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Investigation of the Efficacy of Artificial Intelligence in Indian I.T. Firms' Recruitment Practices

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Abstract: ***Focusing on organizations situated in Chandigarh, this research seeks to understand how AI might improve recruiting methods inside Indian I.T. enterprises. This study delves into how four important AI technologies Natural Language Processing (NLP), Machine Vision (MV), Automation, and Augmentation impact various stages of the recruiting process, from sourcing candidates to screening them, engaging them, and finally evaluating their performance. One hundred fifty human resources and technical staff members participated in the study by way of structured questionnaires, and secondary data came from respected academic databases. This mixed-method technique was used. To determine if AI elements significantly improved recruiting results, Structural Equation Modeling (SEM) was used. According to the results, each of the four AI skills significantly affects how successful a recruiting campaign is. Machine vision and augmentation helped provide more accurate candidate evaluations, while natural language processing and automation were particularly important in enhancing speed and equity. AI-powered solutions are making the hiring process more streamlined, data-driven, and impartial. Using these findings as a roadmap, Indian IT companies may improve operational efficiency and the applicant experience via AI-integrated recruiting tactics.***

Keywords: ***Indian IT Firms, AI-Based Hiring Tools, Natural Language Processing, Recruitment Practices, Artificial Intelligence.***

I. INTRODUCTION

The development of AI represents a watershed moment in the history of technological progress. Indeed, there isn't a single, universally accepted definition of artificial intelligence; rather, the word is defined and understood differently across disciplines (Wang, 2019). It can mimic human thought and behavior (reasoning) thanks to its programming. According to Bezboruah (2020), any system or technology that can learn and solve a particular issue in a way similar to a human brain may be considered artificially intelligent according to this basic definition. To rephrase, artificial intelligence (AI) may be defined as technology that mimics human intellect. However, the term covers a lot more ground than its worth, making it difficult to pin down exactly what it means, its benefits, and its potential uses (Robson, 2019).

Over the course of many years, it has been widely understood that technology plays a significant role in management. According to Waheed et al. (2022), in order for organisations to maintain a competitive advantage and successfully adjust to the ever-evolving environment, they must continually and continuously reinvent their management techniques. Managing the massive volumes of data and information that contemporary organisations produce requires these entities to digitally convert their data and rely on technology such as artificial intelligence (McCarthy et al., 2015). In order to do this, these entities must convert their data to digital format. As a result of this, artificial intelligence is now an essential component of corporate management, which has resulted in a total transformation of business models and a change in the way people function (Murgai, 2018). According to Sivathanu and Pillai (2018) and Nawaz (2020), the human resources (HR) industry is not immune to the effects of this predicament; in fact, it will either join the disruptive technology bandwagon or experience disruption because of it.

It is vital for businesses to implement new methods to human resource management that are both strategic and comprehensive in order to solve the knowledge and competence issues that are brought about by artificial intelligence technology (Nawaz, 2019; Hecklau et al., 2016).The HR man-machine collaboration delivers a functional revolution to how organisations educate and develop people, reorganise complicated HR operations, and speed up the recruiting process. This is in contrast to the traditional approach of reducing human roles.That which we are now seeing is a profound shift that is taking place in the nature of the tasks that people do and the skill sets that are required by businesses. The role that artificial intelligence has played in revolutionising human resources (HR) operations has been beneficial to those who work in HR, as well as to their employers and employees.

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According to Parry and Battista (2019), modern businesses are increasingly using artificial intelligence (AI) in order to improve operations, automate boring activities, and employ predictive algorithms to make challenging strategic decisions more quickly and accurately.

In recent times, there has been an increase in the number of businesses that have shown an interest in incorporating artificial intelligence technology into their human resource processes. Recruitment, applicant screening, and selection are all actions that fall under this category (Chapman and Webster, 2023). It has been reported by Vinogradova et al. (2019) that top and well-established firms are already using artificial intelligence technologies in order to enhance the effectiveness of decision-making and to provide predictive analytics to all of their employees. To put it another way, companies that are equipped with artificial intelligence are able to keep up with the intense competition that exists in the market, and they are also able to experience overall operational excellence in their operations.

A. Recruitment Practices in Indian IT Firms

Artificial intelligence (AI) has been progressively implemented into the recruiting processes of Indian information technology companies, which have been moving away from traditional methods in order to increase efficiency, reduce expenditures, and improve the quality of hiring. These processes include, but are not limited to, the planning of employment positions, the creation of job descriptions, the advertising of opportunities on digital media, the management of the pipeline of applicants, and the maintenance of an excellent employer brand. The process of recruiting is more than simply a back-office operation in the information technology industry; rather, it is a strategic activity that has an immediate impact on how well a firm operates. A consistent and engaging recruitment process is something that organisations aim to build in order to improve their chances of achieving their long-term goals and hiring top talent that will be compatible with the culture of the company (Armstrong & Taylor, 2024).

In the process of altering these recruiting procedures, artificial intelligence (AI) has emerged as a particularly important facilitator. Artificial intelligence (AI) techniques, like as application tracking systems (ATS), machine learning algorithms, and natural language processing (NLP), are being used by Indian information technology companies in order to automate the screening of resumes, rate applicants, and eliminate the impact of human bias.Due to the fact that these technologies expedite time-consuming operations such as candidate sourcing and shortlisting, human resource professionals are able to devote more of their attention to strategic decision-making and the applicant experience. Not only can artificial intelligence speed up the process, but it also gives recruiters the ability to analyse prior recruiting data and make more accurate projections on future labour requirements. As a consequence of this, recruiting procedures are changing to become more data-driven, consistent, and responsive to the ever-changing needs of the information technology industry.

B. Strategic Preplanning in Recruitment

The foundational step of recruiting is strategic preplanning, which guarantees that the organisation is prepared to attract and employ the appropriate talent once it has been prepared. The following activities are included in this phase: calculating the schedule for filling vacancies, evaluating hiring budgets, defining job responsibilities and requirements, assessing future talent needs, and identifying workforce shortages.

In Indian information technology companies, where project-based work often necessitates recruiting cycles that are both swift and efficient, preplanning enables human resource teams to remain ahead of staffing needs. When it comes to talent acquisition, preplanning also entails aligning recruiting goals with the larger organisational strategy. This is done to ensure that talent acquisition is in line with long-term company objectives, such as expanding into new markets, adopting new technology, or expanding operations (Kanagavalli et al., 2019).

Tools that are powered by artificial intelligence are increasingly giving assistance during the preplanning stage by delivering data analytics capabilities that improve forecasting and decision-making capability. The purpose of these tools is to provide information on recruiting tactics by analysing internal indicators like as attrition rates, time-to-fill, and historical hiring patterns, in addition to external labour market data.

To provide just one example, artificial intelligence can forecast high-turnover positions or recommend the most effective methods for obtaining certain skill sets. This makes it easier for recruiting teams to properly manage resources and prioritise hiring efforts in areas that will have the most impact on the organization's strategic goals. Therefore, strategic preplanning that is assisted by artificial intelligence guarantees that recruiting is not reactive but rather proactive and linked with both short-term and long-term business goals of the organisation.

C. AI-Supported Pre-Screening Techniques

The purpose of the pre-screening phase of the hiring process is to find candidates who are both qualified for the position and have the best chance of succeeding in it.Artificial intelligence (AI) enabled solutions have transformed pre-screening, which was previously a laborious and manual procedure, in Indian IT companies.Resume parsers, keyword matching tools, and rating algorithms that compare applicant profiles to job descriptions are all part of this category.Computer programs trained by artificial intelligence can sift through thousands of resumes in a matter of minutes, narrowing the field down to a select few with the best combination of hard and soft talents, including those intangibles like language patterns and writing style (Li et al., 2021).

Natural Language Processing (NLP), which allows computers to read human language in resumes, cover letters, and other textual data, is one of the most powerful tools in this domain. It might be considered one of the most important technologies. By gaining a grasp of the context of a candidate's work history or project engagement, artificial intelligence systems are now able to evaluate a candidate's eligibility beyond the scope of strict keyword matching. Chatbots powered by artificial intelligence are used by certain information technology organisations to carry out the first screening process. These chatbots gather structured information from candidates while also evaluating their degree of interest and their ability to communicate (Li et al., 2021). This change not only makes the recruiting process more efficient, but it also makes it more consistent and minimises the amount of unconscious prejudice that occurs during the early stages of screening. Generally speaking, pre-screening that is enabled by artificial intelligence improves the objectivity and scalability of recruiting operations in situations with large volumes of hiring.

D. Selection and Interview Methods Using AI

After a pool of suitable individuals has been established, the selection step will commence. This phase will consist of structured interviews, technical assessments, and final evaluations. To improve their accuracy, consistency, and efficiency, Indian information technology companies are progressively using artificial intelligence technologies into this phase. Video interview systems that are driven by artificial intelligence are able to analyse applicants' facial expressions, tone of voice, and word choice in order to give insights into their communication skills, confidence, and emotional intelligence when conducting interviews. In addition, these platforms make use of machine learning algorithms to provide a score to interview replies based on predetermined standards, which enables a more standardised review process (Dipboye & Johnson, 2018).

Coding exams, project simulations, and cognitive ability tests are among the many AI-powered technologies that are supplementing video interviews. This is especially important for positions in information technology that need strong analytical, deductive, and problem-solving abilities. By eliminating human prejudice and customising assessments to the exact skills needed for the position, AI guarantees fair ratings. on provide a more tailored and precise evaluation, intelligent test systems may, for example, modify questions in real-time according on a candidate's answers. Artificial intelligence (AI) cannot fully replace human judgement, but it is a useful adjunct that improves the reliability and equity of candidate assessments throughout the selection process.

E. Candidate Engagement and AI-Based Communication

In order to keep a favourable employer brand and improve offer acceptance rates, it is necessary to maintain effective communication and interaction with applicants throughout the whole recruiting process. When it comes to information technology companies in India, where there is a lot of rivalry for talent, delayed replies or confusing communication might result in the loss of potential individuals. This difficulty has been solved by artificial intelligence technology, which has automated routine communications such as the scheduling of interviews, confirmations of applications, and progress updates. In order to manage applicant enquiries in real time, chatbots and virtual assistants are often used. These tools provide candidates with information that is both quick and consistent about the recruiting process (Athanur et al., 2021).

Artificial intelligence solutions may go beyond automation to personalise candidate interaction by analysing preferences and adapting communication in accordance with those choices. CRM (applicant Relationship Management) solutions, for instance, are powered by artificial intelligence and are able to segment applicant databases according to skills, geography, or job interests. These platforms then deliver customised communications about relevant opportunities or events. Even in the event that they are not chosen right away, this maintains a warm and active relationship with possible prospects. AI is also able to monitor the history of candidate interactions and identify candidates who are not actively engaged or who have great potential, which enables recruiters to participate in a smart manner. In general, artificial intelligence improves the efficiency of communication while simultaneously generating a candidate experience that is more engaging and responsive. This is essential in order to recruit top-tier talent in an IT industry that is very competitive.

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F. Challenges in AI-Driven Recruitment Practices

Although artificial intelligence has brought about significant innovation in recruiting methods, the use of this technology is not without its obstacles. The possibility of algorithmic bias, in which artificial intelligence algorithms may mistakenly favour or disfavour applicants based on factors such as ethnicity, gender, language, or educational background, is a big worry in Indian information technology companies. Typically, this situation arises as a consequence of biased training data or a lack of openness in the decision-making process. On top of that, some applicants get the impression that interactions powered by artificial intelligence, such as automated screening or chatbots, are impersonal. This may have a negative impact on how they view the culture and values of the organisational organisation. In light of the fact that recruiting is often the first impression that a candidate receives of an organisation, events of this kind may have long-term ramifications for organisation branding (Zoller, 2018).

The incapacity of artificial intelligence to provide an explanation or interpretation of its judgments is another key obstacle. It is possible that recruiters and hiring managers may have a difficult time comprehending the reasons behind the rejection or flagging of a candidate by an algorithm (Zoller, 2018). This will make it more challenging for them to justify their judgements or offer applicants with useful feedback. Concerns have also been raised over the ethical use of candidate information and the protection of data privacy, particularly in light of the fact that rules such as India's Digital Personal Data Protection Act are constantly updating. Moreover, the high expenses of adopting artificial intelligence, integrating systems, and educating employees may be a challenge for small to medium-sized information technology companies. The existence of these restrictions highlights the need of adopting a balanced strategy, one that combines the efficiency generated by artificial intelligence with human control in order to guarantee recruiting procedures that are fair, transparent, and ethical**.**

II. OBJECTIVES

1) To assess how well AI tools like automation and natural language processing affect hiring practices in Indian IT companies.
2) To investigate how candidates interact with AI-assisted hiring platforms.

III. STATEMENT OF HYPOTHESIS

(H1): The factor of AI, i.e., NLP, has an impact on Recruitment and Selection practices.
(H2): The factor of AI, i.e., Machine vision, impacts recruitment and Selection practices.
(H3): The factor of AI, i.e., Automation, has an impact on Recruitment and Selection practices
(H4): The factor of AI, i.e., Augmentation, impacts recruitment and Selection practices.

IV. CONCEPTUAL MODEL

There is a growing agreement that AI can automate many tasks in the recruiting process, which might greatly improve and simplify recruitment methods.Many professionals in the field and academics have shown that using AI in the hiring process improves efficiency, accuracy, and fairness.Chatbots and virtual assistants, which are driven by artificial intelligence, are being utilised more and more to automate processes like screening resumes, arranging interviews, and initial applicant evaluations.In order to reduce the total time needed to fill available jobs, these technologies may swiftly screen out unqualified applications and prioritise prospects using predictive analytics.

An increasing number of people believe that AI has the potential to automate several steps in the hiring process, which may lead to more efficient and effective hiring practices. Incorporating AI into the employment process enhances efficiency, accuracy, and justice, according to several experts in the area and academics. Automating tasks like as resume screening, interview scheduling, and initial candidate assessments is becoming more common with the use of AI-powered chatbots and virtual assistants. Rapidly weeding out ineligible applicants and prioritising possibilities using predictive analytics are two ways these technologies may shorten the time it takes to fill open positions.

- Time-saving
- Cost-saving
- Removes Bias
- Accuracy
- Increased efficiency
- Better candidate experience
- Reduced workload

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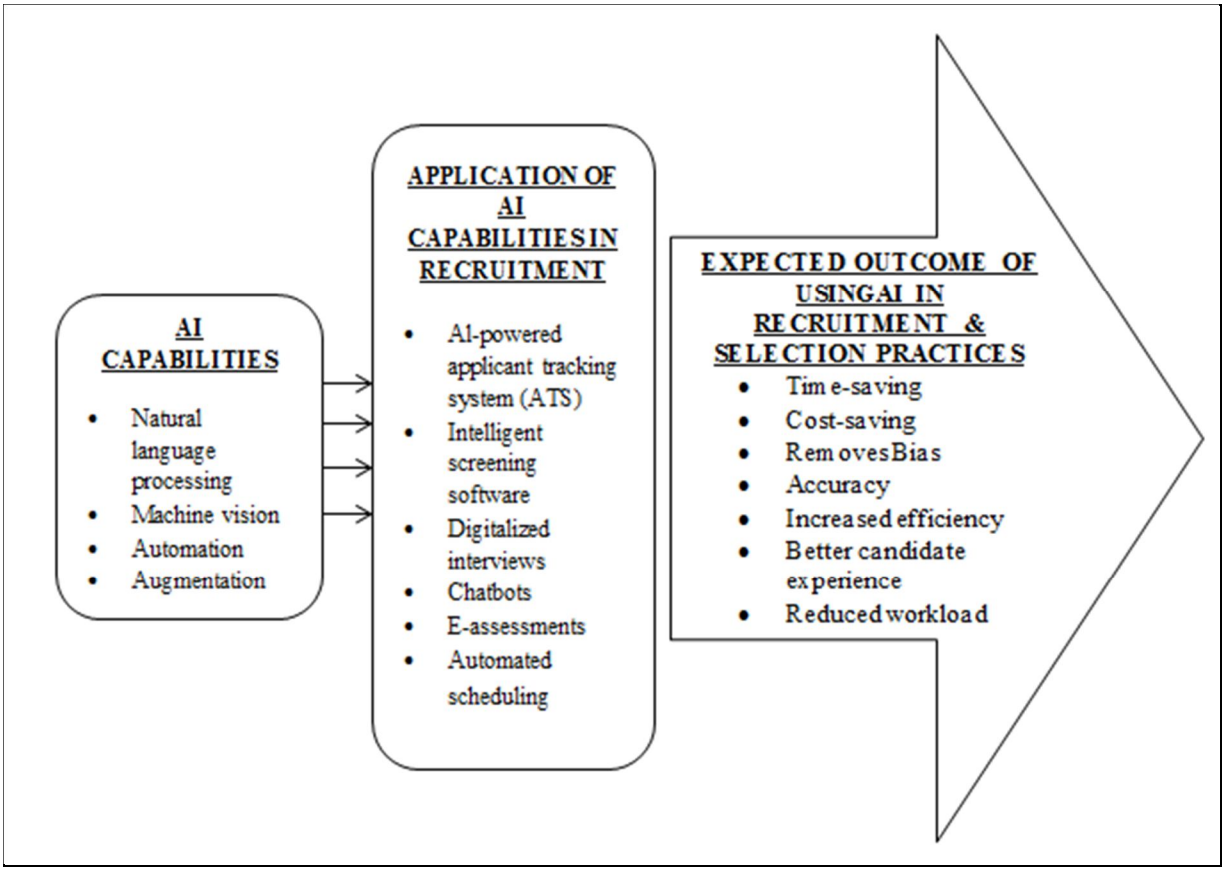

Figure 1: Conceptual Framework of Ai in Recruitment

V. METHODOLOGY

A. Population and Sample

Personnel employed by a few chosen IT organisations in Chandigarh city provided the study's main data. Human resources professionals and others with a hand in the selection and recruiting process were the intended recipients. For this study, we relied on 150 genuine and comprehensive replies. To guarantee accurate and relevant replies from experts in applying AI in recruiting procedures, the researchers used purposive sampling.

B. Data and Sources of Data

Primary and secondary sources of information were used in the research.Insights from the literature study informed the development of a structured questionnaire that the researchers used to collect primary data.There were two parts to the survey: (i) answering questions on the respondents' demographics and organisations, and (ii) rating claims about artificial intelligence and human resources using a five-point Likert scale that went from "strongly agree" to "strongly disagree."To make sure the questionnaire was easy to comprehend, relevant, and clear, the team evaluated it beforehand.Using tools like LinkedIn, Twitter, and personal networks, they disseminated the final edition online after making any required adjustments from May 2024 to November 2024.

In order to gather secondary data, the researchers searched for relevant keywords in academic databases such as Scopus, Emerald, and Elsevier. Some examples of these terms are TITLE-ABS-KEY (artificial AND intelligence), TITLE-ABS-KEY (recruitment), TITLE-ABS-KEY (selection), and TITLE-ABS-KEY (information AND technology AND enterprises). In order to provide support for the theoretical underpinning of the study, they were able to compile up-to-date and trustworthy material from research publications, industry reports, and open-access journals with the assistance of this approach.

C. Statistical Tools and Econometric Models

In order to investigate the connection between AI characteristics and recruiting results, the researchers used descriptive statistics, regression analysis, and correlation analysis.

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Utilising these tools, they were able to evaluate the impact that automation and augmentation had on the recruiting and selection procedures that were carried out inside IT organisations.They made certain that the results were of a high quality and could be relied upon by using certain software that was specifically intended for quantitative data analysis.

VI. RESULTS

Table 1: Demographic Profile of Respondents

Demographic Profile	Frequency	Percent (%)
Gender		
Male	74	49.3
Female	76	50.7
Total	150	100.0
Age (Years)		
22–25 years	71	47.3
26–30 years	36	24.0
31–40 years	18	12.0
Above 40 years	25	16.7
Total	150	100.0
Marital Status		
Single	113	75.3
Married	37	24.7
Total	150	100.0
Educational Qualification		
UG	38	25.3
PG	51	34.0
Professional	61	40.7
Total	150	100.0
Income (per month)		
Less than ₹25,000	60	40.0
₹25,001 – ₹50,000	55	36.7
₹50,001 – ₹75,000	21	14.0
Above ₹75,000	14	9.3
Total	150	100.0
Designation		
Administrator	30	20.0
Business and Program Analyst	19	12.7
Software Engineer	41	27.3
Project and HR Manager	10	6.7
Managing Director	12	8.0
Others	38	25.3
Total	150	100.0
Experience (Years)		
< 2 years	43	28.7
2–5 years	45	30.0
6–10 years	22	14.7
11–15 years	17	11.3
Above 15 years	23	15.3
Total	150	100.0

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The purpose of assessing AI-based recruiting strategies, this study's demographic breakdown of respondents offers a thorough picture of the employee makeup of Indian I.T. companies. The sample is gender balanced, with slightly more females than men (50.7% vs. 49.3%), which is indicative of the growing trend of gender equality in the technology sector. Nearly half of the participants are between the ages of 22 and 25, suggesting that this is primarily an early-career workforce. The majority of new hires in the Indian IT industry are recent college grads and young professionals, therefore this fits in with the employment patterns in that area. The fact that the majority of respondents are unmarried (75.3%) lends credence to the notion that this is a youthful group that is just starting out in the workforce. A large percentage has either a master's degree (34% of the total) or a doctorate (40.7% of the total), indicating that information technology companies place a premium on hiring people with advanced degrees and specialised expertise.

According to the income statistics, the majority of respondents (76.7%) had monthly incomes below ₹50,000, which is indicative of the entry- to mid-level wage structures often seen in the Indian IT industry for junior positions. Software engineers are the biggest category by designation (27.3%), followed by administrators and other various positions, which suggests that the workforce is technically inclined. The fact that a sizeable portion (25.3% to be exact) is classified as "Others" suggests that there is a wide range of responsibilities outside traditional information technology jobs. Additionally, 58.7% of the workforce has less than five years of experience, indicating that they are in the early phases of their careers. This lends credence to the idea that many Indian IT companies employ recent graduates, who are more inclined to use AI-powered recruitment platforms. All things considered, these results give light on the potential effects of AI-based recruiting systems on various demographics, including their perceptions of their fairness, transparency, and effectiveness.

A. Structural Equation Modeling

The research tested the effect of AI technology skills on the selection and recruitment process using structural equation modelling (SEM) using AMOS 21 version software.

HYPOTHESIS 1 (H1): The processing of natural language has an effect on recruitment and selection practices.
HYPOTHESIS 2 (H2): The use of machine vision has an effect on selection and recruitment practices.
HYPOTHESIS 3 (H3): The recruitment and selection practices are impacted by automation.
HYPOTHESIS 4 (H4): The recruitment and selection practices are impacted by augmentation.

Table 2: SEM Model Results

Parameter	CMIN	p	CMIN/DF	GFI	AGFI	CFI	RMSEA
Outcome	471.20	0.000	1.80	0.94	0.92	0.95	0.003

According to many indications, the model fits the data well. For example, the Chi-square/df (CMIN/DF) value of 1.80 is much lower than the generally recognised threshold of 3.0, which indicates that the model is reasonably parsimonious.An outstanding model-data fit is shown by fit indices such as GFI (0.94), AGFI (0.92), and CFI (0.95), all of which surpass the 0.90 benchmark.Moreover, with an RMSEA value of 0.003, which indicates a small approximation error, the hypothesised model provides a strong fit for the data seen in the 150-person sample.

Table 3: Model Regression Weights

Path	Factor of AI	Estimate	S.E.	C.R.	p-value	Decision
RS ⟵ NLP	Natural Language Processing	0.253	0.089	2.848	0.004*	H1: Accepted
RS ⟵ MV	Machine Vision	0.250	0.082	3.029	0.002*	H2: Accepted
RS ⟵ Automation	Automation	0.233	0.093	2.510	0.012*	H3: Accepted
RS ⟵ Augmentation	Augmentation	0.224	0.085	2.634	0.008*	H4: Accepted

Note:
RS = Recruitment and Selection
NLP = Natural Language Processing
MV = Machine Vision
*Significant at $p < 0.05$

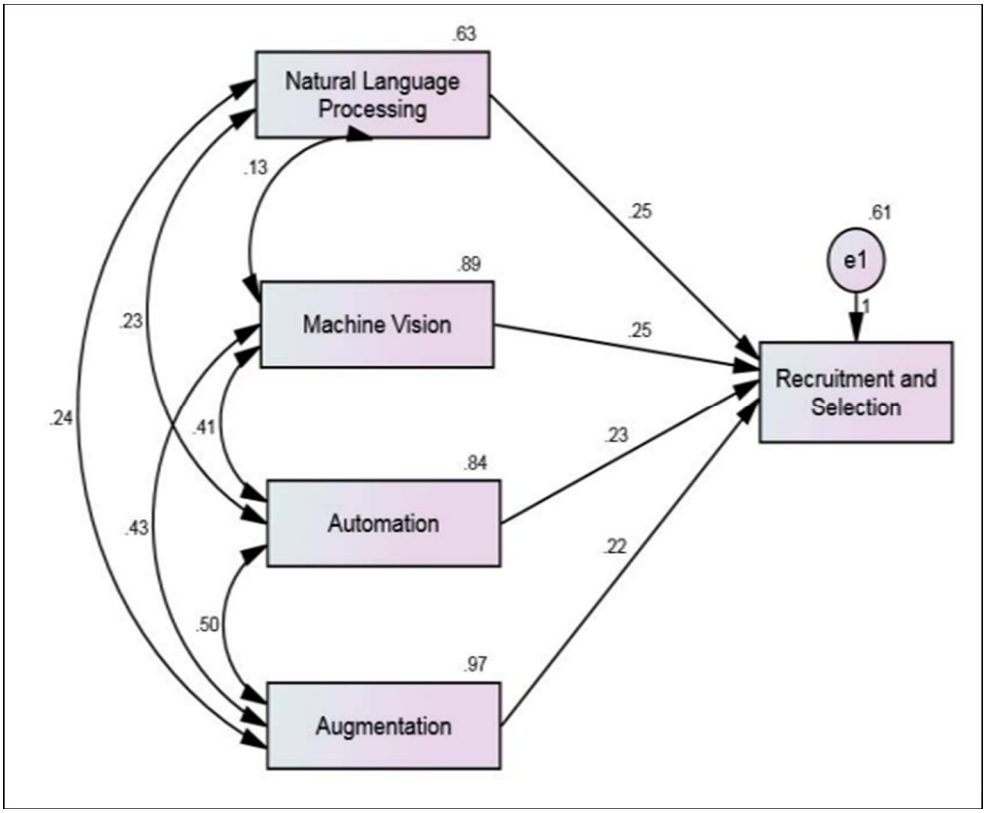

Figure 2: Structural Equation Model Depicting the Influence of Ai Factors on Recruitment and Selection practices

Table 4: Descriptive Statistics of AI Factors

Variable	Mean	Std. Deviation	Min	Max
Natural Language Processing (NLP)	4.12	0.58	2.8	5.0
Machine Vision (MV)	3.95	0.66	2.5	5.0
Automation	4.08	0.61	3.0	5.0
Augmentation	3.89	0.72	2.7	5.0

The descriptive statistics for the four most important artificial intelligence (AI) components that are used in the recruiting process are shown in Table 4. These factors are Natural Language Processing (NLP), Machine Vision, Automation, and Augmentation. Natural language processing (NLP) obtained the highest mean score (M = 4.12), suggesting that respondents considered it to be the most significant use of artificial intelligence in the recruiting process. This indicates that there is a significant demand for technologies that promote both efficiency and impartiality in the recruiting process, such as chatbot-based screening, keyword matching, and resume parsers. Following closely behind with a mean score of 4.08, automation demonstrated its usefulness by minimising the amount of manual activities, lowering the amount of time it takes to acquire new employees, and optimising recruiting procedures. In spite of the fact that Machine Vision and Augmentation had significantly lower averages (3.95 and 3.89 respectively), these ratings nevertheless suggest a largely positive opinion. There was a high degree of consistency in replies, as shown by the relatively low standard deviations across all four categories. This suggests that the majority of participants had comparable experiences or opinions about the usefulness of various technologies in recruiting.

Table 5: Correlation Matrix among AI Factors

	NLP	MV	Automation	Augmentation
NLP	1	0.62	0.58	0.64
MV	0.62	1	0.55	0.60
Automation	0.58	0.55	1	0.59
Augmentation	0.64	0.60	0.59	1

Note: All correlations significant at $p < 0.01$

Table 5 shows the matrix of correlations between the four AI dimensions. Confirming the common practice of using several AI technologies simultaneously, the findings demonstrate robust positive and statistically significant correlations across all AI components. There was a substantial link between natural language processing (NLP) and augmentation ($r = 0.64$), which means that businesses that use NLP tools are also likely to use augmentation features like intelligent decision assistance and predictive analytics. Similarly, Machine Vision is becoming more important in video-based evaluations, face recognition, and behavioural analysis; it exhibited good relationships with both NLP ($r = 0.62$) and Augmentation ($r = 0.60$). The fact that operational efficiency and strategic insight are complimentary in AI-assisted recruiting is shown by the moderate to significant correlations that automation showed with the other three variables, particularly Augmentation ($r = 0.59$). Taking a comprehensive approach, several IT organisations have integrated and networked AI technologies in recruiting and selection. This has improved applicant experiences, reduced prejudice, and enhanced decision-making.

Table 6: Candidate Perception Scores on AI-Driven Recruitment

Perception Statement	Mean	Std. Deviation	Interpretation
AI technologies increase selection fairness	4.10	0.62	Strong agreement
Automated resume screening saves HR and candidates time	4.25	0.54	Very strong agreement
AI reduces hiring prejudice	3.98	0.68	Moderate to strong agreement
Chatbots in hiring seem impersonal	3.30	0.85	Mixed responses (slightly above neutral)
AI-enhanced video interviews increase assessment objectivity	4.05	0.59	Strong agreement
Overall AI-driven recruiting satisfaction	4.18	0.60	High satisfaction level

A selection of applicant perspectives on different features of AI-driven recruiting methods is shown in Table 6.On a Likert scale of five points, respondents gave their ratings for each item.One of the perceptions that received the highest rating was that automated resume screening helps save time ($M = 4.25$), which indicates that there is broad support of efficiency-related solutions.Similar to the previous point, respondents demonstrated a high level of agreement that artificial intelligence improves fairness ($M = 4.10$) and objectivity in evaluations conducted via video interviews ($M = 4.05$).It is interesting to note that the view that artificial intelligence lowers human bias obtained a significantly lower score ($M = 3.98$). This suggests that even while respondents acknowledge the possibility of bias reduction, they may still have qualms about the consistency or transparency of AI.The usage of chatbots received a score of 3.30, which indicates that there is some worry that AI-based communication lacks the human touch that is often sought in the recruiting process. This was the only item that received mixed comments.There was a high level of overall satisfaction with AI recruiting ($M = 4.18$), which lends weight to the more general notion that AI has a favourable impact on the recruitment experience in Indian information technology companies.

Table 7: Reported Benefits and Challenges of AI Adoption in Recruitment

Benefit / Challenge	Frequency	Percentage (%)
Reduced time-to-hire	112	74.7%
Cost efficiency	98	65.3%
Improved candidate-job fit	86	57.3%
Reduced human bias	91	60.7%
Lack of transparency in decision-making (Challenge)	64	42.7%
Overreliance on algorithms (Challenge)	59	39.3%
Inability to evaluate soft skills accurately (Challenge)	72	48.0%

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Table 7 provides a summary of the most common advantages and disadvantages of using AI in recruiting, according to the respondents. Shorter hiring times were listed by about 75% of participants as the most beneficial aspect, followed by financial savings at 65.3% and better matching of candidates with open positions at 57.3%. These outcomes demonstrate how AI is improving the employment process in a concrete way. Having said that, a few of responders did bring up some valid points. Almost half of respondents (48%) said that AI had trouble gauging "soft skills," which are essential for determining if an applicant is a good cultural fit and has strong interpersonal abilities. In addition, over half of respondents (42.7%) pointed out that AI decision-making processes are not always open and honest, and nearly 40% voiced worry that we rely too much on algorithms, which might lead to a decline in human review of important employment choices (39%). The results show that there should be a middle ground between AI and humans in talent assessment, where automation boosts productivity without sacrificing justice or understanding.

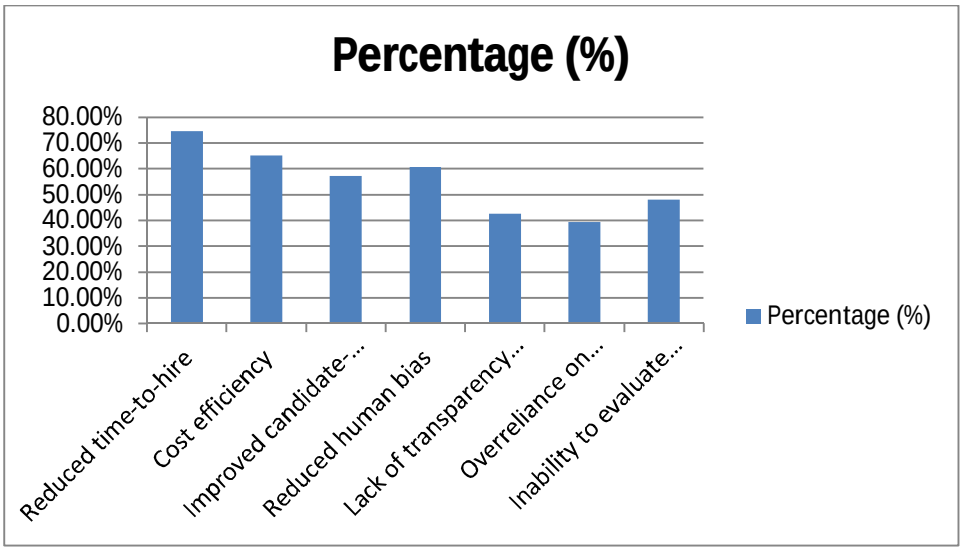

Figure 3: Reported Benefits and Challenges of AI Adoption in Recruitment

VII. DISCUSSIONS

H1: which suggests that Natural Language Processing (NLP) has an effect on the selection and recruitment processes, holds water according to the results of this research? The findings show that natural language processing has a major impact on the hiring practices of several Chandigarh -based IT firms.These points to the growing significance of natural language processing (NLP) technologies in improving the efficacy and accuracy of the recruiting process. These technologies include chatbot-based preliminary screenings, automated resume parsing, and keyword matching.The results are consistent with the general consensus that AI is changing the recruiting market via the introduction of technologies that can efficiently and correctly handle large volumes of applicant data.Natural language processing also helps with the early screening process by making it more organised and objective, which might cut down on prejudice and human mistake.Findings from this research provide credence to the idea that natural language processing (NLP) and artificial intelligence (AI) are revolutionising HR processes. NLP has the potential to tackle systemic problems like unconscious bias in recruiting while also making administrative tasks more efficient.In today's tech-driven recruiting market, NLP may improve decision-making by making it more equitable and data-driven, which in turn improves the quality and fairness of recruitment results (Raveendra, et al, 2020).

H2:claims that this study's results corroborate the existence of an effect of Machine Vision on the selection and recruitment processes. The findings show that Machine Vision has a big impact on how some Chandigarh IT organisations choose candidates for open positions. In order to improve decision-making, HR practices are progressively using technologies that use Machine Vision. These technologies include video interview analysis, facial expression detection, and identity verification. An increasingly autonomous, efficient, and intelligent sourcing and screening process is being facilitated by the use of artificial intelligence (AI) technologies such as Machine Vision, according to the report. During interviews, these systems may decipher candidates' facial expressions, body language, and other visual clues to learn more about their personality and soft skills. Human resources departments may save time and effort with the help of machine vision by automating processes like document scanning and identification verification.

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The results are in line with previous research (Sujitparapitaya et al., 2017), which highlights the great potential for IT companies and employment agencies to work together in creating AI-driven solutions that improve the recruiting process as a whole. This research further supports the idea that machine vision may help bring recruiting methods up to date, making it easier and faster to find top talent in a cutthroat market.

H3: According to the results, automation does have a major impact on the hiring practices of several Chandigarh IT organisations.By using AI and ML algorithms to speed up applicant screening, streamline the recruiting procedure, and reduce human mistakes, automation has transformed conventional HR operations.In order to effectively manage huge numbers of applications while ensuring consistency and fairness in decision-making, HR professionals may use automated technologies like applicant tracking systems (ATS), resume parsers, and evaluation tools driven by artificial intelligence.In addition, the evaluation and selection of applicants, especially in online recruiting settings, has been transformed by the increasing significance of visual information like digital portfolios and video interviews.A candidate's communication abilities, personality, and cultural fit may be better assessed with the use of these visual components than with just a CV.Here, automation helps with both operational efficiency and strategic decision-making by freeing up HR staff to concentrate on higher-quality activities like company branding and applicant engagement.In prior research (D'Silva, C., 2020), it was shown that HR function automation helps HR professionals advance in their careers by giving them greater responsibility for analysis and strategy, which in turn improves the efficiency of hiring in fast-paced, tech-driven companies.

H4: This research lends credence to the idea that augmentation has a major effect on the hiring practices of a subset of Chandigarh 's IT firms. In order to help human resources workers make better, more strategic decisions, augmentation integrates AI-driven solutions that provide smart insights, predictive analytics, and data-driven assistance.Augmentation allows human resources professionals to concentrate on more nuanced factors, such as a candidate's potential, cultural fit, and long-term value, while automation takes care of more mundane, repetitive jobs, like scanning resumes or organising interviews.The findings highlight the fact that automation and augmentation are not mutually exclusive but rather work hand in hand to maximise the efficacy and efficiency of the recruiting process.A more nimble, capable, and future-ready workforce is the result of organisations that embrace both, which reduce operational procedures and improve the strategic quality of recruiting choices (Raisch, S. & Krakowski, S., 2020).

According to the findings, AI technologies are seen as helpful by respondents when it comes to the recruiting process. People felt that automation and natural language processing were the most helpful technologies as they made the evaluation of candidates more objective, faster, and fairer. Organisations often use these technologies in an integrated fashion to optimise recruiting efficiency, likely due to the close links among various AI roles. Chatbot interactions might be impersonal, and AI isn't perfect when it comes to assessing soft skills, but generally, participants are still quite satisfied with AI-based recruiting. Problems like opaque processes and an excessive dependence on algorithms were also voiced, despite the many acknowledged advantages, such as faster hiring, lower costs, and better candidate-job matching. To guarantee efficient, moral, and candidate-friendly hiring methods, these results highlight the need for a middle ground where AI augments, rather than replaces, human decision-making (Parry & Battista, 2019).

VIII. CONCLUSION

In Indian IT companies, the use of AI into hiring procedures has become a game-changer. This research demonstrates that by simplifying procedures, enhancing equity, and lowering manual labour, technologies like natural language processing, machine vision, automation, and augmentation greatly improve hiring results. AI has shown particular efficacy in activities like as applicant rating, resume screening, and video-based evaluations, which have accelerated and improved the accuracy of the hiring process. Though most participants had a good opinion of AI, there are still issues with transparency, an excessive dependence on algorithms, and the incapacity to evaluate soft skills. The results support a well-rounded strategy where AI enhances human decision-making rather than takes its place. Indian IT companies should concentrate on user training, ethical implementation, and hybrid models that blend automation and human control as AI technologies advance. Through this approach, they may fully use AI while preserving equity, openness, and strategic coherence in their hiring procedures.

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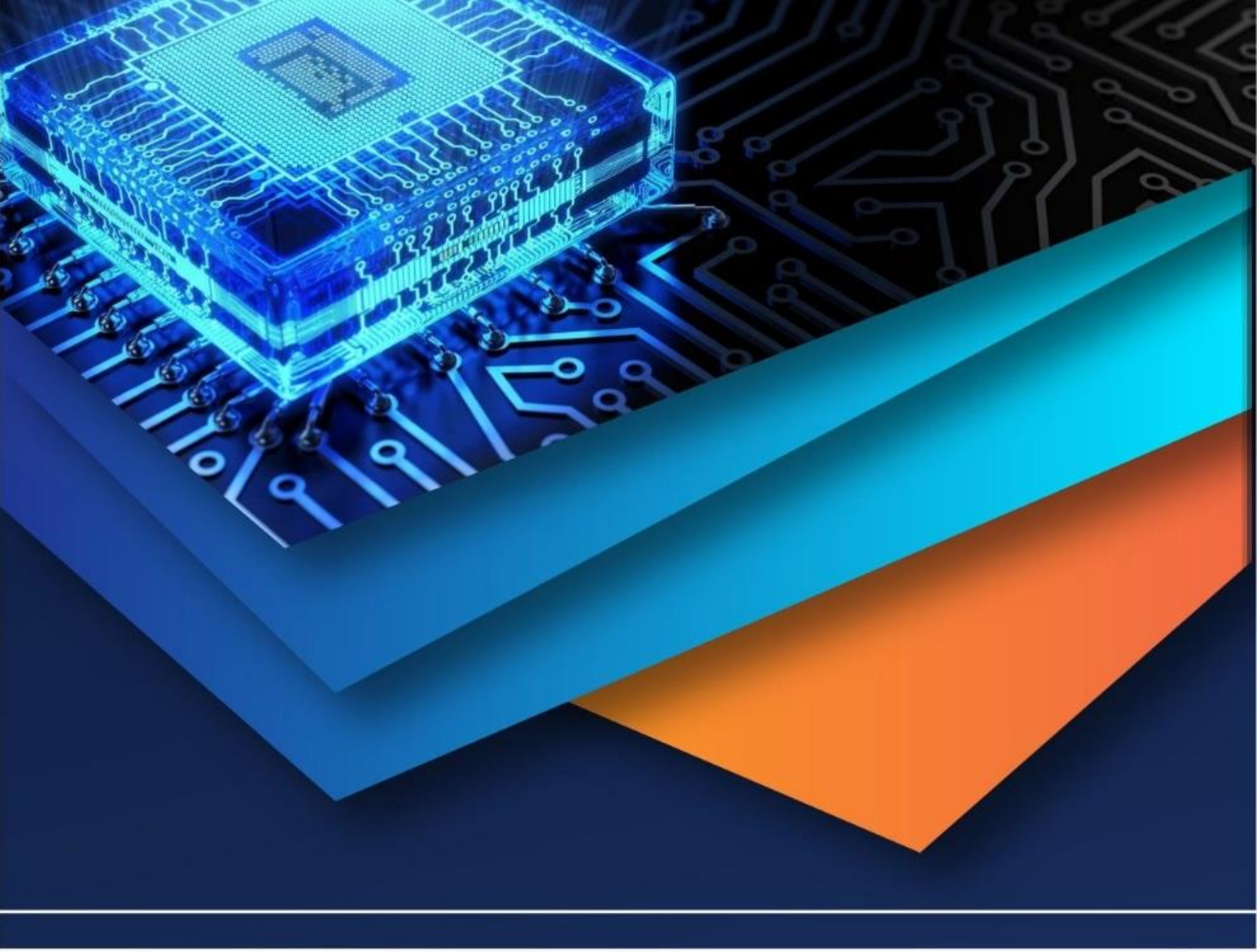

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