

## RESEARCH ARTICLE

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# Goal self-concordance mediates the relation of core self-evaluations with organizational citizenship behavior but not with environmental organizational citizenship behavior

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### Abstract

This paper tested antecedents of organizational citizenship behavior for the environment (OCB-E) and goal self-concordance as a mediator between those antecedents and OCB-E or related outcomes. We proposed that core self-evaluations, a well-studied antecedent of organizational citizenship behavior (OCB), are also related to a newer form of OCB – namely, OCB-E. Similarly, we proposed that environmental identity, a well-studied antecedent of pro-environmental behaviors (PEBS), are also related to a specific form of PEBS – again, OCB-E. The specific relations of these antecedents to OCB-E, to the best of our knowledge, had never been tested. Drawing on the goal-self concordance model, we tested goal self-concordance as a mediating mechanism in each of these relationships. Results drawn from a sample of 297 employees from diverse organizations support goal self-concordance as a relevant mediator between core self-evaluations and OCB, but not for the remaining relationships. Still, environmental identity, as well as core self-evaluations, are positively and significantly related to OCB-E. We discuss implications for the conceptualization of OCB-E and ways to further study this concept.

### Keywords

organizational citizenship behavior for the environment, pro-environmental behaviors, organizational citizenship behavior, goal self-concordance, environmental identity.

### Introduction

That the concept of core self-evaluations (CSE) is a stable personality trait serving as

antecedent for various desirable organizational outcomes is an insight widely documented in the organizational psychology and management literatures (Debuscher,

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#### Author Note

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Hofmans, & De Fruyt, 2016; Ferris et al., 2011; Judge, 2009). That the concept of environmental organizational citizenship behavior (OCB-E, also OCB toward the environment) holds its roots in organizational citizenship behavior (OCB) frameworks is also acknowledged (Robertson & Barling, 2017). However, the possibility that the same personality trait that predisposes employees to manifesting OCB could play the same role in the manifestation of OCB-E seems to have, so far, escaped the research on OCB-E's antecedents. In the current study we propose that CSE are an antecedent of OCB-E and test this empirically. We also propose and test a specific motivational mechanism which we believe could explain why this personality antecedent relates with desirable organizational outcomes such as OCB and OCB-E.

OCB-E was defined as "environmental efforts that are discretionary acts, within the organizational setting, not rewarded or required from the organization" (Daily, Bishop, & Govindarajulu, 2009, p. 243). The concept was formally introduced by Daily et al. (2009) and also by Boiral (2009), with the latter referring to it (while defining it in a similar vein) under the label of "environmental organizational citizenship behaviors". The conceptual foundation of OCB-E as well as some of the most prominently used scales for capturing OCB-E (Boiral & Paillé, 2012; Robertson & Barling, 2017) have their roots in OCB frameworks. Past research also labeled OCB-E as voluntary pro-environmental behaviors in the workplace or voluntary employee green behaviors (Yuriev, Boiral, Francoeur, & Paillé, 2018).

Recent regulations in the US and the EU indicate an increased relevance of encouraging OCB-E within companies. Regulations such as the Corporate Sustainability Reporting Directive (CSRD) in the EU (European Parliament, 2022) and the proposed climate risk disclosure for US companies (U.S. SEC, 2022) will turn environmental reporting into legal obligations for more companies than ever before. About 50,000 EU-operating companies (compared to 11,700 as of October 2022) will be required to report their environmental impacts. Many of

these environmental impacts can be monitored at role level, through required employee green behaviors (Norton, Parker, Zacher, & Ashkanasy, 2015). Nevertheless, complementing these behaviors and also impacting the environmental performance of an organization, are voluntary employee green behaviors (the conceptual equivalent of OCB-E). These too, are considered to have large impacts on the overall environmental performance of an organization when added up across its employee population (Boiral, 2009; Yuriev et al., 2018).

It comes as no surprise then, that OCB-E and their related concepts have received increased attention since 2009 (e.g., Boiral, 2009; Daily et al., 2009; Francoeur, Paillé, Yuriev, & Boiral, 2021; Norton et al., 2015; Yuriev et al., 2018). Still, although OCB-E is largely regarded as a desirable outcome and various antecedents have been considered for it (Yuriev et al., 2018), we see a research gap in the exploration of CSE and environmental identity as antecedents of OCB-E, as well as that of a motivational mechanism linking them.

We have four theoretical contributions. Firstly, we bridge across organizational psychology and environmental psychology literatures and highlight how they can benefit each other. From early on, OCB-E was described "as a new construct to capture pro-environmental behaviors in the work setting" (Paillé & Boiral, 2013, p. 118), thus being conceptually related to pro-environmental behaviors (PEBS). We posit that some antecedents traditionally considered for PEBS) and typically covered by the environmental psychology literature, are of relevance to organizational settings as well. Concomitantly, some of OCB's antecedents, typically covered by the organizational psychology literature, can be of relevance to contexts outside of the workplace. Specifically, we propose that as "core-evaluations influence people's appraisal of themselves, the world and others, and do so subconsciously" (Bono & Judge, 2003a, p. 6), those employees with higher CSE are more likely to engage in OCB-E due to their higher confidence in own abilities, belief of self-worthiness, belief in own ability to control the

surrounding contexts, as well as emotional stability. In parallel, we propose that employees with higher levels of environmental identity - that is, the extent to which they regard themselves as valuing and being connected to the natural environment (Clayton & Opatow, 2003) - can draw a sense of connection and belongingness from this form of identity and that this influences not only their PEBS in general but also in the particular context of their workplaces.

Secondly, through the above proposals, our study also addresses a research gap observed in the employee-level antecedents reviewed by Norton et al. (2015) from a total of 41 studies on employee green behaviors (inclusive of OCB-E): both CSE and environmental identity, as well as their broader categories of personality and identity-level antecedents were missing from the empirical studies to date. This state of the literature is in contrast to many other antecedents having been explored empirically (i.e., behavioral beliefs, habits, personal norms, motivations, affect, behavioral intentions). Furthermore, though not found in prior empirical studies, the same authors included in their proposed theoretical model, personality as a person-level factor which impacts motivational states and, through them, voluntary employee green behaviors (those equivalent to OCB-E).

Thirdly, we propose and test a potentially shared explanatory mechanisms of OCB-E, PEBS and OCB. We draw on the goal self-concordance (GSC) model and posit GSC as motivational path linking our antecedents and outcomes. GSC refers to “the degree to which stated goals express enduring interests and values” (Sheldon & Elliot, 1999, p. 482) and captures the differences between autonomous and controlled motivations one exhibits in regards to goals of their own choice. The same study from which this definition is drawn showed GSC to relate to changes in wellbeing. Bono and Judge (2003) have since leveraged the self-concordance model (Sheldon & Elliot, 1999), along with the self-concept based theory (Shamir, House, & Arthur, 1993) to test a model in which GSC acted as mediator between transformational leadership and overall job performance (i.e., task performance, personal initiative, self-direction

and innovation). Furthermore, GSC has also been employed as mediator in the relationship between CSE and life satisfaction, as well as CSE and goal attainment (Judge, Bono, Erez, & Locke, 2005). The current paper assists in clarifying whether GSC is also a mediator in the relationship between CSE and outcomes such as OCB and OCB-E.

Fourthly, whether the same theoretical frameworks explain PEBS both within and outside of the workplace also does not seem to have reached consensus – though social exchange theory, the norm-activation model, the theory of planned behavior and the value-belief norm theory have been among the favored candidates considered for explaining PEBS in both work and non-work settings (Paillé & Boiral, 2013). The current paper contributes to this important, ongoing discussion on whether there are shared paths for influencing PEBS both within and beyond workplace settings – and it does so by zooming in on GSC as such a potentially shared path.

From a practical relevance perspective, the current paper also addresses interventions that have already been empirically tested and seem to have successfully encouraged certain PEBS (i.e., signing a petition in favor of sustainable energy transitioning, as well as intention to engage in sustainable energy use and more sustainable commuting behaviors) by increasing GSC (Unsworth & McNeill, 2016). The current empirical study tests potential levers to be used in defining new or more effective future interventions.

### **Antecedents of OCB and PEBS**

This paper subscribes to the calls for further clarification of the OCB-E concept, its model of antecedents and their relative importance (Ciocirlan, 2017; Francoeur et al., 2021; Paillé, Boiral, & Chen, 2013). We first draw a parallel to the OCB literature. In the decades which have passed since the OCB concept had first surfaced (Smith, Organ, & Near, 1983), its research agenda have long reached the stage of exploring tens of potential predictors and their relative importance has also come to be quite clearly understood (Hoffman et al., 2007; Organ et al., 2005; Organ, 1997; Spitzmuller et al., 2008). One way in which

those antecedents have been grouped is in the form of: personality dispositions (e.g. agreeableness and conscientiousness), attitudes (e.g. job satisfaction, organizational commitments), motivations (e.g. expressive motives such as expression of role identity, instrumental motives such as cost-benefit consideration), task characteristics (e.g. task demands, task routinization), social relationships (e.g. employee relationships with supervisors or and co-workers) (Spitzmuller et al., 2008). In reviewing the state of the literature and its future directions, Organ (2018) pointed to job satisfaction, perceived fairness and personality dimensions as OCB's most frequently found correlates and antecedents from the existing, predominantly North American, study samples.

We next draw a parallel to the PEBS literature. As the OCB concept was just budding, the search for the strongest predictors of responsible environmental behavior was already flourishing. The first meta-analytical review of such behaviors (Hines, Hungerford, & Tomera, 1987) found support for awareness related antecedents such as knowledge of issues and of action strategies, psycho-social antecedents such as locus of control, attitudes, and individual's sense of responsibility, and behavior intent ones such as verbal commitment. Later on, the PEBS literature moved away from the responsible environmental behavior terminology and embraced PEBS, as a way to differentiate them as those aimed at minimizing negative impact and increasing positive impact on the environment (Steg & Vlek, 2009). These behaviors have been in the scope of ample research (Bamberg & Möser, 2007; Markle, 2013; Osbaldiston & Schott, 2012; Steg & Vlek, 2009), which has taken into consideration both psychological and contextual factors (Ruepert, 2016). More recent meta-analytic reviews of 46 PEBS related correlational reports and 253 experimental treatments have surfaced eight psychological constructs which related to PEBS (Bamberg & Möser, 2007). This newer review added antecedents such as social and moral norms, feelings of guilt, and perceived behavioral control. It also emphasized as most effective the treatments

relying on cognitive dissonance, goal setting, social modelling and prompts (Osbaldiston & Schott, 2012).

### **CSE and EID as antecedents under focus**

The current study hypothesized four mediation models, as shown in Figure 1. The following paragraphs are an account of which antecedents have been considered in the current study, why they have been selected, what is the state of the literature on their relationship with OCB-E (and more broadly, with OCB and PEB), and what (if not before studied) would justify expecting such a relation. Following this exposition of the relevance of antecedents, we advance into introducing GSC as a potential mediation mechanism applicable to each of the hypothesized relationships.

### **Personality in general and CSE in particular as antecedents of OCB**

Personality aspects such as Big Five and proactive personality have been extensively studied and found as antecedents of OCB (Borman, Allen, Peener, & Motowild, 2001; Greguras & Diefendorff, 2010; Ilies, Scott, & Judge, 2006; Ilies, Fulmer, Spitzmuller, & Johnson, 2009; Organ, 2018; Spitzmuller, Van Dyne, & Ilies, 2008). Moreover, there is consistent research indicating that CSE act as antecedents to attitudes, motivation, and behavior in the workplace (Judge & Kammeyer-Mueller, 2011). CSE emerged as an incremental predictor of job performance even when accounting for Big Five traits as a potentially confounding variable (Judge, Erez, Bono, & Thoresen, 2003). Also, meta-analytical research has shown the correlations between each of the four CSE traits and job performance to range from .19 to .26 (Judge & Bono, 2001).

The approach-avoidance motivational framework is one of the theoretical frameworks which explain the relationship between CSE and OCB (Debusscher et al., 2016) as well as job performance, more broadly (Ferris et al., 2011). High levels of CSE are considered favorable for high approach motivation and low avoidance motivation, which in turn favor higher

performance (Debusscher et al., 2016; Ferris et al., 2011).

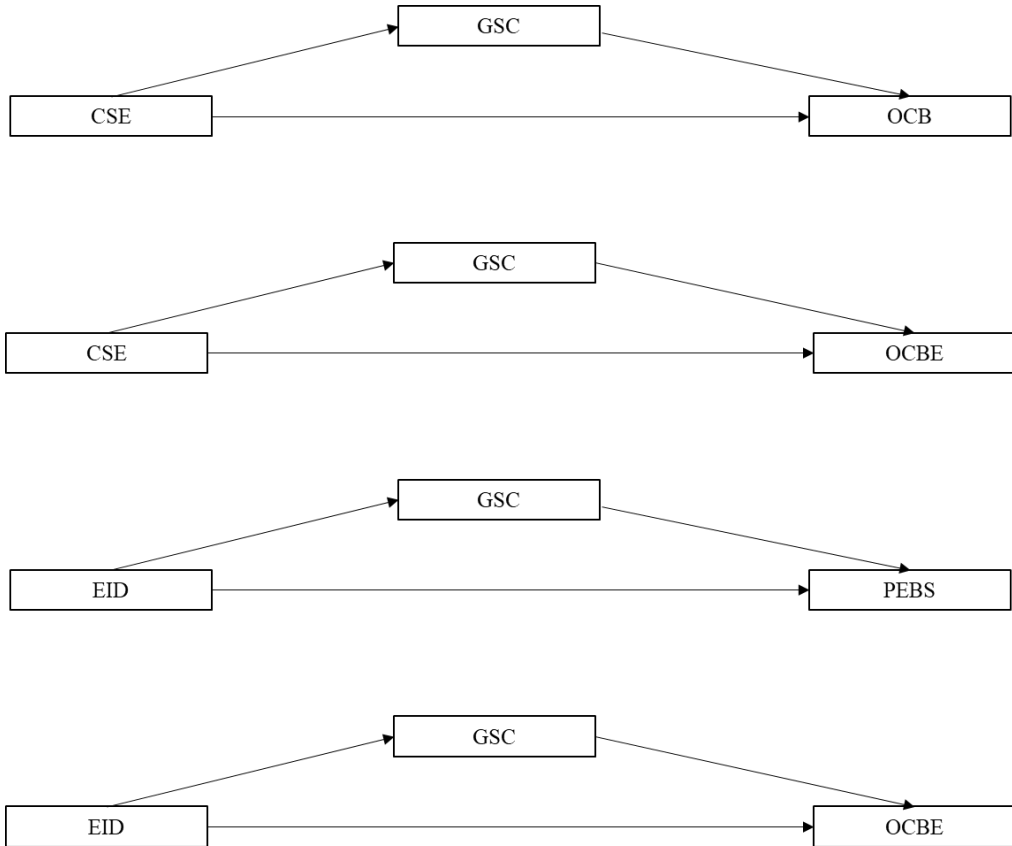


Figure 1. *Proposed mediation models associated with the hypotheses.*

*Note.* CSE = core self-evaluations; OCB = organizational citizenship behavior; GSC = goal self-concordance; EID = environmental identity; PEBS = pro-environmental behaviors; OCBE = organizational citizenship behavior for the environment.

This paper relies on a similar, yet somewhat different motivational framework in explaining the relationship between CSE in OCB.

According to the self-concordance theory, people who rate higher in GSC (that is, they choose more of autonomous-motivated goals and less of controlled-motivated goals) are more likely to achieve their goals. We posit the same mechanism applies to OCB in organizational settings. Autonomous motivations includes intrinsic motivation and fully internalized extrinsic motivation, and these type of motivations lead to engagement

in activities with a higher degree of ownership and volition (Deci, Olafsen, & Ryan, 2017). Controlled motivations, in turn, include introjected (e.g., shame if not pursued) or external motivations, and these can have detrimental effects on performance and level of engagement in activities. Furthermore, other researchers have suggested that “many self-concordant goals are social in nature, involving activities such as helping others” (Greguras & Diefendorff, 2010, p. 543). We believe such “helping others” behaviors are part of what OCB represent in organizational settings.

Prior empirical studies have focused on the mediator role of CSE in explaining other relationships with OCB (Bowling, Wang, & Li, 2012; Spanouli & Hofmans, 2020). However, empirical support for the CSE-OCB relationship comes from some subdimensions of CSE (namely self-esteem, internal locus of control and emotional stability) having emerged as predictors of OCB in previous studies (Borman et al., 2001; Bowling et al., 2012). Furthermore, a related antecedent, creative self-efficacy (a particular type of self-efficacy, which in turn is a subdimension of CSE), has also been shown to predict innovative behavior (Newman, Tse, Schwarz, & Nielsen, 2018) and creative task performance (Tierney & Farmer, 2002).

Bono and Judge (2003b) obtained mixed results regarding the relationship between self-concordance and job performance (in their field versus lab studies). We consider their observation that “it is possible that self-concordance only affects performance on simple tasks or those with an entirely motivational basis (such as extrarole behaviors)” (Bono & Judge, 2003b, p. 568). This is why we also test whether GSC also relates to in-role behaviors (IRB, or task performance) or only to OCB (as a type of extra-role behaviors).

### **Personality in General and CSE in Particular as Antecedents of OCB-E**

To our knowledge, the specific relationship between CSE and OCB-E has not been previously researched. We employ the same GSC theoretical framework in order to posit that CSE could also act as an antecedent of OCB-E. Moreover, other personality traits, such as the Big Five have already been tested as antecedents of OCB-E. Among them, agreeableness, conscientiousness and openness have been shown to relate to OCB-E (Terrier, Kim, & Fernandez, 2016). In that same study, openness to experience and conscientiousness also showed associations with certain subdimensions of OCB-E.

### **Personality in General and CSE in Particular as Antecedents to PEBS**

The current study explores whether CSE, a well-researched antecedent of OCB (Debusscher et al., 2016) and more recently, of OCB-E too (Terrier et al., 2016), can also drive the understanding of PEB. To our knowledge, the direct relationship between CSE and PEBS has not yet been tested. Still, among antecedents of PEBS, personality related ones have been considered as far back as 1988, when they were proposed, along with other variables, in defining clusters of ecologically responsible consumers (Balderjahn, 1988). More recently, Big Five personality traits have also been analyzed in relation to PEBS, with results pointing at openness to experience as relating to PEBS (Markowitz, Goldberg, Ashton, & Lee, 2012) and at specific Big Five personality facets such as altruism, trust, aesthetics, feelings, values and anxiety as relevant in explaining environmental attitudes and choices (Farizo, Oglethorpe, & Soliño, 2016). Furthermore, 64% of the variation in CSE was so far found to be at between-person level (Debusscher et al., 2016). Considering this finding along with the existing support for the Big Five personality and PEBS relationship, we reiterate that, to a large extent, CSE will differ between persons and be somewhat stable across contexts – and thus we posit it will also relate to a person’s PEBS manifested outside of the workplace, as well as in the workplace.

### **Identity in General and EID in Particular as Antecedents to PEBS**

Much like CSE in relationship with OCB, EID is one of the most widely researched antecedents of PEB. Building upon the heightened interest the theme of self and identity has received since 1996 onwards, Clayton and Opatow’s (2003) put forward the more specific concept of environmental identity, rooted in the earlier concepts of place identity and place attachment (Clayton & Opatow, 2003; Devine-Wright & Clayton, 2010). Since then, environmental identity, as

well as related concepts such as pro-environmental self-identity or environmental self-identity, have been gaining traction as antecedents of PEBS in several empirical studies (Brick & Lai, 2018; Carfora, Caso, Sparks, & Conner, 2017; Dermody, Koenig-Lewis, Zhao, & Hanmer-Lloyd, 2018; Gatersleben, Murtagh, & Abrahamse, 2014; Van der Werff, Steg, & Keizer, 2013b, 2013a; Whitmarsh & O'Neill, 2010), including a special issue in the *Journal of Environmental Psychology*, under the umbrella of "Place, identity and environmental behavior" (Devine-Wright & Clayton, 2010). Several theories have explained the relationship between environmental identity and PEBS (Ruepert, 2016). Among them, the theory of environmental self-identity (Van der Werff et al., 2013b) specifically considered how one's self-regard as someone who acts pro-environmentally will increase the likelihood of them behaving pro-environmentally. Personal norms (e.g., seeing PEBS as the right thing to do) as well as symbolic motivations (i.e., to signal self and others that one cares about the environment) are deemed to act together, according to this theory.

### **Identity in General and EID in Particular as Antecedents to OCB-E**

As much as 114 bodies of literature have been previously used to explain workplace PEBS (McDonald, 2014). Contrasting this abundance, as pointed out in a more recent theoretical paper, "The concept of environmental identity, while extensively studied in the private and public environmentalism literatures (Clayton, 2003), has been given insufficient attention in the organizational sustainability literature." (Ciocirlan, 2017, p. 2). Considering OCB-E to be at least partially overlapping with the concept of workplace PEBS and in addressing the above stated research gap, the current study zooms in on EID and proposes it as antecedent of OCB-E.

### **Identity in General and EID in Particular as Antecedents to OCB**

The main reason for considering environmental identity as an antecedent of OCB comes from the current paper's goal of cross-testing antecedents of OCB and PEBS. However, considering OCB as a type of performance, support for this pursuit can already be drawn from some of the existing theoretical perspectives on how social identity interacts with performance, such as those put forward by Ellemers, De Gilder, and Haslam (2004). Their propositions, among others, aimed to explore whether the benefits of installing workgroups and teams (or of identification with a certain group, more broadly) weight more heavily than the seemingly contrary yet rather complementary theoretical perspective of social loafing effects, according to which, individual performance is expected to decrease when working in groups compared to when working individually (Ellemers et al., 2004, p. 470). The same authors have proposed that "the emergence of collective identification directs workers' efforts toward the enhancement of their joint performance when this helps achieve or maintain a distinct collective identity. However, collective identification will diminish joint performance when the distinctive norm is for collective underperformance." (Ellemers et al., 2004, p. 470). Though, to our knowledge, environmental identity has not been explored as antecedent of OCB, we consider it to be a type of group identity that - according to the social identity theory referenced above - has the potential to positively impact performance due to group members' sustained efforts being stimulated by their social identification (Ellemers et al., 2004; Tajfel & Turner, 1979).

### **Goal self-concordance as hypothesized mediating mechanism**

*Our first hypothesis* follows up on some prior studies and posits the mediating role of GSC between CSE and OCB, for the reasons detailed in the above-dedicated section.

*Hypothesis 1: GSC mediates the relationship between CSE and OCB.*

The second hypothesis takes into consideration OCB-E as a new type of OCB (Daily et al., 2009; Paillé & Boiral, 2013). More specifically, it proposes that GSC holds a mediating role in the relationship between CSE and OCB-E.

*Hypothesis 2: GSC mediates the relationship between CSE and OCB-E.*

The third hypothesis reiterates the mediating role of GSC in the relationship between environmental identity and PEBS. It considers prior literature highlighting environmental identity as an antecedent of PEBS (Ruepert, 2016) and the existing support for self-concordance impacting PEBS, as found by Unsworth and McNeill (2016). It advances these prior findings by proposing GSC as mediator.

*Hypothesis 3: GSC mediates the relationship between EID and PEBS.*

The fourth hypothesis proposes that GSC also mediates the relationship between EIS and OCB-E. This proposal relies on considering OCB-E as a workplace specific type of PEBS. It also assumes the EID-GSC path to PEBS is not particular to contexts outside of organizations.

*Hypothesis 4: GSC mediates the relationship between EID and OCB-E.*

As a result of all of the above-stated considerations, the proposed mediation models associated with these hypotheses are shown in Figure 1.

## Method

### Participants and Procedure

Participants were recruited through a dedicated data collection platform (Prolific Academic). Participants were informed and were provided with equal compensation even if they chose to drop out of the study at any stage in the research process. Participants' recruitment criteria include age, employment status and country of residence. Age was solely included to select in adults.

Employment status was critical for some of the key outcomes considered in this study (namely, IRB, OCBI, OCBO, OCB-E). A single country of residence was used in order to minimize the considerable variations in what constitutes as PEBS across countries, often due to the differences in social norms and standards of living – for instance, carpooling is seen as a preferred alternative to driving and as a result, regarded as PEBS in the US; at the same time, in countries in which car ownership is not as common (e.g., due to sustained environmental efforts or to reduced purchasing power), carpooling's environmental impact can actually be worse than that of the "default" transportation mode (e.g., biking). With Markle (2013) having published a critical review of the PEBS scale and having put forward a comprehensive one but for PEBS rather typical of the US and Western countries, we have therefore chosen to recruit participants solely from the US and use this rather "localized" PEBS scale.

This has resulted in 353 participants who have opened the link to the survey (a brief description referring to preferences, objectives and behaviors as well as the number of open-ended items in the survey showed up). Out of these, some opted out of the survey (incompatibility with their tablet was cited as a reason) and others have been timed out (i.e., took more than 10 minutes above the average survey completion time of 15 minutes). Finally, all answers to the open-ended question regarding objectives (used as part of the GSC measurement) have been screened by the research team and answers from two participants were excluded on the basis of them providing seemingly random words or numbers instead of objectives. As a result, the actual number of participants being considered in the analysis stage was  $n = 297$  (84.13% of those who opened the link to the survey). Of these, 52.86% were male (157) and 46.80% were female (139), while one participant selected "Other / I choose not to answer". Ages ranged from 18 to 68 ( $M = 32$ ;  $SD = 10$ ). Table 1 shows descriptive statistics of the sample, including age, household size and household income. To rule out potential bias introduced by monetary motivations, we included an optional item regarding the

respondents' annual household income. Out of the 97.70% participants who answered this question, less than 10% had annual household income levels below 20,000 USD and over 15% were in the above 100,000 USD group,

thus we considered the participants were diverse enough in respect to annual household income.

Table 1. *Descriptive Statistics and Pearson Correlations for Study Variables*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	31.95	10.22	-												
2. Gender <sup>a</sup>	0.53	0.50	-	-											
3. HH	2.60	1.47	-.09	-	-										
4. HH income	4.58	1.67	.05	-	.21**	-									
5. Manager <sup>b</sup>	0.28	0.45	.04	-	-.04	-	-								
6. EID	73.38	18.48	.10	-	.09	.01	-	-							
7. CSE	40.38	9.28	.14*	-	.05	.23**	-	.07	-						
8. GSC	1.03	1.77	.01	-	-.03	.03	-	.22**	.28**	-					
9. PEBS	55.56	12.84	-.14*	-	.07	-.01	-	.58**	.00	.14*	-				
10. OCB-E	26.72	9.66	-.09	-	.07	.03	-	.52**	.14*	.11	.50**	-			
11. OCB	51.97	7.42	.01	-	.14*	.07	-	.21**	.25**	.25**	.18**	.34**	-		
12. OCBI	26.89	5.42	-.04	-	.16**	.10	-	.26**	.17**	.18**	.24**	.42**	.90**	-	
13. OCBO	25.09	3.50	.10	-	.04	.01	-	.04	.27**	.25**	.01	.08	.73**	.36**	-
14. IRB	31.27	3.64	.07	-	.07	.09	-	.07	.30**	.22**	-.03	.02	.47**	.29**	.55**

*Note.* HH = household; EID = environmental identity; CSE = core self-evaluations; GSC = goal self-concordance; PEBS = pro-environmental behaviors; OCB-E = organizational citizenship behavior for the environment; OCB = organizational citizenship behavior; OCBI = organizational citizenship behavior towards individuals; OCBO = organizational citizenship behavior towards the organization; IRB = in-role behavior.

<sup>a</sup> 0 = female, 1 = male. <sup>b</sup> 0 = non-managerial (no direct reports) and 1 = managerial (at least one direct report).

\* $p < .05$ . \*\* $p < .01$ .  $N = 297$ .

## Measures

With the exception of GSC, PEBS and demographic data, all items were accompanied by Likert-type scale and were measured on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

*Core Self-Evaluations (CSE).* CSE were measured using the 12-item scale developed by Judge et al., (2003). The scale was specifically developed to capture this higher-order trait previously assessed through a mix of self-esteem, generalized self-efficacy, neuroticism and locus of control (Judge et al., 2005; Judge, Erez, & Bono, 1998). A sample item is "When I try, I generally succeed." The

internal reliability of this scale in the current sample was Cronbach's  $\alpha = .89$ .

*Goal Self-Concordance.* In line with much of the self-concordance literature, for measuring GSC we have used the scale developed by Sheldon and Elliot (1999). Participants were asked to type in six goals they aim to accomplish over the subsequent 60 days. Each goal then showed up on the screen and they provided ratings that gauged their controlled versus autonomous motivations in pursuing those goals. A sample item for autonomous motivations is "You pursue this goal because you really believe it's an important goal to have". A sample item for controlled motivations is "You pursue this

goal because you would feel anxious, guilty, or ashamed if you didn't".

The self-concordance literature, including self-concordance based interventions to increase PEBS such as energy saving (Unsworth & McNeill, 2016), have alternatively employed a scale developed by Sheldon and Kasser (1995). We considered this alternative scale to be more relevant for capturing self-concordance in regard to specific behaviors and less relevant for capturing GSC as was in scope for the current study. The internal reliability of this scale was measured in line with the procedure highlighted by previous studies (Bono & Judge, 2003b; Greguras & Diefendorff, 2010; Sheldon et al., 2004) and by giving due consideration to the limitations addressed by Bono and Judge (2003). The internal reliability of this 24-item scale in our sample was  $\alpha = .73$ .

*Organizational citizenship behavior towards the environment (OCB-E).* OCB-E was measured with a nine-item scale developed by Boiral and Pail  (2012). A sample item is "I voluntarily carry out environmental actions and initiatives in my daily activities at work". The internal reliability of this scale in our sample was  $\alpha = .94$ . OCB-E/OCB-E

*In-Role Behavior (IRB, Task Performance) and Extra-Role Behaviors (OCB, OCB, OCBO).* IRB, OCB and OCB's sub-components (OCBI and OCBO) were measured with Williams and Anderson's (1991) 20-item scale. A sample item for IRB is "I fulfill responsibilities specified in job description". A sample item for OCB is "I help others who have heavy workloads". This choice in scale is linked to one of the study's goal to further clarify the findings of Bono and Judge (2003) on the relationship between GSC and job performance. Bono and Judge (2003) have considered as outcome variable overall job performance and its sub-dimension of task performance (in-role behavior), personal initiative, self-direction and innovation. By contrast, we maintained the IRB sub-dimension but replaced the others with OCBI, OCBO and OCB-E to further illuminate the potential differences in how CSE interact with in-role versus extra-role behaviors (as a key

contrast they suggested for further research). The internal reliability for IRB was  $\alpha = .79$ , for OCB  $\alpha = .80$ , and for OCB-I  $\alpha = .85$ . OCB-O's internal reliability in this sample was lower (Cronbach's  $\alpha = .60$ ), as opposed to Cronbach's  $\alpha = .75$  in the original study (Williams & Anderson, 1991). Consequently, the results regarding OCB-O should be taken with caution. It is worth noting that throughout this paper we refer to task performance and in-role behaviors (IRB) as interchangeable terms due to their conceptual overlap (Motowidlo, 2000; Organ, 1997; Podsakoff et al., 2000; Spitzmuller et al., 2008).

*Pro-Environmental Behaviors (PEBS).* In measuring PEBS, we have decided to use the scale developed by Markle (2013) after they reviewed 49 studies with 42 unique scales. A primary criterion for our selection of a PEBS scale was to minimize the variations in what constitute PEBS by country. This criterion has also guided our decision to employ a US-based sample of respondents, as Markle's (2013) scale best fit our primary criterion and was designed mainly with US-based respondents in mind. A sample item is "During the past year how often have you walked or cycled instead of driving?". Cronbach's  $\alpha$  in our sample was  $\alpha = .80$ .

*Environmental Identity.* Consistent with prior research, environmental identity was measured using Olivos and Aragon s' (2015) 22-item scale, an improved version of Clayton and Opatow's (2003). Even though it was shown to have a five-factor structure, we only looked at the composite measure. A sample item is "In general, being part of the natural world is an important part of my self-image". Cronbach's  $\alpha$  for this measure was  $\alpha = .94$ .

## Data analysis

We used IBM SPSS Statistics version 20 for descriptive statistics, Pearson correlations and reliability testing. For testing mediations, we used MPlus version 7 (Muth n & Muth n, 2012) with ML estimation complemented by bootstrapping (with 1000 bootstrap draws). We defined the measurement model so that each item-level value would load on its associated latent factor (e.g., each CSE item loading on the CSE latent factor) and we also

allowed the within-factor correlations suggested by the modification indices. We first assessed the quality of our proposed measurement models. Where our proposed model met the guidance thresholds for ML type of estimator (Hu & Bentler, 1999), we advanced to path analysis.

## Results

### Preliminary Analyses in Cross-Testing Antecedents of OCB and PEBS

#### CSE as antecedent of PEBS, OCB-E, and OCB

While CSE is a well-researched and well-supported antecedent of job performance in both IRB and OCB forms (Bono & Judge, 2003b; Erez & Judge, 2001; Judge, 2009; Judge et al., 2005), when trying to extrapolate past empirical findings to other types of behavior, namely, to OCB-E and to PEBS, we have identified significant, positive, moderate relationship between CSE and IRB ( $r = .30$ ,  $p < .001$ ), between CSE and OCB ( $r = .25$ ,  $p < .001$ ) and less strong yet still positive and significant between CSE and OCB-E ( $r = .14$ ,  $p = .015$ ). Moreover, the relationship between CSE and OCB remained significant even when OCB was broken down into its subdimensions – that is, CSE showed a positive, moderate relationship with OCBO ( $r = .27$ ,  $p < .001$ ) and a positive yet mild relationship with OCBI ( $r = .17$ ,  $p = .004$ ). However, the relationship between CSE and PEBS was not significant ( $r = .00$ ,  $p = .967$ ).

#### Environmental identity (EID) as antecedent of PEBS, OCB-E, and OCB

In assessing these, in line with previous studies, the relationship between EID and PEBS was significant, positive and moderate to high ( $r = .58$ ,  $p < .001$ ). Similarly, as expected, EID was also found to positively relate to OCB-E ( $r = .52$ ,  $p < .001$ ) as well as OCB ( $r = .20$ ,  $p < .001$ ).

A moderate, significant, positive relationship was also found between EID and

OCBI ( $r = .26$ ,  $p < .001$ ). Interestingly, the results were not significant for the relationship of EID with neither OCBO ( $p = .507$ ) nor IRB ( $p = .213$ ).

### Mediation models addressing the hypotheses

*Hypothesis 1: GSC mediates the relationship between CSE and OCB.*

Based on the  $\chi^2$  test, the model did not fit the data ( $\chi^2 = 486.705$ ,  $df = 359$ ,  $p < .001$ ). However, bootstrap p-value was on the borderline of significance at a .050 threshold (bootstrap  $p = .050$ ). Considering these mixed results and also the sensitivity of the  $\chi^2$  test to sample sizes, we decided to continue the analysis. Next, considering the SRMR fit index, the model seemed to be a good approximation of the data (SRMR = .063). Incremental fit indices (CFI = .957, TLI = .944) supported a very good incremental fit over the independence model. The RMSEA value indicated an excellent approximation of the data (RMSEA = .035; 90% CI = [.026; .042];  $p > .05$ ). Overall, we decided the data fit the measurement model well enough, and we advanced to testing the mediation paths.

As shown in Table 2, the GSC partially mediated the relationship between CSE and OCB. The indirect effect of CSE on OCB was significant ( $\beta = .087$ , 95% CI = [.007; .167]). The direct effect of CSE on OCB was also significant and larger than the indirect effect ( $\beta = .158$ , 95% CI = [.001; .316]). In line with these results, the total effect was also significant ( $\beta = .245$ , 95% CI = [.117; .374]).

The resulting mediation model, including all specific direct effects is shown in Figure 2. In addition, to address the risk of confounded mediation, we compared our hypothesized mediation model with an inverse model (assuming OCB as the mediator between CSE and GSC). Even though the direct effect of CSE on GSC was significant ( $\beta = .359$ , 95% CI = [.210; .509]) and the total effect of CSE on GSC was also significant ( $\beta = .406$ , 95% CI = [.266; .546]), the inverse model did not show significant indirect effects ( $\beta = .047$ , 95% CI = [-.007; .100]). As a result, the inverse mediation model was not supported.

Table 2. Mediation Path analysis: Standardized Total, Indirect, and Direct Effects (STDYX Standardization with Bootstrap)

	Estimate	SE	Estimate / SE	p	95% Bootstrap C.I.
<b>CSE → OCB</b>					
CSE → OCB (total)	.245	.065	3.750	< .001	.117; .374
CSE → GSC → OCB (indirect)	.087	.041	2.134	.033	.007; .167
CSE → OCB (direct)	.158	.080	1.971	.049	.001; .316
<b>CSE → OCB-E</b>					
CSE → OCB-E (total)	.194	.066	2.949	.003	.065; .323
CSE → GSC → OCB-E (indirect)	.030	.033	.914	.361	-.034; .094
CSE → OCB-E (direct)	.164	.075	2.187	.029	.017; .311
<b>EID → PEBS</b>					
EID → PEBS (total)	.846	.025	34.381	< .001	.798; .894
EID → GSC → PEBS (indirect)	.001	.016	.048	.962	-.030; .032
EID → PEBS (direct)	.845	.029	29.372	< .001	.789; .901
<b>EID → OCB-E</b>					
EID → OCB-E (total)	.606	.043	14.221	< .001	.522; .689
EID → GSC → OCB-E (indirect)	-.004	.017	-.231	.818	-.037; .029
EID → OCB-E (direct)	.610	.048	12.777	< .001	.516; .703

Note. CSE = core self-evaluations; OCB = organizational citizenship behavior; GSC = goal self-concordance; EID = environmental identity; PEBS = pro-environmental behaviors; OCB-E = organizational citizenship behavior for the environment.

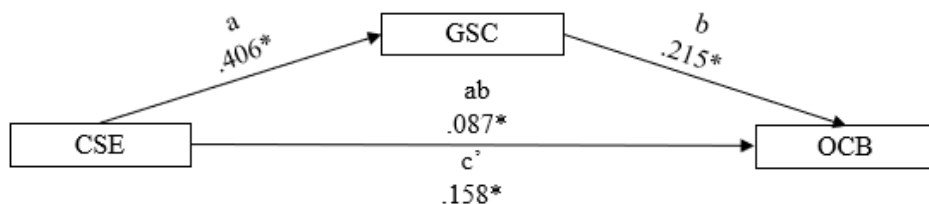


Figure 2. Resulting mediation model associated with H1.

Note. \*Significant based on 95% confidence intervals. a, b, c' are stdyx standardized estimates of direct effects. ab is stdyx standardized estimate of indirect effect. CSE = core self-evaluations; GSC = goal self-concordance; OCB = organizational citizenship behavior.

*Hypothesis 2: GSC mediates the relationship between CSE and OCB-E.*

Following the same procedures as for H1, we considered various model fit indices. The results regarding model fit indices are available in Table 3. We decided the data fit

the measurement model well enough, and we advanced to testing the mediation paths.

As shown in Table 2, the mediator role of GSC was not accepted in the relationship between CSE and OCB-E.

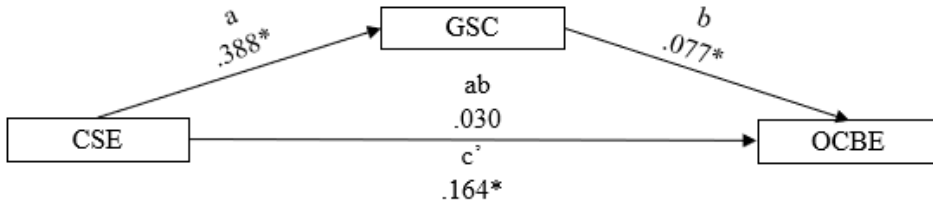


Figure 3. Resulting meditation model associated with H2.

*Note.* \*Significant based on 95% confidence intervals. a, b, c' are stdyx standardized estimates of direct effects. ab is stdyx standardized estimate of indirect effect. CSE = core self-evaluations; GSC = goal self-concordance; OCBE = organizational citizenship behavior for the environment.

*Hypothesis 3: GSC mediates the relationship between EID and PEBS.*

The results regarding model fit indices are available in Table 3. Overall, we decided the data fit the measurement model well enough,

and we advanced to testing the mediation paths.

As shown in Table 2, the mediator role of GSC was not accepted in the relationship between EID and PEBS.

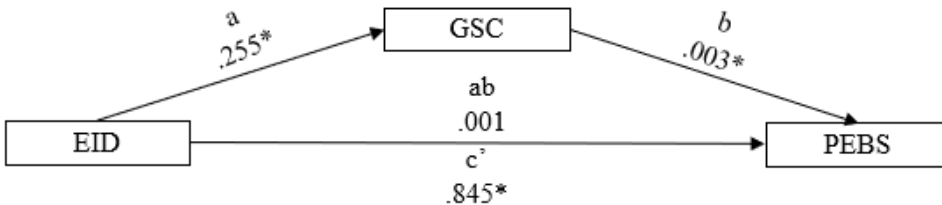


Figure 4. Resulting meditation model associated with H3.

*Note.* \*Significant based on 95% confidence intervals. a, b, c' are stdyx standardized estimates of direct effects. ab is stdyx standardized estimate of indirect effect. EID = environmental identity; GSC = goal self-concordance; PEBS = pro-environmental behaviors.

*Hypothesis 4: GSC mediates the relationship between EID and OCB-E.*

The results regarding model fit indices are available in Table 3. Once again, we decided the data fit the measurement model well

enough, and we advanced to testing the mediation paths.

As shown in Table 2, the mediator role of GSC was not accepted in the relationship between EID and OCB-E.

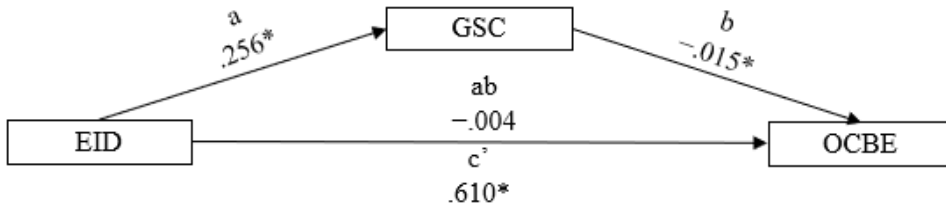


Figure 5. Resulting meditation model associated with H4.

Note. \*Significant based on 95% confidence intervals. a, b, c' are stdyx standardized estimates of direct effects. ab is stdyx standardized estimate of indirect effect. EID = environmental identity; GSC = goal self-concordance; OCBE = organizational citizenship behavior for the environment.

Table 3. Model Fit Indices for Models of Unconfirmed Mediations

Model	$\chi^2$	df	p (for $\chi^2$ )	bootstrap p	SRMR	CFI	TLI	RMSEA	90% CI	p (for RMSEA)
Hypothesis 2	391.469	295	< .001	.084	.050	.975	.970	.033	.024; .042	> .05
Hypothesis 3	1315.093	960	< .001	.017	.052	.935	.927	.035	.030; .040	> .05
Hypothesis 4	782.386	568	< .001	.049	.050	.965	.959	.036	.029; .042	> .05

**Additional analyses aimed at clarifying GSC’s relevance as mediator in the relationship between CSE and extra-role behaviors (OCBs) vs. in-role behaviors (IRB) vs. PEBS**

**Core self-evaluations and goal self-concordance.** Pearson correlation was run to assess the relationship between CSE and GSC. There was a statistically significant, moderate positive correlation between CSE and GSC ( $r = .28, p < .001$ ).

**Goal self-concordance and all forms of OCB (OCBI, OCBO, OCB-E).** Pearson correlations were used to assess the relationship between GSC and various forms of OCB. The relationship between GSC and OCB-E was not statistically significant ( $p = .053$ ). The relationship between GSC and OCBI, OCBO and OCB was statistically significant and small to moderate positive correlations were found between GSC and OCBI ( $r = .18, p = .002$ ), OCBO ( $r = .25, p = < .001$ ), and OCB ( $r = .25, p = < .001$ ).

**Goal self-concordance and IRB.** There was a statistically significant, small to moderate positive correlation between GSC and IRB ( $r = .22, p = < .001$ ). Therefore, the suggestion that extra-role behaviors interact with GSC differently from IRB (Bono & Judge, 2003) is not supported by the current results.

**Goal self-concordance and PEBS.** There is a significant, yet low positive relationship between GSC and PEBS ( $r = .14, p = .019$ ).

**Discussion**

**Summary of findings**

Taken together, our findings showed some support for the conceptual overlap of OCB-E with both OCB and PEBS. First, the current study reconfirmed some of the previously known relationships – those of CSE with IRB and those of environmental identity with PEBS. These relationships reiterate findings from previous studies (Bono & Judge, 2003b; Brick & Lai, 2018; Carfora et al., 2017; Dermody et al., 2018; Gatersleben et al., 2014; Van der Werff et al., 2013a, 2013b). Second,

it showed that although CSE relates significantly with OCB and OCB-E, the same antecedent does not significantly relate to PEBS. Therefore, at least in the relation to CSE, OCB-E is interacting with it more similarly to OCB than to PEBS. This finding could signal OCB-E's uniqueness among PEBS, possibly due to OCB-E having its theoretical roots in the OCB concept. This finding thus relates to recent efforts to clarify the conceptual nuances of OCB-E and green workplace behaviors (Francoeur et al., 2021). Third, environmental identity, to our knowledge previously studied only as antecedent of PEBS, also showed a strong and positive relation with OCB-E, thus rather supporting the conceptualization of OCB-E as a particular case of PEBS. By contrast, the relation between environmental identity and OCB as well as that between environmental identity and OCBI were only moderate. The relation between environmental identity and IRB, as well as that between environmental identity and OCBO departed from this trend, both being not significant. All these findings are, to the best of our knowledge, new empirical findings.

By testing a specific mediation mechanism, we showed that even though GSC accounted for some of the total effect of CSE on OCB, the same mechanisms could not explain the impact of CSE on OCB-E, that of environmental identity on PEBS, nor that of environmental identity on OCB-E. On one hand, the difference in results for CSE versus environmental identity points to potential differences in how personality, as opposed to identity interact with the pro-environmental outcomes. On the other hand, the differences in mediation results for OCB as compared to both OCB-E and PEBS suggest that the GSC mechanism is unique to explaining OCB.

### **Theoretical and practical implications**

The above stated results indicate some interesting similarities but also some surprising ways in which antecedents of OCB and PEBS relate to OCB-E. The results of the current study point to environmental identity as a transferable antecedent from the

environmental behaviors literature to that of OCB-E, in line with our initial assumption that OCB-E present at least some conceptual overlap with PEBS, as PEBS taking place in the workplace context. The current results also reconfirmed previous findings on the theoretical relevance of considering GSC as a mediator in the relationship between personality traits (i.e., proactive personality, CSE) and OCB (Greguras & Diefendorff, 2010). However, the current results suggest that the significant relationships between CSE and OCB-E, as well as the significant relationship between environmental identity and OCB-E, environmental identity and OCB, or environmental identity and OCBI are not explained by the GSC motivational mechanism. Rather than the autonomous versus controlled motivations dynamics captured by GSC, it seems that other motivators explain the above-mentioned interactions.

From a practical perspective, the new antecedent we highlighted for OCB-E can signal to managers, sustainability, human resources and change management professionals that employees with strong environmental identity might be particularly interested or might particularly experience the need to engage in PEBS or environment-focused corporate social responsibility initiatives (e.g., crafting communications, facilitating discussions, volunteering for pro-environmental causes). I current results also show that the goal-self concordance lever targeted in interventions aimed at increasing certain PEBS does not necessarily translate to the same lever being of relevance for interventions aimed at increasing OCB-E. Still, given the strong link the current results showed for environmental identity with PEBS and with OCB-E, and considering approaches from change management practices, inviting those who identify as having strong environmental identity to act as environmental champions in their organization and nurturing the initiatives of this core group could be a way in which OCB-E gets initially encouraged in an organization.

### Strengths and limitations

The current cross-sectional study has the potential limitation of systematic error variance, including rater effects or item effects. Using lagged data and/or methods such as experience sampling (ESM) could increase the validity of the present results. Apart from the previously stated advantages of data collection through specialized platforms, the monetary compensation they entail can externally motivate participants to complete the study rather than completing it with accuracy, thus potentially impacting data quality. However, we addressed this potential limitation by clearly communicating that compensation will be provided for those who start the survey and decide to withdraw, by using listwise deletion of data (except for some optional demographics), and by visually assessing the distribution of annual household income.

The convenience sampling method we used does not ensure statistical representation at country level. Concomitantly, by considering participants from a single country, the findings of the current study might capture some patterns that are specific to the US. Nevertheless, by including participants from diverse organizations, our findings complement existing studies which were conducted with participants belonging to a small group of organizations from countries across the EU and across sectors and industries (Ruepert, 2016).

### Future research directions

Given the current results of our mediation tests, it appears that other motivation-related mediators could be considered as explaining the relationships between environmental identity or CSE, on one hand, and PEBS or OCB-E, on the other. These potential mediators include the environmentally responsible behavior motives (De Young, 2000) – which include competence, frugality, participation, and luxury. Yet another potentially relevant motivation-related mediator could be that of citizenship motivations (Rioux & Penner, 2001) – which include organizational concern, prosocial values, and impression management. Apart from motivation-focused mechanisms, prior literature has shown the relationship between

environmental identity and a specific type of PEBS at work (i.e., waste prevention) to be intermediated by personal norms towards PEBS at work (Ruepert, 2016). Nevertheless, while the effect of environmental identity on norms was significant, the effect of norms on other PEBS at work (i.e., energy use, transport-related energy use, transport-related energy savings, or recycling) was not significant. Our results on aggregated PEBS, combined with the above stated ones indicate that potentially different mechanisms intermediate the relationship between environmental identity and PEBS, as well as environmental identity and OCB-E, depending on the PEBS of interest. While from a practical relevance it might seem desirable to identify shared mechanisms for aggregated PEBS, it seems that specific mechanisms might be of relevance for specific PEBS or OCB-Es and further research could help inform this.

In interpreting the contrasting results between OCBO and OCBI as they related to environmental identity, we believe that environmental identity might make more likely the manifestation of OCBs towards individuals, as individuals can be perceived as also belonging to the natural world. By contrast, organizations and work tasks can be perceived as in no way related to that natural world focus that a strong environmental identity makes salient. Instead, organizations are closer to what environmental literature terms as “the built environment”. We find some support for this in the environmental identity scale including items such as “Being a part of the ecosystem is an important part of who I am”, and “In general, being part of the natural world is an important part of my self-image” (Olivos & Aragonés, 2015). Nevertheless, this assumption we make would require exploration in future research.

A rather recent tendency in the OCB literature is that of exploring the potential negative effects of this concept which has traditionally been approached from a “benefits” perspective – this direction being often guided by resource depletion theories. The potential negative effects of OCB-E, to our knowledge, haven’t yet been discussed in either theoretical or empirical studies yet understanding if such

effects exist seems particularly relevant in informing practical applications. Also, exploring such effects might also help clarify seemingly paradoxical findings such as those observed by Paillé et al. (2013), who noticed in their study that perceived supervisor support and OCB-E were negatively related. In line with literatures such as that of employee engagement or OCB, the resources depletion theoretical framework seems particularly relevant to inform this research direction. Other potential research directions to complement our findings could be comparisons with other extra-role behaviors and employing ESM to capture interactions across both persons and time.

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