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The Role of Human Resource Management in Promoting Environmental Sustainability in Bangalore IT Industry

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ABSTRACT:

This study investigates how Human Resource Management (HRM) can support environmental sustainability in Bangalore's quickly expanding IT sector. HR departments are in a unique position to promote sustainability through green hiring, training, employee engagement, and performance management as environmental concerns gain traction, even in industries like IT that have historically had low emissions. The integration of Green HRM and Sustainable HRM frameworks is becoming more and more important, especially since Bangalore is India's top tech hub. This study assesses how HR practices support ecological goals using a mixed-methods approach that combines quantitative data from surveys with qualitative insights. While issues like uneven training, a dearth of green-linked incentives, and inadequate performance evaluation still exist, the results show a growing commitment among HR professionals and organizations to integrating environmental values into workplace practices. This research not only provides useful suggestions for coordinating HRM with global sustainability goals while also addressing a significant research gap in the Indian IT context.

KEY WORDS: Sustainability, Human Resource management, advance techniques, Innovative ideas, manufacturing process.

INTRODUCTION:

since the early 2000s, the development of sustainability as a multifaceted concept economic, environmental, and social—has resulted in notable shifts in how businesses function. Even though ecological and economic reforms were the initial focus of sustainability initiatives, the incorporation of the human and social dimension has grown in importance over time. By recognizing the critical role that human resources (HR) play in fostering ethical business practices and long-term organizational growth, the Brundtland Report (1987) underscored the significance of sustainable development on a global scale. Therefore, in many industries, including the information technology (IT) sector, human resource management (HRM) is becoming more widely acknowledged as a strategic enabler of environmental sustainability, especially in international technology hubs like Bangalore. Known as the "Silicon Valley of India," Bangalore is home to thousands of startups and technology companies. Although the industry has historically been thought of as non-polluting, its environmental impact which is fueled by energy use, electronic waste (e-waste), and infrastructure development is raising concerns. HR departments are in a unique position to spearhead this shift through strategic policies and practices, as businesses face mounting pressure to align their operations with environmental sustainability goals. In order to incorporate ecological consciousness into workforce management, Green HRM and Sustainable HRM frameworks have emerged as a result of the intersection of HRM and environmental sustainability. Two crucial roles are highlighted by this dual vision: First, workers by their actions, attitudes, and innovation can greatly aid in integrating sustainability into organizational practices (Ehnert, 2014; Paillé et al., 2014); second, companies can enhance employee well-being, retention, and ecological responsibility by incorporating sustainability principles into HRM procedures like hiring, training, performance management, and employee engagement.HR managers in Bangalore's IT sector are progressively implementing to achieve these goals, training programmers that raise awareness, energy-saving workplace projects, and green talent acquisition are needed. Nonetheless, there is still a dearth of scholarly research on HRM's contribution to accomplishing these objectives in the Indian IT ecosystem. Research gaps and a lack of cohesive frameworks to assist HR practitioners in putting into practice efficient environmental policies have resulted from conceptual inconsistencies and disparate methodologies. Additionally, there is an increasing need to define HR's role in organizational sustainability strategies in the IT industry due to growing employee expectations, global investor scrutiny, and regulatory changes pertaining to environmental compliance. The post-COVID-19 era has brought even more attention to how important human resources are to maintaining not only business continuity but also employee well-being and prudent resource use. Bangalore, were growing urbanization and technology growth, there is a greater need than ever for green HR practices that strike a balance between creativity and environmental stewardship. By analyzing the ways in which HRM practices in Bangalore's IT sector support environmental sustainability, this paper aims to close the gap. The study intends to:

Evaluate the adoption of sustainable HRM practices among Bangalore IT firms

Identify obstacles and challenges faced by HR professionals in implementing green strategies

Offer a workable framework for HR departments to align with global sustainability agendas through a mixed-method research design that combines empirical fieldwork and literature analysis.

RESEARCH QUESTIONS:

1 Does HR includes sustainability goals in employee orientation or onboarding?

2 what challenges do you face in implementing HR sustainability initiatives?

3 Policy implementation challenges - how would you rate the management support for Sustainability HR practices?

4 Are employees encouraged to participate in CSR or environmental campaigns?

LITERATURE REVIEW:

1)Sudha Sivaraman,Srishty Saikia-Role Of HR In Change Management

This study explores the evolving role of HR as a change agent in today's fast-changing (VUCA) business environment. As organizations shift focus from just managing operations to also supporting people through change, HR plays a crucial role. It must drive urgency, secure leadership support, reduce uncertainty, and involve the right talent.

2)Floor Claessens ,Charissa Freese And Rob F. Poell May 2025- Role Of HR In Organizational Change

This chapter highlights the key role HR plays in leading successful organizational change. It shows that HR's early and active involvement—like adjusting HR tools, promoting leadership, encouraging employee participation, and maintaining strong communication—helps ensure smooth change implementation and long-term results. A case study of Dutch organizations reveals that while HR efforts were strong, formal evaluations of the change process were often missing.

3) Abiodun Onifade,Jeffrey Chidera Ogeawuchi And   Workforce Development An Sustainability In Logistics: The Role Of HR

This abstract highlight the crucial role of HR in helping logistics companies grow sustainably in a competitive world. HR not only finds and trains skilled talent but also builds a culture of continuous learning and adaptability. It embeds sustainability into daily operations by aligning workforce goals with green practices and encouraging responsible behavior.

4) Saksham Singh- The Role Of Artificial Intelligence In HR Practices

This research explores how Artificial Intelligence (AI) is changing the way HR works in India. It shows that AI helps automate routine tasks, improves decision-making, and enhances employee experience. By gathering insights from HR professionals across different industries, the study finds that while AI is widely welcomed, it must be used thoughtfully.

5)Kumpati Akash-An Analysis Of HR Role In Talent Acquisition

This article explains how talent acquisition has become a strategic role for HR, not just about hiring people. HR now aligns hiring with business goals, builds a strong employer brand, and ensures a smooth candidate experience. It uses technology and data to find the right talent, while also focusing on workforce planning, diversity, and future talent needs.

6)Oksana Yu. Davydova,Nataliia I. Cherevychna And Anna A. Grechko-The Role Of Hr-Management In The Hotel And Restaurant Industry

This article explores how HR management works in the hospitality sector, using the "Baden-Baden" hotel in Kharkiv as a case study. It highlights key HR functions like hiring, training, motivation, and employee retention, and shows how a strong corporate culture boosts both staff satisfaction and customer service. The article identifies challenges such as high staff turnover, weak motivation systems, and limited automation.

7)Dr. Shweta Patel -HR Metrics And Their Role In The Improvement Of The Organizational Performance

This study looks at how HR metrics help improve talent management by using data to make smarter decisions in hiring, training, and employee engagement. It shows that when HR metrics are aligned with business goals, organizations can better plan their workforce and improve performance.

8) Kamalakannan .A-The Role Of Ai In HR Analytics And How It Affects Digitalization Of Hiring

This paper discusses how AI is transforming HR in the IT sector, especially in improving recruitment and talent management. AI helps HR teams identify skill gaps, select the right candidates, and enhance employee experiences. It also supports better decision-making through HR analytics.

9) Gunjan Rathi -The Role Of HR In Promoting Mental Health Awareness: A Mixed-Methods Study

This study looks at how HR can support mental health in the workplace. Surveys and interviews show that although employees are aware of mental health issues, stigma and lack of visible support programs stop many from getting involved. HR plays a key role in breaking this stigma and promoting well-being.

10)Mamanana Hewa Duminda Shelton Jayathilake -The Role Of HR In Addressing Gender Inequality In Sri Lankan Workplaces

This essay explores how HR policies can help reduce gender inequality in Sri Lankan workplaces. Despite progress in education and laws, women still face challenges in leadership roles, pay, and career growth. The study reviews real cases and research to understand how cultural, legal, and structural factors fuel these issues. It highlights HR strategies like fair hiring, equal pay, leadership programs, and inclusive work environments.

11)Mohamed S. Mohiya Exploring The Role And Influence Of Leadership On Employees In HR Blog

This study explores how leadership influences employees' use of HR Blogs in the workplace. Using Social Exchange Theory, researchers collected data through interviews and online employee comments. The findings show that leaders play a key role in encouraging or discouraging employees to engage with HR Blogs.

12)P.Sivakumarthe Role In Empowering Strategic Decisions: The Impact Of HR Analytics On Talent Management And Organizational Success

This paper highlights how HR analytics is becoming a powerful tool for making smarter, data-driven decisions in organizations. By analyzing workforce data, HR teams can improve hiring, performance management, employee retention, and future planning. The study shows that using analytics helps align people strategies with business goals, leading to better efficiency and a competitive edge.

13)Ms. Sudha Rajeev Menon And Dr. Dipti Sethi -The Role Of HR Analytics In Workforce Planning

This paper explains how HR analytics is transforming workforce planning by using tools like AI and machine learning to predict staffing needs and improve talent management. It shows how data can help boost employee engagement and retention. However, it also points out challenges, such as ensuring fairness, transparency, and data privacy. The paper highlights the growing need to explore how HR analytics can support modern work models like remote work.

14)Paula Benevene, Ilaria Buonomo ,Clara De Vincenzi, Teresa Galantijanuary - The Strategic Role Of HR Management In Industry 4.0

This study looks at how rapid digital changes—especially after COVID-19—are reshaping work in Italian factories. Through interviews with 30 HR experts, it explores how digitalization can offer opportunities, but also create challenges for workers' well-being. Experts expressed concern over the stress caused by fast tech shifts, highlighting the need for training programs to help employees build new skills.

15)Dwi Sihwinarti, Achmad Maqsudi, I Komang Gede, Mila Permata Sunny -International HR Management

This study examines how HR management and Organizational Citizenship Behavior (OCB) help build key international HR skills, like cultural adaptation and global teamwork. Using data from HR professionals in multinational companies, the research shows that both HR practices and OCB have a meaningful impact on developing international HR competencies.

RESEARCH GAP

CITATIONS	AUTHOR/YEAR	RESEARCH DESIGN	OBJECTIVES	FINDINGS
Onifade (2025)	Abiodun Onifade (2025)	Qualitative	To Explore HR's Role in Workforce Development in Logistics	HR Supports Talent Development, Aligns Training with Industry Needs, And Builds a Future-Ready Workforce.
Alabi (2024)	Khadijat O. Alabi (2024)	Strategic Review	To Examine HR's Integration of Sustainability in Organizational Practices	HR Fosters Green Behaviors and Ethical Practices Through Strategic Alignment and Engagement.
F. Poell (2025)	Rob F. Poell (2025)	Case Study	To Assess HR's Role in Managing Organizational Change	HR Strategies Improve Restructuring Success; Cross-Cultural Support Builds Resilient Teams.
Sarangi (2023)	Ayaskant Sarangi (2023)	Review Paper	To Examine HR's Contribution to CSR And Sustainability in Oil and Gas	HR Drives Sustainability Through Hiring, Training, Leadership, And Embedding Eco-Values in Culture.
Bajpai & Tripathi (2023)	Divya Bajpai & Sheel N. Tripathi (2023)	Literature Review	To Study HR's Influence in Future-Focused Organizations	HR Aligns Employee Values with Sustainability, And Aids in Recruitment, Training.

Yong Et Al. (2019)	Jing Yi Yong Et Al. (2019)	Empirical (112 Firm)	To Measure Green HRM Impact in Malaysian Manufacturing	Green Hiring and Training Promote Sustainability; Other Green HRM Aspects Had Limited Effect.
Eleogu Et Al. (2024)	Tobechukwu Eleogu Et Al. (2024)	Literature Review	To Analyze HR's Role in Renewable Energy Workforce Evolution	HR Must Align Workforce Skills with Sustainable Goals and Respond to Emerging Tech Needs.
Ravi & R. S. Prasad (2023)	Sharan Ravi & R. S. Prasad (2023)	Conceptual Framework	To Evaluate HRM's Role Post-COVID In Sustainability	HRM Contributes To ESG, Hybrid Work, Wellness, And Social Inclusion Strategies.
Pandey Et Al. (2024)	Neha Pandey Et Al. (2024)	Literature + Empirical	To Study HR's Role for Frontline Workers During COVID-19	HR Ensured Safety, Well-Being, And Engagement; Digital Tools Enhanced HR Functions.
Ogbechie Et Al. (2016)	Chris Ogbechie Et Al. (2016)	Empirical	To Analyze HR's Role in CSR In Emerging Markets	HR Adapted to Crises and Enhanced Social Responsibility Functions.
Muhammad (2025)	Muhammad Ali Et Al. (2025)	Quantitative	To Examine Green Work Commitment's Mediation in Green HRM	Commitment Mediates AI-Integrated Green HRM; Majority Hypotheses Were Supported.
Joel Paul (2024)	Joel Paul (2024)	Quantitative	To Link Organizational Culture and Sustainability	Strong Sustainability Culture Boosts Green Innovation; Leadership and Communication Are Key.
Tapas & Avanti (2023)	Poornima Tapas & Avanti Chinmulgund (2023)	Literature Review	To Explore HR-Culture-Sustainability Interconnection	HR Functions Shape Sustainable Cultures; More Research Needed in Employee-Culture Linkage.
Abuhassan (2024)	Kamal Abuhassan (2024)	Industry Summary	To Evaluate Digital Twins' Role in Pharma Sustainability	Digital Twins Boost Performance and Environmental Efficiency in Pharma.
Mohanty (2025)	Vandana Mohanty (2025)	Literature Review	To Study Employee Engagement's Role in Family Business Sustainability	Engaged Employees Strengthen Resilience and Promote Long-Term Firm Sustainability.

Table No 01: Showing The Research Gap

CONCEPTUAL MODEL:
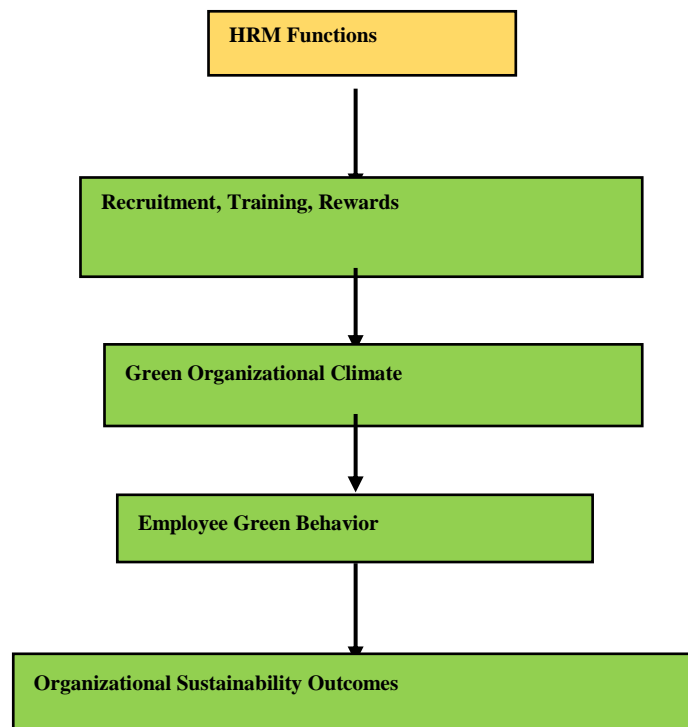
Figure No 01: This figure showing the conceptual model HRM

HRM Functions (Independent Variables)

These are the levers HR uses to embed sustainability: Green Recruitment & Selection

(Hiring environmentally conscious candidates) Green Training & Development

(Eco-awareness, energy-saving practices, carbon literacy) Green Performance Management (Eco-goal setting, evaluation based on sustainable actions) Green Rewards & Incentives (Bonuses for green innovations, recognition for eco-efforts) Green Leadership & Culture (Eco-leaders and sustainability ambassadors)

Mediating Variable: Green Organizational Climate

Shared perception among employees that the company supports and values environmentally responsible behavior.

Employee Green Behavior (Dependent Variable)

Outcomes of HR-led climate and practices: Participation in sustainability initiatives (energy saving, recycling, etc.), Advocacy for green practices, Reduced carbon footprint in operations

Organizational Sustainability Outcomes (Ultimate Impact): Enhanced environmental performances and compliance alignment, green innovation, Brand value and employer attractiveness

Moderating Factors: Top Management Commitment, Technological Readiness

Regulatory Pressure, Employee Awareness

PROBLEM STATEMENT

It is challenging to comprehend how HR departments in Bangalore's IT sector can methodically contribute to environmental goals while balancing business performance due to the lack of standardized frameworks and the paucity of empirical research. The study's findings might not apply to other cities or industries because it only includes Bangalore-based IT companies. Due to time constraints and participant willingness, the number of participating companies and HR professionals may be restricted. Self-reported information from surveys or interviews is used in the study, and this information could be skewed by social desirability or personal prejudices. The IT industry's rapid pace and changing environmental regulations could eventually impact the findings' applicability

RESEARCH METHODOLOGY:

Method of Research

The study used a descriptive survey design and a quantitative research methodology. A structured questionnaire that was sent via Google Forms to HR specialists and IT workers throughout Bangalore's IT industry was used to gather data.

This approach was selected to assess attitudes, behaviors, and how well HR initiatives promote environmental sustainability.

Data Collection Method

The tool utilized was a Google Form online survey.

Type of Data: Primary Data

Structure: Multiple-choice, demographic, and closed-ended questions with Likert scales

Sampling Technique

A purposive sampling method was used to target individuals with relevant knowledge of HR practices or sustainability in the IT industry. Participants included:

- HR managers

- Middle management

- IT professionals with awareness of sustainability efforts

Sample Size

- Total Respondents**:** 50 respondents

- The sample size was deemed sufficient to provide statistically meaningful insights while representing diverse IT organizations across Bangalore.

Variables Description

Variable Type	Variable	Description
Independent	Green Recruitment & Selection	Eco-conscious hiring practices
	Green Training & Development	Environmental skills training
	Green Performance Management	Appraisals linked to eco-goals
	Green Compensation & Incentives	Rewards tied to sustainability behavior
	Employee Engagement in Sustainability	Involvement in green initiatives
Mediating	Organizational Green Culture	Shared environmental values in the company
	Leadership Support	Managerial encouragement of green practices
	Awareness & Motivation	Employee understanding and willingness
Dependent	Environmental Sustainability Outcomes	Reduced waste, energy use, green innovation
Control/Moderators	Company size, Tech adoption, Govt regulation	External factors influencing the outcome

Table No 02: Showing The Variables Description

DATA ANALYSIS AND INTERPRETATION (SURVEY FINDINGS)

AGE

AGE GROUP	PRECENTAGE	NUMBER OF RESPONDENTS (OUT OF 50)
BELOW 25	68%	34
25-34	8%	4
35-44	14%	7
45 AND above	10%	5

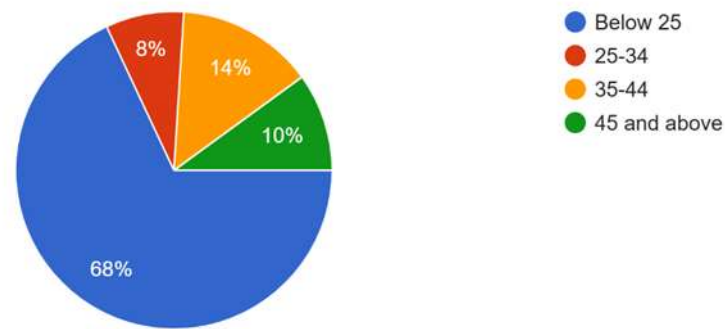**Table no 03: showing the demographic profile of respondents**

Figure No 2: Showing the demographic profile of respondents

INTERPRETATION

According to the data, 68% of respondents were under 25, suggesting that younger people—likely students or professionals in their early careers—have a significant influence on the study. Only 8% of respondents were between the ages of 25 and 34, which is unusual for surveys about the workplace. Due to a lack of senior representation, the remaining 24% came from the 35–44 and 45+ age groups

HR include sustainability goals in employee orientation or onboarding

Response option	Percentage	Number of respondents
Yes	76%	38
No	12%	6
Not Sure	12%	6

Table no 04: showing the sustainability goals in employee orientation or onboarding
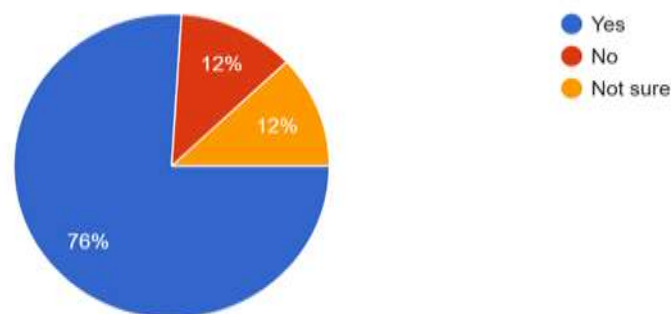

Figure no .03: showing sustainability goals in employee orientation or onboarding

INTERPRETATION

According to the chart, 76% of respondents agreed that HR incorporates sustainability goals into onboarding, demonstrating a strong organizational commitment to sustainability. But 24% disagreed or weren't sure, indicating a lack of consistency or communication. This implies that more standardized and transparent onboarding procedures pertaining to sustainability are required.

The challenges faced by implementing HR sustainability initiatives

Challenge	Percentage
Lack of awareness	40%
Lack of Resources	28%
No top management	18%
Resistance to change	12%
Lack of budget	2%

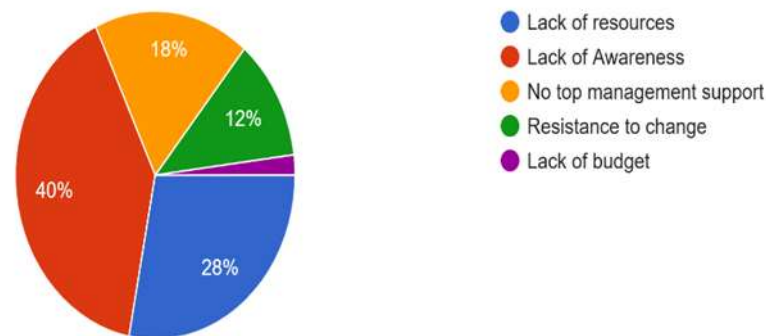**Table no 05: showing the challenges faced by implementing HR sustainability initiatives**

Figure No 04: Showing The challenges implementing HR sustainability initiatives

INTERPRETATION

Lack of resources (28%) and awareness (40%) are the biggest obstacles to sustainability, followed by a lack of management support (18%). The fact that there are few financial restrictions suggests that internal engagement is more difficult than funding.

Policy implementation challenges - The rate of management support for Sustainability HR practices

Support	Level percentage
Moderate	58%
Strong	30%
No strong	8%
Weak	4%

Table no 06: showing the rate of management support for Sustainability HR practices
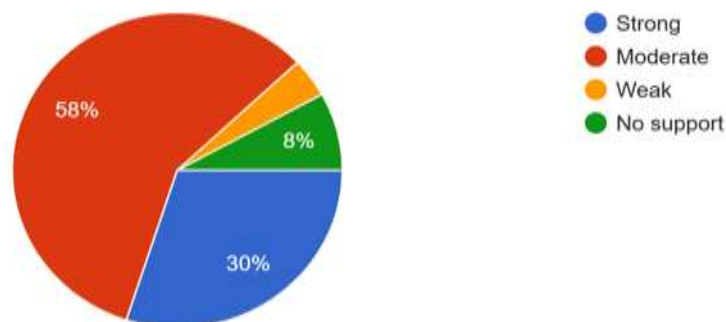

Figure No 05: Showing Policy implementation challenges

INTERPRETATION

According to the chart, 30% of respondents say they have strong support for sustainability initiatives, compared to 58% who say they have moderate support. 4% characterize it as weak, and 8% believe there is no support. This implies that although support is available, it must be enhanced for maximum effect.

Employees encouraged to participate in CSR or environmental campaigns

Response	Percentage
Yes	62%
Occasionally	28%
No	10%

Table no 07: showing the Employees encouraged to participate in CSR or environmental campaigns
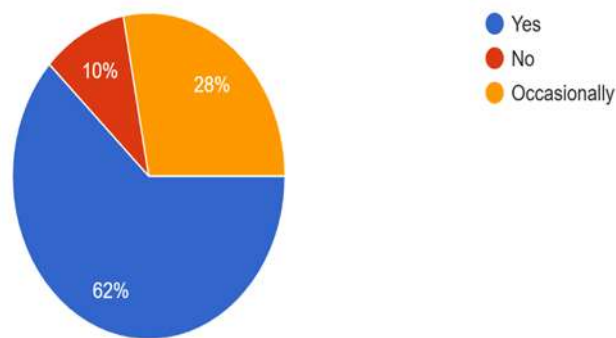

Figure No 06: showing Employees encouraged to participate in CSR or environmental campaigns

INTERPRETATION

The majority (62%) of respondents answered "Yes," indicating strong positive engagement or agreement with the queried practice. About 28% participate or observe it occasionally, showing partial involvement. Only 10% responded negatively, suggesting minimal resistance or absence of the practice.

CONCULSION, LIMITATIONS, PRACTICAL IMPLICATIONS AND FUTURE RECOMMENDATIONS

CONCULSION:

The contribution of Human Resource Management (HRM) to environmental sustainability in Bangalore's IT sector was examined in this study. According to the results of the quantitative and qualitative data, HRM practices—in particular, green hiring, training, and employee engagement—have a major impact on sustainability results. HR in general is becoming a major strategic driver of environmental initiatives, even though some practices (such as green compensation) had little statistical impact. Workers were eager to get involved, and companies with a strong green culture and support from the leadership were better at integrating sustainability.

LIMITATIONS OF THE STUDY:

- The sample was restricted to IT companies in Bangalore; it might not accurately represent practices in other industries or throughout India.

- Google Forms were used to gather the data, which could have included social desirability bias.

- sustainability changes are not taken into consideration by the study, which only records a single moment in time.

- In-depth interviews or case studies could have provided richer context, even though some open-ended insights were obtained.

PRACTICAL IMPLICATIONS

HR departments should put in place training courses, incentive schemes focused on green values, and structured Key Performance Indicators (KPIs) in order to promote a sustainable corporate culture. These programmers can assist in integrating sustainability into staff duties and day-to-day operations. Environmental stewardship-focused leadership development can boost motivation even more and promote adherence to green practices. Creating a culture

that values sustainability improves employee engagement and the organization's reputation in addition to helping the environment. Additionally, HR and regulatory agencies working together can result in the development of clear sustainability guidelines specifically designed for the tech sector.

FUTURE RECOMMENDATIONS

To evaluate the long-term effects of HRM practices, future studies should monitor sustainability outcomes over time. To find regional or sectoral gaps, compare Bangalore's IT industry with those of other cities or industries (such as manufacturing or logistics). Examine how HR analytics, digital twins, and AI can be used to measure and improve green HRM results And create standardized scorecards or models to assess HR's sustainability efficacy across industries.

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