

Level of Green Computing based Management Practices for Digital Revolution and New India

Debabrata Samanta, Suplab Kanti Podder

Abstract: The reality is staring us in the form of global warming, climate changes and air-quality degradation. This reality constitutes an increasing zone on the strategic front. These strategic changes need necessarily to be responded through employees of an organization. Against this backdrop, the Green Information Technology and Green HRM have emerged as a sequel to rapid degradation of our planet due to human activities. Therefore, incorporating the environmentally friendly practices through IT practices, recruitment, training and performance management functions constitute important components of Green IT and HRM. Green information technology is the revolutionary initiatives especially for human resources management practices that lead to digital life towards sustainable society. Keeping this practical and emergent context in view, the present study makes an attempt to develop a framework for assessing the level of green HRM practices actually prevailing in Indian organizations. The requisite data were collected from original sources and clarified with existing sources. The results of the study led to the inference that Information Technology and HRM practices of promoting individual performance needs fine-tuning because any green initiative has necessarily to be a collective exercise by all concerned.

Index Terms: Green Information Technology, Green Human Resources Management, Protection of Environment, Green IT and HRM Practices.

I. INTRODUCTION

Highlight a section that you want to designate with a certain Green human resources management is the sustainable practice towards sustainable development that reduces the human involvement and paper works. The regular HRM activities can be done through green information technology that reduces the use of carbon footprints. The infrequent and innovative activities can be performed by productive human resources that ensure the sustainable development of an organization. The large segment of young population in India with the ability of green IT and HRM practices can take initiatives of digital revolution and become the role model of other countries. Green Information Technology in the combination of Information Technology and Environmental Concern. The green information technology and HRM practices results the eco-friendly outcomes with the productive initiatives of Refuse, Reduce, Recycle and Reuse. With the consideration of reality constitutes an increasing

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zone on the strategic front. These strategic changes need to be responded through employees of an organization. Against this backdrop, the initiatives have the sequel to rapid degradation of our planet due to human activities. Therefore, incorporating the environmentally friendly practices through information technology activities, recruitment, training and performance management functions constitute important components of Green IT and HRM practices.

II. LITERATURE REVIEW

Benz and Frey (2012). clarified in the research paper titled “Impact of Information Technology towards HRM practices and environmental concern”, that the information technology plays important role for reducing human efforts and repeated functions in an organization. Green HRM practices like reduce, reuse and recycle are the Green IT initiatives that ensure the environmental concerns.

Kee-hung and Ramus (2015). Explained in the research article “Empirical study on Information Technology and Environmental Concern”, that the information technology and applications reduce the paper works and human efforts especially for the regular HRM functions. The green IT practices response the environmental concerns.

Lado and Wilson (2013). described in the research paper “Sustainable development and green HR practices”, that the organization practices the green human resources management initiatives, become sustainable comparable to others in the related sector. Information technology gives the extra power and inspiration towards the green HRM practices with less carbon footprints and repeated operations.

Opatha and Arulrajah (2016). deliberated in the article titled “The policies and practices of Green Human Resources Management Functions”, that the human resources management functions especially recruitment, orientation programme, training and development activities can be performed through green IT initiatives ensure the environmental concerns and leads to sustainable development.

III. RATIONALE OF THE STUDY

The present study was undertaken due to following reasons:
(i) Curiosity on the part of the researchers to understand the existing levels of green Information Technology and HRM practices in the actual practice in Indian organizations.
(ii) Scarcity of works in the Indian context necessitated a

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humble contribution to fill the gap in the available literature. (iii) The increasing emphasis on green concerns has made the topic of green IT and HRM relevant in the context of digital revolution and new India.

IV. OBJECTIVES OF THE STUDY

Keeping in mind the research questions of “What is the level of Green IT and HRM practices in an Indian organization?”, and “What is the contribution of strategic forces in making an organization to think about Green IT and HRM in a firm?” the following objectives were derived:

- To identify the strategic forces necessitating for Green Information Technology and HRM practices.
- To identify the dimensions of Green IT and HRM.
- To find out the degree of practice of Green IT and HRM in Indian organizations.
- Based on the study to list out the suggestions and recommendations.

V. RESEARCH METHODOLOGY

The present study makes an attempt to develop a framework for assessing the level of Information Technology and HRM practices actually prevailing in Indian organizations. The requisite data were collected from original sources and clarified with existing sources. Total 450 respondents were selected at random from ten large organizations with five each belonging to manufacturing and service organizations. A set of semi-structured questionnaire and consequent semi-structured interview schedules were employed. The other sources included web literature, journals, periodicals and newspaper reports to get a picture about the prevailing context. The data collected was recorded and collated for further analysis by using SYSTAT Version 13.1 package.

VI. RESULT AND ANALYSIS

Table -1 list the six main forces that are necessitating the Green IT and HRM responses from the organizations. These strategic forces are arranged in the descending order of their importance as perceived by the respondents. It is clear from the table that company’s strategic considerations were the main force behind Green IT and HRM initiatives rather than the monitoring authorities. This may be due to the fact that monitoring authorities do not have sufficient legal teeth as well sufficient manpower to tackle the violations. The companies are not initiating Green IT and HRM due to fear of authorities, but due to survival compulsions. Table 1 described about strategic forces necessitating green IT and HRM responses.

Sl. No.	Strategic Forces	Mean % of Occurrence
1	Economic force necessitating	50.20

	waste reduction	
2	Steps taken by Competitors	50.10
3	Necessity to improve firm’s image	48.20
4	Increased Degree of Public Scrutiny	45.50
5	Pollution Control Boards	45.20
6	Increased Media Pressure	34.30

Compiled by Researcher

Table 1 Strategic Forces Necessitating Green IT and HRM Responses (Arranged in the Descending order of Occurrence

Percentages) N = 450

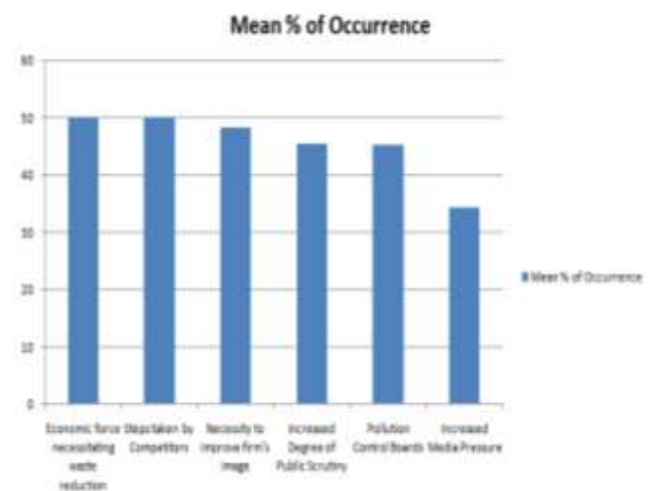


Figure 1 Strategic Forces Necessitating Green IT and HRM Responses

Table 2 lists the 4 R’s of environmental concerns as well as total Green IT and HRM as applied to the IT and HRM practices in the form of Green HRM practices. Each of these dimension had the maximum score of 10. These four dimensions and the total score are presented both for individual practices as well as group level practices. It is interesting to observe that there is very high degree of agreement at both individual as well as group level in terms of Green HRM. This is evident from the similarity in the descending order both at individual as well as at group level Green IT and HRM practices. This phenomenon may be explained by the fact that Green It and HRM practices as they presently exist are at the cognitive level and the affect component need to consolidate in these practices.



Sl. No.	Dimensions	Mean Green HRM Score	
		Individual Practices	Collective or Group Practices
1	Degree of “Reduce” Component	6.30	5.09
2	Degree of “Recycle” Component	5.87	4.89
3	Degree of “Reuse” Component	5.68	4.62
4	Degree of “Refuse” Component	5.12	4.58
5	Total Green HRM Practice	23.87	19.65

Compiled by Researcher

Table 2 Mean Levels of Green Information Technology and HRM Practices Arranged in Descending Order (N=450)

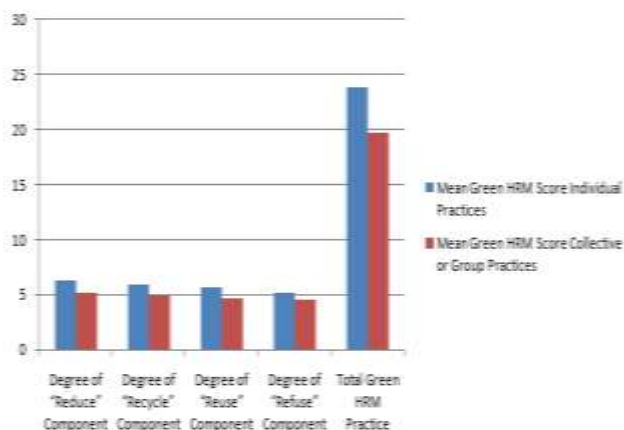


Figure 2 Mean Levels of Green Information Technology and HRM Practices Arranged in Descending Order (N=450)

Table 3 shows the summary of t-test results comparing the extent of individual and group level Green IT and HRM practices. It was found that individual level practices were significantly higher than group level Green IT and HRM practices.

**Significant at 0.01 level of significance

Table 3 Summary of t-test Results of Individual Practices and Collective Practices (N=450)

Category	Mean	SD	df	t-value
Individual Practices	23.87	4.03	39	4.3803**
Collective Practices	19.65	4.57	39	

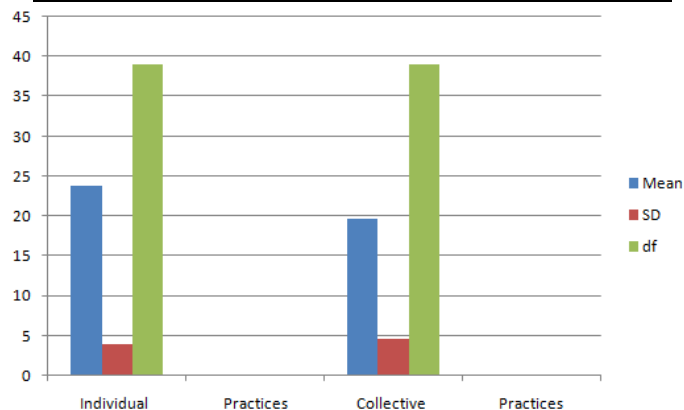


Figure 3 Summary of t-test Results of Individual Practices and Collective Practices (N=450)

These results indicate that individual level concerns about the environment did not get nurtured into group level efforts due to lack of support from the organizational systems.

VII. CONCLUSIONS

It was found during the study that company’s strategic forces rather than compulsion from authorities as well as individual level concerns rather than concerted group efforts were driving the Green IT and HRM initiatives in Indian organizations. The comparison between individual practices and collective practices shows the embezzlement of green initiatives that results the negative impact on working environment as well as the environmental concerns. The green practices of IT and HRM functions are not happening simultaneously, because an individual may apply the green initiative but the collectively the practices are not happening. So, the individual level concerns about the environment did not get nurtured into group level efforts due to lack of support from the organizational systems.

REFERENCES

1. Benz and Frey (2012). “Impact of Information Technology towards HRM practices and environmental concern”, J. of Academy of Management Review, 62, pp 92–104.
2. Bohdanowicz, P., Zientara, P., and Novotna, E. (2011). “International Hotel Chains and Environmental Protection: An analysis of Hilton’s we care!” J. of Sustainable Tourism, 19(2), pp 797–816.
3. Charles R. Perry. “Outsourcing and union power.” Journal of Labour Research 18.4 (1997): 521. Springer Link. Web. 20 March 2014.



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4. C. Hedberg and F. Malmberg (2003). "The Global Education and Institution sustainability reporting in Swedish companies", *Institution Social Responsibility and Environmental Management*, 24(2), pp. 153-164
5. Carroll, A. (2005). "Impact of Institution Social Responsibility and Higher Education", *J. of Business and Society*, 38(3), pp. 268-295
6. Crowther, D. (2008). "The Social and Environmental Accounting and its applicability", *The Financial Times*, Prentice Hall, pp. 234-254
7. Crowder, D. (2009). "The roles of Institution Reporting, Stakeholders and the Internet: Mapping the New Institution Landscape", *J. of Urban Studies*, 37(10), pp. 1837-1848
8. B. Praveen, Umarani N, Anand T, Debabrata Samanta, Cardinal Digital Image Data Fortification Expending Steganography, *International Journal of Recent Technology and Engineering*, Volume-8 Issue-3, January 2019, ISSN:2277-3878
9. M Paul, G Sanyal, Debabrata Samanta, Gia Nhu Nguyen; Dac-Nhuong Le, Admission Control Algorithm Based-on Effective Bandwidth in V2I Communication, *IET Communications*, 10 pp.DOI: 10.1049/iet-com.2017.0825, Online ISSN 1751-8636
10. Sayar A K, Syed K A K and M Mukherjee, Debabrata Samanta, and Dac Nhuong Le, An Aggregation Approach Based on Elastic search, *Journal of Engineering and Applied Sciences (Online)* ISSN : 1818-7803
11. S Chakrabarti, Debabrata Samanta, Image Steganography using Priority based Neural Network and Pyramid, *Proc. of Third International Conference on Emerging Research in Computing, Information, Communication and Applications, (ERCICA-2015)*, 31 July - 01 August, 2015, @ Springer 2015, Bangalore, India.
12. Daly, H. (1999). "The Allocation, Distribution and Scale towards an Economics that is Efficient, Just and Sustainable", *J. of Ecological Economics*, 6(3), pp. 185-193
13. Dyllick, T. and Hockerts, K. (2002). "Beyond the Business Case for Institution Sustainability", *J. of Business Strategy and the Environment*, 11(2), pp. 130-141
14. Elliot, S. R. (2005). "Sustainability: An Economic Perspective", *Resources Conservations and Recycling*, 44(1), pp. 263-277
15. Harvey, L. & Knight, P. (1996). *Transforming Higher Education*. Buckingham, Open University Press and Society to Research into higher education.
16. Hart, S. L. (1997). "Beyond Greening: Strategies for a Sustainable World", *Harvard Business Review*, 75(1), pp. 66-76
17. Hart S. L., M. B. Milstein (2003). "Creating Sustainable Value", *Academy of Management Executive*, 17(2), pp. 56-67
18. Kee-hung and Ramus (2015). "Empirical study on Information Technology and Environmental Concern", *J. of California Management Review*, 52(3), pp 16-26.
19. Lado and Wilson (2013). "Sustainable development and green HR practices", *J. of Academy of Management Review*, 63(4), pp 699-723.
20. Mahua B., Suplab K. Podder, and Debabrata Samanta (2019). "Factors that influence Sustainable Education with respect to Innovation and Statistical Science", *International Journal of Recent Technology and Engineering (IJRTE)*, Volume-7 Issue-5S2, January 2019, ISSN: 2277-3878
21. Opatha and Arulrajah (2016). "The policies and practices of Green Human Resources Management Functions", *International Business Research*, 9(1), pp 101-112.
22. Ramus, C. A. (2001). "Organizational Support for Employees: Encouraging Creative Ideas for Environmental Sustainability", *J. of California Management Review*, 43, pp 85-105.
23. Sathyapriya, J., Kanimozhi, R., and Adhilakshmi, V. (2014), "Green HRM-Delivering high performance HR systems", *International Journal of Scientific Research*, 3, pp 31-34.
24. Suplab K. Podder, Arun B. K. (2018). "Comparison of effectiveness of employee engagement through permanent employees or outsourced employees", *International Journal of Academic Research and Development*, Volume 3; Issue 2; pp. 1406-1408, ISSN: 2455-4197
25. Suplab K. Podder, Arun B. K. (2018). "Contribution of HR sub-functions outsourcing in the improvement of quality and innovation of Education", *Primax International Journal of Commerce And Management Research (PIJCMR)*, Volume-3, Issue-1, Page No. 11-14, ISSN: 2321-3612
26. Suplab Kanti Podder, Debabrata Samanta (2019). "Impact of Climate Changes on Rural Livelihoods and Re-Orienting the Situation through Human Resources towards a Sustainable Society", *International Conference on Sustainable Computing in Science, Technology & Management (SUSCOM-2019)*, Hosting by Elsevier SSRN.
27. Zoogah, D. (2011). *The dynamics of Green HRM behaviors: A Cognitive Social Information Processing Approach*. *German Journal of Personnel Issues (Zeitschrift fur Personalforschung)*, 25, pp 117-139.
28. R Gurunath, M Agarwal, A Nandi, Debabrata Samanta, An Overview: Security Issue in IoT Network, *Proc. of IEEE- 2nd International conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC 2018)*, 30-31 August 2018.
29. M Agarwal, D Sarkhel, Debabrata Samanta, Architecture of 'Loop' without 'for' & 'while', *Proc. of IEEE - 2nd International Conference on Inventive Systems and Control (ICISC 2018) @IEEE, 19-20 January 2018*.
30. Debabrata Samanta and G Sanyal, An approach of Tabu Search for unsupervised classification for SAR Images, *Proc. of Seven International Conference on Image and Signal Processing (ICISP-2013)*, August 9-11, pp. 121-126, @ ELSEVIER 2013, Bangalore, India.

