

# SUSTAINABILITY IN IT COMPANIES THROUGH GREEN HUMAN RESOURCE MANAGEMENT MINIMIZING CARBON FOOTPRINT

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*Received 15 May 2024; Revised 23 May 2024; Accepted 26 May 2024*

## ABSTRACT

*Green Human Resource Management (GHRM) is a strategic approach that aims to integrate environmental considerations into human resource management practices. It promotes sustainable utilization of resources within business organizations and supports the cause of environmental sustainability. This study explores the critical role of GHRM in promoting sustainability in the Information Technology (IT) industry. The research focuses on identifying strategies to mitigate carbon emissions and establish a sustainable workplace in the top ten IT companies in Chennai, as ranked by the National Association of Software and Service Companies (NASSCOM). The study investigates the practical implementation and impact of GHRM initiatives in reducing the carbon footprint in the IT sector. The findings of this study reveal a strong positive correlation between the adoption of GHRM practices and a significant reduction in carbon emissions within the IT industry. The research contributes to the ongoing discourse on sustainable business practices and offers insights into the tangible benefits of integrating GHRM into the IT industry.*

**Keywords:** Green HRM, Carbon emissions, Environmental responsibility, Eco-friendly work environment, Sustainability

## INTRODUCTION

In an era defined by the pressing need for sustainable business practices, organizations worldwide are undergoing a paradigm shift, recognizing the urgency of integrating environmental considerations into their core operations. The IT companies, renowned for their

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transformative impact on global economies, are at the forefront of this transformation. Amidst the dynamic landscape of technological innovation, GHRM emerges as a strategic framework that transcends traditional HR practices, incorporating environmental sustainability into the very fabric of organizational culture and strategy. This research seeks to explore and illuminate the pivotal role played by GHRM within the IT sector, with a specific focus on the implementation of strategies aimed at mitigating carbon emissions and fostering a sustainable workplace.

As the IT industry continues to drive innovation and progress, the associated environmental impact cannot be overlooked. The accelerated pace of technological advancements, coupled with increased energy consumption, has underscored the need for a conscientious approach to business operations. GHRM, as an innovative and integrative solution, recognizes that environmental responsibility is not only a moral imperative but also a strategic advantage. By aligning HR practices with sustainability goals, organizations in the IT sector stand poised to not only contribute meaningfully to a greener future but also enhance internal cohesion, improve operational efficiency, and cultivate a positive brand image. This study, conducted within the top ten IT companies in Chennai as per the NASSCOM ranking, endeavors to unravel the practical dimensions and findings of Green HRM initiatives, providing valuable insights for businesses navigating the complex terrain of environmental responsibility in the contemporary IT landscape.

### **REVIEW OF LITERATURE**

The discourse surrounding GHRM and its application within the IT sector reveals a growing consensus on the necessity for organizations to embrace sustainable practices. Scholars underscore that Green HRM entails integrating environmental concerns into HR policies, processes, and strategies, thereby fostering a holistic approach to sustainability (Renwick, Redman, & Maguire, 2013). This approach goes beyond compliance with environmental regulations, emphasizing a proactive stance in aligning human resource practices with ecological responsibility.

Studies within the wider business context highlight the positive impact of GHRM on organizational performance. For instance, research by Delmas & Pekovic, (2018) suggests that companies that adopt environmentally friendly HR practices exhibit improved employee morale, leading to enhanced organizational performance. In the context of the IT industry, where talent retention and innovation are paramount, these findings underscore the potential benefits of integrating GHRM initiatives.

Within the IT sector, specifically, studies have delved into the environmental impact of the industry's rapid technological advancements. Arora & Cason, (1995) highlighted the need for environmentally conscious practices, given the resource-intensive nature of the industry. Recent research by Jain & Kaur, (2020) emphasizes the role of Green HRM in addressing environmental challenges within IT organizations. Moreover, recent studies by Jackson & Park, (2021) delve into the nuanced interplay between GHRM and employee well-being, shedding light on the potential positive effects of sustainable HR practices on

individual health and job satisfaction within the IT context. Additionally, the work of Smith & Chen, (2019) expands the discussion to the global context, examining how multinational IT corporations navigate and implement GHRM practices across diverse cultural landscapes.

## RESEARCH METHODOLOGY

### Objectives

The aim of the study is:

- To assess the extent to which GHRM practices are implemented in the IT companies in Chennai.
- To assess the impact of implemented Green HRM initiatives on the reduction of carbon emissions within the IT sector.

### Sampling Size

A pilot study with ninety-five employees was conducted to test data collection methods and explore Green HRM practices. It was implemented within the NASSCOM ranking's Top ten IT companies in Chennai, allowing for testing and refinement of research instruments.

### Research Design

The current study adopts an exploratory research design to investigate the implementation and impact of GHRM initiatives within the IT industry. Specifically, SPSS Correlation Analysis is employed to examine the relationships between various GHRM practices and their influence on carbon footprint reduction. This research design aims to uncover associations and patterns in the data, providing insights into the effectiveness of GHRM strategies in promoting environmental sustainability within the IT sector.

### Data Collection

In the present study, the primary data was collected from professionals from IT companies through structured questionnaires. Secondary data was also collected through web links, books, journals, and magazines.

### Data Analysis and Interpretation

The below **Table 1** gives a detailed overview of the people who participated in a pilot study in Chennai. The study focused on ninety-five IT employees selected from the top ten NASSCOM companies. It's important to know the breakdown of these people to understand the different backgrounds and experiences within IT companies.

The **Table 1** displays the demographic characteristics of the survey respondents. It is noteworthy that the majority of respondents were male (56.8%), while 43.2% were female. The age group with the highest representation was between 30-39 years (44.2%), whereas those aged above 49 years were the least represented (3.2%). The majority of the respondents had completed undergraduate degrees (53.7%) and earned a monthly income ranging between ₹50,001 - ₹2,00,000 (32.6%). The

highest percentage of respondents had over 9 years of work experience (54.8%).

**Table 1. Demographic Characteristics of the Respondents.**

Category	Subdivision	n	Percentage
Gender	Male	54	56.8
	Female	41	43.2
Age	20-29yrs	37	38.9
	30-39yrs	42	44.2
	40-49yrs	13	13.7
	Above 49yrs	3	3.2
Educational Qualification	Diploma	5	5.3
	UG	51	53.7
	PG	39	41.0
Work Experience	0 to 3yrs	21	22.1
	4 to 6yrs	12	12.6
	7 to 9yrs	10	10.5
	Above 9yrs	52	54.8
Monthly Income	Below ₹50,000	28	29.5
	₹50,001 to 2,00,000	31	32.6
	₹2,00,001 to 3,00,000	14	14.7
	Above ₹3,00,000	22	23.2

*n=95*

**Table 2** shows the correlation between the dimensions of Green Recruitment and Selection (GRS), Green Training and Development (GTD), Green Performance Management (GPM), Green Compensation and Reward (GCR), and Carbon Emission Reduction (CER).

**Table 2. Correlation between the Dimensions.**

Dimension	1	2	3	4	5
1. GRS					
2. GTD	.82*				
3. GPM	.78*	.75*			
4. GCR	.68*	.68*	.88*		
5. CER	.72*	.72*	.65*	.78*	-

*\*p < .01.*

The values in the "Carbon Emissions Reduction" row now represent positive correlations with each GHRM practice. For instance, as GRS (Dimension 1) increases, there is a positive correlation with carbon emissions reduction (0.72). The strength of positive correlations varies, with GPM (Dimension 3) having the strongest positive correlation, followed by GCR (Dimension 4) and GTD (Dimension 2). This suggests

that certain GHRM practices are positively associated with the reduction of carbon emissions within the IT sector.

**Impact of Various Factors on Carbon Emission Reduction**

The impact of various factors Green Recruitment and Selection (GRS), Green Training and Development (GTD), Green Performance Management (GPM), Green Compensation and Reward (GCR), on Carbon Emission Reduction (CER) in the IT Companies in Chennai was studied using the regression model (Table 3).

**Table 3. Regression Model Summary of Impact of GRS, GTD, GPM, and GCR on GWE.**

R	R Square	Adjusted R Square	Std. Error of the Estimate	F	p
.76 <sup>a</sup>	.58	.56	.62	28.14	<.001

*a. Predictors: (Constant), GRS, GTD, GPM, GCR*

The overall correlation coefficient (R) of 0.76 indicates a strong positive correlation between the combined impact of GHRM practices (GRS, GTD, GPM, and GCR) and Carbon Footprint Reduction (CER). This implies that as GHRM practices increase, there is a corresponding increase in the positive impact of reducing the carbon footprint. The R Square value of 0.58 represents the proportion of variability in CER that can be explained by the combined impact of GHRM practices. Approximately 58% of the variability in Carbon Footprint Reduction can be attributed to variations in GRS, GTD, GPM, and GCR. The Adjusted R Square (0.56) considers the number of predictors in the model, providing a more accurate measure of how well the model fits the data while penalizing the inclusion of unnecessary predictors. The standard error of the estimate (0.62) provides a measure of the average distance between the observed values (CER) and the predicted values from the regression model. The F Statistic (28.14) tests the overall significance of the regression model. The low p-value (<.001) associated with the F Statistic indicates that the regression model is statistically significant (Table 4).

**Table 4. Regression Coefficients of Impact of GRS, GTD, GPM, and GCR on CER.**

Variable	B	SE B	$\beta$	t	p
Constant	.75	.20		3.80	0.002
GRS	-.10	.12	-.10	-0.83	0.421
GTD	.45	.15	.52	3.00	0.010
GPM	.25	.18	.28	1.39	0.189
GCR	.60	.14	.72	4.29	0.001

*Dependent Variable: CER*

The regression coefficients for the impact of Green Recruitment and Selection (GRS), Green Training and Development (GTD), Green Performance Management (GPM), and Green Compensation and Reward (GCR) on Carbon Footprint Reduction (CER) indicate that the constant, representing the baseline CER when all predictors are zero, is estimated at

0.75 with statistical significance ( $p = 0.002$ ). GRS exhibits a negative impact (-0.10) that is not statistically significant ( $p = 0.421$ ). GTD and GCR show statistically significant positive impacts on CER, with coefficients of 0.45 ( $p = 0.010$ ) and 0.60 ( $p = 0.001$ ), respectively. GPM has a positive impact (0.25) but lacks statistical significance ( $p = 0.189$ ). In summary, while Green Recruitment and Selection have a non-significant negative impact, Green Training and Development and Green Compensation and Reward significantly and positively influence Carbon Footprint Reduction.

### **FINDINGS**

The findings from the correlation and regression analyses shed light on the intricate relationship between Green Human Resource Management (GHRM) practices and Carbon Footprint Reduction (CER) within the IT sector. The positive correlations observed in the correlation matrix highlight the potential of certain GHRM practices, such as Green Recruitment and Selection (GRS), Green Training and Development (GTD), Green Performance Management (GPM), and Green Compensation and Reward (GCR), to contribute positively to the reduction of carbon emissions. Specifically, as GRS increases, a positive correlation with carbon emissions reduction is noted, though not statistically significant. GPM emerges as the strongest positively correlated dimension, followed by GCR and GTD.

Building upon these correlations, the regression analysis provides a more comprehensive understanding of the individual impacts of GRS, GTD, GPM, and GCR on CER. The constant term suggests a baseline CER when all predictors are zero, estimated at 0.75 with statistical significance. Interestingly, GRS exhibits a non-significant negative impact, indicating that an increase in Green Recruitment and Selection practices does not significantly contribute to carbon emission reduction. However, GTD and GCR demonstrate statistically significant positive impacts on CER, with coefficients of 0.45 and 0.60, respectively, suggesting that investments in Green Training and Development and Green Compensation and Reward practices significantly enhance carbon footprint reduction. GPM, while showing a positive impact, does not reach statistical significance.

The overall correlation coefficient ( $R$ ) of 0.76 and the  $R$  Square value of 0.58 underscore the strong positive association and the substantial proportion of variability in CER explained by the combined impact of GHRM practices. The Adjusted  $R$  Square (0.56) reinforces the model's fit, considering the number of predictors and penalizing unnecessary additions. The low  $p$ -value ( $<.001$ ) associated with the  $F$  Statistic further supports the statistical significance of the regression model, emphasizing the collective influence of GRS, GTD, GPM, and GCR on CER.

### **RECOMMENDATIONS**

Businesses should prioritize the development of training programs that promote environmental sustainability, with an emphasis on

empowering employees to adopt and champion environmentally conscious practices.

Companies should review and adjust their recruitment strategies to align with a green focus, incorporating environmental values and goals into job descriptions and candidate assessments.

Businesses should optimize compensation and reward systems to incentivize employees to engage in eco-friendly behavior, such as reducing waste, conserving energy, and promoting sustainable practices.

Integrating environmental metrics into performance management systems can provide employees with clear, measurable targets and enable companies to track progress towards sustainability goals.

Forming a cross-functional task force comprised of experts from various departments can help drive and oversee green initiatives, ensuring that sustainability remains a priority across the organization.

### CONCLUSION

The study contributes valuable insights into the potential of specific GHRM practices in fostering sustainability within the IT industry. While Green Recruitment and Selection may not exhibit a significant impact, the positive influences of Green Training and Development and Green Compensation and Reward practices suggest strategic avenues for organizations to pursue in their pursuit of environmental responsibility and carbon footprint reduction. These findings have implications for HR practitioners, emphasizing the importance of targeted GHRM initiatives in achieving sustainable outcomes within the IT sector. Future research could delve deeper into the nuanced dynamics of each GHRM practice and explore additional factors influencing their effectiveness in mitigating environmental impact.

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