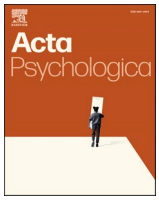
Acta Psychologica 258 (2025) 105153

Contents lists available at ScienceDirect

Acta Psychologica

journal homepage: www.elsevier.com/locate/actpsy



Green HRM, employee pro-environmental behavior, and environmental commitment

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ARTICLE INFO

Keywords:
Green human resource management
Green human resource practices
Employee pro-environmental behavior
Environmental commitment

ABSTRACT

In the field of green human resource management (GHRM), green practices and employee environmental commitment (EEC), there is a need to investigate these dynamics in diverse organizational contexts, such as the hospitality industry. Within hospitality industry, employee behavior is a major factor in determining environmental commitment. This study investigates the connection between GHRM practices and pro-environmental behavior (task-related and proactive pro-EB) among hospitality employees, aiming to enhance their environmental dedication. To conduct this study, we reached out to the HR managers of four hotels in India and collected 281 filled responses through a convenience sampling technique. Drawing on empirical evidence from India, the study supports the abilities, motivation, and opportunities theory and the social exchange theory framework to understand the GHRM mechanism with employee pro-EB and environmental commitment within the hospitality industry. The developed hypotheses and conceptual model used the structural equation modeling technique to test this mechanism. The study findings demonstrated that GHRM promotes pro-EB among hospitality industry employees to improve environmental commitment. This study adopts a unique approach to GHRM by considering the influence of employees' proactive and task-related pro-EB in enhancing their environmental commitment in the hospitality sector.

1. Introduction

Around the globe, researchers, analysts, and ecology regulators concur that humans play a significant role in causing environmental degradation, including declining biodiversity and the shortage of natural resources (Bangwal & Tiwari, 2019a; Chu-Van et al., 2018). However, many organizations are moving toward green and sustainable goals. They also expand environmental awareness programs within their organizations to reshape their employee activities to ensure that their routine operations are less detrimental to the environment. To address these issues, the area of GHRM concerning employee environmental behavior and commitment has emerged (Aboramadan & Karatepe, 2021; Umrani et al., 2020).

GHRM incorporates an environmental approach into the entire HRM process of recruiting, training, appraisal, rewarding, and growing green manpower that knows and gives importance to environmentally responsive beliefs, behaviors, and activities (Raza & Khan, 2022). Green HRM's impact on employee behavior and environmental commitment is still being researched (Yong et al., 2019), and it needs be done in a varied organizational setting, like the hospitality industry. According to Tairu (2018) and Thompson and Green (2005), greening hospitality employees requires employee dedication and participation in green initiatives, which is possible through properly establishing GHRM practices.

The hospitality industry is considered for the study because it has a major economic impact and plays an important role in sustainable development. One of the world's largest economic sectors, it has a significant impact on GDP, jobs, and global trade, with a considerable environmental footprint. India came in at number 34 in the Travel & Tourism category as per the Competitiveness Report published by the

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https://doi.org/10.1016/j.actpsy.2025.105153
Received 24 December 2024; Received in revised form 3 June 2025; Accepted 5 June 2025
Available online 13 June 2025
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World Economic Forum in 2019. In India, the hospitality sector is expanding more quickly than the economy and is projected to contribute USD 492.21 billion to the country's GDP by 2028. In 2019, this industry generated 4.2 million jobs in India, accounting for 8.1 % of all jobs in the nation (Bangwal et al., 2022). Green Human Resource Management (Green HRM) is a potential solution to tackle these challenges through environmentally friendly management of workforces through green recruitment, training, and participation (Bangwal, et al 2017b[1]).

A green organizational culture can enable businesses to improve resource use management, save operational costs, and attract environmentally-aware stakeholders. Such responsible practices contribute to global sustainability objectives, while ensuring the long-term economic potential of the industry. In hospitality industry, employees' actions are especially important in controlling and ensuring practical environmental commitment (Mohamed et al., 2020). Because hospitality employees have considerable potential but are often underappreciated in sustainability, there is a need to support and foster pro-environmental behavior among them to improve their environmental commitment and achieve long-term improvements in environmental performance (Nisar et al., 2021). Therefore, in order to increase the employees' commitment to the environment, the current study focuses on green HRM practices along with the employees' pro-environmental behavior (Pro-EB) in the hospitality sector.

Even though the hospitality industry emits less pollution than other industries and the corporate sector, it still bears the responsibility for improving the environmental commitment of the organization by encouraging pro-EB among its employees (Haldorai et al., 2022; Rayner & Morgan, 2017). Some studies have highlighted the role of employees' pro-EB in enforcing environmental laws and regulations in the workplace (Haldorai et al., 2022). Employees pro-EB is the discretionary effort that contributes to effective environmental performance in an organization (Boiral & Paille, 2012; Jolly et al., 2022). Furthermore, the hospitality industry is required to work more on environmental practices under the GHRM program to promote pro-EB among its employees because its actions and performance have both explicit and implicit effects on EEC in terms of resource sustainability, such as material utilization, waste reduction, energy and power usage (Alam et al., 2023; Veerasamy et al., 2023).

The growing environmental pressure and mounting resource consumption costs have prompted the hospitality industry to advocate pro-environmental behavior. Many hospitality organizations have recognized their responsibilities toward the environment, and some have incorporate environmental management facets into their strategy, policies, practices, structural layout, AI-based automation, and further operational activities (Bangwal & Tiwari, 2019b; Mikulik & Babina, 2009), as well as participating in environmental initiatives. However, their progression toward long-term viability is gradual (Lozano et al., 2013). Recently, the hospitality industry's environmental capabilities have focused on the technical aspects of environmental performance, such as assessing GHG (Greenhouse Gas) emissions and power utilization, but have paid minimal attention to the behavioral facets of environmental performance management (Haldorai et al., 2023; Martin et al., 2024).

As far as we are aware, no other research has looked into the mechanism of GHRM and EEC with or without the influence of employees' *proactive* and *task-related* pro-EB in the hospitality sector, where their employees contribute to enhancing their environmental commitment. This study uses empirical evidence from India to support the Abilities, Motivation and Opportunities (AMO) theory, and Social Exchange theory (SET) framework and theoretical concepts. The contribution of pro-EB is examined within the context of GHRM, as interpreted through the SET and AMO theory frameworks, specifically with regard to pro-EB. According to SET, employees are bound to take pro-environmental actions in proportion to the level of organizational investment made in them. This increases their sense of obligation and responsibility to the environment within the organizational sphere. Meanwhile, the AMO framework posits that GHRM practices enhance employees' abilities (e.g., training in sustainability), motivation (e.g., green rewards and leadership), and opportunities (e.g., participation in eco-friendly initiatives), which collectively drive pro-environmental behaviors. Taken together, these factors enhance the pro-environmental actions of employees. Adopting these theories, Pro-EB functions as a mediating variable in realizing the effects of GHRM on employees' organizational commitment. It shows that employees, who perceive that their organization offers support to its claimed environmental stance, are likely to adopt and practice sustainability values and green practices in the organization and are more likely to remain with the organization. For employee-driven GHRM, this integration enables a more comprehensive illustration of how GHRM assists in nurturing employee-induced sustainability actions.

2. Literature review and hypotheses development

2.1. Green HRM

GHRM encompasses a collection of HRM policies and practices designed to support organizations while simultaneously mitigating the adverse impacts of environmentally harmful behaviors within the workplace (Aboramadan & Karatepe, 2021; Agrawal & Pradhan, 2023; Srividya et al., 2022; Yusoff et al., 2020). An essential aspect of GHRM is to enhance employees' environmental awareness, efficiency, participation, and commitment through eco-friendly training initiatives (Pham et al., 2019). This includes assisting employees in recognizing environmental issues within their organizations and empowering them to address these concerns using green HRM techniques, which have proven to be highly effective in promoting environmentally responsible actions (Bangwal et al., 2017b; Renwick et al., 2013). Notably, relatively recent developments in GHRM encompass a wide range of new practices, starting from the entry point of the process - green recruitment and selection. These include increasing environmental awareness through green training and development, and rewarding green initiatives through green pay and reward systems. All of these practices are very essential for promoting an environmentally conscious workplace (Bangwal et al., 2017a; Veerasamy et al., 2023).

AMO theory is a widely used theory to explain the impression of HRM practices on behavior and commitment. AMO theory supports us in understanding the concept of HRM and the ensuing environmental commitment (Ahmed et al., 2021; Boselie et al., 2005). According to this theory, HR procedures are categorized into three key factors i.e. ability, motivation and opportunity (Appelbaum, 2000). The foundation of ability is created by the methods that ensure that a person has the necessary skills and abilities to accomplish particular environmental tasks, including green recruitment, and green training & development programs.

Similar to this, the foundation of motivation is determined by procedures such as performance reviews, and monetary and non-monetary incentives, like green pay and rewards that are intended to motivate employees to meet their environmental objectives and commitment. Lastly, the opportunity refers to a collection of methods that encourage employee participation in environmental activities through involvement, along with pro-EB (Iftikar et al., 2022).

Researchers have investigated GHRM across various industries via the prism of the AMO theory. (i.e., Iftikar et al., 2022; Singh et al., 2020; Yu et al., 2022, Pham et al., 2019). For instance, Yong et al. (2019) investigated how professors in public research institutions used GHRM and adopted a green mindset. Pham et al. (2019) examined the connection between organizational citizenship behavior and green training, management, and performance in the hospitality sector. Yu

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et al. (2022) undertook research in the automobile industry on GHRM, supply chain practices, and environmental collaboration with suppliers and customers.

Although AMO theory is the most systematic in analyzing GHRM's role in fostering EEC, few studies have fully incorporated the AMO framework into their study models. Nevertheless, there is frequently a lack of a connecting mechanism that connects GHRM to EEC, as demonstrated by pro-EB. Harvey et al. (2013) and Ren et al. (2017) have emphasized the significance of the mediating mechanism that enables GHRM to produce long-term outcomes. Consequently, our study addresses two gaps in the existing literature, expanding the scope of GHRM research through the conceptual framework of AMO. This work underlines the mechanism between GHRM practices such as green recruitment and selection, green training and development, and green pay and rewards that improve EEC. As a result, this study put out the hypothesis,

H1. : GHRM has a significant effect on EEC.

2.2. Pro-environmental behavior (pro-EB)

Pro-EB is mostly studied in the context of travelers (Kim & Coghlan, 2018; Martin et al., 2024). However, pro-EB is also a process of setting up successful sustainability plans for the workplace, which can be accomplished by making conscious efforts to lessen an employee's negative impact on the environment and artificial ecosystems (Ahmad et al., 2022; Alam et al., 2023). This refers to staff efforts aiming at decreasing the adverse effects of employees' behaviors, such as recycling, trash reduction, water conservation, and power use reduction (Nisar et al., 2021). The employee pro-EB comprises of task-related pro-EB (TPEB) and proactive pro-EB (PAEB) (Zhang et al., 2020). PAEB reflects an employee's willingness to go above and beyond their job responsibilities in terms of green behavior (Veerasamy et al., 2023). This form of conduct is caused by personal participation in dealing with unanticipated situations, not by the employment environment or job definitions (Bissing-Olson et al., 2013).

However, behavior that is explicitly mandated by the organization and specified in relation to employee responsibilities is referred to as TPEB (Norton et al., 2015). TPEB refers to how well the employees perform their designated tasks in an environmentally friendly manner. As a result, particular focus is given to the proportion of workers who carry out their primary organizational duties in a manner that promotes environmental and natural resource protection (Bissing-Olson et al., 2013). PAEB (Ahmed et al., 2021; Tian et al., 2020), which has received less research attention, is an important concept in our study, as it combines a supported and proactive approach to work. This includes identifying environmental problems, considering necessary changes, figuring out ways to solve those problems, and providing environmental endorsements.

2.3. Mechanism between green HRM and pro-EB (task-related and proactive)

Organizations are increasingly encouraging GHRM practices among employees to reduce negative environmental impacts and enhance positive ones (Bangwal & Tiwari, 2015; Iftikar et al., 2022; Norton et al., 2017). Employees are being prompted to integrate ecological awareness into their work routines and make more environmentally conscious changes to their work procedures with the support of their employers (Kim et al., 2019; Ramus & Steger, 2000).

To understand the mechanism between GHRM and Pro-EB (TPEB & PAEB), SET (Emerson, 1976) offers a valuable framework. Researchers have found that SET helps clarify and streamline HRM practices related to human relations. When employees understand the significance and benefits of adopting green practices and view them through the lens of SET, they are more likely to actively participate in the organization's ecological initiatives (Pham et al., 2020). GHRM, as suggested by scholars such as Kim (2019), Zhang et al. (2020), and Tang et al. (2018), may be successfully attained by putting green methods into practice, which positively influence employees' environmental behavior and ultimately align with the organization's environmental objectives (Veerasamy et al., 2023). Several investigations have demonstrated that HRM significantly influences employees' green practices, particularly within the hospitality industry (Irani et al., 2022; Pham et al., 2020).

Employee green recruitment, training, and pay & rewards in the context of GHRM practices are identified as key factors in promoting employee Pro-EB (TPEB & PAEB) (Iftikar et al., 2022). While many environmental management scholars have examined environmentally responsible behavior, including waste minimization in the hospitality industry, there is limited research exploring the influence of GHRM on the two primary forms of pro-EB exhibited by hospitality staff. These two forms- TPEB & PAEB, have been identified as key indicators in assessing the effects of GHRM (Chaudhary, 2020; Tian et al., 2020; Zhang et al., 2020). It is anticipated that GHRM practices will have a direct effect on employees' task-related pro-EB due to the alignment of green behaviors with the organization's operational strategies, and the potential for public recognition and rewards. In contrast, proactive pro-EB may not be immediately influenced by GHRM practices since these behaviors are often not formally acknowledged by the organization and may occur outside routine organizational processes.

An organization's green culture can impact employee behavior. Factors such as employees' familiarity with the organization's green culture, the training they receive on green practices, personal motivation, environmental awareness, and their proximity to the environment can all influence proactive pro-EB beyond the scope of corporate guidelines (Dumont et al., 2017; Nisar et al., 2021; Zhang et al., 2020). In light of these considerations, we advocate the incorporation of GHRM principles to stimulate and guide employees' green behaviors within the workplace, directing them toward both task-related and proactive pro-EB. This leads us to propose the following hypotheses:

H2a. : GHRM has a positive effect on employees' TPEB.

H3a. : GHRM has a positive effect on employees' PAEB.

2.4. Mechanism between pro-EB (TPEB & PAEB) and employee environmental commitment (EEC)

Commitment can be defined as a pledge or vow to exhibit certain behaviors. EEC can be defined as a mindset and internal disposition, where the psychological condition reflects people's shared sense of responsibility and the responsibility for workplace environmental issues (Bahuguna et al., 2023; Rubel et al., 2023; Terrier & Marfaing, 2015). In turn, EEC leads to satisfaction with the environment, involvement in broad-spectrum ecological behaviors, and a desire to take measures for the environment's benefit (Yu et al., 2019). People with strong environmental dedication, also known as biospheric values, are willing to take whatever step to ensure the environment's welfare (Afsar & Umrani, 2020) As a result, employees are more likely to be more attentive and support high-priority organizational concerns.

It appears reasonable to believe that an employee shows environmental assurance when he or she wishes to share, identify with and support their organization's environmental concerns. Employees who are passionate about environmental issues will contribute to pro-environmental initiatives and encourage others to do the same (Paillé & Valéau, 2021; Robertson & Carleton, 2018). Once motivated, employees will willingly engage in pro-EB without being reminded or prompted by the supervisors or management. A study conducted by Oreg and Katz-Gerro (2006) supports this claim used a large sample of participants from twenty-seven diverse nations to measure EEC with the association among environmental issues with several pro-EBs such as, recycling, environmental citizenship, and avoiding the use of automobiles.

The dissemination of knowledge and tools for reducing the human impact on the environment has secured its place at the forefront of sustainability science, with the concept of pro-EB as one of its cornerstones. According to researchers, there are two types of pro-EB: TPEB & PAEB. TPEB consists of behaviors carried out to meet defined environmental obligations under the employee role, whereas proactive pro-environmental behavior is voluntary in nature and exceeds formal job requirements to improve environmental conditions (Alzubaidi et al., 2021; Composto et al., 2023; Kim & Stepchenkova, 2020).

Recent studies have suggested that EEC constitutes an important factor that can substantially influence both TPEB as well as PAEB. Someone who is intrinsically environmentally minded is more likely to do a variety of pro-EB - recycling, conserving energy, and advocating for the environment causes (Barclay & Barker, 2020). Thus, a well-established relationship exists in the literature between individual commitment to the environment and TPEB. The more committed individuals are to the environment, the more likely they are to fulfill their environmental responsibilities at workplace such as, properly disposing of waste and following energy-saving protocols. Some research has indicated, for instance, that a positive relationship between external spending on environmental initiatives and energy consumption can lead to greater levels of environmental action on the part of individuals and communities (Barclay & Barker, 2020).

In the interim, other investigations have been conducted to examine the employee behaviors, attitudes, and intentions related to environmental protection along with a readiness to participate in Pro-EB (Mayerl & Best, 2019). Wan et al. (2014) investigated the factors influencing individuals' willingness to support recycling efforts in Hong Kong. Employee pro-EB has a considerable effect on EEC because employees' interests in pro-environmental activities is often linked to their involvement in GHRM practices in the organization. Additionally, voluntary employee commitment is supported by the organizational GHRM policies and environmental management programs, which underpin voluntary employee pro-EB (Cheema et al., 2019; Han & Hyun, 2016; Rahman & Reynolds, 2016; Safari et al., 2018; Wang, 2016). This idea was further supported by previous studies showing that when employees feel satisfied with their organization, they become more socially conscious. As a result of their desire for being recognized from the organization, they are more likely to engage in environmental activities. Thus, the below hypotheses were proposed (Kuo et al., 2022; Mayerl & Best, 2019; Oreg & Katz-Gerro, 2006; Sarwar et al., 2024; Sendawula et al., 2021).

H2b. : TPEB has a positive effect on EEC.

H3b. : PAEB has a positive effect on EEC.

3. Proposed research model and hypotheses

Based on the theoretical framework of AMO theory and SET, and existing literature, we developed the research model and formulated the hypotheses as given in Fig. 1. As given in the research model, GHRM, which is considered an exogenous latent variable, is represented by green training and development (GRTD), green recruitment and selection (GRRS) and green pay and reward (GPR). EEC (EEC) is an endogenous latent variable and the two mediating variables, i.e., proactive pro-environmental behavior (PAEB) and task-related pro-environmental behavior (TPEB).

4. Materials and methods

4.1. Sample and settings

To conduct this study, we gathered information from hospitality employees in India who have incorporated GHRM practices into their daily operations. Data were collected only from eco-friendly certified hotels located in northern India. Based on the mentioned criteria, we reached out to the HR managers of the selected four hotels in northern India and provided them with an explanation of the study's objectives. Using purposive sampling, we collected 281 completed responses out of 425 distributed questionnaires between April 2023 and July 2023. The remaining responses were excluded due to incomplete information. The questionnaire was sent by internal mail to the chosen respondents, yielding a response rate of 66 %.

4.2. Questionnaire design and measurement scale

A set of items were developed to define the construct, such as the EEC, after obtaining approval from the academicians who teach hospitality management courses and hold positions of Assistant Professor or above. These academicians were selected to validate the items along with industry experts - managers, and above- who have valuable experience in the specific operation of the hotel such as Front Office and Food & Beverage (F&B) services. The items of GHRM were taken from Bangwal et al. (2017a), and TPEB and PAEB items were taken from Bissing-Olson et al. (2013) and Dumont et al. (2017). EEC items were

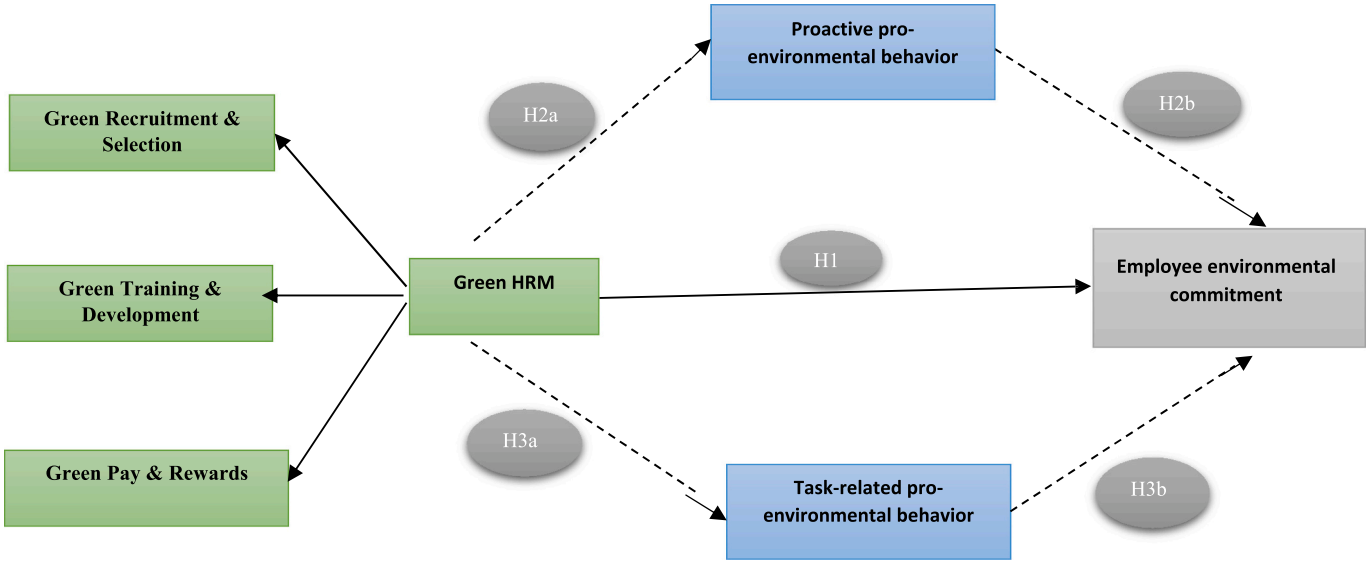

Fig. 1. Proposed research model and hypothesis.

taken from Nath and Ramanathan (2016) and Xing et al. (2019). Cronbach's alpha, as well as convergent and discriminant validity were tested to ensure the items and construct reliability and validity using AMOS 27.0. All the items were measured on a 5-point Likert-type scale anchored from "1 = strongly Disagree" to "5 = strongly agree".

5. Data analysis, interpretation and results

5.1. The sample's demographic features

According to Table 1, there were 281 respondents, of whom 46 % were females and 54 % were male. The respondents were categorized as per their respective departments: Front Office (24 %), Housekeeping (29 %), F&B Services (34 %), Room Services (7 %), and HR Department (6 %). All respondents held the positions of Senior Managers (7 %), Middle Managers (25 %), or Executives (68 %). In terms of age distribution, 38 % of respondents were between 20 and 30 years old, 34 % were between 31 and 40 years old, and 28 % were between 41 and 50 years old.

5.2. Structural equation modeling

Structural equation modeling (SEM) facilitates the estimation of several dependent relationships in a single investigation. SEM has two mechanisms: the measurement model, and the structural model (Bangwal et al., 2022; Doloi et al., 2011). This study adopted SEM method to evaluate the conceptual model and test the hypotheses as given in Fig. 2.

5.2.1. Reflective measurement model

According to Ifinedo (2006), testing model fitness in the SEM should be conducted after verifying the validity and reliability of the items and construct. To asses validity and reliability, confirmatory factor analysis (CFA) was executed. The reflective measurement model includes five constructs i.e., GHRM, which is considered an exogenous latent variable, represented by green training and development (GRTD), green recruitment and selection (GRRS) and green pay and reward (GRPR). EEC (EEC), which is an endogenous latent variable, along with two mediating variables, i.e., proactive pro-environmental behavior (PAEB) and task-related pro-environmental behavior (TPEB). As shown in Table 2, Cronbach's alpha was used to determine the reliability of measurement items. Cronbach's alpha is considered acceptable if it exceeds 0.7 (Sekaran, 2003); in this case, it does. Composite reliability (CR), also known as construct reliability, is used to evaluate the measurement model's construct's reliability (Netemeyer et al., 2003). Table 2 confirms that all constructs exhibit acceptable reliability, as each construct's CR exceeds the 0.7 threshold.

The relationship between one indicator and other indicators of the same construct is explained by convergent validity (CV) (Bangwal et al., 2023; Hair et al., 2019). The CV is determined through standard factor loadings of the items, which represents the correlation coefficients between the observed variables and their corresponding latent variables. As per Hair et al. (2019), standard factor loadings must be >0.50 to be considered acceptable. As shown in Table 2, the standard factor loadings range from 0.75 to 0.95. It demonstrates that the indicators accurately represent their respective latent variables.

Discriminant validity demonstrates that there is no correlation between the measures of the various constructs. It implies that each construct is unique and separate from the others. Discriminant validity can be measured using the square root of average variance extracted (AVE) and average shared variance (ASV). EEC, PAEB, and TPEB exhibit a weak positive correlation with GHRM indicating that each variable in the measurement model is exogenous. As shown in Tables 2 and 3, the square root of AVE is bigger than that of ASV for each construct. Therefore, it can be concluded that discriminant validity of the constructs is acceptable.

5.2.2. Reflective measurement model – Model fit test

To determine the model fit test for both the reflective measurement model and the structural model, the following indices are considered: CFI (comparative fit index), TLI (tucker lewis index), GFI (goodness of fit index), NFI (normed fit index and RMSEA (root mean square of error approximation). The standard threshold values of $\chi 2/df < 3$, CFI, GFI, TLI, NFI > 0.9, and RMSEA < 0.08 (Gefen & Straub, 2000). As shown in Table 4, the obtained values meet the criteria and allow us to further proceed with testing the proposed structural model in the study.

5.2.3. Structural model – Model fit test

The goal of the structural model was to evaluate the conceptual research model under investigation. Table 5 shows the properties of structural model, including Standard Error (SE), Standard Path Coefficients (SPC), Critical Ratio (CR), and the outcome of the proposed hypotheses, along with model fit test. This indicates that the proposed structural model is acceptable and appropriate for hypotheses testing.

5.3. Mediation analysis

This study used parallel mediation analysis as it enables researchers to examine multiple theories simultaneously in a single model (Guevarra & Howell, 2015). This mediation analysis helped us to investigate the relationship between exogenous variables and outcome variables with the effect of hypothetical variables, referred to as mediating variables (Hayes, 2013). In this study, three structural paths were inferred by path theory. The first path is direct effect GHRM ➔ EEC (without mediating variables). The second path and the third path represent mediating effects: GHRM ➔ TPEB ➔ EEC & GHRM ➔ PAEB ➔ EEC, respectively. As shown in Table 6, both indirect paths GHRM ➔ TPEB ➔ EEC & GHRM ➔ PAEB ➔ EEC demonstrate significant partial mediation, as confirmed through the Hayes Process Macro and Sobel test.

5.3.1. Hayes process macro and Sobel test to measure the direct and indirect effect

In the first path (GHRM ➔ EEC), we ran the model without mediating variables to test the direct effect of GHRM on EEC, as stated in hypothesis H1. Results of a structural equation modeling show significant support for hypothesis H1 ($\beta = 0.47$, $p < 0.01$). This indicates that with the help of AI technology, hospitality employees felt satisfaction in their service process. We again run the structural model with mediating variables i.e., TPEB and PAEB, to check the indirect effect of GHRM through the path of these two mediating variables, and the results show that the value of the standard path coefficient was reduced by a non-trivial amount ($\beta = 0.23$, $p < 0.01$) though it was still significant. As a result, the mediation analysis supports partial mediation. The second path via GHRM ➔ TPEB ➔ EEC has shown positive and significant effects

Table 1
Demographic profile of the sample.

Variable	Categories	Frequency ($n = 281$)	Response %
Gender	Male	153	54
	Female	128	46
Age Group	20–30	107	38
	31–40	96	34
	41–50	78	28
Position	Senior	21	7
	Middle	68	25
	Executives	192	68
Department	Front Office	67	24
	Housekeeping	82	29
	Food & Beverage Services	96	34
	Room Service	19	7
	Human Resource Department	17	6

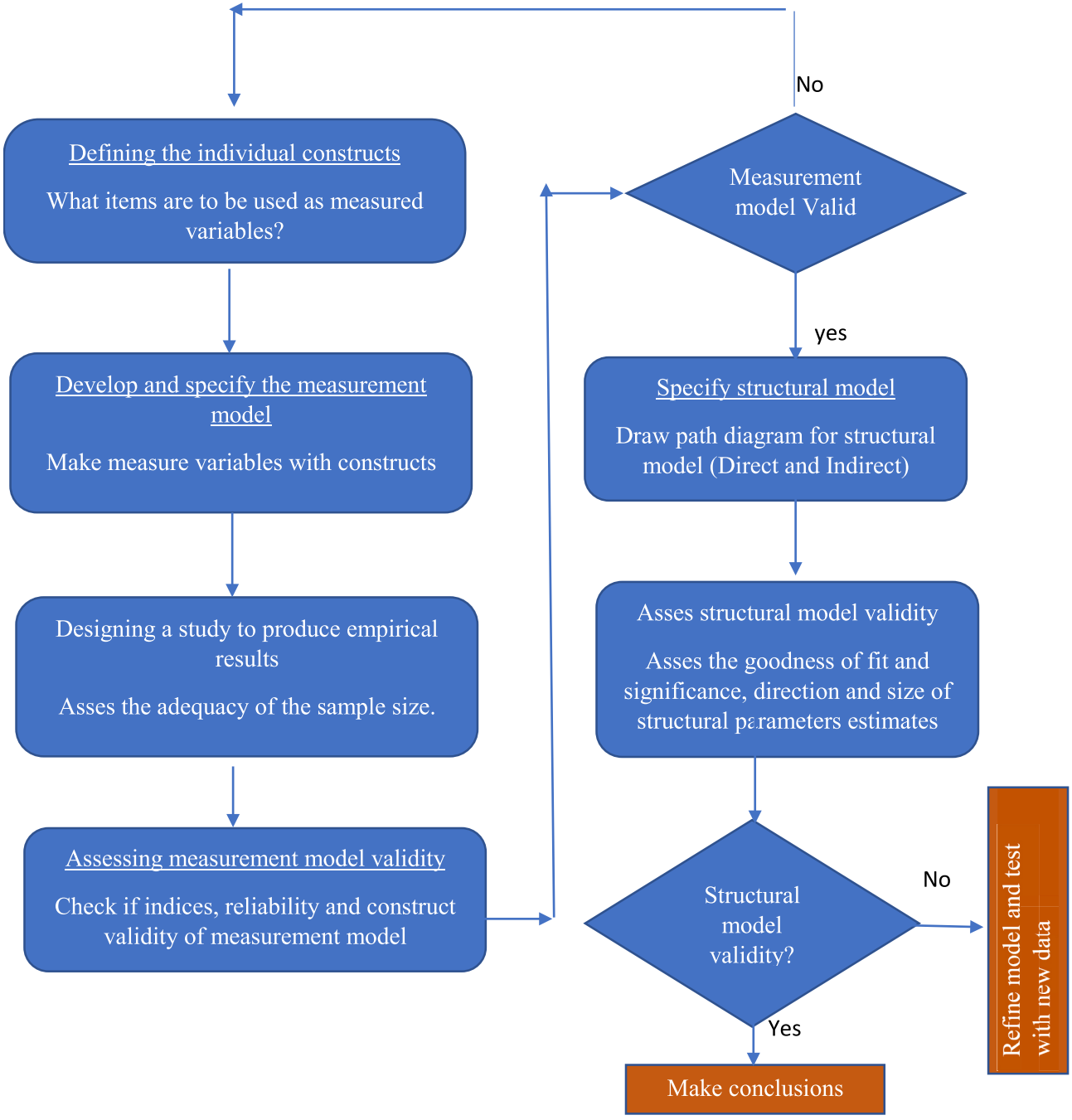

Fig. 2. Flow chart of SEM for proposed research model and hypothesis.

of Green HRM on the EEC through Task-related Pro-EB and supports the hypothesis H2a ($z = 1.566$, $p < 0.05$). It indicates that Green HRM significantly contributes to employee task-related Pro-EB.

As shown in Table 6, Model 1, the path from GHRM to TPEB (direct Effect), corresponding to hypothesis H2a, was found positive and statistically significant ($b = 0.2042$, S.E. $= 0.0434$, $p < 0.05$). Additionally, in Table 6, model 3, hypothesis H2b was also found to be significant supporting the relationship between TPEB to EEC ($b = 0.3680$, S.E. $= 0.0490$, $p < 0.05$). Furthermore, the direct path from GHRM to EEC was also found statistically significant ($b = 0.0322$, S.E. $= 0.0536$, $p < 0.05$). These findings indicate that GHRM positively leads to EEC through employee TPEB.

In sequence, the third path, GHRM ➔ PAEB ➔ EEC, revealed a positive and significant indirect effect between GHRM and EEC through the mediating variable PAEB ($z = 0.57$, $p < 0.05$), thereby supporting the hypothesis H3a, which states that GHRM significantly influences employee PAEB. As expected, due to the GHRM policy, employees of the hospitality industry have the feeling of PAEB, and it further affects their perceptions of the EEC.

As shown in Table 6, Model 2, the path from GHRM to PAEB (direct Effect) and the stated hypothesis H3a were found positive and statistically significant ($b = 0.3112$, S.E. $= 0.0451$, $p < 0.05$). Similarly, the path from GHRM to EEC (direct Effect) was also found significant ($b = 0.322$, S.E. $= 0.627$, $p < 0.05$). Furthermore, the path from PAEB to EEC (direct Effect) and the stated hypothesis H3b was also found to be significant and supported ($b = 0.2235$, S.E. $= 0.0564$, $p < 0.05$). These findings indicate that employee PAEB positively leads to EEC.

Table 6 displays the direct and indirect impacts of X on Y. Acceptance

Table 2
Reliability, Discriminant validity (DV), Convergent validity (CV), Composite reliability (CR), and Standard factor loadings of the items.

Construct	Items	AVE	ASV	CR	Cronbach Alpha	Standardized Factor loadings
Green Training and Development	GTD4	0.586	0.172	0.849	0.843	0.73
	GTD3					0.764
	GTD2					0.871
	GTD1					0.684
Green Pay and Rewards	GPR4	0.545	0.143	0.827	0.826	0.705
	GPR3					0.729
	GPR2					0.751
	GPR1					0.766
Green Recruitment and selection	GRS4	0.731	0.095	0.915	0.812	0.857
	GRS3					0.917
	GRS2					0.852
	GRS1					0.788
Pro-active environmental behavior	PE5	0.707	0.193	0.923	0.943	0.827
	PE4					0.941
	PE3					0.911
	PE2					0.898
	PE1					0.801
Task-Related Pro-environmental behavior	TP5	0.769	0.187	0.943	0.943	0.796
	TP4					0.887
	TP3					0.846
	TP2					0.89
	TP1					0.78
Employee environmental commitment	EC5	0.542	0.177	0.854	0.842	0.606
	EC4					0.781
	EC3					0.764
	EC2					0.738
	EC1					0.777

Table 3
Correlation matrix and the square root of AVE's.

	PAEB	GRTD	GRPR	GRRS	TPEB	EEC
PAEB	*0.841*					
GRTD	0.502	*0.765*				
GRPR	0.368	0.441	*0.738*			
GRRS	0.206	0.411	0.399	*0.855*		
TPEB	0.538	0.341	0.346	0.242	*0.877*	
EEC	0.498	0.357	0.329	0.215	0.594	*0.736*

Note: Diagonal values (Italics) show the square root of AVE of items (observed variance), and the off-diagonal values show the correlation between the constructs.

Table 4
Model fit test values for the reflective measurement model.

Model Fit Index	$\chi 2$/df	CFI	GFI	NFI	TLI	RMSEA
Model	1.491	0.969	0.889	0.912	0.965	0.043

Table 5
Model fit values for the structural model.

Model Fit Index	$\chi 2$/df	CFI	GFI	NFI	TLI	RMSEA
Model	1.556	0.964	0.883	0.906	0.965	0.045

of the null hypothesis, which is zero and insignificant, occurs if zero is within the Low limit Confidence interval (LLCI) and Upper limit confidence interval (ULCI). In this case, PAEB and TPEB are both important in this situation. Although zero does not fall between the Lower limit (L.L) and Upper limit (U.L), the mediation effect is there for both mediators, even though the overall effect is negligible. As "0" does not fall within the confidence interval, the indirect effect of GHRM via TPEB (IE = 0.0864) is also positive and statically significant in this case; 95 % CI = (0.0206, 0.1465). Similarly, the indirect effect of GHRM via PAEB (IE = 0.0716) is also positive and statically significant (0.0189, 0.1408). Table 7 represents the results of hypothesis testing.

6. Result discussion and recommendation

The objective of this study was to assess the influence mechanism of GHRM on EEC with or without the employee Pro-EB within the hospitality industry. The mediating variables are tested through Hayes Process Macro and Sobel Test to measure the direct and indirect effects between GHRM and EEC. PAEB serves as the behavioral bridge between the structural support provided by GHRM and the psychological outcome of EEC. Without this behavioral link, GHRM initiatives may remain superficial or symbolic. PAEB makes the environmental agenda tangible and personally meaningful to employees, thereby embedding environmental values into workplace culture and individual identity.

Implementation of GHRM practices within organization cultivate a sense of adopting TPEB that is directly related with their job task. This behavior may foster a mindset among employees to minimize resources consumption, follow the sustainable work processes, or actively participate in green initiatives at work. Consistent engagement in such behaviors enhances employees' psychological attachment and commitment to the organization's environmental mission. In essence, TPEB serves as the behavioral expression of employees' environmental values, nurtured through GHRM. It, thus, act as a vital link that reinforcing their EEC. This relationship underscores the importance of aligning HR practices with environmental objectives to foster a workforce that is both environmentally responsible and emotionally invested in sustainability.

The results specifically support hypotheses H2a and H3a, which highlight the significant and direct connection between the exogenous variable GHRM and the mediating variables- TPEB and PAEB. The results indicate that individuals working in the hospitality sector exhibit a higher inclination toward environmentally conscious behavior at the workplace. Notably, these employees express a greater willingness to engage actively in their organization's eco-friendly initiatives when they are aware of the benefits of adopting green practices and understand their broader environmental impact.

Based on these findings, it can be concluded that GHRM positively influence the employees' environmental behaviors and enhances their level of environmental commitment within the organization. These results corroborate Pham et al.'s (2019) assertion that GHRM encourages

Table 6
Process Macro for Mediation Analysis: Mediating role of TPEB and PAEB in the path of GHRM ➔ EEC.

Outcome variable:						
TPEB (Task-Related Pro-EB)						
Model l Summary						
R	R-sq	MSE	F	df1	df2	p
0.2042	0.0417	757,032.130	11.7039	1.0000	269.0000	0.0007
Model 1						
	coeff	se	t	p	LLCI	ULCI
constant	1215.2437	54.8802	22.1436	0.0000	1107.1944	1323.2930
GHRM	0.0001	0.0000	3.4211	0.0007	0.0000	0.0001
Standardized coefficients						
	coeff					
GHRM	0.2042					
Outcome variable:						
PAEB (Proactive Pro-EB)						
Model 2 Summary						
R	R-sq	MSE	F	df1	df2	p
0.3112	0.0968	571,784.885	28.8377	1.0000	269.0000	0.0000
Model 2						
	coeff	se	t	p	LLCI	ULCI
constant	738.9878	47.6952	15.4940	0.0000	645.0845	832.8912
GHRM	0.0001	0.0000	5.3701	0.0000	0.0000	0.0001
Standardized coefficients						
	coeff					
GHRM	0.3112					
Outcome variable:						
EEC (Employee Environmental Commitment)						
Model 3 Summary						
R	R-sq	MSE	F	df1	df2	p
0.5755	0.3312	402,844.710	44.0774	3.0000	267.0000	0.0000
Model 3						
	coeff	se	t	p	LLCI	ULCI
constant	470.5412	69.3089	6.7890	0.0000	334.0797	607.0028
GHRM	0.0000	0.0000	0.6096	0.5427	0.0000	0.0000
TPEB	0.3680	0.0490	7.5142	0.0000	0.2716	0.4645
PAEB	0.2235	0.0564	3.9650	0.0001	0.1125	0.3344
Standardized coefficients						
	coeff					
GHRM	0.0322					
TPEB	0.4231					
PAEB	0.2299					
Direct and indirect effects of X on Y						
Direct effect of X on Y						
Effect	se	t	p	LLCI	ULCI	c'_cs
0.6776	0.0343	0.6096	0.0427	0.5101	0.08710	0.0322
Completely indirect effect(s) of X on Y:						
	Effect	BootSE	BootLLCI	BootULCI		
Total	0.1579	0.0499	0.0566	0.2525		
TPEB	0.0864	0.0314	0.0206	0.1465		
PAEB	0.0716	0.0312	0.0189	0.1408		

Table 7
Hypotheses test summary.

Hypothesis		Structural Relationship			St. Est (β)	Unst. Est(β)	P	Result
	Direct Effect	EEC	«	GHRM	0.47	0.50	P < 0.01	
H1	Indirect Effect	EEC	« «	GHRM	0.23	0.24	P < 0.01	Supported
H2a		TPEB	«	GHRM	0.62	0.79	P < 0.05	Supported
H2b		EEC	«	TPEB	0.39	0.32	P < 0.05	Supported
H3a		PAEB	«	GHRM	0.71	1.19	P < 0.05	Supported
H3b		EEC	«	PAEB	0.13	0.08	*P* < 0.05	Supported

Notes: β, standardized beta coefficients; *p < 0.05; **p < 0.01; ***$p < 0.001$.

the hospitality employees to adopt a green mindset within the organization that facilitates the development of environmentally conscious, resource-efficient, and socially accountable enterprises. The results of the present study are consistent with previous studies, especially showing, how organizational GHRM policies impact employees' TPEB (Dumont et al., 2017; Tirno et al., 2023; Yang & Li, 2023). The results show that employees sincerely engage in those green tasks which are officially mandated within the organization (Bissing-Olson et al., 2013). Moreover, employees interact more effectively with TPEB when GHRM practices are systematically implemented within the organization (Tian et al., 2020).

The results further reinforce prior research that GHRM is directly and strongly associated with PAEB and other environmentally friendly actions within the workplace, thereby validating hypothesis H3a (Chaudhary, 2020; Dumont et al., 2017). PAEB can be defined as employees' initiative toward engaging in green behavior outside of their regular job responsibilities. Previous studies have also emphasized that employees' working within GHRM frameworks are essential in enabling

firms to proactively adopt environmental sustainability, and that employees' PAEB strengthens EEC. GHRM practices and policies play a key role in enhancing employees' green competencies, motivating them to participation in environmental activities, and creating opportunities for green involvement, thereby fostering employee pro-EB and EEC (Shafaei, Nejati and Mohd, 2020).

The study validates the hypothesis H2b and H3b, confirming the indirect relationship between GHRM and EEC through a mediating role played by employees' TPEB and PAEB. The results support the premise that employees' TPEB and PAEB increase their level of EEC (Saeed et al., 2019; Rubel et al., 2023; Jeet & Qazi, 2025). These Pro-EB actions- such as employing eco-friendly methods and voluntarily taking part in environmental projects- can reinforce the EEC (Dumont et al., 2017). These results imply that employees can meaningfully contribute to the EEC when they engage in pro-EB, as such action have an explicit and implicit effect on their level of commitment (Alam et al., 2023; Veerasamy et al., 2023). Moreover, a GHRM initiative's EEC could also result in proactive environmental behaviors in the workplace, including adoption of environmental protection and conservation practices.

6.1. Theoretical contribution

This study tries to fill the exiting research gaps and significantly contribute to the broad area of HRM and growing research on GHRM within the hospitality sector. Our analysis focuses on the emerging shift in the stream of hospitality management research, which moves from exploring employee pro-EB to examine EEC in the hospitality industry. Given the current global emphasis on environmental conservation, particularly in industries like tourism and hospitality that have a direct influence on the environment, the present analysis is both timely and critical.

Furthermore, in line with the most current experimental studies on the environmental behaviors of employees- such as those conducted by Alzubaidi et al. (2021), Kim and Stepchenkova (2020) and Li et al. (2019) - our investigation offers a detailed assessment of pro-EB bytakin into account TPEB and PAEB. The second objective of the study is to clarify how GHRM affects EEC via employee pro-EB. TPEB and PAEB, the two primary forms of employees' green behavior, serve as mediating variables in this research. This provides additional support for earlier studies that faced limitations in identifying the mechanism linking GHRM and EEC. The present study is intended to fill this gap (Chaudhary, 2020; Tian et al., 2020). By demonstrating that GHRM can encourage staff toward pro-EB and improve their intentions to involve in green behaviors beyond formal job requirements, this study advances the theoretical understanding of employee-driven environmental sustainability.

The findings demonstrate that, to strengthen employee commitment to the environment, green behavior must closely align with the GHRM policies and practices to yield more effective and meaningful outcomes. Overall, our study offers empirical support for the advancement of pro-EB within the hospitality sector by analyzing and assessing the role of green-oriented organizations in fostering individuals' green behaviors. It also highlights the interdependent roles of organizations and employees in shaping and sustaining pro-EB in the workplace.

Eco-friendly actions influence employee's dedication to the organization and underscore the importance of GHRM in developing and sustaining environmentally responsible behaviors in the organization. In the absence of environmental supporting culture, employees are likely to show limited concern and reduced commitment toward engaging in pro-EB. As per SET, for the model to be effective, employees should be willing to reciprocate organizational support by committing their efforts to pro-EB. In contrast, AMO framework suggests that GHRM practices enhance employees' abilities (e.g., through green training), motivation (e.g., via green rewards), and opportunities (e.g. participating in green initiatives), thereby enabling and reinforcing pro-EB. Applying these theories, pro-EB serves as a mediator between GHRM practices and organizational commitment. This indicates that employees are more likely to internalize sustainability values, demonstrate green behaviors, and exhibit greater loyalty to the organization when they perceive that the organization prioritizes environmental concerns through GHRM practices. This theoretical integration explain how GHRM can effectively promote employee-driven sustainability actions and contribute to improved organizational performance and environmental outcomes.

6.2. Practical contributions

The practical insights derived from the study are relevant for scholars, academicians, decision-makers, professionals, and organizations. For the hospitality industry, we recommend that legislators enact laws and regulations that mandate waste management plans and environmental impact assessment to promote environmentally friendly practices. More importantly, in our opinion, the responsibility of large organization overweighs that of individual accountability in achieving environmental sustainability. A truly sustainable future is more likely to be realized through the implementation of robust green policies and practices at organization level. When an organization adopts green philosophy centered on green consumerism, promotes green attitudes, and, most prominently, provides prospects to act on emerging environmental awareness through structured initiatives, it fosters a culture where individual accountability is naturally enforced, encouraging employees to contribute more actively to environment protection.

When addressing global environmental protection challenges, businesses play a significant social role. To embed green principles into their missions and operations, they must adopt a transformational strategy and adhere to the international standards of conduct, which unquestionably require transparency through for environmental impact disclosures. We recommend that incorporating green principles into core HR functions like, workforce recruitment, performance evaluation, training, and motivation systems. The importance of pro-EB must be emphasized and highlighted in job descriptions, selection criteria, and recruitment processes. Employers could select those candidates who show their concern about environmental sustainability during the recruitment and selection stages. To establish what can be referred to as "an ecologically aware fit," organizations should communicate the significance of environmental responsibility to prospective employees through well-crafted recruitment messages, selection benchmarks, and job descriptions.

Pro-environmental activities can be encouraged through both extrinsic and intrinsic incentives. An example of an extrinsic incentive is a cash bonus which can be used to directly reinforce desirable environmental behavior. On the other hand, intrinsic rewards might include recognition programs, such as naming employees who demonstrate "excellent pro-environmental behavior" as the "green employee of the month." In addition, organizations can promote and reinforce pro-EB through regular formal and informal green training initiatives. The primary objective of these green initiatives should be to enhance employees' environmental awareness, develop green capabilities, and cultivate a commitment to environmental protection. To ensure the well-being of the community, country, planet, and employees, leadership must model "green orientation" and actively support employees in achieving organization's environmental goals.

7. Conclusion, limitations, and future research

Despite the valuable findings of this study, some shortcomings remain can be addressed in future research. This study primarily concentrated on general GHRM practices to provide contextual foundation to pro-EB, resulting in insightful but broad results. Future research should adopt a more comprehensive and inclusive approach by incorporating literature from diverse academic databases, industry reports, and cross-regional case studies. This would help capture emerging trends and enrich ongoing discourse on GHRM within the hospitality

sector. To address this, future research should employ a mixed-methods approach, incorporating qualitative methods such as surveys, interviews, or case studies. This will allow future researches to strike a balance between quantitative and qualitative analyses to provide a more profound understanding of the field. Moreover, future research could focus on GHRM practices- such as green hiring practices, green leadership, or green training- to explore their individual contributions to pro-EB and EEC.

CRediT authorship contribution statement

Deepak Bangwal: Methodology. **Aparna Chaudhary:** Investigation, Data curation. **Rupesh Kumar:** Validation, Supervision, Investigation. **Sarbjit Singh Oberoi:** Writing – review & editing, Validation, Formal analysis. **Vinod Kumar:** Writing – review & editing, Validation, Resources, Conceptualization.

Declaration of competing interest

There is no conflict of interest in the manuscript.

Acknowledgement

No funding was receieved

Data availability

Data will be made available on request.

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