



Empowering Sustainability: The Impact of Green Human Resource Management on Employee Green Behavior in Pakistan's Tourism Sector

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Abstract: Unquestionably, human resource management is a strong instrument for advancing sustainable and green practices, especially when new green human resource management research focuses mostly on environmental sustainability. Thus, as seen by the growing volume of significant publications on the subject, academics researching human resource management have given its contribution to greening businesses more attention. Environmental initiatives are being implemented by organizations worldwide more and more. Recent studies have shown that employees' actions are of great significance, making it a new area of research. The impact of green human resource management techniques (GHRM) on employees' environmentally friendly behaviors as an emerging area of study. Multiple research have discovered that the success of numerous corporate environmental programs hinges on the sustainable behavior of employees. With this background, this study aims to examine the role of GHRM practices in enhancing employee green behaviour within tourism sector of Pakistan. The study further examine the underline mechanism by which GHRM practices affect EGB i.e. environmental awareness. Using a questionnaire survey, the research collected data from 244 hotels employees to examine the conceptual framework developed from existing theories. The data was analyse using SPSS (27) and Excel. The results of the study show that GHRM practices strongly influence EGB (i.e. Voluntary Green Behaviour and Task Related Green Behaviour). the results further suggests that Employee environmental awareness also positively effecting EGB. Furthermore, GHRM practice positively and significantly effecting employee environmental awareness. Lastly, employee environmental awareness play a partial mediating role in the relationship between GHRM and EGB. A theoretical and practical contribution of the study was discussed and limitations of the study were provided with future research suggestions.

Key Words: Green Human Resource, environmental awareness, green behavior, tourism

1. Introduction

In the twenty-first century, greening businesses and ensuring environmental sustainability have become top priorities for decision-makers, prompting a shift towards innovative approaches in human resource management (HRM). Employees play a crucial role in promoting environmental efforts within organizations through various eco-friendly initiatives (Striteska, Myslivcova, Prokop, & Zapletalova, 2024). As a strategic tool, HRM has gained attention for its potential to advance sustainable and green practices, especially as recent green HRM research increasingly emphasizes environmental sustainability (Jabbour et al., 2022). This rising interest is reflected in the volume of significant publications focusing on HRM's contribution to greening businesses (Striteska et al., 2024; Wang, Cai, Ren & Singh, 2023; Jnaneswar, 2023). Consequently, global organizations are actively implementing

environmental programs, underscoring employees' behaviors as key drivers for these initiatives (Paruzel, Schmidt & Maier, 2023; Paillé, Chen, Boiral & Jin, 2014). Notably, Paruzel et al. (2023) highlight the impact of green HRM techniques on employees' eco-friendly behaviors, while Vicente-Molina et al. (2021) reveal that the success of corporate environmental programs largely depends on employees' sustainable behaviors, essential for long-term organizational success.

Addressing the growing environmental challenges caused by industrial activities, such as pollution and irreversible changes, has prompted public and organizational attention towards issues like recycling, energy conservation, and renewable energy (Ecer et al., 2021). Businesses, particularly in the hospitality sector, have responded by implementing energy and water conservation, optimizing the use of consumables, and reducing waste (Pham, Tučková, & Jabbour, 2019). Research in the tourism and hospitality industries has increasingly explored topics like green HRM's environmental impact (Kuo et al., 2022; Ribeiro et al., 2022), as these sectors benefit from fostering a green culture and promoting environmentally responsible practices. Green HRM initiatives prioritize educating employees on environmental objectives, encouraging environmental commitment, and aligning personal development with organizational environmental goals (Ribeiro et al., 2022).

Although research confirms a link between green HRM practices and employee green behavior (EGB), Kuo et al. (2022) argue that understanding this relationship requires a deeper process analysis. Recent studies emphasize a need for more knowledge on how GHRM practices stimulate eco-friendly behaviors among employees (Ansari et al., 2021), suggesting that additional mediation mechanisms might provide insight (Chaudhary, 2020). This study addresses these gaps by examining how environmental awareness mediates the causal link between GHRM and EGB.

This analysis is framed within signaling theory (Guest et al., 2021; Reynolds, 2008), which underscores the importance of organizational signals in shaping employee perceptions of HRM practices. Garavan et al. (2022) emphasize that signaling theory plays a key role in corporate branding, and this research leverages its principles to identify effective strategies for promoting environmental values to employees. Using data from tourism professionals in Pakistan, this study explores the direct and indirect effects of GHRM on EGB, focusing on environmental awareness as a mediating variable to bridge a critical knowledge gap.

Environmental degradation and stricter environmental regulations are compelling businesses to reduce adverse environmental impacts (Aftab & Veneziani, 2024; Papademetriou et al., 2023). Organizations with robust environmental policies benefit from increased revenue, brand recognition, and positive employee outcomes (Kuo et al., 2022; Ribeiro et al., 2022). Employee behaviors are integral to executing these green policies effectively (Gretmenoglu et al., 2022). Despite the established connection between green HRM practices and EGB, studies reveal limited understanding of the specific GHRM practices that most effectively foster EGB. This research thus advocates for examining specific GHRM practices rather than adopting a systems approach, which could obscure individual behaviors and perceptions (Ghani, Mubarak & Memon, 2024). Recognizing the importance of mediating mechanisms, this study seeks to clarify the role of environmental awareness in this relationship.

The tourism sector in Pakistan, a rapidly developing industry contributing significantly to the economy, provides the context for this investigation. Despite its attractions, Pakistan's tourism industry faces challenges in effectively promoting its offerings and ensuring security for international visitors (Malik et al., 2020). Efforts by the Pakistani government to enhance tourism include improving infrastructure, introducing online visa services, and attracting more international visitors (Torres, 2021). However, COVID-19 has heavily impacted tourism worldwide, leading to job losses and revenue declines (Kumudumali, 2020). As a result, Pakistan's tourism sector seeks sustainable approaches to drive resilience and growth. Green HRM practices in Pakistan's tourism sector could foster eco-friendly behaviors, improving human resource quality and, ultimately, sector productivity. This study examines the role of GHRM in promoting employee creativity via environmental awareness, with implications for long-term tourism sustainability.

This research aims to investigate the impact of GHRM practices on EGB within Pakistan's tourism sector, focusing on environmental awareness as a mediating mechanism. The study addresses the following objectives: 1) to analyze the role of GHRM practices in enhancing EGB in Pakistan's tourism sector, and 2) to explore environmental awareness as a mediator in the relationship between GHRM and EGB. Corresponding research questions include: How do individual GHRM practices affect employee green behavior (e.g., voluntary and task-oriented green behaviors) in Pakistan's tourism sector? And, does environmental awareness mediate the relationship between GHRM and EGB in this context?

2. Literature Review and Hypothesis Development

2.1 Green Recruitment and Selection

Green Recruitment and Selection (GRS) in Green HRM identifies and recruits environmentally conscious candidates motivated to support sustainable goals (Tang et al., 2018). Based on traditional hiring, GRS remains impactful regardless of economic shifts (Morin et al., 2011), enhancing later environmental training and engagement. Strong environmental credentials help attract skilled talent (Grolleau et al., 2012), while candidates' motivation for eco-friendly initiatives boosts performance and voluntary cooperation, adding intangible benefits like green product branding (Del Brío et al., 2007). GRS also emphasizes person-organization fit, selecting candidates aligned with the organization's environmental values and goals (Perron et al., 2008).

2.2 Green training and development

Green Training and Development (GTD) programs focus on environmental sustainability by equipping employees with the skills necessary for environmental conservation (Jabbour, 2011). GTD enhances employees' abilities to implement eco-friendly practices, fosters green behavior, and increases environmental awareness (Zoogah & Peng, 2011). These programs build workers' knowledge of how their actions impact the environment and provide skills for identifying and mitigating environmental issues. Environmental training improves employees' awareness and sensitivity, motivating them to adopt sustainable practices (Kjaerheim, 2005). This training, along with green knowledge management, encourages voluntary environmental actions and supports positive employee engagement in sustainability (Dumont, Shen, & Deng, 2017).

2.3 GHRM Practices and EGB

According to Suleman, Amponsah-Tawiah, and Ametorwo (2023), individual green behavior encompasses various actions, such as participating in extracurricular activities, adhering to environmental guidelines, and engaging in HRM green initiatives. Organizations may adopt a compliance strategy, requiring employees to perform daily tasks in alignment with environmental quality standards, including hazard management, energy consumption, and recycling. However, unforeseen challenges may necessitate innovative approaches to environmental conservation, prompting employees to actively identify risks and contribute to sustainable projects.

Voluntary green behaviors include conserving office lighting and conducting self-guided energy audits (Steg & Vlek, 2009). Research by Suleman et al. (2023), Ababneh (2023), and Ansari et al. (2023) supports a correlation between HRM activities and employee eco-friendly behavior. Utilizing the Ability-Motivation-Opportunity (AMO) framework proposed by Appelbaum et al. (2000), Renwick et al. (2013) suggest that HRM practices significantly encourage individual green behavior by enhancing employees' abilities, motivation, and opportunities to contribute to environmental efforts.

Green HRM practices involve integrating eco-friendly standards into recruitment, training, and development; incentivizing environmentally conscious behavior through performance management; and providing opportunities for employee participation in environmental initiatives. Incorporating sustainability principles into recruitment aligns organizational and employee values, enhancing attraction and retention of environmentally responsible candidates (Chen & Teng, 2013). Customized training initiatives improve employees' understanding and skills related to environmental issues (Dumont et al., 2017).

Performance management and compensation strategies influence employee motivation and attitudes (Pinzone et al., 2016). Eco-focused performance assessments can enhance job satisfaction and motivate employees to take environmental concerns seriously (Grobelna, 2019). Reward systems that recognize eco-friendly efforts improve workplace morale (Jackson et al., 2011). Pinzone et al. (2016) found that employee perceptions of the relationship between eco-friendly performance and employer benefits affect their sense of fairness and satisfaction.

Green initiatives are expected to enhance both employee and organizational performance (Jabbour et al., 2015). A holistic approach that examines the interplay of HRM practices may provide deeper insights into factors influencing sustainability attitudes and behaviors than analyzing each practice in isolation. The configurational perspective of HRM emphasizes the importance of integrating HRM strategies into cohesive bundles to enhance firm performance (Pauwe, 2009).

2.4 Mediating effect of Environmental Awareness between the Relationship of GHRM and EGB

According to social cognitive theory (SCT), individuals' knowledge develops through their observations of others,

social interactions, experiences, education, and external media (Bandura, 2001). External factors influence individuals' ability to consciously select and manage their actions to achieve desired outcomes. From the perspective of signaling theory, employees respond variably to external influences, demonstrating adaptability and the capacity for adjustment (Bandura, 2001). When employees understand their environment's significance for sustaining life and recognize their role in its protection, they engage more constructively with environmental issues.

Signaling theory posits that Green Human Resource Management (GHRM) enhances employees' environmental awareness and indirectly influences workplace performance. GHRM involves informing and motivating employees to improve their environmental skills to contribute effectively to organizational goals. Training programs focused on environmental awareness bolster employees' capabilities to protect the environment and increase their commitment to enhancing organizational environmental performance (Papademetriou et al., 2023). Roscoe et al. (2019) suggest that recruiting environmentally conscious individuals and providing effective training can enhance overall environmental awareness within an organization, ensuring that employees' actions reflect environmental concern.

Employee green behavior (EGB) refers to intentional efforts by employees to mitigate the environmental impact of human activities. Studies indicate that knowledge of environmental issues fosters ecological responsibility among workers. GHRM aims to raise staff awareness and commitment to sustainability (Pham et al., 2019) by educating them about environmental management processes and benefits (Ahmad, 2015). Kim et al. (2019) recommend that HR managers provide training on environmental regulations and best practices to encourage environmentally conscious behavior. Chan et al. (2014) found that insufficient environmental knowledge can hinder EGB participation, while increased awareness and knowledge promote the integration of eco-friendly practices into daily routines, leading to greener workplace policies. However, there is limited research connecting environmental consciousness to GHRM and EGB (Zhang et al., 2019). Further investigation is necessary to understand the relationships among these concepts across various industries, including hospitality. This study concludes that organizations employing GHRM can enhance employee environmental awareness, thereby fostering eco-friendly operations.

2.5 The Theoretical Underpinning of the Study

Signaling theory, as articulated by Connelly et al. (2011), explains how employees interpret HRM tasks amidst information imbalances. Organizations must strategically determine how and when to communicate Green Human Resource Management (GHRM) practices, which serve as messages reflecting the organization's commitment to environmental sustainability and recognition of employees' efforts in green behavior (Sanders, Shipton, & Gomes, 2014). Employees interpret these signals to understand the organization's stance on sustainability and their role in environmental protection.

The clarity and frequency of signals are crucial in analyzing the impacts of GHRM activities. For example, while green performance management may directly affect employees' perceptions, green hiring might seem less significant (Chaudhary, 2020). GHRM policies perceived as beneficial to employees are more likely to be embraced, and regular engagement in practices like green performance management can reinforce environmental values (Saeed et al., 2019).

Signaling theory also focuses on how employees actively receive and respond to GHRM practices (Spence, 1973). Signals can shape attitudes and behaviors; thus, this study centers on Employee Green Behavior (EGB), which includes both task-related and voluntary actions aimed at enhancing environmental performance (Ramus & Killmer, 2007). EGB emphasizes personal initiative and the ability to exceed organizational standards (Norton et al., 2015).

The theory posits that GHRM practices foster EGB by conveying the organization's commitment to sustainability, which encourages employees to engage in eco-friendly activities (Renwick et al., 2013). Environmentally aware employees are more likely to recognize these signals and respond with increased pro-environmental behavior (Norton et al., 2015). Additionally, GHRM strategies create a sense of organizational support that further promotes sustainability commitment (Tang et al., 2018).

The effectiveness of GHRM in promoting EGB hinges on the clarity and strength of the signals and their alignment with employees' environmental values. Employees with prior environmental awareness are more likely to interpret GHRM activities as affirmations of organizational sustainability, enhancing their commitment to green behaviors.

Environmental consciousness acts as a moderating factor, influencing how employees perceive and react to GHRM initiatives.

Furthermore, signaling theory underscores the importance of feedback loops, whereby employee reactions can reinforce or weaken the perceived signals. If GHRM practices are viewed as genuine, employees are more likely to engage in both task-oriented and voluntary green behaviors. Conversely, if these practices appear superficial or misaligned with actual organizational efforts, skepticism may arise, diminishing pro-environmental engagement.

The reliability of the signals significantly shapes employee behavior. GHRM strategies perceived as symbolic rather than substantial can undermine the importance of green actions. Research indicates that credible and consistent GHRM practices, such as thorough training and performance monitoring, enhance the effectiveness of the signals and boost EGB (Renwick et al., 2013; Tang et al., 2018).

Integrating employee feedback into GHRM practices can amplify the effectiveness of the signals. Recognizing and rewarding employee contributions to sustainability fosters a positive feedback loop, increasing engagement in environmentally friendly activities. Conversely, a lack of acknowledgment can weaken the message and discourage participation in green initiatives.

In conclusion, signaling theory not only elucidates the relationship between GHRM practices and EGB but also highlights the necessity of aligning these signals with authentic organizational values. By adopting this approach, organizations can create an environment that encourages employees to engage in both task-related and voluntary green behaviors, driven by clear, reliable, and consistent signals of commitment to sustainability.

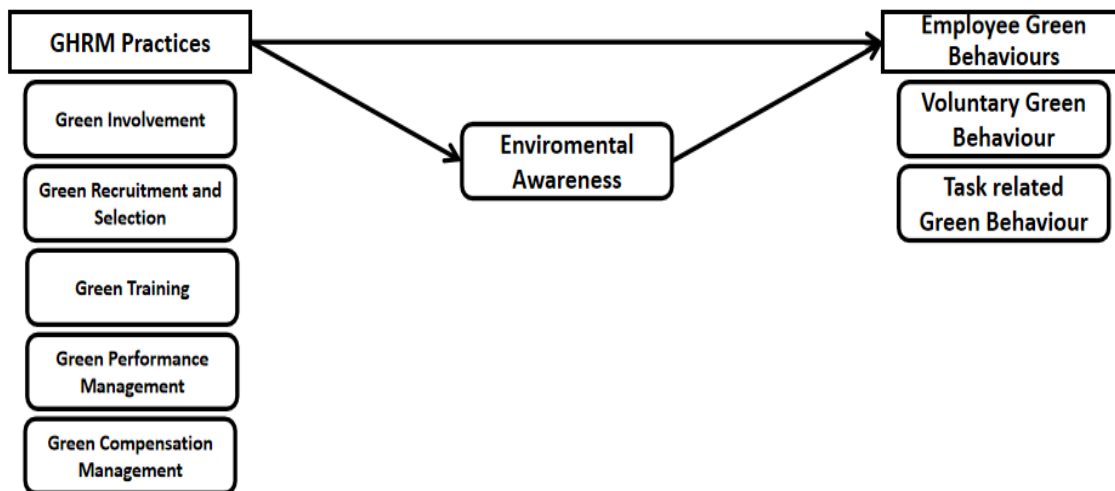


Figure 2.1
The Theoretical Framework of The Study

3. Research Methodology

3.1 Research Strategy and Approach

This study adopts a quantitative approach, focusing on numerical data collection and analysis to explore the relationship between Green Human Resource Management (GHRM) practices and Employee Green Behavior (EGB), including the mediating effect of environmental awareness. A deductive strategy is employed to test hypotheses derived from existing theories, reflecting the study's findings and contributing to theoretical development.

The epistemological stance is positivist, using scientific methods from natural sciences to analyze social realities. Quantitative research typically aligns with this approach, emphasizing hypothesis testing. Ontologically, the study adopts an objectivist perspective, viewing organizations as concrete entities that influence employee behavior through GHRM practices.

Research methodologies are structured frameworks for investigation. This study utilizes a quantitative and deductive methodology, analyzing statistical patterns to reveal trends in human experiences. Primary data is collected through questionnaire surveys, while secondary data from academic sources helps inform the research questions.

3.2 Data Collection instrument

This research investigates the causal relationship between Green HRM practices and employee green behavior, considering the mediating role of employee environmental awareness. A questionnaire serves as the primary data collection tool, comprising three parts: demographics, environmental knowledge, and workplace green behavior.

To measure GHRM practices, the scale from Tang et al. (2017) and Dumont et al. (2017) is used, including 21 items across five dimensions: recruiting and selection, training, performance management, compensation management, and employee involvement. Respondents rate their satisfaction with GHRM practices on a five-point Likert scale.

The Employee Green Behavior Scale, adapted from Bissing-Olson et al. (2013), includes six items measuring task-related and voluntary behaviors. Environmental awareness is assessed using four items adapted from Rezapouraghdam et al. (2018).

Table 1: Names, number of items and sources of different scales used in the study

Construct	Items	Source
Voluntary green behaviour	3	Bissing-Olson et al. (2013)
Task related green behaviour	3	Bissing-Olson et al. (2013)
Green HRM Practices	21	Tang et al. (2017) and Dumont et al. (2017)
Employee Environmental Awareness	4	Han and Yoon (2015), and Ryan and Spash (2008)

3.3 Sampling Strategy and Sample Size

Sampling reduces the data needed for collection by selecting a limited number of elements rather than surveying the entire population (Saunders et al., 2009). It is often more practical than a census due to constraints in time and finances. In this study, focusing on Pakistan's tourism sector is necessary due to the large number of hotels (estimated at 200,000 to 300,000) and the lack of available data.

Sampling is believed to provide greater accuracy than a full census (Barnett & Bown, 2002), allowing for a deeper understanding of selected cases (Bell et al., 2018). For a population of over 250,000, a sample size of 384 is recommended based on Research Advisors (2006).

The study will utilize a convenience sampling method and ensure the sample size's appropriateness by adhering to the guideline of seven to ten observations per variable. Additionally, sample size calculations were supported by online tools like Raosoft calculators.

3.4 Data Analysis and Hypotheses Testing

3.4.1 Response Rate

A questionnaire survey was conducted in top tourism spots in Pakistan that include Islamabad, Swat and Murree areas of Pakistan. The participants were given a structured questionnaire to document their responses. Out of 700 questionnaires given, 262 respondents completed the surveys, yielding a response rate of 37.42%. Out of 262 surveys, 18 were incomplete or had unanswered items, resulting in a total of 244 completed questionnaires. Table 4.1 displays a summary of the survey response rate.

Table 4.1: Response rate of the survey

Number of Questionnaires		Perenatge
Distributed Questionnaires	700	100
Received Questionnaire	262	37.42
Dropped Questionnaire	18	0.02
Usable Questionnaire	244	34.85

3.4.2 Preliminary Data Analysis

Data from the questionnaire survey was entered into an Excel workbook, labeled, and reverse-coded before being

imported into SPSS (version 27) for analysis. The preliminary analysis involved data cleaning, checking for abnormalities such as missing values, normality, and outliers (Hair et al., 2017).

Data Cleaning: The analysis focused on identifying suspicious response patterns, particularly straight lining, where respondents select the same answer repeatedly. No such patterns were found, allowing all 244 observations to be included for further analysis.

Missing Data: Data was screened for inconsistencies using SPSS, ensuring no unanswered items or disengaged responses. The analysis confirmed that all instances were complete, meeting the requirements for Multiple Regression analysis.

Table 4.2: Missing data analysis

Items	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
GHRM1	244	100.0%	0	0.0%	244	100.0%
GHRM2	244	100.0%	0	0.0%	244	100.0%
GHRM3	244	100.0%	0	0.0%	244	100.0%
GHRM4	244	100.0%	0	0.0%	244	100.0%
GHRM5	244	100.0%	0	0.0%	244	100.0%
GHRM6	244	100.0%	0	0.0%	244	100.0%
GHRM7	244	100.0%	0	0.0%	244	100.0%
GHRM8	244	100.0%	0	0.0%	244	100.0%
GHRM9	244	100.0%	0	0.0%	244	100.0%
GHRM10	244	100.0%	0	0.0%	244	100.0%
GHRM11	244	100.0%	0	0.0%	244	100.0%
GHRM12	244	100.0%	0	0.0%	244	100.0%
GHRM13	244	100.0%	0	0.0%	244	100.0%
GHRM14	244	100.0%	0	0.0%	244	100.0%
GHRM15	244	100.0%	0	0.0%	244	100.0%
GHRM16	244	100.0%	0	0.0%	244	100.0%
GHRM17	244	100.0%	0	0.0%	244	100.0%
GHRM18	244	100.0%	0	0.0%	244	100.0%
GHRM19	244	100.0%	0	0.0%	244	100.0%
GHRM20	244	100.0%	0	0.0%	244	100.0%
GHRM21	244	100.0%	0	0.0%	244	100.0%
EA1	244	100.0%	0	0.0%	244	100.0%
EA2	244	100.0%	0	0.0%	244	100.0%
EA3	244	100.0%	0	0.0%	244	100.0%
EA4	244	100.0%	0	0.0%	244	100.0%
VGB1	244	100.0%	0	0.0%	244	100.0%
VGB2	244	100.0%	0	0.0%	244	100.0%
VGB3	244	100.0%	0	0.0%	244	100.0%
TGB1	244	100.0%	0	0.0%	244	100.0%
TGB2	244	100.0%	0	0.0%	244	100.0%
TGB3	244	100.0%	0	0.0%	244	100.0%

3.4.3 Data Normality

Skewness, kurtosis, and the Shapiro-Wilk test were utilised to evaluate the normality of the data (Hair et al., 2017). The skewness and kurtosis test results are shown in Table 4.3 below.

Table 4.3: Data normality using Skewness and Kurtosis

items	N	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Std. Error
				Statistic
				Std. Error

GHRM1	244	1.05194	-1.581	.156	2.228	.310
GHRM2	244	1.02550	-1.649	.156	2.535	.310
GHRM3	244	.93037	-1.510	.156	2.178	.310
GHRM4	244	1.05563	-1.755	.156	2.836	.310
GHRM5	244	1.07534	-1.413	.156	1.575	.310
GHRM6	244	.94720	-1.588	.156	2.824	.310
GHRM7	244	.99152	-1.440	.156	2.072	.310
GHRM8	244	1.00343	-1.380	.156	1.712	.310
GHRM9	244	1.00269	-1.490	.156	1.995	.310
GHRM10	244	1.02833	-1.536	.156	2.170	.310
GHRM11	244	1.02399	-1.611	.156	2.401	.310
GHRM12	244	1.05859	-1.513	.156	1.922	.310
GHRM13	244	.91774	-1.651	.156	3.222	.310
GHRM14	244	1.00819	-1.571	.156	2.501	.310
GHRM15	244	1.03011	-1.067	.156	.384	.310
GHRM16	244	1.03858	-1.369	.156	1.443	.310
GHRM17	244	1.00585	-1.443	.156	1.934	.310
GHRM18	244	.92223	-1.281	.156	1.848	.310
GHRM19	244	.89806	-1.288	.156	1.938	.310
GHRM20	244	1.08658	-1.201	.156	.787	.310
GHRM21	244	1.14396	-1.530	.156	1.706	.310
EA1	244	1.10637	-1.671	.156	2.237	.310
EA2	244	.99404	-1.458	.156	1.759	.310
EA3	244	1.04686	-1.130	.156	.811	.310
EA4	244	1.06577	-1.156	.156	1.078	.310
VGB1	244	1.15549	-.865	.156	-.121	.310
VGB2	244	1.12111	-1.184	.156	.702	.310
VGB3	244	1.23627	-1.237	.156	.574	.310
TGB1	244	1.04219	-1.265	.156	1.128	.310
TGB2	244	1.07723	-1.418	.156	1.561	.310
TGB3	244	1.18112	-1.473	.156	1.370	.310
Valid N (listwise)	244					

The results indicate that the skewness and kurtosis values for all items exceeded the critical range of +1.96 to -1.96 (Mishra et al., 2019) and the range of +3 to -3 for kurtosis (Holton, 2007).

3.4.4 .Outliers Detection

Outlier identification is crucial for data screening and inferential statistics (Hair et al., 2017). This study examined data for multivariate outliers, which can distort statistical estimates and affect generalizability. Previous research (Boukerche et al., 2020) noted that selecting extreme values (1 or 5) on Likert scales does not indicate outlier behavior.

Using the Mahalanobis test, the study identified ten outliers across all variables with a Chi-square distribution showing $p < 0.001$. According to Hair et al. (2019), if outliers constitute less than 5% of the data, they can be retained. With an outlier proportion of 0.04, these observations were kept for further analysis. Table 4.4 presents the Mahalanobis D squared test results for the first 26 cases.

Table 4.4: Outliers detection using Mahalanobis D squared test

Observation	MAH	P-Value
214	103.88973	.00000
145	91.21166	.00000
120	84.40499	.00000

59	82.07545	.00000
43	68.64049	.00011
44	63.90213	.00046
74	62.91824	.00060
100	61.49317	.00090
127	61.49317	.00090
156	61.28600	.00095
201	60.68998	.00112
238	59.65198	.00148
23	59.22064	.00167
79	58.52591	.00201
68	56.06552	.00381
99	56.03322	.00385
220	53.39778	.00746
188	52.71302	.00882
82	52.02729	.01040
96	51.72692	.01118
17	51.61693	.01147
49	51.53990	.01169
230	103.88973	.01336
28	91.21166	.01612
34	84.40499	.01612
66	82.07545	.01637

3.5 Demographic Profile of the Respondents

The demographic profile of respondents offers essential insights into the sample population for the research on Green Human Resource Management (GHRM) practices and employee green behaviors.

The sample is predominantly male, with 69.7% (170 respondents) identifying as male and 30.3% (74 respondents) as female. This gender imbalance may reflect the hotel industry's composition and could influence attitudes toward GHRM practices.

Age-wise, over half (54.1%) of respondents are under 30, while 35.7% are between 30 and 40, indicating a youthful workforce that is likely more environmentally conscious.

In terms of education, 49.2% are university graduates, and 29.9% are postgraduates, suggesting a well-informed workforce that may be more receptive to GHRM initiatives.

Most respondents are employees (74.2%), with managers comprising 24.6%, highlighting a focus on general workforce behaviors related to GHRM.

Experience varies, with 45.1% having less than 5 years and 43.4% between 5 and 10 years, indicating a relatively new workforce that may be less familiar with established GHRM practices.

Table 4.5:
Demographic profile of the sample

Demographics	Category	Frequency	Percentage	Cumulative Percent
Gender	Male	170	69.7	69.7
	Female	74	30.3	100.0
Age	Under 30 years	132	54.1	54.1
	30-40 years	87	35.7	89.8

	41-50 years	25	10.2	100.0
Education Level	High school level	16	6.6	6.6
	college certificate	35	14.3	20.9
	University Graduate	120	49.2	70.1
	Postgraduate	73	29.9	100.0
Position in Hotel	Manager	60	24.6	24.6
	Employee	181	74.2	98.8
	Other	3	1.2	100.0
Experience	Less than 5 years	110	45.1	45.1
	5-10 years	106	43.4	88.5
	11-20 years	16	6.6	95.1
	More than 20 years	12	4.9	100.0

3.6 Exploratory Factor Analysis

3.6.1 Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis (EFA) is a statistical method used to identify the underlying dimensionality of items, particularly when prior studies have modified measurement instruments (Hair et al., 2017). EFA is essential in scale development to ascertain construct dimensions and is advised for assessing item dimensionality due to differing population characteristics (Fabrigar & Wegener, 2011; Watkins, 2018).

The EFA process involves the Kaiser-Meyer-Olkin (KMO) measure for sampling adequacy, loading factors for items, total variance explained, and item mean scores, with Cronbach's Alpha used to assess construct reliability. Sample size is crucial for effective EFA; while guidelines suggest at least 200 cases for reliability, EFA can still be reliable with samples under 50 if communalities are high (Fabrigar & Wegener, 2011; Schreiber, 2021). This study utilized a sample size of 244 for EFA, analyzing 31 items across four latent components: GHRM practices, Environmental Awareness, Voluntary Green Behavior, and Task-Oriented Green Behavior.

Principal Component Analysis (PCA) with oblique promax rotation was conducted to ensure accurate factor alignment. The scree plot was employed to determine the number of factors to retain, with the elbow point indicating which components to omit (Cattell, 1952). The KMO measure was .967, confirming the data's suitability for factor analysis. Ultimately, 25 items were selected based on the pattern matrix generated by promax rotation, which illustrates the factorial structure of the identified components.

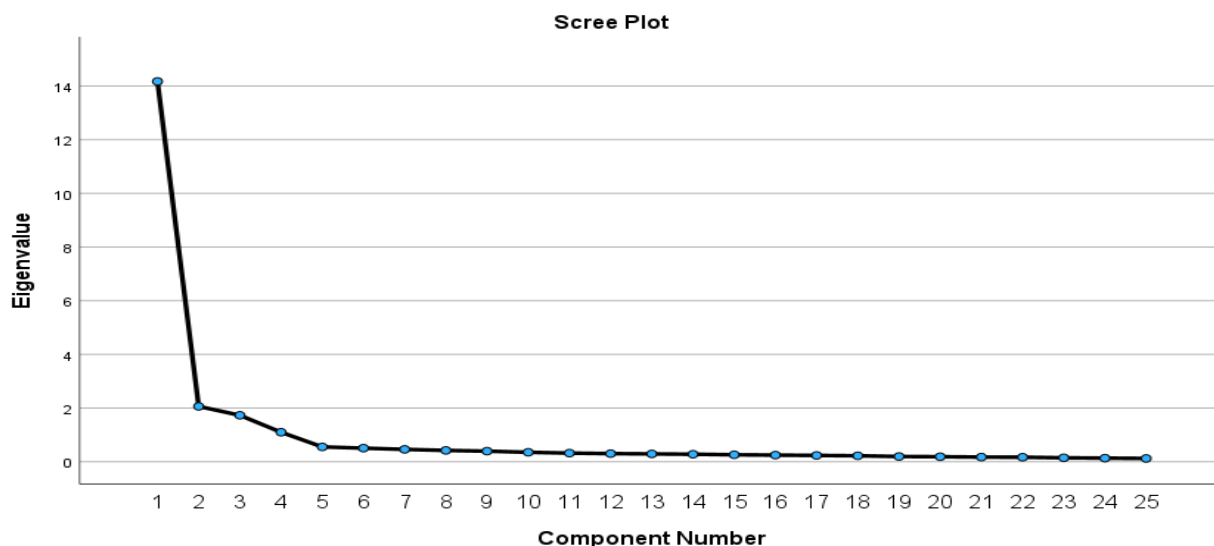


Figure 4.1

Scree Plot

Table 4.6: KMO and Bartlett's Test of Sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.973
Bartlett's Test of Sphericity	Approx. Chi-Square	6811.492
	df	465
	Sig.	.000

The initial running of the structure results into four factor solution, however, different items of GHRM practices have cross loading and some got very low loading on GHRM practices. As a results, these items were removed from the structure one by one. Finally, a total of 6 items from GHRM practices were removed. These items are: GHRM7, GHRM15, GHRM16, GHRM17, GHRM18, and GHRM20. The EFA were performed again which results into a clear structure of four factors having 71.44% accumulative variance explain. The following table 4.9 shows pattern matrix, eigen value, commonalities and total variance explain.

Table 4.7: Pattern matrix, Eigen values and Total variance explained

Items	Factor 1	Factor 2	Factor 3	Factor 4	Commonalities
GHRM1	.683				.728
GHRM2	.617				.795
GHRM3	.679				.728
GHRM4	.686				.798
GHRM5	.655				.713
GHRM6	.600				.691
GHRM8	.541				.668
GHRM9	.580				.688
GHRM10	.717				.721
GHRM11	.661				.736
GHRM12	.640				.664
GHRM13	.703				.798
GHRM14	.778				.695
GHRM19	.616				.649
GHRM21	.580				.662
EA1		.590			.768
EA2		.649			.741
EA3		.664			.669
EA4		.702			.677
VGB1				.755	.712
VGB2				.744	.750
VGB3				.655	.676
TGB1			.718		.750
TGB2			.709		.713
TGB3			.647		.669
Eigen Values	15.299	1.425	1.142	1.012	
Total Variance Explained	61.195	65.263	68.446	71.443	

The exploratory factor analysis (EFA) identified four components related to GHRM practices. The first factor, GHRM Practices, consists of 15 items, explaining 61.195% of the total variance with an eigenvalue of 15.299. The second factor, Environmental Awareness, includes 4 items and accounts for 4.134% of the variance. The third factor, Task-Oriented Green Behavior, has 3 items and explains 2.847% of the variance. The fourth factor, Voluntary Green Behavior, comprises 3 items and accounts for 3.003% of the total variance. Together, these four factors explain 71.443% of the variance, with each item distinctly loading onto its corresponding factor.

Following EFA, a reliability assessment was conducted using Cronbach's Alpha to ensure the consistency and validity of the constructs. A coefficient above 0.7 is considered acceptable (Schreiber, 2011). All four constructs exceeded this threshold, confirming their reliability for further analysis.

Table 4.8: Cronbach Alpha values of all the constructs

Constructs	Cronbach Alpha	No. Of Items
GHRM Practices	0.968	15
Environmental Awareness	0.868	4
Voluntary green behaviour	0.792	3
Task oriented green behaviour	0.810	3

3.7 Multiple Regression Analysis

3.7.1 Assumption of multiple regression analysis

3.7.1.1 Multicollinearity Assumption

The Variance Inflation Factor (VIF) is a key measure for assessing multicollinearity among independent variables (Taylor, 2023; Bobbitt, 2021). A VIF above 5 indicates a strong correlation among variables, complicating the identification of their individual effects on the dependent variable (Bobbitt, 2021). Ideally, VIF values should be between 1 and 5 (Bobbitt, 2021). Multicollinearity often arises during data sampling when some variables are duplicated or modified (Mahmood, 2022).

Table 4.9: Multicollinearity using VIF and Turbulence values

Constructs	Collinearity Statistics	
	Tolerance	VIF
GHRM Practices	.286	3.502
Environmental Awareness	.246	3.202

It can be seen from the multicollinearity table that all of the independent variables have values that are greater than 1 and less than 5. A value that is more than one and less than five implies that our independent variables do not show multicollinearity, as stated in (Bobbitt, 2021). As a result, the assumption of multicollinearity is satisfied.

3.7.1.2 Assumption Independence of observation or No auto-correlation

Testing for independence among observations is essential in multiple regression analysis (Bobbitt, 2021; Taylor, 2023). The Durbin-Watson (DW) statistic, which ranges from 0 to 4, measures autocorrelation. Values between 0 and 2 indicate positive autocorrelation, while values from 2 to 4 suggest negative autocorrelation (Zach, 2021; Taylor, 2023). It is recommended to use a DW range of 1.5 to 2.5, as values within this range are generally acceptable (Datalab, 2021).

Table 4.10: Durbin Watson Test

Dependent Variable	Durbin Watson Value
Voluntary green behaviour	1.788
task oriented green behaviour	1.562

According to Zach (2021) and Datalab (2021), the Durbin-Watson values of the first three independent variables and the final three independent variables suggest that our Dickey-Watson (DW) values are within the range of 1.5 to 2.5. This implies that our DW values are considered to be within the acceptable range. This implies that the assumption of independence of observation is also met.

3.8 Assumption of Normality

3.8.1 Assumption of Linearity

A key assumption in multiple linear regression is the linear correlation between the dependent and independent variables (Hair et al., 2019). This can be visually assessed using scatterplots, which should display a linear correlation. Additionally, recognizing outliers is crucial, as linear regression is sensitive to extreme values. Scatter plots are effective for evaluating this linearity assumption, and the following figures illustrate the absence of non-linearity.

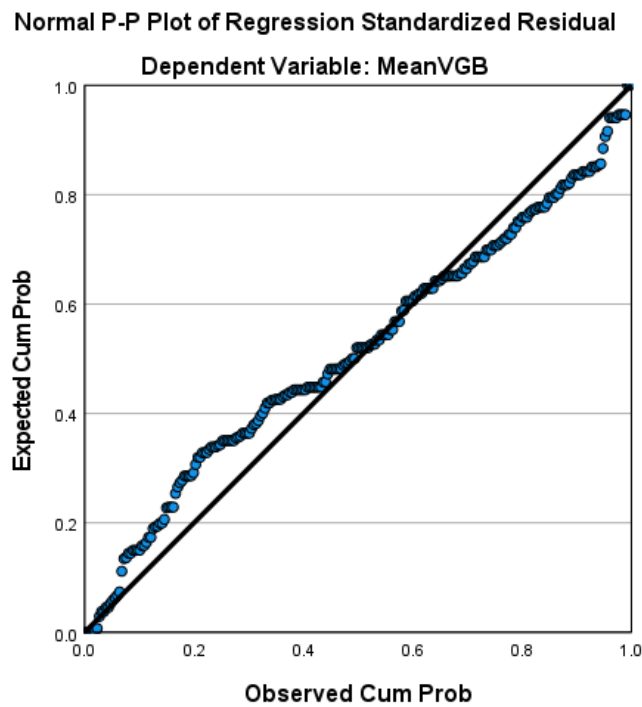
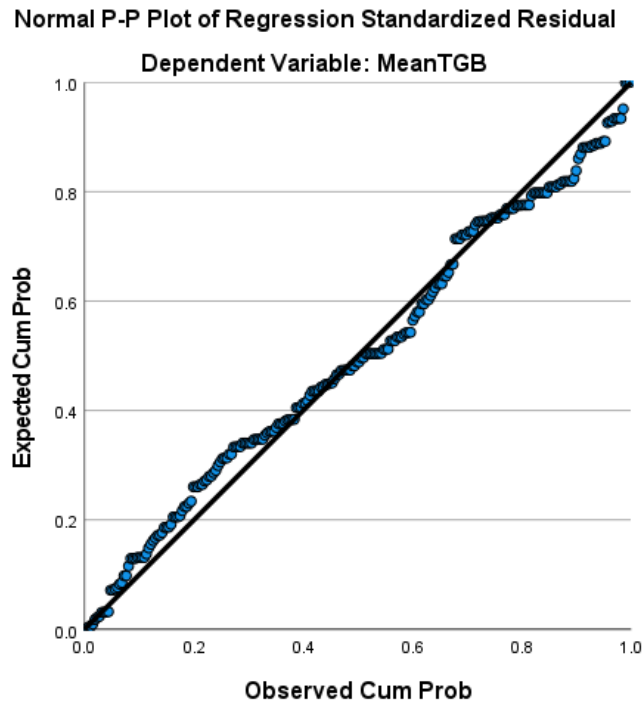


Figure 4.2
P-P Plot of Regression Standardized Residuals

By looking to both the plots it can be said that both plots are satisfactory and it says that the relationships is linear.

3.8.2 Testing of Multiple Regression Analysis

As discuss in chapter 3, four different simple regression analysis were used to test the four hypotheses proposed in chapter 2. these hypotheses are:

H1a: Green HRM is positively related with employee voluntary green behaviour.

H1b: Green HRM is positively related with employee task related green behaviour.

H2: Green HRM practices are positively related with employee environmental awareness.

H3: Employee environmental awareness is positively related with employee green behaviors.

The following four regression equations were used to test these hypotheses:

$$\text{Voluntary green behaviour} = \beta_0 + \beta_1 (\text{GHRM practices, H1a}) + \varepsilon$$

$$\text{Task related green behaviour} = \beta_0 + \beta_1 (\text{GHRM practices, H1b}) + \varepsilon$$

$$\text{Employee environmental awareness} = \beta_0 + \beta_1 (\text{GHRM practices, H2}) + \varepsilon$$

$$\text{Employee green behaviors} = \beta_0 + \beta_1 (\text{Employee environmental awareness, H3}) + \varepsilon$$

Obtaining the β (beta) values, or regression coefficients, is essential in regression analysis, as they enable the calculation of predicted values for the dependent variable. The β coefficient, defined by Eid (2003), represents the unstandardized simple regression coefficient for a single independent variable and acts as a partial regression coefficient when multiple independent variables are present.

Beta (β) measures the average change in the dependent variable for a one standard deviation increase in the independent variable, with other variables held constant. A positive β indicates a positive relationship between the dependent and independent variables.

The significance of the overall regression model was assessed using Analysis of Variance (ANOVA), specifically the F ratio, which tests the null hypothesis of no linear correlation between the dependent and independent variables. A significance level of 0.05 or higher is generally accepted in social science research.

3.9 Hypotheses Testing

H1a: GHRM is positively related with employee voluntary green behaviour.

The variables related to GHRM practices and Voluntary green behavior were combined to test the hypotheses. The simple regression model indicated that GHRM practices significantly influence Voluntary green behavior, accounting for 51.9% of the observed variation ($R^2 = 0.521$, Adjusted $R^2 = 0.519$). Thus, GHRM practices effectively explain the variability in Voluntary green behavior.

Table 4.11: Model Summary table

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.722 ^a	.521	.519	.683

a. Predictors: (Constant), MeanGHRM

b. Dependent Variable: MeanVGB

The ANOVA table assesses the relationship between GHRM and Voluntary Green Behavior (VGB). The regression sum of squares (122.689) indicates the variance in VGB explained by GHRM, while the residual sum of squares (112.916) reflects the unexplained variance. The total sum of squares is 235.605. With an F-value of 262.944 and a significance level (Sig.) of .000, the model is highly statistically significant, indicating that GHRM is a strong predictor of VGB and explains a substantial portion of its variance, with a p-value well below 0.05. Table 4.12 presents the ANOVA results.

Table 4.12: ANOVA results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	122.689	1	122.689	262.944	.000 ^b
	Residual	112.916	242	.467		
	Total	235.605	243			

a. Dependent Variable: MeanVGB

b. Predictors: (Constant), MeanGHRM

The null hypothesis, which states that the population partial regression coefficient for the variables is zero, was examined by computing the t-statistic and determining its corresponding observed significance level. The present study provides the empirical results in table 4.13.

Table 4.13: Results of Beta Weights

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.365	.215		1.697	.091
	MeanGHRM	.844	.052	.722	16.216	.000

Based on the findings shown in the table, it can be reliably seen that the researcher has the ability to reject the null hypothesis, which states that the coefficients for GHRM practices (beta= 0.844, t-value= 16.216, p<0.001) are equal to zero. The beta coefficient indicates that GHRM practices have a positive and significant impact on Voluntary green behaviour, so supporting the acceptance of hypothesis H1a in the study.

H1b: GHRM is positively related with employee task related green behaviour.

All variables related to GHRM practices and task-related green behavior were analyzed in a single block to test the hypotheses. The results from the simple regression model show that GHRM practices significantly affect task-related green behavior, accounting for 60.8% of the variation ($R^2 = 0.608$, Adjusted $R^2 = 0.606$). Therefore, GHRM practices effectively explain the observed diversity in task-related green behavior.

Table 4.14: Model Summary table

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.780 ^a	.608	.606	.5884

a. Predictors: (Constant), MeanGHRM

b. Dependent Variable: MeanTRGB

The ANOVA table assesses the relationship between GHRM and TRGB (Task-Related Green Behavior). The regression sum of squares (129.853) reflects the variance in TRGB explained by GHRM, while the residual sum of squares (83.791) indicates the unexplained variance. The total sum of squares (213.644) represents the overall variance in TRGB. With an F-value of 375.032 and a significance level (Sig.) of .000, the model is highly statistically significant, indicating that GHRM is a strong predictor of TRGB. The p-value below 0.05 confirms that GHRM explains a substantial portion of the variance in task-related green behavior.

Table 4.15: ANOVA results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	129.853	1	129.853	375.032	.000 ^b
	Residual	83.791	242	.346		
	Total	213.644	243			

a. Dependent Variable: MeanTRGB

b. Predictors: (Constant), MeanGHRM

The null hypothesis, which states that the population partial regression coefficient for the variables is zero, was examined by computing the t-statistic and determining its corresponding observed significance level. The present study provides the empirical results in table 4.16.

Table 4.16: Results of Beta Weights

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	.478	.185		2.583	.010
	MeanGHRM	.868	.045	.780	19.366	.000

Considering the data in the table, the researcher may confidently refute the null hypothesis that the coefficients for GHRM practices (beta= 0.868, t-value= 19.366, p<0.001) are equal to zero. The beta coefficient indicates that GHRM practices have a positive and significant impact on task-related green behaviour, therefore supporting the acceptance of hypothesis H1b in the study.

H2: Green HRM practices are positively related with employee environmental awareness.

All variables related to GHRM practices and environmental awareness were entered into a single block to test the hypotheses. The simple regression model indicates a significant impact of GHRM practices on employees' environmental consciousness. With an R² of 0.714 and an adjusted R² of 0.713, GHRM practices explain 71.3% of the variance in environmental awareness among employees, as shown in Table 4.17. Thus, GHRM practices effectively account for the variability in environmental awareness among workers.

Table 4.17: Model Summary table

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.845 ^a	.714	.713	.477

a. Predictors: (Constant), MeanGHRM

b. Dependent Variable: MeanEEA

The ANOVA table (Table 4.18) evaluates the relationship between GHRM and Employee Environmental Awareness (EEA). The regression sum of squares (138.037) indicates the variance in EEA explained by GHRM, while the residual sum of squares (55.171) reflects the unexplained variance. The total sum of squares (193.208) accounts for the overall variance in EEA. With an F-value of 605.473 and a significance level (Sig.) of .000, the model is highly statistically significant, indicating that GHRM is a strong predictor of EEA. The low p-value, well below 0.05, shows that GHRM explains a substantial portion of the variance in employee environmental awareness, highlighting the model's strong predictive power.

Table 4.18: ANOVA results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	138.037	1	138.037	605.473	.000 ^b
	Residual	55.171	242	.228		
	Total	193.208	243			

a. Dependent Variable: MeanEEA

b. Predictors: (Constant), MeanGHRM

The null hypothesis, which states that the population partial regression coefficient for the variables is zero, was examined by computing the t-statistic and determining its corresponding observed significance level. The present study provides the empirical results in table 4.19.

Table 4.19: Results of Beta Weights

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	.426	.150		2.835	.005
	MeanGHRM	.895	.036	.845	24.606	.000

The results in the table indicate that the researcher may confidently reject the null hypothesis that the coefficients for GHRM practices (beta= 0.895, t-value= 24.606, p<0.001) are equal to zero. The beta coefficient indicates that GHRM practices have a powerful and statistically significant impact on employee environmental consciousness, therefore supporting the second hypothesis of the study.

H3: Employee environmental awareness is positively related with employee green behaviors.

To examine the hypotheses, all variables related to Employee Environmental Awareness and employee green behaviors were combined into a single block. The analysis of the proposed simple regression model revealed a significant influence of employee environmental awareness on green behaviors. As shown in Table 4.20, 58.6% of the variation in employee green behaviors is explained by employee environmental awareness (R² = 0.586, Adjusted R² = 0.584). Thus, employee environmental knowledge effectively accounts for the diversity in green actions.

Table 4.20

Model Summary table

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.765 ^a	.586	.584	.56554

a. Predictors: (Constant), MeanGHRM

b. Dependent Variable: MeanEGB

The ANOVA table 4.21 assesses the relationship between GHRM and Employee Green Behavior (EGB). The regression sum of squares (109.375) indicates the variance in EGB explained by GHRM, while the residual sum of squares (77.401) represents unexplained variance. The total sum of squares is 186.776. With an F-value of 341.971 and a significance level of .000, the model is highly statistically significant, indicating that GHRM is a strong predictor of EGB. The p-value below 0.05 suggests that GHRM explains a substantial portion of the variance in employee green behavior, demonstrating strong predictive power.

Table 4.21: ANOVA results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	109.375	1	109.375	341.971	.000 ^b
	Residual	77.401	242	.320		
	Total	186.776	243			

a. Dependent Variable: MeanEGB

b. Predictors: (Constant), MeanGHRM

The null hypothesis, which states that the population partial regression coefficient for the variables is zero, was examined by computing the t-statistic and determining its corresponding observed significance level. The present study provides the empirical results in table 4.22.

Table 4.22

Results of Beta Weights

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.840	.169		4.979	.000
	MeanGHRM	.752	.041	.765	18.492	.000

The results in the table indicate that the researcher may confidently reject the null hypothesis that the coefficients

for Employee environmental awareness (beta= 0.752, t-value= 18.492, p<0.001) are equal to zero. The beta coefficient indicates that there is a high and statistically significant beneficial impact of employee environmental awareness on employee green behaviors, so supporting hypothesis H3 of the study.

3.10 Mediation Hypothesis

H4: Employee environmental awareness mediates the relationship between green HRM practices and employee green behaviour.

The methodology chapter employs Preacher and Hayes (2004) methods to analyze the mediating role of Employee Environmental Awareness in the relationship between GHRM practices and Employee Green Behavior. Using bootstrap tests, the study produces an empirical sample distribution based on 95% confidence intervals ($p < 0$). The lower and upper bounds are set at 2.5% and 97.5%, respectively. Data are analyzed using the Process Macro in SPSS, with Employee Green Behavior as the dependent variable, GHRM practices as the independent variable, and Employee Environmental Awareness as the mediator. With 1,000 bootstrap samples and a 95% confidence level, the "Indirect Effect" table shows LLCI and ULCI values of 0.0203 and 0.4741, indicating a statistically significant mediation effect. Thus, the mediation hypothesis (H4) is confirmed.

The coefficients a, b, and c are calculated to assess the mediation type. The direct effect (c) is statistically significant (beta = 0.639, $p < .001$), indicating a substantial direct influence. Given the significant direct and indirect impacts, Employee Environmental Awareness is found to partially mediate the relationship between GHRM practices and employee green behaviors.

Table 4.23: Mediation Analysis

Relationship	Total Effect		Direct Effect		Indirect Effect		
	Beta	Sig.	Beta	Sig.	Beta	LLCI	ULCI
GHRM Practices ----> EA ----> EGB	.855	.000	.639	.000	.208	.0203	.4741

The following table shows the summary of all the hypotheses tested in the current study.

Table 4.24: Results of all hypothesis

No	Statement	Results
H1a	GHRM is positively related with employee voluntary green behaviour.	Accepted
H1b	GHRM is positively related with employee task related green behaviour.	Accepted
H2	GHRM practices are positively related with employee environmental awareness.	Accepted
H3	Employee environmental awareness is positively related with employee green behaviors.	Accepted
H4	Employee environmental awareness mediates the relationship between GHRM practices and employee green behaviour.	Accepted

4. Discussion and Conclusions

H1a: GHRM is positively related to employee voluntary green behavior.

H1b: GHRM is positively related to employee task-related green behavior.

H2: GHRM practices are positively related to employee environmental awareness.

Employee environmental awareness is positively related to employee green behaviors.

4.1 Hypothesis Results

H1a posits a positive relationship between GHRM practices in Pakistan's tourism sector and Employee Voluntary Green Behavior (EVGB). The results indicate a significant positive correlation (beta = 0.844, $p < 0.001$), consistent with findings by Suleman et al. (2023) and others. This aligns with the AMO theory, which asserts that HRM practices enhance individual green behavior by improving employee capacity, motivation, and opportunities.

H1b suggests a positive link between GHRM practices and Employee Task-Related Green Behavior (ETGB). The study confirms this with a strong beta weight of 0.868 ($p < 0.001$). Previous research also supports this relationship, indicating that integrating green criteria into GHRM practices fosters environmentally friendly behavior among employees, thereby improving workplace performance.

H2 proposes a positive relationship between GHRM practices and Employee Environmental Awareness (EEA). The results show a strong correlation ($\beta = 0.859$, $p < 0.001$), highlighting GHRM's role in enhancing employee sustainability awareness and commitment. GHRM aims to educate staff about environmental management and its benefits, which fosters a more environmentally conscious workforce.

H3 states that EEA is positively related to Employee Green Behavior (EGB). The current study confirms this with a significant correlation ($\beta = 0.752$, $p < 0.001$), consistent with previous research. EEA enhances employees' integration of eco-friendly practices into their routines, leading to greener workplace policies.

4.1.2 Discussion of the indirect hypothesis of the study

This study propose a single mediation hypothesis that are given below:

H4: Employee environmental awareness mediates the relationship between green HRM practices and employee green behaviour.

The result of the current study show that EEA partially mediate the relationship between GHRM practices and EGB. The indirect path between the constructs of GHRM practices and EGB is significant and positive (i.e. $\beta = 0.208$; LLCI = 0.0203; ULCI = 0.4741). However, the direct path between GHRM practices and EGB is also significant ($\beta = 0.639$ at $P < 0.001$), which means a partial mediation of EEA. The empirical evidence supporting H4 validates the substantial indirect relationship between GHRM Practices and EGB through the mediating influence of EEA. These findings, consistent with the research conducted by Kim et al. (2019) and Roscoe et al. (2019), indicate that when employees possess a more comprehensive knowledge of the environment and are aware of their ability to make a substantial impact on its preservation, they take on the duty of actively participating in environmental matters and activities. It is possible to argue that the EEA that is the consequence of GHRM practices has the potential to support environmentally responsible acts in the workplace, such as the adoption of projects for environmental protection and conservation. GHRM practices, when implemented through environmental education and trainings, create a culture that is beneficial to the environment and educate employees on the numerous elements and concepts of environmental management that are important to achieve environmental goals (Chaudhary, 2020). GHRM practices strive to promote the variety of abilities and work relevance among employees by building a common environmental vision, goal, and objectives, as stated by Shafaei et al. (2020). The findings of this study provide more evidence to support the assertions made by Shafaei et al. (2020). According to Shafaei et al.'s research from 2020, it also increases the environmental consciousness of employees through various training programme activities.

5. Contributions of the Current Study

This study significantly contributes to the literature on human resource management (HRM), specifically in the context of green human resource management (GHRM) within the hospitality industry. The primary aim is to explore the recent shift in hospitality management research from employee performance analysis to the examination of employee green behavior (EGB) in the hotel sector.

The study emphasizes environmental conservation in sectors like tourism and hospitality, building on recent empirical work by Alzubaidi et al. (2021) and Kim and Stepchenkova (2020) by specifically analyzing employee task-related green behavior (ETGB) and employee voluntary green behavior (EVGB). Utilizing signaling theory (Connelly et al., 2011), the research clarifies how GHRM influences EGB through employee environmental awareness (EEA) and demonstrates the mediating role of EEA—a mechanism not extensively explored in previous studies.

Additionally, the research provides empirical evidence of how GHRM encourages environmentally friendly actions within organizations, enhancing our understanding of the relationship between organizational practices and employee behavior in achieving sustainability goals.

Ultimately, this study shows that GHRM can effectively predict EGB, particularly ETGB and EVGB, by integrating theoretical models with empirical research. It addresses the gap in literature regarding the relationship

between GHRM and EGB, contributing to the understanding of how GHRM impacts employee outcomes and the motivational mechanisms involved.

6. Managerial Contributions of the Study

This research offers practical contributions for decision-makers in public policy, experts, and organizations, emphasizing the need for regulations that encourage environmentally conscious behaviors in the tourism and hospitality sectors. While the study does not adopt a macro perspective, it advocates for policies that promote impact assessments and waste management systems, including technical regulations on emissions and energy use.

The study argues that corporate responsibility for environmental sustainability is more critical than individual actions. A green organizational culture fosters eco-friendly attitudes and initiatives, motivating employees to engage in conservation efforts. The hospitality industry should adopt transformative practices that align with international environmental standards, particularly in recruitment, performance evaluation, and training.

To encourage pro-environmental behaviors, both intrinsic and extrinsic incentives should be implemented. Extrinsic rewards might include monetary bonuses, while intrinsic rewards could involve recognition programs like "green employee of the month." Ongoing training initiatives should enhance employees' green skills and knowledge, with leadership providing clear direction towards environmental goals.

In line with the 2018 United Nations General Assembly theme on sustainable societies, the study highlights the importance of protecting natural resources and promoting sustainable work environments to reduce future socio-environmental costs. The findings provide HRM managers with data on the significance of green HRM practices for executing environmental policies effectively.

To achieve environmental goals, companies must reorganize responsibilities and provide structured training on ecological issues. Incorporating sustainable practices into recruitment and performance management can attract candidates aligned with environmental commitments. Developing key performance indicators for environmental behaviors can improve employees' perceptions of their roles and the fairness of reward systems, fostering greater involvement in pro-environmental activities. Establishing official and informal communication channels will further engage employees in addressing environmental challenges.

7. Study Limitations and Future Research Directions

Although the current work has made significant contributions and presented important consequences, it also has certain drawbacks that might be considered as potential areas for future research. Firstly, this study concentrated on GHRM practices to offer insights into EGB and yielded intriguing results. However, follow-up research could concentrate on a particular green management strategy, such as criteria for personnel recruitment, green training, or green leadership. In addition, given that the literature contains a number of different categories of environmental performance, it is possible that future study might investigate additional potential results of GHRM. These outcomes could include green innovation and green consumer behavior. A cross-sectional survey was used to collect data for this study, which was a quantitative investigation that was the only type of inquiry that was investigated. As a consequence of this, it is strongly recommended to take into consideration qualitative research or a mixed-methods strategy that contains a postponement of the data collection process. Thirdly, the current research was only conducted on one nation (Pakistan) and one industry (hotels), which is a specific limitation. The organization's attempts to create environmental policies and fulfill goals associated to sustainability might be hindered or strengthened by differences in the physical, regulatory, and cultural environments. These differences can either restrict or boost the organization's efforts. In addition, the cultural circumstances may have an effect on how workers perceive and comprehend the policies and practices of the firm in green human resource management (GHRM). Consequently, the applicability of the current findings should be further improved by examining the existing model in situations that span several cultures and industries. Furthermore, despite the fact that GHRM incorporates a number of management practices, theoretical research demonstrates that different HRM methods focus different components and have different impacts on employees. Subsequent research may concentrate on analyzing the individual impacts of green employee performance evaluation, green employee recruiting, and green employee training on environmental, social, and governance practice

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