



Green work climate, work meaningfulness and supervisor environmental priority: A social exchange perspective on employees' eco-initiatives

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ABSTRACT

Employees' pro-environmental behaviors (or eco-initiatives) are of paramount importance for embedding sustainability beyond symbolic commitments and compliance with formal procedures. Understanding antecedents of employees' eco-initiatives requires examining situation- and person-related factors, in order to shed light on interactions between the work environment, individuals' cognitive dynamics and supervisory behaviors that drive employees' proactive stance on environmental issues on the job. Drawing on a survey of employees in four large retail stores in Italy, the study examines green work climate and work meaningfulness as antecedents of employees' eco-initiatives, also testing the mediation of work meaningfulness in the relation between green work climate and eco-initiatives. In addition, the study explores the moderation of supervisor environmental priority on the relation between work meaningfulness and eco-initiatives. The results support the hypothesis of the study, highlighting green work climate and work meaningfulness as relevant workplace dynamics in stimulating employees' eco-initiatives, also shedding light on the role of supervisors in managing conflicting priorities between sustainability and productivity. The findings contribute to the literature on drivers of green workplace behaviors, by emphasizing interactions between situational, personal and supervisory antecedents. Managerial implications and avenues for future research are also discussed.

1. Introduction

The transition towards environmental sustainability is proving to be an increasingly complex challenge for businesses. Modern sustainability challenges require moving beyond management approaches that characterized corporate responses to sustainability issues over the past two decades (Grewatsch et al., 2021). Adopting environmental practices designed to serve legitimation purposes – in response to external demands and pressures (Bowen and Aragon-Correa, 2014) – is ill-suited to support firms in continuously balancing conflicting but interrelated objectives of environmental and economic sustainability that are inherently dynamic and pervasive in modern business operations (Bianchi and Testa, 2022).

Empirical research has indeed found that environmental management standards based on international schemes (e.g. ISO 14001) provide inconsistent benefits when environmental principles are not embedded in day-to-day operations and routines (Heras-Saizarbitoria et al., 2020; Bianchi et al., 2022). In particular, the role of human factors – i.e.,

managers and employees' behaviors – has been proven critical in internalizing sustainability beyond compliance with formal procedures or management schemes (Norton et al., 2015). Empirical evidence has shown that employees' pro-environmental behaviors are crucial for increasing organizations' awareness of, and attention towards, the natural environment, also making organizations more resilient to external pressures and demands (Testa et al., 2019). Such pro-environmental behaviors are framed as employees' eco-initiatives, when they entail advancing suggestions and proactively discussing opportunities for improving environmental performance of company's operations (Boiral and Paillé, 2012).

Numerous studies have explored the drivers of employees' pro-environmental behaviors, focusing on both situation and person-related factors (Yuriev et al., 2018). Situation-related factors refer to employees' perceptions about organizational or job-related aspects that characterise how they interpret their daily work experience (Konovsky and Organ, 1996). Previous studies have identified situation-related antecedents such as green human resource management (Rubel et al.,

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2021; Nisar et al., 2021), organizational support (Temminck et al., 2015; Paillé et al., 2020), supervisory support (Daily et al., 2009; Raineri et al., 2016), environmental management practices (Aslam et al., 2021), and corporate environmental policies (Paillé and Raineri, 2015). Such factors have been found to stimulate pro-environmental behaviors by leveraging a social exchange mechanism. Social exchange consists of “reciprocal relationships between two or more parties that are based on voluntary actions of reciprocity” (Raineri et al., 2016, p. 49). When organizational members evaluate their work context as characterized by high-quality relationships and oriented toward a meaningful purpose, they are more likely to find intrinsic benefits from their membership in the organization and to reciprocate with pro-environmental behaviors (Lavelle et al., 2009; Amrutha and Geetha, 2021). The literature on pro-environmental behaviors has identified certain person-related factors as pivoting factors of social exchange, such as affective commitment to the organization and the environment (Temminck et al., 2015; Raineri and Paillé, 2016), environmental concern (Daily et al., 2009), and organizational identification (Opoku-Dakwa et al., 2018).

In discussing social exchange mechanisms underlying pro-environmental workplace behaviours, such studies often refer, implicitly or explicitly, to work meaningfulness. Indeed, when individuals identify with their organization's values and endorse its orientation, they experience a sense of purpose and fulfillment in the performance of their work that drives them to “return the favor” in the form of additional effort beyond their formal duties (Cropanzano and Mitchell, 2005). However, despite its relevance as a trigger of proactive behaviors, work meaningfulness has been seldom investigated and measured in models of pro-environmental behaviors.

In addition, studies on situation-related antecedents have focused only on specific features of the work environment, while few studies have investigated a multidimensional situation-related factor that holistically captures different contextual aspects and dynamics. However, an organizational context that facilitates employees' pro-environmental behaviors is multidimensional in nature, as it is a multi-faceted manifestation of a common background of beliefs, values, and norms that characterizes the predominant patterns of behavior within the organization (Schneider et al., 2013).

Finally, studies on workplace pro-environmental behaviors have overlooked the issue of conflicting demands and work pressures that employees experience in the work context, thus neglecting the complexity of divergent, but interrelated logics that influence behavior on the job (Hengst et al., 2020). Scholars have pointed out that organizational members face daily competing work pressures when approaching sustainability aspects of the job, such as sustaining efficiency and pace of operations while managing environmental aspects (Hahn et al., 2010). Such pressures require organizational members to navigate tensions between divergent objectives in the attempt to reconcile conflicting work pressures (Dahlmann and Grosvold, 2017). When perceived as irreconcilable, such tensions may force workers to jettison environmental concerns in favor of efficiency and productivity, thus hindering the adoption of pro-environmental behaviors on the job. In this frame, supervisors play a crucial role in determining priorities between conflicting logics (Hahn et al., 2014). Indeed, due to their formal authority within the organization, they are able to exert considerable influence on workers and, therefore, direct their actions toward the consideration of environmental aspects even when work pressures would lead to overshadow them (Paillé et al., 2019). A work context where environmental aspects are prioritized by the supervisor increases the effect of work meaningfulness on employees' eco-initiatives and thus results in greater social exchange.

To address these gaps, drawing on social exchange theory, we propose that a multidimensional situational factor such as green work climate stimulates employees to adopt discretionary pro-environmental behaviors, such as eco-initiatives, by fostering a sense of work meaningfulness and purpose (May et al., 2004). In this view, the study envisions work meaningfulness as a key mechanism in the social exchange

dynamics that underlies the relation between green work climate and employees' eco-initiatives on the job (Bhatnagar and Aggarwal, 2020). Thus, under the lens of social exchange theory, work meaningfulness is viewed as a psychological person-related factor through which employees are likely to reciprocate the presence of an environmentally concerned and committed organizational context with voluntary initiatives aimed at improving the corporate environmental performance. Finally, we test the moderating effect of the supervisor's environmental priority on the relationship between work meaningfulness and eco-initiatives, recognizing that the supervisor's attitude is a decisive contextual factor in guiding and influencing employee behaviors and, therefore, in avoiding neglecting environmental aspects due to conflicting work pressures (Wesselink et al., 2017). Supervisor's environmental priority can increase employees' positive perceptions of the organizational context, thereby strengthening the effect that work meaningfulness has on eco-initiatives.

Accordingly, the study's contribution is threefold. First, the present research contributes to the literature on workplace pro-environmental behaviors by emphasizing the role of organizational climate in shaping a work environment that is conducive to employees' eco-initiatives. Second, drawing on social exchange theory, the study highlights work meaningfulness as a key cognitive mechanism to stimulate pro-environmental behaviors on the job by triggering exchange relationships between employees and the organization. Third, the study is a first attempt to capture the complexity that characterizes organizational dynamics in which everyday goals may be in conflict. In this regard, the study highlights how supervisors' framing and prioritisation of environmental sustainability issues is critical in encouraging eco-initiatives, especially at times when win-win solutions are not achievable.

The article proceeds as follows: in the next section, we review the literature on pro-environmental workplace behaviors and social exchange theory, and we formulate our research hypotheses; then, the research method is described; consequently, the results of the study are discussed; lastly, the last section highlights the novel contributions of the research and addresses managerial implications, limitations, and future research directions.

2. Theoretical framework and hypothesis

2.1. Social exchange theory and employees' eco-initiatives

Pro-environmental behaviors are a key resource for companies, as they allow to achieve higher levels of sustainability performance (Ramus and Killmer, 2007; Testa et al., 2019). Pro-environmental behaviors can be divided into two categories: in-role and extra-role behaviors (Ramus and Killmer, 2007). The former consist of behaviors that are effectively part of employees' work tasks (Bissing-Olson et al., 2013). In contrast, extra-role behaviors consist of discretionary actions that are not required and not rewarded by formal reward systems (Paillé et al., 2019). Several notions of this concept have been developed in the literature on discretionary pro-environmental behaviors which, with different nuances and meanings, can be lumped into the macro-category of organizational citizenship behavior for the environment (OCBE) (Yuriev et al., 2018). Among them, voluntary behaviors that indirectly contribute to increasing the organizational environmental performance through individual initiatives, suggestions, and guidance to colleagues have been framed as eco-initiatives by Boiral and Paillé (2012).

Several studies have provided empirical evidence of the effectiveness of individuals' discretionary pro-environmental behaviors in internalizing environmental practices, thus improving organizational sustainability performance (Paillé et al., 2014; Boiral et al., 2015; Yuriev et al., 2018). In this regard, a key aspect of such behaviors is the tendency of individuals to implement voluntary initiatives aimed at offering assistance to colleagues on environmental issues and sharing environmental knowledge. These initiatives facilitate embedding sustainability as they

enable its diffusion into the operational setting, which is hardly promoted by codified procedures (Boiral and Paillé, 2012; Todaro et al., 2022). Therefore, due to the relevance of employees' eco-initiatives, it is important to understand the dynamics that trigger them.

Social exchange theory has been widely applied to understand the nature of workplace behaviors that are optional and not included in employees' regular duties (Organ et al., 2006). As stated by Blau (1964), social exchange involves reciprocal relationships on a voluntary basis between two or more parties. The basic concept of the theory is that employees, when stimulated and encouraged by their work context, are more likely to reciprocate this endorsement by acting proactively and going above and beyond what is expected of them (Lavelle et al., 2009). Therefore, a work environment eliciting positive perceptions in employees with respect to their organization enables the creation of high-quality relationships between the two parties and, therefore, prompts organizational members to take supererogatory initiatives in the workplace (Cropanzano and Mitchell, 2005). With specific reference to environmental sustainability, social exchange theory has been used to explain the emergence of employees' pro-environmental behaviors in response to corporate practices in favor of the environment (Amrutha and Geetha, 2021). For instance, Paillé et al. (2014) found that environmental management practices contribute stimulating organizational citizenship behaviors toward the environment (OCBEs) by employees, as they are motivated to reciprocate organizational efforts towards sustainability. Amrutha and Geetha (2021) used the social exchange theory to explain the relationship between green training provided by the organization and voluntary workplace green behaviors.

As indicated by some authors, the social exchange dynamic leverages certain relational and emotional or psychological states, such as employee engagement (Slack et al., 2015), affective commitment (Raineri et al., 2016), person-organization or person-job fit (Farzaneh et al., 2014), and work meaningfulness (Seibert et al., 2011). In particular, the role of work meaningfulness has been recognized as a person-related factor triggering social exchange mechanisms through the positive perception and internal motivation that the organizational context can elicit in organizational members (Bhatnagar and Aggarwal, 2020).

Indeed, work meaningfulness entails a sense of satisfaction and purpose in the performance of work activities. This psychological state prompts individuals to reciprocate their appreciation for the organizational context with proactive workplace initiatives (Binyamin and Brender-Ilan, 2018). Thus, the social exchange mechanism between employees and the organization occurs through individual psychological processes that link contextual factors to behavioral consequences (Raineri et al., 2016). On this basis, it is reasonable to assume that an organization committed to environmental aspects, in which a green work climate prevails, can stimulate employees' eco-initiatives by activating in individuals a sense of work meaningfulness that enables social exchange dynamics.

Social exchange mechanisms can also involve relationships between the supervisor and employees (Cropanzano and Mitchell, 2005). Literature on social exchange shows that when employees experience positive relationships with their supervisor, they are more likely to show greater commitment towards the organization, also through extra-role behaviors (Gkorezis, 2015). In relation to pro-environmental behaviors, several studies have explored how supervisor support can stimulate such behaviors in employees (Ramus and Steger, 2000; Daily et al., 2009). Indeed, as argued by the social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960), individuals who receive benefits from other individuals implicitly feel obligated to them. Therefore, if organizational members experience a sense of purpose and accomplishment in their work due to a work context devoted to environmental issues, it is plausible to believe that a supervisor's orientation aimed at not neglecting environmental aspects is perceived positively by employees. Accordingly, in such a context, supervisor environmental priority is able to further stimulate employees' eco-initiatives through

social exchange mechanisms.

The following paragraphs detail the hypotheses of the study, by discussing the analyzed constructs and the underlying relationships.

2.2. Determinants of social exchange for employees' eco-initiatives

2.2.1. Green work climate and employees' eco-initiatives

Many studies have pointed out that organizational context can influence employees' behaviors and attitudes in the workplace (Kuenzi and Schminke, 2009; Schneider et al., 2013). Indeed, the organizational context incorporates elements such as leadership styles (Testa et al., 2019), policies (Norton et al., 2014), practises and procedures (Aslam et al., 2021), and interpersonal relationships (Todaro et al., 2022), that affect the behavior of individuals and how they relate to the organization and to others, generating mechanisms of social exchange and reciprocity (Lavelle et al., 2009). Burke et al. (2002) state that employees first perceive and make sense of the work environment and then behave accordingly. If employees perceive that their organization adopts environmentally friendly policies, practices and attitudes, this will lead them to deem green behaviors at the workplace appropriate and desired (Norton et al., 2014, 2015). By receiving similar information, living common experiences and participating in joint meetings and discourses, individuals of the same organization shape collective and shared perceptions of the work setting (Babnik et al., 2014). Employees' shared perceptions of policies, practices, procedures, and behaviors that characterise the organizational context define the work climate (Zohar, 2010). More specifically, work climate formation can occur with reference to particular domains of organizational action (Schneider, 2013), such as environmental management. In this view, green work climate relates to how employees perceive the organizational approach towards environmental sustainability (Norton et al., 2014). An organization's orientation toward environmental sustainability derives from a range of business practices that may include consideration of environmental aspects when planning activities (Norton et al., 2015), involvement of operational staff in decision-making processes related to green issues (Todaro et al., 2022), clarity in communication and information on these topics (Rubel et al., 2021), and attention to environmental problems (Norton et al., 2014). Employees' evaluations of these practices define the green work climate which, in turn, affects their environmental behaviors and attitudes at workplace, as empirically demonstrated by research (Norton et al., 2017; Sabokro et al., 2021). Accordingly, we propose the following hypothesis:

Hypothesis 1. Green work climate positively influences Employees' eco-initiatives

2.2.2. Work meaningfulness as a mechanism of social exchange

Working for an organization responsible for society and the environment, which operates with respect for what surrounds it and contributes to the common good (Rosso et al., 2010), makes employees participate in a greater cause, allowing them to feel a sense of purpose and accomplishment (Chaudhary and Akhouri, 2019). In this context, employees experience work meaningfulness, since they perceive their own activity as directly or indirectly useful and beneficial to others and oriented toward a broader minded goal, thus attributing value and meaning to it (Aguinis and Glavas, 2013).

By eliciting a sense of fulfilment and satisfaction, work meaningfulness influences how employees spend physical, cognitive and emotional energy while performing their work activities (Kahn, 1990). In fact, research has shown that work meaningfulness is associated with several positive personal and work outcomes, such as intrinsic motivation, personal growth, job satisfaction, work engagement and organizational commitment (May et al., 2004; Allan et al., 2019). In this line, some studies have suggested that when employees' work is guided by meaningfulness, they are more likely to engage in proactive behaviors involving an investment of energy and time beyond regular tasks

(Binyamin and Brender-Ilan, 2018; Aguinis and Glavas, 2013). Specifically, employees who, in carrying out their work, feel a sense of accomplishment and meaning because they identify with their work context and share its values and beliefs, are more inclined to go "above and beyond" their normal duties, returning this "favor" to the organization as a social exchange (Seibert et al., 2011; Bhatnagar and Aggarwal, 2020). For instance, Opoku-Dakwa, Chen and Rupp (2018) consider the individuals' identification with the environmental and social cause of the organization as a crucial factor for work meaningfulness, motivating them to make additional efforts to benefit their workplace environment. In this vein, individuals who experience work meaningfulness, since they are aligned with the organization's environmental orientation, will be more likely to engage in voluntary pro-environmental behaviors, such as eco-initiatives (Bhatnagar and Aggarwal, 2020). In literature, work meaningfulness is indeed considered as a key psychological factor linking variables related to work and organizational characteristics with behavioral and attitudinal outcomes (Seibert et al., 2011). In particular, a socially and environmentally concerned work environment, by contributing to employees' identification with their company's objectives, triggers a social exchange dynamic that increases their motivation to implement discretionary pro-environmental behaviors (Raineri et al., 2016). In this view, green work climate makes employees participate in a greater and shared purpose, causing them to feel work meaningfulness which, in turn, fosters individual environmental initiatives (Aguinis and Glavas, 2013). Therefore, we assume that the relationship between green work climate and eco-initiatives is mediated by work meaningfulness. Based on these considerations, the following hypothesis:

Hypothesis 2. Work meaningfulness mediates the relation between Green work climate and Employees' eco-initiatives

2.2.3. Supervisor environmental priority

In the work context, individuals face daily tensions between inter-related objectives that, while all desirable in isolation, appear conflicting when considered together (Smith and Lewis, 2011; Hengst et al., 2020). Indeed, organizational members are required to constantly and simultaneously address pressures related to multiple sustainability goals such as those concerning productivity, efficiency, environment, and safety (Dahlmann and Grosvold, 2017). Given the "complex and multi-faceted nature" of corporate sustainability (Hahn et al., 2015, p. 298), several authors have addressed the issue of managing tensions inherent in the economic, environmental, and social aspects of organizational action (Gao and Bansal, 2013; Hahn et al., 2018; Ivory and Brooks, 2018). This complexity involves both decision-makers at a strategic level (Hahn et al., 2014; Todaro et al., 2019), and middle-managers at an operational level (Siltaloppi et al., 2021). Although previous studies on pro-environmental behaviors have considered relationships with behavioral and attitudinal aspects of the supervisor (Wesselink et al., 2017; Paillé et al., 2022), they have not analyzed the role of the supervisor in managing existing tensions in the work setting, simplifying its inherent dynamics (Siltaloppi et al., 2021).

In most organizations, supervisors have the role of communicating and transmitting organizational norms, practices and policies directly to workers (Todaro et al., 2022). This position within the corporate hierarchy makes them, with respect to employees, the main communication channel and the closest representative of the organization (Paillé et al., 2019). For this reason, supervisors can exert a significant influence on the behaviors, beliefs and attitudes of individuals under their supervision (Ramus and Steger, 2000). Therefore, if the supervisor had particular regard for environmental issues, he or she could leverage his or her role and influence to encourage employees to consider the environmental objectives and aspects as essential and, hence, to adopt behaviors accordingly (Paillé et al., 2022).

The role of supervisors in prioritising environmental issues in the workplace, thus influencing the level of attention that workers dedicate

to the management of environmental aspects of their daily operations, have been often neglected in the literature on pro-environmental workplace behavior. In the field of safety management this concept is defined as "supervisor safety priority" and refers to the extent to which the supervisor focuses his or her intervention and attention on safety even when the pressures to achieve production and productivity targets would lead to consider safety as secondary (Kao et al., 2015). Similarly, this concept can be interpreted in an environmental key as "supervisor environmental priority", representing the primary importance that the supervisor ascribes to environmental aspects even in times of stress caused by productivity demands or workloads. This supervisor attitude denotes an approach that recognizes the inherent complexity of sustainability, bringing out the existence of conflicting tensions between environmental aspects and work demands and the need to manage them by avoiding trade-offs (Hahn et al., 2015).

By helping to guide employees' behavior (Wesselink et al., 2017), supervisors who consider green issues as a priority regardless of production pressures, convey environmental engagement to subordinates as a core work value (Paillé et al., 2019). Consequently, this supervisor environmental orientation enhances the involvement of employees in activities supportive of the natural environment, such as eco-initiatives (Raineri and Paillé, 2016). In addition, if employees experience work meaningfulness as they are embedded in an organizational context committed toward the environment, the supervisor's focus on considering environmental aspects as a priority will be perceived positively by organizational members. Therefore, they will be further stimulated to reciprocate the supervisor's attention to the environment by implementing eco-initiatives. We thus offer the following hypothesis:

Hypothesis 3. Supervisor environmental priority positively moderates the relation between Work meaningfulness and Employees' eco-initiatives

Fig. 1 displays the study's conceptual model.

3. Method

3.1. Data collection and sample

The study draws on data collected from employees in four supermarkets owned and operated by a major Italian retail chain sited in Tuscany (Italy), which operates 110 stores – from minimarkets, through supermarkets, to hypermarkets – and employees 7.938 workers in the region. Out of the 110 stores owned by the retail chain, 83 are supermarkets: supermarkets indeed play a central role in the retail chain's business model, and a substantial portion of the overall retail chain's environmental footprint is directly or indirectly attributable to supermarkets, primarily for what concerns waste (Marrucci et al., 2020). Therefore, based on a random sampling approach, four supermarket stores were selected, employing about 5 percent of the retail chain's workers.

It is important to underline that the research was conducted prior to the implementation of a certifiable environmental management system in the four stores. This research setting allowed us to explore a work environment where environmental issues are increasingly relevant, but not deeply entrenched in workers' operations. Accordingly, employees and managers have significant leeway in terms of the initiatives they can take in regard with environmental issues. First, contrary to other industrial sectors (such as the manufacturing sector), in the retail sector, salient environmental impacts are mostly indirect (i.e. they occur upstream and downstream in the supply chain) (Naidoo and Gasparatos, 2018): as a result, environmental impacts are only indirectly associated to workers' core activities and operations in the store, and, consequently, less visible to store workers. Second, despite being operated by the same retail chain, the four stores do not abide to a certifiable environmental management program: the retail chain does not enforce an environmental management system according to an international

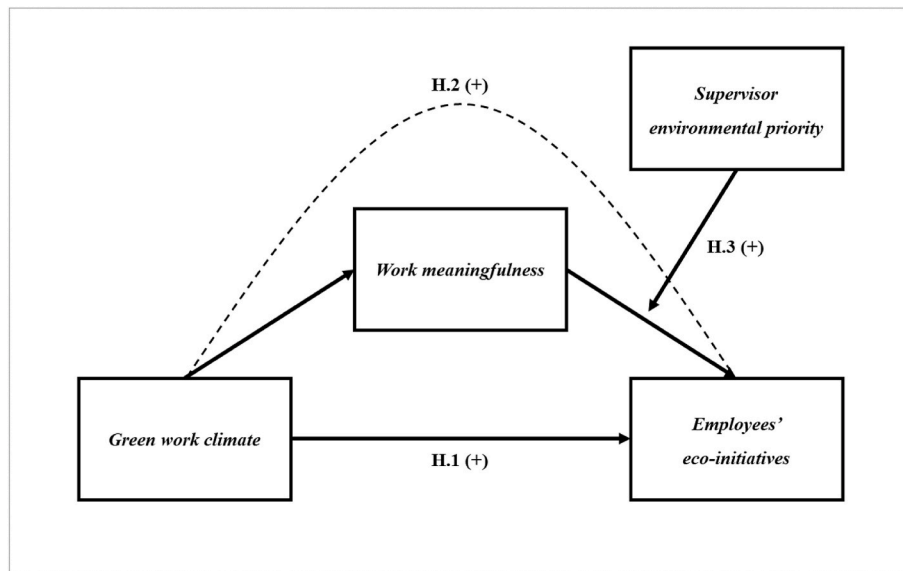


Fig. 1. Conceptual model.

standard (such as ISO 14001) on its controlled stores, but rather provides a set of environmental procedures aimed at ensuring compliance of operations with national and regional environmental regulations, especially in relation with waste management and disposal. Accordingly, the stores lack a certified management scheme designed for the continuous improvement of environmental performance and, most importantly, they lack the external pressure entailed by third-party verifications of compliance with the management system's requirements.

Due to the limited environmental salience and to the lack of the external influence of third-party verifiers, the stores' proactivity on environmental sustainability – beyond regulatory compliance – is handed over to store managers and department heads' discretion to promote the adoption of voluntary environmental behaviors among the workforce. As a result, the stores' overall stance on environmental sustainability largely hinge on managers and supervisors' influence on the workforce, and, consequently, on workers' own ability to engage in voluntarily initiatives aimed at improving environmental aspects of daily operations.

In this view, the four stores constitute an appropriate research setting to examine social exchange mechanisms underlying discretionary employees' eco-initiatives on the job, as the lack of inherently relevant environmental aspects of work operations and limited external influence rule out potential bias that may influence employees' pro-environmental behaviours.

Each store employs from 50 to 145 employees, with diverse roles and responsibilities, ranging from store clerk to department head and store manager. All stores' employees were invited to take part in the survey, irrespective of role, job function or position. In fact, none of the variables examined are specific to, or contingent upon, a specific role or job function, and thus they can be elicited as self-assessments by all roles considered in our sample. Thus, a total of 300 employees were invited to participate in the survey.

While designing the questionnaire, several procedural remedies were adopted to mitigate bias that might affect survey-based research, such as common method bias and social desirability bias. An introductory message to the questionnaire guaranteed the independent aim of the study, that data would only be revealed in an aggregated form, and respondent anonymity. Consequently, questions concerning the name of the respondent or the name of the organization were avoided. Most importantly, to avoid vagueness, questions were kept simple and concise, and verbal labels for the endpoints and midpoints of the

categorical Likert scales were indicated in order to reduce ambiguity (Podsakoff et al., 2003).

Prior to the final submission of the questionnaire, a pre-test was carried out with a small sample of employees. As a result of the pre-test, few questions were discarded, while others were simplified or rephrased in order to make terminology more adherent to respondents' jargon that is commonly spoken in the workplace.

The final questionnaire was uploaded to an online survey platform and participants were informed about the survey from the co-operative's management. From March to April 2022, the questionnaire was made accessible to stores' employees via the co-operative's intranet system. After this time span, 250 responses were collected across the four stores. Due to partial completion, two incomplete questionnaires were discarded: thus, 248 responses were retained for analysis, representing an overall response rate of 82.6%. Table 1 provides the sample breakdown in terms of respondents' demographics (gender, age and seniority) and roles.

Given the presence of diverse organizational roles in the sample of respondents – store clerk, department heads and store managers – one-way analysis of variance (ANOVA) tests were carried out in order to detect significant variations in all latent variables' means across organizational roles that could signal differences in the level of understanding or diverse interpretations of questionnaire items among such groups of respondents. The analysis yielded non-significant results for all variables considered, thus indicating a homogeneous understanding of the questionnaire across roles, and that organizational role did not significantly affect the understanding of questionnaire items.

To detect any significant differences between respondents and non-respondents, we checked for non-response bias by comparing early respondents with late respondents: to this purpose, we assumed that late respondents were similar to non-respondents (Fiorini et al., 2022). The sample of respondents was divided into quartiles based on the date each respondent participated in the survey: the first quartile thus includes respondents who participated earlier in the data collection period, while the fourth quartile included late respondents who completed the questionnaire towards the end of the data collection period. An independent *t*-test was used to compare the mean difference between early respondents and late respondents. The results in Table 2 show no significance difference between the two groups ($p > 0.05$) in both the Levene's test and the equality of means for the constructs of the model, indicating that non-response bias is not a potential threat to our results.

Table 1
Sample breakdown: respondents' demographics and roles. Percentages are in brackets.

	Stores				Total
	1	2	3	4	
No. of responses collected	128	40	59	21	248
Gender					
Male	34 (27%)	19 (47%)	10 (17%)	7 (33%)	70 (28%)
Female	94 (73%)	21 (53%)	49 (83%)	14 (67%)	178 (72%)
Age					
< 30	9 (7%)	5 (12%)	1 (2%)	3 (14%)	18 (7%)
31–50	74 (58%)	19 (48%)	37 (63%)	15 (72%)	145 (58%)
> 51	45 (35%)	16 (40%)	21 (36%)	3 (14%)	85 (34%)
Seniority					
< 10	25 (19%)	10 (25%)	6 (10%)	6 (29%)	47 (19%)
11–20	68 (53%)	13 (32%)	31 (53%)	10 (48%)	122 (49%)
> 21	35 (28%)	17 (43%)	22 (37%)	5 (24%)	79 (32%)
Role					
Clerk	122 (95%)	30 (75%)	51 (86%)	16 (76%)	219 (88%)
Department head	5 (4%)	9 (23%)	7 (12%)	4 (19%)	25 (10%)
Store manager	1 (1%)	1 (2%)	1 (2%)	1 (5%)	4 (2%)

Table 2
Assessment of non-response bias.

Construct	Sig. Levene's Test	Sig. t-test for equality of means
Green work climate	0.546	0.167
Work meaningfulness	0.389	0.903
Supervisor environmental priority	0.257	0.449
Employees' eco-initiative	0.949	0.715

3.2. Measurements

Most measures utilised in the study were developed based on already validated psychometric scales, as detailed in the following paragraphs. Measurement scales were then adapted to the context of the study in close collaboration with the co-operative's management and employees, in order to improve consistency with the cultural and social frames of the research setting and thus mitigate risk of common method bias (Ramus and Killmer, 2007). All measurement scales were based on a 5-point Likert scale: specifically, respondents were asked to rate their level of agreement with each item on a scale from 1 = "Totally disagree" to 5 = "Totally agree".

Green work climate – Green work climate refers to employees' perceptions about their organization's orientation towards environmental sustainability (Norton et al., 2014, 2015). The measure was developed based on Norton et al. (2014), by adapting items pertaining to the organizational-level of analysis: in fact, while operationalisations of work climate often elicit generic perceptions about both co-workers and the organization, the present study exclusively focuses on workers' perceptions about the organization in order to provide a more stringent measure and a more focused contribution.

Work meaningfulness – The measurement scale was initially derived from the Work as Meaning Inventory (WAMI) scale, as proposed by Steger et al. (2012), and then adapted to fit the context of the study. In

line with this operationalisation approach, the scale incorporates eight items to capture all the three primary facets of meaningful work: namely, positive meaning in work, meaning making through work and greater good motivations.

Supervisor environmental priority – The research drew on the safety management literature to adapt the construct of supervisor safety priority to the environmental management domain (Henning et al., 2009). Within the safety management field, this concept denotes the extent to which supervisors prioritise compliance with safety procedures over production, and thus motivate workers to desist from taking shortcuts or taking risks to get the job done (Kao et al., 2015). By drawing on previously validated scales (Henning et al., 2009), four items for supervisor environmental priority were developed.

Employees' eco-initiative – The measure for employees' eco-initiative was developed by reviewing previous studies on pro-environmental OCB. In line with the taxonomy of pro-environmental OCBs and "eco-initiatives" proposed by Boiral and Paillé (2012), the measure thus incorporates five items that adhere to the conventional OCB typologies of stewardship, sportmanship, and individual initiative.

Control variables – Based on recommendations by Becker et al. (2016) and Bernerth and Aguinis (2016), one-way analysis of variance (ANOVA) tests were carried out to detect differences in the variables examined across three potential control variables, i.e. gender, organizational role (store clerk, department head and store manager) and seniority (number of years as an employee for the organisation). Such demographic variables are indeed often used as control variables in studies of pro-environmental workplace behaviours (Klein et al., 2012; Yuriev et al., 2018). However, the ANOVA tests did not highlight any significant differences in the variables examined across such factors; consequently, to prevent possible bias Li (2021); Wysocki et al. (2022), the control variables were omitted from the analysis (Malik et al., 2023).

All latent variables' measurement scales are presented in Table 3.

4. Results

4.1. Assessment of the measurement model and detection of misspecifications

Before testing the hypothesis, the validity of the measurement model was assessed by means of a confirmatory factor analysis (CFA) (Anderson and Gerbing, 1988), and by analyzing modification indices (MI) and expected parameter change (EPC), to investigate if misspecifications are present in our model (Shashi et al., 2019; Latan et al., 2020). The analysis of MI and EPC suggested including some covariances between indicator errors. However, since modification indices should be used only when supported by rigorous theoretical consistency, as recommended by Byrne (2016), we added only covariances between indicator errors belonging to the same construct in the model (CFA). Further analysis of MI/EPC did not show alternative measurements consistent with theory, revealing that the model had no problems with model specification errors.

First, the CFA confirmed the unidimensionality of the four constructs, indicating that the measurement items consistently load on four distinct factors with factor loadings higher than 0.55 and uniqueness values lower than 0.44 (Table 3). Second, validity and robustness checks corroborate the good fit of the model: the comparative fit index (CFI) is 0.96; the Tucker–Lewis index (TLI) is 0.97, both above the acceptability threshold value of 0.90; the root-mean-square error of approximation (RMSEA) is 0.047, below the acceptability threshold values of 0.08 (Iacobucci, 2010). Moreover, the chi-square statistic adjusted by its degrees of freedom (χ^2/df) amount to 1.54, which is considerably lower than the 3.0 threshold (Kline, 2015).

Consequently, latent variables' convergent and discriminant validity were examined. The measurement model exhibits a good fit, as all observed variables are significantly related to their latent construct ($p < 0.001$), and all regression coefficients are higher than 0.05. Then, we

Table 3

Questionnaire items and factor loadings M = mean; SD = standard deviation; AVE = average variance extracted; CRA = Cronbach's alpha; CR = composite reliability; MSV = Maximum Shared Variance; ASV = Average Shared Squared Variance.

Construct	Operationalisation	Factor loading	M	SD	Uniqueness	AVE	CRA	CR	MSV	ASV
Employees' eco-initiative	I often take time during working hours to raise awareness among my colleagues about the environmental aspects of work activities	0.66	2.41	0.05	0.31	0.469	0.83	0.81	0.275	0.235
	I take advantage of every opportunity to discuss issues related to the environmental aspects of our work with my colleagues	0.74	2.44	0.05	0.27					
	Even when work pressure is high, I take time to share information on environmental issues with my colleagues	0.64	2.78	0.06	0.36					
	I always weigh environmental risks and impacts while carrying out my work activities	0.64	3.83	0.05	0.44					
	I make suggestions to my colleagues about ways to protect the environment more effectively, even when it is not my direct responsibility	0.75	3.06	0.03	0.25					
Green work climate	My organization takes environmental aspects into account while planning work activities of each department	0.84	3.87	0.05	0.31	0.559	0.89	0.88	0.507	0.381
	When a change in activities, operations or processes is implemented, decisions taken with regard to the management of environmental aspects are comprehensively and clearly discussed	0.55	3.37	0.05	0.39					
	In my organization, workers who report problems related with the environmental aspects of work activities are provided with a timely feedback	0.67	3.38	0.04	0.37					
	In my organization, I have received sufficient information to correctly perform my work activities while protecting the environment	0.73	4.07	0.04	0.22					
	In my organization, information initiatives are effective in promoting environmentally friendly behaviour	0.82	3.86	0.03	0.20					
	When new operations are introduced, my organization always provides clear information about any relevant environmental aspects	0.82	3.95	0.03	0.33					
Work meaningfulness	My work contributes to my life's meaning	0.76	3.98	0.04	0.29	0.615	0.93	0.93	0.362	0.269
	I am aware of what makes my job meaningful	0.69	4.29	0.04	0.38					
	My job has a meaningful purpose	0.88	4.05	0.03	0.19					
	I am aware that my work contributes to my personal growth	0.80	3.93	0.03	0.30					
	My work helps me better understand myself	0.73	3.69	0.03	0.32					
	My work helps me make sense of the world around me	0.81	3.5	0.03	0.22					
	My work helps make the world a better place	0.83	3.23	0.03	0.28					
The work I do contributes to a greater purpose	0.76	3.58	0.03	0.30						
Supervisor environmental priority	My supervisor expects everyone to follow environmental procedures "to the letter", even when work activities are delayed	0.68	3.16	0.05	0.29	0.546	0.86	0.82	0.507	0.310
	My supervisor pays a lot of attention to environmental procedures, especially when we are working under very tight deadlines	0.70	3.15	0.05	0.18					
	My supervisor shows constant commitment in improving environmental aspects, through his own behaviour	0.92	3.78	0.03	0.26					
	My supervisor thinks environmental protection comes before productivity	0.61	2.38	0.05	0.27					

computed the average variance extracted (AVE) of all constructs to assess the amount of total variance explained by each single construct. All constructs indeed exhibit AVE values that satisfy the 0.5 threshold requirement (Hair et al., 2014), with the only exception of employees' eco-initiatives, whose AVE is only slightly below the threshold (specifically, 0.47). Thus, composite reliability (CR) values were computed for all constructs, to find that all latent variables exhibit CR values higher or equal to the 0.8 threshold. Accordingly, despite a lower AVE value in the case of a single construct, the convergent validity of the latent constructs can be considered satisfactory (Fornell and Larcker, 1981). With regard to discriminant validity, following Fornell and Larcker (1981), we compared the squared root of the AVEs with the latent variable

correlations (Table 4). Since all the squared root of the AVEs are greater than the correlations between each relative latent variable and the others, the measurement model shows discriminant validity. In addition, discriminant validity was determined by evaluating Maximum Shared Variance (MSV) and Average Shared Squared Variance (ASV). Both were lower than the average variance extracted (AVE) for all constructs (Hair et al., 2014), as displayed in Table 3. Finally, as a further confirmation of discriminant validity, we calculated the heterotrait-monotrait ratio of correlations (HTMT). As shown in Table 5, none of the HTMT criteria violates the recommended threshold of 0.85 (Henseler et al., 2015).

Internal reliability and consistency of the latent constructs was also examined by computing Chronbach's alpha reliability coefficients. All

Table 4

Correlations among latent variables and square root of average variance extracted (AVE) in italics on the diagonal.

	Work meaningfulness	Employees' eco-initiative	Green work climate	Supervisor environmental priority
Work meaningfulness	<i>0.78</i>			
Employees' eco-initiative	0.47	<i>0.69</i>		
Green work climate	0.60	0.52	<i>0.75</i>	
Supervisor environmental priority	0.47	0.45	0.71	<i>0.74</i>

Table 5
Discriminant validity: Heterotrait-monotrait Ratio Statistics (HTMT).

	Meaningfulness	Employees' eco-initiative	Supervisor environmental priority	Green work climate
Meaningfulness	.			
Employees' eco-initiative	0.534	.		
Supervisor environmental priority	0.517	0.530	.	
Green work climate	0.656	0.597	0.800	.

coefficients are considerably higher than the 0.7 threshold (Nunnally, 1978): specifically, Chronbach's alpha is 0.93 for work meaningfulness, 0.83 for employees' eco-initiative, 0.89 for green work climate and 0.86 for supervisor environmental priority. Lastly, the assumptions of normality and multicollinearity were checked. Normality was tested by both graphical methods (i.e. histogram and kernel density estimation) and numerical methods (i.e., Shapiro-wilk test and skewness and kurtosis test). Multicollinearity was assessed by calculating variance inflation factors (VIF). Both assumptions are found to be met.

4.2. Testing hypothesis

4.2.1. Testing hypothesis 1 and 2

Hypothesis 1 and 2 were tested by means of a structural equation model (SEM) (Fornell and Larcker, 1981). Specifically, the mediation of work meaningfulness between green work climate and employees' eco-initiative was assessed by following the Iacobucci (2010) three-steps approach based on SEM. This approach is indeed recommended when estimating mediation effects among latent variables (Mehmetoglu, 2018). In the first step, one SEM is constructed to simultaneously estimate the direct path (in this study, the path between green work climate and employees' eco-initiative) and the indirect path. This step aims at verifying that the indirect path is significant, thus implying that a mediation effect can be evinced. In our study, the indirect path corresponds to the relations between green work climate and work meaningfulness, and the one between work meaningfulness and employees' eco-initiative. The results of the SEM indicates a statistically-significant and positive relation between green work climate and work meaningfulness (standardized coefficient $\beta = 0.53$, $SE = 0.054$ and statistical significance $p < 0.001$). The relation between work meaningfulness and employees' eco-initiative is significant and positive ($\beta = 0.32$, $SE = 0.075$, $p < 0.001$). Consequently, a further path was introduced between green work climate and employees' eco-initiative (i.e. the direct path) in the model: this yielded a significant and positive result ($\beta = 0.36$, $p < 0.001$). Based on this result, Hypothesis 1 is supported.

In the second step, the Sobel's z test is computed to test the relative sizes of the indirect (i.e. mediated) and direct paths. The Sobel's test was computed with Stata software for statistical analysis. As for the third step, both the z test (z-value = 3.958) and the direct path yielded significant results, thus indicating that the mediation of work meaningfulness is partial with indirect effect coefficient $\beta = 0.170$, $SE = 0.043$ and $p < 0.001$ (Iacobucci, 2010). Based on these results, Hypothesis 2 is supported Table 6.

Table 6
Model paths, coefficients, Standard errors and p-values.

Paths	Coefficients	Standard errors	p-values
Green work climate → Meaningfulness	0.53	0.054	0.000
Meaningfulness → Employees' eco-initiative	0.32	0.075	0.000
Green work climate → Employees' eco-initiative	0.36	0.074	0.000
Green work climate - - > Meaningfulness - - > Employees' eco-initiative (Indirect path)	0.17	0.043	0.000

The model exhibits a good fit: CFI and TLI amount to 0.97 and 0.96, respectively; RMSEA is 0.053; the χ^2/df ratio is 1.682.

4.2.2. Testing hypothesis 3

The moderation of supervisor environmental priority in the relation between work meaningfulness and employees' eco-initiative was tested by means of a hierarchical regression. Hierarchical regression is indeed recommended for testing the moderation on the relation between a predictor and a dependent variable (Frazier et al., 2004). First, the interaction term was created by multiplying the predictor (i.e. work meaningfulness) with the moderator (i.e. supervisor environmental priority). Then, following indications by Frazier et al. (2004), the hierarchical regression model was constructed according to two steps: predictor and moderator were included in the first step (Model 1); the interaction term was included in the second step (Model 2).

Table 7 displays the results of the hierarchical regression. In both Model 1 and 2, the F-test is significant ($p < 0.001$). Specifically, the results of Model 1 show a significant and positive relation between the moderator and employees' eco-initiative ($\beta = 0.33$, $SE = 0.073$, $p < 0.001$); this result is confirmed in Model 2. The results of Model 2 show a significant and positive relation between the interaction term and employees' eco-initiative ($\beta = 0.15$, $SE = 0.064$, $p < 0.05$). Thus, the R-squared increases to 0.290 in Model 1 and reaches 0.311 in Model 2. The difference in R-squared across models is also statistically significant. Based on these results, Hypothesis 3 is supported.

4.3. Addressing common method variance

Although procedural remedies were adopted to mitigate risk of common method variance, study's variables are based on self-reported data collected from a unique questionnaire: despite being a very common research approach, this data collection technique is vulnerable to common method bias (Campbell and Fiske, 1959). This kind of bias consists of the variance caused by the measurement instrument rather than the actual predispositions of the respondents, generating inflated or deflated correlations between variables (Podsakoff et al., 2003). Therefore, post-estimation tests were conducted to assess the presence of common method variance and multicollinearity in the dataset. First, in line with recommendations by Fuller et al. (2016), the Harman's single factor test was conducted. Based on the Harman's test results, the largest factor accounts for 46% of the variance against a threshold of 50%, and four factors with eigenvalues greater than 1 were detected. Thus, accordingly to this test, common method bias does not affect the dataset in a significant manner. We then further tested for common method

Table 7
Hierarchical regression results. Standard errors are in parenthesis. *** $p < 0.001$. ** $p < 0.01$. * $p < 0.05$.

Dependent variable: Employees' eco-initiative	Model 1	Model 2
Work meaningfulness	0.334 (0.074) ***	0.402 (0.079) ***
Supervisor environmental priority	0.334 (0.073) ***	0.319 (0.072) ***
Supervisor environmental priority * Work meaningfulness		0.149 (0.064) *
Constant	0.091	0.022
F-test	***	***
R-squared	0.290	0.311

variance by analyzing a common method factor whose indicators included all indicators of the analyzed latent constructs (Podsakoff et al., 2003). Therefore, after performing a CFA containing the method factor, we compared the substantive item loadings on the respective latent constructs analyzed with the item loadings on the method factor. All factor loadings on the analyzed latent variables are greater than loadings on the method factor. On average, the variance explained by the analyzed latent constructs was 58% greater than the variance explained by the common method factor. In accordance with this analysis, common method bias is not a problem in our study.

As for the multicollinearity among the variables, variance inflation factors (VIF) were computed: mean VIF amounts to 1.96 (which is considerably lower than the threshold of 4), while VIF is lower than 2.5 for all variables and tolerance levels (1/VIF) are considerably higher than 0.25. Based on these results, multicollinearity does not appear to concern the variables of the conceptual model (Kennedy, 2003).

5. Discussion

The aim of the current research is to gain a better understanding of the sociopsychological mechanisms that drive employees to perform eco-initiatives in the workplace. Drawing on the literature on corporate greening and organizational behavior (Ramus and Killmer, 2007; Paillé et al., 2022), the current study suggests that individuals' proactive behaviors are the result of both situation and person-related factors (Testa et al., 2018; Al-Swidi et al., 2021). Specifically, relying on social exchange theory, we developed and tested an empirical model in which green work climate predicts eco-initiatives through the mediation of work meaningfulness. In addition, we found an interaction effect in this process, given by the positive moderation of the supervisor's environmental priority on the relationship between work meaningfulness and eco-initiatives.

Delving into the results, the findings of Hypothesis 1 indicate that when employees interpret their work context as oriented toward environmental sustainability, they are more likely to perform eco-initiatives in the workplace. This result is in line with previous studies that have analyzed the influence of contextual features on organizational members' behaviors, also in the light of social exchange theory. For instance, Afsar et al. (2018) empirically tested the effect of perceived corporate social responsibility (CSR) on employees' pro-environmental behaviors, framing this relationship as a social exchange. Indeed, according to the authors, individuals' positive perceptions of CSR practices spur them to reciprocate these organizational actions with discretionary pro-environmental behaviors. Similarly, Paillé et al. (2014) found that environmental management practices stimulate pro-environmental behaviors through mechanisms of reciprocity and social exchange. Our findings not only confirm but extend previous contributions by testing the influence of multiple purely environmental aspects of organizational climate on employees' eco-initiatives. Therefore, as stated by Burke et al. (2002), organizational members' behaviors and attitudes are influenced by their interpretations of the work context.

Furthermore, studies have shown that organizational and work characteristics defining the context are related to behavioral and attitudinal outcomes through psychological factors such as work meaningfulness (Seibert et al., 2011; Al-Hawari et al., 2021). Indeed, by embedding a sense of personal accomplishment, identification and purpose, work meaningfulness prompts employees to invest additional physical, cognitive and emotional effort in performing their work tasks, with consequent beneficial effects for the organization (Kahn, 1990). Binyamin and Brender-Ilan's (2018) argued that work meaningfulness serves as a "calling" that motivates people to go beyond their job duties. When employees perceive organizational practices, procedures and actions as directed toward a shared purpose they identify with and they deem important, they are inclined to return this benefit to the organization through discretionary and proactive efforts, as a form of social exchange (Lavelle et al., 2009; Amrutha and Geetha, 2021). In this vein,

the results related to Hypothesis 2 confirm previous contributions, showing that the relationship between a contextual factor, such as green work climate, and a behavioral outcome characterized by proactivity, such as eco-initiatives, is positively mediated by work meaningfulness.

Finally, our findings suggest that supervisor's priority towards environmental aspects, even under circumstances of potentially conflicting production and business pressures, further stimulates workers to engage in eco-initiatives by strengthening the effect of work meaningfulness (Hypothesis 3). This result endorses the studies that have shown the influence that supervisors (i.e., middle management), even due to their role and position in the corporate hierarchy, can exert on employees' psychological and emotional aspects, as well as on their behaviors, beliefs and attitudes (Ramus and Steger, 2000; Raineri et al., 2016; Testa et al., 2020; Todaro et al., 2023). This finding highlights the importance of accepting and managing the conflicting tensions underlying corporate sustainability (Ivory and Brooks, 2018). Indeed, to fully embedding sustainability into day-to-day operations, firms and organizational members need to embrace and manage tensions between economic, social and environmental objectives without an a priori predominance of any of these dimensions (Gao and Bansal, 2013; Dahlmann and Grosvold, 2017). In this regard, the supervisor's approach to giving primary importance to environmental issues, irrespective of work pressures, denotes a willingness to avoid trade-offs between conflicting objectives, as a result of acknowledging the complexity that characterizes corporate sustainability.

6. Conclusion

6.1. Contribution to the literature

The current study advances manifold contributions to corporate sustainability literature, by extending the understanding of antecedents of discretionary pro-environmental behaviours in the work context (Testa et al., 2019). First, by adopting a social exchange perspective, the study advances research on exchange mechanisms underlying discretionary workers' eco-initiatives (Yuriev et al., 2018). In particular, by examining workers in four retail stores prior to the implementation of a certifiable environmental management system, the research emphasises the relevance of social exchange mechanisms for corporate sustainability in organizational contexts where – due to limited direct environmental impacts, and limited environmental issue salience (Todaro et al., 2019) – the overall stance on environmental sustainability hinge on organizational members' discretion and proactivity. On the one hand, the study highlights as social exchange is contingent upon employees' perceptions of the organizational context. On the other hand, the study also highlights individuals' work meaningfulness as a key socio-psychological driver of social exchange for corporate sustainability.

Second, the study contributes to research on the situation and person-related factors that influence the emergence of eco-initiatives in the workplace. Specifically, in terms of situation-related factors, the study contributes to the emergent literature on green work climate, by highlighting its role in conditioning employees' eco-initiatives (Norton et al., 2015). Research on the antecedents of pro-environmental behaviors has often examined workers' perceptions of organizational support, or corporate environmental practices and policies as proxies of a supportive work environment for employees' pro-environmental behaviour (Temminck et al., 2015; Raineri and Paillé, 2016; Pinzone et al., 2019). However, by focusing on specific situation-related factors, previous research has overlooked the multidimensionality of shared perceptions of the work environment. Thus, by analyzing green work climate as a multidimensional driver of eco-initiatives, which comprehends manifold aspects of the work environment ranging from environmental policies and procedures, to practices and actions, the study contributes to a more comprehensive understanding of organizational climate-related factors in pro-environmental workplace behaviours.

In terms of person-related factors, the study highlights work meaningfulness as a relevant psychological mechanism mediating the relation between employees' perceptions about their work context and the adoption of proactive environmental behaviours (Kahn, 1990; Seibert et al., 2011). In this sense, the study adds to the literature on socio-psychological mechanisms of discretionary pro-environmental workplace behaviours (such as OCBE): while previous research examined mechanisms related with employees' attachment, belonging, or identification with the organization – ranging from organizational commitment (Allan et al., 2019) to person-organization fit (Farzaneh et al., 2014) – the states of perceived meaningfulness and purpose have been only marginally explored in corporate sustainability literature (Opoku-Dakwa et al., 2018). The study confirms previous scholars claiming that individuals' contribution to environmental protection through work, or through membership in an organization, enhances individuals' work meaningfulness (Chaudhary and Akhouri, 2019). Accordingly, the study advances research by providing evidence of work meaningfulness as a crucial lever of employees' eco-initiatives in organizations; consequently, the study points out work meaningfulness as a pivoting factor of employees' environmental proactiveness.

Third, the study adds to the ongoing debate regarding conflicting work tensions resulting from the joint pursuit of competing but inter-related goals – such as environmental sustainability and production objectives – that may hamper organizations' sustainability efforts (Van Bommel, 2018). Extant corporate sustainability literature has largely overlooked the effects of such tensions and conflicts on pro-environmental workplace behaviours (Ivory and Brooks, 2018), favouring a strategic management perspective on this specific issue (Hahn et al., 2010). However, the present study acknowledges that employees are indeed required to navigate multiple and conflicting pressures on the job, ranging from workloads and job performance targets, to environmental aspects of work activities. By highlighting supervisor environmental priority as a moderator in the relation between work meaningfulness and employees' eco-initiatives, the study emphasises the role of supervisors in reconciling such tensions in favor of environmental concerns. In this view, the research also adds to leadership research in the corporate sustainability field (Testa et al., 2019), by pointing out supervisor environmental priority as an effective leadership mechanism in directing subordinates' behaviour towards greater attention on environmental issues on the job.

Lastly, the study complements research on certifiable environmental management systems (Boiral et al., 2018). For environmental management systems to be effective, compliance with the requirements of such systems needs to be complemented by proactive behaviors that propel the company toward the continuous improvement of performance (Boiral and Paillé, 2012). Therefore, the study adds to this stream of research by identifying additional mechanisms that contributes embedding environmental management systems in companies' day-to-day routines.

6.2. Managerial implications

The present research provides implications for managerial practice, particularly with reference to how to stimulate individuals' proactive green behaviors that can improve the corporate environmental performance. Our findings suggest that organizational climate plays a crucial role in activating green discretionary behaviors. Therefore, the management should direct its efforts to the implementation of environmental policies, practices, procedures, and actions triggering positive employee perceptual mechanisms about the company's orientation toward the environment.

Similarly, given the centrality of work meaningfulness to employees' eco-initiatives (Al-Hawari et al., 2021), managers should care about how employees perceive their work and intervene to prevent or correct any discontent, dissatisfaction, or psychological detachment from the organization. Managers should also aim at stimulating employees'

identification with the company, to get them involved and participating in the environmental cause and to make them feel the importance of their contribution in the pursuit of such a cause. To this end, training programs could be implemented to increase employees' environmental knowledge and awareness. In addition, the environmental predisposition of individuals could be assessed in recruitment processes to attract candidates having a mindset and a care oriented toward green issues.

Finally, managers should minimise trade-offs between sustainability and productivity, even when work pressure is high (Hahn et al., 2010). The diverse social, environmental, and economic goals that companies and organizational members have to continuously balance may indeed create tensions and ambiguities that managers should recognize and address rather than avoid by jettison environmental sustainability in favor of production and work objectives (Dahlmann and Grosvold, 2017).

6.3. Limitations and avenues for future research

The limitations of the current study help to trace directions for future research. First, the study tests the hypothesis on a narrow sample of employees in four retail stores: our sample of respondents indeed consists of members from different stores that, although lacking central and vertical coordination on environmental management, belong to the same retailer. Future studies could therefore consider a larger sample of organizational members belonging to different companies in order to enhance the generalizability of our results.

Second, the study focuses on the retail sector and, more specifically, on retail stores prior to the implementation of a certifiable environmental management system. Accordingly, the examined retail stores are characterised by a lack of environmental requirements that regulate workers' behaviours with regard to environmental aspects of work operations, beyond regulatory compliance: as a result, the management of environmental aspects is largely handed over to the proactivity and discretions of stores' employees. Although this research setting is ideal to study social exchange mechanisms underlying employees' eco-initiatives, due to the lack of potential bias, "hard" constraints or external influence, this aspect may partially limit the generalizability of the study's result to sectors where environmental issues are increasingly relevant, but not yet entrenched in workers' operations by means of certified management systems: these may include diverse service sectors, ranging from the sports industry to the tourism sector (Daddi et al., 2022). Consequently, future studies may explore the interactions between the certifiable environmental management schemes and employees' discretionary pro-environmental behaviour to shed light on the role of social exchange mechanisms in the more formalised organizational contexts.

Third, this research, while investigating both personal and situational factors as antecedents of eco-initiatives, including green work climate comprehensive of manifold contextual aspects, does not provide an exhaustive overview of possible drivers. Indeed, other situation and person-related factors may influence the proactive environmental behaviors of individuals in the workplace. Future research should extend the number of factors that may stimulate these behaviors, considering, for instance, factors related to relational aspects with coworkers, in order to investigate antecedents on four levels of analysis: personal, supervisor, work group (i.e., coworkers) and organizational levels.

Fourth, in discussing the mechanisms that trigger environmental behaviors in the workplace, our research focuses on employees' voluntary and extra-role behaviors (Boiral and Paillé, 2012). Future research could consider employees' in-role green behaviors as an additional outcome variable (Bissing-Olson et al., 2013) to determine whether the factors investigated are effective in influencing both forms of behavior in the same manner.

This study also explores the issue of tensions between competing sustainability objectives that individuals experience in the workplace and shows how the supervisor can manage them. Future research could

analyze the role of the organization and top management in recognizing and accepting these tensions and in making subsequent strategic decisions that have an effect on workers' behaviors in the company and on operational dynamics in general.

Lastly, since this is a cross sectional study based on self-reported data, in which all variables were measured using the same source, common method bias may occur. Although we used different procedural remedies, as suggested by Podsakoff et al. (2003), and adopted two tests to verify this issue, items aimed at adopting the common marker variable technique could be included in the survey construction as an additional test to detect the presence of common method bias (Williams et al., 2010; Lucianetti et al., 2018). Alternatively, future studies can pursue diverse methodological approaches to avoid relying on self-assessments of pro-environmental behaviors, by differentiating data sources between independent and dependent variables. As done by Testa et al. (2019), workers' pro-environmental behaviors can be assessed by interviewing their direct supervisors or managers in the organization, while supervisor-related antecedents of behavior can be measured by interviewing workers in the same organization. By differentiating data sources, a similar approach allows mitigating risk of common method bias, while ensuring a robust assessment of pro-environmental workplace behavior and its antecedents.

CRedit authorship contribution statement

Natalia Marzia Gusmerotti: Conceptualization, Funding acquisition, Project administration, Writing – original draft. **Niccolò Maria Todaro:** Methodology, Investigation, Data curation, Writing – original draft, Writing – review & editing. **Duccio Tosi:** Software, Formal analysis, Visualization, Writing – original draft, Writing – review & editing. **Francesco Testa:** Conceptualization, Project administration, Supervision, Methodology, Validation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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