

## Artificial Intelligence interchange human intervention in the recruitment process in Indian Software Industry

Nishad Nawaz

Assistant Professor

Department of Business Management, College of Business Administration,  
Kingdom University, Sanad, Riffa, Kingdom of Bahrain.

nishadnawaz@hotmail.com



### ABSTRACTS

The paper discussed on artificial intelligence (AI) inference in human resource management, especially in the recruitment process. The study aim is to know artificial intelligence swapping human involvement in the recruitment process in selected software companies in India. To get valid data, the study designed structure questionnaire for different designations of 138 HR professionals and also used convenience sampling, coefficients beta ( $\beta$ ), cronbach's alpha, t test and descriptive statistics test were used. The study found that artificial intelligence has a positive on human replacement in the recruitment process. Meanwhile, the study is expected to help studied organizations to formulate recruitment strategies and policy interferences to align to develop its effective recruitment process to recruit qualified talent into team to encounter competitive business and to develop sustainable environment.

**Key words:** artificial intelligence, human resource management, HR professionals, software companies and employer brand and recruitment process.

### 1. INTRODUCTION

The digital business is introducing new technologies moving from big data to machine learning to artificial intelligence (AI). AI refers to the big umbrella of computer technology, that allows to performing human requirements including human intelligence, decision-making analytics, recognition of pattern, visual & speak recognition and language translation using a subclass algorithm within the environment of artificial intelligence, but our discussion narrow, focusing on the recruitment process.

As we all know, the tradition, all organizations adopted un-technology methods for the recruitment process, including local or national newspaper advertisement, paper ads, supplementary paper ads, employee referrals, internal hiring, local agencies and government agencies to choose, attract qualified candidates.

After information technology introduction, the functions of the recruitment process has been improved in the data

processing. The concept of electronic recruitment emerged in the recruitment process in mid-1980, and it is called e-recruitment it facilitates the speed in the techniques of recruitment process, these techniques classified as a corporate website for hiring and commercial jobs advertisements (for instance, Naukri.com, Monster.com, Indeed, CareerBuilder.com and etc ) provide the links for the job posting for current positions. [1][2]

The companies and agencies want to speed their recruitment process. Therefore, they are chosen online to meet the candidates with live vacancies by adopting database technologies, which facilitate online job advertisements. By using search engines the job seeks can apply in minute for the post, even the human resource department can place in suitable position in anywhere in the organization independently, in addition to that, the agencies of recruitment are using cloud Saas services (software as a service) to reach significant number of job seeker and to get immediate feedback for potential candidates. The internet enables other websites like social networks such as LikendIn, Twitter, Facebook will communicate and reach fast and give adequate information and named as social recruiting.[3]

The aim of the is to know artificial intelligence replacement of human in the recruitment process in selected software companies in Bangalore and Hyderabad based companies in India.

### 2. LITERATURE REVIEW

In line with the research objective, the aim of the literature is to develop constructs for artificial intelligence, recruitment process for the purpose the review of literature has been searched in such as Scopus, Web of science, Elsevier, Emerald and Science direct to identify the relevant studies in the area, in addition to that industry reports and various websites such as human resource, artificial intelligence and recruitment.

While working on the literature following steps were adopted, get desired research papers.

(i). Used keywords for researching in leading various databases such as Scopus, Proquest, EBSCO, Science Direct, Emerald and Elsevier, Taylor and Francis, Springer and Wiley Inderscience were selected and used to cover complete literature. The keywords used for the research include human resource, artificial intelligence and recruitment process.

(ii) Internet search engines through google, google scholar, Microsoft Academic, Science.gov, Semantic Scholar and Baidu Scholar were utilized to identify and to access the relevant books, media reports, industry reports, working papers and blogs and presentations.

(iii) Periodic access and review of leading journals that have frequently published articles in

Strategic HR Review, Journal of Information Technology Teaching Cases, Information and Knowledge Management, Canadian HR Reporter, International Journal of Mechanical Engineering and Technology, The International Journal of Human Resource Management, Journal of Management Research and International Journal of Scientific Research and Review among others were conducted to include the most recent and up to date studies which could have been missed on the keywords search.

Each construct for the software industry identified from the literature is provided in Table 1, which the construct identified that items are discussed in the following sections.

**Table 1 : Constructs and items identified from the literature.**

Constructs	References
Artificial intelligence and recruitment process	[4], [5]
Artificial intelligence and human	[6], [7], [8], [9],

From the decades, the information technology interfering in human resource management and doing significant changes in all sub functional areas [10], [11], [12]. In the era of internet-based application has developed in the human resource management to draw the effectiveness [13], and the digitalization provides cloud applications and HR apps to reach customers needs and demands. [14]

According to [15] artificial intelligence improves the performance of human resource management and its function of the recruitment process, training and development, payroll, talent acquisitions and retention and its role more significant in future. As per the report of [16] inclusion of artificial intelligence in human resource functions will take away the various jobs from the current workforce by swapping with logical human intelligence application (i.e software). This act effect on the result in redesigning of job specification at all the levels and moreover some of the industries might have to scratch most of the jobs and to create a fresh set of rules for the jobs needful in digitalized intelligence. In any organization, the human resource department is having a variety of human-related data. Those who are working in the human resource department, collecting data, scrutiny, data analysis, interpreting whole data to facilitate meaningful output for decision-makers will take time-consuming work, but now after artificial intelligence [17] enabled database of human resource department as intelligent database management sharpen the individual competency, online monitoring and individual assessment competencies [18].

[19] David Mallon, discussed at the Bersin, the new technology of robotics process automation take over the routine work of human resource department by enabling

robots. This scenario replaces the human efforts as robotics process automation have a capability of mimicking the skills of human [20], [21]. There is significant change in human resource management functions such as job specification, job description, applicant screening, employee onboarding process, employee training & development, redesigning of compensation, mapping, performance management by establishment of expert systems [22][23] Sriram & Gandhi conducted study in IT industry and adopted a model found that implementation of machine learning and artificial intelligence has many innovative methods to make success of human resource functions. The success of the organization depends on which technology they have implemented in digitalization and concluded that artificial intelligence tools construct significant impact on human resource management functions, for instance, recruitment, selection, training & development, performance management and compensation & reward management.[24].

The recruitment process can avoid the following items like name of the candidates, school details, gender, age and race by empowering artificial intelligence systems. These tools enhance the human resource professional to identify the right candidate in the talent pool for the right position in the organization. [25]. Moreover, AI helps the resume database to scrap profiles of the social media and facilitate the public data of candidates past profile and current as well. [26].

Additionally, artificial intelligence provides other benefits in the screening, engagement of the candidate, re-building relationship, post job offer letter, on-boarding, these all empowered and sharpen the recruitment process more effective and efficient, build the employer brand.[27].

Therefore, the author identified the topic to study to reduce the gap between the literature and practice.

### 3. HYPOTHESIS DEVELOPMENT

After careful observation based on literature, the theoretical framework provides a way to conceptualize these complex relationships in between the artificial intelligence and recruitment process and has shown a positive relationship that has not been studied previously in the software industry, especially the Bangalore, Hyderabad based software companies. This attempt made us design our hypothesis.

**H1** : There is an effect of artificial intelligence on the recruitment process in selected software companies in India.

**H2** : Artificial intelligence automates whole recruitment work.

**H3** : Artificial intelligence recruiter judge more effective than human recruiter.

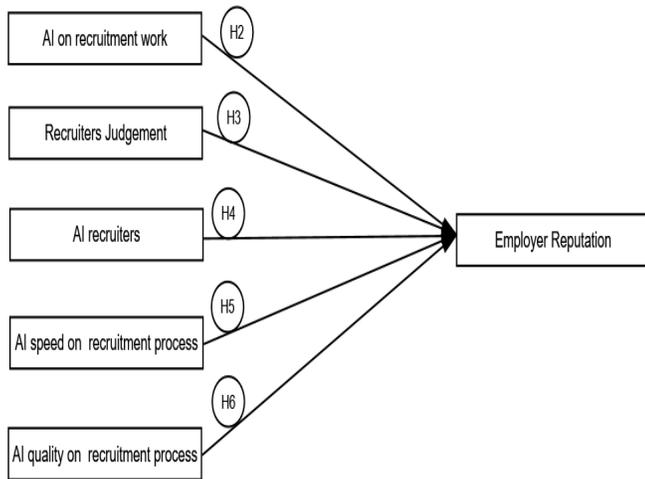
**H4** : Artificial intelligence recruiters transform unbiased process in recruitment.

**H5** : Artificial intelligence enhances the speed in the process of recruitment.

**H6** : Artificial intelligence enriches the quality of the recruitment process.

The study hypotheses are conceptualized in the form of a framework for the purpose of objective 02 in Figure 1. In the next section will discuss the methodology developed for the study.

### 3.1 Hypothesis Development



**Figure 1:** Conceptual Framework

Therefore, the study is to know artificial intelligence effect on the recruitment process, the following objectives have been designed, to examine the artificial intelligence effect in the recruitment process and to assess the artificial intelligence influence on employer reputation among the job seekers.

### 3.2. Methodology

The survey-based research methodology was used to test the proposed hypothesis in the study and the items with each construct identified from the literature Table 1 well-structured questionnaire was developed and used five-point Likert measurement scale was used ranging from strongly agree (5) to strongly disagree (1) and closed-ended questions were used to evaluate the main constructs in the study. The study instruments were pre-test with six experts (three from academicians and rest from the domain specialists). This met the condition outlined by [28], who recommended that a questionnaire should go through a pre-test of at least three to five respondents. The pre-test process with proper questions, relevance, readability, terminology, clarity, understanding and the relevance of the items in the study in a real-world situation. At the time of pre-test suggestions, identified issues are addressed, and it's reflected in the final questionnaire.

The final questionnaire prepared and circulated for the period of 7 months from December 2018 to June 2019 across HR professionals in Bangalore & Hyderabad and used QuestionPro survey system; author circulated the questionnaire link via their personal contact, LinkedIn and Twitter. Moreover, the list of the companies is chosen from the following sites <https://www.nasscom.in/nasscom-offices/bangalore>, <https://www.nasscom.in/nasscom-offices/hyderabad> and <https://www.Indiandata.org>. After circulation of the questionnaire 200 respondents were received, after scrutiny, 138 respondents filled correctly and completed all the questions, rest (62) responses removed due to the incompleteness, a questionnaire filled by the responses fill were

that all considered for further analysis. Table 2 shows the demographic characteristics of the final answers.

**Table 2:** Classification of survey respondents

	Responses	Percentage
<b>Firm ownership</b>		
Private companies	51	36.95
Holding companies	23	16.67
Associate companies	64	46.38
Total	138	100
<b>Size (employees)</b>		
Less than 100	76	55.07
101-200	29	21.01
201-300	18	13.06
Greater than 301	15	10.86
Total	138	100
<b>Response experience (in year) in the software sector</b>		
0-2	95	68.84
3-5	30	21.74
6-10	08	5.79
Greater than 10	05	3.63
Total	138	100
<b>Respondents experience (in year) in the current organization</b>		
0-2	96	69.57
3-5	19	13.77
6-10	13	9.42
Greater than 10	10	7.24
Total	138	100

Table 2 gives detail information regarding the representation of companies in study 51 private companies, 23 holding companies, 64 associate companies are involved, in detail, 30 from Bangalore, 21 from Hyderabad in private companies, 12 from Bangalore, 11 from Hyderabad holding companies, 34 from Bangalore, 30 Hyderabad Associate companies. Also received the breakdown of the firm size of employees, 76 responses from the less than 100, 29 responses in between 101 to 200, 18 responses from 201 to 300 and rest of the answers fall under greater than 301, Further, with regards to the experience of the responses in the software sector, 68.84 percentage, had 2 years of experience, 21.74 percentage had in between 3 to 5 years of experience, 5.79 percentage had in between 6 to 10 years of experience, only 5 responses more than 10 years of experience and in the current organization the response quality is high in regard to 2 years of experience, followed by 3 to 6 years of experience, 6 to 10 years of experience and 10 responses fall under greater than 10 years.

**4. ANALYSIS AND FINDINGS**

**Table 3 :** Respondents’ opinion on artificial intelligence usage in recruitment process

Sl. No	Designation of Employee	Opinion		Total
		Yes	No	
1	Senior Executive HR	42 (30.43)	4 (2.89)	46 (33.33)
2	HR Executives	37 (26.81)	5 (3.62)	42 (30.43)
3	Trainee Associate HR	44 (31.18)	6 (4.34)	50 (36.23)
4	Total	123 (89.13)	15 (10.86)	138 (100)

Note : Figures in parentheses represent percentages to the respective vertical totals and horizontal grand total

Research objective: To examine the artificial intelligence effect in the recruitment process

Hypotheses 1: There is an effect of artificial intelligence on the recruitment process in selected software companies in India.

Table 3 displays designation-wise opinion of the respondents on artificial intelligence replace humans in the recruitment process, about 123 (89.13 percentage) respondents out of 138 opined that artificial intelligence would replace human in the recruitment process, however, 15 respondents stated that it would not be possible to replace human with artificial intelligence in the process of recruitment. Additionally, the mean 1.108, standard deviation 0.312 are presented in Table 2.

Thus, it is cleared stated that the majority of the respondents presented that artificial intelligence effect on the recruitment process of selected companies in Bangalore & Hyderabad. In other words, the hypothesis is supported.

Tables 4 to Table 15 it explains the responses on various variables on artificial intelligence replace humans in the recruitment process by using percentage and the next step to know which variable is more significant, the author tested the Coefficient  $\beta$  (Beta) and t-test to conclude the results.

**Table 4 :** Respondents’ opinion on artificial intelligence vs human recruiter in the recruitment process.

Sl No	DE	Opinion				Total
		VC	SM	SU	VN	
1	SEHR	07 (5.07)	12 (8.69)	08 (5.79)	00 (00)	27 (19.56)
2	HRE	15 (10.86)	19 (13.76)	10 (7.24)	02 (1.44)	46 (33.33)
3	TAHR	22 (15.94)	28 (20.28)	11 (7.97)	04 (2.89)	65 (47.10)
4	Total	44 (31.88)	59 (42.75)	29 (21.00)	06 (4.34)	138 (100)

Note : Figures in parentheses represent percentages to the respective vertical totals & horizontal grand total

Note 2 : VC: very comfortable, SM: somewhat comfortable, SU: somewhat uncomfortable, VN: very uncomfortable.

Note 3 : DE : Designation of Employee, SEHR : Senior Executive HR, HRE : HR Executives, TAHR : Trainee Associate HR.

Table 4 explained about the opinion regarding the comfortableness of working with artificial intelligence, and human recruiters, 103 respondents shown they are happy to work with artificial intelligence in recruitment and rest of the respondents are shown uncomfortable. Moreover, the means & SD values as follows 1.978, 0.841.

**Table 5 :** Respondents’ opinion on fairness about artificial intelligence usage in recruitment process

Sl. No	DE	Opinion		Total	Values	
		Yes	No		Mean	SD
1	SEHR	40 (28.98)	05 (3.63)	45 (32.60)	1.376	0.486
2	HRE	20 (14.49)	15 (10.86)	35 (25.36)		
3	TAHR	26 (18.84)	32 (23.18)	58 (42.02)		
4	Total	86 (62.31)	52 (37.68)	138 (100)		

Note : Figures in parentheses represent percentages to the respective vertical totals and horizontal grand total.

Note 2 : DE : Designation of Employee, SEHR : Senior Executive HR, HRE : HR Executives, TAHR : Trainee Associate HR

Table 5 respondent’s opinion on the using of artificial intelligence in judging applicant resume instead of human intervene, the 86 respondents are presented very positive opinion, and 37.68 percentage are not showing much interest. In detail, 40 senior executive HR 40, 20 HR executives, 26 trainee associate HR are mentioned artificial intelligence products, but the same designations 37.67 percentage are given it will not harvest the fair judgement.

**Table 6 :** Respondents’ opinion on trust artificial intelligence recruiter vs human recruiter to find a job.

Sl. No	DE	Opinion				Total
		LLT	SWH	SWM	LMT	
1	SEHR	07 (5.07)	25 (18.11)	03 (2.17)	07 (5.07)	42 (30.43)
2	HRE	06 (4.34)	28 (20.28)	08 (5.79)	09 (6.52)	51 (36.95)

3	TAHR	20 (14.49 )	09 (6.52 )	07 (5.07 )	07 (5.07 )	43 (31.15 )
4	Total	35 (16.66 )	62 (44.92 )	18 (13.04 )	23 (16.66 )	138 (100)

Note : Figures in parentheses represent percentages to the respective vertical totals & horizontal grand total.

Note 2 : LLT : lot more than, SWH: somewhat more than, SWM: somewhat less than, LMT: lot less than

Note 3 : DE : Designation of Employee, SEHR : Senior Executive HR, HRE : HR Executives, TAHR : Trainee Associate HR.

The respondents opinion artificial intelligence and human recruiters in the recruitment process. It is witnessed that 07 respondents stated that artificial intelligence more liable than human recruiters, 4.34 percentage of HR executives, 20 respondents of trainee associate HR are opined that the same, 62 respondents opined that artificial intelligence recruiters somewhat good than human recruiters, 18 respondents mentioned that somewhat less than a human recruiter and rest of the respondents mentioned that human recruiters better than AI recruiters presented in Table 6 and mean and standard deviation values as follows 2.210 and 1.006.

**Table 7 :** Respondents’ opinion on Technology cannot replace the human interaction.

Sl. No	DE	Opinion				Total
		SA	A	D	SD	
1	SEHR	02 (1.44 )	04 (2.89 )	17 (12.31 )	12 (8.69 )	35 (25.36 )
2	HRE	00 (0.00 )	02 (1.44 )	15 (10.86 )	10 (7.24 )	27 (19.56 )
3	TAHR	00 (0.00 )	01 (0.72 )	45 (5.07 )	30 (21.73 )	76 (55.07 )
4	Total	02 (1.44 )	07 (5.07 )	77 (32.60 )	52 (37.68 )	138 (100)

Note : Figures in parentheses represent percentages to the respective vertical totals & horizontal grand total.

Note 2 : SA: Strongly agree, A : Agree, D : Disagree, SD: Strongly disagree.

Note 3 : DE : Designation of Employee, SEHR : Senior Executive HR, HRE : HR Executives, TAHR : Trainee Associate HR.

Table 7 exhibits designation-wise opinion of the respondents on the statement “technology cannot replace the human interaction required to recruit effectively”. It is found that 52 respondents selected strongly disagree, 77 respondents stated disagree above the statement; only 9 respondents are representing the above positive statement and mean and standard deviation values as follows 2.210 and 1.006.

In brief, it can conclude, that the statement of “technology cannot replace the human interaction required to recruit effectively” not agreed by the respondents.

**Table 8 :** Respondents’ opinion on recruitment needs change through the adoption of new technology.

Sl. No	DE	Opinion				Total
		SA	A	D	SD	
1	SEHR	03 (2.17 )	27 (19.56 )	01 (0.72 )	15 (10.86 )	46 (33.33 )
2	HRE	02 (1.44 )	10 (7.24 )	00 (0.00 )	16 (11.59 )	28 (20.28 )
3	TAHR	02 (1.44 )	40 (28.98 )	01 (0.72 )	21 (15.21 )	64 (46.37 )
4	Total	07 (5.07 )	77 (32.60 )	02 (1.44 )	52 (37.68 )	138 (100)

Note : Figures in parentheses represent percentages to the respective vertical totals & horizontal grand total.

Note 2 : SA: Strongly agree, A : Agree, D : Disagree, SD: Strongly disagree.

Note 3 : DE : Designation of Employee, SEHR : Senior Executive HR, HRE : HR Executives, TAHR : Trainee Associate HR.

Table 8 display the designation-wise opinion on the adoption of the new technology in the recruitment process. It is found that 84 respondents out of 138 are agreed that new technology adoption is required in the recruitment process and the rest of the respondents opined that it is not much necessity in recruitment process and mean is 2.210 and standard deviation is 1.006.

Thus, it is observed that the majority of the respondents are agreed to have new technology in recruitment to get better results.

**Table 9 :** Respondents’ opinion on point of recruitment dealing by AL and human recruiters

Sl. No	DE	Opinion				Total
		Packag e	Dealin g	Initial	entire	
1	SEHR	03 (2.17 )	11 (7.97 )	27 (19.56 )	15 (10.86 )	46 (33.33 )
2	HRE	04 (2.89 )	13 (9.43 )	10 (7.24 )	16 (11.59 )	28 (20.28 )
3	TAHR	03 (2.17 )	15 (10.86 )	30 (21.73 )	21 (15.21 )	64 (46.37 )
4	Total	10 (7.24 )	39 (28.26 )	67 (48.55 )	22 (15.94 )	138 (100)

Note : Figures in parentheses represent percentages to the respective vertical totals & horizontal grand total.

Note 2 : DE : Designation of Employee, SEHR : Senior Executive HR, HRE : HR Executives, TAHR : Trainee Associate HR.

Table 9 reveals the designation-wise opinion of the respondents about having entire process with human recruiter, 22 respondents mentioned this, 22 respondents stated that initial process to be taken by the artificial intelligence, 39 respondents selected from the interview process has to handle by human recruiters, finally negotiating of package of job seeker should be human instead of artificial intelligence recruiter and mean and standard deviation values as follows 2.268 and 0.815.

**Table 10 :** Respondents’ opinion on artificial intelligence work in recruitment

Sl. No	DE	Opinion				Total
		all the time	most of the time	work most of the time	Work all of the time	
1	SEHR	13 (9.42)	20 (14.49)	20 (14.)	11 (7.97)	64 (46.37)
2	HRE	09 (6.52)	10 (7.24)	10 (7.24)	13 (9.42)	42 (30.43)
3	TAHR	05 (3.62)	12 (8.69)	10 (7.24)	05 (3.62)	32 (23.18)
4	Total	27 (19.56)	42 (30.44)	40 (28.98)	29 (21.01)	138 (100)

Note : Figures in parentheses represent percentages to the respective vertical totals & horizontal grand total.

Note 2 : DE : Designation of Employee, SEHR : Senior Executive HR, HRE : HR Executives, TAHR : Trainee Associate HR.

Table 10 shows the designation-wise opinion about the automation of the recruitment process, 42 respondents felt that automation would be work most of the time, 27 respondents opined that automation works all the time, 28.98 percentage respondents stated that automation will not perform most of the time, and 29 respondents presented that automation recruitment does not work all the time and mean is 2.594, standard deviation is 1.131. However, the brief most of the respondents are stated that automation work better than the manual system.

**Table 11 :** Respondents’ opinion on value most while dealing with human recruiters

Sl No	DE	Opinion					Total
		P	T	C	S	R	
1	SEHR	13	03	20	10	11	57
2	HRE	14	02	10	09	19	54

3	TAHR	15	03	10	04	17	49
4	Total	42	07	19	23	47	138

Note : Figures in parentheses represent respondents numbers to the respective vertical totals grand total.

Note 2 : SI No : Serial Number

Note 3 : DE : Designation of Employee, SEHR : Senior Executive HR, HRE : HR Executives, TAHR : Trainee Associate HR.

Note 4 : P: Personal, T:Trust, C:Care, S:Subjective, R:Role

Table 11 incorporated the designation-wise opinion of the respondents expectations from the human recruiters, 30.43 percent of respondents stated that human is able to construct a personal relationship with job seekers, 7 respondents opined that applicants have a trust on human manual process, 19 respondents have confidence in human recruiters, they will perform the job, 16.66 percent of respondents believe that human recruiters are in-depth of the subject while selecting the candidate and rest of the respondents human recruiters know what are the requirements for the advertised job and Mean 3.42 and Standard Deviation 1.95.

**Table 12 :** Respondents’ opinion on value dealing with artificial intelligence recruiters

SI No	DE	Opinion					Total
		U	E	E	F	A	
1	SEHR	20	13	01	10	01	45
2	HRE	22	12	00	09	01	44
3	TAHR	30	14	00	05	03	52
4	Total	71	37	01	24	05	138 (100)

Note : Figures in parentheses represent respondents numbers to the respective vertical totals & horizontal grand total.

Note 2 : DE : Designation of Employee, SEHR : Senior Executive HR, HRE : HR Executives, TAHR : Trainee Associate HR.

Note 3 : U : Unbiased, E: Efficient, E: Experience and F : Faster, A: Accurate.

Table 12 depicts the designation-wise opinion of the respondents about the process handling of recruitment by the artificial intelligence recruiters, 71 respondents stated that AI recruiters do their job unbiased and show their fairness in process, 26.81 percentage respondents stated that AI recruiters more effective than human recruiters, 24 respondents stated that AI recruiters faster than human recruiters, five respondents stated that AI recruiters are produced their accurate in finding job and rest of the respondents shown it will enhance the candidate experience in the recruitment process. Thus, it can be concluded that the major of the respondents are positive in working with AI

recruiters and Mean and Standard deviation values as follows 1.924 and 0.959.

**Table 13 :** Respondents’ opinion on speed of work with artificial intelligence in recruitment process

Sl. No	DE	Opinion		Total	Values	
		Yes	No		Mean	SD
1	SEHR	30 (21.73%)	15 (10.86%)	45 (32.60%)	1.550	0.491
2	HRE	20 (14.49%)	25 (18.11%)	45 (32.60%)		
3	TAHR	30 (21.73%)	18 (23.18%)	48 (34.78%)		
4	Total	80 (57.98%)	58 (42.02%)	138 (100%)		

Note : Figures in parentheses represent percentages to the respective vertical totals & horizontal grand total.

Note 2 : DE : Designation of Employee, SEHR : Senior Executive HR, HRE : HR Executives, TAHR : Trainee Associate HR.

Table 13 exhibits designation-wise opinion of the respondents on the speed of recruitment process, 80 respondents, are stated that through AI recruiters are most fast than human, 42.02 respondents stated that human recruiters are faster than AI recruiters. In brief, it can be concluded that majority of the respondents felt that AI recruiters generate speed in the recruitment process.

**Table 14 :** Respondents’ opinion on quality recruitment process via artificial intelligence.

Sl. No	DE	Opinion		Total	Values	
		Yes	No		Mean	SD
1	SEHR	35 (25.36%)	13 (9.42%)	48 (34.78%)	1.550	0.491
2	HRE	20 (14.49%)	22 (15.94%)	42 (30.43%)		
3	TAHR	30 (21.73%)	18 (13.04%)	48 (34.78%)		
4	Total	85 (61.59%)	53 (42.02%)	138 (100%)		

Note : Figures in parentheses represent percentages to the respective vertical totals & horizontal grand total.

Note 2 : DE : Designation of Employee, SEHR : Senior Executive HR, HRE : HR Executives, TAHR : Trainee Associate HR.

Table 14 demonstrate the designation-wise opinion of the respondents about the quality development in the recruitment process through artificial intelligence. Eighty-five respondents stated that artificial intelligence enhances the quality of the recruitment and remaining concluded that it will not impact any significance in the recruitment process.

**Table 15 :** Respondents’ opinion on concerned impact of artificial intelligence on recruitment process

Sl. No	DE	Opinion		Total	Values	
		Yes	No		Mean	SD
1	SEHR	44 (31.88%)	13 (9.42%)	57 (41.30%)	1.217	0.413
2	HRE	52 (37.68%)	10 (7.24%)	62 (44.92%)		
3	TAHR	12 (8.69%)	07 (5.07%)	19 (13.76%)		
4	Total	108 (61.59%)	30 (42.02%)	138 (100%)		

Note : Figures in parentheses represent percentages to the respective vertical totals & horizontal grand total.

Note 2 : DE : Designation of Employee, SEHR : Senior Executive HR, HRE : HR Executives, TAHR : Trainee Associate HR

Table 15 displays the designation-wise opinion on the concern of AI impact on the recruitment process and the way of detailing with recruiters. 61.59 percentage of the respondents agreed that they have a concern, and 42.02 per cent of the respondents stated that it would not affect the recruitment process.

Summary of the result of that artificial intelligence much influence on the recruitment process. The study has taken up various concepts of the recruitment process will replace human touch with artificial intelligence. Most of the respondents are felt that artificial intelligence swap with the human touch in the recruitment process. Respondents concluded that artificial intelligence would be very useful in the initial stage of recruitment, but the interview process and package negotiation should be better with the human. AI will escalate the speed, quality and unbiased features in the process of recruitment.

**4.1 Construct Reliability**

For the purpose to know the reliability of the constructs, Cronbach’s alpha is the most widely used measure for reliability is used for the study [29]. The values of the Cronbach’s alpha ranges from 0 to 1 if the values are achieving higher values reliability. As per the (Nunnally, J.C. and Bernstein, I.H. 1994), the acceptable threshold for reliability is 0.70. As observed in the study, our constructs were well above 0.70, indicating there is strong reliability of

constructs, the actual values of the study are 0.81, number of items 14.

**4.2 Objective 02 Summary of findings and hypothesis test results.**

The study was conducted to assess the artificial intelligence influence on employer reputation among the job seekers. After using of statistical test, the author found two types of information such as significant variables and insignificant variables. Therefore, the author has selected significant variables for further discussion, which are insignificant variable not to discuss why, because it will not make any sense in the results.

Hence, it is cleared that the objective 2 has five significant variables (i.e H2, H3, H4, H5 & H6) discussion carried out in the rest of the page.

The values of (H4) while using of artificial intelligence in recruitment process, the following responses we have found artificial intelligence provide unbiased and fairer, it will work more efficient than human recruiters, the process is faster, but some of them opined its better choosing job apps, and finally candidate got some good experience. Moreover the values such as  $\beta = 0.581$ ,  $t = 6.380$  and  $p < 0.000$ , (H3) artificial intelligence tools will be helpful in the recruitment process, the respondents opined that automation of recruitment process would be effective, followed by automation recruitment works most of the time, automation of recruitment work all the time and finally automation of recruitment do not work all the time, the significant values are  $\beta = 0.236$ ,  $t = 2.428$  and  $p < 0.017$ . (H5) The respondents stated that artificial intelligence recruiters delivered effective judgment than the human recruiters in arranging in interview process the values as  $\beta = 0.197$ ,  $t = 2.085$  and  $p < 0.039$ , (H2) respondents opined that in the matter of the speed of the recruitment process will be more in using artificial intelligence, the values as  $\beta = 0.197$ ,  $t = 2.085$  and  $p < 0.039$ , and finally respondents stated that by using artificial intelligence in the recruitment process, it would make possible to enhance the quality in the hiring process, even the values are  $\beta = 0.152$ ,  $t = 2.328$  and  $p < 0.015$  are supported, and the values are displayed in Table 16.

**Table 16 : Hypotheses test results**

Hypothesized relationship			$\beta$	S.E	t-value	p	HR
H2	Judge	ER	0.197	0.095	2.085	0.039	S
H3	System	ER	0.236	0.097	2.428	0.017	S
H4	Dealing AIR	ER	0.581	0.091	6.380	0.000	S
H5	Speed	ER	0.197	0.095	2.085	0.039	S
H6	Quality	ER	0.152	0.095	2.328	0.015	S

Significant at  $p < 0.05$ ,  $\beta$  - standardized coefficients; S.E. – standard error.

Note : Dealing AIR : Dealing with artificial intelligence recruiters.

Note 2 : HR : Hypothesis Result, S : Supported, ER : Employer Reputation.

**5. DISCUSSION AND CONCLUSION**

The study was conducted in the Bangalore and Hyderabad based software companies with the opinion of the HR professionals by the aim of artificial intelligence will replace humans in the recruitment process. The study has developed the hypothesis and tested the objectives designed, the first objective artificial intelligence with inference the human in the recruitment process, the recruitment process has been affected by artificial intelligence in many ways, the professionals of different designations of human resource stated that human recruiter is not better than artificial intelligence recruiter, this act of artificial intelligence will lead the fairness in the process. In the process of the searching job, artificial intelligence, by and large, most of the professionals agreed artificial intelligence is better than a human recruiter, whereas, technology cannot replace the human interaction stated a large number of the participants in the study.

The huge number of professionals opined that technology is needed to enhance the overall results in the process of recruitment. If the whole process of recruitment dealing with artificial intelligence is better in the initial stage of recruitment process opined by a large number of people, in some of them opined that artificial intelligence should take care of all the entire process, some good number of professional said that interview process, package negotiation should be taken care of by the human process. Regarding automation of the recruitment process, a large number of professionals said that it is ways better to have automation all the time while dealing of applications human recruiters are quite good in maintain human relations, trust, confidence and ability to ask subjective questions.

Artificial intelligence can build unbiased and show fairness and produce more effective in finding the job, and this will enhance the candidate experience, the quite number of the professional said that artificial intelligence creates good speed, quality in the process of recruitment. However, a good number of professionals agreed that there is an impact of artificial intelligence on the recruitment process.

As per the viewpoint of the respondents, artificial intelligence enables logical thinking via programming to do analytical work based on the command to perform the action to deliver the desired output. Human accomplishes their task by using technology by reducing human effort, errors and burden. Artificial intelligence replaces human in the workplace by performing better via human intervention; it will act as an intelligence machine, stimulate human to find new technology for the future.

The author collected insights from the participants regarding artificial intelligence impact on the recruitment process, and the responses are consolidated and presented. The respondents stated that artificial intelligence very useful tool

in finding the job process, will use in the junior-level hiring process, it will perform the work on the basis of coding so it will deliver as per the instructions, with fast, reliable, accurate and impartial manner. There are some of the difficulties of using, artificial intelligence cannot set up the culture, and it can screen but not make interview process of the candidates. An overview is that artificial intelligence can not replace the whole process of recruitment.

### 5.1 Limitations and future research avenues

The authors have given new insights for the study. This will contribute to the existing literature. The study embedded with some of the new points that are very useful for the artificial intelligence practitioners to identify more functions into artificial intelligence recruitment applications, and to know the gap in the present applications of artificial intelligence. Additionally, this study will be productive in the machine learning, natural language processing and neural networks. The study was conducted in the Bangalore and Hyderabad based companies only, the sample collected by using convenience sampling. The proposed study can be conducted in other parts of India. Where hi-tech companies are placed such as Chennai, Mumbai, Delhi-Noida and Gurgaon, Pune, Kolkata (Salt Lake), Ahmedabad and Gandhinagar (GIFT City) by taking the huge number of the data sample, and there is possible to make different artificial intelligence recruitment application to make comparative study and as well between Tech companies. There is a possibility to have the same study can be conducted in different countries or regions.

### REFERENCES

- [1] J. A. Breaugh, **Recruiting and attracting talent**, Michigan, 2004.
- [2] D. Bartram, **Internet recruitment and selection: kissing frogs to find princes**, *Int. J. Sel. Assess.*, vol. 8, no. 4, pp. 261–274, 2000.  
<https://doi.org/10.1111/1468-2389.00155>
- [3] P. Kaur, “**E-recruitment : a conceptual study**,” *Int. J. Appl. Res.*, vol. 1, no. 8, pp. 78–82, 2015.
- [4] J. Martínez-Miranda and A. Aldea, **Emotions in human and artificial intelligence**, *Comput. Human Behav.*, vol. 21, no. 2, pp. 323–341, Mar. 2005.  
<https://doi.org/10.1016/j.chb.2004.02.010>
- [5] A. Raviprolu, **Role of Artificial Intelligence in Recruitment**, *Int. J. Eng. Technol.*, vol. 5, no. 4, pp. 115–117, 2017.
- [6] B. Olivier, **Artificial intelligence (AI) and being human: what is the difference?**, *Acta Acad.*, vol. 49, no. 1, pp. 1–20, 2017.  
<https://doi.org/10.18820/24150479/aa49i1.1>
- [7] R. Kowalski, **Artificial intelligence and human thinking**, in *IJCAI International Joint Conference on Artificial Intelligence*, 2011, pp. 11–16.
- [8] M. Sipper and J. H. Moore, **Artificial intelligence: more human with human**, *BioData Min.*, vol. 10, no. 1, pp. 1–2, Dec. 2017.  
<https://doi.org/10.1186/s13040-017-0157-1>
- [9] I. Buzko, Y. Dyachenko, M. Petrova, N. Nenkov, D. Tulenina, and K. Koeva, **Artificial Intelligence technologies in human resource development**, *Comput. Model. new Technol.*, vol. 20, no. 6, pp. 26–29, 2016.
- [10] N. Nawaz and A. M. Gomes, **Human resource information system: a review of previous studies**, *J. Manag. Res.*, vol. 9, no. 3, p. 92, Jul. 2017.  
<https://doi.org/10.5296/jmr.v9i3.11488>
- [11] Nishad Nawaz, **The usage of human resource information systems in HR processes in select software companies in Bangalore City India**, *Inf. Knowl. Manag.*, 2013.
- [12] K. S. Ball, **The use of human resource information systems: A survey**, *Pers. Rev.*, vol. 30, no. 6, pp. 677–693, 2001.  
<https://doi.org/10.1108/EUM0000000005979>
- [13] T. Bondarouk, E. Parry, and E. Furtmueller, **Electronic HRM: four decades of research on adoption and consequences**, *Int. J. Hum. Resour. Manag.*, vol. 28, no. 1, pp. 98–131, Jan. 2017.  
<https://doi.org/10.1080/09585192.2016.1245672>
- [14] N. Nawaz, **A comprehensive literature review of the digital HR research filed**, *Inf. Knowl. Manag.*, vol. 7, no. 4, pp. 15–20, 2017.
- [15] R. M. P and R. Jayam, **Artificial Intelligence in Human Resource Management**, *Int. J. Pure Appl. Math.*, vol. 119, no. 17, pp. 1891–1895, 2018.
- [16] Pedro Domingos, **Artificial intelligence in HR: a no-brainer**, Netherlands , 2017.
- [17] P. Gupta, S. F. Fernandes, and M. Jain, **Automation in recruitment: a new frontier**, *J. Inf. Technol. Teach. Cases*, vol. 8, no. 2, pp. 118–125, 2018.  
<https://doi.org/10.1057/s41266-018-0042-x>
- [18] M. A. Robinson, P. R. Sparrow, C. Clegg, and K. Birdi, **Forecasting future competency requirements: A three-phase methodology**, *Pers. Rev.*, vol. 36, no. 1, pp. 65–90, 2007.  
<https://doi.org/10.1108/00483480710716722>
- [19] Julie Denardo, **Global 500 web site recruiting**, San Francisco, 2001.
- [20] M. Sebel, **Robotic process automation & human resources**, 2018.
- [21] N. Nawaz, **Robotic process automation for recruitment process**, *Int. J. Mechanical Eng. Technol.*, vol. 10, no. 04, pp. 88–91, 2019.
- [22] V. B. Sheila L. McGovern, Vinod Pandey, Steve Gill, Tim Aldrich, Chad Myers, Chirag Desai, Mayank Gera, **The new age: artificial intelligence for human resource opportunities and functions**, 2018.
- [23] M. Sriram and L. Gandhi, **Exploring the dynamica virtus of machine learning (ML) in human resource management-a critical analysis of IT industry**, *Int. J. Comput. Sci. Eng.*, vol. 5, no. 12, pp. 173–180, 2017.  
<https://doi.org/10.26438/ijcse/v5i12.173180>
- [24] S. Jain, **Artificial intelligence - the engine driving the next wave of transformation in business**, *Int. J. Adv. Res. Sci. Eng.*, vol. 6, no. 1, pp. 592–596, 2017.
- [25] J.-A. Min, **Enhancing recruitment through AI**, *Can. H R Report.*, vol. 30, no. 6, p. 14, 2017.

[26] R. Geetha, **Recruitment through artificial intelligence: a conceptual study**, *Int. J. Mech. Eng. Technol.*, vol. 9, no. 7, pp. 63–70, 2018.

[27] D. Wilfred, **AI in recruitment**” SAGE Publications, Dec. 2018.

<https://doi.org/10.1177/0974173920180204>

[28] G. K. Ghauri Pervez, **Research methods in business studies**. Harlow: Pearson Education, 2002.

[29] Cronback LJ, **Coefficient alpha and the internal structure of tests**, *Psychometrika*, vol. 16, no. 3, pp. 297–334, 1951.

<https://doi.org/10.1007/BF02310555>