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Impact Of Artificial Intelligence On HR Practices: An Empirical Analysis

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Abstract

The purpose of this research paper is to explore the major impact of artificial intelligence (AI) on the practices of human resources (HR) and talent management are examined. The article gives an introduction to AI technologies and their applications within HR, emphasizing their potential to improve strategic decision-making, streamline recruiting and selection procedures, and increase employee engagement and performance. The obstacles and ethical issues surrounding the application of AI in HR are also covered. In conclusion, this study shows how the HR AI revolution can lead to more productive, data-driven, and inclusive workplaces.

Keywords- Artificial Intelligence, Human Resources, Talent Management, Employee Engagement, Productivity

I. INTRODUCTION

How quickly things have changed is demonstrated by how antiquated we feel about even relatively modern computer technology today. In the 1990s, cell phones resembled large bricks with imprecise green displays. Punch cards were the primary form of computer storage 20 years prior. It is simple to overlook how recent this technology is because computers have advanced so swiftly and become such a crucial part of our daily lives in such a short amount of time.

In the age of the digital revolution, artificial intelligence (AI) has assumed a prominent role, with applications in numerous industries. Human Resources (HR) is one area where this game-changing technology has had a huge impact but is frequently ignored. HR is naturally focused on human connection, yet it is increasingly benefiting from AI's unique capabilities.

Automation is one of AI's most important contributions to the workplace. Data entry and report production are two examples of repetitive and time-consuming operations that can now be automated utilizing AI-powered solutions. Employees are liberated from menial activities as a result, freeing them up to work on more important and innovative projects. Not only does this lessen the possibility of human error, but it also makes it possible for workers to use their knowledge and experience more effectively, increasing production and efficiency.

AI is revolutionizing communication and collaboration in the workplace in addition to automating duties. Chatbots and other virtual assistants improve customer service and corporate communication by giving users immediate access to information and support. AI-powered language translation software is removing obstacles to communication between workers from various backgrounds and cultures. Project management platforms and AI-powered document editing software are two examples of collaborative solutions that are streamlining teamwork and making it simpler for employees to collaborate on projects from anywhere. As a result, there is better communication, better teamwork, and greater production.

Digitalization in HRM

The use of cutting-edge technology to transform conventional HR operations is known as digitalization. To automate HR procedures and workflows, digital HR makes use of the cloud and software as a service (SaaS). HR is being revolutionized by the cloud, which is reducing HR procedures and enabling HR and People teams to concentrate on people. Businesses purchase SaaS and cloud technology on a rolling subscription basis. By using a digitalized strategy, they can avoid making a one-time fixed investment in on-premise equipment. Instead, the cost is spread out over time and based on the demands and growth of the organization. Due to the fact that all of an organization's People data is kept in one location for analysis and reporting, digitalized HR also gives businesses the ability to make intelligent, data-based decisions.

An organization must prioritize digitizing its HR services. It is a crucial and strategic process that tries to maximize the workforce in order to achieve organizational objectives. With technological advancements, shifting consumer behavior patterns, and the globalization of markets, HR functions, and processes have been altering. One such development, digitization, has recently changed HR practices by offering higher production and efficiency at reduced prices.

HR digitalization? It entails the transformation of data into a digital format. Numerous benefits of digitization include simpler access and retrieval, reduced costs, quicker communications, and improved security. To boost productivity and simplify processes, it is used throughout all human resource procedures.

One of the most crucial aspects of human resource processes is recruitment. The other is selection. It frequently serves as the opening stage of the hiring procedure and is essential to the onboarding of new employees. By integrating tools like ATS (Applicant Tracking tools) or CV/Resume databases that enable more effective candidate sourcing, screening, and tracking, recruitment, and selection can be made more digital.

The use of digitization in training and development is another example. This can be accomplished by creating a learning management system (LMS) or using eLearning platforms. Users can access different forms of content (such as written materials, videos, and interactive games) through an LMS at any time and from any location.

Table-1 Benefits and disadvantages of Digitalization in HRM:

Benefits of Digitalization in HRM:
<ul style="list-style-type: none"> • Cost-cutting • Enhanced Productivity • Enhanced Efficiency • Improved clientele service • Enhanced Security • More accurate data analysis • Greater employee satisfaction • Stronger alignment between company strategy and people management • Better decision-making with accurate data and information • Higher talent retention • Lower HR costs • Automation of manual processes • Improved visibility over the workforce • Consolidated HR systems • Stronger employer branding and candidate attraction
Disadvantages of Digitalization in HRM
<ul style="list-style-type: none"> • Privacy Breach • Down Time • Wrong Employee Assessment • Lack of confidence in digital data • ignorance of the advantages of digitization • a lack of understanding about how to use technology • loss of subjectivity

II. THEORETICAL FRAMEWORK

In a company with 100 employees, performing the activities manually might be labor- and time-intensive. Here is an approximate time estimate for each task:

- 1. Manual paperwork and filing:** Depending on the amount of paperwork and the organization's filing system, manual paperwork and filing can take a long time. Depending on the complexity of the paperwork, the volume of documents to be filed, and the effectiveness of the filing process, it can take anything from a few hours to several days per week.
- 2. Inventory management:** Managing an inventory manually can take a lot of time, especially if a company has 100 employees and a lot of inventory. Depending on the intricacy of the inventory, the number of products, and the degree of organization and tracking needed, it can take many hours per day or week.
- 3. Data analysis and reporting:** If there is a lot of data to be evaluated, manual data analysis and reporting might be time-consuming. Depending on the complexity of the data, the level of analysis necessary, and the accessibility of data analysis tools, it may take several hours or even days.
- 4. Manual email management:** This process entails reading and replying to emails, classifying and ordering communications, and responding to email inquiries. Depending on the volume of emails received, the complexity of email organization, and the number of employees, manually managing emails can take several hours each day.
- 5. Scheduling** appointments manually for 100 employees can be time-consuming, especially if there are many appointments to manage and there are many scheduling conflicts. Depending on the number of appointments, the number of personnel available, and the effectiveness of the scheduling procedure, it can take several hours per week.
- 6. Financial transactions:** Managing payments, creating invoices, and recording transactions are all examples of manual financial operations. Depending on the volume of transactions and the complexity of financial reporting, manually processing financial transactions in a 100-person company can take several hours per week or month.
- 7. Client Service:** Handling client enquiries, offering advice, and resolving problems are all parts of manual customer service. Depending on the volume of queries and the complexity of the support issues, manual customer service in a company with 100 employees may take many hours per day with a large staff and client base.
- 8. Recruitment and applicant tracking** tasks include managing applicant information, conducting interviews, and examining resumes as part of manual recruitment and applicant monitoring. Depending on the number of positions available, the number of applications, and the effectiveness of the hiring process, it might take many hours per week or month.
- 9. Manual employee onboarding** calls for responsibilities like creating orientation materials, running training sessions, and managing documentation. Depending on the onboarding activities, the quantity of new employees, and the effectiveness of the onboarding process, manual employee onboarding for a 100-person workforce may take several days or weeks.
- 10. Time and attendance tracking:** Manual time and attendance tracking tasks include keeping track of absenteeism, handling timesheets, and recording employee work hours. Depending on the number of employees and the precision and effectiveness of the manual tracking method, it can take several hours every week.
- 11. Payroll processing:** Creating and delivering pay slips as well as manually calculating wages, deductions, and taxes are all parts of the manual payroll processing procedure. Depending on the complexity of the payroll system, any particular rules or regulations, and the effectiveness of the manual processing, manual payroll processing for 100 employees might take anywhere from few hours to a few days.
- 12. Manual performance management** entails duties including goal-setting, carrying out performance assessments, and giving feedback. Depending on the frequency of reviews, the level of analysis, and the level of detail required, manual performance monitoring for 100 employees can take several hours to several days.
- 13. Portals for employee self-service:** manual control of employee self-service

III. LITERATURE REVIEW

S.N. Premnath and A. Arun(2019) highlighted other themes, including the typical difficulties HRs may encounter when integrating AI and HR and how these difficulties could be overcome, the current limitations of the technology, and most importantly, the advantages of applying such a technology to the HR function. In order to assist future HR professionals in adjusting to a more technologically advanced HR function, the study sought to learn more about the application of artificial intelligence to the human resources function in the Indian setting.

Peigong Li et al (2022) stated how digital innovation and technological advancements in the HR of the healthcare industry would enable firms to obtain better financial and economic results while raising productivity, employee retention, and general satisfaction. The creation of employee compensation and benefits plans, which hitherto took up the majority of the work of HR personnel and required the use of rudimentary methods, will take much less time with the deployment of digital HR systems run by AI tools. By implementing AI tools, procedures were transformed and HR employees had more time to concentrate on more strategic issues.

Abhilasha Singh & Apurva Shaurya (2021) Demonstrated that the main advantages of AI were the elimination of repetitive jobs and accelerated quality. Similarly, to that, the biggest problems were a lack of training and technological readiness. Due to restrictions, AI is less able to be implemented in the overall hiring process and can produce results that are problematic in terms of their authenticity. AI is expected to take the position of administrative chores in both the hiring process and hiring activities, interfering with aspects that are relevant to certain jobs and recruitment outcomes. The traditional hiring procedure would be extended by AI, which is capable of providing candidates for jobs with a wider range of possibilities.

Ginu George & Mary Rani Thomas (2019) stated that AI is replacing many HR functions, but this does not imply that HR positions are being replaced by AI, which is untrue. For HR professionals, there is a ton of administrative work that is important and repetitious, like posting jobs, sourcing candidates, screening them, organizing meetings and interviews, creating timesheets, documenting and verifying accounts, and tracking other expenses. Of course, if this can be totally automated through AI, it will be to the HRs' great advantage as it will free them up from these menial jobs and allow them to spend more time on strategic thinking, creativity, relationship-building, emotional intelligence, and better problem-solving.

Xiaoyu Huang et al (2023) concluded that the next generation of HRM, known as personalized HRM, is characterized by the use of advanced HR analytics and AI to maximize both the quality and ROI of HRM. By establishing a conceptual framework for personalized HRM and exploring its theoretical and managerial consequences, this research enriches the strategic HRM literature overall. A two-level causal conceptual framework that explains the causal mechanisms connecting personalized HRM and a firm's financial success has been introduced. We have proposed and explained why personalized HRM outperforms traditional HRM approaches in terms of improving employee ability and motivation, productivity, the HR climate, flexibility, the ROI of HRM, and subsequently, the firm's financial performance. Our arguments are based on the theories of individual differences and person-organization fit.

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Abdirahman Mohamoud Ali (2022) stated that an HRM digitization process must meet a number of requirements in order to be successful. These are the prerequisites:

- 1- Clearly and explicitly define the goals
- 2 Clearly recognizing the important and relevant figures
- 3- Using digital tools to complement traditional/conventional ones

III. RESEARCH METHODOLOGY

This research uses primary methods and quantitative and qualitative in nature. The data was collected from the HR Department of Medium size companies who has more than 100 employees. 10 SMEs were included and 16 HR Task was analyzed. Only those SMEs were considered those who have introduced AI in their organizations. As the data was not distributed evenly so Wilcoxon rank test was conducted to analyze the data.

V. DISCUSSIONS

S.N	Name of Task	Before Digitalization /Month	After Digitalization /Month
1	Manual paperwork and filing	20	5
2	Inventory management	6	2
3	Data analysis and reporting	12	2
4	Email management	8	2
5	Appointment scheduling	4	1
6	Financial transactions	10	4
7	Customer support	30	12
8	Recruitment and applicant tracking	4	2
9	Employee onboarding	6	2
10	Time and attendance tracking	8	1
11	Payroll processing	14	4
12	Performance management	10	2
13	Employee self-service portals	4	1
14	Training and development	12	6
15	Benefits administration	8	4
16	Employee surveys and feedback	4	1

As the above data is not normally parametrically distributed so researchers have decided to conduct nonparametric tests Wilcoxon signed rank test the data do not follow a normal distribution or the assumptions for parametric tests cannot be met.

H_0 = “There no difference in activities time before digitalization and after digitalization”

H_1 =” There is significant differences in activities time before digitalization and after digitalization”

Decision -If the p-value is less than the chosen significance level, you can reject the null hypothesis and conclude that there is a significant difference between the paired observations.

Paired Samples T-Test

			Statistic	df	p	Mean difference	SE difference	95% Confidence Interval	
								Lower	Upper
Before Digitalization /Month	After Digitalization /Month	Student's t	6.03	15.0	< .001	6.81	1.13	4.40	9.22
		Wilcoxon W	136		< .001	6.00	1.13	4.00	9.50

Conclusion – p value 0.001 is less than 0.05 so we reject the null hypothesis

There is a significant difference in activities time before digitalization and after digitalization

Conclusion

Our findings demonstrate how digital innovation and technical developments in SME HR could help businesses improve their economic and financial performance while also increasing productivity, employee satisfaction, and staff retention. Staff members should be able to collaborate online for the AI implementation at SME to be effective. Good customer service should be taught to staff members. When necessary, staff personnel must have access to the right data. Your front-line staff needs to be aware of the functions of your executives and the fundamental values of the business. So that your employees may access this information when they're on the go, the business must have a mobile app.

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