



Trust in the context of psychological contract breach: Implications for environmental sustainability



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ABSTRACT

This study examines the links between organizational support, trust in manager, psychological contract breach, job satisfaction, and workplace pro-environmental behavior. We tested the conditional indirect effect of organizational support and pro-environmental behavior through job satisfaction at different levels of psychological contract breach and trust in the manager. Using a convenience sample ($N = 651$), the findings show that job satisfaction only mediates the effect of organizational support on pro-environmental behavior at a low level of psychological contract breach. The findings also indicate that (low) psychological contract breach only moderates the conditional indirect effect of organizational support and pro-environmental behavior through job satisfaction at a high level of trust in manager. Practical implications are discussed, and suggestions for future research are proposed.

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1. Introduction

More than a decade ago, Stern (2000) argued that organizations have significantly more effect on the natural environment than individuals and households. Later, in their review of literature on determinants of pro-environmental behavior (hereafter, PEB), Steg and Vlek (2009) claimed that in comparison with households the organizations remain rarely investigated. However, the topic of PEB in the workplace has recently attracted considerable attention. With some notable exceptions (Siero, Boon, Kok, & Siero, 1989), most empirical efforts have been undertaken these last few years (e.g., Bissing-Olson, Iyer, Fielding, & Zacher, 2013; Cantor, Morrow, & Montabon, 2012; Carrico & Riemer, 2011; Greaves, Zibarras, & Stride, 2013; Lamm, Tosti-Kharas, & Williams, 2013; Lo, Peters, & Kok, 2012; Norton, Zacher, & Ashkanasy, 2014; Ones & Dilchert, 2012; Paillé & Boiral, 2013; Paillé & Mejía-Morelos, 2014; Raineri & Paillé, 2015; Robertson & Barling, 2013; Temminck, Mearns, & Fruhen, 2015; Zhang, Wang, & Zhou, 2013).

Norton, Parker, Zacher, and Ashkanasy (2015) recently reviewed

such emerging literature. They concluded that “there is little research that explains the mechanisms driving EGBs [employee green behaviors]” (p. 120). In this research, we seek to fill this gap by focusing on a set of variables including perceived organizational support (hereafter, POS), job satisfaction, psychological contract breach (hereafter, PC-breach), and trust in manager (hereafter, trust). These variables are typically associated with social exchange theory (SET) (e.g., Bal, Chiaburu, & Jansen, 2010; Conway & Briner, 2005; Tekleab & Chiaburu, 2011) that refers to “the voluntary actions of individuals that are motivated by the returns they are expected to bring and typically do in fact bring from others” (Blau, 1964, p. 91). SET literature suggested that employees “engage in beneficial activities that go beyond their formal job duties in order to benefit their employer” (Mitchell, Corpanzano, & Quisenberry, 2012, p. 101). PEB can be beneficial for the organization when the organization seeks to become greener by engaging in environmental sustainability (Ones & Dilchert, 2012). While research results reported an indirect positive effect of POS on PEB through commitment to the organization (Lamm et al., 2013; Paillé & Boiral, 2013; Temminck, Mearns, & Fruhen, 2015), other findings failed to show that job satisfaction has played a mediating role between POS and PEB (Paillé & Boiral, 2013). Further research has reported that when employees feel that a PC-breach occurs, only the mediating

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role of job satisfaction between POS and PEB seems to have been affected, whereas the mediating role of employee commitment was not (Paillé & Mejía-Morelos, 2014). Overall, these findings are in line with SET framework. In this regard, Bal et al. (2010) indicated that employees “who experience high levels of social exchange feel betrayed, and reciprocate contract breaches by reducing effort on the job” (p. 266). This means that by hampering the role of job satisfaction in the relationship between POS and PEB, a PC-breach may lead employees to reduce their willingness to behave responsibly toward the environment in the workplace.

This paper proposes to examine to what extent trust in manager may reduce the disruptive role of PC-breach on the relationships between POS, job satisfaction, and PEB. Although prior research has demonstrated the complex nature of the interaction between trust and PC-breach in the prediction of work-related outcomes (e.g., Bal et al., 2010), very little effort has been put into examining whether trust may reduce the effect of a PC-breach in the specific context of environmental sustainability, and more especially on PEB. In addition, we emphasize trust in the immediate manager (hereafter, manager). In this regard, it has been speculated that the manager is the most reliable person for maintaining the psychological contract over time (Furnham & Taylor, 2004). This means that a trustworthy manager has the capacity to lessen the negative experience of PC-breach on work-related outcomes, such as PEB. However, the role of trust in a manager in the specific context of environmental sustainability has not yet been examined. Therefore, we contribute to existing research on determinants of workplace PEB by testing a moderated moderation-mediation model (depicted in Fig. 1) wherein trust in manager interacts with PC-breach in the prediction of PEB. The paper is structured as follows. We first present the literature review and the research hypotheses. The research method and results are then defined. Finally, the findings are discussed in light of the literature review.

2. Theoretical background and hypotheses

2.1. Perceived organizational support, job satisfaction, and PEB

Research has found that support given by an organization in the context of sustainability has a positive influence on employees' tendencies to act in favor of the natural environment in their job. An overview of the environmental literature reveals that organizational support has been addressed in two different perspectives.

Adopting the first perspective rooted in environmental management literature, Ramus and Steger (2000) were among the first to report a positive effect between organizational support on employees' sustainable behaviors in the specific form of eco-initiatives, which refers to “any action taken by an employee that she or he thought would improve the environmental performance

of the company” (p. 606). Consistent with the environmental management literature that emphasizes managerial practices contributing to protect the natural environment (Christmann, 2000), Ramus and Steger have envisioned the support given by organization in a broader sense by encompassing environmental policy alongside supervisory support. In further works, Ramus (2001, 2002) offered some clarifications about organizational support that reflects first how employees perceived that they are involved by their firm to protect the natural environment through training, encouragement to give their opinions, and feedback received from top management, and second how the employer seeks to encourage performing environmental actions by rewarding employees, recognizing their efforts, and sharing with them goals and responsibilities. However, in their research Ramus and Steger have not sought to explore which psychological factors may intervene between organizational support and employees' sustainable behaviors. Although this research avenue has not been regarded in subsequent work in the domain of environmental management, this issue has recently been explored in research undertaken in environmental psychology.

The environmental psychology literature has recently resurfaced the role of organizational support (e.g., Biga, Dilchert, McCance, Gibby, & Doyle Oudersluys, 2012; Lamm et al., 2013; Paillé, Boiral, & Chen, 2013; Temminck et al., 2015). However, in this second perspective, scholars have envisioned organizational support by adopting the concept of perceived organizational support (POS). Developed by Eisenberger and his colleagues (Eisenberger, Huntington, Hutchison, & Sowa, 1986), POS refers to an employee's belief that the employer values his or her contributions and demonstrates concern for his or her well-being at work. An important tenet is that support given by the employer should be perceived as a set of discrete decisions taken on a voluntarily basis in order, for example, to expand employee skills, to develop a sustainable workplace, or to foster a cooperative work context (Eisenberger & Stinglhamber, 2011). This means in accordance with Cropanzano and Mitchell (2005) that “POS is somewhat akin to an organization's commitment to an employee” (p. 884), suggesting that POS may be considered as a degree to which the employer is committed to employees. Interestingly, the introduction of POS in the field of environmental psychology has coincided with the emergence in this area of social exchange theory (SET). In this regard, in accordance with SET tenets, research undertaken in the environmental domain has sought to determine whether support from the organization leads employees to behave responsibly toward the environment by investing time and energy beyond the basic job requirements (Norton et al., 2015).

In sum, although the literature on environmental management and environmental psychology share the idea that the support given by the organization is an important means for the

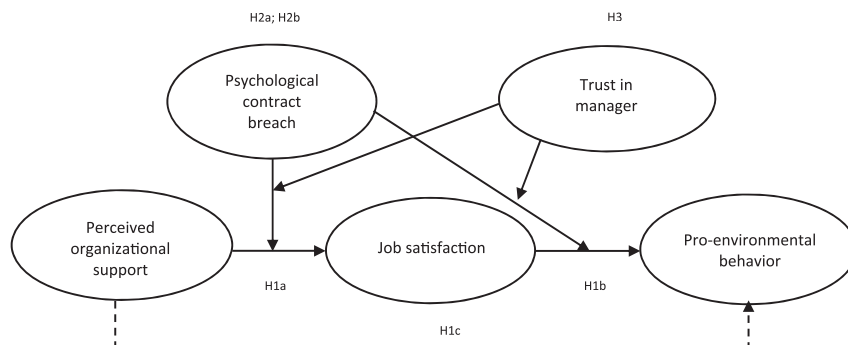


Fig. 1. Theoretical model. Solid arrows represent direct relationships; dashed arrow is used to depict indirect relationship.

achievement of environmental sustainability, they envision the content of support in slightly different ways (which are potentially compatible). While support in environmental management literature focuses more on the employees' empowerment conveyed by environmental practices, support in environmental psychology literature is more oriented to individual socioemotional needs. Drawing on the environmental psychology perspective, the three first hypotheses propose to examine the positive effect of POS on employee job satisfaction that in turn positively influences PEB in the workplace.

Job satisfaction is typically defined as “a person's pleasurable state that stems from one's own appraisal of one's job or job experience” (Cheung, Wu, Chan, & Wong, 2009, p. 78). According to Greguras and Diefendorff (2009), the degree to which the workplace contributes to fulfilling the needs and expectations of employees is one of the key matters of job (dis)satisfaction. Therefore, a work environment that is (un)able to meet employees' needs and expectations will lead to feelings of (dis)satisfaction with the job (Society of Human Resource Management, 2010). Job satisfaction is a key construct that has important organizational effects. Recurrent findings indicate that satisfied employees tend to increase their willingness to cooperate by performing extra efforts in the job, in terms of organizational citizenship behavior (OCB) (e.g., Organ, Podsakoff, & MacKenzie, 2006), whereas dissatisfied employees are more likely to reduce their effort on the job and to engage in unethical behaviors (e.g., Furnham & Taylor, 2004).

Riggle, Edmondson, and Hansen (2009) reported meta-analytic findings showing a strong positive relationship between POS and job satisfaction, suggesting that the more employees feel supported by their organization, the more they will be satisfied with their job. According to Eisenberger and Stinglhamber (2011), the positive effects of POS on job satisfaction may be explained by three important underlying mechanisms. The first is the anticipated help given by the employer when employees express needs related to performing their job. The second is the reward expectancy through which the employer demonstrates its ability to recognize the level of effort undertaken by employees for the achievement of a specific set of tasks. The third is the fulfillment of socioemotional needs that contribute to the congruence between an employee and his or her work environment, in terms of affiliation, social approval, or the sharing of values with other members, among other factors. In addition, a positive relationship between POS and job satisfaction has been reported in the environmental sustainability context (Paillé & Boiral, 2013; Paillé & Mejía-Morelos, 2014). Consequently, we hypothesize:

Hypothesis 1a. Perceived organizational support is positively related to job satisfaction.

Biga et al. (2012) speculated that satisfied employees are more likely to engage in PEB. However, it is surprising to remark that whereas job satisfaction has generated a great deal of research in numerous fields (Saari & Judge, 2004), few studies have been undertaken in the field of environmental sustainability (Norton et al., 2015). Despite this scarcity, a handle of studies can be found in the environmental psychology literature. A first glance reveals that relationships between job satisfaction and PEB are unclear at best. Lee and De Young (1994) showed that the implementation of recycling paper programs has an increased effect on intrinsic satisfaction among office workers who have had prior experience with recycling paper. Tudor, Barr, and Gilg (2008) conducted a case study in the context of health services to determine the main organizational and individual factors that influenced sustainable waste-management behaviors. They found that employees are more prone to adopt responsible behaviors toward the environment (e.g., sorting of waste) when they experience feelings of

satisfaction with their job. More recently, Paillé and Boiral (2013) and Paillé and Mejía-Morelos (2014) reported no significant relationship between job satisfaction and PEB. In sum, while some research suggested a positive effect on employee satisfaction (e.g., Tudor et al., 2008), other showed no effect (e.g., Paillé & Mejía-Morelos, 2014).

A difference can be found by scrutinizing the choice made by scholars to define environmentally responsible behaviors in the workplace that may help explain the mixed results. PEB refers to how individuals contribute to environmental sustainability (Mesmer-Magnus, Viswesvaran, & Wiernik, 2012). Employees can demonstrate their concern about the environment by engaging in a wide range of sustainable behaviors in the workplace. Among other behaviors, they may avoid waste, recycle, or encourage colleagues (for a broader list, see Ones & Dilchert, 2012). Recycling paper is not the same as conserving energy, initiating an environmental program, or encouraging colleagues to adopt friendly environmental behaviors. Although these behaviors are close since all put the focus on sustainability in the workplace, each of them can be viewed as a specific response to protecting the natural environment. By returning to the research discussed above, it is interesting to notice that the positive effect has been found in research wherein scholars have examined recycling and sorting waste (i.e., specific PEB) (Lee & De Young, 1994; Tudor et al., 2008), whereas a nonsignificant relationship with job satisfaction has been found in studies wherein researchers have measured PEB as a whole (e.g., Paillé & Mejía-Morelos, 2014).

The lack of relationship between job satisfaction and PEB found by Paillé and Mejía-Morelos (2014) may be attributed to their decision to merge the three initial sub-scales (i.e., eco-helping, eco-civism, and eco-initiative) for measuring an overall PEB. Interestingly, similar difficulties can be found in the literature on OCB. This literature offers a useful theoretical underpinning that may help to better understand the relationship between job satisfaction and PEB. Briefly, OCB was typically viewed as an individual extra effort beyond the formal job requirements (Organ et al., 2006). These efforts may be either directed toward the employer in the form of sportsmanship (i.e., enduring frustration related to the job) and civic virtue (i.e., protecting the image of the organization), or toward the pairs in a form of helping (i.e., give individual support to others who need help). The relationship between job satisfaction and OCB has a long history (Organ et al., 2006). Research has contributed to refine this relationship over time. In this regard, meta-analytic findings by LePine, Erez, and Johnson (2002) showed a positive relationship between job satisfaction and overall measurement of OCB, and reported non-significant relationship with each of the main dimensions of OCB. LePine et al. (2002) provided a wide range of possible reasons to explain their results. One of the reasons given seems particularly salient for our purpose. They suggested that it is appropriate to consider the dimensions of OCB individually when these behaviors may have “different organizationally relevant consequences” (p. 62). Consistent findings with this proposition can be found in subsequent research. For example, Deckop, Cirka, and Andersson (2003) indicated that helping others has not only a positive influence on organizational members, but also can trigger a virtuous circle beneficial for the entire organization. Further, Lester, Meglino, and Korsgaard (2008) showed a positive association between job satisfaction and helping others, and no association between job satisfaction and sportsmanship, and civic virtue.

In sum, by borrowing LePine et al.'s idea and by applying it to the environmental domain, this means that it may be more fruitful to consider dimensions of PEB individually. In this regard, Norton et al. (2014) reported that in comparison with the organizational sustainability policy, the employee who performs green behavior is

more influenced by his or her perception than other organizational members who contribute to the green work climate. Their findings give consistence to the role of encouraging others (i.e., eco-helping) in the workplace to achievement environmental sustainability (Ones & Dilchert, 2012), which was examined as a relevant dimension of PEB (Paillé & Boiral, 2013). Finally, based on the previous developments suggesting that satisfied employees are prone to help other organizational members (Lester et al., 2008), it seems reasonable to expect a positive relationship between job satisfaction and pro-environmental behavior (in the form of eco-helping). Thus.

Hypothesis 1b. Job satisfaction is positively related to pro-environmental behavior.

Muse and Stamper (2007) have reported that POS has a positive influence on employee job satisfaction that in turn increases their proneness to perform extra effort in the job. It seems consistent to assume a similar pattern in the environmental sustainability context, since it has been repeatedly argued that responsible behaviors toward the environment refer to an extra role when these behaviors reflect individual efforts taken on a voluntary basis (e.g., Norton et al., 2015; Ones & Dilchert, 2012). Prior research supports this proposition. For example, a positive effect of POS on PEB has been found in the form of organizational citizenship behavior for the environment (Lamm et al., 2013; Paillé et al., 2013; Temminck et al., 2015). As we indicate above in the discussion leading to the two first hypotheses, POS positively influences job satisfaction (Riggle et al., 2009), and satisfied employees tend to adopt environmentally responsible behaviors (Tudor et al., 2008). Taken together, these results show how POS has an indirect positive effect on PEB through job satisfaction. Hence, on this basis, we hypothesized the following:

Hypothesis 1c. Job satisfaction mediates the relationship between perceived organizational support and pro-environmental behavior.

2.2. The role of PC-breach

The introduction of PC-breach in the context of environmental sustainability is relatively recent (Paillé & Mejía-Morelos, 2014; Paillé & Raineri, 2015). We believe that PC-breach is a relevant topic and offer a complementary perspective for understanding the individual hindrances to environmentally responsible behavior on the job. PC-breach is a subjective experience (Robinson, 1996) that refers to an individual's cognition of a discrepancy between what has been promised and what has been received (Coyle-Shapiro, 2002). In accordance with Morrison and Robinson (1997), the discrepancy may be rooted in either reneging or incongruence. Reneging refers to either the inability to respect the initial agreement (for example, a lower rate of employee performance than was expected) or the unwillingness to fulfill prior promises (related, for example, to the arrival of a new manager who does not know the content of agreements or chooses to ignore it). Incongruence reflects an honest misunderstanding and can be explained by the fact that “each party believes that both parties have made promises and that both parties have accepted the same contract terms. However, this does not necessarily mean that both parties share a common understanding of all contract terms” (Robinson & Rousseau, 1994, p. 246).

Whatever the cause, reneging or incongruence, the incapacity of the organization to respect its obligations is an important elicitor of PC-breach. Given that maintaining over time the abilities, knowledge, and skills of employees is an important moral obligation that

an organization should respect (Lawler, 2011), this means that a perception of breach may occur if the organization neglects to respect its obligation to train its employees (Herriot, Mannings, & Kidd, 1997). Although training is not explicitly assessed in this research, it may give some insight into how the obligation to train employees in the context of environmental sustainability is useful for understanding the possible emergence of perception of breach. As a functional HRM dimension contributing to corporate environmental management, training enhances employees' capabilities and, to this end, helps them to understand the content of an environmental policy (Jabbour, Santos, & Nagano, 2008). Training also fosters employees' concern for the natural environment (Sammalisto & Brorson, 2008). To be efficient, training must be based on an appropriate analysis for determining the exact nature of the employee's needs as they relate to environmental skills that should be covered during sessions (Milliman & Clair, 1996). Training is recurrently regarded as an important source of employee motivation that allows them to achieve sustainability in work settings (Renwick, Redman, & Maguire, 2013). Hence, if an organization has the objective of becoming greener, and especially if this organizational orientation is relatively new, one of its basic obligations should be the improvement of employees' skills and abilities in order to help them to achieve this new objective. The respect of these obligations is important because green workplaces contribute to job satisfaction (SHRM, 2010).

According to Govindarajulu and Dailey (2004), “a company can devastate its efforts to become environmentally responsible if there is little or no support to train and encourage its employees to do the right thing” (p. 366). This proposition reflects the idea that the resources an organization devotes to becoming greener should not only be adapted to the specific environmental issue targeted, but also commensurate with the environmental objectives defined by top management. Consistent with this argument, Unsworth, Dmitrieva, and Adriasola (2013) have speculated that if environmental issues are not defined by the management as a main goal, and if employees face a multiplicity of demands and goals in their job, employees may carry their efforts over to the goal they believe to be the most important. Hence, if an organization seeks to become greener (e.g., by diminishing energy consumption or reducing transportation use for meetings) without providing the appropriate interventions (e.g., educating for environmental awareness) or equipment (e.g., investing in videoconferencing equipment), employees may believe that their employer fails to align its expectations with its obligations. McDonald (2011) reported findings that support this possibility. She concluded that an existing mismatch between stated objectives and assigned resources leads employees to absolve themselves of their responsibilities toward the environment. Although McDonald did not consider PC-breach in her research, we can assume that if such a context generates the perception of a breach, employees may react negatively by becoming less satisfied with their job (Zhao, Wayne, Glibkowski, & Bravo, 2007).

In their attempt to explore the effect of PC-breach in the sustainability context, Paillé and Mejía-Morelos (2014) have shown an interaction effect between POS and PC-breach on job satisfaction. However, they have neglected to consider the moderating effect of PC-breach on the relationship between job satisfaction and PEB. This moderating effect has not been tested. Yet, PC-breach may also affect the effect of job satisfaction on PEB. However, Rigotti (2009) reported findings indicating that the effect of PC-breach on job satisfaction seems more complex than shown in prior research. He suggested first that individuals may tolerate unfulfilled obligations (what he called “a zone of acceptance”) until they have reached their own threshold of tolerance, and second, that job satisfaction is likely less closely linked to PC-breach (i.e., contrarily, that has been

shown in prior research). Beyond this critical point, a high-level of PC-breach may have a negative effect on job satisfaction that in turn may lead to a detrimental effect on work-related outcomes, including for example PEB. In sum, based on prior research undertaken in sustainability context (Paillé & Mejjà-Morellos, 2014) and other domains (Rigotti, 2009), we can expect an interactional effect from PC-breach on the relationship between POS and job satisfaction, and between job satisfaction and PEB. Therefore, we hypothesized the following:

Hypothesis 2a. PC-breach will moderate the relationship between POS and job satisfaction. Specifically, POS will yield a stronger relationship with job satisfaction for employees who perceive low PC-breach than for employees who perceive high PC-breach.

Hypothesis 2b. PC-breach will moderate the relationship between job satisfaction and PEB. Specifically, job satisfaction will yield a stronger relationship with PEB for employees who perceive low PC-breach than for employees who perceive high PC-breach.

2.3. Trust in manager

Trust is a key variable that contributes to shaping virtuous relationships among individuals in the long run (e.g., Lavelle, Rupp, & Brockner, 2007). Research has reported that when employees perceive a PC-breach, trust in their organization helps them to overcome frustration by avoiding the emergence of any form of disturbance or discomfort that may affect their organizational contributions (see Conway & Briner, 2005). Dirks and Ferrin (2001) have proposed the source of trust in organizational settings as a psychological state indicating the extent to which individuals deal with other individuals under circumstances implying vulnerability. A manager who is trustworthy may help his or her subordinates to avoid feelings of vulnerability, overcome related frustrations, and reduce their tendency to display undesirable work-related outcomes resulting from their perception of PC-breach.

According to Tan and Tan (2000), trust in the manager refers “to the willingness of a subordinate to be vulnerable to the action of his or her supervisor whose behavior and actions he or she cannot control” (p. 243). The employees’ perceptions that their manager is trustworthy are shaped by a set of features identified by Butler (1991). According to Butler, the development of trust results from a general feeling that the manager demonstrates availability, competence, coherence, discretion, equity, integrity, loyalty, transparency, the fulfillment of promises, and receptivity. Therefore, the more/less subordinates attribute these features to their manager, the more/less the latter will be perceived as trustworthy.

Dirks and Ferrin (2002) reported meta-analytic findings indicating that when subordinates trust their manager, they are less likely to leave the organization, tend to perform better in their jobs, tend to be more satisfied, and tend to be more prone to engage in OCB. Furnham and Taylor (2004) have speculated that “the immediate boss or supervisor is seen as the most important, honest and reliable person and therefore the chief agent for establishing and maintaining the psychological contract” (pp. 9–10). Therefore, the manager has an essential role to play when his or her subordinates perceive that a PC-breach has occurred. If he or she is trustworthy, he or she has the capacity to avoid his or her subordinates reducing their contributions on the job. Bennis and Nanus (1985) have suggested that trust is a “lubricant that makes work possible within organizations” (p. 43). The metaphor of “lubricant” is particularly useful for discussing the conditional moderating role of trust in manager. We suggested above that an organization may not take the appropriate actions to support its

sustainable objectives. This situation may shape employees’ perceptions that the organization has not fulfilled its obligations. In one sense, this example suggests that a PC-breach is likely to occur for causes attributed to discrepancies between objectives and means. However, as an agent of the organization, if the manager is perceived as a trustworthy person by his or her subordinates, the former has the possibility to help the latter overcome the vulnerability derived from the perception that a PC-breach has occurred.

No research has attempted to test this possibility in the context of environmental sustainability; however, drawing on the literature discussed above, we believe it can be assumed that the detrimental effect of PC-breach on PEB may depend of the level of trust in a manager. Despite scant research, some existing findings support this possibility. PEB has been derived from OCB (Boiral & Paillé, 2012; Lamm et al., 2013), and given that meta-analytic findings by Dirks and Ferrin (2002) reported a positive relationship between OCB and trust in manager, a similar positive effect can be inferred with PEB. In addition, Dulac, Coyle-Shapiro, Henderson, and Wayne (2008) reported an interaction effect between PC-breach and the degree to which an employee experienced quality relationships with the manager. Dulac and his colleagues reported that individuals’ negative reactions toward a perceived breach (examined in terms of intention to resign) are stronger when they experienced weak exchange quality with their managers. Drawing upon these results, we anticipate a similar effect on PEB. A manager may act as a lubricant agent when employees believe there is a mismatch between the organization’s willingness to become greener and the lack of resources devoted to reaching this objective. On this basis, we expect that a high level of trust in one’s manager buffers the negative effect of PC-breach on the indirect relationship between POS and PEB through job satisfaction. Therefore, we hypothesized the following:

Hypothesis 3. Trust in manager will moderate the interaction effect of PC-breach on the conditional indirect effect of POS on PEB through job satisfaction. Specifically, the interaction effect of PC-breach will be weaker for employees who perceive high trust than for employees who perceive low trust.

3. Method

3.1. Sample

Data were gathered with the support of the alumni association of a large Canadian university. Survey questionnaires were sent to 2441 alumni who had been enrolled in executive MBA programs between 2004 and 2009. Participants were contacted two years after having completed their program. A total of 731 responses were returned, for a response rate near 30%. Sixteen participants withdrew from the survey website before completing the questionnaire, and 64 responses were excluded because of missing data. The final sample included 651 participants. At the time of the survey, all participants held jobs in non-green industries. A total of 68% worked in large organizations (over 500 employees), and 69.7% of the participants were female. The average age of the participants was 34.7 years ($SD = 6.3$). The average organizational tenure was 9.6 years ($SD = 7.8$).

3.2. Measurements

Perceived organizational support was measured using a short version (4 items) of the POS scale defined by Eisenberger et al. (1986) (e.g., “My organization values my contribution”). The initial scale was comprised of more than 30 statements representing a wide range of organizational discretionary actions toward

employees (Eisenberger & Stinglhamber, 2011). The long version has been rarely used in subsequent research. Using a short scale is a common practice for measuring POS in the literature and does not appear problematic as the original scale is unidimensional and has high internal reliability (Rhoades & Eisenberger, 2002). Thus, POS was measured with a short version of four items of Stinglhamber, de Cremer, and Mercken (2006). Both facets of the definition of POS were represented: a valuation of employee contributions and regard for employee well-being. The reliability of the scale was high ($\alpha = .89$).

Job satisfaction was measured using a selection of three of the five items of Hackman and Oldham (1975) scale. Of the five items, three capture “job satisfaction” and two refer to “thoughts of quitting.” Following previous research (e.g., Shaffer, Harrison, Gilley, & Luk, 2001), we kept only the items measuring job satisfaction (e.g., “I am generally satisfied with the kind of work I do in this organization”). The reliability of the scale was high ($\alpha = .89$).

PC-breach was measured using the 5-item scale developed by Robinson and Morrison (2000) (e.g., “I have not received everything promised to me in exchange for my contributions”). The first three items were reverse-coded; the reliability of the scale was high ($\alpha = .85$).

Trust in the manager was measured using the initial 3-item scale developed by Cook and Wall (1980), in which the set of items were adapted to the theme of the supervisor (e.g., “I can trust my supervisor to treat me fairly”). The reliability of the scale was high ($\alpha = .91$).

Employees' pro-environmental behaviors were measured with the 3-item scale developed by Boiral and Paillé (2012) capturing eco-helping (e.g., “I spontaneously give my time to help my colleagues take the environment into account in everything they do at work”). The reliability of the scale was high ($\alpha = .89$).

All items were measured using a 7-point Likert scale (7 = strongly agree; 6 = agree; 5 = slightly agree; 4 = neither agree nor disagree; 3 = slightly disagree; 2 = disagree; and 1 = strongly disagree).

In addition, we controlled for age, gender, and tenure because these variables may affect employees' level of involvement with pro-environmental behaviors (Lamm et al., 2013).

3.3. Analysis

In order to test our hypotheses, we followed the procedure proposed by Cole, Walter, and Bruch (2008), consisting of inter-linked steps. The research implied testing mediation (Hypotheses 1a, 1b, and 1c), moderation (Hypotheses 2a and 2b) and moderated variation-mediation (Hypothesis 3). Mediation was examined using the bias-corrected bootstrap method; in this context, mediation is demonstrated when the bias-corrected confidence interval (95%) of the indirect effect does not include zero (Hayes, 2013). Moderations were examined with regression. Before computing the two product terms (POS \times PC-breach, and job satisfaction \times PC-breach), standard skewness and kurtosis tests were performed to ensure the normality of each indicator. Then, the variables (predictor and moderator) were mean-centered to avoid multicollinearity (Cohen, Cohen, West, & Aiken, 2003). Moderated moderation-mediation was examined using conditional indirect effects that refer to “the magnitude of an indirect effect at a particular value of a moderator (or at particular values of more than one moderator)” (Preacher, Rucker, & Hayes, 2007, p. 186). Briefly, the basic requirement for the conditional indirect effect is the same as that for mediation; CIs must not include 0. The PROCESS macro designed by Hayes was used. More specifically, model 4 and model 72 were used for testing mediation and moderated moderation-mediation, respectively. According to Hayes (2013), “PROCESS is a

computational tool for path analysis-based moderation and mediation analysis as well as their integration in the form of a conditional process model” (p. 419).

4. Results

Before testing our hypotheses, we checked whether common method variance (CMV) may inflate the data. This stage is important, since our data have been gathered by using self-reports. Related concerns should not be ignored (Steg & Vlek, 2009). Self-report has advantages and disadvantages that include ease of use and desirability bias, respectively (Kormos & Gifford, 2014). In addition, after reviewing relevant studies on PEB in non-work settings, Kormos and Gifford recommended that the use of self-report to capture PEB should be used with cautionary measures, such as checking CMV. When confirmatory factor analysis is used for analyzing the data, single-common-method-factor approach is the best method for checking CMV (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). This approach consists of comparing the fit of the measurement model with the fit of the measurement model with a method factor.¹ CMV is not a threat if the measurement model is the more parsimonious.

The test was performed with the AMOS 19 program using the covariance matrix with the maximum likelihood method of estimation. The baseline comparisons indicated that the measurement model ($\chi^2 = 580.3$, $df = 142$, $p < .001$; CFI = .95; NNFI = .94; RMSEA = .06), as well as the measurement model with the common factor ($\chi^2 = 580.0$, $df = 140$, $p < .001$; CFI = .94; NNFI = .93; RMSEA = .07) have fitted the data well. In addition, the Chi-square difference test (Bentler & Bonnett, 1980) is not significant ($\Delta\chi^2 = .3$), suggesting that measurement models with(out) common factor are quite similar. According to Hu and Bentler (1995), the computation of the Akaike's Information Criterion (AIC) is also useful for comparing models. Although the more parsimonious model should provide the lowest value (Hu & Bentler, 1995), Burnham and Anderson (2002) indicated that for taking the best decision, the difference in AIC (ΔAIC) between the two models should be higher than 2. Given that the measurement model yielded a smaller AIC (AIC = 676.3) than measurement model with the common factor (AIC = 680.0), and that $\Delta AIC = 3.7$, it can be inferred that common variance bias was not a significant issue.

As indicated above the measurement model provided a good fit for the data. Also, all indicators loaded significantly ($p < .001$) onto their respective constructs. Table 1 reports means, standard-deviations (SD), and pair-wise correlations among variables. The reliability (Jöreskog's ρ) for each construct and the average variance extracted (AVE), which gives the proportion of the total variance explained by the latent variable, were also reported. AVEs and ρ s are above the recommended cut-off of .50 and .70, respectively (Hair, Anderson, Tatham, & Black, 1998). In addition, the discriminant validity of the constructs was evidenced (see Table 1).

4.1. Hypotheses 1a, 1b, and 1c

The results for the three first hypotheses are reported in Table 2. As expected, Hypotheses 1a and 1b were supported by the data, since a positive relationship was found between POS and job satisfaction ($\beta = .14$, $p < .001$), and between job satisfaction and PEB

¹ This widely used method requires adding an unmeasured common latent factor to the measurement model. Following Marler, Fisher, and Ke (2009), all items were loaded on their theoretical constructs as well as on a latent common method factor. The significance of the structural parameters was then examined both with and without the latent factor.

Table 1
Correlation matrix and psychometric properties (N = 651).

	1.	2.	3.	4.	5.	6.	7.	8.	AVE	ρ
1. Gender	—								—	—
2. Age	.02	—							—	—
3. Tenure	.73**	-.03	—						—	—
4. POS	.14	.09	.15	—					.68	.89
5. JS	.06	.07	-.09	.43 (.18)**	—				.74	.89
6. Breach	-.08	.03	-.04	-.52 (.27)**	-.38 (.14)**	—			.63	.87
7. Trust	.12	.09	.11	.54 (.29)**	.41 (.27)**	-.49 (.24)**	—		.74	.92
8. PEB	.15	.05	.13	.16 (.02)**	.17 (.02)**	.04 (.00)	.04 (.00)	—	.74	.89
Mean ^a	1.3	34.7	9.6	5.1	5.8	2.6	5.3	4.6		
SD	.4	6.3	7.8	1.2	1.1	1.3	1.3	1.5		

Note. POS, perceived organizational support; JS, job satisfaction; PEB, pro-environmental behavior. AVE, average variance extracted; ρ , Jöreskog's rho. Values in brackets report shared variance for a given pairwise. For example the correlation between POS and JS is .43. Their shared variance is .18 (.43 \times .43). The average AVE is .71 (.68 + .74/2). Given that the average AVE is higher than their shared variance, discriminant validity is evidenced for this pair.

** $p < .01$.

^a Based on Means' and SDs' scales.

Table 2
Bootstrap analysis of the direct and indirect effects (N = 651).

IV	Mediator	VD	β Direct effect	β indirect effect	Standard error	95% CI	
						Lower	Upper
POS	→	JS	.14		.032	.078	.205
JS	→	PEB	.28		.069	.147	.418
POS	→	PEB	.22		.021	.130	.317
POS	→	JS					
		→					
		PEB		(.14 \times .28) = .039	.046	.012	.095

Note. POS, perceived organizational support; JS, employee job satisfaction; PEB, pro-environmental behavior.

($\beta = .28$, $p < .001$). Hypothesis 1c predicted an indirect effect of POS on PEB through job satisfaction. The direct effect of POS and PEB was significant ($\beta = .22$, $SE = .02$, $t = 2.74$, $p = .006$). The indirect effect was significant, since the 95% CI did not include 0 ($\beta = .03$, $SE = .04$, 95%CI = .01, .09). The Sobel test ($z = 2.99$, $SE = .01$, $p = .002$) also confirmed that the indirect effect was significant. These results lead to the conclusion that the relationship between POS and PEB was mediated by job satisfaction. Therefore, Hypothesis 1c was supported by the data.

Hypothesis 2a predicted that PC-breach moderates the relationship between POS and job satisfaction. Table 3 indicates that while POS and PC-breach accounted for 22% of the variance in job satisfaction, the product term (POS \times PC-breach) was not significant ($\beta = -.04$, ns, $\Delta R^2 = .00$). Thus, Hypothesis 2a was not supported.

Hypothesis 2b predicted that a PC-breach moderates the relationship between job satisfaction and PEB. Table 4 shows that job satisfaction and PC-breach accounted for 5% of the variance of PEB, and that the product term (job satisfaction \times PC-breach) was significant ($\beta = -.11$, $p = .008$, $\Delta R^2 = .01$). Then, we conducted a test for assessing to what extent the slopes were or were not

Table 4
Results of moderation (Hypothesis 2b).

Step	Variable(s) entered	Pro-environmental behavior		
		Model 1	Model 2	Model 3
1	Gender	-.03	-.02	-.02
	Age	-.07	-.03	-.03
	Tenure	.11	.12	.11
2	JS		.26***	.29***
3	PC-breach		.17***	.15***
4	JS \times PC-breach			-.11**
	ΔR^2	.01	.05*	.01**

Note. JS, job satisfaction; PC-breach, psychological contract breach.

* $p < .05$. ** $p < .01$. *** $p < .001$.

significantly across low and high levels of PC-breach. To illustrate the nature of this interaction, we plotted the regression line of PEB on job satisfaction at 1 SD below and 1 SD above the mean of PC-breach (Cohen et al., 2003). Fig. 2 shows that the slope for high PC-breach is flatter than the slope for low PC-breach. Simple slope analyses showed that job satisfaction was positively related to PEB for employees with low PC-breach ($t = 2.91$, $p = .004$), but not for those with high PC-breach ($t = -.97$, $p = .335$), providing support for Hypothesis 2b.

Hypothesis 3 predicted that the interaction effect of PC-breach on the indirect relationship between POS and PEB through job satisfaction is moderated by trust in manager. Table 5 provides the conditional indirect effects of POS on PEB through job satisfaction at low and high values of both PC-breach and trust in manager. At a low level of trust, the data indicated that the conditional effect of POS on PEB through job satisfaction was significant at a high level of PC-breach ($\beta = .03$, $SE = .01$, 95% CI = .01, .07), and not significant at a low level of PC-breach ($\beta = .02$, $SE = .03$, 95% CI = -.04, .10). At a high level of trust, the data showed that the conditional indirect effect of POS on PEB through job satisfaction was significant at a low level of PC-breach ($\beta = .06$, $SE = .02$, 95% CI = .02, .14), and not

Table 3
Results of moderation (Hypothesis 2a).

Step	Variable(s) entered	Employee job satisfaction		
		Model 1	Model 2	Model 3
1	Gender	-.04	.02	.01
	Age	-.06	-.03	-.05
	Tenure	.14	.16	.15
2	POS		.32***	.31***
3	PC-breach		-.21***	-.20**
4	POS \times PC-breach			-.04
	ΔR^2	.01	.22***	.00

Note. POS, perceived organizational support; PC-breach, psychological contract breach.

** $p < .01$. *** $p < .001$.

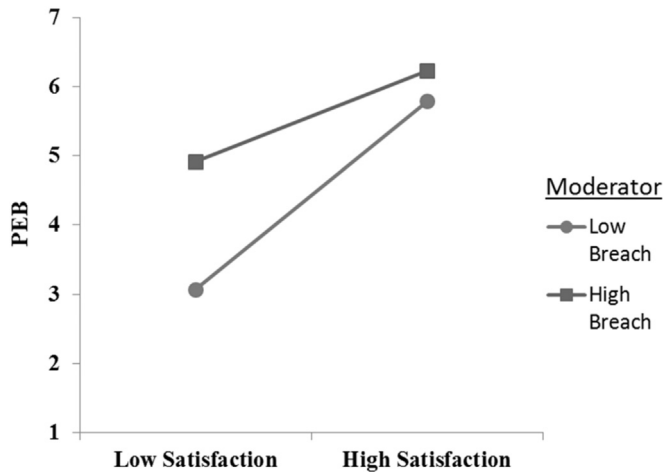


Fig. 2. Graphical representation of the moderating effect of PC-breach on the relation between job satisfaction and pro-environmental behavior (PEB).

Table 5

Conditional indirect effects of POS on PEB through job satisfaction at low and high values of both trust and PC-breach.

Level of trust ^a	Level of PC-breach ^a	Effect	Standard error	95% CI	
				Lower	Upper
Low	Low	.021	.03	-.038	.104
Low	High	.030	.01	-.005	.073
High	Low	.063	.02	-.019	.144
High	High	.027	.02	-.014	.094

Note

^a Low, 1 SD below the mean; High, 1 SD above the mean.

significant at a high level of PC-breach ($\beta = .03$, $SE = .02$, 95% $CI = -.01, .09$). Thus, among the four possible pairs of slopes, only two were significant: low PC-breach with high trust; and high PC-breach with low trust (see both Table 5 and Fig. 3 supported). Simple slope analyses showed that POS was positively related to PEB through job satisfaction for employees with high trust and low PC-breach ($t = 2.81$, $p = .005$), but not for those with low trust and high PC-breach ($t = -.56$, $p = .337$). However, although a high level of

trust in manager had a buffering effect for low PC-breach, it had no effect for high PC-breach, providing only partial support for Hypothesis 3.). Based on these results, we concluded that Hypothesis 3 was supported.

5. Discussion

5.1. Main contributions of the research

The present study was designed to determine whether trust in a manager affects the moderation effect of PC-breach on the indirect effect of POS on PEB through employee job satisfaction. In doing so, this study extends current research on employees' decisions to engage in environmentally friendly behaviors in two main ways.

The first result of interest addresses the role of PC-breach. In the present investigation, we go further than Paillé and Mejía-Morelos (2014) and Paillé and Raineri (2015) in the understanding of PC-breach in the context of sustainability. Although previous findings indicated that employees' willingness to engage in sustainable behaviors can be inhibited by the perception that the employer has failed to fulfill its obligations, the extent to which PC-breach moderate the effect of job satisfaction on PEB had not been investigated. Fig. 2 provides a visual representation of the degree to which PEB is predicted by job satisfaction across low and high levels of PC-breach. We found that job satisfaction only mediated the effect of POS on PEB at a low level of PC-breach. When the PC-breach is not too severe, employees who are highly satisfied with the nature of their job seem more likely to engage in PEB than employees who express low job satisfaction. Also, job satisfaction was not related to PEB for employees with high-PC breach (i.e., the slope did not significantly differ from zero). That is, satisfaction with the nature of one's job does not seem to offset the negative effect of a severe PC-breach. Surprisingly, however, employees who were less engaged in PEB reported a lower level of PC-breach regardless of the level of job satisfaction. This may due to the fact that our hypotheses were tested on a sample of employees drawn from a variety of organizations, which did not allow us to control for the context. Similarly, we cannot rule out the possibility that a third variable, not measured in this study and relevant to the expression of PEB in the workplace, such as environmental values or beliefs, may have accounted for higher perception of PC-breach.

The second result of interest is the role played by employees'

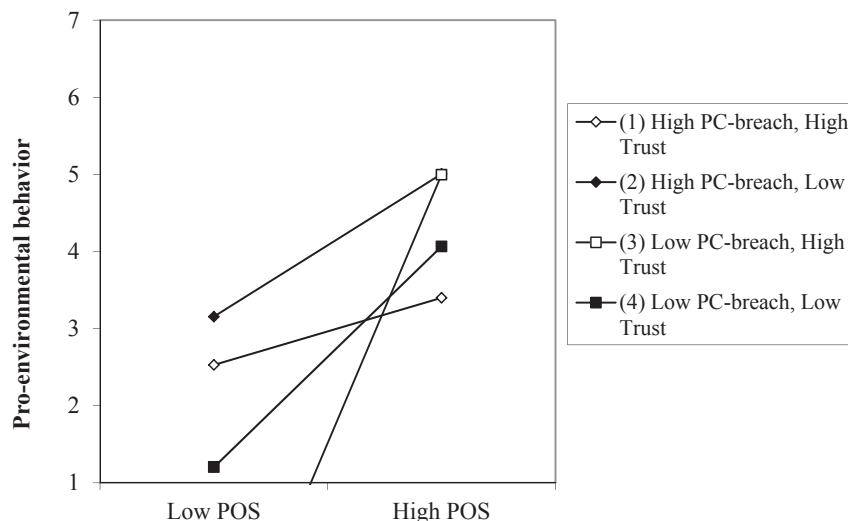


Fig. 3. Graphical representation of the interaction between PC-breach and trust on the relation between POS and pro-environmental behavior.

trust in managers. Our intention was to investigate whether employees' trust in their managers may contribute to reducing the effect of PC-breach on PEB. This proposition was based on a contention by [Furnham and Taylor \(2004\)](#), who claimed that a trustworthy immediate manager may help his or her subordinates to overcome the detrimental effect of their perception that their employer has not respected its obligations. [Fig. 3](#) gives a visual representation that helps to understand the role of trustworthy immediate manager. Employees are more likely to engage in PEB when they perceive a fair amount of support from the organization, especially under the condition of high trust and low PC-breach. Our findings suggest that when an organization supports its employees, a trustworthy manager seems to play a complementary role in influencing PEB in the context of PC-breach. Prior research in the organizational psychology literature may help to interpret these findings. For example, [Bal et al. \(2010\)](#) suggested that the role of trust should be analyzed by taking into account the nature of personal motives of the employees. By drawing on this suggestion, our results might suggest that if the immediate manager respects the environmental values of his or her subordinates, the former may be perceived as an available resource when PC-breach tends to become an important source of concern for employees who perform PEB for ethical motives. In sum, our findings add to current literature on environmental psychology by shedding more light on the critical role of immediate managers in sustaining employee efforts toward the environment. Although scarce, existing research in this area has shown the positive influence of support given by the manager (e.g., [Cantor et al., 2012](#)) and the importance of the degree to which the manager is concerned by the necessity to take into account environmental issues when he or she designs the work of his or her subordinates (e.g., [Paillé, Chen, Boiral, & Jin, 2014](#)). Trust in one's manager helps to understand why employees maintain their focus on PEB, even when the latter feels (rightly or not) that the organization did not successfully fulfill its obligations.

In addition, the most notable finding to emerge from the data is that when we jointly consider the two main results, it seems that POS and PC-breach may be regarded as antagonistic forces in the context of environmental sustainability. An organization may devastate its efforts in terms of support; it may also waste resources that are specifically devoted to the achievement of environmental sustainability if, at the same time, employees believe that the organization has failed to provide adequate resources allowing them to carry out this environmental goal. The present research suggests that this antagonism may be reduced when employees are satisfied with their job and when they consider that their manager is trustworthy. Taken together, our findings suggest that a low level of job satisfaction can be compensated by a heightened level of trust in the manager. It is particularly true when employees have a slight PC-breach experience. In this case, job satisfaction mediates the effect of POS on PEB. Interestingly, a low level of trust in the manager also has a moderating effect on a high level of perceived breach. In this situation, the mediating role of job satisfaction between POS and PEB is maintained. This result is compatible with prior literature on organizational psychology, which indicates that the quality of relationships within the leader-subordinate dyad is an important source of employee satisfaction ([Dirks & Ferrin, 2002](#)). In the particular context of environmental sustainability, this means that trust in a manager may be a compensatory source of satisfaction that contributes to facilitating the transmission of the effect of POS on PEB, even when subordinates perceive that a (low) PC-breach has occurred.

5.2. Practical perspectives

Our research has interesting practical implications. Our findings

indicate that employees are less sensitive to the perception that a PC-breach has occurred when they trust their immediate manager, at least when the PC-breach is not too severe. This means that the organization should be concerned by strengthening the quality of the relationship between the manager and his or her subordinates. Managers should be aware of the necessity of monitoring behavioral expressions that a PC-breach has occurred. In doing so, a manager can reduce the feeling of vulnerability by demonstrating to the subordinates the degree to which he or she is sensitive to their concerns.

5.3. Limitations and future research

Despite these contributions to the environmental literature, the present research is not without limitations. First, from a methodological standpoint, we should recognize that data were gathered by using a cross-sectional design. A number of methodological precautions were taken in the present research, which indicates that the effects of common variance bias did not disrupt the validity of the research model. In addition, the sense of causation among the variables may not be fully guaranteed. Therefore, future research could use a longitudinal research design to verify the stability of the observed mediation effects over time. Second, in the discussion above (leading to hypotheses [2a](#) and [2b](#)), we gave some possible examples of unfulfilled obligations in the context of environmental sustainability that illustrate the reasons why employees may believe that their employers have not respected their engagement. Although we demonstrated that a PC-breach has the capacity to affect the relationship between job satisfaction and PEB, we have not sought to identify which organizational obligations related to environmental sustainability may explain the perception of the PC-breach. Future investigations may explore this possibility.

In addition, there are at least three other possible directions for future research. First, past research has demonstrated that individuals may distrust their organization and at the same time trust their manager such that the latter offsets the former ([Tan & Tan, 2000](#)). Future research might consider taking into account the coupled effect of trust in the manager and trust in the organization. Second, the psychological contract between an employee and an organization can also be considered in terms of violation (i.e., the feeling of being betrayed). Breach and violation are two related but separate dimensions of the psychological contract. While individuals may tolerate recurrent PC-breach experiences, excessive episodes of breach trigger the feeling of violation. Once individuals perceive a PC-violation, they tend to significantly reduce their efforts at work. Future research might consider PC-violation in order to examine whether trust in a manager has the capacity to buffer its negative effect on PEB. Third, consistent with our prediction, we found that the relationship between POS and PEB was mediated by employee job satisfaction. Although weak, the effect size of the mediator is statistically significant. In accordance with [Rucker, Preacher, Tormala, and Petty \(2011\)](#), the mediation process may not be considered fully, since this means that another variable captures a part of the total effect between POS and PEB by playing a mediating role. Further research is needed to increase our understanding of the relationship between POS and PEB. In this regard, recent literature reviews have offered extensive lists of variables that can help guide future research (e.g., [Mesmer-Magnus et al., 2012](#); [Norton et al., 2015](#)). For example, organizational-level (e.g., procedural justice), group-level (e.g., peer influence), individual-level (e.g., environmental commitment), and within-person variables (e.g., emotions at work) could be considered more systematically.

6. Conclusion

This research was designed to examine the relations between POS, job satisfaction and PEB, as well as the boundary conditions within which the relationships held depending on levels of PC-breach and trust in manager. Our results suggest that POS is positively related to PEB through job satisfaction only for employees with high trust in manager and low PC-breach. Trustworthy managers have the capacity to lessen the negative experience of PC-breach on PEB, at least when the PC-breach is not too severe. Continuous research efforts are needed to unveil the psychology of employees' pro-environmental behaviors.

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References

- Bal, P. M., Chiaburu, D. S., & Jansen, P. G. W. (2010). Psychological contract breach and work performance: is social exchange a buffer or an intensifier? *Journal of Managerial Psychology*, 25, 252–273.
- Bennis, W. G., & Nanus, B. (1985). *Leaders: The strategy for taking charge*. New York: Harper & Row.
- Bentler, P. M., & Bonnett, D. C. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88, 588–606.
- Biga, A., Dilchert, S., McCance, A. S., Gibby, R. E., & Doyle Oudersluys, A. (2012). Environmental sustainability and organization sensing at Procter & Gamble. In S. E. Jackson, D. S. Ones, & S. Dilchert (Eds.), *Managing human resources for environmental sustainability* (pp. 362–374). San Francisco, CA: Jossey-Bass.
- Bissing-Olsen, M. J., Iyer, A., Fielding, K. S., & Zacher, H. (2013). Relationships between daily affect and pro-environmental behavior at work: the moderating role of pro-environmental attitude. *Journal of Organizational Behavior*, 34(2), 151–171.
- Blau, P. (1964). *Exchange and power in social life*. New York, NY: John Wiley and Sons, Inc.
- Boiral, O., & Paillé, P. (2012). Organizational citizenship behaviour for the environment: measurement and validation. *Journal of Business Ethics*, 109, 431–445.
- Burnham, K. P., & Anderson, D. R. (2002). *Model selection and multimodel inference: A practical information-theoretic approach*. New York, NY: Springer.
- Butler, J. K. (1991). Toward understanding and measuring conditions of trust: evolution of a conditions of trust inventory. *Journal of Management*, 17, 643–663.
- Cantor, D. E., Morrow, P. C., & Montabon, F. (2012). Engagement in environmental behaviors among supply chain management employees: an organizational support theoretical perspective. *Journal of Supply Chain Management*, 48, 33–51.
- Carrico, A. R., & Riemer, M. (2011). Motivating energy conservation in the workplace: an evaluation of the use of group-level feedback and peer education. *Journal of Environmental Psychology*, 31, 1–13.
- Cheung, M. F. Y., Wu, W. P., Chan, A. K. K., & Wong, M. M. L. (2009). Supervisor–subordinate Guanxi and employee work outcomes: the mediating role of job satisfaction. *Journal of Business Ethics*, 88, 77–89.
- Christmann, P. (2000). Effects of “best practices” of environmental management on cost advantage: the role of complementary assets. *Academy of Management Journal*, 43(4), 663–680.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Hillsdale: Erlbaum.
- Cole, M. S., Walter, F., & Bruch, H. (2008). Affective mechanisms linking dysfunctional behavior to performance in work teams: a moderated mediation study. *Journal of Applied Psychology*, 93(5), 945–958.
- Conway, N., & Briner, R. B. (2005). *Understanding psychological contracts at work: A critical evaluation of theory and research*. Oxford, UK: Oxford University Press.
- Cook, J., & Wall, T. (1980). New work attitude measures of trust, organizational commitment and personal need non-fulfilment. *Journal of Occupational Psychology*, 53(1), 39–52.
- Coyle-Shapiro, J. A.-M. (2002). A psychological contract perspective on organizational citizenship behavior. *Journal of Organizational Behavior*, 23, 927–946.
- Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: an interdisciplinary review. *Journal of Management*, 31(6), 874–900.
- Deckop, J. R., Cirka, C. C., & Andersson, L. M. (2003). Doing unto others: the reciprocity of helping behavior in organizations. *Journal of Business Ethics*, 47, 101–113.
- Dirks, K. T., & Ferrin, D. L. (2001). The role of trust in organizational settings. *Organization Science*, 12, 450–467.
- Dirks, K. T., & Ferrin, D. L. (2002). Trust in leadership: meta-analytic findings and implications for research and practice. *Journal of Applied Psychology*, 87, 611–628.
- Dulac, T., Coyle-Shapiro, J. A. M., Henderson, D. J., & Wayne, S. J. (2008). Not all responses to breach are the same: the interconnection of social exchange and psychological contract processes in organizations. *Academy of Management Journal*, 51, 1079–1098.
- Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology*, 71, 500–507.
- Eisenberger, R., & Stinglhamber, F. (2011). *Perceived organizational support: Fostering enthusiastic and productive employees*. Washington, DC: American Psychological Association Books.
- Furnham, A., & Taylor, J. (2004). *The darker side of behaviour at work: Understanding and avoiding employees leaving, thieving and deceiving*. London, UK: Palgrave Macmillan.
- Govindarajulu, N., & Dailey, B. F. (2004). Motivating employees for environmental improvement. *Industrial Management & Data Systems*, 104(4), 364–372.
- Greaves, M., Zibarras, L. D., & Stride, C. (2013). Using the theory of planned behavior to explore environmental behavioral intentions in the workplace. *Journal of Environmental Psychology*, 34, 109–120.
- Greguras, G. J., & Diefendorff, J. M. (2009). Different fits satisfy different needs: linking person–environment fit to employee commitment and performance using self-determination theory. *Journal of Applied Psychology*, 94(2), 465–477.
- Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied Psychology*, 60, 159–170.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). Upper Saddle River: Prentice-Hall.
- Hayes, A. F. (2013). *Introduction to mediation, moderation and conditional process analysis*. New York, NY: The Guilford Press.
- Herriot, P., Manning, W. E. G., & Kidd, J. M. (1997). The content of the psychological contract. *British Journal of Management*, 8, 151–162.
- Hu, L., & Bentler, P. M. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), *Structural equation modelling: Concepts, issues and applications* (pp. 76–99). London: Sage.
- Jabour, C. J. C., Santos, F. C. A., & Nagano, M. S. (2008). Environmental management system and human resource practices: is there a link between them in four Brazilian companies? *Journal of Cleaner Production*, 16, 1922–1925.
- Kormos, C., & Gifford, R. (2014). The validity of self-report measures of pro-environmental behavior: a meta-analytic review. *Journal of Environmental Psychology*, 40, 359–371.
- Lamm, E., Tosti-Kharas, J., & Williams, E. G. (2013). Read this article, but don't print it: organizational citizenship behavior toward the environment. *Group & Organization Management*, 38(2), 163–197.
- Lavelle, J., Rupp, D., & Brockner, J. (2007). Taking a multifoci approach to the study of justice, commitment, and organizational citizenship behavior: the target similarity model. *Journal of Management*, 33, 841–866.
- Lawler, E. E. (2011). Creating a new employment deal: total rewards and the new workforce. *Organizational Dynamics*, 40, 302–309.
- Lee, Y. J., & De Young, R. (1994). Intrinsic satisfaction derived from office recycling behavior: a case study in Taiwan. *Social Indicators Research*, 31(1), 63–76.
- LePine, J., Erez, A., & Johnson, D. (2002). The nature and dimensionality of organizational citizenship behavior: a critical review and meta-analysis. *Journal of Applied Psychology*, 87(1), 52–65.
- Lester, S. W., Meglino, B. M., & Korsgaard, M. A. (2008). The role of other orientation in organizational citizenship behavior. *Journal of Organizational Behavior*, 29, 829–841.
- Lo, S.-H., Peters, G.-J., & Kok, G. (2012). A review of determinants of and interventions for proenvironmental behaviors in organizations. *Journal of Applied Social Psychology*, 42, 2933–2967.
- Marler, J. H., Fisher, S. L., & Ke, W. (2009). Employee self-service technology acceptance: a comparison of pre-implementation and post-implementation relationships. *Personnel Psychology*, 62, 327–358.
- McDonald, S. (2011). Green behaviour: differences in recycling behaviour between the home and the workplace. In D. Bartlett (Ed.), *Going green: The psychology of sustainability in the workplace* (pp. 59–64). Leicester, England: British Psychological Society.
- Mesmer-Magnus, J., Viwesvaran, C., & Wiernik, B. M. (2012). The role of commitment in bridging the gap between organizational sustainability and environmental sustainability. In S. E. Jackson, D. S. Ones, & S. Dilchert (Eds.), *Managing human resources for environmental sustainability* (pp. 155–186). San Francisco, CA: Jossey-Bass.
- Milliman, J., & Clair, J. (1996). Best environmental HRM practices in the US. In W. Wehrmeyer (Ed.), *Greening people: Human resource and environmental management* (pp. 49–74). Sheffield, UK: Greenleaf Publishing.
- Mitchell, M. S., Cropanzano, R. S., & Quisenberry, D. M. (2012). Social exchange theory, exchange resources, and interpersonal relationships: a modest resolution of theoretical difficulties. In K. Törnblom, & A. Kazemi (Eds.), *Handbook of social resource theory* (pp. 99–118). New York, NY: Springer-Verlag.
- Morrison, E. W., & Robinson, S. L. (1997). When employees feel betrayed: a model of how psychological contract violation develops. *Academy of Management Review*, 22, 226–256.
- Muse, L. A., & Stamper, C. L. (2007). Perceived organizational support: evidence for a mediated association with work performance. *Journal of Managerial Issues*, 19(4), 517–535.
- Norton, T. A., Parker, S. L., Zacher, H., & Ashkanasy, N. M. (2015). Employee green behavior a theoretical framework, multilevel review, and future research

- agenda. *Organization & Environment*, 28, 103–125.
- Norton, T. A., Zacher, H., & Ashkanasy, N. M. (2014). Organisational sustainability policies and employee green behaviour: the mediating role of work climate perceptions. *Journal of Environmental Psychology*, 38, 49–54.
- Ones, D. S., & Dilchert, S. (2012). Employee green behaviors. In S. E. Jackson, D. S. Ones, & S. Dilchert (Eds.), *Managing Human Resource for environmental sustainability* (pp. 85–116). San Francisco, CA: Jossey-Bass.
- Organ, D. W., Podsakoff, P. M., & MacKenzie, S. B. (2006). *Organizational citizenship behavior: Its nature, antecedents, and consequences*. Thousand Oaks, CA: Sage Publication.
- Paillé, P., & Boiral, O. (2013). Pro-environmental behavior at work: construct validity and determinants. *Journal of Environmental Psychology*, 36, 118–128.
- Paillé, P., Boiral, O., & Chen, Y. (2013). Linking environmental management practices and organizational citizenship behavior for the environment: a social exchange perspective. *International Journal of Human Resource Management*, 24(18), 3552–3575.
- Paillé, P., Chen, Y., Boiral, O., & Jin, J. (2014). The impact of human resource management on environmental performance: an employee-level study. *Journal of Business Ethics*, 121, 451–466.
- Paillé, P., & Mejía-Morelos, J. H. (2014). Antecedents of pro-environmental behaviours at work: the moderating influence of psychological contract breach. *Journal of Environmental Psychology*, 38, 124–131.
- Paillé, P., & Raineri, N. (2015). Linking perceived corporate environmental policies and employees eco-initiatives: the influence of perceived organizational support and psychological contract breach. *Journal of Business Research*, 68, 2404–2411.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88, 879–903.
- Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: theory, methods, and prescriptions. *Multivariate Behavioral Research*, 42, 185–227.
- Raineri, N., & Paillé, P. (2015). Linking corporate policy and supervisory support with environmental citizenship behaviors: the role of employee environmental beliefs and commitment. *Journal of Business Ethics*. <http://dx.doi.org/10.1007/s10551-015-2548-x>.
- Ramus, C. (2001). Organizational support for employees: encouraging creative ideas for environmental sustainability. *California Management Review*, 43, 85–105.
- Ramus, C. A. (2002). Encouraging innovative environmental actions: what companies and managers must do. *Journal of World Business*, 37, 151–164.
- Ramus, C. A., & Steger, U. (2000). The roles of supervisory support behaviors and environmental policy in employee eco-initiatives at leading-edge European companies. *Academy of Management Journal*, 43, 605–626.
- Renwick, D. W. S., Redman, T., & Maguire, S. (2013). Green human resource management: a review and research agenda. *International Journal of Management Reviews*, 15, 1–14.
- Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: a review of the literature. *Journal of Applied Psychology*, 87, 698–714.
- Riggle, R. J., Edmondson, D. R., & Hansen, J. D. (2009). A meta-analysis of the relationship between perceived organizational support and job outcomes: 20 years of research. *Journal of Business Research*, 62, 1027–1030.
- Rigotti, T. (2009). Enough is enough? threshold models for the relationship between psychological contract breach and job-related attitudes. *European Journal of Work and Organizational Psychology*, 18, 442–463.
- Robertson, J. L., & Barling, J. (2013). Greening organizations through leaders' influence on employees' pro-environmental behaviors. *Journal of Organizational Behavior*, 34, 176–194.
- Robinson, S. L. (1996). Trust and breach of the psychological contract. *Administrative Science Quarterly*, 41, 574–599.
- Robinson, S. L., & Morrison, E. W. (2000). The development of psychological contract breach and violation: a longitudinal study. *Journal of Organizational Behavior*, 21, 525–546.
- Robinson, S. L., & Rousseau, D. M. (1994). Violating the psychological contract: not the exception but the norm. *Journal of Organizational Behavior*, 15, 245–259.
- Rucker, D. D., Preacher, K. J., Tormala, Z. L., & Petty, R. E. (2011). Mediation analysis in social psychology: current practices and new recommendations. *Social and Personality Psychological Compass*, 5(6), 359–371.
- Saari, L. M., & Judge, T. A. (2004). Employee attitudes and job satisfaction. *Human Resource Management*, 43(4), 395–407.
- Sammalisto, K., & Brorson, T. (2008). Training and communication in the implementation of environmental management systems (ISO14001). *Journal of Cleaner Production*, 16, 299–309.
- Shaffer, M. A., Harrison, D. A., Gilley, K. M., & Luk, D. M. (2001). Struggling for balance amid turbulence on international assignments: work-family conflict, support and commitment. *Journal of Management*, 27(1), 99–121.
- SHRM. (2010, June). *2010 employee job satisfaction: A survey report by SHRM*. Alexandria, VA: Society for Human Resource Management.
- Siero, S., Boon, M., Kok, G., & Siero, F. (1989). Modification of driving behavior in a large transport organization: a field experiment. *Journal of Applied Psychology*, 74, 417–423.
- Steg, L., & Vlek, C. (2009). Encouraging pro-environmental behaviour: an integrative review and research agenda. *Journal of Environmental Psychology*, 29, 309–317.
- Stern, P. C. (2000). Psychology and the science of human-environment interactions. *American Psychologist*, 55(5), 523–530.
- Stinglhamer, F., de Cremer, D., & Mercken, L. (2006). Perceived support as a mediator of the relationship between justice and trust. *Group & Organization Management*, 31(4), 442–468.
- Tan, H. H., & Tan, C. S. F. (2000). Toward the differentiation of trust in supervisor and trust in organization. *Genetic, Social and General Monographs*, 126(2), 241–260.
- Tekleab, A. G., & Chiaburu, D. S. (2011). Social exchange: empirical examination of form and focus. *Journal of Business Research*, 64, 460–466.
- Temminck, E., Mearns, K., & Fruhen, L. (2015). Motivating employees towards sustainable behaviour. *Business Strategy and the Environment*, 24(6), 402–412.
- Tudor, T. L., Barr, S. W., & Gilg, A. W. (2008). A novel conceptual framework for examining environmental behavior in large organizations: a case study of the Cornwall National Health Service (NHS) in the United Kingdom. *Environment and Behavior*, 40, 426–450.
- Unsworth, K. L., Dmitrieva, A., & Adriasola, E. (2013). Changing behavior: increasing the effectiveness of workplace interventions in creating pro-environmental behavior change. *Journal of Organizational Behavior*, 34, 211–229.
- Zhang, Y., Wang, Z., & Zhou, G. (2013). Antecedents of employee electricity saving behavior in organizations: an empirical study based on norm activation model. *Energy Policy*, 62, 1120–1127.
- Zhao, H., Wayne, S., Glibkowski, B., & Bravo, J. (2007). The impact of psychological contract breach on work-related outcomes: a meta-analysis. *Personnel Psychology*, 60, 647–680.