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## A Study on the Impact of Artificial Intelligence on Human Resource Management

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### ABSTRACT:

*This competitive world demands for the human resources as a mandatory asset in order to improve the organizational performance. The organizations have to strive for adopting the innovative HR practices to improve their performance and be different among its competitors. In near future, HRM is moving from the traditional way of HR practices to more advanced progress like automation, augmented intelligence, robotics and AI.*

*AI has been proved as life – changing for us. From automation of mundane and time-consuming tasks, to the augmentation and amplification of human capabilities, AI has the potential to drastically transform the way we live and work. For HR, this is not just an opportunity but also an urgency to adapt and adopt. The HR professionals today are more towards optimizing the combination of human and automated work to gain a simple and intuitive work environment. It provides them enough time to deliver the enhanced employee performance.*

*To compete with AI and advanced machines, the real challenge now lies within the respective HR department that how will they train and re-transform their workforce in understanding the AI and collaborating and working with AI and robotics.*

### INTRODUCTION

#### What is Artificial Intelligence?

Artificial Intelligence (AI), as highlighted by Tecuci (2012), is a fast-developing technology driven largely by the growth of the Internet and is expected to significantly influence everyday life in the near future. The term “Artificial Intelligence” was formally introduced in 1956 (Stuart & Norvig, 2016). AI generally refers to machines designed to simulate human intelligence, enabling them to learn, reason, plan, perceive, and understand natural language. These capabilities create vast socio-economic benefits while also presenting important challenges.

Since AI is closely linked with Internet-based technologies, the Internet Society emphasizes the importance of understanding both its opportunities and risks to ensure the development of a trustworthy digital environment. With the increasing integration of machine learning into products and services, maintaining user trust in the Internet has become a critical concern.

There are several key issues associated with AI that require careful consideration. These include its socio-economic effects, concerns about transparency, bias, and accountability, as well as the ethical

use of data. Additionally, security and safety challenges, along with AI's role in shaping new digital ecosystems, must be addressed.

Despite its advantages, AI also faces notable challenges such as limited transparency in decision-making processes, difficulties in interpreting outcomes, data quality issues, and the risk of biased results. Furthermore, concerns related to security, accountability, and its potentially disruptive impact on social and economic systems continue to grow.

To address these complexities, the Internet Society has proposed a set of principles and recommendations focusing on the fundamental capabilities that enhance the value and reliability of the Internet. In recent years, AI has gained significant global attention. Continuous innovation powered by the Internet has integrated AI more deeply into daily life. Alongside these advancements, increasing awareness of its economic, social, and ethical implications has made AI a central topic in modern discussions. As a result, both industry investments and government interest in AI are expanding rapidly, with policymakers seeking to understand its implications for society.

### **What is Human Resources Management?**

Human Resource Management (HRM) is a distinct and specialized function that every manager is required to perform. It focuses on the recruitment, selection, development, and effective utilization of employees within an organization. The primary aim of HRM is to ensure that each employee contributes optimally toward achieving organizational objectives.

The modern concept of HRM has evolved through several important and interconnected developments since the Industrial Revolution. With the rise of trade unions, organizations felt the need for an intermediary who could maintain a healthy relationship between management and workers. Initially, this responsibility was handled by Labour Welfare Officers, whose role was largely limited to employee welfare activities.

As industrialization progressed and the factory system developed, large numbers of workers began to be employed under one roof. This increased the demand for systematic hiring processes, leading to the emergence of the Personnel Officer. The key responsibilities of this role included recruiting, selecting, and placing employees within the organization.

Over time, rapid technological advancements created the need for continuous skill development and training for both existing and new employees. The human relations approach further emphasized that employees are the most valuable asset of any organization. As a result, the traditional concepts of Labour Welfare and Personnel Management gradually evolved into a more comprehensive approach known as Human Resource Management.

Today, HRM encompasses a wide range of activities, including recruitment, selection, placement, training, and employee welfare. In conclusion, Human Resource Management has effectively replaced the earlier concepts of Labour Welfare and Personnel Management by adopting a more holistic and strategic approach to managing people in organizations.

The main functions performed by Human Resource Management are:

- (i) Determining the number & types of employees required.
- (ii) Recruitment, selection & placement of employees.

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- (iii) Providing training to the employees for improving their performance & career growth.
  - (iv) Performance appraisals
  - (v) Motivating the employees by providing both financial & non-financial incentives.
  - (vi) Ensuring social security for employees & handling their grievances.
  - (vii) Defending enterprises from legal complications
  - (viii) Establishing amicable relations between union & management.

In any enterprise all managerial functions are performed by individuals. No enterprise can function and achieve its objectives in the absence of efficient and competent employees. Committed, honest, determined and loyal employees are required not only for the growth but also for the survival of organization. Therefore, human resource is considered as the most valuable resource of an enterprise.

After deciding what is to be done and how it is to be done through planning and deciding the organization structure, the human requirement of the organization is assessed. Staffing function starts with the process of need assessment and goes on to recruit and select people as per the requirement of organization.

Staffing is also considered as a distinct functional area of management just as marketing management and financial management. Further, success of employees depends upon the quality and stability of the jobs for which they are appointed. Ensuring same is an important role played by the human resource department.

Therefore, staffing is referred to as both viz “a line as well as a staff activity” i.e. an essential function of the management as well as a distinct functional area of management.

#### ***Artificial Intelligence in Human Resource Management:***

Artificial Intelligence (AI) technologies provide significant opportunities to enhance various Human Resource (HR) functions, including self-service operations, recruitment and talent acquisition, payroll management, reporting, and access to organizational policies and procedures. In today’s rapidly evolving technological environment, AI capabilities are advancing continuously and are transforming the way organizations conduct their business.

HR executives increasingly believe that integrating AI into HR processes can greatly improve the overall employee experience. It enables better resource utilization, saves time and costs, and provides more accurate data for effective decision-making in people management. As noted by Nilsson (2005), machines have the potential to perform tasks that traditionally require human intelligence, moving toward what is described as human-level AI.

The collaboration between humans and intelligent machines is generating a vast amount of HR-related data, especially through cloud-based systems. AI-driven analytics help organizations gain deeper insights into operations and improve decision-making. The success of any organization depends on how effectively it integrates people, processes, and technology to deliver value

efficiently. AI plays a key role in automating routine back-office tasks, ensuring reliable HR transactions and service delivery.

A major application of AI in HR is the use of conversational tools such as chatbots, which enable intelligent automation of HR services. The adoption of AI in HRM, particularly in recruitment, represents a “new era of HR,” as it replaces repetitive tasks traditionally handled by human recruiters (Upadhyay & Khandelwal, 2018).

Despite its advantages, the adoption of AI in HR faces several challenges. Financial constraints often limit the implementation of advanced tools. Additionally, there is a shortage of skilled professionals capable of managing AI systems. Concerns regarding data privacy and security are also significant, as HR data is highly sensitive and must be accessed only by authorized individuals. AI systems require continuous maintenance, updates, and learning to remain effective. Integration issues may arise due to limited data availability, especially with the increasing use of Software as a Service (SaaS) platforms. Furthermore, many AI applications are still in experimental stages, with limited large-scale proven success.

However, the use of AI in HR can be justified due to its multiple benefits. It reduces the time spent on administrative tasks, minimizes the workload of shared service centers and help desks by handling routine queries, and improves recruitment and employee retention processes. It also helps in measuring return on investment and reduces bias in HR-related decision-making.

To remain competitive in the global economy, organizations must adopt AI-driven solutions, particularly conversational AI, in their HR processes. By automating administrative functions, AI allows HR professionals to focus more on strategic roles. AI systems can process data faster than humans and identify a broader pool of potential candidates, including those who may not be actively seeking jobs. This leads to a more efficient recruitment process and enables managers to dedicate more time to strategic analysis and organizational development.

### ***Purpose of the Study***

The purpose of this study is to know what impact the Artificial Intelligence has on Human Resource Management in the current era or how AI will affect HRM in the future. As a concept, artificial intelligence has been used around decades. But from last 20 years, the successful application of machine learning enabled the boom of AI. This study is important because AI, today, has begun to engage the workforce. It is helping the staff to manage their time effectively and add the strategic value to the organization. AI has the potential and capability to solve many business problems as well as to make shift in productivity of the industries by introducing automation for tedious, time consuming, mundane and repetitive tasks.

HR is one of the core functions of any organization. Adopting AI in technology in HR might give both short term as well as long term gains. Some have been witnessed already while others are expected to be witnessed in the near future.

There are many ways in which AI can play an important role in HR which are as follows:

#### **1. Recruitment**

Gusdorf, Myrna (2008) explained that the use of AI technology in recruitment function of HR helps the team to analyze the resumes received and comparing it with the job description as well as the existing employee with the same job role and then select the best suitable candidate. This

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eliminates the human intervention and bias completely. Thus, AI helps in speeding up of the recruitment process.

## 2. Talent Management

Every organization has the need of human capital. Talent management refers to the planning done by the organization to meet the employee's needs. For this, the HR department undertakes the activities such as talent management, succession management etc.

Implementing AI in this will benefit the organization in many ways. For example – AI would observe minute details such as whether an employee submitted their work sample through LinkedIn or Glassdoor. It maintains scorecards

for all the employees based on its own analysis with zero intervention. This helps the interviewers sort through the applications ahead of time.

## 3. Scheduling

There are many AI based tools like Amy Ingram and zoom.ai which learns from observing employees' preferences overtime and then manages it in an automated manner for them. It even allows employees to automate regular tasks like looking for a file and scheduling meetings. By doing so, employees of the organization can focus on more important and strategic tasks. It ultimately helps in improving the employee productivity and providing the best result.

## 4. On boarding Process

HR can automate many tasks of onboarding that would take hours otherwise. Tools like zoom.ai come here to rescue as it can collect relevant data from new employees as well as generate their offer, send out the documents and answer the queries. It saves time and energy of HR department such that HR team can focus on integrating the employee into mainstream of the organization.

Thus, the purpose of AI adoption in HR is to improve the productivity and efficiency of HR so that it can meet its core objectives. Hence, it should be kept in mind that the impact of AI technology in HR is to facilitate employee experience at every level.

### ***RESEARCH QUESTIONS***

1. Do the software used for hiring process in your organization is based on application of AI or latest technologies?
2. Are AI - based software helping to find the best talent for the job?
3. Is AI - based software future of HR practices?
4. Is AI easing HR operations?
5. Implementing AI in HR practices will lead to the loss of Human Jobs?
6. Are organizations interested in seeing AI-based software for HR practices?

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## OBJECTIVES OF THE STUDY

The objectives of the study are as follow:

- The objective of this study is to know the impact of Artificial Intelligence on Human Resource Management
- To identify the role of AI based software in hiring the best talent from industry
- To evaluate the function of AI based software specifically towards the screening process which is the primary process of hiring and cost of using such systems
- To understand the effect of AI based software on recruiters' job

### *Limitations of the Study*

In order to conduct this study, the following research limitations have been recognized by the researcher:

The main limitation of this research was that a low number of recruitment professional participated in the survey/questionnaire. Of the 150 Google forms sent out to professionals, only 19 replies were received. However, response rate of 20% is acceptable if the information collected is of good quality. In order to collect and analyze the data from the respondents, the research requires a high amount of time. However, this study has a particular deadline, which increased limitation in data analysis.

Secondly, respondent error is another limitation which can occur. Participants may make mistakes when filling information in the questionnaires. In order to combat this, the questions provided in the questionnaires, were easy to understand and left little room for confusion.

There are chances that the employees might have misinterpreted the questionnaire also. (Source – ideal.com, 2019)

## LITERATURE REVIEW

Scott W. O'Connor (2020) highlights that Artificial Intelligence will significantly influence the future of Human Resource Management (HRM). He emphasizes that while AI brings positive transformation, HR professionals must be prepared to handle emerging challenges and continuously upgrade their knowledge.

Prasanna Vatsa and Kusuma Gullamjji (2019) found that integrating AI into HR practices improves organizational performance. AI is widely applicable across recruitment, training, onboarding, and performance evaluation. However, high implementation costs restrict many organizations from adopting AI.

Jennifer Johansson and Senja Herranen (2019) observe that AI adoption in recruitment is still limited. Its key advantages include improved efficiency and reduction of routine tasks, while organizational readiness remains a major challenge.

Albert Christopher (2019) states that AI enhances employee productivity through data analysis and predictive capabilities. However, concerns such as data privacy, skill gaps, system maintenance, and bias must be carefully managed.

Barbara van Pay (2018) explains that AI streamlines recruitment by automating candidate screening, ranking, and interviewing using tools like AI-based interview systems. This reduces hiring time and improves candidate selection, though organizations remain cautious about relying on AI.

Anupam Jauhari (2017) notes that AI and machine learning are transforming HR functions, especially recruitment through chatbots and automated communication. Reports indicate that many organizations are either ready to adopt or have already implemented digital HR tools.

## Research Gap

Existing studies mainly focus on the overall impact of AI on HR practices such as job satisfaction, productivity, and organizational performance. However, there is limited research specifically addressing AI-based recruitment and selection methods. Moreover, most studies broadly discuss Information Technology in HR, while Artificial Intelligence, being a more advanced and distinct application, requires deeper and more focused analysis.

## Research Design

Research design can be broadly classified into quantitative and qualitative approaches, which may be used independently or together. Quantitative research focuses on analyzing relationships between variables using numerical data and statistical tools. It includes:

- **Descriptive Research:** Describes characteristics of a population or phenomenon and answers “what” questions. This study adopts a descriptive approach for data collection.
- **Correlational Research:** Examines relationships between variables using statistical analysis.
- **Experimental Research:** Establishes cause-and-effect relationships by manipulating variables.

Qualitative research, on the other hand, is exploratory and focuses on understanding human behavior and experiences in depth.

The methodology involves systematic procedures for collecting and analyzing data. This study uses a combination of quantitative and qualitative methods to ensure better validity and reliability.

## Questionnaire Method:

Questionnaires are used to collect data from a large number of respondents efficiently. They allow participants to respond at their convenience and express their views freely. However, limitations include low response rates and the possibility of incomplete or biased responses. Questionnaires may include multiple-choice, open-ended, and scale-based questions and can be distributed through various modes such as online or face-to-face. This study adopts the questionnaire method for primary data collection.

The research process includes reviewing literature, defining the problem, selecting methods, collecting and analyzing data, and drawing conclusions.

### Data Collection

Both primary and secondary data were used in this study. Primary data was collected through a structured questionnaire distributed to 150 respondents, out of which 19 valid responses were analyzed. Secondary data was gathered from journals, articles, and published research papers. Both data sources were analyzed to derive meaningful conclusions.

### Data Analysis Tool

Data analysis was conducted using SPSS. Reliability of the questionnaire was tested using Cronbach's Alpha. Multiple linear regression was applied to examine the impact of Artificial Intelligence on HRM and HR practices.

### Research Model

The research model considers Artificial Intelligence technologies and software as independent variables, while HRM and HR practices are treated as dependent variables.

### Research Hypothesis

- **H0 (Null Hypothesis):** Artificial Intelligence has no significant impact on HRM.
- **H1 (Alternative Hypothesis):** Artificial Intelligence has a significant impact on HRM.

### Data Analysis and Interpretation

After ensuring the integrity and the reliability of the data, 19 responses were received and analyzed. The first part is the age, occupation and organization analysis of the respondents.

Out of 19 respondents, 15 respondents (78.9%) ie majority of the respondents belong to the age group of 20 – 30 years followed by the age groups of 31 – 40 years and 51 years & above. This is shown in figure 1 given below.

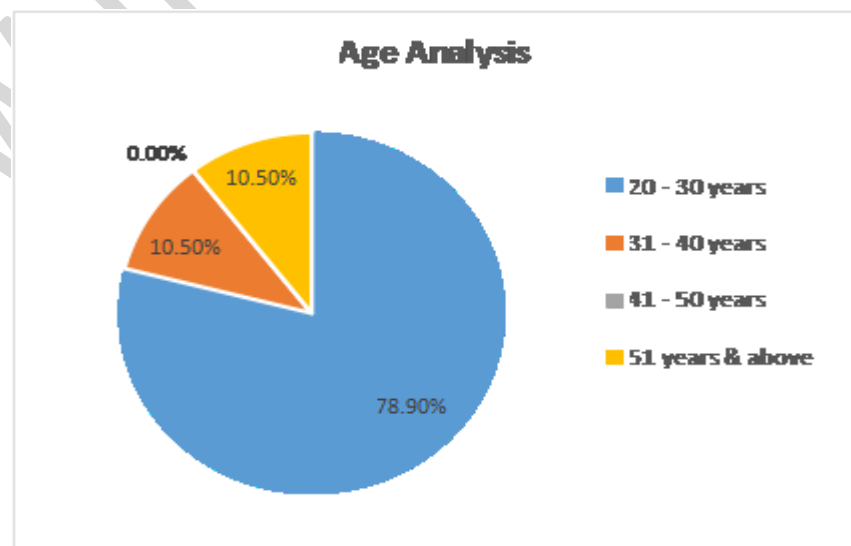
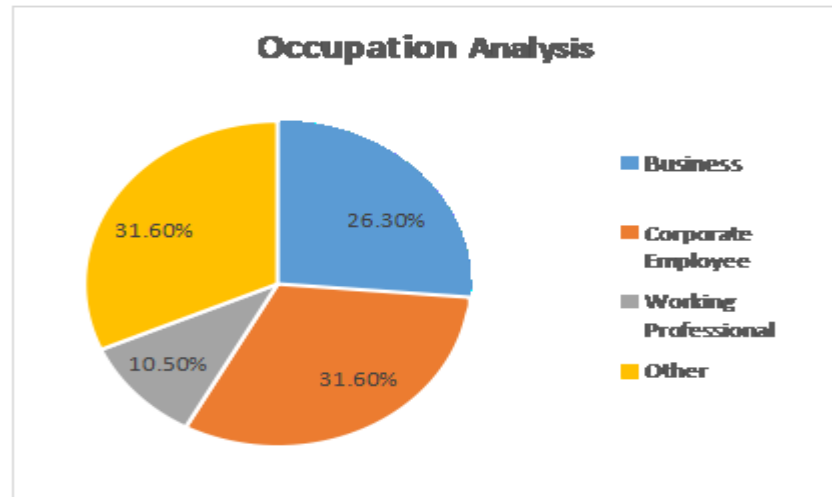


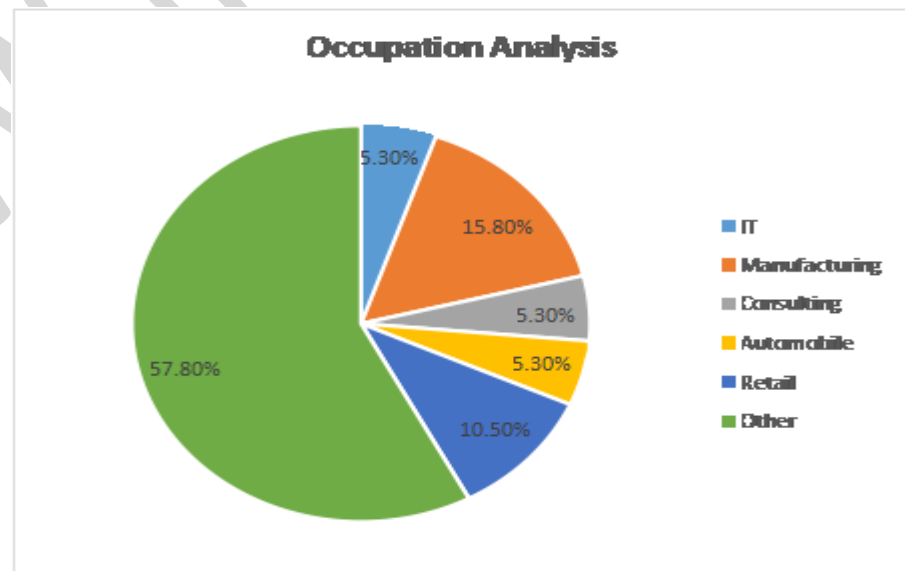
Figure 1: Age analysis of the respondents

From the figure 2 below, the occupation of the respondents can be analyzed. Majority of the respondents are corporate employees (31.6%) followed by other category (31.6%) and the business category (26.3%). The least number of the respondents belong to the working professional category.



**Figure 2: Occupation analysis of the respondents**

From the figure 3 given below, the occupation of the respondents can be analysed. Majority of the respondents (57.8%) do not lie in the mentioned categories and lie in the other sector that includes Education sector, Pharmaceutical Sector, Journalism, Engineering sector, etc. This is followed by the Manufacturing sector (15.8), Retail Sector (10.5%), IT, Automobile and Consulting Sector occupying 5% each.



**Figure 3: Occupation analysis of the respondents (sector wise)**

#### 4.1 Reliability analysis of the survey instrument:

The survey instrument used for this study was a structured questionnaire. The questionnaire was drafted by using Likert scale. These questions were drafted to gauge the usage of Artificial Intelligence technologies in HR Practices in organizations and their impact on the Human Resource Management.

Cronbach's alpha was utilized to measure of the reliability and internal consistency of the survey instrument. This method also helps to understand if the items in the questionnaire have shared covariance. According to the output table 1, it can be seen that the Cronbach's alpha is 0.754. This value is greater than the standard value of 0.7 which shows that the questionnaire is reliable and have an internal consistency among the questions. This test showed that all the questions have a shared covariance which proves that they all help to understand and measure the same concept of sustainable HR practices.

**Table 1: Cronbach's Reliability Test Output**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.754	.688	4

#### 4.2 Analysis of the impact of AI on HRM

After checking the reliability and the consistency of the questionnaire, the impact and significance of Artificial Intelligence on HRM and HR Practices was analyzed. Multiple regression analysis was used to understand the effect of the. For this study, Artificial Intelligence technologies and AI based software were taken as the independent variables and HRM & HR Practices like HR Operations is taken as the dependent variable. Table 2 shows the R square value of the model and this value helps to understand if the research model undertaken is a good fit for the research data and it also explains how much variability of the dependent variable is explained by the independent variable. From table 2, it can be seen that the R square value is 0.622. This means that 62.2% of the variability of Human Resource Management can be explained by Artificial Intelligence.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.789 <sup>a</sup>	.622	.506	.99387

**Table 2: Model Summary**

Table 3 shows the ANOVA test output which helps in understanding if the independent variables used in this model is effective in predicting the dependent variable. From table 3 it can be seen that the sig value is 0.009 which is less than the standard p value 0.05. So it proves that the independent variables chosen for this model (Artificial Intelligence technologies and software) are helpful in determining the dependent variable which is HRM & HR Practices.

**Table3: ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.159	4	5.290	5.355	.009 <sup>b</sup>
	Residual	12.841	13	.988		
	Total	34.000	17			

Table 4 shows the regression test output. This helps to determine the significance and the effect of Artificial Intelligence on Human Resource Management and HR Practices. It also shows the relationship between AI and HRM. From table 4, it can be seen that the sig value for all the independent variables (familiarity with AI introduction – 0.005(, and (agreement of AI software helping in finding the best talent for the job – 0.011) is lesser that the standard significance value of 0.05 which proves that these factors are significant and have a significant effect on HRM. But the other two factors have the value greater than 0.05, which shows that currently their organizations do not use AI based software for HR Practices. From table 4, it can also be seen that the beta values for the factors except the usage of in-house software or third party software are positive. This implies that these factors are positively related to HRM and HR Practices.

So, on the basis of the analysis performed, the hypothesis H1 stating that AI has a positive and significant impact on HRM can be accepted.

**Thus, the H1(Alternate) hypothesis is accepted and H0(Null) hypothesis is rejected which means that Artificial Intelligence has a significant impact on Human Resource Management.**

**Table 4: Multiple Regression Output**

Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	3.571	1.380		.023
	Do you have in-house HRM software or you rely on third party software systems for hiring?	-.836	.489	-.302	.111
	Are you familiar with introduction of AI in hiring practices?	.915	.273	.587	.005
	Do the software used for hiring process in your organization is based on application of AI or latest technologies?	.288	.299	.178	.353
	To what extent do you agree that AI-based software are helping to find the best talent for the job?	.777	.263	.529	.011

## FINDINGS AND CONCLUSION

### Findings

1. Majority of the organizations have adopted the AI in their Human Resource Management practices.
2. There is a positive response from the respondents that they are likely to accept the introduction of AI at various stages of HR based functions.
3. Organizations are using the third party software, in house software, Omnidocs, Ezieka, etc as AI software in HRM.
4. Majority of the organization is positive for the fact that AI is the future of HR.
5. Organizations which are not using AI based software would like to adopt the same in future.

### 5.2 Suggestions

Researchers would like to suggest that companies devise a simple and concise organizational strategy to integrate AI into their recruitment process, based on the results of this study.

Researcher would like to recommend that recruiters should replace easy and time-consuming tasks with smart AI technology, allowing recruiters and HR managers to concentrate more on strategic functions. Further more, developers of smart AI technologies need to develop such platforms keeping in mind the budgetary issue of small to medium organization as well, so that they can adopt AI in their recruitment process.

### 5.3 CONCLUSION

The incorporation of HR activities for candidates based on AI undoubtedly has a greater effect in enhancing the efficiency of the organisation. Although AI applications do not possess emotional and cognitive abilities like humans, these powerful AI-based HR applications may be able to interpret, forecast, diagnose, and it is a powerful tool for any kind of organization.

Yet the real concern that is overwhelming the Global workforce is how AI is demonstrating its impact in cutting jobs across various industries around the world. But, the truth is that it's not the advanced technologies that replace humans, but it's more about how humans can adapt and use these developments in wealth and prosperity development.

In the true sense, the AI-based functions would affect certain percentage of workers, and it is the responsibility of HR leaders and companies to reflect on their employee needs and future outcomes. And, eventually, based on our research, most companies effectively incorporate AI-related methods into recruitment, but AI is everywhere in HR in the near future: May be in recruitment, training, onboarding, performance analysis, retention etc.,

But most companies are still lagging behind in incorporating AI into their HR activities due to their integration-related costs. In conclusion, the application of AI should be regarded as a positive opportunity, because AI improves life, AI produces a better future if it is clearly understood and properly used.

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