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Ai-Driven Recruitment in the It Industry: Opportunities, Challenges, And the Future of Hiring Practices

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Abstract:- The rapid advancement of Artificial Intelligence (AI) has significantly transformed recruitment and selection processes in the IT sector. This study explores the opportunities, challenges and future prospects of AI-driven recruitment practices, focusing on the IT industry in Bangalore, Karnataka. A descriptive and exploratory research design was employed utilizing both primary and secondary data. A structured questionnaire was administered to 400 IT professionals using purposive sampling. Employees have a relatively neutral to slightly positive attitude towards AI implementation in recruitment, acknowledging its ability to improve efficiency as well as quality and diversity of applicants. Questions about bias in algorithmic predictions, privacy and the necessity of human judgment remain. The results of correlation analysis indicate that ethical concerns have negative relationships and AI efficiency, candidate experience, and strategic edge has positive associations. NOVA results show that responses are in agreement at all the considered hierarchical scales. The research indicates that IT departments should be investing heavily in AI recruiting tools, by deploying solid ethical frameworks with strong bias mitigation components. We recommend you integrate newer technologies such as emotional AI and blockchain in order to be competitive. The study also emphasizes the critical balancing act between automation and human judgment, alongside open communication, for trust and acceptability of AI in recruitment.

Keywords*: AI Recruitment, IT Sector, Bangalore, Employee Perception, Ethical Concerns, Future Prospects*

Introduction

1. AI tools like machine learning algorithms, natural language processing and predictive analytics have enhanced the efficiency, accuracy and objectivity of hiring practices. Organizations are increasingly leveraging AI to automate resume screening, assess

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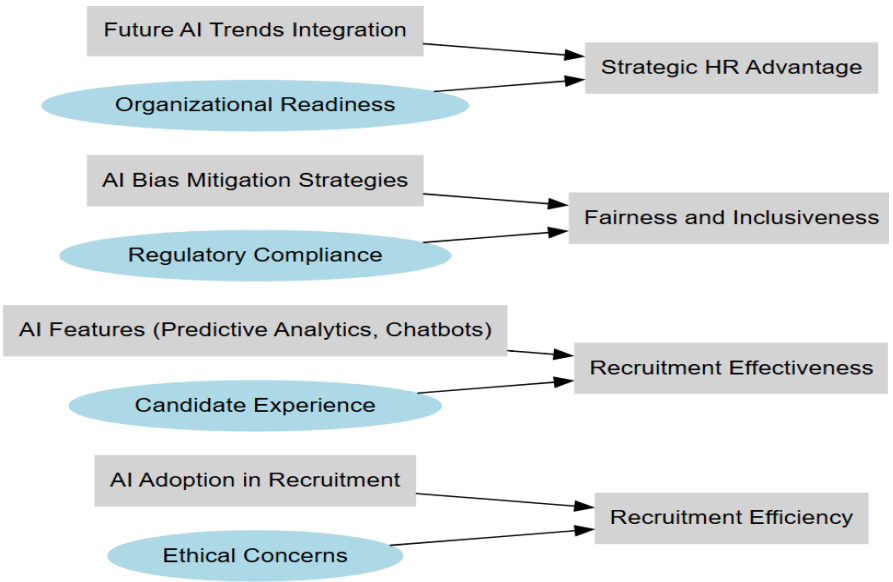
candidate fit, and predict employee performance (Upadhyay & Khandelwal, 2018).

2. Despite its potential, the adoption of AI in recruitment raises significant ethical, operational, and organizational challenges. Concerns over algorithmic bias, data privacy and the dehumanization of hiring processes highlight the complexity of integrating AI into human resource management (Cowgill, Dell'Acqua, & Deng, 2021).IT companies must carefully balance automation with the need for human judgment to ensure that hiring practices remain fair and inclusive. Ignoring these concerns could open an organization to lawsuits, PR nightmares and a loss of qualified candidates.
3. The speedy and innovative nature of the IT sector makes it an ideal place to adopt AI for hiring. Indeed, some of the top companies in the world, including IBM, Google, and Infosys, have begun using AI-driven platforms to improve candidate sourcing, skill assessment, and employee retention prediction (Suen, 2018). At these companies, the value of AI as a tool is neatly quantifiable -- in scalability, minimizing unconscious bias and improving the candidate experience. AI solutions can only be as good as the data processed and the algorithms they use.The future of AI powered IT recruitment, there are three tech trends that could play a huge part in the future of AI and recruitment in the IT sector: Emotional AI Blockchain-verified credentials Advanced predictive analytics These initiatives are expected to make hiring even more efficient and personalized, although they also come with different ethical and regulatory issues (Black & van Esch, 2020).

CONCEPTUAL MODEL FOR THE STUDY



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LITERATURE REVIEW

AI Adoption in Recruitment

AI in recruitment has revolutionized hiring by enabling automation of repetitive processes such as resume screening, interview scheduling and initial assessments. As per Upadhyay and Khandelwal (2018) AI has resulted in faster decision making, reduced cost and a better 'fit' between applicant and organisation, based on predictive algorithms. In the IT industry, with the shortage of high-quality talent, the application of AI enables enterprises to seize the competitive edge in the race to improve headhunting efficiency. The effectiveness of AI tools is also based on organizational readiness, the quality of available data (Black & van Esch, 2020) and the complexity of challenges undertaken by the adoption of such tools (Kanapathy Kana, Kar San, & S. Khor, 2019).

AI Elements

The emergence of advanced tools like AI (predictive analytics, chatbots) has changed the way recruitment does business by utilizing data driven analytics and making the life of a candidate better. Recruiters can leverage predictive analytics in order to forecast a candidate's potential for success and probability to turnover and this results in smarter hiring decisions (Suen, 2018). Chatbot also increase job quality by offering immediate feedback, and facilitate communication throughout the recruitment process (Maurer, 2016). Besides achieving more with less effort, these AI features can also contribute to a powerful employer image in a fiercely competitive IT sector.

AI Bias Mitigation Strategies

While AI promises objectivity, concerns around algorithmic bias remain critical. Bias mitigation strategies such as debiasing training data and implementing fairness constraints in algorithms are essential to uphold ethical standards (Cowgill, Dell'Acqua, & Deng, 2021). Raghavan et al. (2020) argue that without intentional designAI systems can inadvertently perpetuate historical biases embedded in datasets. Companies are doubling down on transparent programs and third-party audits to verify that AI-powered hiring tools are instilling fairness and inclusivity across IT staff where many of our minority tech staff work.Positive values suggest.

Future AI Trends Integration

Up-and-comers like emotional AI for video interviewing, blockchain credentials and predictive talent analytics will disrupt the way recruiting is executed. Emotional AI Its goal in Emotional AI is to sluice job candidates for both emotional intelligence and cultural fit, with a more sophisticated analysis of behaviour (Black & van Esch, 2020). Improvement of authentication in a more secure way less frame for fraud, with the aid of Blockchain

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(Nguyen, 2019). Wait until you see the kind of sci-fi integration that is a glimpse into what AI and recruitment will be in our future, not just faster, but also better, making recruitment more real, more trusted and even more predictive accurate in tech.

Recruitment Efficiency

Already, AI-driven recruitment proved itself to be a critical lever for productivity gains, by helping companies reduce time-to-hire and cost to recruit. It has been established through research that AI could possibly wipe out 70% of pre- hiring mandate for humans to strategize decision making (Upadhyay & Khandelwal, 2018). Nowhere is it more needed than in IT, when you're hiring super technical people as fast as you can You get visits into better jobs faster For just a better engagement just way, way faster and more accurate.

Recruitment Effectiveness

Your recruitment effectiveness is the quality of you selecting people that are a good fit for the position and the company. AI applications increase the efficiency of the candidates' hiring by predicting candidate success and longevity (Suen, 2018). Maurer (2016) adds AI can lead to more precise evaluations because it does not have to emphasize things like GPA, so as a consequence, if IT companies focus on finding the best people for the job and these are found in pockets of diverse communities;AI will help companies identify them.

Fairness and Inclusiveness

Fairness and inclusivity in AI facilitated recruitment are topic of recent research. The design of AI is also crucial to ensure the emergence of no systemic bias, which could lead to discrimination against minorities (Cowgill, Dell'Acqua& Deng, 2021). Fairness in different industries Different approached to fairness, e.g. anonymized resume screening; bias reduction in crowdsourcing; bias audits. Why diversity and Innovation is more important in the IT industry 'Advocating inclusion in hiring not only leads to diversity, but it also promotes innovation and competition in the IT industry".

Strategic HR Advantage

Companies that leverage AI in hiring strategically have immense gains for talent management and company performance. According to Black and van Esch (2020), AI provides strategic advantage through the ability to forecast with warning on more accurate staffing needs, predictive succession management, and data-driven decision making. In the IT space, which thrives on agility and innovation, strategic HR, driven by AI, can contribute to organisational resilience and market leadership.

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THEORETICAL BACKGROUND

Use of AI in recruitment and selection is a product of theories of technology adoption, human resource (HR)and organizational efficiency.Technology Acceptance Model (TAM) clarifies the idea of perceived usefulness and ease of use urged the use of AI-based recruitment systems by the organizations (Davis, 1989).The RBV of the firm posits that AI technologies offer a competitive advantage to firms, in that they enhance recruitment effectiveness and fit through more precise match-up between candidate and job and a swifter decision-making process (Barney, 1991). In the IT industry, organizations value high agility and quick adaptation, and AI-powered recruitment is considered one of the strategic levers that enable talent acquisition to be aligned and serve the overall business (Black & van Esch, 2020). Ethical theories such as deontological ethics contribute to discussions of bias, fairnessand transparency in hiring systems powered by AI (Cowgill, Dell'Acqua, & Deng, 2021). Combined, these theoretical lenses create a solid basis to explore a continuance perspective of how AI changes recruitment practices and which ethical issues are to be considered.

GAP OF THE STUDY

When significant research has been conducted on AI in the context of recruitment, most of it is either on the technical or on the ethical side, and has not been integrated, specifically in the context of the IT industry. The absence of the simultaneous examination of AI's opportunities, challenges and future trends from a holistic, strategic HR viewpoint in empirical investigations is evident (Suen, 2018; Upadhyay & Khandelwal, 2018).Much of the existing literature is based on conceptual frameworks without real-world validation in dynamic sectors like IT, where recruitment demands are unique and rapidly evolving. Furthermore, the mediating role of factors like ethical concerns, candidate experience, and organizational readiness has not been deeply explored in relation to recruitment outcomes. This study aims to bridge these gaps by providing an integrated analysis of AI-driven recruitment specifically within the context of the IT sectorincorporating both operational and strategic dimensions.

SCOPE OF THE STUDY

This study focuses on examining the adoption, implementation, and outcomes of AI-driven recruitment practices within the IT industry. It covers various AI technologies such as predictive analytics, chatbotsand algorithmic decision-making tools used during candidate sourcing, screening and selection. The research specifically addresses how AI enhances recruitment efficiency and effectiveness while identifying challenges related to fairness, ethicsand data privacy (Black & van Esch, 2020; Cowgill et al., 2021). The geographic scope is primarily limited to leading IT hubs, considering both multinational corporations and mid-

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sized firms operating in technologically advanced markets. The study also explores future trends such as emotional AI and blockchain credentialing to suggest strategic directions for HR practitioners. The research does not deeply investigate recruitment practices in non-IT industries or manual/human-only recruitment processes without AI intervention.

OBJECTIVES OF THE STUDY

1. To assess the impact of AI on recruitment efficiency in the IT sector.
2. To explore opportunities offered by AI in IT talent acquisition.
3. To identify challenges and ethical concerns in AI-driven recruitment.
4. To examine future trends and best practices for AI integration in hiring.

RESEARCH METHODOLOGY

This research is descriptive and exploratory in nature designed to explore the opportunities and challenges and then the future prospects of AI based recruitment in the IT industry. Primary as well as secondary data collection is used to make the results stronger and broad. The primary data has been collected through a structured questionnaire containing about 20 five-point likert scale questions which was emailed to the participants belonging to employees of IT firms, in Bangalore, Karnataka, a major IT destination of India. The core data wanted to interview the IT personnel based on their real thoughts and experiences concerning the practice of using AI for recruitment and selection purpose. Other secondary research was conducted from classroom library, Industrial reports, case studies and good online sources to provide strong theoretical background. Non-probability purposive sampling was used and the population consisted of IT companies' employees who have knowledge of AI enabled recruitment system, and in total 400 employees who are the respondents were taken. Geographically, the study was confined to Bangalore, Karnataka, due to its prominence as the Silicon Valley of India. The data was analysed using descriptive statistics such as mean, standard deviation and percentage analysis and also inferential statistics such as correlation and regression analysis were conducted by employing SPSS as well as Microsoft Excel. The research identified that there was content from secondary data sources which contributed to the study however the primary analysis was also well supported with AI driven recruitment within the IT industry.

DATA ANALYSIS AND INTERPRETATION

CRONBACH'S ALPHA TEST

Item	Cronbach's Alpha values
Q3	0.75
Q4	0.75
Q5	0.75

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Q6	0.75
Q7	0.75
Q8	0.75
Q9	0.75
Q10	0.75
Q11	0.75
Q12	0.75
Q13	0.84
Q14	0.84
Q15	0.84
Q16	0.84
Q17	0.75
Q18	0.75
Q19	0.75
Q20	0.75

Table: 1

The above table presents the impact of removing each item on the scale's internal consistency, as measured by Cronbach's Alpha. Removing items Q3-Q12 and Q17-Q20 consistently yields an alpha of 0.75, suggesting their positive contribution to reliability. Conversely, deleting any of items Q13-Q16 increases the alpha to 0.84, indicating these items may be reducing the scale's homogeneity. This necessitates a review of the content and psychometric properties of Q13-Q16, potentially through content analysis, item-total correlations, or factor analysis, to inform decisions about their retention, revision or removal, while considering both statistical improvement and the scale's content validity.

DESCRIPTIVE STATISTICS

	mean	std	min	max
Q3	3.00	0.97	1	5
Q4	2.94	1.00	1	5
Q5	2.95	1.02	1	5
Q6	3.03	1.03	1	5
Q7	2.96	1.00	1	5
Q8	3.00	1.09	1	5
Q9	2.99	1.06	1	5
Q10	2.99	1.15	1	5
Q11	2.96	1.08	1	5

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Q12	2.98	1.05	1	5
Q13	3.08	1.05	1	5
Q14	3.06	1.08	1	5
Q15	3.01	1.09	1	5
Q16	2.99	1.07	1	5
Q17	2.94	1.01	1	5
Q18	2.97	1.04	1	5
Q19	2.95	1.05	1	5
Q20	3.00	1.08	1	5

Table :2

This table presents descriptive statistics for each item (Q3-Q20) on a scale, including the mean, standard deviation, minimum, and maximum observed values. The means for all items howver around 3.0, indicating a tendency towards the midpoint of the response scale. The standard deviations, ranging from 0.97 to 1.15, suggest a moderate level of variability in responses across items. With minimum and maximum values consistently at 1 and 5 respectively, all items utilize the full range of the 5-point scale. This summary provides an overview of the central tendency and dispersion of responses for each individual item which can be useful for understanding response patterns and identifying potential issues like restricted rangealthough none are apparent here.

Correlation

	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
Q3	1.00	0.61	0.63	0.61	0.60	0.55	0.57	0.63	0.61	0.58	-0.60	-0.57	-0.53	-0.55	0.61	0.61	0.60	0.64
Q4	0.61	1.00	0.62	0.65	0.63	0.60	0.52	0.61	0.60	0.61	-0.55	-0.58	-0.60	-0.59	0.58	0.62	0.62	0.61
Q5	0.63	0.62	1.00	0.63	0.63	0.60	0.58	0.61	0.56	0.60	-0.60	-0.60	-0.56	-0.55	0.63	0.62	0.61	0.62
Q6	0.61	0.65	0.63	1.00	0.65	0.63	0.56	0.61	0.59	0.57	-0.59	-0.56	-0.56	-0.58	0.58	0.60	0.63	0.64
Q7	0.60	0.63	0.63	0.65	1.00	0.58	0.52	0.62	0.59	0.57	-0.58	-0.62	-0.55	-0.59	0.61	0.60	0.65	0.63
Q8	0.55	0.60	0.60	0.63	0.58	1.00	0.56	0.56	0.53	0.52	-0.58	-0.57	-0.58	-0.52	0.59	0.60	0.63	0.63
Q9	0.57	0.52	0.58	0.56	0.52	0.56	1.00	0.58	0.55	0.54	-0.52	-0.53	-0.57	-0.55	0.57	0.56	0.54	0.57
Q10	0.63	0.61	0.61	0.61	0.62	0.56	0.58	1.00	0.60	0.57	-0.60	-0.59	-0.61	-0.56	0.60	0.59	0.59	0.61
Q11	0.61	0.60	0.56	0.59	0.59	0.53	0.55	0.60	1.00	0.56	-0.51	-0.54	-0.56	-0.53	0.59	0.59	0.58	0.62
Q12	0.58	0.61	0.60	0.57	0.57	0.52	0.54	0.57	0.56	1.00	-0.54	-0.57	-0.52	-0.54	0.58	0.59	0.59	0.58
Q13	-0.60	-0.55	-0.60	-0.59	-0.58	-0.58	-0.52	-0.60	-0.51	-0.54	1.00	0.54	0.54	0.53	-0.56	-0.57	-0.58	-0.56
Q14	-0.57	-0.58	-0.60	-0.56	-0.62	-0.57	-0.53	-0.59	-0.54	-0.57	0.54	1.00	0.55	0.55	-0.55	-0.63	-0.58	-0.57
Q15	-0.53	-0.60	-0.56	-0.56	-0.55	-0.58	-0.57	-0.61	-0.56	-0.52	0.54	0.55	1.00	0.55	-0.56	-0.59	-0.60	-0.59
Q16	-0.55	-0.59	-0.55	-0.58	-0.59	-0.52	-0.55	-0.56	-0.53	-0.54	0.53	0.55	0.55	1.00	-0.54	-0.56	-0.57	-0.57
Q17	0.61	0.58	0.63	0.58	0.61	0.59	0.57	0.60	0.59	0.58	-0.56	-0.55	-0.56	-0.54	1.00	0.60	0.61	0.61
Q18	0.61	0.62	0.62	0.60	0.60	0.60	0.56	0.59	0.59	0.59	-0.57	-0.63	-0.59	-0.56	0.60	1.00	0.62	0.63
Q19	0.60	0.62	0.61	0.63	0.65	0.63	0.54	0.59	0.58	0.59	-0.58	-0.58	-0.60	-0.57	0.61	0.62	1.00	0.63
Q20	0.64	0.61	0.62	0.64	0.63	0.63	0.57	0.61	0.62	0.58	-0.56	-0.57	-0.59	-0.57	0.61	0.63	0.63	1.00

Table :3

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This table displays the Pearson correlation coefficients between each pair of items (Q3 through Q20). The values range from -1.00 to +1.00, indicating the strength and direction of the linear relationship between the responses to any two given questions. Positive values indicate that as responses to one item increase, responses to the other tend to increase; negative values indicate the opposite. Values near 0 indicate a weak or no linear relationship. Inspection of the intercorrelations shows that there were mostly positive and moderate to high relationships among most items, indicating that the items probably are tapping into theoretically related constructs. Questions Q13 to Q16 consistently display the negative correlations with most of the remaining questions (Q3 to Q12 and Q17 to Q20). This means that there is a negative relationship: high scores in Q13-Q16 tend to be coupled with low scores in the rest of items and vice versa.

The negative relations for Q13-Q16 offer statistical support to the finding in the "Cronbach's Alpha if Item Deleted" table in which the deletion of these items resulted in an increment for internal consistency. If we find negative associations represented by these, it means that Q13-Q16 are not measuring the same construct implied by the other items, and weaken the uni-dimensionality of the scale. More research should be conducted to look at the negative linked items to see why they are not working and should they be changed or removed.

Anova Table

	F-Statistic	p-Value
Q3	1.1939	0.3129
Q4	0.2490	0.9102
Q5	0.8668	0.4838
Q6	0.5575	0.6937
Q7	0.3004	0.8777

Table :4

This table presents the F-statistic and corresponding p-value for each item (Q3 through Q7). These values typically originate from an Analysis of Variance (ANOVA) test where each item is considered as a dependent variable and some categorical independent variable(s) are used to compare group means on that item.

F-Statistic: This value represents the ratio of the variance between the groups to the variance within the groups for each item. A larger F-statistic suggests greater differences in the means of the groups being compared for that specific item.

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p-Value: This is the probability of observing an F-statistic as extreme as, or more extreme than, the one calculated, *assuming there is no real difference between the group means* (i.e., the null hypothesis is true).

For all the items presented (Q3 through Q7), the p-values are considerably larger than the conventional significance level of 0.05.

Lack of Significant Group Differences: For each of these items, the high p-values (0.3129 for Q3, 0.9102 for Q4, 0.4838 for Q5, 0.6937 for Q6, and 0.8777 for Q7) indicate that there is not enough statistical evidence to reject the null hypothesis. In practical terms, this means that based on the ANOVA test, there are no statistically significant differences in the average responses to these individual items across the levels of the independent variable(s) being examined.

The ANOVA results suggest that the groups defined by your independent variable(s) do not exhibit significantly different mean scores on items Q3, Q4, Q5, Q6, and Q7. Any observed differences in the means are likely due to random variation rather than a systematic effect of the independent variable(s).

LIMITATIONS

The research has implications for the AI-based recruitment practice in the IT industry, however, there are some limitations that should be acknowledged. First, the research is contextualized in a specific location (e.g. Bangalore, Karnataka) what might restrict on the one hand the transferability of results to other areas or sectors with different level of technology maturity and organizational cultures. Second, the research was heavily based on subjective perceptions of employees based on their own self-report which could have been biased by either social desirability or incomplete knowledge about AI technologies that underlie recruitment practices. Third, although the use of a structured questionnaire guaranteed consistency, it could have limited data richness, particularly with regard to the nuances of ethical concerns or organizational policies. Furthermore, the cross-sectional design of the study measures the perceptions at a certain point in time but does not monitor the development of attitudes as AI techniques and organizational methods develop over time.

FUTURE RESEARCH DIRECTION

Future studies may extend this study to other IT hubs or across industries (e.g. healthcare, manufacturing or finance) where AI-based recruitment is being readily adopted. Prospective studies would also be useful to follow change over time in employee beliefs as AI

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technology mature and ethical guidelines develop. Such mixed-method studies could be particularly valuable to gather a more nuanced perspective on employees' experiences and perceptions with regard to AI adoption. Additionally, research may examine the efficacy of the particular AI tools, for example: emotion AI, predictive analytics or blockchain verification in the enhancement of hiring results. Lastly, comparative studies comparing recruiters and candidates' perspectives would allow for a more complete picture of the implications of AI and how it is being applied to recruitment and selection practices.

FINDINGS

We found that IT workers had a rather neutral (mean score around 3.0 in the 5-point Likert scale which indicated moderate agreement) to some positive (other way round) attitude toward the implementation of AI in the staffing process. AI solutions were seen to support more efficient recruitment by shortening time-to-hire and improving the quality of the hire, and broadening pool and diversity of candidates as well as aiding with workforce planning by using predictive analytics to see the future of their teams. Attention to potential bias and data privacy challenges were also reflected in the degree of concerns about AI recruitment systems, despite their perceived benefits - indicating the significance of ethical issues to IT professionals more generally. In addition, there is significant openness to the use of up-and-coming AI technologies, including emotional AI and blockchain, in relation to future recruitment processes, with respondents suggesting that the IT industry is set to embrace AI recruitment as a 'the norm' in the next five years. The internal consistency of the questionnaire was judged acceptable, with a Cronbach's Alpha value of ~0.785. Correlation analysis showed that the efficiency of AI, candidate experience and strategic advantage were strongly positively correlated with the ethical considerations, where appropriate perceptions were negatively correlated with the latter. ANOVA also indicated no significant difference in perceptions among designation levels; and that the view of AI in recruitment is consistent across hierarchies in IT. The study vicinity, being the IT capital of India, Bangalore, Karnataka, led to the selection of highly currently technology users, providing creditability and applicability of the findings in the context of IT in particular.

SUGGESTIONS

According to the results, here we suggest that IT companies should adopt AI-based recruiting tools continually to improve the hiring process efficiency. There's also a need to incorporate strong ethical frameworks, as well as mechanisms to mitigate bias, to ensure that fairness, transparency, and data privacy concerns are appropriately addressed. Ongoing AI audits feel necessary to ensure that acceptable ethical standards continue to be met and that recruitment processes remain unbiased. Firms ought to consider training for human resources

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(HR) professionals and interviewing departments to interpret AI-informed insights with a human-centric approach to candidate evaluation. IT companies need to look at new AI systems, for example emotional AI and blockchain for credential verification, to keep pace with the changing recruitment scenario. Certainly, as employees are generally favourable albeit cautious when it comes to AI, employers will have to be transparent about how AI is used in the hiring process if they want to avoid suspicion and resistance. Additional research may broaden the horizon to conduct a comparative analysis cross multiple cities or industries, in order to obtain a more comprehensive perspective on AI adoption phenomenon in recruiting practices.

CONCLUSION

It is found that AI-based recruitment processes in filled of IT domain provide great advantage towards productiveness, efficiency and Strategic Human resource acquisition. For the most part, employees embrace the use of AI -- or, at least, they understand it value in helping simplify the hiring process, increasing the quality of candidates, and even making diverse talent pools more accessible.Ethical implications, algorithmic bias and data privacy issues are understandable concerns and deserve close organisational scrutiny. The results indicate similar perceptions of AI across levels in IT organizations, indicating the acceptance of AI in terms of position. And it demonstrates that there is a willingness to adopt emotional AI and blockchain applications among IT pros in the future. In light of the fast-paced technological transformation in the recruitment domain, businesses need to have responsible AI practices that strike a balance between automation and human judgementcertainty this will guaranty fairness, transparency and trust.This study provides important perspectives on the dynamics of AI adoption in the recruitment processes, which are unfolding within the IT industry in Bangalore, and reinforces the necessity of strategic, ethical and human-centric applications of AI towards the goal of sustainable talent management.

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