

## **“Analysing the role of Automation Technology in Sustainable Human Resource Management: A Conceptual Study”**

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### **Abstract**

This study aims to systematically analyse sustainable human resource management (HRM) research as well as an understanding of Automation, specifically the role of Artificial Intelligence in Sustainable Human Resource Management, to develop a better understanding of the state of the field and research gaps, as well as proposing a future research agenda. Sustainability is defined by the Brundtland Commission in 1987 as having three pillars: environmental, economic, and social. This research provides an overview of the function of automated technologies in economic and socially sustainable human handling. Moreover, regional disparities exist in sustainable HRM research. Additionally, in comparison to individual sustainable HRM best practices, the concept of grouping sustainable HRM practices has garnered limited study attention. As a result, from a strategic HRM standpoint, the authors emphasize numerous methods to group together sustainable HRM strategies. Furthermore, the findings indicate that sustainable HRM, in conjunction with automated technology, can encourage firms to become more competitive and successful in their pursuits of ensuring economic prosperity, social well-being, and environmental outcomes for their stakeholders. Conclusion identifies the role of AI for sustainable Human Resource Management and also discusses the three broad dimensions of Sustainability along with sub variables in HR.

**Keywords:** - Sustainable Human Resource Management, Artificial Intelligence, Social dimension, Economic Dimension, Environmental Dimension.

**Introduction: -**

In the past, HR departments were primarily used for administrative tasks. The main duties were clerical and worked in the HR departments, which were referred to as personnel department. Department committed to maintaining records regarding the workforce. But the way people regard human resources has changed significantly over the past 30 years. Research has revealed that the ways in which businesses handle their employees have a crucial implication for the effectiveness of organizations. (Combs, 2006) Today the phrase ‘strategic HR’ is used to refer to HR practices that provide a competitive advantage to organizations. (Ployhart, 2014) .

The two new buzzwords in the business world are sustainable human resource management and automation technology. The word sustainable development came into existence along with its recognition for very first time by United Nations World Commission on Environment and Development, in 1987 The Brundtland Report which chaired by Gro Harlem Brundtland (Former Prime Minister of Norway) says that the sustainable development is the development which meets the needs of the present, without compromising the ability of future generations to meet their own needs. This report revolves around three main agendas i.e., Environmental Protection, Economic Sufficiency and Social Nurturing community. After that the first international attempt to draw up action plans and strategies for moving towards a more sustainable pattern of development said to be happened in Rio de Janeiro also known as “Earth Summit”.

After covid 19 pandemic sustainability got more attention in every domain specially in Management, this is because of the rising awareness that to achieve sustainable development in the office environment, companies must use more than just an environmentally friendly building (Smith and Pitt 2011). They look for the building that supports wellbeing by creating appropriate working conditions, including workplace characteristics influence people's wellbeing (Bakker et. al 2008; Jensen and Van der Voordt, 2019).. It seems especially important in terms of returning to the workplace and assuring employees that they can feel and be safe (Verdani Partners, 2020). Furthermore Automation technology is also having its impact on every domain of corporate world. (Sheri Feinzig, 2018) Automation technology is enabling us to solve pervasive talent issues such as knowing our skills, preventing unwanted employee turnover, reacting quickly to employee hot spots, matching employees and external candidates with career opportunities, supporting managers with better salary investment guidance, eliminating manual tasks in benefits administration and payroll through robotic process automation, and creating an irresistible platform for employees to learn on the go. The world has already entered Industrial Revolution 4.0, in which human intervention has been eliminated in order to increase the efficiency and effectiveness of each individual in the business. The recent improvement, particularly the digital India mission in 2015, has enhanced technology to such a degree that the influence can be seen in almost all businesses. automation benefits include reduced workload and less time consuming, which leads to less mistakes and fraud boosting productivity and performance. On the other hand, negative impacts such as loss of situation awareness and reduced control in physical handling, which leads to deterioration of individual talents, should not be overlooked.

This is the first research paper which anticipates the role of Automation for Sustainable Human Resource Management.

### Review of Literature; -

Author	The focus of the research	Related applications
Gollan (2000)	In the workplace, employees' ambitions, desires, and potentials should be prioritized. If there is a significant disparity between employer speech and workplace reality, the competent and eager employees may wish to leave. Sustainable human resource management is a one-dimensional concept.	Work arrangements, use of technology, customer/supplier connections, multi-skilling and job redesign, and production processes (teamwork, total quality management, training, and appraisal).
Zaugg, Blum, & Thom, (2001)	The three major aims of sustainable HRM are to increase employment, increase individual responsibility through participatory leadership systems, and provide an acceptable work-life balance for employees. There is a person-centered approach.	Employability, individual responsibility, and work-life balance are all encouraged.
Ehnert (2009)	Sustainable human resource management is viewed as a global and micro phenomenon.	Productivity-oriented methods, cost reduction, efficient and effective resource deployment, value generation; to make organizational and human resources sustainable by balancing resource consumption and resource reproduction. Macro-level (external influences and causes): societal responsibility, the requirement for legitimacy, employee welfare, social welfare, and life quality.
De Prins (2011 cited in Rompa, 2011, pp. 16-18)	Sustainable human resource management has been handled from four main angles. As a result, it focuses on developing a strong link between organizational strategy and environment, employing effectively from, and engaging the organizational workforce respectfully.	From a psychological standpoint, stimulate employee conversation, help workers in their work-life balance, include employees in choices that impact them, policies aimed at stress avoidance, flexible working options, educational

		support; From a sociological standpoint, there is a diversified workforce, employee health and safety, volunteer work, engagement policies, and family-friendly personnel policies. Recruitment, employee turnover, employee assessment, and employability from a strategic standpoint Eco-friendly employee behaviour, green employer branding, environmental awareness training, and encouragement of ecologically sustainable conduct are all examples of green perspectives.
Kramar (2014)	Individual, organizational, societal, and ecological results may be used to evaluate the outcomes of Sustainable HRM. HRM procedures have both beneficial and bad consequences on many stakeholders.	Organizational outcomes include employee relationship quality, worker health and well-being, and organizational productivity. Job satisfaction, motivation, work-life balance, organizational commitment, and turnover rate are all individual results. Social effects include being recognized among a variety of prospective labour sources, being a preferred employer, and the quality of work relationships. Environmental outputs include: raising awareness about the usage of resources such as electricity, paper, and water; developing ecologically friendly goods and services; and lowering the cost of business travel.
Tabatabaei, Omran, Hashemi, & Sedaghat (2017)	A Balanced Scorecard-based Sustainable HRM approach is suggested. The model is concerned with economic and social behaviours.	Perspective on learning and growth: Purposeful HR training and development, lifelong learning, equitable opportunity, equal potential for individual progress; Internal process perspective: Developing sustainable working systems (developing and raising human

		resources, protecting them from poor working conditions), fair reward systems and motivating incentives compatible with sustainability goals, change toward sustainability, and ensuring human resource training. Stakeholder perspective: Stakeholder dialogue spaces, boosting employability, human resource health and safety, work-life balance, and negative externalities of HRM control Organizational reputation, social legitimacy, long-term competitive advantage, higher productivity, and, finally, the acquisition and retention of competent, motivated, and dedicated human resources.
Nigel Guenole, Ph.D. and Sheri Feinzig, (2006)	This Case study provides an understanding about the role of automation technology in HR along with the miracles of Artificial Intelligence for better Human Resource Management.	Related Application include enhancement of candidate experience, efficient and effective Recruitment, enhancement of motivation, Smarter compensation planning etc.

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## History of Human Resource Management

The Industrial Revolution- The Industrial Revolution was characterized primarily by the development of machinery, the integration of machine power, the development of a factory system, and mass production. It was distinguished by fast technical progress and growing specialization. As a result, the workplace transformed from a house to a factory, and the

employer's personal touch vanished. Labour was viewed as a commodity that could be bought and sold during the time.

**Trade Unionism** - Following the industrial revolution, trade unionism emerged. Workers created unions in order to improve their situation. The notion of trade unionism is preferable because it provides collective backing, and management may be obliged to address their problems. For this goal, unions utilized strikes, slowdowns, walkouts, picketing, boycotts, and sabotage. Trade union management methods gave birth to a variety of personal practices such as collective bargaining, a grievance handling system, arbitration, and so on.

**Scientific Management**- The scientific management movement has had a significant impact on management, particularly the employer-employee relationship. However, opponents of scientific management point out that the emphasis was on technology rather than the human aspect business. it was a significant advance in human resource management. F.W. Taylor (the founder of scientific management) created four scientific management concepts.

- Genuine science development.
- Scientific worker selection and training.
- The cooperative relationship between management and employees.
- Development of each employee to his or her greatest potential.

**Industrial Psychology**- Industrial psychologists emphasized the need of matching employee talents to the work. Hugo Munsterberg made major contributions to the study of jobs in terms of their mental and emotional demands, as well as the invention of testing instruments. The advancement occurred in the selection, placement, testing, and so on.

**Human Relation Movement** - Hawthorne's experiment and sources of published information focused on worker attitudes and moods and their impact on productivity. The importance of informal groupings in the sector was emphasized. The human relations movement took into account its social system. It was advised that interpersonal relationships be enhanced in order to really maximize the potential of people and communities.

**Behavioural Science** - The behavioural science period resulted in the creation of new motivational and leadership strategies, such as job enrichment, employee involvement, two-way communication, MBO, and so on.

**Human Resource Specialist and employee Welfare** - The scope of human resource management expanded with the advent of the welfare period. It is no longer exclusively concerned with the industrial recruitment and labour relations system.

**Modern concept of Human Resource Management has developed through following stages: -**

The commodity concept- The guild system was the beginning of Human Resource Management prior to the Industrial Revolution. The Guild was a close-knit group concerned with hiring, training, rewarding, and retaining employees. Factory systems arose as a result of the industrial revolution. The intimate contact between owners and employers was shattered

owing to the separation of owners and managers. Labour became a commodity that could be bought and sold.

The Factor of Production Concept - Employees were seen as a factor of production in the same way that land, machinery, materials, and money were. Taylor's scientific management emphasized personnel selection and training in order to enhance production. Employees were generally seen as the operational organization of machines or as simple appendages in the industrial process. However, this approach was an improvement in the sense that employees benefited from improved working conditions and greater pay.

The Paternalistic concept - Employees banded together to improve their situation by organizing around similar interests and forming trade unions. The expanding strains of democracy fuelled collective bargaining. The state also acknowledged employees' entitlement to job protection. Employers develop plans for their employees as a result of all of these influences. Employers had a protective and fatherly attitude toward their employees. Health facilities, relationship facilities, pension plans, group insurance schemes, housing facilities, and so on were among the welfare systems. Employers and employees both realized that they couldn't exist and thrive without the other.

The Humanitarian Concept - The Humanitarian approach is founded on the concept that employees have certain fundamental human rights and that it is the employer's responsibility to defend these rights. The industrial psychologists emphasized that an employee was not only interested in monetary benefits. Rather, social and psychological fulfilment were equally significant. Hawthorne's experiment sparked a lot of interest in workplace human issues.

The Human Resource Concept - Several studies have been undertaken in order to evaluate and comprehend human behaviour in an organization. These investigations resulted in the application of behavioural sciences to problems of individual and collective behaviour, among other things. Conflict management and organizational environment have become prominent topics. Employees began to be regarded as significant assets to the business, allowing corporate goals and employees' aspirations to be met concurrently. The emphasis has turned to management strategies such as two-way communication, management by objective, the function of informal groups, quality circles, and so on.

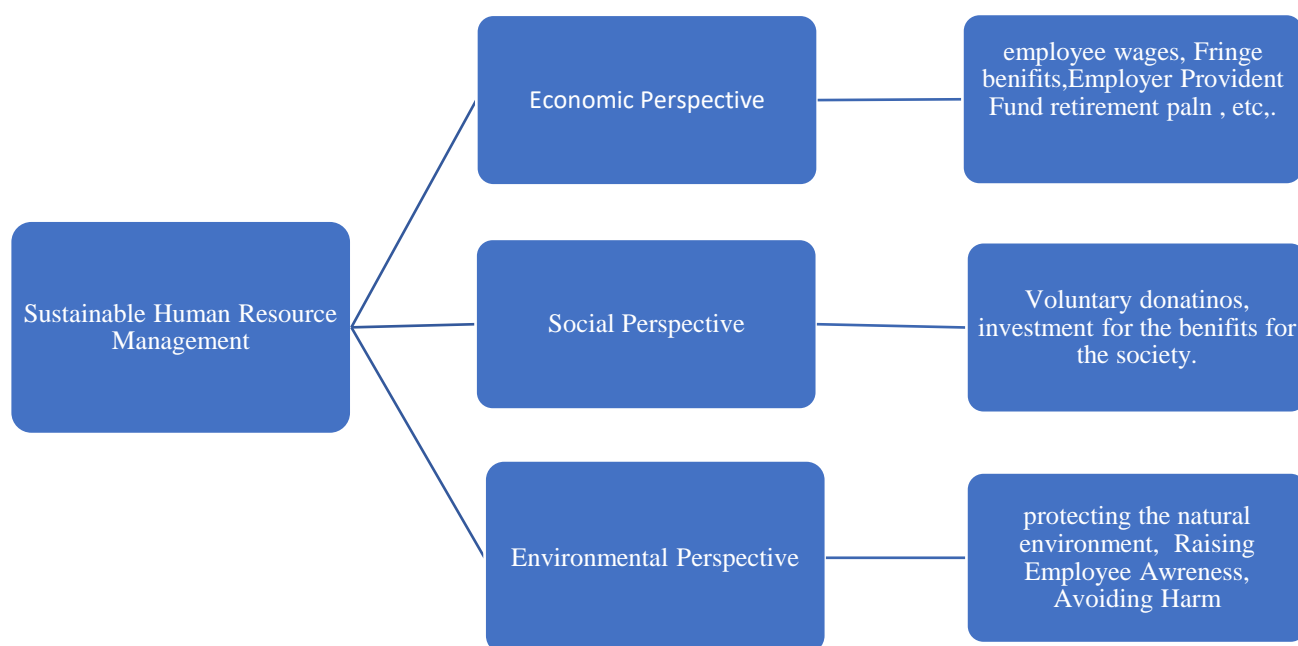
The Emerging Concept - Employees are now regarded as industry partners. They are progressively being awarded equity participation in the corporation. Workers' representatives are introduced to the board of directors and appointed. This new concept aims to instil in employees a sense that the organization is their own. Human resource management is gradually but slowly growing as a distinct academic field and a profession. Human Resource Development, Strategic Human Resource Management, and Sustainable Human Resource Management are some of the specialities available.

So, the summary of above content can be as follows, Human resource management originated as a function of record keeping. Later, the administration of labour agreements became its primary responsibility, and it became the corporate conscience keeper concerned with employee morale. After a while, the emphasis turned to the scientific side of staff selection,



training, and remuneration, which involved the use of systematic methodologies. Employees were regarded difficulties, processes, and expenses in the old approach. In contrast, the modern approach regards them as a resource, an asset, and an opportunity.

### Dimensions of SHRM and the potential role of Automation



Three pillars of Sustainable Development were identified in the Brundtland Report. Based on this, we may tie these viewpoints to HRM and discover a variety of factors. The approach given above divides SHRM into three major views and factors. Economic perspective defines financial sustainability, which includes employee compensation, fringe benefits, employer provident funds, retirement plans, and so on. Voluntary gifts and investments for the benefit of society are discussed in the social viewpoint. Environmental perspectives include natural environment conservation, raising employee awareness, and avoiding harm. This research article examines the role of automation in long-term human resource management by posing the following question: -

RQ: - Does automation technology assist organizations in becoming sufficiently efficient to fulfil the economic standpoint of SHRM?

RQ: - Does automation facilitate the establishment of better social relationships with its stakeholders?

RQ: - Does automation technology aid in improving environmental conditions as well as personnel awareness?



## **Role of Automation (Artificial Intelligence) in Human Resource Management; -**

Certain businesses do not rely solely on artificial intelligence since adding AI in certain industries harms the firm, and these are the areas where human resources came into picture. Both artificial intelligence and human resources are indisputable. The future of HR will be both digital and human, with HR directors concentrating on maximising the mix of manual and automated work. This is motivating HR to give leadership and team development a new top priority. A command of AI while reimagining HR to be more personalised, human, and intuitive.

### **Combining human and artificial intelligence improves the candidate experience**

As this is the area where businesses see significant, measurable, and immediate results in reducing time to hire, increasing productivity for recruiters, and providing an enhanced candidate experience that is seamless, simple, and intuitive, many companies are starting their AI pilot programmes in talent acquisition.

According to the IBM case study "Business Case for AI in HR," the use of artificial intelligence in recruitment assisted in attracting more qualified candidates even before they submitted applications for open positions. It also improved the applicant experience.

### **Example; -**

According to Carrie Altieri, vice president of HR communications at IBM, "Locating the perfect candidate in a reasonable amount of time is like finding a needle in a haystack. We have significantly reduced time to hire since using WCA, quadrupled NPS, and made significant improvements in connecting candidates to vacancies.

Engagement of AI candidates at IBM - The aim of IBM was to establish a meaningful experience that engages job seekers right away and fosters a shared knowledge of their desirability for jobs that match their skill set. The Watson Candidate Assistant is the AI solution that IBM created to address this issue (WCA). The way job seekers interact with IBM has been altered by WCA. Previously, after learning about the opportunity from an online jobs board or career website, candidates and employers would meet for the first time at the job interview. With the help of AI, candidates and employers can now communicate in real time through a chatbot, giving job searchers a more individualised application experience. With each contact, these chatbots get more intelligent. In order to provide a far more accurate taste of what it's like to work at the company, videos can also be included into the process. An increase in the flow of high-potential candidates has been the end result of IBM putting these skills into practise. In a trial study comparing WCA to a conventional static website, WCA had a conversion rate from browsing to application of 36% compared to 12% for the conventional static website. The time from application to interview has been significantly shortened, and Net Promoter Scores (NPS) were also higher for WCA than for conventional application methods.

AI recruitment at IBM – The task of recruiting is extremely difficult and essential to fulfilling the recruiter's job. The key challenge for IBM was to choose possible applicants who truly had

the necessary skill set to carry out a certain task. Using information about the job market, recruiting prospects' prior experiences, and AI, IBM Watson Recruitment (IWR) uses data to predict the time to fill and select the candidates with the highest potential of success. AI frees up time for the recruiter to concentrate on the most important aspects of recruiting: cultivating connections with applicants and prioritising and ranking candidate appropriateness. AI generates a match score between resume skills and necessary skills based on job requisitions. AI in the hiring process improves candidate and recruiter experiences while enabling faster and more accurate hiring.

IBM issues an AI manager alert- Managers at IBM receive alerts that are customised to each employee's needs. The manager is informed, for instance, when someone has been a member of a team for a long time, possesses particular talents, and is qualified for a promotion. Managers also get notifications regarding workers who are more likely to quit their jobs. Early interventions can be recommended when salespeople are in danger of missing quotas to bring individuals back on track. By suggesting options that HR would want to see implemented, alerts like these help managers make decisions that are aligned with an organization's people management strategy.

IBM's AI buzz analysis - The top three issues from social media sources inside the IBM firewall are revealed using chatter analysis. This offers suggestions that are tailored to a particular leader to aid in raising team engagement. For instance, IBM might suggest to a management that once an employee receives praise for their exceptional work, they spread the word about it to other people. These kinds of activities, according to IBM, increase engagement. A learning AI programme called "Engage at IBM" asks the leader for input on the suggestions, and as a result, the system gets better. The efficiency of the managers in leading and motivating their staff improves as the system does.

IBM's compensation planning with AI- IBM employs AI to help with the difficulty of accurately making complex compensation decisions for the entire enterprise. IBM created a decision support tool using AI that helps managers plan pay without under or over weighting the important data pieces. The software analyses a large number of data points before generating recommendations, combining internal data on elements like cost of replacement with external data from sources like the Bureau of Labour Statistics. Following successful early trials in certain areas, the programme is currently being made available to tens of thousands of first-line managers to aid in their pay planning.

The foregoing case study summarizes that the approaching period will be full of technological developments, and every firm must adapt. The implementation of artificial intelligence in human resource management resulted in several new changes. The author addresses human resource managers in this article, which will benefit both the recruiter and the potential employee. Recruiters are no longer need to spend hours reviewing thousands of candidates, freeing up their time to focus on higher-value duties such as sourcing, recruitment marketing, and communicating with prospects and hiring managers. DBS recruiters, in fact, learned a new skill: teaching the Chatbot to evaluate prospects and reply to applicants' inquiries.

## **Addressing the first Research Question; -**

### **Automation technology assist organizations in becoming sufficiently efficient to fulfil the economic standpoint of SHRM.**

The above-mentioned SHRM aspects discuss the economic perspective, which is connected to organizational financial sustainability. The company can provide reasonable salaries, fringe benefits, perks, provident funds, retirement schemes, pensions, and so forth. Not only on paper but also in practice, it is possible to conclude that, as a result of the intervention of AI in HR, most of the critical or monotonous tasks have been performed automatically, allowing every individual to increase their productivity at a greater extent, in the words of F.W. Taylor, allowing each employee to reach his or her full potential.

### **Automation facilitates the establishment of better social relationships with its stakeholders.**

The social aspect of sustainability in HR discusses improving relationships with stakeholders. The application of AI improves transparency in all tasks. This reduces friction and fosters positive relationships with everyone impacted by organizational activity. Aside from that, if an organization can fulfil its economic goals, it will be able to achieve its social goals as well. In other words, they are not mutually exclusive. They are connected.

### **Automation technology aid in improving environmental conditions as well as personnel awareness.**

Even though it is still in its early phases, the green initiative in human resource management is one of the most researched and contested subjects in the HR industry. The importance of the green initiative is recognized by both corporations and ordinary citizens. The Prime Minister of India's National Green India Mission 2014 might be the major cause. As a result, since 2015, the importance of green projects and the development of green HRM practices in organizations has grown. Automation technologies enable paperless work. The selecting process might be done in less time, saving time, money, gasoline, and other valuable resources. Organizations may use technology to make them realize the true relevance of environmental sustainability by adopting AR and VR.

**Conclusion:** - An overview of literature to understand the function of automation technologies, particularly artificial intelligence, in sustainable human resource management, has been done. As the Brundtland report offers the economic, social, and environmental viewpoints of sustainability. This study has shed light on the technological element of how artificial intelligence can aid for satisfying the three main dimensions of sustainability by assessing the criteria for achieving sustainability in HR. The analysis of numerous publications led researchers to the conclusion that while AI won't eliminate jobs, it will definitely make people more dependent on machines. This paper discusses the development of HRM as a concept from a commodity to an emerging concept and the role of technology. Last but not least, automation technology is essential to reaching a higher level of sustainability. Employing artificial intelligence in particular makes it possible for businesses to actually undertake sustainable human resource management. However, we must not ignore the drawbacks of technological empowerment.

**Potential of Future Research:** - More convenience means being less able to rely on oneself and more dependent on others. Modern machines are capable of doing anything, and people are becoming more and more dependent on them. (For instance, many numbers were memorised when using the wired telephone to communicate with people so that easy communication could be done anywhere, but after the wireless telephone or we should say mobile phone people hardly remember any number for the call.) This could result in a loss of skills and situation awareness. People have less faith in themselves and more faith in technology. Uncertainty surrounds this matter, which can be discussed later.

### References:

- Combs, J. L. (2006). How much do High performance work practice matter? A Meta-Analysis of their effects on organisational performance. *Personal Psychology*, 501-528.
- Ployhart, R. E. (2014). The Fascinating psychological micro foundation. *Annual Review of organisational Psychology and Organisational Behaviour*, 145-172.
- Sheri Feinzig, N. G. (2018). A Business Case of AI in HR. United States of America.
- Li, X. (2018). New Thinking of Human Resource Management in The Age of Artificial Intelligence.
- System 2018 (P. 4). Shaanxi: Francis Academic Press, UK.
- Biswas, S. (2019, February 5). Guide to AI in HR.
- Buzko, D. (2016). Artificial Intelligence Technologies in Human Resource Development. *Computer Modelling and New Technologies*.
- Forbes. (2018, September 27). Artificial Intelligence and Machine Learning.
- Meister, J. (2019, January 8). Ten HR Trends in The Age of Artificial Intelligence. Retrieved from Forbes.com Technology Is Changing Human Resource - But Where Will It Go. (N.D.).
- The Digital Age. (2019). Cognizant (P. 77). Cognizant. 5 8 the International Conference on Managing Human Resources at the Workplace, December 6-7, 2019 ISBN:978-93-83302-41-3 Deep Learning. (N.D.). Retrieved From Investopedia: Investopedia.Com
- Agbozo, G. K., Owusu, I. S., Hoedoafia, M. A., & Atakorah, Y. B. (2017). The Effect of Work Environment on Job Satisfaction: Evidence from the Banking Sector in Ghana. *Journal of Human Resource Management*, 5(1), 12–18. <https://doi.org/10.11648/j.jhrm.20170501.12>
- Ahmad, S. (2015). Green Human Resource Management: Policies and practices. *Cogent Business & Management*, 2(1), 1–13. <https://doi.org/10.1080/23311975.2015.1030817>
- Alarcón, D. M., & Cole, S. (2019). No sustainability for tourism without gender equality. *Journal of Sustainable Tourism*, 27(7), 903–919. <https://doi.org/10.1080/09669582.2019.1588283>

App, S., Merk, J., & Büttgen, M. (2012). Employer Branding: Sustainable HRM as a Competitive Advantage in the Market for High Quality Employees. *Management Revue*, 23(3), 262–278. <https://doi.org/10.1688/1861-9908>

Arowoshegbe, A. O., Emmanuel, U., & Atu, O. G. (2016). Sustainability and Triple Bottom Line: An Overview of Two Interrelated Concepts. *Igbinedion University Journal of Accounting*, 2(August), 88–126.

Arreola, O. G. (2015). Learning From Theories and Practice Of Sustainability: In Search of Cohesion. Doctoral Dissertation.

Michigan State University. Avery, G. (2005). Leadership for Sustainable Futures: Achieving success in a competitive world.

Edward Elgar Publishing. Avery, G. C., & Bergstein, H. (2011). Sustainable Leadership: Honeybee and Locust Approaches. Routledge.

Bansal, P. (2005). Evolving sustainably: A longitudinal study of corporate sustainable development. *Strategic Management Journal*, 26(3), 197–218. <https://doi.org/10.1002/smj.441>

Bennett, M., Bouma, J. J., & Wolters, T. (Eds.). (2002). Environmental Management Accounting: Informational and Institutional Developments (Vol.9). Springer Science & Business Media.