

influence of co-worker support on employees' environmental citizenship behavior. However, in this study, instead of focusing on co-worker support to mutual well-being, we introduce co-worker environmental support to examine the effect of perceived co-worker support for environmental initiatives on environmental citizenship behavior.

Using the above definitions, we develop a complete multisource environmental support construct including organization, supervisor and co-workers. We contend that: (1) organizational environmental support, supervisor environmental support and co-worker environmental support are distinct constructs, in other words, employees tend to compartmentalize them into separate mental categories; (2) environmental support from each of these three sources is positively related to environmental citizenship behavior; (3) They have additional effects on environmental citizenship behavior.

*Hypothesis 1. Organizational environmental support, supervisor environmental support and co-worker environmental support have distinct and additional effects on environmental citizenship behavior*

#### *1.2. The mediating role of affective commitment*

Our second hypothesis highlights the mediating role of affective commitment in the relationship between environmental support and environmental citizenship behavior. The first part of the mediation hypothesis concerns the relationship between environmental support and commitment toward the source of environmental support. This hypothesized "similarity" in the sense of Lavelle et al (2007), between the source of the perceived support and the target of commitment, draws on a series of studies explaining how and why corporate responsibility programs supporting altruistic causes lead to organizational commitment (Brammer et al., 2007 ; Grant et al. 2008; Farooq et al., 2014 ; Peterson, 2004; Turker, 2009). Turker (2009) suggests that corporate responsibility programs promote a positive and attractive image of the organization with which employees seek to associate themselves. Grant et al. (2008) highlight the "inspiring" effect of working for a higher purpose. This inspiration process moves away from Blau's (1964) social exchange theory to consider "*other-orientation process*" (De Dreu and Nota, 2009; Melino and Klosgaards, 2004). Grant et al. (2008) thus

consider that philanthropic corporate programs have the potential to not only transform the way employees see their organization, but also how they see themselves, in particular their own values and goals. These studies highlight “*the mechanisms through which giving to others through organizational programs strengthens affective organizational commitment*” (Grant et al., 2008, p. 900), based on the sharing of the same “*other orientation*” values and goals. This affective mindset, characterized by attachment to, identification with and involvement in the organization (Allen and Meyer, 1990), reconnects with early commitment literature (e.g. Mowday et al., 1979; O’Reilly and Chatman, 1986) by highlighting elements of social influence and internalization process leading to the sharing of the same goals and values.

Environmental protection constitutes an adequate illustration of Grant et al.’s (2008) conception of a higher purpose. Turker (2009) in particular showed that programs targeting “*social and non-social stakeholders*”, including among other issues “*the protection and improvement of natural environment*”, have an effect on organizational commitment. Cantor et al. (2012, 2015), who cited Grant et al.’s (2008) work on social responsibility programs, suggested that organizational environmental support contributes to the sharing of the same environmental values and goals, but these studies measured environmental commitment rather than affective organizational commitment. Lamm et al. (2015) looked at the effect of organizational environmental support on organizational identification, but their study only measured this effect for employees who already felt concerned by environmental issues. Drawing on previous research on corporate social responsibility programs (Brammer et al., 2007; Grant et al. 2008; Farooq et al., 2014 ; Peterson, 2004; Turker, 2009), we argue that environmental support may inspire employees to commit to the source of support for this higher purpose. Regarding supervisor, Mi et al. (2020) demonstrated that transformational leadership in the form of moral modeling can “inspire employees’ environmental citizenship behavior through psychological ownership, the latter involving elements of identification. We argue that this line of reasoning can apply to all sources of perceived support for environmental initiatives, including co-workers. Hence, we suggest that employees are also likely to commit to co-workers whom they



perceive as supporting environmental initiatives. We thus predict the following relationships between organizational environmental support and organizational commitment, supervisor environmental support and commitment to supervisor, and co-worker environmental support and commitment to co-workers.

The second part of our mediation hypothesis concerns the relationship between commitment to the source of environmental support and environmental citizenship behavior. This relationship is already well established (Raineri et al., 2016). Mowday et al (1979) stated that commitment led to “a willingness to exert considerable effort on behalf of the organization”, while Allen and Meyer (1990) and Meyer and Herscovitch (2001) define commitment as “*a force that binds an individual to a course of action of relevance to a given target*” (p. 299). In the context of environmental management research, this relationship between organizational commitment and environmental citizenship behavior was first introduced by Daily et al. (2009) in the form of a theoretical proposal. Paillé et al. (2013) and Paillé et al., 2016 found an effect of AC-CW on eco-helping. Finally, Raineri et al. (2016) have recently presented a complete model including organizational, supervisor and commitment to co-workers and validated their distinct and cumulative effects on environmental citizenship behavior.

Based on the indirect effect of environmental support on environmental citizenship behavior through commitment, our multisource model provides an alternative version of Lavelle et al.’s (2007) target similarity framework in which commitment to the source of environmental support does not draw on social exchange, but on the sharing of the same environmental values and goals. Drawing on this other-orientation approach to corporate social responsibility programs, we reinterpret environmental support as an invitation to share and serve environmental protection goals, which can lead employees to commit to the source of this altruistic form of support for a third party. Applying this line of reasoning to organization, supervisor and co-workers, we examine the mediating role of commitment in the relationship between environmental support and environmental citizenship behavior and make the following hypotheses:

*Hypothesis 2a: Organizational commitment mediates the relationship between organizational*

*environmental support and environmental citizenship behavior.*

*Hypothesis 2b: Commitment to supervisor mediates the relationship between supervisor environmental support and environmental citizenship behavior.*

*Hypothesis 2c: Commitment to co-workers mediates the relationship between co-worker environmental support and environmental citizenship behavior.*

### *1.3. The key role of organizational commitment*

Previous research on commitment has shown that organizational commitment mediates the effect of commitment to “nested foci”, such as supervisor and co-workers, on most organizational behavior (Lavelle et al., 2007; Meyer and Herscovitch, 2001; Hunt and Morgan, 1994; Vandenberghe et al., 2004). Based on Meyer and Herscovich’s (2001) notion of focal behavior and Lavelle et al.’s (2007) notion of target similarity, we argue that organizational commitment has the strongest and most direct effect on environmental citizenship behavior. Organizational citizenship behavior for the environment, that we have defined as individual initiatives developed within the organization with the aim of limiting its ecological footprint, supports the organization’s interests, and is therefore, quoting Meyer and Herscovitch (2001), primarily an “organization-relevant behavior”. Recent findings in the environmental management literature are consistent with previous research on commitment. Many studies evoke the importance of institutionalizing environmental policies as part of organizational strategy (Berry and Rondinelli, 1998, Raineri and Paillé, 2016; , 2015; Roy et al., 2013), but also highlight the crucial influence of supervisor and co-workers. However, taking a closer look at these texts, they usually consider the latter as agents or adjuvants relaying and facilitating the implementation of organizational policy at the individual level, rather than innovative employees developing their own projects. It is therefore usually argued that having a positive perception and attitude toward supervisors and co-workers will lead to a more positive perception and attitude toward the organization, which can translate into positive organizational behavior, in this case, environmental citizenship behavior. Paillé et al (2019), for instance, hypothesized a mediating role of POS in the relationship between PSS and environmental citizenship behavior, but the results failed to support their hypothesis. Cantor et al (2012)

found that the effect of supervisor environmental support on environmental commitment was mediated by organizational environmental support. Based on the commitment literature (Vandenberghe et al., 2004), the present study argues that organizational commitment mediates the relationship between both commitment to the supervisor and commitment to co-workers and environmental citizenship behavior.

By the same reasoning, which is that specific individual proximate entities are nested in more collective and global ones (Hunt and Morgan, 1994; Mueller and Lawler, 1999; Vandenberghe et al., 2004), we also argue that commitment to co-workers mediates the relationship between commitment to supervisor and organizational commitment. We view the supervisor as a psychologically proximate target with whom employees can develop an interpersonal relationship. This relationship is nested in a more social relationship with co-workers, forming a collective entity with its own norms and culture (Paillé et al., 2016). Results from Raineri et al. (2016) showed that AC-CW mediates the relationship between commitment to supervisor and environmental citizenship behavior. We propose the following hypotheses:

*Hypothesis 3.a. Commitment to co-workers and affective organizational commitment mediate, in sequence, the relationship between co-worker environmental support and environmental citizenship behavior.*

*Hypothesis 3.b. Commitment to supervisor, commitment to co-workers and organizational commitment mediate, in sequence, the relationship between supervisor environmental support and environmental citizenship behavior.*

## **2. Method**

### *2.1. Sample and participants*

This study was conducted in France. The target sample was a range of employees from different work contexts so as to develop a general model. Our data collection method therefore took the form of a chain-referral web survey (Callegaro et al., 2015). After obtaining authorization from their business school, 75 paid workers taking a part-time evening course were asked to forward an email to five paid-workers from their professional network. This email included a presentation of our study, a

guarantee of confidentiality, and a link to our online survey. The final sample counted 384 individuals, thus reaching the standard threshold number required for structural equation modeling (Kline, 2011). Based on 75 informants: this made an average of 5.12 recruitments per informant. The respondents' average age was 37.04 years (SD = 8.31) and the average tenure 8.1 years (SD = 8.19). 56.8% of our sample were female and 43.2% male. Their status was 61% employees and workers, 14% intermediaries, 25% managers and executives. Respondents' organizations were 58.3% private, 24.7% public and 17.4% nonprofit. The average number of employees was 515.43 (SD = 932.66).

## 2.2. Measures

Environmental citizenship behavior was measured using Boiral and Paillé's (2012) scale. This scale comprises 6 items (e.g. "In my work, I weigh the consequences of my actions before doing something that could affect the environment",  $\alpha = .93$ ). In order to establish a coherent multifoci measure, all perceived support for environmental initiatives items were derived from Lamm et al.'s (2015) measure. Perceived organizational support for environmental initiatives was measured using a 3-item scale ( $\alpha = .89$ , e.g., "My actions toward sustainability are appreciated by my organization"). Perceived supervisor support for environmental initiatives was also measured using a 3-item scale ( $\alpha = .92$ , e.g., "My actions toward sustainability are appreciated by my supervisor"). co-worker environmental support included 3 items ( $\alpha = .92$ , e.g., "My actions toward sustainability are appreciated by my co-workers"). Commitment to multiple targets was measured using Stinglhamber et al.'s (2002) short versions. Organizational commitment was measured using a 4-item scale ( $\alpha = .88$ , e.g., "I am proud to belong to this organization"). Commitment to supervisor was measured using a 4-item scale from Stinglhamber et al (2002) ( $\alpha = .85$ , e.g. "I am proud to work with my supervisors"). Commitment to co-workers was also measured using a 4-item scale from Stinglhamber et al (2002). However, due to poor alpha value, one item had to be removed ( $\alpha = .90$ , e.g. "I am proud to work with my co-workers"). All measures used in the research were existing scales already translated into French. All responses were measured on five-point scales.

## 2.3. Data analysis

We first assessed our measurement model with a confirmatory factor analysis (Anderson and Gerbing, 1988). We also measured the importance of common method bias by performing the common latent factor (CLF) method. We verified our different hypotheses using structural equation modeling (Kline, 2011). The potential mediating effects described in hypotheses 3 and 4 were tested using the bias-corrected bootstrap method (Preacher and Hayes, 2008).

## Results

### *Measurement model, common method bias and descriptive statistics*

We first performed a factor analysis to confirm the properties of the measurement model (Anderson and Gerbing, 1988; Klines, 2011) using AMOS structural equation modeling. Table 1 shows that the hypothesized 7-factor model including organizational environmental support, supervisor environmental support, co-worker environmental support, organizational commitment, commitment to supervisor, commitment to co-workers and environmental citizenship behavior presented a good fit  $\chi^2 = 565.3$ ,  $df = 276$ ,  $p = .000$ , CFI = .96, NNFI = .95 ; RMSEA = .052 ; AIC = 715.2. This model outperforms any of the other models on all the indices.

We then ran a common latent factor test (Podsakoff et al., 2003) in order to evaluate the importance of common method biases. We added a common latent factor to the measurement model. This model resulted in a good fit ( $\chi^2 = 565.1$ ,  $df = 275$ ,  $p = .000$ , CFI = .96, NNFI = .95 ; RMSEA = .052 ; AIC = 717.1), but did not outperform the model without the common latent factor. Furthermore, item loadings on their respective factors remained largely unchanged after introducing the common factor. The loading of items on the common latent factor was .202 (n.s), only a minor 4% (.202<sup>2</sup>) of the total variance. We can therefore conclude that common method bias is limited.

Table 2 reports descriptive statistics and correlations for the study variables. It shows that most of the results are consistent with our predictions since all our constructs are positively related. As none of these bilateral correlations exceeded .70, there is no risk of multicollinearity. We were therefore able to carry out a structural equation modeling analysis.

Table 2 Descriptive statistics

	Mean	SD	1	2	3	4	5	6	7
1. PSE-ORG	3.28	1.04	-						
2. PSE-CW	3.26	.98	,54**	-					
3. PSE-SUP	3.16	1.09	,70**	,51**	-				
4. AC-ORG	3.67	.94	,31**	,27**	,35**	-			
5. AC-CW	3.75	.98	,27**	,32**	,28**	,69**	-		
6. AC-SUP	3.60	1.00	,30**	,18**	,37**	,55**	,52**	-	
7. OCB-E	3.31	.93	,40**	,46**	,44**	,31**	,28**	,18**	-

\*\* . correlations significant at  $p < 0.01$

PSE-ORG: organizational environmental support; PSE-SUP: supervisor environmental support; PSE-CW: co-worker environmental support; AC-ORG: organizational commitment; AC-SUP: commitment to supervisor; AC-CW: coworker commitment; OCB-E: environmental citizenship behavior.

### *Structural equation modeling*

We tested our research model following the structural equation modeling method and using the covariance matrix (Kline, 2011). Our model yielded a good fit to the data ( $\chi^2 = 571.7$ ,  $df = 284$ ,  $p = .000$ ; CFI = .96; NNFI = .96; RMSEA = .051; AIC = 705.7). Nevertheless, it was necessary to test for the existence of a nested model providing a better fit (Anderson and Gerbing, 1988; Kline, 2011). This permitted us to discard three non-significant relationships between organizational environmental support and environmental citizenship behavior, between AC-SUP and environmental citizenship behavior, and between AC-CW and environmental citizenship behavior, these results supporting full rather than partial mediating effects (see bootstrap analysis en the next subsection). The final model provides a slightly better fit and is based on a more parsimonious set of relationships ( $\chi^2 = 572.8$ ,  $df = 285$ ,  $p = .000$ ; CFI = .91; NNFI = .90; RMSEA = .051; AIC = 704.61).

Figure 1 displays the final research model. Confirming hypothesis 1, supervisor environmental support and co-worker environmental support are directly related to environmental citizenship behavior ( $\beta = .212$ ,  $p < .001$ ;  $\beta = .317$ ,  $p < .001$ ; respectively). The relationship between organizational environmental support and environmental citizenship behavior was not significant ( $\beta = .070$ ; *ns*). Supporting the mediating effects introduced in hypotheses 2a, 2b and 2c, our results show a significant relationship between organizational environmental support and organizational

commitment, and between organizational commitment and environmental citizenship behavior ( $\beta = .110, p < .01; \beta = .144, p < .01$ ; respectively); a significant relationship between supervisor environmental support and commitment to supervisor, and between co-worker environmental support and commitment to co-workers ( $\beta = .403, p < .001; \beta = .250, p < .01$ ; respectively), but the relationship between commitment to supervisor and environmental citizenship behavior and between commitment to co-workers and environmental citizenship behavior failed to reach the significance threshold ( $\beta = -.102, ns; \beta = .036, ns$ ; respectively). Finally, all results satisfy the conditions for the mediating effects introduced in hypotheses 3a and 3b, fully confirming a significant relationship between AC-SUP and AC-ORG, between AC-SUP and AC-CW, and between AC-CW and AC-ORG ( $\beta = .239, p < .001; \beta = .511, p < .001; \beta = .622, p < .001$ ; respectively).

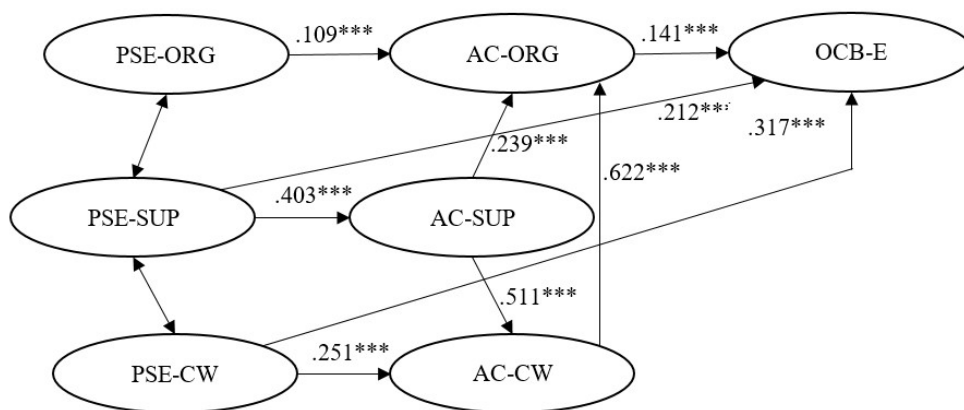


Figure 1. Final model

PSE-ORG: organizational environmental support; PSE-SUP: supervisor environmental support; PSE-CW: co-worker environmental support; AC-ORG: organizational commitment; AC-SUP: commitment to supervisor; AC-CW: coworker commitment; OCB-E: environmental citizenship behavior.

### *Bootstrap analysis*

Finally, we conducted a series of bootstrap analyses (Preacher and Hayes, 2008) to assess the simple and sequential mediating effects introduced in hypotheses 2 and 3. Table 3 shows the full mediating effect of AC-ORG on the relationship between organizational environmental support and environmental citizenship behavior (hypothesis 2a) (indirect effect :  $\beta = .015$ , lower limit B =  $.001$ ;

upper limit B = .032; direct effect:  $\beta = .070$ , lower limit B = -.087; upper limit B = .293). Our results support the partial sequential mediating effect of AC-CW and AC-ORG on the relationship between co-worker environmental support and environmental citizenship behavior (hypotheses 2c and 3a,  $\beta = .022$ , lower limit B = .003; upper limit B = .032) and the partial sequential mediating effect of commitment to supervisor, commitment to co-workers and organizational commitment on the relationship between supervisor environmental support and environmental citizenship behavior (hypotheses 2b and 3b,  $\beta = .022$ , lower limit B = .012; upper limit B = .037).

Table 3 Bootstrap analysis of indirect effects

IV	Mediators	VD	direct effect	in- direct	Sd error	95% CI Lower Upper	
<i>organizational environmental support</i>							
PSE_ORG	→ AC-ORG →	OCB-E	(.109 x .141)	.015	.007	.001	.032
PSE-ORG		OCB-E	.070		.066	-.087	.293
<i>co-worker environmental support</i>							
PSE-CW	→ AC-CW → AC-ORG →	OCB-E	(.251 x .622 x .141)	.022	.009	.003	.032
PSE-CW		OCB-E	.317		.064	.041	.293
<i>supervisor environmental support</i>							
AC-SUP	→ AC-CW →	AC-ORG	(.511 x .622)	.048	.048	.184	
PSE-SUP	→ AC-SUP(→ AC-CW)→ AC-ORG →	ECB	(.403 x .557 x .141)	.032	.012	.003	.037
PSE-SUP		ECB-E	.212		.064	.041	.293

Table 3. Bootstrap analysis of indirect effects

PSE-ORG: organizational environmental support; PSE-SUP: supervisor environmental support; PSE-CW: co-worker environmental support; AC-ORG: organizational commitment; AC-SUP: commitment to supervisor; AC-CW: coworker commitment; OCB-E: environmental citizenship behavior.

### 3. Discussion

#### 3.1. Findings

The main innovation of the present study is in the introduction of the construct of co-worker environmental support with the aim of providing an integrated three-source environmental support matrix. Organizations are usually well aware of the importance of both communicating on environmental policy at the organizational level and the central role of supervisors in delivering this



message at the employee level. However, the influence of co-workers is often overlooked. The additional direct and indirect effects of co-worker environmental support on environmental citizenship behavior appear to support the idea that co-workers are a valuable resource for the implementation of environmental policy, in addition to organizational and supervisor supports for environmental initiatives. This research thus makes several contributions to the literature.

First, it extends sources of environmental support to co-workers and, along with pre-existing organizational environmental support and supervisor environmental support, provides a more complete multisource environmental support model. Supporting hypothesis 1, our results show environmental support from each of these three sources has distinct and additional effects. This result confirms Raineri et al.'s (2016) suggestion that effective environmental management and environmental performance depend on the participation of all actors and all stakeholders at all levels of the organization. Among these actors, co-workers play an important role at an intermediary collective level, between that of the supervisor at an interpersonal level and of the organization at an institutional level. To date, only Paillé et al. (2016) and Raineri et al. (2016) have examined the role of co-workers. However, they looked at the impact of Eisenberger et al.'s (1986) perceived support to employee well-being within a social exchange framework where environmental citizenship behavior was interpreted in terms of reciprocation. Following Cantor et al. (2012) and Lamm et al. (2015), our study specifically targets perceived support for employees' environmental initiatives. In line with the distinction made by Meglino and Koorsgaard's (2004) and Grant et al. (2008), co-worker environmental support moves from a mainly self-interest rationality to an other-orientation rationality. Co-worker environmental support contributes to commitment to co-workers, which partly mediates the relationship between commitment to supervisor and organizational commitment. Co-worker environmental support thus constitutes a key construct, as important as supervisor environmental support and organizational environmental support, which enables a better understanding of the social influence mechanisms underlying environmental citizenship behavior.

Second, our study shows that organizational environmental support, supervisor environmental

support and co-worker environmental support relate to commitment to the corresponding source, that is AC-ORG, AC-SUP and AC-CW, respectively. The validation of this triple-source model of environmental support and commitment demonstrates the consistency and robustness of models exploring the inspirational effect of programs supporting a higher purpose (Farooq et al., 2014; Grant et al., 2008; Turker, 2009). Our study adds to this previous research by more concretely examining perceived support for environmental initiatives and further investigating the role of supervisors and co-workers as alternative sources of inspiration, in addition to the organization. Our findings extend Grant et al.'s (2008) proposal by highlighting individual and collective bottom-up initiatives. The results of this study demonstrate the capacity of different entities and actors, namely, organization, supervisor and co-workers, to influence employees' environmental behaviors through their support for environmental initiatives. It also adds to the literature by detailing how this influence may operate through commitment to the source of environmental support. Eisenberger et al. (1986) showed that offering support to employees favors reciprocation in the form commitment. Nevertheless, as previously explained, support for environmental initiatives is fundamentally different in nature as it does not directly target employees' well-being, but invites them to take action to protect environment. The mediating role of commitment can thus be interpreted in two ways. First, as put forward by previous literature (Farooq et al., 2014; Grant et al. 2008; Turker, 2009), social responsibility and other-orientation such as support for environmental initiatives can have an inspirational effect leading to identification with the source of the support and the sharing of the same values and goals promoted by the latter, as in commitment. However, given the cross-sectional nature of our data (see the limits subsection), a second explanation would be a more processual two-way causal effect where the initial level of commitment could influence the perception and evaluation of the source of support, meaning that employees would follow the values and goals of the source they already identify with. Future studies with either a qualitative or longitudinal design are required to further investigate the nature and stages of this process linking environmental support, commitment and environmental citizenship behavior.

Third, our findings confirm the mediating effect of commitment to environmental support sources on the relationship between environmental support and environmental citizenship behavior. The results shows a full mediating effect of organizational commitment on the relationship between organizational environmental support and environmental citizenship behavior (hypothesis 2.a.), and partial mediating effects of commitment to supervisor on the relationship between supervisor environmental support and environmental citizenship behavior (hypothesis 2.b.), and of commitment to co-workers on the relationship between co-worker environmental support and environmental citizenship behavior (hypothesis 2.c). This series of results which includes a triple replication of our mediating model, contributes to current research on environmental management by linking two types of studies. Based on social exchange and reciprocation process, the first type focuses on the mediating role of commitment in the relationship between perceived support for employee's well-being and environmental citizenship behavior (e.g. Paillé et al., 2016; Raineri et al. 2016). The second type introduces a more specific form of perceived support, in this case for environmental initiatives (environmental support), and examines its effect on commitment to environment and, through the mediation of the latter, on environmental citizenship behavior (Cantor et al., 2012; Cantor et al., 2015; Paillé et al., 2019). These two bodies of research have developed in parallel, with only occasional cross-references. Our study bridges the gap between them by identifying the relationship between environmental support and commitment to its source, and by showing that the relationship between environmental support and environmental citizenship behavior can be enhanced through the quality of the relationship with the source of environmental support. Paillé et al (2019) and Paillé and Raineri (2016), who studied trust and examined contract breach, respectively, both found that the quality of the relationship between employees and the source of perceived support mediates the effect of environmental support on environmental citizenship behavior. In a different approach, Lamm et al (2015) showed that organizational environmental support had an effect on both organizational identification and environmental citizenship behavior, but did not attempt to link these findings. Drawing on Baron and Kenny (1986), the mediating role of commitment in the relationship between

organizational environmental support and environmental citizenship behavior may be viewed as a transformation process rather than a condition: through the commitment process (Allen and Meyer, 1990; O'Reilly and Chatman, 1986; Mowday et al., 1979), employees come to share the environmental values and goals of the source of environmental support and, as a result, adopt environmental citizenship behavior.

A fourth result of interest is the fact that organizational commitment fully mediates the effects of commitment to supervisor and commitment to co-workers on environmental citizenship behavior. In line with previous multifoci research on commitment (Lavelle et al., 2007; Vandenberghe et al., 2004), these findings confirm that, as far as environmental citizenship behavior is concerned, organization also remains what Hunt and Morgan (1994, p. 1568) referred to as a “*key mediating construct*”. Drawing on Meyer and Herscovitch (2002), we view environmental citizenship behavior as a focal behavior for organizations seeking to reduce their ecological footprint. What our study shows is that employees’ commitment to organizational constituents, such as supervisor and co-workers, can contribute to commitment to the organization as whole and, through its mediation, have an indirect effect on environmental citizenship behavior. Previous research on environmental management highlights the importance of promoting environmental values at the organizational level (Boiral and Paillé, 2012; Raineri and Paillé, 2016; , 2015; Roy et al., 2013), but also calls attentions to the role the supervisor and co-workers play in their implementation (Ramus and Steger, 2000; Raineri et al., 2016). Our results reconnect these different studies by showing that organizational commitment facilitates the integration of supervisor and co-worker inputs.

Our integrated multisource model of perceived support for environmental initiatives and commitment introduces a new theoretical framework highlighting the inspirational effects of social responsibility and other-orientation programs (Farooq et al., 2014; Grant et al. 2008; Turker, 2009), to the field of environmental management research. This framework constitutes an alternative to the social exchange approach to environmental citizenship behavior. Our model supports the idea that pro-environmental behavior does not only benefit the environment, but also contributes to

organizational cohesion through increased commitment to the various source of environmental support with through organizational commitment operating as a key mediating construct. The development of multiple commitments to co-workers, the supervisor and the organization can lead to shared environmental goals and values. Although Greenwood (2013) has suggested that in a traditional organizational setting, goal sharing may be either utopic or manipulative, it can be argued that environmental objectives are of a different nature. They introduce a higher purpose (Grant et al., 2008) which requires an alternative theoretical framework. What is important when discussing the different theoretical frameworks used to guide the development of environmental management is that this context should be considered as a field of research where previous organizational behavior constructs are not always sufficient. Social exchange theory is without a doubt one of the most influential theories in organizational behavior science (Cropanzano and Mitchell, 2005) and environmental management research (Raineri et al., 2016), but one theory does not fit all situations and –circumstances. We invite future environmental management research to explore new theoretical frameworks, including altruistic and ethics-based approaches, to address the specificities of organizational citizenship behavior for the environment.

### *3.2. Practical perspectives*

Our study shows that organizational, supervisor and co-worker environmental support have significant direct and indirect additional effects on environmental citizenship behavior. Drawing on these results, a first general direction for practice would be to promote environmental support at these three different levels. Organizations, supervisors and co-workers who demonstrate their sense of social responsibility through environmental support all have the potential to inspire other employees to increase their environmental citizenship behavior. Our results suggest that there is no superior source of environmental support, but a form of complementarity between them. The level of response to each of these different form of environmental support may also vary from one employee to another depending on their initial commitment profile. Simultaneous organizational, supervisor and co-worker

PSE maximize the percentage of employees responding with environmental citizenship behavior. Organizations are usually well aware of both the importance of communicating on environmental policy at the organizational level (Berry and Rondinelli, 1998, Raineri and Paillé, 2016; , 2015; Roy et al., 2013) and the central role of supervisors in delivering this message at the employee level (Cantor et al. 2015; Paillé et al., 2019; Ramus and Steger, 2000), but do not often consider the influence of co-workers (Paillé et al., 2016; Raineri et al; 2016). The additional direct and indirect effects of co-worker environmental support on environmental citizenship behavior support the idea that co-workers are a valuable resource for the implementation of environmental policy. Discussing the specific importance of co-worker environmental support brings the question of how to develop this. A practical recommendation would thus be for supervisors to draw on and encourage co-worker environmental support and commitment to co-workers by combining one-to-one interactions with group sessions on environmental protection issues. Once a certain threshold has been reached in terms of the percentage of the employee population invested in sustainability, organizations could then draw on emerging PSE-CW to further develop their environmental management practice.

Our results show that co-worker support, through commitment to co-workers, enhances the overall level of environmental citizenship behavior, but future research is needed to further investigate individual differences in employees' responses to different sources of support, in particular to co-worker support. Recent research by Ababneh (2021) shows that the effect of green HRM practices partly depends on the engagement profile and personality of individual employee. The present research has shown that employees' level of commitment mediates the relation between environmental support and citizenship behavior. Drawing on Meyer and Herscovitch's (2001) "commitment profile" approach, it could be argued that responses to different forms of environmental support may vary from one employee to another, depending on his or her personality and commitment profile. Thus, certain employees who do not necessarily respond to top-down incentives, may be more influenced by non-institutional sources. Co-worker environmental support might have its strongest impact on this segment of the employee population.

The influence of co-worker environmental support on environmental citizenship behavior leads to the question of how to promote such interactions. Future research could examine how the organization and supervisor integrate coworkers within their strategy to promote environmental citizenship behavior. Such “*meta-support*” would not only encourage employees to take action to reduce their own ecological footprint, but also “help others” to do the same. Helping others was one of the categories of citizenship behavior initially identified by Podsakoff et al. (2000). In the context of environmental protection, helping others would involve actively sharing knowledge about how to meet green objectives, and the urgency of such action. Recent research highlights the importance of green knowledge sharing (Rubel et al., 2021). This meta-support strategy rallies the most active employees to raise awareness among those who do not spontaneously feel concerned by green matters. Integrating co-workers, along with the organizational and supervisor, as part of a multisource environmental support system could help to achieve what Parboteeah and Kapp (2008) refer to as an “ethical climate”. Environmental citizenship could thus become a central aspect of organizational culture that would be broadly shared, not only at the institutional level but also in the form of non-institutional bottom-up appropriation of this orientation by employees.

### *3.3. Limitations and future research*

The main limit of our research lies in the cross-sectional single-source design used for this study. We examined employees’ perceptions, attitudes and behavioral intentions to better understand the impact of PSE. This model needs further validation, which could include supervisor evaluations of employees’ environmental citizenship behavior or measures of actual behavior. Longitudinal designs would help to determine the direction of causality in our model. More research is also needed to understand how this cohesion develops. Does the initial commitment profile of employees influence the way they respond to environmental support from the different sources? How does co-worker environmental support emerge and to what extent is it influenced by organizational environmental support and supervisor environmental support? At what point does co-worker environmental support gain momentum? Is employees’ perception of co-worker support for environmental initiatives more

likely to come from a few charismatic individuals or from a more collective movement without leadership?

A second limit concerns the absence of control variables in our structural equation model. Our structural equation model primarily aimed to assess the relationships among a series of psychological constructs in the form of latent variables. We constituted a maximum diversity sample to examine the invariance of the structure of their causal relationships across sociodemographic variables such as sex, age and status of employees and the size, sector and date of creation of their organizations (Raines-Eudy, 2000). Nevertheless, it can still be argued that employees' environmental behavior may be influenced by these sociodemographics. Post hoc analysis of age did not reveal any significant effect with any of our mediating and dependent variables (organizational commitment  $\beta = -.057$ ,  $p = n.s.$ ; commitment to supervisor  $\beta = -.007$ ,  $p = n.s.$ ; commitment to co-workers  $\beta = -.102$ ,  $p = n.s.$ ; environmental citizenship behavior :  $\beta = -.102$ ,  $p = n.s.$ ). Future research could further examine the moderating effects of sociodemographic variables and personality traits such as social desirability. Although CMV remained under the accepted threshold, a more direct measure of social desirability would constitute a useful complement.

## **Conclusion**

Our integrative multisource model reconnects studies on environmental citizenship behavior focusing on Eisenberger et al.'s (1986) perceived support and commitment to the organization, supervisor and co-workers, with those focusing specifically on environmental support and environmental commitment. Our findings linking organizational environmental support and organizational commitment, supervisor environmental support and commitment to supervisor and co-worker environmental support and commitment to co-workers supports the idea that pro-environmental policies create an inspiring higher purpose that actually enhances employees' commitment to the source of environmental support. The second part of our model adding the mediating effect of organizational commitment on the relationship between commitment to supervisor



and commitment to co-workers with environmental citizenship behavior. Our overall model points to the potential benefits of organization, supervisor and co-workers joining together to develop a common vision and strategy of action for environmental protection.

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