

# Linking Green Human Resources Management Practices and Pro-Environmental Performance: The Role of Green Creativity and Transformational Leadership of Private Companies in Saudi Arabia

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## Keywords:

Green Human resource management practices, GC (Green creativity) GHRM, GTL (Green transformation leader), P-PEP (Proactive pro-environment Performance), T-PEP (Task related pro-environment performance).

**Abstract.** This study examines the link between green human resource management practices and pro-environmental performance among employees in the hotel industry of Riyadh, Saudi Arabia. The survey instrument included established scales measuring GHRM practices, green creativity, green transformational leadership, and employee PEB. Data analysis involved assessing the reliability and validity of the instrument, followed by a structural equation model to examine the theorized relationships. The study used convenient sampling to collect data from 338 employees across different industries in Riyadh, Saudi Arabia. The findings support a positive link between GHRM practices & task-related Pro-environmental performance strong GHRM practices lead to increased environmental responsibility within regular job duties. Surprisingly, GHRM practices did not significantly impact proactive PEP. However, GHRM positively influences green creativity, which in turn positively impacts T-PEP Interestingly, GTLs may weaken the relationship between GHRM practices and proactive PEP. This could be due to the strong leadership already driving environmental initiatives, potentially reducing the need for specific GHRM interventions. Overall, the study highlights the importance of a comprehensive method to encourage employee PEP. Effective GHRM practices, coupled with green leadership and fostering employee creativity, can empower a workforce to contribute to a more sustainable future. The study holds strong implications for practitioners in the hoteling industry, researchers, and academia.

## 1. INTRODUCTION

GHRM (Green Human Resource Management) is a tactical approach through which organizations cultivate human capital to bolster both their environmental achievements & eco-friendly behaviors in the Organization [1]. GHRM encompasses the human resources elements of the management environment, characterized by HRM operations resulting in beneficial environmental impacts [2]. The practices within GHRM are divided into three key areas: enhancing green skills in employees, fostering motivation among environmentally conscious staff, and creating opportunities for green initiatives [3]. Fostering a workforce's green skills entails the infusion of sustainable thought processes into the organization through different HR functions, such as hiring, selection, training & development, Appraisal performance evaluations, incentivization, & leadership growth [4]. Following recruitment and training & development, employee motivation is sustained by performance appraisals and incentive schemes designed around elevating environmental performance [3]. Numerous academics have explored how GHRM practices influence corporate environmental [5]. Their findings suggest that GHRM practices significantly propel environmental performance, notably through initiatives like waste reduction and enhanced organizational efficiency [6].

Promoting PEBs (pro-environmental behavior) should be a primary goal of raising awareness of environmental [7]. It's crucial to understand public perceptions of sustainability and their willingness to be involved in supportable practices. Highlighting the significance of environmental awareness is the first step in mobilizing people to tackle environmental challenges. General knowledge about the environment among the public plays a significant role in recognizing its importance, which could lead to substantial changes in how humans interact with nature and make Earth a better place to live. Understanding the adverse effects of environmental issues is vital for policymakers to address potential concerns effectively through comprehensive solutions. Both individuals and communities must be aware of various environmental issues, like pollution and waste management, and their effects on our planet [8] Secondly, transformational leadership, which focuses on the ethical aspects of leaders' behaviors, may significantly impact the relationship between GHRM & creative environmental outcomes. Managers with strong transformational leadership skills are likely to enhance these outcomes [8]. Despite its potential, research in this area is still emerging. Previous studies have confirmed the importance of leadership in fostering an organization's green initiatives [9].

In the direction of ensuring environmental goals are intertwined with GHRM, there has been a push to incorporate these objectives within HRM happenings [10] [11]. The environment not only supports life but also imposes responsibilities on countries aiming for sustainable development. For a country like Saudi Arabia, environmental issues are crucial, especially considering its status as a leading oil exporter. Oil revenues make up 70% of the national budget, with projections showing that a \$10 increase in the price per barrel could boost the GDP by 14% [12]. Research emphasizes the insufficient investigation into the relationship among Green Human Resource Management (GHRM) practices, green creativity, pro-environmental behavior, and green transformational leadership. [13] and [14] assert that the mediating and moderating

effects of green creativity and green transformational leadership on the connection between GHRM and pro-environmental behavior remain inadequately explored. The relationship among transformational leadership, GHRM practices, and green innovation in enhancing pro-environmental performance in private enterprises in Saudi Arabia is insufficiently studied. This study addresses the insufficient comprehension of how GHRM practices affect proactive task-related pro-environmental performance through the mediating influence of green innovation and the moderating impact of transformational leadership. This gap in the literature provides an opportunity to examine the interplay between GHRM practices, green innovation, and transformational leadership.

## 2. LITERATURE REVIEW

### 2.1. Green Human Resource Management Practices

GHRM intentionally manages an administration's workforce to leverage competitive advantages effectively. It is planned and structured to optimize employee contributions toward meeting an employer's strategic objectives. Green HRM is distinguished as HRM approaches, practices, and strategies tailored to promote sustainability within a business, focusing specifically on avoiding environmentally harmful practices [1]. These practices aim to inspire ecological behaviors amongst employees, fostering a Socially responsible and efficient workplace culture [2]. GHRM emphasizes educating employees on ecological practices and bolstering their awareness and performance regarding environmental issues [3]. It is one of the most effective ways to facilitate the adoption of eco-friendly programs within organizations by equipping employees to identify and tackle environmental challenges [4]. GHRM significantly influences sustainable practices, affecting employee behaviors, attitudes, and motivations [5]. Historical analysis links GHRM practices to environmental management, attributing to the evolution of green and environmental HRM practices [6]. GHRM is regarded as an essential tool for businesses to advance their environmental initiatives by fostering environmentally aware behaviors among employees, which enhances corporate environmental outcomes [7]. The intensifying competition makes it challenging for HR professionals to generate lasting benefits, emphasizing the need for effective HR strategies in environmental management [8]. Transitioning regular employees into a green workforce through green HR initiatives has proven instrumental in meeting environmental targets [9], underscoring the importance of GHRM practices in achieving environmental performance as outlined by previous studies [10]. GHRM utilizes ongoing organizational processes to create systems aimed at environmental sustainability, engaging all employees in this critical endeavor by enhancing their commitment to environmental goals [11].

### 2.2. Social Cognitive Theory

Social Cognitive Theory (SCT) was introduced by Bandura in 1986 [12]. SCT comprises three primary components: individual, behavior, and environment. An individual's positive behavior is shaped by their knowledge, attitude, and experiences. A component of SCT, the Acceptance Model of human behavior incorporates a variety of theories, such as the Theory of Planned Behavior and the Theory of Reasoned Action [13]. This study has investigated several aspects of SCT to evaluate its potential applicability in analyzing HRM practices and corporate performance [14]. Social Cognitive Theory (SCT), as endorsed by Bandura (1986)[12], functions within a triadic reciprocity framework and seeks to clarify the complex interplay of persons, their behaviors, and the effects on the external environment. This theory posits that social-structural factors affect the reproduction of observable behavior. These aspects are shaped by personal qualities, which denote an individual's intrinsic characteristics, and behavioral responses, which arise from these characteristics. Additionally, the intrinsic characteristics of an individual have an impact on the external environment, which encompasses the results and repercussions of their actions (Bandura, 1986)[12]. According to Bandura's Social Cognitive Theory, humans are not wholly influenced by external factors nor are they exclusively motivated by internal drives. Their contributions within a network of influences and interests shape their activities and development[15][13].

### 2.3. Proactive Pro-Environmental Performance

Proactive pro-environmental performance denotes the voluntary and initiative-driven actions employees engage in to advance environmental sustainability inside their organizations. This concept is widely seen as vital for cultivating a culture of environmental accountability and attaining organizational sustainability objectives. Studies demonstrate that employees' pro-environmental views substantially influence their propensity to engage in proactive behaviors. [16]. discovered that employees with less favorable environmental attitudes were more inclined to demonstrate proactive pro-environmental activity when experiencing positive emotions like enthusiasm and excitement[16]. This corresponds with the broaden-and-build idea, which asserts that good emotions can increase individuals' likelihood of participating in constructive actions, including those advantageous to the environment [16]. Consequently, cultivating a pleasant emotional atmosphere in the workplace can be essential in promoting proactive environmental actions. Furthermore, the significance of environmental information cannot be overstated. Rajapaksa et al. established that elevated environmental knowledge is favorably associated with pro-environmental behaviors [17]. This conclusion indicates that firms ought to prioritize environmental awareness programs to provide employees with the essential knowledge for making educated decisions that bolster sustainability initiatives. By augmenting employees' comprehension of environmental issues, firms can foster a workforce that is more actively involved in proactive pro-environmental initiatives. Leadership significantly influences employees' pro-environmental habits. Robertson and Barling emphasized that leaders who exemplify pro-environmental behaviors can substantially impact their employees' conduct [18]. When leaders foster an organizational atmosphere that incentivizes eco-friendly actions, employees are more inclined to embrace analogous practices. This highlights the significance of leadership dedication to environmental sustainability as a catalyst for proactive pro-environmental performance.

### 2.4. Task-Related Pro-Environmental Performance (TPEP)

Task-related pro-environmental performance (TPEP) includes the behaviors and actions undertaken by individuals in their job roles that positively impact environmental sustainability. This notion is increasingly acknowledged as essential for firms seeking to improve their environmental performance while achieving their operational objectives. GHRM methods have been shown to have both direct and indirect effects on the environmentally sustainable performance behaviors of employees, which comprise both task-related and voluntary actions. [19] [17]. These approaches foster a psychological green climate that motivates

employees to incorporate environmental considerations into their regular activities. Employees may be incentivized to fulfill their job duties in ecologically sustainable manners, such as minimizing waste or conserving energy [20]. The creation of such an environment is essential, as it harmonizes organizational objectives with individual actions, promoting a culture of sustainability[21].

The correlation between organizational support and task-related pro-environmental behaviors is substantial. Studies demonstrate that perceived organizational support increases employee participation in TPEP by fostering a sense of connection and dedication to the organization's environmental objectives[22] [23]. Employees who perceive organizational support are more inclined to implement ecologically sustainable activities at work, enhancing overall environmental performance [22] [16]. This connection underscores the significance of company culture in promoting TPEP, as a conducive atmosphere can enhance employee motivation and proactive actions [24]. Furthermore, the significance of personal attitudes and psychological elements must not be disregarded. Research indicates that employees possessing favorable pro-environmental attitudes are more inclined to participate in task-related pro-environmental behaviors [16]. This indicates that firms should not only adopt GHRM procedures but also prioritize fostering a positive environmental mindset among personnel. Training and awareness initiatives can effectively augment employees' comprehension of the significance of their roles in environmental sustainability, thus elevating their involvement in TPEP [21].

## 2.5. GHRM, Proactive Pro-and Task Related Pro-Environment Performance

GHRM includes several strategies designed to enhance environmental sustainability in firms, including recruitment, training, performance, workers & management participation in environmental activities. Nurulfadhilah and Emilisa determined that GHRM positively affects both task-related pro-environmental behavior (TPEB) and proactive pro-environmental behavior (PPEB), hence enhancing environmental performance [25]. This indicates that firms that proficiently execute GHRM policies can develop a workforce that is not only adherent to environmental norms but also actively endeavors to enhance environmental results through inventive and proactive strategies. Additionally, the research conducted by [26] supports the correlation between GHRM and proactive pro-environmental performance, as it demonstrated that GHRM has a substantial impact on both task-oriented and proactive pro-environmental behaviors in small tourism enterprises [26]. It is crucial to emphasize that their investigation did not identify a substantial direct impact of GHRM on the overall environmental performance. This implies that, despite the fact that GHRM influences behaviors, the relationship to performance outcomes may be more complex.

The significance of leadership in fostering proactive pro-environmental habits is paramount. Wu et al. highlighted that leaders who actively endorse and exemplify pro-environmental actions can markedly affect their employees' participation in these practices (Wu et al., 2021) [24]. When leaders foster a favorable environmental climate, employees are more inclined to view their firm as dedicated to sustainability, thereby encouraging them to engage in proactive behaviors that correspond with organizational objectives. Moreover, the amalgamation of cognitive and non-cognitive elements is crucial for improving task-oriented pro-environmental behaviors. Sabbir and Taufique assert that the establishment of favorable environmental attitudes via corporate environmental policies can markedly improve employees' task-oriented green behaviors[27]. This suggests that firms must prioritize not only formal GHRM procedures but also the cultivation of a culture that promotes environmental knowledge and accountability among employees.

## 2.6. Green Creativity Mediator between GHRM and Proactive and Task Related Pro-Environment Performance

Abugaligah et al. (2023) [28] found that green work engagement mediates the association between GHRM and green creativity, suggesting that employees who engage in green practices are more likely to present innovative solutions to environmental issues. This is consistent with the Job Demands-Resources (JD-R) theory, which posits that employee engagement and creativity are enhanced by supportive work environments. According to Muisyo et al. (2022) [29] (Patwary et al., 2023) [30], the relationship between green outcomes and GHRM practices is mediated by employee green creativity (EGC), which encompasses proactive pro-environmental behaviors and task-related pro-environmental behaviors. This suggests that GHRM not only encourages employee engagement in environmentally favorable practices but also enhances their ability to develop and implement innovative solutions that advance corporate sustainability. GHRM practices can facilitate increased employee innovation, which in turn can promote environmental performance by fostering an eco-friendly culture within the organization. The significance of leadership is paramount in this situation. Patwary et al. emphasized that green inclusive leadership substantially mediates the relationship between proactive pro-environmental & GHRM [30]. Leaders who foster a sustainability and creativity culture can motivate staff to engage in environmental initiatives, thereby improving both proactive and task-oriented pro-environmental performance. This leadership influence is crucial for fostering an organizational environment that appreciates and incentivizes ecological creativity. Moreover, Ahmed's research demonstrates that GHRM endorses green creative behavior by enhancing employees' involvement in environmental efforts [1]. This engagement is essential for promoting a proactive stance on environmental issues, since employees who perceive organizational support are more inclined to propose creative ideas and solutions.

## 2.7. Green Transformational Leadership Moderator Between Green Creativity, GHRM and Proactive and Task Related Pro-Environment Performance

The objective of GHRM methodologies is to integrate environmental factors into HR operations, thereby encouraging employees to adopt sustainable behaviors. Singh et al. demonstrate that green transformational leadership mediates the positive impact of GHRM on green innovation and performance. [31]. This suggests that GTL can improve the implementation of GHRM principles by encouraging employees to participate in environmental activities. Green transformational leadership is characterized by leaders who foster a culture of sustainability within the organization by inspiring and motivating their adherents to achieve environmental objectives. Shah et al. assert that GTL has a positive impact on environmental performance, underscoring its role in both proactive and task-oriented pro-environmental behaviors [32]. Leaders who embody green transformational attributes have the potential to effectively motivate their teams, fostering innovation and engagement in sustainable initiatives. In this setting, the mediating function of green creativity is essential. Al-Ghazali et al. discovered that GTL promotes green innovation, which in turn improves pro-environmental performance [33] [34]. This signifies that GTL not only inspires employees but also nurtures their creative potential, allowing them to devise inventive solutions to environmental issues. The interplay between GHRM and GTL

fosters an atmosphere in which employees are enabled to articulate their creativity in manners that advance sustainability. Moreover, the correlation between GTL and green creativity is substantiated by Ding's findings, which indicate that GTL favorably influences individual employee green performance via the mediation of green creativity [35]. This underscores the need to cultivate a creative environment in which employees can investigate and execute innovative concepts that correspond with company sustainability objectives. When leaders promote innovative thinking and problem-solving, employees are more inclined to exhibit proactive behaviors that improve environmental performance. The moderating effect of GTL on the link between GHRM and pro-environmental performance is substantial. Research by Çöp et al. highlights that GTL can improve team resilience and collaborative endeavors aimed at attaining environmental sustainability [36]. This resilience is essential for sustaining enthusiasm and dedication to pro-environmental actions, especially under difficult situations.

## 2.8. Hypothesis

*H<sub>1</sub>: Green human resource management positively relates to proactive P-EP.*

*H<sub>2</sub>: Green human resource management positively relates to task-related P-EP.*

*H<sub>3</sub>: Green creativity mediates the impact of Green human resource management on task-related P-EP.*

*H<sub>4</sub>: Green creativity mediates the impact of Green human resource management on proactive P-EP.*

*H<sub>5</sub>: Green transformational leadership moderates the impact of Green human resource management on green creativity.*

*H<sub>6</sub>: Green transformational leadership moderates the impact of Green human resource management on task-related P-EP.*

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*H<sub>7</sub>: Green transformational leadership moderates the impact of Green human resource management on proactive P-EP.*

## 2.9. Model

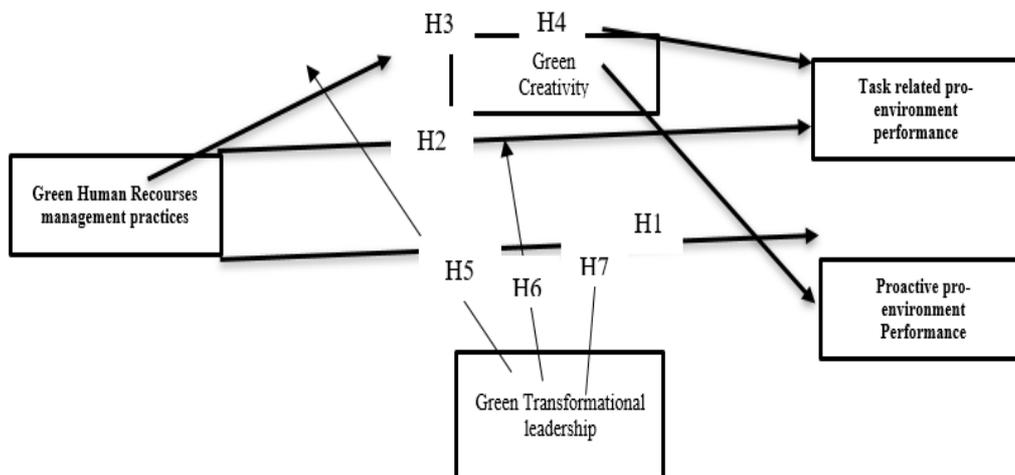


Figure 1: Conceptual framework.

## 3. RESEARCH METHODOLOGY

### 3.1. Research Design

The research design used was observational quantitative analytics has followed explanatory research design using a survey-based data collection approach. The data of this study were obtained from the the employees working at the managerial or supervisor level in the Hoteling industry of Riyadh Saudi Arabia and possessed more than a year at this level.

### 3.2. Research Target/Subject

The target population consisted of managers or supervisors working in the hotel industry of Riyadh Saudi Arabia with at least one year of experience at this level. A convenience sampling approach was used to select 500 managers from industry websites. Potential participants were contacted via email and followed up with phone calls to complete the online survey created using Google Forms. The response rate was 338 out of 450, representing a 75 % response rate.

### 3.3. Instruments, and Data Collection Techniques

The survey utilized established, structured questionnaires with high reliability and validity. Adjustment of all instruments has been done as per the framework of the study, and the reaching scale is 1 to 5 (Five Point- Likert scale) from strongly agree to strongly disagree to check the reliability & validity of the items. Fifteen items adopted from [4] and [37] were used to evaluate green human resource management practices. Six items were adopted from [38] which measured green creativity and green transformational leadership. Three Item used by previous researchers [5]& [16], for employee task-related and proactive environment performance.

## 4. RESULTS AND DISCUSSION

### 4.1. Introduction

Partial least squares" (PLS) and "Structural Equation Modeling" (SEM) were conducted so that the proposed theoretical hypotheses with mediating effects of individual Leadership on Employee Empowerment and PEB Pro-environmental behavior in

the workplace could be examined. PLS-SEM can retain more reflective items per dimension than other statistical methods (CB-SEM). We adopted a two-step method to evaluate the gathered data

Table 1: Demographic analysis (N=338).

Variables	Items	No	Percentage
Gender	Male	136	40%
	Female	202	60%
	Total	338	100
Age	20-30	33	9.8%
	30-40	274	81.1%
	40-50	26	7.7%
	50-60	4	1.2%
	60-Above	1	0.3%
	Total	338	100%
Experience	5-10	180	53.3%
	10-15	88	26.0%
	15-20	31	9.2%
	20-25	26	7.7%
	25-Above	13	3.8%
	Total	338	100%

Above table 1 provides a demographic breakdown of 338 survey participants. The majority (60%) of respondents were female, while 40% were male. In terms of age, the largest group (81.1%) was between 30 and 40 years old. Most participants (53.3%) had 5-10 years of experience, followed by those with 10-15 years (26%). This analysis reveals a predominantly female, experienced cohort, primarily within the 30-40 age range

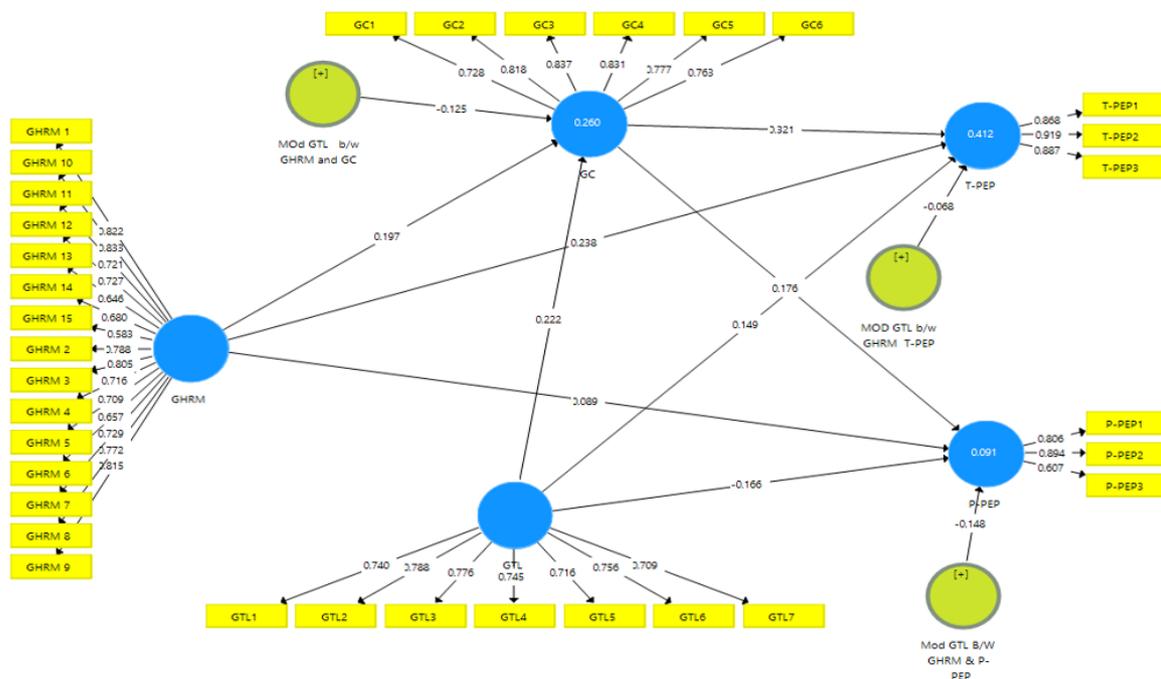


Figure 2: Measurement model testing.

Table 2: Construct reliability and validity.

Variables	Cronbach alpha	Composite reliability	Composite reliability	Average variance extracted
GC	0.881	0.883	0.910	0.629
GHRM	0.939	0.947	0.946	0.543
GTL	0.868	0.871	0.899	0.559
P-PEP	0.700	0.774	0.818	0.606
T-PEP	0.871	0.873	0.921	0.795

Note: GC (Green creativity) GHRM (Green human resource management practices) GTL (Green transformation leader) T-PEP (Task related pro-environment performance) P-PEP (Proactive pro-environment performance).

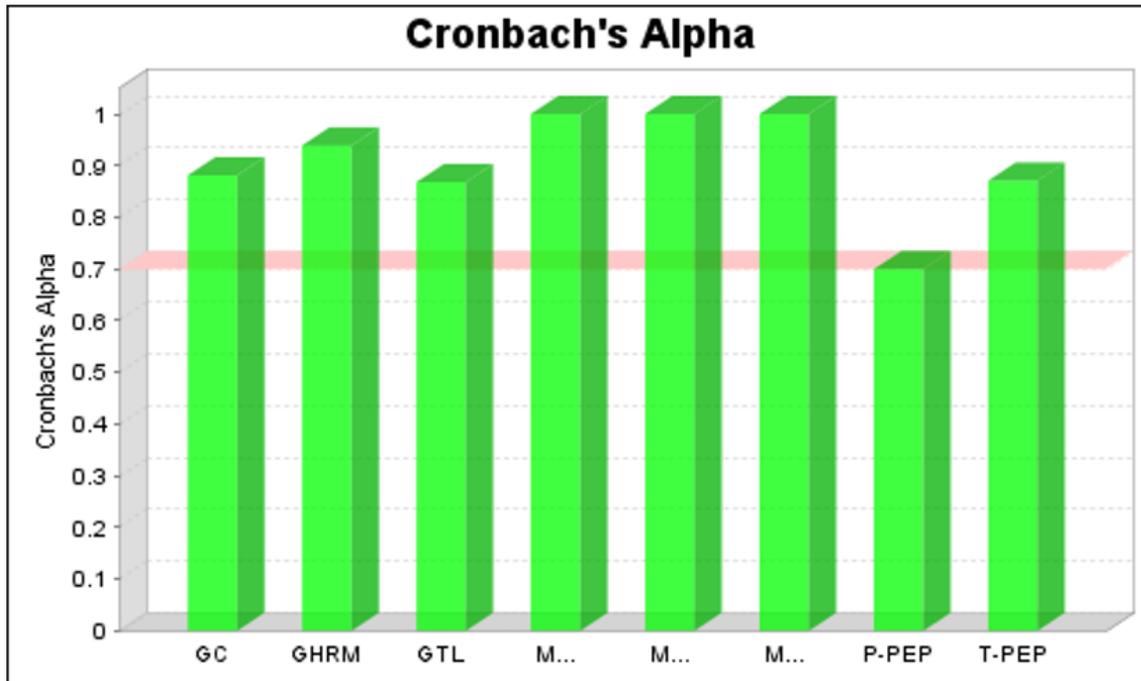


Figure 3: Histogram diagram of Cronbach' alpha.

The results of a reliability and validity analysis for five variables are presented in the table and figure 3. GHRM (Green Human Resource Management Practices) and GC (Green Creativity) GTL (Green Transformation Leader) T-PEP (Task-related pro-environmental performance) P-PEP (Proactive Environmental Performance) Cronbach's Alpha, Composite Reliability, and Average Variance Extracted (AVE) were the three primary components of the analysis. In general, the results suggest that all five variables are reliable and valid, as evidenced by Cronbach's Alpha values exceeding .70, Composite Reliability values exceeding .80, and AVE values exceeding .50. These results indicate that the instruments employed to quantify these variables are valid and reliable for further investigation.

Table 3: Heterotrait-monotrait ratio – matrix.

Variables	GC	GHRM	GTL	P-PEP	T-PEP
GC					
GHRM	0.437				
GTL	0.517	0.738			
P-PEP	0.252	0.151	0.116		
T-PEP	0.604	0.552	0.589	0.258	

Note: GC (Green creativity) GHRM (Green Human resource management practices) GTL (Green transformation leader) T-PEP (Task related pro-environment performance) P-PEP (Proactive pro-environment Performance).

#### 4.2. Discriminant Validity

The table 3 presents the Heterotrait-Monotrait Ratio (HTMT) matrix, which is used to assess discriminant validity. Discriminant validity ensures that each construct (GC, GHRM, GTL, P-PEP, T-PEP) is distinct and not highly correlated with other constructs. The HTMT values represent the correlation between two different constructs divided by the square root of the average of their reliabilities. Ideally, HTMT values should be below 0.85 to indicate sufficient discriminant validity. In this case, most HTMT values are below 0.85, suggesting that the constructs are sufficiently distinct from one another.

Table 4: R-square.

Variables	R square	Adjusted R square
GC	0.260	0.253
P-PEP	0.091	0.080
T-PEP	0.412	0.405

Note: GC (Green creativity) T-PEP (Task related pro-environment performance) P-PEP (Proactive pro-environment Performance).

Table 5: Path coefficients.

Variables	Original sample	Sample mean	Standard deviation	T statistics	P values
GC -> P-PEP	0.18	0.18	0.06	2.74	0.01
GC -> T-PEP	0.32	0.32	0.05	6.98	0.00
GHRM -> GC	0.20	0.20	0.07	2.71	0.01
GHRM -> P-PEP	0.09	0.09	0.07	1.25	0.21
GHRM -> T-PEP	0.24	0.24	0.06	3.77	0.00
GTL -> GC	0.22	0.23	0.09	2.53	0.01
GTL -> P-PEP	-0.17	-0.15	0.08	2.01	0.05
GTL -> T-PEP	0.15	0.16	0.07	2.23	0.03
MOD GTL, GHRM -> GC	-0.12	-0.13	0.04	2.97	0.00
MOD GTL GHRM -> P-PEP	-0.15	-0.12	0.07	2.27	0.02
MOD GTL GHRM -> T-PEP	-0.07	-0.05	0.05	1.42	0.16

Note: GC (Green creativity) GHRM (Green Human resource management practices) GTL (Green transformation leader) T-PEP (Task related pro-environment performance) P-PEP (Proactive pro-environment performance).

Above table shows the the paths coefficients in the table represent the standardized regression weights, which indicate the strength and direction of the relationship between two variables. For example, GC has a positive and significant impact on both T-PEP (0.32) and P-PEP (0.18). This suggests that organizations with higher levels of green creativity are more likely to exhibit both task-related and proactive environmental performance.

Table 6: Final specific results.

Variables	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values	Hypothesis	Results
GHRM -> P-PEP	0.03	0.04	0.02	1.83	0.07	H1	Not supported
GHRM -> T-PEP	0.06	0.06	0.02	2.56	0.01	H2	Supported
GHRM -> GC -> T-PEP	0.06	0.06	0.02	2.56	0.01	H3	Supported
GHRM -> GC -> P-PEP	0.03	0.04	0.02	1.83	0.07	H4	Not supported
MOD GTL, GHRM -> GC	-0.12	-0.13	0.04	2.97	0.00	H5	Supported
MOD GTL, GHRM & GC -> T-PEP	-0.04	-0.04	0.01	2.72	0.01	H6	Supported
MOD GTL, GHRM & GC -> P-PEP	-0.02	-0.02	0.01	1.88	0.06	H7	Not supported

Note: GC (Green creativity) GHRM (Green Human resource management practices) GTL (Green transformation leader) T-PEP (Task related pro-environment performance) P-PEP (Proactive pro-environment performance).

The Above table presents the results of a structural equation model (SEM) that examines the relationships between various variables. The model focuses on the impact of Green Human Resource Management Practices (GHRM) and its interactions with other variables on different aspects of environmental performance. The results show that GHRM has a significant positive impact on task-related pro-environmental performance (T-PEP) and a significant indirect impact on T-PEP through its influence on green creativity (GC). However, the direct impact of GHRM on proactive pro-environmental performance (P-PEP) and the indirect impact through GC was not found to be significant. The interaction effects between GTL and GHRM on GC and T-PEP were found to be significant, suggesting that the combined effect of these two factors is stronger than their individual effects. However, the interaction effect on P-PEP was not significant. Overall, the results suggest that GHRM plays a crucial role in promoting task-related environmental performance, especially when combined with green transformation leadership. However, its impact on proactive environmental performance may be more limited.

### 4.3. Simple Slope Analysis (GTL Moderator)

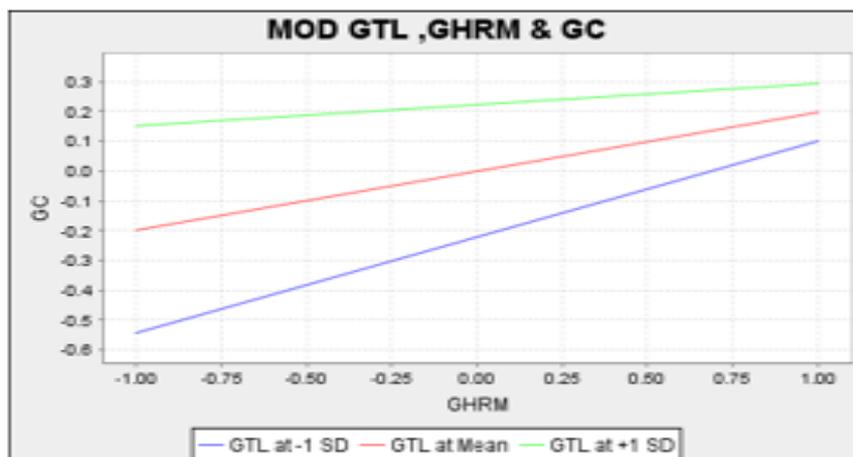


Figure 4:

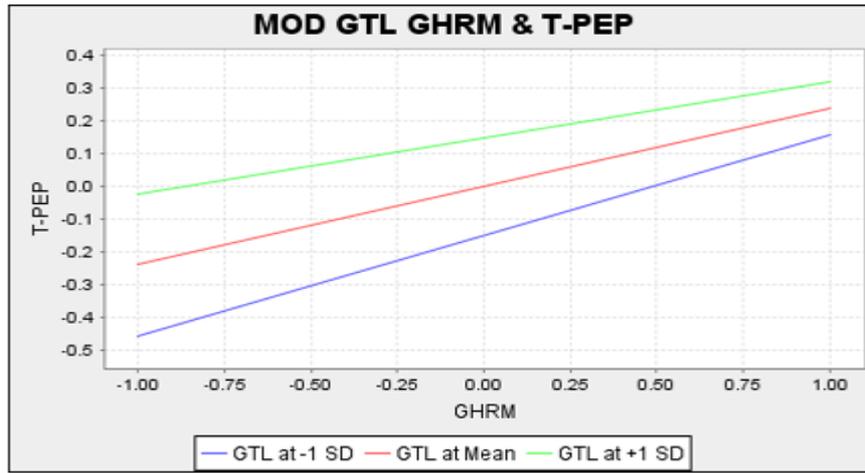


Figure 5:

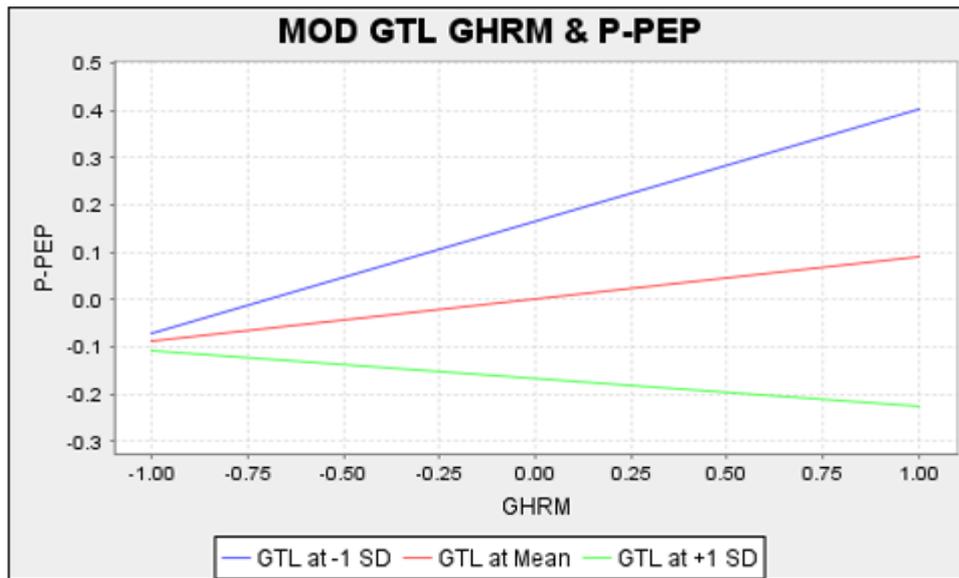


Figure 6:

Figure 4,5,6 indicates that the moderating effect of Green Transformational Leadership (GTL) on the relationship between Green Human Resource Management (GHRM) & GC (Green Creativity) Pro-Environmental Performance (P-PEP) T-PEP (Task related pro-environment performance).

## 5. DISCUSSION AND CONCLUSION

The aim of the study was Linking Green Human Resources Management Practices and Pro Environmental Behavior: The Role of green creativity & Transformational Leadership of private companies in the Kingdom of Saudi Arabia. Data was collected from the Hoteling industry of Riyadh province of Saudi Arabia for the data analysis and the total responded were 338. For demographic analysis used SPSS & Excel which helped find the frequency of the data such as Gender, age, and experience, which is presented above in tale 1. As explained the respondents, such as 59.8% (202) were male and 40.2 % (136) female. In regards to age, most respondents were in the 30–40 years category (81%, 274). Reliability and validity assessments for various constructs (GC, GHRM, GLT, P-PEP, T-PEP.) in a study. All constructs (GC, GTL, T-PEP, T-PEP) seem reliable (Cronbach's alpha > 0.7) and capture their intended meaning well (AVE > 0.5).

The hypothesis testing results are as follows. GHRM -> T-PEP. These hypotheses suggest that GHRM practices have a positive influence on T-PEP (task-related pro-environmental performance). In simpler terms, if an organization implements strong GHRM practices, employees are more likely to take actions that minimize environmental impact within their regular job duties. Consistent with previous research - and [10]. GHRM practices are considered a strategic step to enhance corporate environmental performance, as managing human resources based on environmentally friendly principles enables the achievement of environmental goals Proactive behavior requires more motivation: There's a key difference between T-PEP and proactive environmental behavior. T-PEP involves following established procedures or protocols for environmental responsibility. These actions often require less individual initiative compared to proactive behaviors. When organizations implement GHRM practices, they are essentially embedding environmental considerations into how they manage their workforce. This can include training employees on sustainable practices, integrating environmental goals into performance evaluations, or rewarding employees for eco-friendly suggestions. These practices can raise awareness, equip employees with the necessary skills, and create a culture that values environmental responsibility. As a result, employees are more likely to integrate these practices into their daily tasks, leading to improved T-PEP.

Unexpectedly there were no statistically significant results in GHRM and P-PEP (Green Human Resource Management Practices and Proactive Pro-environmental Performance). This means there is not a statistically significant correlation between

green human resource management practices and proactive pro-environmental performance. P-PEP, however, necessitates initiative and going the extra mile. Strong GHRM practices that emphasize environmental values and goals might be more effective in motivating such proactive behaviors' practices can empower creativity: Effective GHRM practices can foster a work environment that encourages creativity and independent thinking. This, in turn, might empower employees to come up with new ideas for proactive environmental initiatives (P-PEP). P-PEP behaviors involve going above and beyond regular duties. Strong GHRM practices that emphasize environmental values and goals might create a stronger sense of purpose and inspire employees to take initiative. GHRM practices can include clear guidelines and procedures for T-PEP, such as recycling protocols or turning off lights when not in use. These might be easier for employees to adopt compared to taking proactive initiatives. This unexpected finding highlights the need for further research into understanding how GHRM practices can be most effectively designed to not only influence T-PEP but also cultivate a culture that encourages and supports proactive environmental behaviors within organizations. Perhaps a combination of GHRM practices with additional factors, such as recognition programs or mentorship opportunities specifically focused on P-PEP, could be the key to unlocking this potential.

Third the hypotheses suggest that GHRM practices also have an indirect effect on T-PEP through Green Creativity (GC). But! did not find a significant indirect link between GHRM and Proactive pro-environmental performance through green creativity. As study found GHRM can influence GC, which can influence on T-PEP. Strong GHRM practices, like environmental training or rewarding green suggestions, can foster a work environment that encourages creative thinking. Employees feel empowered to consider new approaches and develop innovative ideas to tackle environmental challenges. When employees are green creative (GC), they're more likely to come up with ideas to minimize environmental impact in their daily tasks (T-PEP) or propose proactive initiatives for sustainability (T-PEP). For instance, an employee might creatively redesign a product to use less material (T-PEP). organizations that implement green HR practices may be fostering a more creative workforce. greener employee's creative are also more likely to integrate environmental considerations into their daily tasks. However, less is known about GHRM practices & their relationship with workers' green creativity [11]. Researchers indicate the employee green behavioral Output for example GC (green creativity) of GHRM in the situation of Pakistan. This suggests that strong GHRM practices, like environmental training or rewarding green ideas, can cultivate a work environment that fosters creative thinking around environmental issues. Employees feel empowered to explore new approaches and develop innovative solutions to tackle environmental challenges. When employees are green creative (GC), they're more likely to propose ideas that minimize environmental impact in their daily tasks (T-PEP) or suggest proactive initiatives for sustainability (P-PEP). For instance, an employee might creatively redesign a product to use less material (T-PEP) or propose a new recycling program (P-PEP).

Also examine the Interaction between Green Transformation Leaders, Green Human resources management Practices & Green Creativity, and Task-related pro-environment Performance): The p-value is 0.001, which is statistically significant. This means there is a significant link effect among green transformation leaders, green human resource management practices, & green creativity. This suggests that the relationship between green human resource management practices and green creativity may be stronger for organizations with green transformation leaders. the previous scholars [47] [17] [48]. This new study significantly expands this knowledge base by highlighting the crucial role of the interaction between these factors. This finding holds substantial weight for organizations striving to enhance their environmental sustainability. By fostering a culture led by green transformation leaders and implementing effective GHRM practices, organizations can empower their employees to generate creative solutions that cover the way for the best future of sustainability.

Found that a Green Transformation Leader (GTL) moderates the link between GHRM practices & proactive pro-environmental performance negative path coefficients, indicating that a GTL may weaken the positive relationships between GHRM and P-PEP. In research, moderation occurs when a third variable influences the strength of the relationship between two other variables. Here, the presence of a GTL might weaken the positive effects of GHRM practices on P-PEP. These findings are in different from the previous study [48] [47] [17] which examined the influence of GHRM practices on workers' green and non-green output through different psychological & social procedures. This doesn't necessarily mean GTLs are bad for the environment. It means their influence is complex and might depend on the specific situation. Perhaps a strong GTL sets a very clear vision and roadmap for environmental sustainability within the organization. In such cases, specific GHRM practices designed to raise awareness might become less important as everyone is already focused on the goals set by the leader. A strong GTL culture might already encourage Proactive pro- environmental behavior (P-PEP) from employees. These findings highlight the multifaceted nature of leadership and its influence on environmental performance. While GTLs are undoubtedly crucial for driving sustainability efforts, their impact can be complex and situation-dependent. Organizations need to consider the specific context and leadership style when designing their GHRM practices to ensure optimal effectiveness in fostering environmental responsibility among employees. Further research is needed to fully understand the nuances of this moderating effect and how GTLs and GHRM practices can be best combined to achieve peak P-PEP within organizations.

Overall, my results suggests that green HR practices, green transformation leaders, and green creativity all play an important role in promoting pro-environmental performance among employees by implementing strong GHRM practices, organizations can create a foundation for pro-environmental behavior. Green transformation leaders further amplify this effect by inspiring creativity and setting a clear vision. Together, these elements create a synergistic environment where employees are not only aware of environmental responsibilities but also empowered to find innovative solutions and take proactive steps to minimize environmental impact. This research underscores the importance of a holistic approach to sustainability within organizations. By focusing on GHRM practices, fostering green leadership, and nurturing green creativity, organizations can effectively harness the power of their workforce to drive a more sustainable future.

## 6. RECOMMENDATIONS AND IMPLEMENTATION

This research sheds light on the intricate interplay between green human resource management (GHRM) practices, green transformation leaders (GTLs), green creativity (GC), and pro-environmental performance (PEP) within organizations in Saudi Arabia. Implement robust GHRM practices that integrate environmental considerations throughout the employee lifecycle (recruitment, training, performance evaluation). Training programs should equip employees with the knowledge and skills necessary to minimize environmental impact in their daily tasks (T-PEP). Consider incorporating green performance metrics into employee evaluations to reinforce environmentally responsible behavior. Identify and cultivate green transformation leaders who can champion environmental sustainability within the organization. Provide GTLs with the necessary resources and support to effectively communicate the organization's environmental vision and goals. Encourage GTLs to foster a culture of creativity and innovation around environmental solutions. Foster a work environment that encourages creative thinking and problem-solving,

particularly regarding environmental challenges. Create opportunities for employees to share green ideas and participate in brainstorming sessions focused on sustainability. Recognize and reward employees who contribute innovative solutions for minimizing environmental impact or propose proactive sustainability initiatives (P-PEP). While GHRM practices can directly influence T-PEP, the presence of a strong GTL might influence the need for specific GHRM practices focused on raising awareness. Organizations with strong GTLs may benefit from GHRM practices that complement the leader's vision and empower employees to translate it into action (e.g., green skills development). Further research is needed to fully understand the nuances of this moderating effect for optimal tailoring of GHRM practices in different leadership contexts.

Organizations should strive for a holistic approach by combining strong GHRM practices with inspiring green leadership and nurturing green creativity. This synergy can empower employees to become not just environmentally responsible but also proactive changemakers, driving innovation and promoting a more sustainable future. Continuous monitoring and evaluation of these practices will ensure their effectiveness in achieving the desired environmental outcomes. By implementing these recommendations, organizations in Saudi Arabia and beyond can leverage the power of their workforce to create a culture of environmental responsibility and achieve significant progress toward their sustainability goals.

## 7. LIMITATION AND FUTURE DIRECTION

The study focused on private companies in Saudi Arabia, limiting the generalizability of findings to other regions or company types. Future research could explore these relationships in a wider range of contexts. This study employed a one-time data collection, making it difficult to establish causality. Future studies could utilize longitudinal designs to track changes over time and strengthen causal inferences. Reliance on self-reported measures of PEP, GC, and GHRM practices might introduce bias. Future studies could incorporate objective measures or supervisor assessments to strengthen the validity of findings. The unexpected moderating effect of GTLs on the GHRM-T-PEP relationship warrants further investigation.

Future research could explore the specific leadership styles and communication strategies of GTLs that might amplify or weaken the influence of GHRM practices. The study highlights the need for a deeper understanding of how GHRM practices can be designed to cultivate proactive environmental behaviors (P-PEP). Future research could examine the effectiveness of specific GHRM practices (e.g., recognition programs, and mentoring for P-PEP) in promoting proactive environmental initiatives. This study highlights the importance of GC but offers limited insights into its specific dimensions. Future research could delve deeper into the types of green creativity relevant to organizational sustainability and how GHRM practices can nurture them. The study suggests that GHRM practices influence PEP through GC. Future research could explore the specific psychological or motivational mechanisms that underlie this indirect effect. While the study focused on pro-environmental employee behaviors, future research could broaden the scope to include the impact of these factors on organizational environmental performance metrics like energy consumption or waste reduction.

## REFERENCES

- Jaramillo, J. A., Zartha Sossa, J. W., & Orozco Mendoza, G. L. (2019). Barriers to sustainability for small and medium enterprises in the framework of sustainable development: Literature review. *Business Strategy and the Environment*, 28(4), 512–524. <https://doi.org/10.1002/bse.2261>
- Kramar, R. (2014). Beyond strategic human resource management: Is sustainable human resource management the next approach? *The International Journal of Human Resource Management*, 25(8), 1069–1089. <https://doi.org/10.1080/09585192.2013.816863>
- Renwick, D. W. S., Redman, T., & Maguire, S. (2013). Green human resource management: A review and research agenda. *International Journal of Management Reviews*, 15(1), 1–14. <https://doi.org/10.1111/j.1468-2370.2011.00328.x>
- Pellegrini, C., Rizzi, F., & Frey, M. (2018). The role of sustainable human resource practices in influencing employee behavior for corporate sustainability. *Business Strategy and the Environment*, 27(8), 1221–1232. <https://doi.org/10.1002/bse.2064>
- Jabbour, C. J. C., & de Sousa Jabbour, A. B. L. (2016). Green human resource management and green supply chain management: Linking two emerging agendas. *Journal of Cleaner Production*, 112, 1824–1833. <https://doi.org/10.1016/j.jclepro.2015.01.052>
- Roscoe, S., Subramanian, N., Jabbour, C. J. C., & Chong, T. (2019). Green human resource management and the enablers of green organisational culture: Enhancing a firm's environmental performance for sustainable development. *Business Strategy and the Environment*, 28(5), 737–749. <https://doi.org/10.1002/bse.2276>
- Islam, T., Ahmad, S., & Ahmed, I. (2023). Linking environment-specific servant leadership with organizational environmental citizenship behavior: The roles of CSR and attachment anxiety. *Review of Managerial Science*, 17(3), 855–879. <https://doi.org/10.1007/s11846-022-00547-3>
- Ahmed, M., Hafeez, M., Kaium, M. A., Ullah, S., & Ahmad, H. (2023). *Do environmental values matter?*
- Robertson, J. L., & Barling, J. (2015). The role of leadership in promoting workplace pro-environmental behaviors. In J. L. Robertson & J. Barling (Eds.), *The psychology of green organizations* (pp. 164–186). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199997480.003.0008>
- Kim, Y. J., Kim, W. G., Choi, H. M., & Phetvaroon, K. (2019). The effect of green human resource management on hotel employees' eco-friendly behavior and environmental performance. *International Journal of Hospitality Management*, 76, 83–93. <https://doi.org/10.1016/j.ijhm.2018.04.007>
- Pham, N. T., Hoang, H. T., & Phan, Q. P. T. (2019). Green human resource management: A comprehensive review and future research agenda. *International Journal of Manpower*, 41(7), 845–878. <https://doi.org/10.1108/IJM-07-2019-0350>
- Khaskhely, M. K., Qazi, S. W., Khan, N. R., Hashmi, T., & Chang, A. A. R. (2022). Understanding the impact of green human resource management practices and dynamic sustainable capabilities on corporate sustainable performance: Evidence from the manufacturing sector. *Frontiers in Psychology*, 13, 844488. <https://doi.org/10.3389/fpsyg.2022.844488>
- Darvishmotevali, M., & Altinay, L. (2022). Green HRM, environmental awareness and green behaviors: The moderating role of servant leadership. *Tourism Management*, 88, 104401. <https://doi.org/10.1016/j.tourman.2021.104401>
- Su, X., Xu, A., Lin, W., Chen, Y., Liu, S., & Xu, W. (2020). Environmental leadership, green innovation practices, environmental knowledge learning, and firm performance. *SAGE Open*, 10(2). <https://doi.org/10.1177/2158244020922909>
- Tang, G., Chen, Y., Jiang, Y., Paillé, P., & Jia, J. (2018). Green human resource management practices: Scale development and validity. *Asia Pacific Journal of Human Resources*, 56(1), 31–55. <https://doi.org/10.1111/1744-7941.12147>

- Pham, N. T., Hoang, H. T., & Phan, Q. P. T. (2020). Green human resource management: A comprehensive review and future research agenda. *International Journal of Manpower*, 41(7), 845–878. <https://doi.org/10.1108/IJM-07-2019-0350>
- Dumont, J., Shen, J., & Deng, X. (2017). Effects of green HRM practices on employee workplace green behavior: The role of psychological green climate and employee green values. *Human Resource Management*, 56(4), 613–627. <https://doi.org/10.1002/hrm.21792>
- Younis, I., Muhammad, I., Yasir, M., & Mubeen, M. (2021). Impact of stock market, renewable energy consumption and urbanization on environmental degradation: New evidence from BRICS countries. *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-021-12731-1>
- Agyabeng-Mensah, Y., Afum, E., & Ahenkorah, E. (2020). Exploring financial performance and green logistics management practices: Examining the mediating influences of market, environmental and social performances. *Journal of Cleaner Production*, 258, 120613. <https://doi.org/10.1016/j.jclepro.2020.120613>
- Wu, H. (2022). Trade openness, green finance and natural resources: A literature review. *Resources Policy*, 77, 102801. <https://doi.org/10.1016/j.resourpol.2022.102801>
- Arulrajah, A. A., Opatha, H., & Nnj, N. (2015). Green human resource management practices: A review. *Sri Lankan Journal of Human Resource Management*, 5(1), 1–16.
- Yousaf, Z., Yang, M., & Abid, H. (2022). How do firms achieve green innovation? The role of organizational culture and green human resource management. *Energies*, 15(7), 2549. <https://doi.org/10.3390/en15072549>
- Mandip, G. (2012). Green HRM: People management commitment to environmental sustainability. *Research Journal of Recent Sciences*, 1(ISC-2011), 244–252.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52(1), 1–26. <https://doi.org/10.1146/annurev.psych.52.1.1>
- Taherdoost, H. (2018). A review of technology acceptance and adoption models and theories. *Procedia Manufacturing*, 22, 960–967. <https://doi.org/10.1016/j.promfg.2018.03.137>
- Voo, I. C., Soehod, K., & Long, C. S. (2018). Applying social cognitive theory to HRM practices, HR roles, and firm performance. In *Proceedings of the International Conference on Industrial Engineering and Operations Management, March 2018* (pp. 3094–3103).
- Carillo, K. D. A. (2010). Social cognitive theory in research: Literature review, criticism, and research agenda. *Communications in Computer and Information Science*, 110, 1–13.
- Bissing-Olson, M. J., Iyer, A., Fielding, K. S., & Zacher, H. (2013). Relationships between daily affect and pro-environmental behavior at work: The moderating role of pro-environmental attitude. *Journal of Organizational Behavior*, 34(2), 156–175. <https://doi.org/10.1002/job.1788>
- Aftab, J., Ahmad, M., Hussain, A., & Nawaz, M. A. (2022). Environmental ethics, green innovation, and sustainable performance: Exploring the role of environmental leadership and environmental strategy. *Journal of Cleaner Production*, 377, 134639. <https://doi.org/10.1016/j.jclepro.2022.134639>
- Robertson, J. L., & Barling, J. (2013). Greening organizations through leaders' influence on employees' pro-environmental behaviors. *Journal of Organizational Behavior*, 34(2), 176–194. <https://doi.org/10.1002/job.1820>
- Chaudhary, R. (2020). Green human resource management and employee green behavior: An empirical analysis. *Corporate Social Responsibility and Environmental Management*, 27(2), 630–641. <https://doi.org/10.1002/csr.1827>
- Sabir, S. A., Ahmad, M., Khan, M. T. I., & Ali, R. (2023). A causal link between financialization and ecological status: A novel framework for Asian countries. *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-023-28352-9>
- Erat, S., Alniacik, U., Ciftcioglu, A. B., & Akcin, K. (2017). Effect of perceived organizational support on organizational silence and task performance: A study on academicians. *Journal of Global Strategic Management*, 11(1), 35–43. <https://doi.org/10.20460/jgsm.2017.244>
- Fatima, Z. (2020). Exploring the organizational factors affecting salesforce ethical behavior: A review-based article. *Asian Journal of Business Ethics*, 9, 1–23.
- Wu, J., Zhang, L., Ying, M., & Lin, Y. (2021). The trickle-down effect of leaders' VWGB on employees' pro-environmental behaviors: A moderated mediation model. *Frontiers in Psychology*, 12, 623687. <https://doi.org/10.3389/fpsyg.2021.623687>
- Nurulfadhilah, L., & Emilisa, N. (2023). Pengaruh GHRM, task-related pro-environmental behavior, proactive pro-environmental behavior, green innovation practices terhadap environmental performance. *E-Jurnal Manajemen Universitas Udayana*, 12(1), 26–43. <https://doi.org/10.24843/EJMUNUD.2023.v12.i01.p02>
- Elshaer, I. A., Sobaih, A. E. E., Aliedan, M., & Azazz, A. M. S. (2021). The effect of green human resource management on environmental performance in small tourism enterprises: Mediating role of pro-environmental behaviors. *Sustainability*, 13(4), 1956. <https://doi.org/10.3390/su13041956>
- Sabbir, M. M., & Taufique, K. M. R. (2022). Sustainable employee green behavior in the workplace: Integrating cognitive and non-cognitive factors in corporate environmental policy. *Business Strategy and the Environment*, 31(1), 110–128. <https://doi.org/10.1002/bse.2877>
- Abualigah, A., Koburtay, T., Bourini, I., Badar, K., & Gerged, A. M. (2023). Towards sustainable development in the hospitality sector: Does green human resource management stimulate green creativity? A moderated mediation model. *Business Strategy and the Environment*, 32(6), 3217–3232. <https://doi.org/10.1002/bse.3296>
- Muisyo, P. K., Su, Q., Hashmi, H. B. A., Ho, T. H., & Julius, M. M. (2022). The role of green HRM in driving hotels' green creativity. *International Journal of Contemporary Hospitality Management*, 34(4), 1331–1352. <https://doi.org/10.1108/IJCHM-07-2021-0833>
- Patwary, A. K., Mohamed, A. E., Mohamed, M., & Sadekin, M. N. (2022). The linkage between entrepreneurial orientation, self-efficacy, and financial performance of tourism entrepreneurs in Langkawi Island, Malaysia. *International Journal of Trade and Global Markets*, 16(1), 27–37.
- Singh, S. K., Di Giudice, M., Chierici, R., & Graziano, D. (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management. *Technological Forecasting and Social Change*, 150, 119762. <https://doi.org/10.1016/j.techfore.2019.119762>
- Shah, M. (2019). Green human resource management: Development of a valid measurement scale. *Business Strategy and the Environment*, 28(5), 771–785. <https://doi.org/10.1002/bse.2279>

- Al-Ghazali, B. M., Gelaidan, H. M., Shah, S. H. A., & Amjad, R. (2022). Green transformational leadership and green creativity: The mediating role of green thinking and green organizational identity in SMEs. *Frontiers in Psychology, 13*, 977998. <https://doi.org/10.3389/fpsyg.2022.977998>
- Ding, H., Su, W., & Hahn, J. (2023). How green transformational leadership affects employee individual green performance—A multilevel moderated mediation model. *Behavioral Sciences, 13*(11), 887. <https://doi.org/10.3390/bs13110887>
- Fahim, F., & Mahadi, B. (2022). Answer to comments on “Green supply chain management/green finance: A bibliometric analysis of the last twenty years by using the Scopus database” by Fahim, Faryal and Mahadi, Batiah. *Environmental Science and Pollution Research, 29*(54), 82616–82616.
- Hameed, R., Zahoor, S. Z., Mahmood, A., & Liu, Y. (2023). Promoting pro-environmental behavior among One Belt One Road firms’ employees through the lens of green human resource practices. *Work, 75*(3), 785–796. <https://doi.org/10.3233/WOR-211442>
- Pinzone, M., Guerci, M., Lettieri, E., & Huisingh, D. (2019). Effects of ‘green’ training on pro-environmental behaviors and job satisfaction: Evidence from the Italian healthcare sector. *Journal of Cleaner Production, 226*, 221–232. <https://doi.org/10.1016/j.jclepro.2019.03.317>