ROLE OF ARTIFICIAL INTELLIGENCE IN HRM

Author details
Surabhila Pattali
Assistant Professor
College of Administrative and Financial Sciences, University of Technology, Bahrain

Abstract
The vast development in technology has transformed the pace of every industry in today's vibrant and competitive world. Technology such as AI allows faster industrial growth and more effective job completion. Several departments, like finance, HR, marketing etc., have adopted this technology. People working at various managerial levels are currently under pressure and should be aware of AI techniques to overcome competition in the present competitive environment. So researches have been carried out in the field of AI integrated HR for many HR process such as recruitment etc.,. The relationship between AI and HR tasks will be examined in this study. the main objective of this study is to optimize the performance of HR with AI topology. So HR manager and employees from several firms were taken into consideration for the study. Through the investigation, the findings showed a there is strong correlation exists between AI and HR activities. Thus, AI plays vital role in industrial revolution.

Keywords: Artificial Intelligence**,** HR managers, Employers.

1.INTRODUCTION

The development of technologies such as AI, ML, mobile technology, IoT has expanded its role throughout the Fourth Industrial Revolution [20]. The utilization of these technologies transforms the way of business and has a significant impact on it. The AI and other intelligence based applications offer opportunities for organisations to achieve their optimal strategic business outcomes, which comprises productivity, ROI, customer engagement and operational efficiency etc.,[21]. Additionally, it yields beneficial results in the areas of employee satisfaction towards management and talent experiences.

The AI facilitates computers to carry out tasks that typically require human cognition like adaptive decision making [22]. Different AI digital tools and techniques are the subject of a discussion about whether businesses can profit from them. As a result, research on the intersection of AI and HRM is becoming more interdisciplinary. The role of AI's over sub- functional areas of HRM are becoming more and more popular [23]. This emerging AI based topology can assist to HRM in various aspects like talent acquisition, development and retention etc.,[24]It may also help the HR in recruiting , advertisements etc., Figure 1 depicts theimplementation of AI in companies
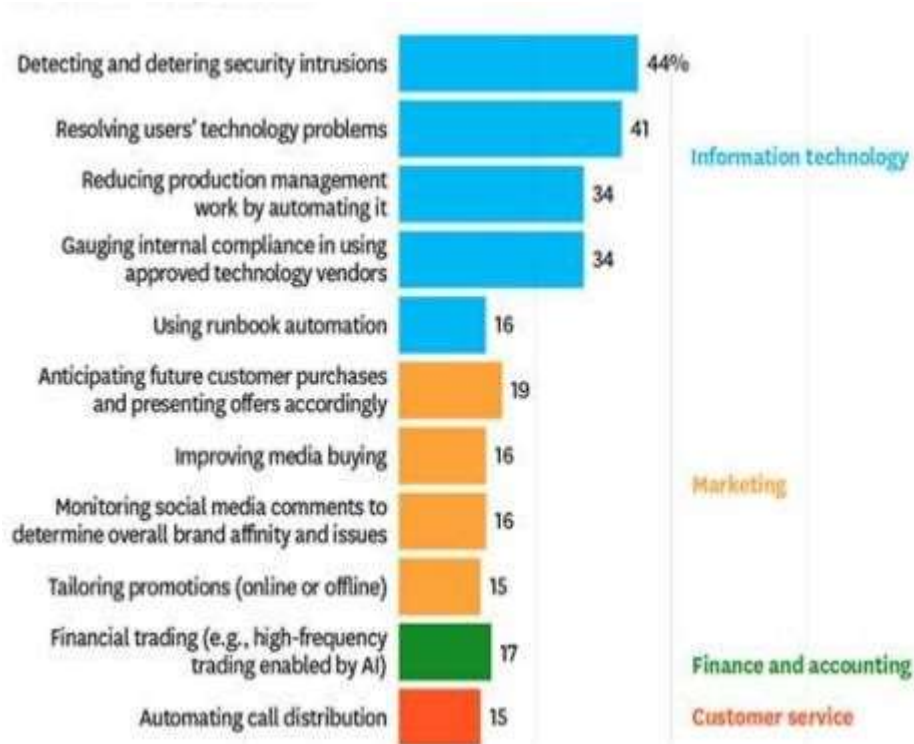
Figure 1. Implementation of AI in companies

Although the survey available on AI-enabled HRM reveals positive results, some people suggest that it is important to look into the potential drawbacks of these technologies for both businesses and workers[25]. Unintentional consequences like high employee turnover, declining job satisfaction, losing customer satisfaction etc., have an impact on an organization's overall business performance and goodwill can result in negative aspects [26-30].

Hence, in this article, a study has been carried out to analyses the role of AI in different progression of HR.

Thus, while implementing AI based HRM, there exist some limitations like,

1. Limited data sets,
2. Nature of HR process etc.,

Hence, this study addressed the effect of AI over HRM activities like recruitment, cost savings and staff management.

2. REVIEW OF LITERATURE

In order to examine the effects of workplace robots on firm productivity, data from 24 European countries were analysed [1]. Their unique contribution comprises of changing and developing new creative methods. So the managers must maintain a balance between exploitative and exploratory routines in order to successfully manage the adoption of service robots and thetransition to automation.

The adoption of AI in hiring procedures is examined by [2]. The authors examined thefacilitators and hurdles while implementing AI in recruitment procedures. Itexamined data from 297 Chinese companies. While analyzing the relationship between competence and AI, it was discovered that positive equability effects is only possible for the firms which has higher assets. A comprehensive qualitative case study of a massive worldwide information technology inconsulting firm is presented by [3].The MNC is creating contextually relevant AI apps for itsIndian business. While utilizing this, employees were able to receive individualised, ideas, andproblem-solving capacity. Additionally, it increased the overall cost-effectiveness of HR.

The critical issue of equipping workers with the knowledge and skills necessary to use AI technology is focused on [4].Authors reported an examination of qualitative data from 20 technical managers of international companies functioning in India.

According to [5], organisations must consider the different change perspectives needed to implement technology innovation in organisations.

It was discovered that service professionals with AI emotion recognition tools increased the effectiveness of controlling customer emotions and therefore elevated their emotional well-being. They conducted their research in two centralised call centres in the Netherlands [6].

It also proved that although there is a positive relationship between AI and employee intention, itmay be influenced by the perception of organisation support and the competition among a sample the workers [7].

As a result, research on the intersection of AI and HRM is becoming more interdisciplinary[8]. However, there is still little knowledge in the literature on AI and HRM on how these technologies can provide answers for efficient HRM and sub-functional areas [9].

Although research on AI-HRM is still in its infancy, a modern advancements in automation technologies offer significant advantages for HRM [10-12].Additionally, both small and large scale MNEs have recognized the advantages of AI tools and techniques for enhancing various HR activities like employee satisfaction, job engagement, productivity [13], HR cost effectiveness [14] effective decision making[15]. Examining AI's effects over functionality of HRM is becoming more and more popular in many MNE [16]. It can also help in hiring process including the selection, interviewing and evaluation of candidates [17] as well as the use of Industry 4.0 advertisements to post new job profiles [18] and evaluate the success of an employee's training [19].

3. PROBLEM STATEMENT

Early days, the major responsibilities of HRs were payroll and records maintenance. Then, their duties were expanded to employee training and recruitment process. Thus, the importance of HRM is increasing every day. These days, in addition to being in charge of the aforementioned duties, they are also responsible for inspiring the growth of the workforce and the well-being of the employees. Thus, the HR executives are intend to spend money on improved process automation and predictive analytics along with AI. Thus, AI plays a vital role in HR management. So HR leaders are concentrating more on this technology.

4. RESEARCH OBJECTIVES

The research is aimed to research the following

Objectives:

- To analyse the impact of AI on HRM.
- To find out strategies for the effective utilization of AI in HRM.

Research Questions

The research will be addressing the following questions:

1. What is the reason for adopting AI over HRM?
2. What is the recommendation for the effective use of AI technologies in HRM?
3. What are the different challenges faced during implementation of AI in HRM ?

6. METHODOLOGY

A descriptive research design is employed in the study. In this study, the research analysis used secondary data. Secondary data is gathered through scholarly publications, articles, and polling company survey findings etc.,.

Data Analysis

The survey's questions were developed using a 5-point Likert scale. This survey is split into 7 different sections namely HR process, difficulties, challenges, advancement of AI, recruiting, and demographic data. The questionnaire survey was sent to HR members and employees of 60 organizations. The sample size of 100participants of HR members and employees are involved inthis survey and the hypothesis research tests such as (t-tests, Chi Square and ANOVA) are considered for evaluation.

7. RESULTS AND DISCUSSION

The collected data was processed in IBM SPSS version for statistical analysis. The data wereanalysed for mean and standard deviation and is displayed below.

7.1 Reasons for adopting AI

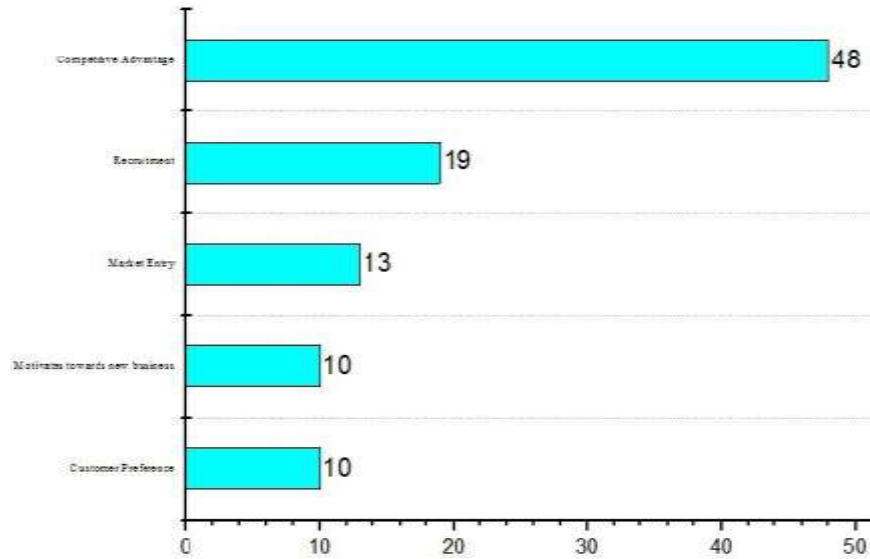Figure 2 depicts the reasons for adopting AI topologies in their firm.

Figure 2. Reasons for adopting AI topologies

From the analysis, it is concluded that most of the companies adopted AI to overcome competitive advantages and for recruitment process.

7.2 Statistical analysis for "challenges faced during implementation of AI in HRM"

Table1.Analysis of challenges faced during implementation of AI in HRM

Challenges faced during AI implementation	Mean	Std.Deviation	Skewness	Kurtosis
Integration of Data	3.58	0.852	-0.509	-0.326
Poor Skill	2.96	0.852	0.087	-0.441
Poor data quality	3.04	1.107	0.54	-1.136
Delayed Implementation	3.18	0.834	-0.351	-0.182
High Cost	3.18	0.834	-0.105	0.235

From the above analysis, for Integration of Data, both Skewness and Kurtosis remains negative, Hence it is concluded that data integration is a challenge while implanting AI. In case of Poor skill, Skewness is close to zero and Kurtosis remains negative. Hence it is concluded that respondents neither agree nor disagree that poor skill is one of the challenge. The same analysis happened in case of Delayed implementation. Similarly, it is determined that the most of the respondents disagree with poor data quality. Consequently, high cost is not a major challenge in implementing AI.

However, while implementing AI, employees are not aware how organization is making decisions about their work. So it leads to confrontational behavior of worker in organization. Thus, the feedback between employees and organization is not perfect or hidden one. This may create unfavorable consequences at the workplace.

Hypotheses Testing

The research hypotheses are tested in the below sectionHypotheses Testing - H1

Research Objective: To study the relationship between AI and job satisfaction.

Research Question (RQ1): What relationship, between AI implementation and job satisfaction of workers?

$H1_0$: There is no significant difference between AI implementation and job satisfaction. $H1_1$:There is significant difference between before AI implementation and job satisfaction.

Table2. Result of test of job satisfaction of workers before and after AI implementation

Variable	Mean	Std. Deviation	t	df	Result
Job Satisfaction before AIimplementation	2.86	.917	- 8.492	50	Significant
Job Satisfaction a fore AIimplementation	4.12	.653			

P< than 0.05, null is rejected. Hence there is significant difference in the mean values of job satisfaction before and after AI.

The majority of the employees claimed that engaging in their innovation focused work caused them to feel emotionally well. The process of social exchange has undergone as a result of the integration of AI-based platforms. The majority of employees expressed greater levels of job satisfaction.

HR recruitment and selection

Hypotheses Testing – H2

Research Objective: To study the effective role AI implementation over HR recruitment. Research Question (RQ2): What is the improvement of AI implementation over HR recruitment

$H2_0$: There is no significant difference between AI implementation and process of HRrecruitment.

$H2_1$: There is significant difference between before AI implementation and process of HRrecruitment.

Table3.Result of ttest of effective role of AI implementation over HR recruitment

Variable Pair	Mean	Std. Deviation	t	df	Result
HR recruitment process before AI	3.08	.891	-8.645	50	Significant
HR recruitment process after AI	4.16	.579			

P< than 0.05, null is rejected. Hence there is significant difference in the role of AI implementation over HR recruitment.AI technologies make this easier. It assists in interview process and makes it more effective. Hence, the interview procedure is now changed from personal to online interview. So the HR managers feel betterment in recruitment process procedures.

Training and development

Hypotheses Testing – H3

Research Objective: To study the effectiveness of AI implementation over training anddevelopment.

Research Question (RQ3): What is the effectiveness of AI implementation over training anddevelopment.

$H3_0$: There is no significant difference between AI implementation and success rate of trainingand development.

$H3_1$: There is significant difference between AI implementation and success rate of training anddevelopment.

Variable	Mean	Std. Deviation	t	df	Result
Success rate of training and development before AI	2.71	.855	-12.089	50	Significant
Success rate of training and development after AI	4.20	.633			

P< than 0.05, null is rejected. Hence there is significant difference in the mean values of success rate of training and development before and after AI implementation. Thus, AI will help the HR managers to identify the lacking skills of employees and offers required training to them. Thus, virtual training process provides lot of benefits for both the employees and organization. It also assist HR managers in making assessments over employee capability which includes intellectual and emotional proficiencies**.**

Business outcomes

The impact of AI in HRM also effects the business outcomes. The adoption of AI based HRM leads to improvement in productivity, cost reduction, customer engagement and loyalty.

Thus from the above survey, it is concluded that AI motivated HRM create favorable outcomes like job satisfaction, employee engagement etc. It also enables the employees to developreasonable expectations and impressions of their working conditions. It also improves the outcomes of business values. However, these technologies also have negative impact on employees such as higher stress, job insecurity and negative attitudes towards newly adopted technologies. Moreover, interfacing of an employees with internet will cause the disputes over employees' well-being at their workplace.

8. CONCLUSION

The purpose of this work is to analyze the impact of AI system over the performance of HRM. In order to carry out this study, 75 questionnaires' were reviewed and the results showed that AI has substantial impact on HRM. With less human involvement, AI is seen to replace repetitious tasks in HR functions. AI performs better than humans by lowering the attrition rate and enhancing talent acquisition. Hence, many organisations are moving towards AI techniques for the acquisition and maintenance of competitive advantages.

References

1. Del Giudice, M., Scuotto, V., Ballestra, L. V., &Pironti, M. (2021, this issue). Humanoid robot adoption and labour productivity: A perspective on ambidextrous product innovation routines. *The International Journal of Human Resource Management*, 1–27.

2. Pan, Y., Froese, F., Liu, N., Hu, Y., & Ye, M. (2021). The adoption of artificial intelligence in employee recruitment: The influence of contextual factors. *The International Journal of Human Resource Management*, 1–23.

3. Malik, A., De Silva, M. T. T., Budhwar, P., &Srikanth, N. R. (2021). Elevating talents' experience through innovative artificial intelligence-mediated knowledge sharing: Evidence from an IT-multinational enterprise. *Journal of InternationalManagement*, 27(4), 100871.

4. Jaiswal, A., Arun, C. J., &Varma, A. (2021). Rebooting employees: Upskilling forartificial intelligence in multinational corporations. *The International Journal of Human Resource Management*, 1–30.

5. Tambe, P., Cappelli, P., & Yakubovich, V. (2019). Artificial intelligence in human resources management: Challenges and a path forward. *California Management Review*,61(4), 15–42.

6. Henkel, A. P., Bromuri, S., Iren, D., & Urovi, V. (2020). Half human, half machine- augmenting service employees with AI for interpersonal emotion regulation. *Journalof Service Management*, 31(2), 247–5818.

7. Li, J. J., Bonn, M. A., & Ye, B. H. (2019). Hotel employee's artificial intelligence and robotics awareness and its impact on turnover intention: The moderating roles of perceived organisational support and competitive psychological climate. *Tourism Management*, 73, 172–181.

8. Connelly, C. E., Fieseler, C., Černe, M., Giessner, S. R., & Wong, S. I. (2020). Working in the digitised economy: HRM theory & practice. *Human Resource Management Review*, 31(1).

9. Agrawal, A., Gans, J., & Goldfarb, A. (2017). What to expect from artificial intelligence.*MIT Sloan Management Review*, 58(3), 23-26.

10. Bersin, J., & Chamorro-Premuzic, T. (2019). New ways to gauge talent and potential. *MIT Sloan Management Review*, 60(2), 1.

11. Maedche, A., Legner, C., Benlian, A., Berger, B., Gimpel, H., Hess, T., Hinz, O.,Morana, S., & Sollner, M. (2019). AI-based digital assistants. *Business & Information Systems Engineering*, 61(4), 535–544.

12. Prikshat, V., Malik, A., & Budhwar, P. (2021). AI-augmented HRM: Antecedents, assimilation and multilevel consequences. Human Resource Management Review,100860.

13. Wirtz, J. (2019). Organisational ambidexterity: Cost-effective service excellence, servicerobots, and artificial intelligence. *Organizational Dynamics*, 49(3), 1–9.

14. Azadeh, A., Yazdanparast, R., Abdolhossein Zadeh, S., & Keramati, A. (2018). An intelligent algorithm for optimising emergency department job and patient satisfaction. *International Journal of Health Care Quality Assurance*, 31(5), 374–390.

15. Torres, E. N., & Mejia, C. (2017). Asynchronous video interviews in the hospitality industry: Considerations for virtual employee selection. *International Journal ofHospitality Management*, 61, 4–13.

16. deKervenoael, R., Hasan, R., Schwob, A., & Goh, E. (2020). Leveraging human- robot interaction in hospitality services: Incorporating the role of perceived value, empathy, and information sharing into visitors' intentions to use social robots. Tourism Management, 78, 104042.

17. vanEsch, P., Black, J. S., & Ferolie, J. (2019). Marketing AI recruitment: The next phase in job application and selection. *Computers in Human Behavior*, 90, 215–222.

18. Pejic-Bach, M., Bertoncel, T., Meško, M., & Krstić, Ž. (2020). Text mining of industry

4.0 job advertisements. International Journal of Information Management, 50, 416–431.

19. Sitzmann, T., &Weinhardt, J. M. (2019). Approaching evaluation from a multilevel perspective: A comprehensive analysis of the indicators of training effectiveness. Human Resource Management Review, 29(2), 253–269.

20. Azadeh, A., Yazdanparast, R., AbdolhosseinZadeh, S., &Keramati, A. (2018). An intelligent algorithm for optimising emergency department job and patient satisfaction.International Journal of Health Care Quality Assurance, 31(5), 374–390.

21. Shank, D. B., Graves, C., Gott, A., Gamez, P., & Rodriguez, S. (2019). Feeling our wayto machine minds: People's emotions when perceiving mind in artificial intelligence.Computers in Human Behavior, 98, 256–266.

22. Prentice, C., & Nguyen, M. (2020). Engaging and retaining customers with AI and employee service. *Journal of Retailing and Consumer Services*, *56*, 102186.

23. Nguyen, T. M., & Malik, A. (2022). 'Impact of knowledge sharing on employees' service
quality: The moderating role of artificial intelligence. *International MarketingReview.*

24. Malik, A., Sreenivasan, P., & De Silva, T. (2022). Artificial intelligence, employee engagement, experience and HRM. In A. Malik (Ed.), Strategic human resource management and employment relations: An international perspective (2nd ed.). Springer.

25. Huang, M. H., & Rust, R. T. (2018). Artificial intelligence in service. Journal of Service Research, 21(2), 155–172.

26. Wilson, H. J., Daugherty, P., &Bianzino, N. (2017). The jobs that artificial intelligence will create. MIT Sloan Management Review, 58(4), 14.

27. Charlwood, A. and Guenole, N., 2021. Can HR adapt to the paradoxes of AI?. *Human Resource Management Journal*.

28. De Stefano, V. (2019). 'Negotiating the algorithm': Automation, artificial intelligence
and labour protection. Comparative Labor Law & Policy Journal, 41(1), 15-46.

29. Ererdi, C., Nurgabdeshov, A., Kozhakhmet, S., Rofcanin, Y., &Demirbag, M. (2021). International HRM in the context of uncertainty and crisis: A systematic review ofliterature (2000–2018). The International Journal of Human Resource Management,1–39.

30. Glikson, E., & Woolley, A. W. (2020). Human trust in artificial intelligence: Review of empirical research. Academy of Management Annals, 14(2), 627–660.'

31. Senthiil, P. V., V. A. Sirusshti, And T. Sathish. "Artificial Intelligence Based Green Manufacturability Quantification Of A Unit Production Process." *International Journal Of Mechanical And Production Engineering Research And Development* 9.2 (2019): 841-852.

32. Bryndin, Evgeniy. "Development Of Sensitivity And Active Behavior Of Cognitive Robot By Means Artificial Intelligence." *International Journal Of Robotics Research And Development* 10.1 (2020): 1-11.

33. Nawalagatti, Amitvikram, And R. Kolhe Prakash. "A Comprehensive Review On Artificial Intelligence Based Machine Learning Techniques For Designing Interactive Characters." *International Journal Of Mathematics And Computer Applications Research(Ijmcar)* 8.3 (2018): 1-10.

34. Sulphey, M. M. "The Utility Of Q-Methodology In Human Resource Management Research." *International Journal Of Human Resources Management* 3.3 (2014): 15-26.

35. Mehta, P. A. L. L. A. V. I., And K. H. U. S. H. B. U. Mehta. "Green Hrm Practices And Organizational Culture." *International Journal Of Human Resources Management* 6.1 (2017): 1-6.

36. Nivlouei, Fahimeh Babaei. "Explanation Of Electronic Synergistic Applications Of Human Resource Management According To The E-Hrm System." *International JournalOf Human Resources Management (Ijhrm)* (2014): 38-49.