

Recruitment Through AI in Selected Indian Companies

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Abstract

Artificial intelligence (AI) is being used very pervasively with the ever-evolving and competitive business world and has become the 21st-century buzzword. Countless innovations in technology have pushed businesses to make their value creation processes more effective and customer friendly. Digitization has played a significant role in reshaping the different human resource functions and processes. This study aims to elucidate the acceptance of automation in human resource management by employers and the degree to which recruiters can use AI to hire people. The study incorporates a thematic analysis approach, and the data is collected from primary sources by conducting semi-structured interviews with four experts working in IT organizations. This research would be useful for recruiters and HR managers to consider the fields of AI implementation and management to take advantage of cost-cutting technical developments.

Keywords

Artificial intelligence, human resource management, recruitment, talent acquisition, technology, digital transformation

Introduction

The business world is ever-changing. With the fourth industrial revolution, manufacturing or production is undergoing a digital transformation. Advancements in technology have forced the companies to adapt to technologies such as artificial intelligence (AI), big data, machine learning, data analytics, Internet of Things (IoT), cloud computing, and 3D printing. The digitalization that symbolizes the new industrial revolution emphasizes evolving technology to improve efficiency and the companies' value creation process. With the introduction of technology-enabled platforms, companies can serve the current needs in a much better way. These platforms have impacted the customer expectation and organizational forms, and the traditional business models. Business giants and leaders are now adopting and integrating these technologies to reap the maximum benefit of Industry 4.0.¹ With this, the human resource department is not lagging. HR professionals have now integrated the new technologies which pave the way for "Smart HR 4.0." This concept has emerged from Industry 4.0 by leveraging digital technologies such as the IoT, AI, big data, and data

analytics for effectively managing human resources.² Technology has reshaped the HR functions by introducing applicant tracking systems (ATS), robotic process automation (RPA), social media recruitment, and information systems. With the increase in competition in the industry and the global workforce's management, it becomes imperative to integrate technology in human resource management (HRM) to improve HR service delivery and cost savings.¹ Human resource professionals face tremendous pressure in talent acquisition. Finding talent has moved beyond traditional ways of recruitment.

Talent acquisition involves multiple teams across the organization, which brings complexity. HR personnel is always faced with difficulty in finding competent candidates for crucial roles. Advancements and innovations in technology have provided new ways to solve the problem of HR. The big fuss is all about the use of AI in HR. AI and virtual reality in human resource functions can be seen in recruitment and selection, performance evaluation, payroll, talent acquisition, training and development, onboarding. The most popular area for AI is the recruitment and selection process. AI technology is a tool that helps recruiters identify the right talent, screen and assessing,

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selection of candidates, and creating a large candidate pool. AI helps automate and streamline the workflow, especially repeated and high-volume tasks, to reduce time and cost. AI can also be useful for improving the overall candidate experience. In a study conducted, the results show that there is a greater level of satisfaction among candidates who experience the technology-enabled recruitment process.³ Most of the global companies are now looking for innovative ways to attract and engage candidates and improve talent acquisition by selecting talent best fit for the organization. AI in recruitment can be adopted in various sectors. Popular MNC's such as Infosys, IBM, EY, Accenture, Deloitte, Unilever, L'Oréal, Capgemini, Amazon, Bajaj Allianz, Tech Mahindra, Mindtree, and LinkedIn and HR start-ups such as HireVue, Para.ai, Pymetric, Hiretual, Darwinbox, and Dockabl have been using various AI-powered tools for recruitment including intelligent ATS, RPA, recruiter chatbots, and digitized interviews. AI recruitment technology involves AI, natural language processing, machine learning, predictive analytics, sentiment analysis, algorithm, and people analytics.

Review of Literature

In the era of digitalization and advancement in technology, there is a need for reshaping the various core functions of the organizations to sustain in the dynamic business environment. Every business is striving towards digital transformation. A global survey shows that 32% of the respondents are designing their organization to become more adaptable.⁴

Another survey identifies four key trends that collectively elevate recruiting to a more strategic profession: new interviewing tools, AI, diversity, and data. HRM is a crucial part of a company's management function. Recruitment and selection of the right kind of candidates are essential to improve the performance of the company. Advancement in technology has also hit the recruitment industry.⁵ Due to the advances in technology, there is a shift in the functioning of human resources. It affects the daily functioning of human resource practices and procedures.⁶ Over the years, digitalization has played a crucial role in transforming the recruitment process. Talent acquisition is no longer what it used to be. It is not just recruiting; instead, it enhances the candidate experience through constant feedback and communication through chatbots.⁷ Talent acquisitions involve a series of tasks to be performed: planning, sourcing, selecting, and onboarding.⁸ AI has its own significant role in the process of recruitment which makes the process easy and efficient. With the Industrial Revolution 4.0, the use of AI has been increasing. The focus has been on making companies "smart" by leveraging technology to enhance performance. AI and automation are the major trends in HR technology today. The companies are now adapting to newer recruiting

candidates by integrating AI into their recruitment process.⁹ AI in recruitment uses technology as a computer to streamline and automate various parts of the recruiting work. The IT system is trained in such a manner that it is similar to human intelligence and behaviour.¹⁰ The AI in recruitment would essentially help recruiters make optimal talent acquisition by relieving them from the routine task of applicant sourcing and screening, which is time-consuming.¹³ On average, 52% of recruiters believe applicant screening from a large pool is the most challenging part of recruitment. The manual screening of resumes is rigid because approximately 75%–80% of resumes received for a position are not qualified. It takes roughly 23 hours for a recruiter to screen and shortlist candidates for a single hire.¹⁴ AI technology will standardize this function and make it faster by aligning the candidate data such as knowledge, skill, and experience and finally identify and match skills required for the position. This improves job matching and thereby enhancing the productivity of employees.¹⁵ The role of AI in the recruitment and selection process is limited to the sourcing and screening of candidates. There are 11 areas where AI can be applied, including vacancy prediction, psychometric tests, interviewing, and background checking.¹⁶ In general, AI in talent acquisition helps attract, engage, screen, and assess candidates to enable organizations to interact with appropriate candidates without wasting time and money.¹⁵ Despite the advantage, the biggest challenge of AI is that it requires a massive amount of data to understand human psychology and nature.¹⁷ Since it identifies and replicates patterns of human behaviour and decision-making, there is also the possibility of biases.¹⁷ The companies should intelligently look at how to adapt to AI and automation to leverage the benefits and ensuring that man and machine work better together.¹⁸

(For a detailed ROL please refer to appendix ROLxIs.)

Research Gap

Though several research papers have emphasized the importance of AI in recruitment and its influence on recruitment strategies, very few articles have given real-time examples of how AI is transforming and revolutionizing the supporting HR functions such as recruitment, employee engagement, and performance management, training, and development. One such article has presented the example of Unilever North America, which started AI-based hiring in over 68 countries and had a successful journey in terms of saving recruiters time and recruiting cost.¹⁵ A majority of papers that were reviewed present only the conceptual understanding of AI in recruitment based on secondary data. This research study aims to bridge this gap by understanding the experience and perception of employees towards adoption and relevance of AI in recruitment.

Objectives

In view of the research gap, the following research questions were framed.

1. What is the perception of employees towards organizations following AI for recruitment and talent acquisition?
2. What is the experience of employees towards adoption of AI in recruitment?
3. What are the advantages, challenges, and future relevance of adoption of AI in recruitment?
4. What is the understanding of employees towards talent acquisition metrics and areas of application of AI?

In view of the above research questions, the primary objective of the study is to understand the perception of employees towards organizations following AI for recruitment and talent acquisition.

The specific objectives of our study are as follows:

- to understand the experience of employees towards adoption of AI in recruitment;
- to study the perception of employees towards advantages, challenges, and future relevance of adoption of AI in recruitment; and
- to explore the understanding of employees towards talent acquisition metrics and areas of application of AI.

Operational Definition

Human Resource: As the name suggests, human resources are the people working in the organization. It is the workforce in an organization that has to carry out various operations to achieve their desired goals. The 5 M's of management (man, money, material, machine, and methods) consider man to be the most important factor in achieving strategic goals.¹⁹

Human Resource Management (HRM): HRM is the administration of various aspects related to human resources. HRM involves recruiting and selecting new talent, performance management and appraisal, learning and development, career planning, payroll, and compensation and grievance handling.²⁰

Artificial Intelligence (AI): AI aims to enable computer programmes and machines to imitate human behaviour.²¹ AI can perform a series of tasks based on recognized patterns, synthesize information, and draw conclusions based on the same. Its thinking and acting is similar to that of human intelligence. AI technology consists of automation, natural language, robots, and machine learning.²²

Recruitment: Recruitment is when the HR managers can find the right talent to fill up various vacant positions

within the organization. Recruitment consists of a series of tasks identifying, sourcing, screening, interviewing, and shortlisting potential candidates. The managers must look for the right candidates to gain a strategic advantage. Recruitment is considered a vital HR strategy that requires an excellent level of coordination and management.²³

AI in Talent Acquisition: AI in talent acquisition is an emerging trend following the latest technology advancements. AI is being used to automate the recruiter's routine and high-volume tasks, enabling them to reduce the time required to hire a candidate.²⁴ AI can be applied to various recruitment functions such as candidate sourcing, screening, assessing, and engagement.²⁵

Theoretical Framework

This study uses the resource-based view of a firm as its theoretical framework. It examines an organization's internal resources that help make strategic decisions that lead to sustainable competitive advantages.²⁶ According to Barney, resources can be identified as physical capital, human capital, and organizational capital. These resources are considered to be rare, imperfectly imitable, valuable, and non-substitutable.²⁷ Over the years, human capital as an internal resource has become an essential resource for a firm's sustained competitive advantage. RBV has been found to make significant contributions in the domain of strategic HRM.²⁸ The impact of technology resources on firm performance and competitiveness, according to the RBV, should be considered in the context of other resources like the human capital. This study's primary subject is human capital, and previous studies on RBV have suggested that there seems to be a synergistic effect between human capital and technological resources that provide impetus to an organization to improve its performance and march towards sustainable competitive advantage. Figure 1 shows a diagrammatic representation of the theoretical framework.

Methodology

The article follows a qualitative methodology to gather HR professionals' insights working across different companies to understand the impact of AI on talent acquisition deeply. The interviews focused on applying AI in the recruitment process, such as sourcing, screening, engagement, assessment, and understanding the impact on talent acquisition metrics. The data was collected using a semi-structured interview of four professionals working in human resources or as an AI specialist for HR technology in India's different IT companies. The selection criteria are based on the companies which integrate AI as a part of their HR technology. The participants were sent an email confirming their willingness to take part in the interview. Anonymity is maintained, and their names and profiles are not used in the discussion paper.

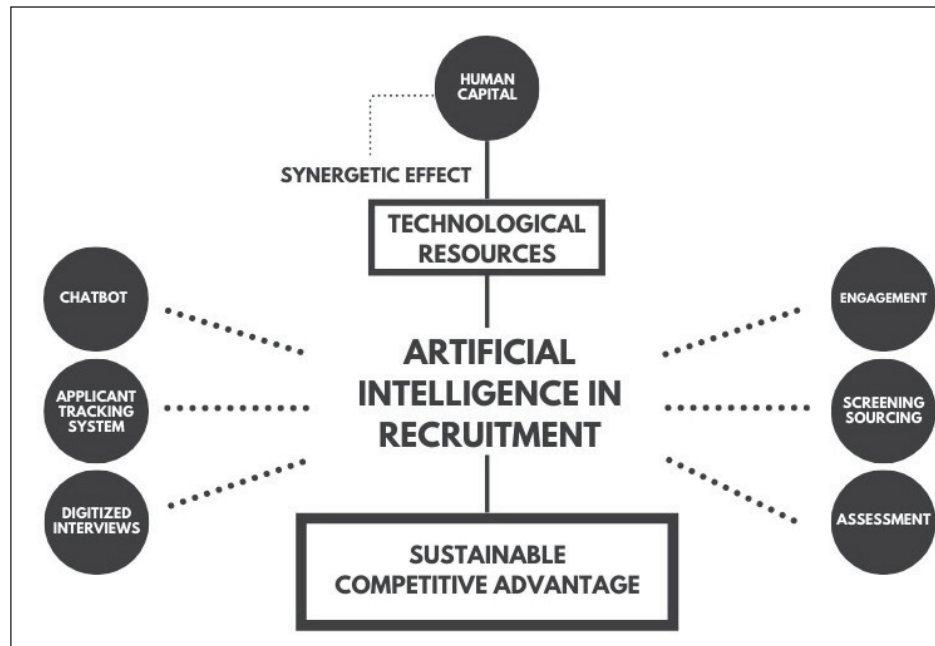


Figure 1. Theoretical Framework

Source: The authors.

Each interview lasted for 30–40 minutes and was recorded for further transcription and coding. An interview guide was prepared for the purposes of conducting the semi-structured interview. The same was validated at two levels. The first level was peer validation followed by expert validation. We have followed an inductive approach and triangulation has been done in a manner where our research questions tried to explore the responses from the participants that helped in substantiating the information. Since the interview was essentially semi-structured, the line of enquiry helped us in understanding the point of data saturation. It became a good indicator for us that we do not deviate from our theme of understanding the perceptions of employees towards organization following AI in talent acquisition and recruitment. This article follows a thematic analysis approach to bring out the main themes, sub-themes, and linkages. We have used a directed content analysis²⁹ in which we began the initial coding based on previous research findings, then analysed the interview transcripts which allowed further themes to develop.

We began with preparation at an early stage of data collection. The data was prepared in the following manner.

- To transcribe all main questions from the interview guide;
- The verbalizations were transcribed literally; and
- The observations from interviews such as sound and pauses were excluded.

The unit of analysis are the themes itself expressed in words or sentences, and these code units are assigned to

any words or sentences that expressed the theme/research question.

We used six codes that essentially are the theme itself which we identified from previous researchers and our own data. The previous research gave us a sense of direction, but we let the categories emerge on their own during the coding process. Some categories were straightforward and could be easily identified while some were difficult because they were partially based on latent context of the text. After certain revisions, we were able to identify six categories/themes. We used consensus agreement for inter-code agreement using a nominal group technique.³⁰ Each author coded the transcripts individually and then discussed and ranked each other's ideas. The results were tabulated and further discussed to arrive at a consensus. Finally, we drew conclusions from our codes and interpreted and described the findings for each theme which in turn provided answers to our framed research questions.

Sample adequacy has always been a questionable concern when it comes to qualitative research. Though one of the limitations of our research is a small number of participants restricted to four, who were chosen for the purposes of conducting the semi-structured interview, the appropriateness of the sample is justified by virtue of the ability to gather richly textured information which is relevant to the topic chosen for the study. Even though there are various sample size principles, guidelines, and tools developed to enable researchers to set and justify their sample size, yet the research says that the sample size sufficiency reporting is generally poor, if not non-existent, across a variety of disciplinary domains.³¹

Results, Analysis, and Interpretation

Since the research article is essentially a qualitative study trying to understand the experience of employees towards AI in recruitment, the results are not conclusive in nature. The findings are essentially subjective experiences of the employees which give us an understanding of their perceptions towards the theme of the research article.

This thematic analysis brings out six main themes that are further divided into sub-themes for a clear understanding. Table 1 shows the various themes and sub-themes discussed by the four professionals. Each participant had briefly covered almost every question.

Table 1 gives clarity on aspects being concerned with the participants.

Current adoption of AI in recruitment functions: This theme focuses on how AI is applied in the participants'

organization. The sub-themes under this include (a) current state of adoption, (b) factors to consider while adopting AI, and (c) level of technology integration. AI is a buzzing topic amongst recruiters and hiring managers today. Most of the companies are looking forward to adopting this technology. Numerous large-scale organizations such as TCS, Deloitte, IBM, Accenture, and Tech Mahindra have already started to use AI as a part of their recruitment process. The level of technological integration is at a partial stage. Most of the participants believe that there can never be full integration of the technology. The major areas currently where AI is becoming useful in the recruitment process is that of candidate sourcing, screening, selection, and candidate experience. The discussion further highlighted that AI is useful for job description posting, filters based on keywords, profiling of candidates, shortlisting, communicating with candidates using chatbots, and

Table 1. Themes and Sub-themes

Main theme	Sub-theme	Participant 1	Participant 2	Participant 3	Participant 4
Adoption of AI in recruitment	The current state of adoption				
	Factors				
	Level of integration				
Areas of application of AI	Sourcing & screening				
	Assessment				
	Interviews				
	Engagement				
	Onboarding				
Talent acquisition metrics	Time to fill				
	Time to process				
	Cost per hire				
	Quality of hire				
	Offer acceptance rate				
Advantages	Speed of work				
	Workflow				
	Standardized job matching				
	Quality of hire				
	Candidate experience				
	Candidate pool				
	Cost-effective				
Challenges	Understanding need				
	Large data				
	Data cleansing & authenticity				
	Building scalable infrastructure				
	Hiring for senior positions				
	Suitable to large scale organizations				
	Misuse and hacking				
Future relevance	Greater interaction				
	Robotics				
	AI and authenticity				
	Complete virtual hiring				
	Psychometric assessment				
	Simulation-based on emotions and AI				
	Grievance handling				

Source: The authors.

sending out offer letters. Concerning the Indian context, the technology adoption level is slower than countries such as the USA and Japan. Hence, AI is popular in the Indian recruitment industry; however, its adoption is a little slow due to lack of infrastructure available. Certain factors are responsible for adopting AI, such as the organization's size and scale and the cost benefit. The hiring volume of a company could be a contributing factor. Adopting AI in a company having a small hiring volume of 50–100 per annum would not be worth investing in. Also, understanding the need for a particular technology and the business case/opportunity is significant. Another factor to consider would be the availability of reliable and accurate data to feed in the system and build algorithms as AI is data driven. Such factors are crucial to be looked at before adopting technology like AI.

The tech adoption in India is pretty much slower as against the Western countries like the States. One of the major causes is because we do not have the strong infrastructure required. Therefore, by the time tech advancements hit India, it becomes very much common outside.

Areas of application of AI in the recruitment process: This theme emphasizes the application of AI in the recruitment process.

Sourcing & screening: In this process, AI has the potential to source candidates from various platforms. AI-based tools help in the job description and posting a consistent message that there is a vacancy for a particular position(s). It focuses on target search based on keywords and helps filter out the ones that are not ideal. (Initial filtering of resumes received.) Ideally, with the help of ATS, the AI can quickly navigate through the existing database and newly received applications that suit the description of the job. AI has the power to create a large data pool of suitable/potential candidates that can be searched later on for upcoming vacancies.

AI is best fitted to help recruiters screen out resumes that do not fit the requirement. This helps save a lot of time of the recruiter.

Assessment: One of the drastic changes apparent is the way people are being assessed. Apart from the traditional pen–paper assessments, candidates are now undergoing online AI proctored exams. There are various skill-based tests using gamification, a virtual simulation technique wherein a similar real situation would be given. Candidates have to apply their skills and knowledge to provide solutions. Similarly, there are AI-based games/tools to test the behaviour of a candidate. This is newly adopted; however, a human element to test behaviour is still required. In some countries, AI has the power to conduct background and reference checks considering their social media profiles on platforms such as Instagram, Facebook, and

LinkedIn. To a certain extent, AI improves job matching, that is, a better match between the job and the skill, knowledge, and experience of the potential candidates.

Interview: Similar to the assessments, AI can prove powerful in analysing the interviews with the candidates. At this point, AI alone cannot interview the candidate; however, the AI-powered digital interviews can be used to analyse the facial expressions, body language, and voice modulation to a certain extent. AI can help automate the initial interviews by sending out a message to candidates and the recruiter about the candidates shortlisted and called for an interview. Candidates can be evaluated based on the report generated by the AI tool about their behaviour and conversation that happened during the interview.

Engagement: Engaging candidates have always been difficult, but with the help of AI, the job has become easier. AI-powered chatbots are fed with enormous data related to the general query a candidate may have about the company and their interview process. The candidates can simply post their queries on the chat box and get a quicker response for the same. AI can also send out automated updates for the candidates' current status in the process and send out an automated offer letter to the final shortlisted candidates.

Candidate experience is very important in hiring process. Recruiters do not want candidates to have a negative perception about the company when rejected. Therefore, AI enables chatbots are new ways to engage candidates and help fill the communication gap.

Onboarding: Once the candidates are selected, they are given an orientation about the company, its culture and ethics, its people, their respective job roles, etc. To a certain extent, AI can help provide such information and guide candidates through their paperwork process and help build initial group-based training sessions and collect regular feedback on the same.

Table 2 shows how AI is applied in the participant's organization.

Talent acquisition metrics: These metrics evaluate the recruiting process's effectiveness in time and money spent. It helps understand which functions in the recruitment function are performing well and need to be focused on for improvement.

Time to fill: It is the time required to fill a particular vacant position.

Time to process: It is the time taken to process a new hire.

Quality of hire: It is associated with the value a new hire creates.

Table 2. Applications of AI

Organization	Application Areas
1	Chatbots for registered candidate's engagement, filtering the resumes and application, automated updates, emails and offer letters, analytical reports for decision making
2	Sourcing and matching involving screening for qualified candidates, chatbots for interaction.
3	Job description posting on the AI tool, which acts as an interface to all stakeholders. AI-based 2nd tool, which helps shortlisting and profiling of candidates and reaching out for an interview. Every stage of recruitment that a candidate passes through is available on one platform for the hiring manager and the registered candidates, sending out a notification for the same. Consistency in communication with all candidates.
4	Outsource some recruiting to an HR firm that uses AI in their process- Resume/profiling based on keywords, screen match, filtering process, automated questions for assessment, interviews via video call, mailing, and communication.

Source: The authors.

Cost per hire: The cost relating to sourcing, agency fee, travel, recruiter compensation, etc.

Offer acceptance rate: The percentage of candidates accepting the job offer.

Table 3 shows the impact of AI on talent acquisition metrics.

Table 3 reveals that the interviewees felt that the time to fill up a position and process the hire has improved. The process has become efficient and smooth as most of the administrative high-volume tasks have become automated, saving recruiters time. During the discussion, the participants expressed that it takes on an average 30–90 days to complete the entire hiring process. The quality of hire has improved to a certain extent through significant job and candidate matches. Cost per hire and offer acceptance rate does not seem to have much impact. However, the participants believe that to a certain extent, costs can be reduced, and adoption of AI leaves room for a more extraordinary candidate experience which brings a positive image of the company in the candidate's mind, which could be a contributing factor to accepting an offer or at least a positive outlook about the company and its recruitment process.

The overall time to process a new hire is definitely reduced because of AI, however costs do not seem to have much of change.

Advantages: The advantages of AI in recruitment are as follows.

- Improved speed of work by automating routine tasks, which speed up the hiring process.
- Improved workflow, which allows us to focus on strategic decision-making.
- Standardized job matching and improved quality of hire.
- Reducing the cost in terms of money and efforts spent on hiring.
- Improve overall candidate experience by effective, clear, and regular communication.
- Helps create a repository of candidates.
- Helps generate analytical reports for decision-making.
- Gain access to remotely located qualified candidates via AI-based searches.

The main purpose of AI in recruitment is to enable recruiters to streamline their process and do all the routine administration tasks so that recruiters can focus on more strategic decision-making.

Challenges: Some of the obstacles or the downsides of using AI are as follows.

- Understanding the need for technology and its possible applications.
- Large data requirements and data cleansing and filtering to make it reliable.
- The authenticity of data to feed in the system and the authenticity of candidates applying for the job.
- Building a scalable infrastructure is a costly affair.

Table 3. Impact of AI on Talent Acquisition Metrics

Metrics	Organization 1	Organization 2	Organization 3	Organization 4
Time to fill	Reduced	Reduced	Reduced	Reduced
Time to process	Efficient	Efficient	Efficient	Efficient
Quality of hire	Improved	Improved	Neutral	Improved
Cost per hire	Indifferent	Reduced	Cost-effective	Indifferent
Offer acceptance rate	Increased	–	Slightly improved	–

Source: The authors.

- Hiring senior positions using AI technology would be difficult.
- Suitable for large organizations and those who have a large volume of hiring.
- Misuse of technology and hacking systems.
- Faulty system designs.

Most people fail to develop a business case for such applications, which means they are not able to understand the basic need for the technology and how it can be used. This is one significant obstacle in place.

Future relevance: AI has tremendous potential, especially when the current world moving towards a complete digital transformation. Over the years to come, the level of technology adoption will only increase. The participants feel that AI tools can penetrate more into the process and make it a 70–30 ratio where AI will have the maximum share. The participants think that AI has the potential to verify the authenticity of a candidate who applies for jobs. Currently, some recruiters face candidates simply writing the keywords they know hiring managers are looking for without actually possessing those qualities. AI with robotics in recruitment will be an excellent combination for hiring candidates. The participants believe that soon there will be a complete video-based recruiting or virtual recruitment via mobile or laptop. Another area where AI can be applied would be improving the behavioural and psychometric assessments to the extent where human verification is not needed, and simulations based on emotions and AI combination would further enhance the evaluation. Other than recruitment, AI has also been applied to different functions of HRM and has been revolutionizing the HR industry as a whole.

AI is not here to replace the team. AI is here to add to the team so that man and machine can function well together and improve the overall efficiency in work.

Conclusion

Thus, the study clarifies the exposure of employees towards the contribution AI has made in transforming and revolutionizing the way an organization functions in terms of its recruitment strategies and talent acquisitions. All the four HR professionals interviewed for the study thought that companies had been relentlessly adopting AI in recruitment. While some have successfully had their indigenous technology, a few have started outsourcing the know-how on AI tools that provides an impetus to their organization in supporting various functions such as recruitment, training, and development. Concerning AI application areas in recruitment, companies are adhering to AI in terms of sourcing, screening, and engagement. Using AI by organizations in onboarding, assessment, and interview is varying and yet to become pervasive. Talent acquisition metrics also

indicated that the use of AI has significantly helped reduce the time taken to finish the entire process of recruitment and hiring of a candidate and, hence, is being adopted by firms. Further research study can be undertaken in this area which try to follow deductive approach and has a sequential exploratory research design.

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