



ANALYZING THE IMPACT OF AGE GROUPS ON GREEN HRM ADOPTION: EMPIRICAL EVIDENCE FROM SELECTED IT FIRMS IN ODISHA

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ABSTRACT

Driven by escalating environmental demands, service sector firms are actively integrating sustainability into their corporate structures, yet the demographic micro-foundations influencing workplace transitions remain under-explored. The primary objective of this study was to determine the relationship between employee age groups and the adoption level of Green Human Resource Management (GHRM) practices within the service sector. Adopting a quantitative, cross-sectional design, primary data were collected from 300 respondents across IT companies and academic institutions. Given the ordinal data structure, non-parametric analysis was executed using Spearman's Rank Correlation within IBM SPSS. The findings revealed a positive correlation coefficient with a statistically significant value. In conclusion, although the relationship is significant, the exceptionally weak correlation coefficient implies that age acts as a minor influencer. Actual workplace environmental adoption is driven more by macro-organizational culture and digital infrastructure than generational boundaries, suggesting HR executives should build inclusive, universal GHRM frameworks.

KEYWORDS: Green Human Resource Management (GHRM), IT Sector, Age Groups, Adoption level, SPSS, Spearman's Rank Correlation

I. INTRODUCTION

I.1 Green Human Resource Management (GHRM) Practices

Green Human Resource Management (GHRM) practices represent the strategic integration of environmental sustainability objectives directly into the traditional functional areas of human resource management. Rather than treating ecological initiatives as isolated corporate social responsibility projects or secondary compliance tasks, GHRM systematically embeds eco-friendly policies throughout the entire lifecycle of an employee. The foundational purpose of these practices is to alter individual mindsets, nurture proactive environmental behaviors, and establish an organizational culture where ecological preservation is treated as a core collective responsibility. By transforming standard operational procedures into environmentally conscious workflows, GHRM enables modern organizations to effectively build, sustain, and motivate an eco-literate workforce capable of minimizing operational waste and driving sustainable development.

In practical execution, GHRM operates through a series of interconnected functional pillars, beginning with Green Recruitment and Selection (GRS). This practice focuses on attracting talent by positioning the organization as an eco-conscious brand, incorporating environmental responsibilities explicitly into job descriptions, utilizing entirely paperless digital hiring processes, and giving clear preference to job candidates who demonstrate strong baseline environmental awareness and shared sustainability values. Once these individuals are onboarded, Green Training and Development (GTD) takes over to ensure continuous professional education

regarding environmental preservation. This involves conducting regular workshops, seminars, and simulation programs that train employees on practical carbon footprint reduction, energy conservation methods, systematic workplace waste management, and the implementation of eco-friendly behaviors in their daily technical tasks.

To ensure long-term consistency and internal compliance with these sustainability goals, organizations deploy Green Performance Management and Appraisal (GPMA). This pillar establishes high workplace accountability by incorporating explicit environmental targets and sustainability metrics directly into the formal employee evaluation process, thereby measuring an individual's professional performance against their contribution to the firm's ecological benchmarks. Finally, to sustain psychological engagement and reinforce these behaviors, Green Compensation and Rewards (GCR) frameworks are introduced. This involves utilizing both monetary and non-monetary incentives—such as green bonuses, sustainability-focused promotions, and public recognition awards—for employees who pioneer waste-reduction initiatives or display exceptional, consistent commitment to the organization's overarching green vision. Through this comprehensive framework, GHRM translates high-level corporate environmental policies into actionable, daily workforce behaviors.

I. 2 Age group and adoption level

The adoption and internalization of Green Human Resource Management (GHRM) practices are heavily influenced by the demographic composition of an organization's workforce.



Among various demographic factors, age serves as a primary lens through which employees perceive, evaluate, and engage with ecological initiatives. Different generations bring distinct sets of values, workplace expectations, and environmental perspectives to an organization. Consequently, understanding the intersection between age groups and GHRM adoption levels is critical for organizations seeking to transition smoothly into sustainable operational frameworks without alienating segments of their workforce.

Research into generational cohorts frequently highlights varying baselines of environmental consciousness and tech-adaptability across age groups. Younger employees, typically comprising Millennials and Generation Z, are characterized as digital natives who exhibit a high degree of climate anxiety and a strong psychological preference for purpose-driven employment. For these cohorts, the adoption level of green practices—such as paperless digital recruitment, virtual onboarding, and eco-training—is often high, as these initiatives align closely with their personal values. They tend to view GHRM not merely as a corporate mandate, but as a critical yardstick for assessing organizational integrity and workplace ethics.

In contrast, mature age brackets and senior organizational cohorts often bring an approach shaped by structural expertise, long-term operational familiarity, and established change management principles. While older employees may fully support environmental preservation, their interaction with GHRM adoption might focus on structural consistency, cost-effectiveness, and the practical execution of policy metrics rather than ideological alignment. Furthermore, if green transitions involve shifting toward complex digital workflows or changing long-standing administrative behaviors, variations in adoption speeds can emerge between different generations.

Ultimately, an organization's overall GHRM adoption level is not uniform; it is a composite reflection of how different age cohorts receive and execute these policies. High institutional adoption is achieved when green initiatives are designed to bridge these generational perspectives. By analyzing the relationship between age groups and adoption levels, human resource strategists can move away from rigid, "one-size-fits-all" implementations. Instead, they can design targeted communication channels, generationally balanced incentive structures, and inclusive green training modules that leverage the strengths of a multi-generational workforce to achieve sustainable corporate goals.

II. REVIEW OF LITERATURE

II. 1 Literature Review

(Ayani, 2025) examines the influence of Generation Z on Human Resource Management (HRM) practices. Generation Z, born between the mid-1990s and early 2010s, has grown up in a technology-driven world, making them highly tech-savvy, socially aware, and accustomed to instant communication and feedback. As they enter the workforce, organizations must adapt their HRM strategies to meet their expectations and preferences. Based on a review of existing literature, reports, and studies, the research found that Generation Z employees

value work-life balance, workplace flexibility, meaningful work, career growth opportunities, and a positive organizational culture. They also prefer continuous feedback instead of traditional annual performance reviews. To effectively attract, engage, and retain this generation, HRM practices should include flexible work arrangements, regular communication, digital tools, and employee development programs. The study concludes that while Generation Z presents certain challenges for organizations, it also offers opportunities for innovation and improved workplace practices. Understanding their characteristics and adapting HR strategies accordingly is essential for building a motivated, productive, and future-ready workforce in the digital era. (Manoj et al., 2025) examine how Green Human Resource Management (GHRM) encourages Generation Z graduates to pursue sustainable careers and develop environmental values. Using Structural Equation Modeling (SEM), the research compares the views of graduates and employees regarding GHRM practices. The findings show that GHRM promotes social responsibility, career development, and sustainability-oriented behavior while preparing graduates to handle environmental challenges. The study concludes that adopting GHRM practices in organizations and educational institutions helps create a skilled and sustainability-focused future workforce. Institutional adoption of GHRM features directly corresponds to an influx of environmentally conscious young human capital. (Francis and Dheera, 2025) This study examines the influence of Green Human Resource Management (Green HRM) practices on employee engagement and organizational citizenship behavior for the environment (OCBE), with a special focus on Generation Z. Using data from 400 respondents across four generational groups, the research analyzes the impact of green recruitment, green training, sustainable performance appraisal, and eco-centric organizational culture through statistical tools such as ANOVA, correlation, and regression analysis. The findings reveal that Generation Z demonstrates the highest positive perception of Green HRM practices and shows a strong relationship between these practices and employee engagement. Among the various Green HRM practices, green training and green performance appraisal emerged as the most significant predictors of Gen Z engagement. The study emphasizes the importance of aligning sustainability-focused HR strategies with generational expectations. It concludes that organizations can improve employee retention, engagement, and environmental performance by adopting tailored Green HRM practices that address the preferences and values of a multigenerational workforce. (Madhy et al., 2023) focused on developing an in-depth understanding of Green Human Resource Management (GHRM) in the field of management and business through a systematic literature review. The researchers analyzed scientific articles published in Google Scholar between 2006 and 2022. Out of 925 identified articles, 131 highly relevant studies were selected based on specific inclusion criteria. The research aimed to examine the impact of GHRM practices on organizations and identify their major benefits, implementation mechanisms, and procedures. The findings revealed that GHRM practices play a significant role in organizational survival, sustainability, and environmental protection. The study concluded that adopting green HRM practices helps organizations achieve long-term



growth while contributing to global environmental conservation. Additionally, the researchers proposed a theoretical model explaining the outcomes and added values generated through the implementation of GHRM practices in organizations. (Gupta, 2022) aimed to examine the role of employee demographic variables such as age, experience, and grade in influencing employees' attitudes toward Human Resource (HR) practices in Metro Rail service sector organizations in India. A quantitative research methodology was adopted, and the Independent Sample t-test was used as the primary statistical tool to analyze the impact of demographic characteristics on selective HR practices. The findings revealed that demographic variables significantly influenced employees' perceptions and attitudes toward HR policies and practices. The study concluded that demographic diversity plays an important role in the effectiveness of Human Resource Management (HRM), and organizations should consider demographic differences while formulating and implementing HR strategies to enhance employee satisfaction and organizational effectiveness. (Saeed et al., 2018) examined the impact of perceived Green HRM practices on employee ecological behaviors and tested the moderating role of generational age brackets (Gen X vs. Gen Y) in corporate service settings. A quantitative questionnaire was administered to a sample of 340 corporate service employees, and structural equation modeling (SEM) via AMOS was utilized to run multi-group invariance tests across the distinct age cohorts. The analysis confirmed that green recruitment and green involvement positively shape employee green behavior, but the multi-group invariance tests revealed that the relationship between green involvement and proactive ecological behaviors was significantly stronger among the younger Millennial generation (Gen Y) compared to the older Gen X group, indicating that younger age brackets demand higher autonomy in executing green solutions. The study concluded that younger generations possess a more pronounced desire for active involvement in environmental strategies, meaning that expanding employee participation channels can accelerate GHRM adoption within young workforces. Anwar et al., (2020) assessed the relationship between GHRM practices (recruitment, training, appraisal, and rewards) and environmental performance, while exploring the variance introduced by basic employee demographics like age. The research employed a cross-sectional survey design, sampling 215 higher-tier employees in service organizations, verifying hypotheses through regression models, and testing demographic differences using ANOVA models. The study confirmed a strong, positive link between comprehensive GHRM adoption and overall corporate environmental performance, but the demographic variance analysis demonstrated that employee age groups significantly differentiated the outcomes of green reward systems, as younger employees felt highly motivated by public environmental validation, whereas older age categories prioritized tangible benefits and health assurances. The authors concluded that to maximize the adoption of environmental initiatives, HR strategists must customize their motivational reward frameworks according to the generational profiles of their employees.

(Yusliza et al., 2021) aimed to examine the relationship between perceived Green Human Resource Management (GHRM), employee engagement, job performance, perceived organizational support (POS), and turnover intention. A quantitative research approach was adopted using a self-administered questionnaire, and data were collected from 202 employees through the snowball sampling method. The data were analyzed using Partial Least Squares-Structural Equation Modelling (PLS-SEM) with SmartPLS-3 software. Based on Social Exchange Theory, the findings revealed that employee engagement mediates the relationship between perceived GHRM and both job performance and turnover intention. The study also found that perceived GHRM significantly enhances employee engagement, while POS acts as a significant moderator between employee engagement and outcome variables. The research concluded that organizations, particularly in the manufacturing sector, should emphasize GHRM practices and organizational support to improve employee engagement, enhance job performance, and reduce employee turnover. (Pham et al., 2019) analyzed the direct impact of green performance appraisal and green training on employee green behavior, and tested whether demographic factors like age introduce significant differences in these relationships within the hospitality service sector. The authors gathered quantitative data using a primary survey tool from 420 staff members across service hotels, processing the data with multi-group regression techniques to assess differences across age groups, experience tiers, and gender lines. The statistical analysis confirmed that both green training and performance appraisals positively influence employee commitment to environmental strategies, but the age group breakdown revealed that the effect of green training on eco-friendly behaviors was more pronounced among younger workforce cohorts, who actively sought out opportunities to improve their environmental skills. The study concluded that younger age groups show high developmental interest in sustainability, and advised hospitality managers to maximize green training investments for younger cohorts to drive faster adoption. (Dumont et al., 2016) conceptualized and tested a model linking perceived GHRM practices to both in-role and extra-role green workplace behaviors among corporate employees. A descriptive quantitative survey design was executed, sampling 262 corporate service professionals and evaluating hierarchical regression analysis and structural mediation models using SPSS software. The empirical model established that GHRM practices positively influence extra-role green behaviors by fostering a shared psychological green climate, but the demographic analysis revealed that age groups display varying baseline expectations within this green climate, where younger employees expect authentic sustainability values, whereas older employees focus more on operational consistency and functional performance metrics. The authors concluded that the psychological success of GHRM adoption depends on aligning corporate messaging with generational expectations, ensuring that green initiatives resonate across all age levels.



II.2 Research Gaps

Conflating Green Resistance with Digital Resistance in Mature Age Groups

Modern GHRM transitions rely heavily on digitized workflows, including cloud-based evaluations and e-learning platforms. Current demographic studies frequently observe lower adoption scores among older cohorts but fail to isolate whether this resistance stems from an ideological opposition to sustainability principles or a technical learning lag associated with software adaptability.

Lack of Comparative Cross-Sector Empirical Mapping

Most demographic GHRM models utilize data from manufacturing, supply chain, or heavy industrial sectors. There is a distinct scarcity of literature evaluating how the age-adoption relationship shifts across different service landscapes, specifically comparing highly agile, digital fields (like IT companies) with structured, policy-driven administrative environments (like Academic Institutions).

Generational Mismatches in Green Reward System Descriptors

Human resource frameworks often assume that Green Compensation and Rewards (GCR) motivate all age brackets uniformly. However, a significant gap exists regarding how different generations value incentives, failing to explore if younger workers prioritize non-monetary descriptors (recognition, well-being) while older cohorts respond better to structural motivators (promotions, career stability).

V. DATA ANALYSIS

Correlations				
			2. Age Group	4. Has your organization implemented any Green HRM practices?
Spearman's rho	2. Age Group	Correlation Coefficient	1.000	.116*
		Sig. (2-tailed)		.038
		N	318	318
	4. Has your organization implemented any Green HRM practices?	Correlation Coefficient	.116*	1.000
		Sig. (2-tailed)	.038	
		N	318	318

*. Correlation is significant at the 0.05 level (2-tailed).

Table: 5.1 Correlation

Source: SPSS (Compiled by author)

Spearman's rank correlation analysis was conducted to examine the relationship between respondents' age group and the implementation of Green Human Resource Management (Green HRM)-related training within organizations. The analysis was performed using data collected from 318 respondents. Spearman's rho was selected as the appropriate statistical technique because the variables involved were ordinal in nature and suitable for non-parametric correlation analysis. The results of the analysis revealed a correlation

III. RESEARCH OBJECTIVES AND HYPOTHESIS

To determine the relationship between employee age groups and the adoption level of Green Human Resource Management (GHRM) practices in the service sector.

H₀: There is no significant relationship between employee age groups and the adoption level of Green Human Resource Management (GHRM) practices in the service sector.

IV. RESEARCH METHODOLOGY

This study adopts a quantitative, cross-sectional, and non-parametric research design to empirically evaluate the relationship between employee age groups and the adoption level of Green Human Resource Management (GHRM) practices within the service sector. Utilizing a non-probability purposive sampling technique to ensure diverse generational representation across corporate IT firms and educational environments, a sample of approximately 300 participants (N = 300) was selected to complete a structured, close-ended digital survey. The independent variable, Employee Age, is treated as an ordinal categorical variable divided into generational brackets, while the dependent variable, GHRM Adoption Level, is captured across core functional dimensions using a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Given the ordinal, bracketed nature of the demographic profiles and the non-normal distribution typical of subjective attitudinal metrics, Spearman's Rank Correlation (r_s) will be executed as the primary inferential statistical tool within IBM SPSS software instead of a linear Pearson correlation. This analysis will compute the two-tailed directional correlation coefficient and its corresponding significance value (p -value) to test the null hypothesis (H_0) at a 95% confidence level ($\alpha = 0.05$), statistically determining if an employee's age bracket significantly influences their organizational adoption of green workplace initiatives.

coefficient value of $r_s=0.116$, indicating a positive relationship between age group and the implementation of Green HRM-related training. However, the strength of this relationship was found to be very weak, suggesting that age group has only a limited influence on employees' perceptions regarding the implementation of such training programs in organizations. The significance value obtained from the analysis was $p=0.038$, which is lower than the standard significance level of 0.05. Therefore, the relationship between the two variables is



considered statistically significant. This means that variations in age group are associated with slight differences in perceptions regarding Green HRM-related training implementation. Although the relationship is statistically significant, the low correlation coefficient implies that other organizational or individual factors may play a more important role in influencing the adoption and implementation of Green HRM training practices. Overall, the findings suggest that age group has a minor yet meaningful association with Green HRM-related training initiatives in organizations.

VI. FINDINGS AND CONCLUSION

The inferential data analysis yielded an empirical correlation between the respondents' age brackets and the perceived implementation level of Green HRM-related training within organizations. Based on a sample size of 318 service sector professionals ($N = 318$), the non-parametric statistical evaluation generated a Spearman's rank correlation coefficient of $r_s = 0.116$. This positive coefficient establishes a direct, monotonic directional relationship between the two variables, indicating that as the age cohort category increases, the perceived implementation and internalization of sustainability training practices tend to shift marginally higher. However, the magnitude of the coefficient ($r_s = 0.116$) mathematically indicates a very weak relationship, demonstrating that age group demographics explain only a minor variance in individual perceptions of green training initiatives. Crucially, the two-tailed significance probability value was calculated at $p = 0.038$. Since this calculated p-value falls strictly below the conventional academic threshold of 0.05 ($p < 0.05$), the null hypothesis (H_0) is rejected, confirming that the weak positive relationship is statistically significant and did not occur due to sampling errors. Therefore, while variations across generational age cohorts are associated with real differences in how green training implementation is perceived, the low strength of the coefficient signals that the workforce's generational profile plays only a secondary role relative to broader organizational components

In conclusion, this study demonstrates a statistically significant but minor relationship between employee age groups and the adoption level of Green HRM training frameworks within the service sector. The statistical validation provides critical empirical insight: while generations differ slightly in their engagement with corporate environmental development, age is not a primary barrier or major catalyst for green policy execution. The negligible correlation strength strongly implies that modern green training adoption is driven more comprehensively by macro-organizational factors—such as institutional culture, top management commitment, digital infrastructure availability, and clear corporate sustainability policies—rather than micro-demographic generational boundaries. Consequently, human resource executives and organizational strategists should not view different age brackets as separate challenges when introducing eco-friendly workflows. Instead, corporate interventions should focus on establishing inclusive, accessible training modules that address universal organizational needs, rather than over-customizing strategies based solely on demographic age groups. Ultimately, these results provide a foundational path forward for service

firms, proving that a multi-generational workforce can be uniformly integrated into an overarching sustainable corporate ecosystem if supported by robust institutional frameworks.

VII. SCOPE FOR FURTHER RESEARCH

While this study establishes a statistically significant positive relationship between employee age groups and Green HRM training adoption within the service sector, the exceptionally weak correlation coefficient ($r_s = 0.116$, $p = 0.038$) strongly signals that age is merely a minor contextual variable, leaving substantial variance unexplained. To bridge these empirical gaps, future academic inquiries must transition from basic demographic isolation to testing complex intervening mechanisms by introducing psychological and organizational variables. Specifically, researchers should model individual traits, such as personal environmental values, digital literacy, and baseline eco-anxiety, alongside macro-level frameworks like green transformational leadership and organizational culture, to determine if these factors act as critical mediators or moderators that override generational boundaries. Furthermore, future studies should expand the demographic architecture by shifting away from isolated age brackets and instead adopting an intersectional analysis. Examining how age interacts simultaneously with organizational tenure, educational background, and hierarchical job level would clarify whether a mature employee's sustainability compliance stems from generational values or from institutional familiarity and structural authority. Methodologically, because this research relied on a cross-sectional snapshot of employee perceptions, it is highly recommended that future investigators employ longitudinal research designs. Tracking the same multi-generational workforce cohorts over several years would dynamically reveal how ecological behaviors shift as employees age, or how adoption patterns evolve as an organization's GHRM infrastructure matures from entry-level awareness training to formalized green incentive and reward mechanisms. Finally, expanding the geographical and industrial scope to contrast these service-sector findings against resource-intensive, asset-heavy fields like manufacturing, oil and gas, or construction, while incorporating mixed-methods qualitative tools like focus groups, would provide a more robust, globally generalizable understanding of what truly drives workforce environmental commitment.

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