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ROLE OF AI IN GREEN HRM IN PURSUIT OF SUSTAINABLE DEVELOPMENT

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Abstract

Environment problem is major concern in today's world. There are many problems like Green House effect, green emersion, pollution, ice melting and global temperature problems. These problems directly or indirectly effect organisations and their functions like human resource practices. To cope up with this, it is much required by organisations to adopt some green practices at workplace. Technology can play key role in practicing theses green practices at workplace. Thus, this paper aims at discussing role of Artificial intelligence in adopting green practices for attaining sustainable development. Based on the literature review this paper also suggest future scope of Green Human Resource Management and Artificial Intelligence in attaining and maintaining sustainable development.

Keywords—*Green HRM, Sustainable Development, Sustainability, Artificial Intelligence.*

I. INTRODUCTION

A few research has shown that organizations are responsible for these environmental issues because organization are continuously producing carbons and small particles that mixed with air and generate harmful gases and effecting human and animal's bodies. Thus, Stakeholders has been started to focus on these all problems. Organization has also shifted focus on Green practices and it sustainable development. Human behaviour[22] generally contribute to climate change [1], as they are more engaged in wasting resources, polluting air, water and environment, therefore, the prime motive of organizations shifted in developing practices that leads to green behaviours[15]. Green HRM is one of the practices that encourages green initiatives and behaviours[2,30].

Traditional Human resource practices are old and are not effective to cope up with the environmental changes. These days organisations are focusing on shifting towards green practices because of its effectiveness. To focus on green practices more technology is used by organization and that is why manual jobs are taken over by brain jobs. AI (Artificial Intelligence) is playing important role [3]to apply green human resource management practices.

Consequently, this research work try to use a bibliometric approach to analyse role of Artificial intelligence in green human resource practices[12], attaining

sustainability with green human resource practices, and, more precisely, identifying research and trends by studying the articles published on dimensions, Scopus, Web of Science, with use of VOSviewer. By analysing content of recent publications scope and opportunities of AI, Green HRM and sustainability were identified.

II. LITERATURE REVIEW

A. *Green HRM and Artificial Intelligence*

Green Human Resource Management (GRHM) [21,29] is a concept that refers to the integration of environmental sustainability into human resource management practices[8, 10]. This can include things like implementing environmentally-friendly policies and practices, promoting environmentally-conscious behavior[4] among employees, and incorporating sustainability into the recruitment and hiring process. By adopting GRHM practices, organizations [11] can easily focus not only in reducing their environmental impact, but also in improving employee engagement[20] and satisfaction, and potentially gain a competitive advantage in the marketplace.

AI (Artificial Intelligence) refers to replication of human intelligence in machines which are designed to think and learn the way humans do. Artificial Intelligence [27] is used in a wide range of applications, including natural language processing, image recognition, decision-making, and more. There are different types of AI, based on the level of complexity of the system. Some of these include:

Reactive Machines: These types of AI systems can only respond to the situation at hand, but can't use past experiences to inform future decisions.

Limited Memory: These systems can use past experiences to inform current decisions.

Theory of Mind: These systems have the ability to understand and replicate human emotions and mental states.

Self-Aware: These systems possess the ability to understand their own mental states and consciousness.

AI is a rapidly evolving field, and it has the potential to change many aspects of our lives for the better. However, it is important to understand the practical and future scope and importance of AI, and to ensure that the technology is developed and used in an ethical and sensible manner.

B. *AI in Green HRM and sustainable development*

The role of AI in Green HRM [13] is increasingly important as organizations strive to become more sustainable and environmentally friendly. Sustainable development refers to the process of fulfilling present need in such a manner that future generation doesn't compromise in meeting their needs. This includes economic, social, and environmental factors. The literal meaning of sustainable development was first coined in the Brundtland Report in 1987, which defined it as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The United Nations later adopted this definition and established the Sustainable Development Goals (SDGs) in 2015 as a framework for achieving sustainable development globally. The SDGs include 17 goals and 169 targets that address issues such as poverty, hunger, health, education, clean water, energy, and climate change, among others.

AI technology can be used to analyse data on employee commuting patterns and energy usage in the workplace, identify opportunities for telecommuting and other alternatives, and automate and streamline HR processes. By using AI to promote sustainable practices, organizations can reduce their carbon footprint and improve

their overall environmental performance[19]. Additionally, AI can help to foster a culture of sustainability within the organization by encouraging employee engagement and education on environmental issues. Overall, the integration of AI in Green HRM is a crucial step towards achieving sustainable development and meeting the United Nations' Sustainable Development Goals.

Additionally, AI can be used to monitor and track energy usage in the workplace, and to identify areas where improvements can be made. AI can also help to automate and streamline HR processes, such as recruitment and training, which can reduce the need for paper and other resources. Overall, AI can help organizations to become more sustainable[7] and environmentally friendly through the strategic use of technology.

Green Human Resource Management (GRHM) and sustainable development[28] are closely related concepts that both aim to create a more sustainable future. GRHM focuses specifically on how organizations can integrate environmental sustainability into their human resource management[26] practices, while sustainable development looks at broader societal issues and how to meet the needs of the present without compromising the ability of future generations.

III. METHODOLOGY

This study is based on a bibliometric review of Artificial intelligence, green human resource and sustainability studies. Study is based on Descriptive Analysis using Vos Viewer. Bibliometric review methodology is considered substantial in reviewing documents in any research area as it provides a clear classification of the documents published in each research area, based on criteria used for analysing and classifying publications. The application of VOSviewer helps in presenting the data in a much easier way by representing data graphically, through category maps[5]. Data was collected on 14th January 2023 from dimension database. Initially 3507 bibliographic material was fetched from dimensions and then it was reduced to 273 after filtering data closely relevant to our study.

IV. ANALYSIS

A. Geographical Analysis

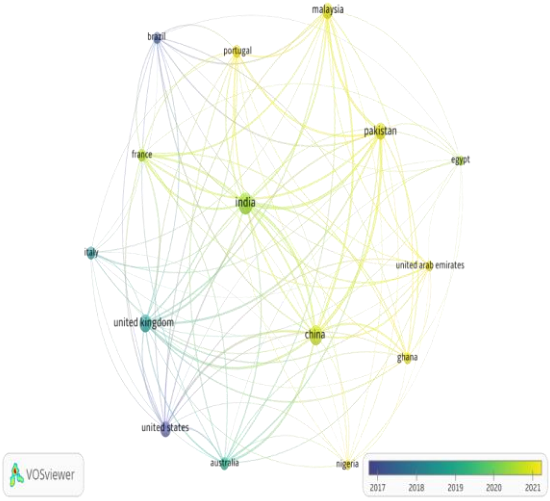


Figure 1: Co-Authorship by Country from year 2017-2021

The lines connecting the countries indicates the co authorship between countries and the length between the cluster shows the strength between them and it also depicts the strength of publication between these countries in relation to co authorship.

B. Bibliographic Coupling

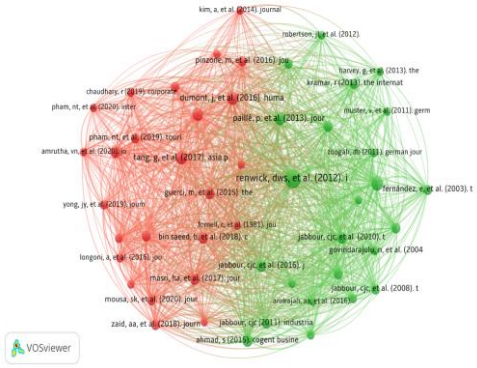


Figure 2: Bibliographic Coupling

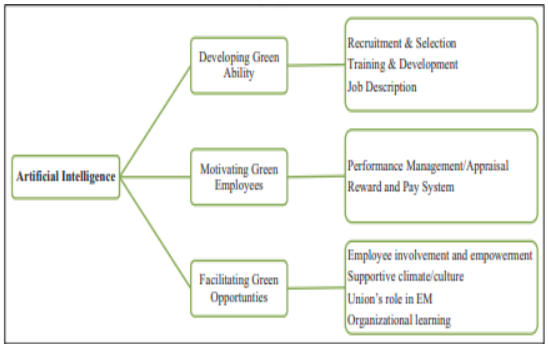
By doing bibliographic coupling of authors, it is possible to see which articles and authors are correlated, through multiple citations as it can be seen that Jabbour, cjc, et al is most cited in this domain of research work.

V. FINDINGS & DISCUSSIONS

This work analysis 273 papers on Green HRM and sustainability. Many organizations are doing data analysis to understand the trend of recruitment, compensations and sales etc. But AI (artificial intelligence) linkage with green HRM practices[6] is still in nascent stage. Although linkage of AI with Green practice is providing competitive advantage but still it is limited in few companies. The adaptation rate is low because of two major reasons because company does not know to manage this application and fear to replacement of human job with machine.

AI is helping to green practices in organization. Figure 3, Gupta, M., 2021. The Role of Artificial Intelligence in Adopting Green HRM Practices. In *Reinventing Manufacturing and Business Processes Through Artificial Intelligence* (pp. 1-18). CRC Press is explaining how AI can help in green practices.

Figure 3: Role of AI in Green HRM



Recently an application has been developed by an Indian IT company with the name of "AskDexter". This application has managed 22,000 employees by handling all major HR functions[7]. This application also shared upcoming job opportunities details with employee and help them to plan their career development. AI helps to screening of CV with perfect match with requirement. It also saving the candidate travelling time and cost because it has provided platform like Microsoft team and zoom for conducting online interviews etc. Now this is promoting green practices because it directly and indirectly saving nature.

AI also help in preformation appraisal on daily, monthly, quarterly and annual basis. It helps in taking and giving feedback and through that employee can judge his/ her self and do self-development. AI application helps to provide green reward by matching green performance [25] with green standard performance.

There are various application like Chatbots and Chat rooms help employer to conduct online counselling session, grievance handling session and employee engagement activities etc. Because of this AI application an employee can understand about the companies' green policies[24] and practices as well. Due to this employee can put their effort in only desirable area. AI application also help to reduce wastages and save energy of company. Use of AI application help to reduce chance of error and also helping to

adopt automation that further led Green HRM practices.

A. Practical Implications

As per above discussion it is clear that artificial intelligence is very helpful in Green Human Resource Management Practices. There are few implications which are discussed below –

Hiring – AI help in help in green hiring [14]. It provides online platform to implicate all screening process and conducting interviews etc.

Performance Appraisal – Advance technologies or software helps in tracking the employee performance[18]. Through this employees green performance can track on daily basis.

Operations – Various software like chat rooms and chat boards are available in market. These applications are used to solve the employee's queries and providing instant solution. It is also helpful to guide employee in solve problem.

Work Force – Today most of companies are looking for innovation and creativity. AI is providing that support to do something new in field of technology and Human resource.

Payroll – Technologies are playing important role in calculation of salary. It has also reduced the time and error. It also promotes green practices because it is reducing the paper use. This template was designed for two affiliations.

VI. CONCLUSION

This bibliometric review paper aims to identify research gaps, suggest recommendations and propose a research framework for future studies to further develop the GHRM field [21]. Technology is playing important role in Market. AI is helping companies to perform effectively and efficiently. AI helps to do automation of work because of this category of jobs are also changing in market. More brain jobs are demanding in market as compare to muscle jobs. AI has its larger benefits of area and that is why, it is more demanding in every area.

GRHM can help organizations contribute to sustainable development by promoting environmentally-conscious behaviour among employees [9,23], implementing environmentally-friendly policies, and incorporating sustainability into recruitment and hiring practices. This can not only reduce the organization's environmental impact, but also improve employee engagement and satisfaction, and potentially gain a competitive advantage in the marketplace.

On the other hand, sustainable development can be supported by GRHM by ensuring that the organization's human resources strategies and practices are aligned with the sustainable development goals (SDGs) set by the United Nations. The SDGs cover a wide range of topics, including poverty, hunger, health, education, clean water, energy, and climate change, and GRHM[16] can help organizations address these issues by encouraging employees to act sustainably, promoting sustainable practices[17, and creating a culture of sustainability in the workplace.

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