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published in

International Journal of Hospitality Management
2023

DOI (link to publisher)

[10.1016/j.ijhm.2023.103436](https://doi.org/10.1016/j.ijhm.2023.103436)

document version

Publisher's PDF, also known as Version of record

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citation for published version (APA)

El Baroudi, S., Cai, W., Khapova, S. N., & Jiang, Y. (2023). Green human resource management and team performance in hotels: The role of green team behaviors. *International Journal of Hospitality Management*, 110, 1-9. Article 103436. <https://doi.org/10.1016/j.ijhm.2023.103436>

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Green human resource management and team performance in hotels: The role of green team behaviors

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ARTICLE INFO

Keywords:

Green HRM
Green work behavior
Performance
Teams

ABSTRACT

Despite the growing research interest in green human resource management (green HRM) in the context of hospitality and tourism, little is known about its effects on team nongreen hospitality performance. To address this gap, this paper examines the relationship between team perceptions of green HRM and team nongreen performance in hotels. Drawing on social exchange theory (SET) and convergence and emergence in organization theory, we propose that green team behaviors in hotels, such as in-role and extra-role green team behaviors, mediate the relationship between team perceptions of green HRM and team nongreen performance. Analyses of multisourced data from 63 teams in four hotels in China support our hypotheses. The findings of this paper provide novel implications for green HRM research in the hospitality and tourism literature.

1. Introduction

The past decade has witnessed a proliferation of green HRM research in the context of hospitality and tourism, as an increasing number of hotels begun to adopt new green HRM practices to foster green performance (i.e., individual, team and organizational performance) (Úbeda-García et al., 2021; Pham et al., 2020). Among the relevant practices of green HRM are recruiting and hiring new employees with green values, awareness and knowledge; green training to develop and strengthen employees' green skills and competencies; green performance appraisals with clear requirements for assessing green work behaviors and performance; and rewards to provide incentives based on the successful implementation of organizational green objectives (for review see Renwick et al., 2013). Indeed, research shows that the availability of green HRM practices increases hotel employees' organizational citizenship behaviors toward the environment (Pham et al., 2020) and promotes their in-role and extra-role green work behaviors (Karatepe et al., 2022; Ababneh, 2021).

While the consequences of green HRM practices on hotel employees' green work behaviors are known (e.g., Pham et al., 2020; Karatepe et al., 2022; Ababneh, 2021), much less knowledge is available about the consequences of green HRM practices for hotel employees' nongreen performance (Karatepe et al., 2022). This gap seems to also be present in

the HRM literature more generally (Shen et al., 2018). Furthermore, research on the consequences of green HRM practices for teams is almost absent in both the HRM literature and in the hospitality and tourism literature. This is problematic considering that hotels are increasingly pursuing team-based work and thus rely on team performance to achieve organizational goals (Fu et al., 2020; Du et al., 2021). Moreover, research increasingly shows that the factors that predict team outcomes may be different from those that predict individual outcomes (Tims et al., 2013). We thus do not know whether the limited research on green HRM and nongreen performance can be generalized to the team level.

With this paper, we aim to respond to these gaps. Our study is guided by two theories to formulate our research questions and to develop our hypotheses. First, SET (Blau, 1964) is a widely used theory in the HRM literature to explain how HRM fosters performance. Alfes et al. (2013) reviewed the literature on HRM and performance and note that the link between the variables is likely indirect, mediated by a range of behavioral variables. According to the authors, studies that examine such mediation draw on SET to provide an explanatory framework. The basic assumption of the theory is that those organizations that direct their actions toward benefitting their employees create high-quality exchange relationships in which employees feel the need to reciprocate in positive, beneficial ways, specifically by engaging in positive work behaviors (Settoon et al., 1996). For green HRM, this means that organizations can

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use green HR practices to communicate that they are committed to environmental management practices and to provide clear performance goals, recruitment expectations, and training to their employees to help them achieve their performance and career goals. In return, employees reciprocate by engaging in work behaviors that align with their organization's green values and by helping their organization achieve its overall performance, including nongreen performance. Since previous studies argue that green HRM signals to employees that they must engage in in-role and extra-role green work behaviors (e.g., Dumont et al., 2017), we selected those behaviors as mediating mechanisms through which green HRM fosters performance. This is also in line with recent green HRM research in the hospitality and tourism literature, in which studies have examined the effect of green HRM on environmental performance through the mediating effect of green employee behaviors at the individual level (e.g., Nisar et al., 2021; Elshaer et al., 2021). Next, we were guided by the theory of convergence-emergence in organizations from Fulmer and Ostroff (2016) in seeking to understand how green HRM fosters nongreen performance through in-role and extra-role green work behaviors at the team level. Their work aims to explain how individuals' perceptions and attitudes consolidate to emerge as properties at the unit or team level. Fulmer and Ostroff (2016) propose that in a social context (i.e., team context), individuals strongly interact with others and share their perceptions and experiences, resulting in similar reactions and behaviors (see also Kozlowski and Klein, 2000). A strong set of HRM practices also sends information that is interpreted similarly by employees in a social context so that convergence in perceptions and behaviors occurs (Bowen and Ostroff, 2004). According to this thinking, it is reasonable to propose that when team members collaborate, they discuss how green HRM practices can be used to achieve their team's responsibilities and goals. Team members thus likely share the same perceptions about green HRM and, consequently, about behaving green as a team and performing as a team.

Thus, in this paper, we address two research questions: 1) *To what extent do team perceptions of green HRM predict team performance in hotels?* 2) *What are the effects of in-role and extra-role team green behaviors on this relationship?* We depict our theoretical assumptions in Fig. 1. To test our research model, we conducted a study of 63 teams in four hotels in China, including 63 team leaders and 190 team members.

With this study, we aim to make several important contributions to the research on green HRM and its consequences for the hospitality and tourism literature. First, we provide empirical evidence for the positive effect of green HRM on hotel employees' performance (Úbeda-García et al., 2021). Debates on HRM and performance have a long history in the HRM research domain, with mixed evidence of the relationship (Paauwe and Boselie, 2005). Our study shows that HRM practices that incorporate aspects of green management have positive effects on team performance in hotels, thus offering additional evidence for the HRM-performance link. Second, to our knowledge, only a few papers have made attempts to study the nongreen work outcomes of green HRM in the hospitality and tourism literature and in the HRM literature more generally (e.g., Karatepe et al., 2022; Shen et al., 2018; Tanova and Bayighomog, 2022). Studying this topic further is important because most hotels are not only focused on green goals but also on financial and economic outcomes. Finally, this paper makes an important contribution by expanding the discussion of the effects of green HRM on team-level performance (Ari et al., 2020). While hotels are increasingly

adopting a team-design approach to the organization of their work (e.g., Fu et al., 2020; Du et al., 2021), little research on green HRM has addressed its consequences for teams. This study contributes to filling this important research gap.

2. Theory and hypotheses

2.1. Team performance

We define teams after Kozlowski and Ilgen (2006) as consisting of at least two individuals who (a) socially interact; (b) possess at least one common goal; (c) perform organizationally relevant tasks together; (d) exhibit interdependencies regarding workflow, goals and outcomes; (e) have different responsibilities and roles; and (f) are embedded in an organizational system with boundaries and linkages to the broader context (Kozlowski and Ilgen, 2006). Consequently, we characterize team performance as a process-oriented type of performance for which team members exert a collective collaborative effort to achieve all nongreen objective performance goals. We thus focus on teamwork and not on specific nongreen team performance indicators because the latter may vary from team to team. Teamwork includes processes such as communication, collaboration, coordination, conflict management and cohesion that are likely present in all teams (Dionne et al., 2004).

2.2. Team perceptions of green HRM and team performance

Our proposition of the positive link between team perceptions of green HRM and team performance stems from two streams of research. First, we draw on research suggesting that it is not the availability of HRM practices but rather employees' perceptions of HRM practices that matter in influencing performance (Guest, 2002). Consequently, we focus on the study of team perceptions of green HRM rather than green HRM itself. Studies show that focusing on employees' perceptions of HRM practices provides more robust research findings (Paauwe and Boselie, 2005). With "perceptions of green HRM", we refer to employees' interpretations of what green HRM is and how it is implemented, which is based on individual experiences in the workplace (Wright and Nishii, 2006). Following Fulmer and Ostroff's (2016) theory of convergence and emergence in organizations, we argue that in a team context, perceptions of green HRM are shared among team members; hence, they can be captured by a team-level construct. More specifically, Fulmer and Ostroff (2016) argue that emergence occurs in social contexts where experiences and interactions can drive individuals in a unit to have similar reactions. A coherent structure can then be recognized among them, which means that a collective property has emerged (see also Kozlowski and Klein, 2000; Hazy and Ashley, 2011). There are two types of influence that further foster such convergence in teams: normative or informational influence (Stasser et al., 1980). Normative influence implies that individuals in a team have the desire to comply with the expectations or feelings of others, which produces conformity. Informational influence implies that individuals have the desire to rely on another for information about reality, especially when they are strongly connected to each other, as is the case in teams (Stasser et al., 1980). Organizational practices reveal to employees what is valued and expected in the organization (Guzzo and Noonan, 1994). This then fosters convergence and conformity in interpretations and behaviors (Mischel, 1973), especially in a team context where team members may feel pressure to comply with their peers' feelings and expectations about organizational practices. Indeed, Bowen and Ostroff (2004) argue that a strong set of HRM practices sends signals that are interpreted similarly by individuals in a social context so that convergence in perceptions and behaviors occurs. Likewise, Guzzo and Noonan (1994) argue that teamwork has a collective role in how HRM practices are interpreted because employees discuss their views and concerns with others or even use colleagues as sounding boards for individual opinions (p.456). Considering that a team context is a social context where green

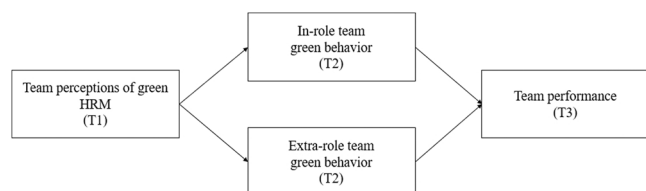


Fig. 1. Research model.

HRM practices can be interpreted similarly, we treat it as a team-level construct (i.e., team perceptions of green HRM).

Second, to our knowledge, there are no empirical findings on the relationship between team perceptions of green HRM and team performance in the hospitality and tourism literature or in the HRM literature. We therefore draw on the theoretical assumptions of SET too to make sense of the relationship between the two theoretical constructs. SET explains the reciprocal relationship between two parties' expectations, which they communicate through their actions (Blau, 1964). In our case, the two parties are the hotels and the teams. Resources are exchanged through a process of reciprocity between the two parties whereby one party repays the good deeds of another party (Gouldner, 1960). By providing employees with a clear set of green HR practices, an organization communicates to its employees what the expectations are in terms of work behaviors and performance criteria, and it provides employees with the resources to help them meet expectations, such as training, rewards and feedback (Renwick et al., 2013). Indeed, where hotels invest in employees, such as in individual training and development programs, research shows that employees feel the need to reciprocate to the organization (e.g., Chand and Katou, 2007; Ruzic, 2015). Han et al. (2016) study on workplace fun and team performance in the hotel context provides some evidence that teams in hotels could also reciprocate with good performance once the hotel management invests resources in the team. However, more evidence stems from the team literature. For instance, team research shows that when organizations support team members with necessary resources to achieve their performance and work goals, it increases the team's collective belief that all goals can be achieved (Kennedy et al., 2009). Team members then collectively reciprocate to their organization by putting more effort into improving teamwork and by persevering to achieve goals, with positive consequences for overall team performance. In another study, Kim (2017) focused on an aspect of teamwork, namely, team learning behavior, defined by the author as the extent to which team members openly discuss their mistakes and weaknesses as part of improving their ability to accomplish their tasks effectively (p. 1256). The author found that even within a team whose members act intolerantly toward colleagues with different backgrounds, when the members perceive that the organization supports them and recognizes their work, they reciprocate by exhibiting team-learning behaviors that not only benefit team performance but also help improve overall organizational performance. Taken together, we suggest, based on SET, that clear green HR practices signal to all team members in a team that their hotel supports them with the necessary resources to perform. Hence, team members collectively reciprocate by achieving and improving their team's performance. We therefore hypothesize the following:

Hypothesis 1. Team perceptions of green HRM are positively related to team performance.

2.3. The mediating effects of in- and extra-role green team behaviors

As previously argued, SET is also used in the HRM literature to determine which behavioral variables mediate the relationship between HRM and performance. Organizations that implement green HRM create an environment that prompts employees to respond with adequate work behaviors. Following SET, it is thus reasonable to suggest that teams reciprocate with work behaviors that are in line with hotels' green HRM. According to the green HRM literature, such behaviors are identified as green work behaviors (Dumont et al., 2017), also referred to as the "willingness to engage in pro-environmental activities" (Scherbaum et al., 2008). There are two types of green work behaviors, namely, in-role and extra-role green work behaviors, which are related but distinct constructs (Dumont et al., 2017). The way these two types of green work behavior are classified in practice depends on what the organization expects of its employees (Paillé and Boiral, 2013). In-role green work behaviors are part of employees' formal job duties; hence,

the organization expects employees to engage in these behaviors. In contrast, extra-role green work behaviors are more proactive in nature and include voluntary behaviors to help improve organizational environmental performance (Paillé and Boiral, 2013; Dumont et al., 2017). Dumont et al. (2017) refer to the former as requirements of employees to follow organizational green policies and/or government policies, which is the case in the hotel industry (Chan, 2009; Chan and Hsu, 2016). Extra-role green work behaviors have been considered to include activities such as turning off computers at the end of the day, recycling papers and turning off lights (Paillé and Boiral, 2013); walking to work (Adams et al., 2017); participation in pro-environmental events (Tsai et al., 2016); and helping colleagues solve green issues (Paillé et al., 2016).

We propose that team perceptions of green HRM trigger teams to behave green for the following reasons. First, green HRM includes effective recruitment and selection strategies to attract and hire employees with green values (Renwick et al., 2013). For teams, this means that more individuals with green values can join the team, thereby increasing the team's motivation to participate in required green activities (i.e., in-role behavior) and to offer suggestions and new ideas to initiate extra voluntary green activities (i.e., extra-role behavior). Second, green HRM includes policies regarding performance appraisals, compensation and promotion, which demonstrate the organization's commitment to being green and may include clear requirements toward in-role green work behaviors and expectations about extra-role green work behaviors (Renwick et al., 2013). Teams will therefore better understand how to engage in the two types of green work behaviors and may be more motivated to do so. Finally, green HRM includes green training practices that disseminate clarity about which green activities one must participate in and directly develop skills and competences that are key processes for helping employees engage in the required activities, such as in-role green work behaviors (Pless et al., 2012). Such training practices could also signal that organizations value green work behaviors in general and may thus also motivate team members to engage in extra-role green work behaviors. Team members who participate in such trainings can bring the necessary skills and competencies to the team, thereby helping the team to behave green for both in-role and extra-role behaviors. Although there are no empirical findings on the relationship between team perceptions of green HRM and green team behaviors in the hospitality and tourism literature, there is some evidence for the relationship at the employee level in the HRM literature. For instance, Amrutha and Geetha (2021) found that green training fosters voluntary green work behaviors (i.e., extra-role work behaviors). Dumont et al. (2017) provided empirical evidence of the relationship between green HRM and both in-role and extra-role green work behaviors.

We further propose that both in-role and extra-role green team behaviors improve team performance. We characterize team performance as a process-oriented type of performance for which team members exert a collective collaborative effort to achieve nongreen performance goals. Team performance is thus different from both types of green work behaviors because it indicates how teams function and aim to achieve all objective team goals and outcomes, whereas both types of green team behaviors involve only participation in green activities. To argue how both types of green team behaviors foster team performance, we turn to Rousseau et al. (2006), who identified several behavioral dimensions of teamwork. One of those dimensions is task-related collaborative behaviors, in which both in-role and extra-role green team behaviors can be classified because team members collaborate to behave "green" as a team for both types of green team behaviors. Related research that has studied work behaviors as an individual-level construct such as job crafting demonstrated that when it is initiated at the team level, team members engage in a process in which they collaborate to meet shared behavioral expectations (e.g., Leana et al., 2009; Tims et al., 2013). Assuming that both types of green team behaviors are collaborative behaviors, there are several reasons to suggest that they are both likely

to improve teamwork and thus team performance. First, according to Rousseau et al. (2006), when team members collaborate, they continuously exchange information. Information exchange is the extent and ease with which team members share information about tasks. When team members collaborate to behave “green”, they exchange information about green activities but likely also exchange information about other team performance-related tasks and activities. Team members then develop mutual knowledge and shared experiences, which further facilitate communication and collaboration in teams (Crampton, 2001). Indeed, freely and quickly spreading task-related information to the right team members facilitates task completion in teams (Stout et al., 1999), thereby likely improving overall team performance. Second, Rousseau et al. (2006) argue that collaborative behavior also includes cooperation, that is, the extent to which team members work together on a task and share the workload (Wagner, 1995). When team members collaborate to behave green, they also better understand how to complete tasks in an efficient way. Because they can also better know how each team member contributes with his or her unique knowledge and skills to the team, they likely also improve the quality of their teamwork (Hoegl and Gemuenden, 2001). Finally, Rousseau et al. (2006) argue that when team members collaborate, there is also coordination in a team, which implies that team members integrate their activities to ensure that tasks are accomplished within established temporal constraints. When team members collaborate to engage in green work behaviors, coordination allows them to synchronize their efforts to complete all tasks efficiently (Cannon-Bowers et al., 1995), thereby likely improving overall team performance.

In summary, we argue that team perceptions of green HRM are positively related to both in-role and extra-role team behaviors and that the latter behaviors improve overall team performance. We thus argue that there exists a mediated relationship between the constructs and hypothesize the following:

Hypothesis 2a. Team perceptions of green HRM are positively related to team performance through the mediation of in-role green team behaviors.

Hypothesis 2b. Team perceptions of green HRM are positively related to team performance through the mediation of extra-role green team behaviors.

3. Method

3.1. Sample and procedure

We randomly selected six five-star hotels among thirty-eight five-star hotels by contacting the CEO of each hotel. These hotels were randomly numbered by one of the coauthors who then randomly selected six hotels. Of these six hotels, four confirmed that their organizational strategy, values, and culture were green-oriented and that their organization adopted a team-based structure. All four hotels agreed to participate in our research. With the help of the hotels' HR departments, we randomly selected 100 teams from the four hotels, with an average of 25 teams selected per hotel. In line with the research on teams, we informed the HR departments that teams should consist of at least two members (Kozlowski and Ilgen, 2006). Based on this requirement, the HR departments sent us a list of teams (more than 300 teams) in each hotel. Next, we followed the requirements of the random number method to include all the teams from the different hotels into one pool and then assigned a number to every team randomly. Then, without bias, we randomly picked a subset of the teams (100 teams). Among the 100 teams, 277 team members agreed to participate by completing the questionnaires voluntarily. We asked the HR departments to help us send the questionnaires to the 277 participants during their working hours. At time 1, team members were asked to rate the green HRM practices of their hotels and to provide their demographic information. After deleting incomplete questionnaires, we had 250 usable responses

left. At time 2, one month later, the questionnaires were sent to the 250 participants to rate their in-role and extra-role team green behavior. After deleting incomplete questionnaires from the 250 responses, we had 212 usable responses left from 65 teams. Finally, at time 3, one month later, we asked the HR departments to provide us with the required information to match the team leaders with the team members of their teams. The questionnaires were sent to the team leaders of the 65 teams, who were asked to rate their team's performance and to provide their demographic information. We received usable responses from 63 leaders. We then matched the responses from the 63 team leaders with their respective teams, which resulted in 190 complete surveys from employees. The final sample thus consisted of 63 teams, in which there were 63 team leaders and 190 team members.

The 63 teams were from eight departments in the four hotels: human resources (12.7 %), finance (9.5 %), marketing (3.2 %), technical support (7.9 %), reception (23.8 %), housekeeping (11.1 %), food and beverage (23.8 %), and operations (7.9 %). Most of the teams had 25–34 team members per team (44.4 %, SD = 0.84). Among the 63 team leaders, most were between 25 and 34 years old (66.7 %, SD = 0.62), and 50.8 % were female (SD = 0.50).

3.2. Measures

We collected data on green HRM and team performance with a validated unadapted scale. To assess in-role and extra-role team green behaviors, we used validated scales but adapted the scales to assess them at the team level according to the referent-shift composition model (Chan, 1998; Klein et al., 2001). According to the referent shift composition model, the basic content of the original constructs should not be adapted, but only the referent of the content should change from the individual to the team. It then becomes possible to assess the agreement of the team members on the team constructs, as was also done in related research on job crafting (Tims et al., 2013). All scales were in English; hence, a back-translation method was used to provide a Chinese instrument. Unless noted otherwise, a seven-point Likert scale (from 1 = strongly disagree to 7 = strongly agree) was used in the scales.

3.2.1. Team perceptions of green HRM

A six-item scale from Dumont et al. (2017) was used to measure team perceptions of green HRM. Team members were asked to rate their company's green HRM so that the average of all individual perceptions could be calculated for the separate teams. A sample item is “My company relates employees' workplace green behaviors to rewards and compensation” (Cronbach's $\alpha = 0.97$).

3.2.2. In-role team green behavior

We used the three-item scale from Bissing-Olson et al. (2013), which measures the construct at the individual level. We adapted the items to the team level. A sample item is “My team adequately completes assigned duties in environmentally friendly ways” (Cronbach's $\alpha = 0.95$).

3.2.3. Extra-role team green behavior

We used the three-item scale from Bissing-Olson et al. (2013), which measures the construct at the individual level. The items were adapted to the team level. A sample item is “My team did more for the environment at work than was expected to” (Cronbach's $\alpha = 0.96$).

3.2.4. Team performance

A two-item scale from González-Romá and Hernández (2014) was used to measure team performance. The authors selected and adapted the items from Jehn and colleagues' group performance scale (1999). In line with the scale of González-Romá and Hernández (2014), different Likert scales were used for the two items. A seven-point Likert scale ranging from “1 = very badly” to “7 = very well” was used for the first item, and another seven-point Likert scale ranging from “1 = very bad”

to “7 = very good” was used for the second item. The items are “How well do you think the work team you manage performs?” and “What is the quality of the work carried out by the team you manage?” (Cronbach’s $\alpha = 0.98$).

3.2.5. Control variables

We decided to include several control variables in our analyses for the following reasons. First, previous research indicates that team size influences how a team functions (for a review, see El Baroudi et al., 2019). Second, researchers have indicated that gender may exert potential influences on green-related behavior in the workplace because women may have a higher level of altruistic value orientation than men and hence may be more aware of the importance of engaging in green behaviors (e.g., Stern et al., 1993). Third, Wiernik et al. (2013) found evidence that older people are more concerned about environmental issues than their younger peers. Fourth, Meyer (2015) found an increased effect of education level on an individual’s pro-environmental behavior. Fifth, research has suggested including the potential role of departments in hotels because there are significant differences between departments in hotels, especially in the green management literature (Ali et al., 2008). Finally, because a recent study in the green literature demonstrates that leaders influence how teams function, we controlled mostly for team leaders’ demographic variables (Cai et al., 2020).

Taken together, we controlled for the following variables: team leaders’ gender (1 = male; 2 = female), team leaders’ age (1 = below 25 years old; 2 = from 25 to 34 years old; 3 = from 35 to 44 years old; 5 = above 45 years old) and team size (1 = less than 5 team members; 2 = from 6 to 10 team members; 3 = from 11 to 15 team members; 4 = more than 16 team members). Since we collected data from four hotels, we also controlled for organizational-level variability by coding the hotels from 1 to 4. Finally, we controlled for the differences between the eight departments by coding them as follows: 1 = human resources department, 2 = financial department, 3 = marketing department, 4 = technical support department, 5 = reception department, 6 = housekeeping department, 7 = food and beverage department, and 8 = operational department.

3.3. Analytical strategy

Green HRM, in-role team green behavior and extra-role team green behavior were rated by individual team members but were aggregated to form an overall team-level measure of the variables; hence, the variables represent the average of the individual ratings in a team. We conducted a team-level statistical analysis and hence first computed r_{wg} to evaluate the interrater agreement, ICC(1) (intraclass correlation coefficient) to evaluate the intraclass correlations, and ICC(2) to evaluate the reliability of the group means (Bliese, 2000). For green HRM, the results indicate that ICC(1) is 0.29, ICC(2) is 0.67, and the average r_{wg} is 0.90. For in-role team green behavior, the results show that ICC(1) is 0.22, ICC(2) is 0.58, and the average r_{wg} is 0.91. For extra-role team green behavior, the results show that ICC(1) is 0.20, ICC(2) is 0.85, and the average r_{wg} is 0.89. According to the generally applied cutoff of r_{wg} (i.e., above 0.70) (James et al., 1984), ICC(1) (i.e., above 0.05), and ICC(2) (i.e., above 0.50) (LeBreton and Senter, 2007), all these indicators in the current study show that our data aggregation is appropriate.

Before testing our hypotheses, we first conducted a descriptive analysis. We then conducted a confirmatory factor analysis (CFA) to establish the discriminant validity of all the factors by employing AMOS 25.0. As shown in Table 1, our hypothesized model indicates better fit ($\chi^2 = 125.172$, $df = 71$, $\chi^2/df = 1.763$, RMSEA = 0.064, GFI = 0.917, TLI = 0.979, CFI = 0.983) than other alternative models (Hu and Bentler, 1999). These results thus also provide evidence that our study variables are distinct constructs. In addition, we performed Harman’s single-factor test to examine whether most of the variance could be explained by a single factor (Harman, 1976; Podsakoff et al., 2003). The results showed that one factor accounted for 36.90 %, which is below the

Table 1
Results of CFA.

Model	χ^2/df	RMSEA	GFI	TLI	CFI
Four factors (baseline model)	1.763	0.064	0.917	0.979	0.983
Three factors: team perceptions of green HRM and in-role team green behavior combined	9.929	0.217	0.670	0.749	0.796
Three factors: team perceptions of green HRM and extra-role team green behavior combined	10.201	0.221	0.667	0.741	0.790
Three factors: In-role team green behavior and extra-role team green behavior combined	9.150	0.208	0.691	0.771	0.814
Two factors: team perceptions of green HRM, in-role team green behavior and extra-role team green behavior combined	17.692	0.297	0.500	0.531	0.608
One factor: All variables combined	23.353	0.344	0.453	0.371	0.468

accepted threshold of 40 %. This result indicates that common method bias is not a serious problem in our study. Finally, we assessed the discriminant validity of our scales with Fornell and Larcker’s (1981) criterion, which denotes that discriminant validity exists when the squared correlation of the other study variables is lower than the average variance extracted of the variable itself. Table 2 shows that there is discriminant validity among the constructs assessed in our model.

To test the direct hypotheses and the mediation effect, we used hierarchical regression analyses in SPSS with three steps. We first tested the main effect of green HRM on team performance. Next, after testing the effect of green HRM on in-role and extra-role team green behavior and the effect of in-role and extra-role team green behavior on team performance, we included the independent variable and the mediating variables in the regression analysis to test the mediating effects of in-role and extra-role team green behaviors on the relationship between green HRM and team performance. Additionally, we used PROCESS in SPSS by calculating 95 % confidence intervals (CIs) of indirect effects derived from bias-corrected bootstrap estimates with 10,000 iterations.

4. Results

The descriptive statistics of our study variables are shown in Table 3. The results show that team perceptions of green HRM are positively correlated with in-role team green behavior ($r = 0.12$, $p < 0.05$), with extra-role team green behavior ($r = 0.34$, $p < 0.05$), and with team performance ($r = 0.12$, $p < 0.05$).

Model 2 in Table 4 demonstrates that team perceptions of green HRM are positively related to team performance ($\beta = 0.45$, $p < 0.01$), supporting Hypothesis 1. Moreover, team perceptions of green HRM are positively related to in-role team green behavior ($\beta = 0.51$, $p < 0.01$) (Model 3) and to extra-role team green behavior ($\beta = 0.48$, $p < 0.001$) (Model 4), and both in-role team green behavior ($\beta = 0.33$, $p < 0.01$) and extra-role team green behavior ($\beta = 0.46$, $p < 0.01$) (Model 5) are positively related to team performance.

Table 4 also presents the results for the mediation hypotheses. In Model 6, team perceptions of green HRM are not significantly related to

Table 2
Results of discriminant validity.

Variable	1	2	3	4
1. Team perceptions of green HRM	0.64 ^a			
2. In-role team green behavior	0.07 ^b	0.63 ^a		
3. Extra-role team green behavior	0.09 ^b	0.20 ^b	0.61 ^a	
4. Team performance	0.09 ^b	0.17 ^b	0.15 ^b	0.66 ^a

^a Average variance extracted, AVE.

^b Squared correlation.

Table 3
Means, standard deviations and correlations.

	Mean	SD	1	2	3	4	5	6	7	8
1. Team leaders' gender	1.51	0.50								
2. Team leaders' age	2.24	0.62	0.12							
3. Team size	2.24	0.84	0.13	0.20						
4. Departments	4.98	2.22	0.16	-0.26	0.06					
5. Hotels	2.00	1.12	0.00	0.23	0.22	0.18				
6. Team perceptions of green HRM (agg.)	2.92	1.31	-0.01	-0.09	-0.04	0.26*	0.08			
7. In-role team green behavior (agg.)	3.94	1.55	-0.08	0.03	0.22	0.08	0.13	0.53**		
8. Extra-role team green behavior (agg.)	3.44	1.43	0.12	-0.06	0.41**	0.13	0.04	0.50**	0.42**	
9. Team performance	4.07	1.58	-0.14	0.10	0.12	0.13	0.21	0.39**	0.53**	0.49**

N = 63. Team level. agg. = aggregation.
p* < 0.05; *p* < 0.01.

Table 4
Results of hierarchical regression analysis.

	Model 1 Team performance	Model 2 Team performance	Model 3 In-role team green behavior (agg.)	Model 4 Extra-role team green behavior (agg.)	Model 5 Team performance	Model 6 Team performance
Constant	3.00	1.85	1.60	0.32	0.94	0.97
Team leaders' gender	-0.59	-0.55	-0.32	0.30	-0.57	-0.58
Team leaders' age	0.29	0.32	0.16	-0.28	0.41	0.41
Team size	0.15	0.19	0.05	0.74***	-0.24	-0.26
Departments	0.11	0.05	-0.03	-0.04	0.08	0.08
Hotels	0.20	0.17	0.10	-0.11	0.18	0.19
Team perceptions of green HRM (agg.)		0.45**	0.51**	0.48***		-0.05
In-role team green behavior (agg.)				0.16	0.33**	0.35**
Extra-role team green behavior (agg.)			0.23		0.46**	0.43**
Δ <i>R</i> ²	0.10	0.13	0.30	0.28	0.35	0.22
Δ <i>F</i>	1.24	9.59	12.46	14.93	17.09	10.43

N = 63. Team level. agg. = aggregation.
* *p* < .05; ** *p* < .01; *** *p* < .001 (two-tailed test).

team performance ($\beta = -0.05, p = 0.78$), but both in-role ($\beta = 0.35, p \leq 0.01$) and extra-role team green behavior ($\beta = 0.43, p \leq 0.01$) are still related to team performance. Thus, the relationship between team perceptions of green HRM and team performance is mediated by in-role and extra-role team green behavior. We further performed a bootstrapping analysis with 10,000 samples to detect the statistical power of these mediation effects. The bootstrapping results suggest that the mediation effect is significant for both in-role team green behavior (0.18, 95 % CI [0.01, 0.46]) and extra-role team green behavior (0.23, 95 % CI [0.05, 0.50]). Therefore, Hypotheses 2a and 2b are both supported.

5. Discussion

5.1. Theoretical contributions

This study makes several important contributions to the research on green HRM and its consequences in both the hospitality and tourism literature and the HRM literature more generally. First, the study advances empirical evidence on the positive effects of green HRM on employees' performance, which is prevalent in both streams of literature (e.g., Pham et al., 2020; Shen et al., 2018). The HRM-performance debate has a long history in the HRM research domain, with mixed evidence of the relationship (Paauwe and Boselie, 2005). Our study shows that HRM practices that incorporate aspects of green management have positive effects on team performance, thus offering additional evidence for the HRM-performance link. Specifically, the results demonstrate that green HRM influences performance at the team level through a green behavioral process, including in-role and extra-role green team behaviors. As such, this study provides new insights into the nature of the

social and psychological processes through which green HRM influences nongreen workplace outcomes. It thereby also responds to a call in previous work to examine whether the effect of green HRM may go beyond employee green behavior (Dumont et al., 2017).

Second, to our knowledge, only a few papers have made an attempt to study the nongreen consequences of green HRM in both streams of literature (e.g., Shen et al., 2018; Karatepe et al., 2022). Studying the implications of green HRM for nongreen employee outcomes is important considering that most hotels are not only focused on green goals but also on the financial and economic outcomes of hotels. We drew on the literature on emergence and convergence, which argues that a strong set of HRM practices provides information that is interpreted similarly by team members in a team so that convergence in perceptions and behaviors occurs (Bowen and Ostroff, 2004). Our results provide some support for the latter theoretical assumption, as our team-level analyses revealed that team members in a team provided similar ratings for green HRM and for both types of team green behaviors. With our team-level focus, our study thus provides new insights into the consequences of convergence in perceptions and behaviors for green HRM and nongreen team performance.

Third, this study makes an important contribution by elevating the discussion about the effects of green HRM on nongreen performance to the team level (Shen et al., 2018; Ari et al., 2020). We therefore also respond to the calls from scholars to adopt a multilevel approach in green HRM research (Dumont et al., 2017). While hotels are increasingly adopting a team-design approach to their organization of work (e.g., Fu et al., 2020; Du et al., 2021), little research on green HRM has addressed its consequences for teams. This study contributes to filling this important research gap. In doing so, it also adds to the knowledge base of the team-based HRM literature that suggests that HR practices should focus

on developing teams by using nongreen team training and nongreen team feedback to improve team outcomes (e.g., Salas and Cannon-Bowers, 1997; Chuang et al., 2016). Our results show that green HR practices can also influence teams and their outcomes. Additionally, in our study, we propose and test the role of in-role and extra-role green team behaviors, in the relationship between team perceptions of green HRM and team performance. The limited research that distinguished between in-role and extra-role work behaviors (e.g., Dumont et al., 2017) concluded that there are differences in the way both behaviors are officially appraised. In-role green work behavior is officially appraised, recognized, and related to rewards and can therefore be considered routine workplace behavior. Extra-role green work behavior is not officially appraised and rewarded and can therefore be considered nonroutine work behavior. We do not rule out the possibility that the latter assumptions might be true, but our findings show that 1) both behaviors are fostered by green HRM and that 2) both behaviors improve team performance. The former finding provides some support for SET (Edwards, 1996, 2007) because it indicates that teams reciprocate with green team behaviors when there is a clear set of green HR practices. Limited research has applied SET in teams (e.g., Cole et al., 2002); thus, we contribute to this extant limited work by showing how teams reciprocate to the organization when it offers green HRM. The latter finding is in line with the team literature on collaborative team behaviors, which suggests that when team members collaborate, it can potentially improve how a team performs (Rousseau et al., 2006). Hence, both in-role and extra-role team behaviors can improve team performance. However, it is still interesting to explore in future research which team mechanisms play a role that better accounts for the differences between the two types of team green behaviors.

Finally, recent studies in the hospitality and tourism literature have called for more green HRM research that extends the focus on Western societies (Cabral and Jabbour, 2019) to the focus on Asian societies (Cooke et al., 2020). Responding to this call, Karatepe et al. (2022) provided evidence for the effect of green HRM on nongreen hotel employee outcomes with a Taiwanese sample, and our study further does so with a Chinese sample. We hope that future studies will extend our research by focusing on other non-Western cultures and societies. In addition, in three recent systematic literature reviews, the authors found that green leadership fosters green employee outcomes of *green creativity* and *green innovation* (Arici and Uysal, 2022; Gürlek and Koseoglu, 2021; Bavik and Kuo, 2022). We therefore recommend that scholars complement the hospitality and tourism literature by examining whether green leadership also fosters team outcomes of green HRM in the context of hotels.

5.2. Practical implications

This study provides valuable practical implications for hotel managers. One of the main findings of this study is that green HRM benefits team performance in hotels. Considering that most hotels adopt a team-based organizational structure, it is thus beneficial for hotels to implement green HRM practices. Next, we found that green HRM fosters team performance through two types of green team behaviors: *in-role and extra-role green team behaviors*. For hotels, this means that green HR practices should be designed such that they support teams in engaging in the two types of green behaviors. A first step is designing effective recruitment and selection procedures to form teams in which all team members have the motivation and skills to engage collectively in both in-role and extra-role green behaviors. Next, trainings should be designed to help teams meet the organization's expectations toward green behaviors. This could be, for example, done by emphasizing what such expectations are and how they can be met. To further foster voluntary green team behaviors, trainings should be designed to help teams understand what such behaviors are and help them develop skills to proactively engage in the behaviors. To strengthen teams' motivation to engage in both types of green behaviors, hotel managers can also

consider appraising both team green behaviors and linking them to promotional opportunities, pay, and compensation.

5.3. Limitations and directions for future research

This study has some limitations that we encourage future researchers to address. First, it was not possible for our study to account for possible moderators that could influence the mediated relationship among the constructs team perceptions of green HRM, team green behaviors and team performance. Previous work has demonstrated that the effect of green HRM on green work behaviors is contingent on moderators such as psychological green climate and individual green climate (Dumont et al., 2017). Likewise, the limited research on the nongreen workplace outcomes of green HRM demonstrates that contextual moderators may play an important role (Shen et al., 2018). In their literature review, Fulmer and Ostroff (2016) propose that several contextual factors may facilitate or hamper the convergence and emergence of a higher-level property in social contexts. Specifically, they propose four factors: (1) structure and practices, (2) leader behaviors, styles, and leader-member interactions, (3) social processes and communication and (4) homogeneity of individual attributes. We suggest that future studies include these factors as contextual moderating variables to further explore how they strengthen or weaken the effect of team perceptions of green HRM on team green behaviors and team performance.

Second, the data were collected for the study variables with a one-month time interval. We acknowledge that HRM practices may take more time to exert an influence on team behaviors. Likewise, it may take more time for team behaviors to influence team performance. As such, we encourage future research to conduct longitudinal studies to better capture the mediated effect of team green behaviors and to rule out potential reverse causality issues. Future studies may also wish to conduct experimental studies to address reverse causality issues.

Finally, in line with most research on performance, we measured performance in terms of a specific dimension, namely, the quality of teamwork, using subjective team leader ratings (Meyer et al., 1989). However, scholars argue that performance is a multifaceted and complex construct that may not be correctly measured with subjective or aggregated assessments; thus, multiple objective indicators of performance should be used (Siders et al., 2001). Since we used only subjective ratings, we cannot determine whether our findings would be different with objective measurements of team performance. To strengthen our findings, we encourage future studies to replicate our research by including both subjective ratings of team performance and objective measurements.

Declaration of interest statement

The authors declare no conflict of interest.

Data Availability

Data will be made available on request.

Acknowledgements

This research was supported by a grant awarded to Dr. Wenjing Cai, University of Science and Technology of China, funded by National Natural Science Foundation of China (Grant No. 72002211).

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