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The Effect of Green Human Resource Management Practices on Green Employee Engagement and Employee Behavior

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ABSTRACT

This research investigates the impact of Green Human Resource Management (GHRM) practices namely green recruitment and selection, green training and green pay and reward on green employee behavior in Pakistan SME manufacturing firms. The mediating effect of green work engagement, i.e; employees' passion and commitment to green work tasks, is the center of attraction. Data were gathered from 102 workers with a standardized questionnaire. Findings indicate that although awareness about green practices is present, it is not being implemented. But when GHRM practices are properly implemented, they have a great impact on employee engagement and encourage green behavior. The research indicates that formal green HR strategies are crucial to improve environmental performance and motivation.

Keywords: Human Resource Management, Green HRM, Green HR practices, Green Work Engagement, Green Employee Behavior, Organizational Green Performance, Green Training, Green Recruitment & Selection, Green Pay & Reward.

1. INTRODUCTION

Businesses are implemented permanent trade practices in response to increasing environmental concerns. Of these, the Green Human Resource Management (GHRM) has created an important strategy to motivate the members of the employees to be ecologically a conscious manner. To create a task force that supports environmental goals, GHRM includes green recruitment and selection, green training and green prize systems. To reduce industrial pollution in the manufacturing sector, it is necessary to promote green employee behavior, especially in in developing countries like Pakistan. (Huo, Azhar, Rahman, and Majeed, 2022).

Although the GHRM approach is accepted to facilitate environmental performance, but more research to determine is the need of how they affect employee behavior, especially through engagement of green work. To achieve stability, GHRM is described as a method for management and adaptation of HRM processes. This affects how individuals behave, think, feel, and are motivated to create a more environmentally friendly world. Adopting GHRM principles provides equal benefit to organizations and employees by increasing employee productivity and morale. The GHRM has the ability to improve the financial and environmental performance of the organization (Huo, Azhar, Rahman, and Majeed, 2022).

Green HRM uses strategies to promote performance and behavior including Green Pay and Reward (GPR), Green Training (GT), and Green Recruitment and Selection (GRS).

Therefore, GHRM can increase green performance and employee behavior (GP) in the workplace by hiring Eco-friendly staff, offer environmentally friendly training, motivate employees to participate in environmentally friendly activities by establishing environmentally friendly incentive programs, and develop a platform for eco-friendly initiatives.

Organizations are using creative management strategies that integrate their operations with environmentally friendly concepts in response to growing environmental concerns and global stability goals. To promote sustainable organizational behavior, one such strategy is the Green Human Resource Management (GHRM), which involves environmental management in human resource policies and processes (Rainvic et al., 2013). Because it promotes employees to embrace green ideals that affect their outlook, motivations and behaviors, GHRM exceeds only one trend - it is a strategic requirement (Jebour and Santos, 2008). Businesses can successfully establish an environmentally conscious culture by integrating stability in HRM processes such as hiring, training, display reviews and salary (Phel et al., 2019).

In traditional HRM processes, GHRM wants to establish long-term organizational and environmental stability (Tang et al, 2018) by incorporating eco-friendly strategies such as Green Pay and Reward (GPR) system, Green Training (GT), and Green Recruitment and Selection (GRS). These procedures improve environmental understanding and inspiration of the current employees in addition to assistance in the selection of environmentally responsible applicants. As a result, companies see two benefits: environmental performance and higher staff morale, productivity and engagement (Jackson et al., 2011).

In addition, GHRM enables organizations to improve its green performance (GP), which implements systems that encourage sustainable behavior, such as environmentally friendly incentive plans, green workplace policies, and platforms for green workplace policies, and platforms for green innovation (zuagah, 2011). This promotes an inclusive approach, where the employee feels strong to contribute to the organization's environmental goals; eventually the financial and ecological results (Ahmed, 2015) are increased. Thus, GHRM acts as an important bridge between organizational success and environmental responsibility.

1.1.Problem Statement:

Research focusing on how internal HR practices contribute to fostering green employee engagement in SME manufacturing firms. Understanding how GHRM practices influence employees' psychological engagement and behavior can help create a greener workforce.

1.2.Research Gap:

While global research has increasingly emphasized the importance of green employee engagement in promoting organizational sustainability, there is a significant lack of empirical studies focusing on this concept within the Pakistani context. Specifically, the intersection of environmental sustainability and employee engagement remains underexplored in Pakistan's corporate sector. There is minimal understanding of how cultural, organizational, and policy-related factors influence the willingness and ability of employees to engage in green behaviors.

1.3.Purpose of study:

The main objectives of this study are:

- To Analysis the effects of GHRM practices (green recruitment and selection, green training and green pay/reward) on green work engagement.
- To determine which specific GHRM practice is the most effective in promoting green employee behavior through engagement.

2. LITERATURE REVIEW

The importance of Green Human Resource Management (GHRM) is more widely accepted in promoting Green Work engagement (GWE)

Its helps especially in encouraging permanent employee practices. According to Yashaliza et al., According to Tang et al. (2018), it is a symbol of mental, emotional and physical engagement of workers that fulfill their green responsibilities. Apart from being more productive, the activists engaged are also more dedicated to the environmental purposes of their companies. Green Human Resource Management (GHRM) refers to policies and practices designed to promote permanent

environmental targets through HR functions such as recruitment, training, performance management and awards (Rainvic et al., 2013). GHRM has attracted significant attention as a strategic approach that aligns employee management with ecological objectives. These practices create a green organizational culture that promotes pro-environmental approaches and behavior (Jabbour & Santos, 2008).

Green Human Resource Management (Green HRM) integrates environmental management in human resource policies to promote permanent practices and increase ecological results within organizations (Rainvic et al., 2013). Green HRMs include activities such as green recruitment, training, performance evaluation and reward systems that align employee objectives with environmental goals (Jabbour & Santos, 2008). Many studies have found a positive relationship between green HRM practices and green organizational performance. For example, Saeed et al. (2019) Emphasize that green recruitment and training improve the environmental performance by establishing environmental conscious behavior among the staff.

Research by Huo et al. (2022) Provides evidence that the employee positively affects the employee behavior through an increase in the engagement of work in GHRM practices. Green recruitment and selections align individual and organizational environmental values, leading to an increase in green functions. Similarly, green training enhances environmental knowledge and skills, prepares employees to participate in permanent initiatives. Green pay and rewards further strengthen the desired green behavior by identifying and encouraging them.

Green work engagement, as a mediator, plays an important role in converting GHRM inputs into behavioral output. Employees engaged are more likely to be active, exhibit eco-helping behavior, and take initiative towards environmental goals. Thus, the engagement acts as a psychological bridge between HR practices and real green conduct in the workplace.

According to recent studies, there is a direct relationship between Green Work Engagement (GWE) and Green HRM practices, particularly Green Pay and Reward (GPR), Green Training (GT), and Green Recruitment and Selection (GRS) (Huo et al., 2022). The purpose of these procedures is to incorporate the environment.

H1. Green recruitment and selection positively affect green work engagement.

Green recruitment and selection (GRS) involve hiring candidates who have a desire to adopt environmental values or permanent behavior. Organizations that prioritize environmental norms in job details and attract individuals during the process of hiring those who are naturally motivated to engage in green behavior (Renvik et al., 2013). By clearly communicating the environmental commitment of the organization during recruitment, firms can promote initial green engagement in potential employees, laying groundwork for intensive work engagement after hiring (Tang et al., 2018). The study confirms that the GRS is positively related to the employee GWE, as it shapes the psychological contract around green expectations and values (form et al., 2019).

H2. Green training positively affects green work engagement.

Green Training (GT) is an important driver to increase employee capabilities related to environmental responsibilities. This provides the employees required to effectively perform green tasks, leading to their confidence, a sense of purpose and participation in their roles (Jabbour & Santos, 2008). When employees receive specific training about how to contribute to environmental stability, they are more likely to attach to their work to be meaningful. Training also strengthens the confidence of employees in the organization's commitment to stability, promoting their internal motivation and engagement (Jackson et al., 2011). When organizations offer environmentally concentrated training programs to employees - such as stability, reduction in waste, or workshops on energy efficiency - it enhances employees' involvement in environmentally responsible behaviors at work. Green training creates knowledge, shifts attitude, and motivates employees to align their tasks with environmental goals of the organization.

H3: Green Pay and Reward positively affects green work engagement.

These programs use both monetary and non-monetary incentives to encourage employees to function in an environmentally friendly manner. In addition to the organization's honest commitment to stability, these awards encourage the desired behavior. According to Zaugah (2011), employees who recognize their environmental initiative are more likely to be busy and motivate to do better. According to (Huo et al. (2022)), GPR is also displayed to promote target alignment between organizations and employees, which enhances work engagement and behavior of employee. Including green performance in compensation systems-providing bonuses, recognition, or award for environmentally friendly initiative-attach to employees to actively participate in stability efforts. When employees see that their green behavior is accepted and rewarded, they are more likely to stay in green work practices.

H4: Green Work Engagement positively affects the Green Employee Behavior.

Research suggests that employees who are engaged in more green work are more likely to engage in green staff behavior (Geb). These practices may include closing unused electrical appliances, recycling, reducing paper use, supporting stability campaigns, or even starting green innovation (Kim et al., 2017). GWE not only enhances the motivation of an employee to participate in environmentally friendly tasks, but also shapes their identity and values towards stability. A study by Huo et al. (2022) revealed that employees with high green engagement levels were much more involved in promoting and participating i green initiatives, promoting and participating in green initiatives. Similarly, Shah et al. ,Dumont et al. (2017) argues that the engagement is an important predecessor of discretionary behavior in the workplace. When engagement is directed to environmental concerns, employees internal the organizational green goals, resulting in both in-role and extra-role green behavior. This discovery aligns with organizational support theory, which suggests that employees cross organizational care with positive behavior. In addition, Yaslija et al. (2020) emphasized that GWE plays an inspiring role, not only leading to personal commitment to stability, but also encourages others to participate in the workplace. GWE enhances beliefs about alleged behavior control and environmental functions of employees, which in turn affects real behavior.

Green performance refers to an organization's ability to achieve environmental goals, such as waste deficiency, energy efficiency, and stability compliance (Yussleyja et al., 2020). When employees

are hired, trained and evaluated on the basis of green colored values, they are more likely to engage in

Green work engagement refers to a situation where employees are cognitive, emotionally and physically involved in environmentally friendly activities (Aboramadan, 2020). Sax and Gruman (2014) argue that engagement medals the relationship between HR practices and performance results. In the context of green, employed employees feel a strong relationship with the environmental values of the organization and thus try to achieve green goals (Fung and Jabarullah, 2021). Muisyo and Qin (2021) found that when organizations adopt green HRM strategies, The Green Work engagement (GWE) is defined to the extent that employees are present, are psychologically, energetic, and environmentally dedicated to sustainable work (Aboramadan, 2020). This especially of the engagement plays a mediated role between organizational practices and employee results. According to the Social Exchange Theory, when the employees experience support from the organization (through GHRM), they attach more deeply to their work and behave mutually interdefinously - especially in the behavior of the organization that align with the Green Mission (Saks & Graman, 2014) of the organization.

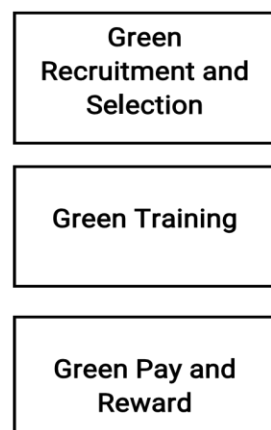
Green Employee Behavior (GEB) is defined as asetof voluntary or role-related workplace behaviors that contribute to environmental sustainability (Ones & Dilchert, 2012). Examples include recycling, reducing paper usage, turning off unused lights, and suggesting eco-friendly initiatives. GEB is not only influenced by personal values but also by organizational practices that support green culture (Dumont et al., 2017).

Research has established that GHRM significantly influences GEB by providing employees with the skills, motivation, and opportunities to behave in environmentally responsible ways (Saeed et al., 2019). When HR systems prioritize green objectives, employees internalize those values and express them through green behavior at work.

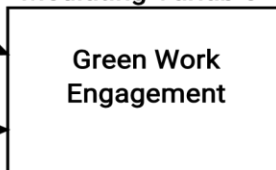
3. Framework:

Green HRM Practices

Independent Variable



Mediating Variable



Dependent Variable



4. METHODOLOGY

4.1 Research design and settings

This study adopts a quantitative, cross sectional research design. The data will be collected through the structured questionnaire distributed among the employees working in the manufacture of SMEs in Pakistan, especially with known environmental impacts.

4.2 Population and Sampling

Data were collected from 102 employees working in various Karachi-based organizations. An adopted questionnaire was used, focusing on the following variables: Green Recruitment and Selection, Green Work Engagement, Green Employee Behavior, Green Pay and Reward, and Green Training. Each construct was measured using a 5points Likert scale ranging from “Strongly Disagree” to “Strongly Agree”. As this study follows a quantitative approach, thematic analysis was conducted to extract meaningful patterns and themes from the participants’ responses. The data were organized and interpreted based on the five core green HRM variables.

5. EMPIRICAL ANALYSIS

The descriptive statistics are as follows:

Table 1_Frequency Distribution

Classification of Respondent	Groups	Frequency	Percentage
Gender	Female	55	53.92%
	Male	47	46.08%
Age	20's	38	37.25%
	30's	48	47.06%
	40's	14	13.73%
	50's	2	1.96%
	60's	0	0%
Department	AUD	3	2.94%
	FIN	20	19.60%
	HRM	13	12.75%
	IT	1	0.98%
	MIC	5	4.90%
	MKT	18	17.65%
	OPT	2	1.97%
	QAC	5	4.90%
	SCM	4	3.92%
	STD	8	7.84%
	T&D	23	22.55%
Experience	<=0.5	33	32.35%
	<=2	28	27.45%
	<=5	16	15.69%
	<=>8	25	24.51%

The demographic profile of respondents as mention in above table indicate male 46.08% and female 53.92%, respondents in 20's(16 to 25) are 37.25%, in 30's(26 to 35) are 47.06%, in 40's (36 to 45) are 13.73% and in 50's are 1.96% of whole sample population. According to experience 32.35% have less than or equal to 6 months experience they just start their professional career or internee as most are university students, 27.45% have less than or equal to 2 years experience as they are early stage of their career, 15.69% are those who have less than or equals to 5 years industrial experience and 24.51% have more than 5 years to more than 8 years experience.

Table 2_ Descriptive Statistics

Name	Mean	S E	SD
My organization attracts applicants who have a concern for environmental issues.			
Green awareness is considered an important factor in our recruitment and selection process.	3.118	0.409	1.114
Job advertisements in my organization emphasize the importance of environmental values.	3.118	0.151	1.123
My organization provides training programs that focus on environmental protection and green practices.	3.206	0.331	1.106
Environmental awareness and skills are emphasized in employee development.			
Employees are encouraged to attend workshops or sessions related to sustainability and green practices.	3.539	0.725	1.063
My organization offers rewards (financial) for employees who demon behavior. Financial or nonstrate eco-friendly			
Employees are recognized for their contributions to environmental sustainability.	3.275	0.44	1.156
Green performance is considered in promotions, bonuses or rewards.			
I feel enthusiastic about performing environment related tasks at work.	3.627	0.878	1.009
I am highly involved in work that supports environmental goals.			
I feel energized when working on green initiatives or eco-friendly projects.	3.775	0.929	0.949
I go beyond my job duties to support environmentally friendly practices.			
I encourage my coworkers to act in environmentally responsible ways.	3.853	0.804	0.912
I suggest new ways to make the workplace more environmentally friendly.			

The above questionnaire has 5 category first three are independent, 4th one is mediator and last one is dependent. The first category “Green Recruitment & Selection” has 3 items in the questionnaire, all means values of the items for “Recruitment & Selection” lie within the range of 2.91-3.118. The mean value for first and second item is 2.91 and 3.118 respectively which is below average and above average respectively, the standard deviation for both are 0.981 and 1.114 respectively that shows that values are close to mean data set. The mean value of third item is 3.118 and standard deviation is 1.123 which show the same picture.

The mean value of first item of 2nd independent category “Green Training & Development” is 3.206 and standard deviation is 1.106 and respectively other two items are also have mean above average and standard deviation are low show the values are not isolated away from mean value. The mean value of first item of 3rd independent category “Green Incentive & Reward” is 3.049 which is slightly above average and standard deviation is 1.248 which can be consider low or not much high or not much isolated from mean. The mean of other two item of same category are above and slightly above average and their standard deviation are also not much isolated from mean.

The mean value of all item of 4th mediator category “Green Engagement” are slightly or considerably above average and also standard deviation are low which show segregations with means.

Finally, the mean value of all items of 5th dependent category “Green Employee Behavior” are considerably above average and comparatively standard deviation are low to other categories which show positive response with low isolation with mean and considerably same response from the related audience

Table 3. Reliability Statistics

Reliability means consistency of questionnaire results. This will provide an answer or similar result whenever the interviewer reuses the questionnaire for the same population. It shows high internal consistency and repeatability of the questionnaire. The main criterion for reliability is to avoid injustice in research. Therefore, it can be improved by testing the search process and analysis, as is done using different research and analysis methods or other researchers. This also includes the reliability and authenticity of the research.

Variable	Cronbach's alpha
Green Recruitment & Selection	0.748
Green Emp Behavior	0.787
Green Engagement	0.784
Green Reward	0.862
Green Training	0.752

The result above chart shown is significant reliable. The reliability ranges from 0.752 to 0.862. Green Incentive & Reward reliability value is 0.862 which is considered to be significant reliable as it is > 0.70, reliability value for Green Engagement is 0.784 which is reliable as it is > 0.70, whereas in Green Training reliability value is 0.752 which is reliable as it is > 0.70.

Table 4. Quantitative Techniques

Factor	Green Emp Behavior	Green Reward	Green Engagement	Green Recruitment & Selection	Green Training
GBH1	0.783				
GBH2	0.888				
GBH3	0.841				
GBR1		0.849			
GBR2		0.898			
GBR3		0.894			
GEM1			0.831		
GEM2			0.862		
GEM3			0.814		
GRS1				0.685	
GRS2				0.861	

GRS3				0.882	
GTD1					0.855
GTD2					0.839
GTD3					0.759

It has been shown that three factors related to independent variables “Green Recruitment & Selection”, “Green Training & Development” and “Green Incentive & Reward” has loading values above than 0.50. Furthermore, it is shown that three factors related to mediator variable “Green Engagement” has loading values above than 0.50. Lastly, it is shown that three factors related to dependent variable “Green Employee Behavior” has loading values above than 0.50. Lastly, however none of item is eliminated due to irrespective loading.

Table 5. Construct Reliability & Validity

Variable	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Green Recruitment & Selection	0.748	0.809	0.853	0.663
Green Emp Behavior	0.787	0.794	0.876	0.703
Green Engagement	0.784	0.788	0.874	0.699
Green Reward	0.862	0.927	0.912	0.776
Green Training	0.752	0.754	0.859	0.670

Above table evidently shows that variance extracted values are greater than 0.5 for all the variables including Green training & development, Green incentive & reward and Green employees engagement and Green employee behavior. And cronbach's Alpha values are above than 0.70. However, it supports convergent validity of instrument.

Table 6. Discriminant Validity Fornell-Larcker criterion

Variable	Green Recruitment & Selection	Green Emp Behavior	Green Engagement	Green Reward	Green Training
Green Recruitment & Selection	0.814				
Green Emp Behavior	0.286	0.838			
Green Engagement	0.292	0.635	0.836		
Green Reward	0.581	0.355	0.406	0.881	
Green Training	0.569	0.423	0.463	0.605	0.819

Discriminate validity explains a single construct when differs from other constructs in the respective model. In present study discriminate validity results show loading values are above than 0.5.

Table 7 Hypothesis Testing

Hypothesis	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	Decision
H1: Green Recruitment & Selection has significant impact on Green Employee Engagement	0.117	0.267	0.789	Not Supported
H2: Green Incentive & Reward has significant impact on Green Employee Engagement	0.128	1.643	0.000	Supported
H3: Green Training & Development has significant impact on Green Employee Engagement	0.124	2.850	0.004	Supported
H4: Green Engagement -> Green Emp Behavior	0.084	7.522	0.000	Supported

Above is the table which display the result of hypothesis, the independent variable and mediator (Green recruitment & Selection, Green training & development, Green incentive & reward and

PLS Algorithm

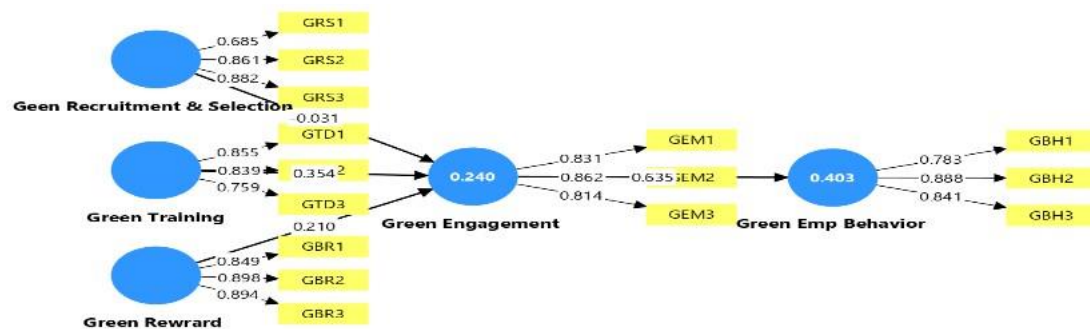
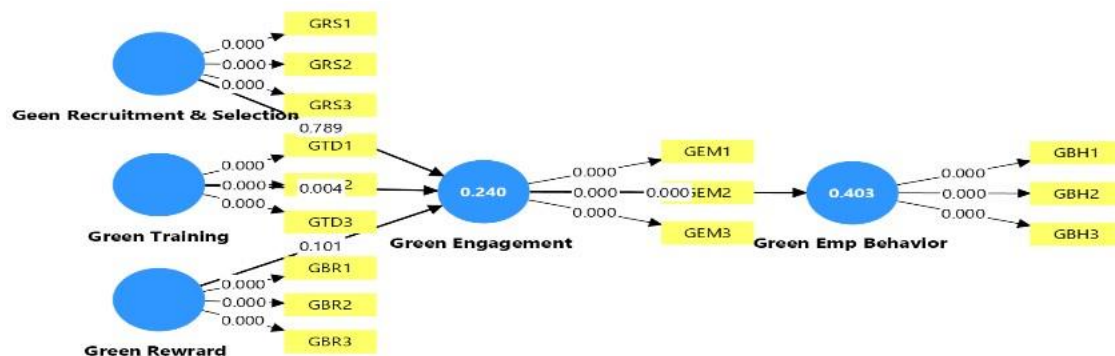


Table 7. Hypothesis Testing

Green Engagement) having relationship positive with Green Engagement and Green Employee behavior as all the three p-values are less than 0.05 which confirm all three variable has positive impact on Engagement & Motivation

Table 7.1 PLS Bootstrapping



6. DISCUSSION

Green Recruitment and Selection: Respondents highlighted the growing importance of environmentally conscious hiring practices. Many organizations were reported to include sustainability-related criteria during the selection process, aiming to attract candidates who align with green values.

Green Work Engagement: A significant number of participants expressed active involvement in eco-friendly initiatives at work. Themes such as motivation to support green policies, pride in contributing to sustainability goals, and high energy levels when engaging in green tasks were commonly observed.

Green Employee Behavior: Employees reported engaging in green behaviors such as reducing paper usage, conserving energy, and encouraging peers to adopt sustainable habits. The presence of a supportive green culture further reinforced such behaviors.

Green Pay and Reward: Several participants mentioned that their organizations had begun linking green performance with incentives. However, some responses indicated a lack of formal reward systems for eco-friendly contributions, suggesting room for improvement.

Green Training: Training programs focused on environmental awareness and green practices were found to be a common part of employee development. Many respondents appreciated these initiatives, stating that they helped improve both personal and professional sustainability efforts.

These qualitative insights indicate a rising awareness and implementation of green HRM practices within Karachi-based organizations. The data suggest that when employees are recruited, engaged, trained, and rewarded with a green focus, their behavior aligns more closely with sustainable organizational goals.

7. CONCLUSION

This study aimed to explore the impact of Green Human Resource Management (GHRM) practices specifically green recruitment and selection, green training, and green pay and reward on employee behavior through the mediating role of green work engagement. The research focused on manufacturing SMEs in Pakistan, a sector that significantly contributes to environmental challenges and thus presents a critical need for sustainable workplace practices.

Through quantitative data collected from 102 respondents in various departments, the study revealed important findings. Descriptive statistics indicated that while some GHRM practices are being implemented, their mean scores were generally below average suggesting that although awareness exists, practical application still requires improvement. For example, recruitment practices showed moderate inclusion of environmental criteria, but training and development related to green practices scored slightly lower. Likewise, reward systems for green behavior were found to be either informal or inconsistently applied. This highlights a gap between organizational intention and structured execution.

Despite these limitations, the study found strong support for the idea that GHRM practices influence green employee behavior, especially when employees are actively engaged in environmentally responsible work. Factor analysis confirmed the reliability and validity of the constructs used in the questionnaire. The high Cronbach's Alpha values (ranging from 0.752 to

0.862) indicated consistent measurement across all variables, and factor loadings further supported the structural integrity of the model. The mediating role of green work engagement was particularly noteworthy; employees who were mentally and emotionally invested in sustainability efforts displayed more proactive green behavior at work.

The findings also support the hypothesis that GHRM practices when well-integrated into HR processes positively influence employee motivation and action towards sustainability. Specifically, green training enhances skills and awareness, green recruitment helps align personal and organizational environmental values, and green rewards reinforce and sustain desired behaviors. Employees in the study expressed that being recognized for eco-friendly actions motivated them to do more, even though formal incentive systems were not always in place.

In a broader sense, this research confirms that GHRM is a powerful strategic tool for organizations seeking to balance business objectives with environmental responsibility. It fosters a work culture where employees are not only aware of sustainability goals but are actively participating in achieving them. This cultural shift is essential for building a sustainable future, particularly in regions like Pakistan where industrial development must be balanced with ecological preservation.

In conclusion, the study establishes that GHRM practices supported by strong employee engagement lead to meaningful changes in workplace behavior, promoting both environmental and organizational performance. For these practices to reach their full potential, however, organizations must go beyond basic implementation and invest in consistent, structured, and visible green HR strategies. This includes formalizing green rewards, enhancing training content, and integrating sustainability into every stage of the HR cycle. By doing so, businesses not only fulfill their environmental obligations but also strengthen their workforce, improve morale, and gain a competitive advantage in an increasingly eco-conscious world.

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