

**TO STUDY THE EFFECTIVENESS OF ARTIFICIAL INTELLIGENCE IN
RECRUITMENT
PRACTICES OF INDIAN I.T. COMPANIES**

A Thesis
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Research Guide

Undertaking

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KAMAL KISHOR
(Research Scholar)

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Abbreviations

AI	Artificial Intelligence
NLP	Natural Language Processing
IQ	Intelligence Quotient
HR	Human Resource
HRM	Human Resource Management
IT	Information Technology
MNC	Multi National Companies
ATP	Applicant Tracking System
CV	Curriculum Vitae
UI	User Interface
HCM	Human Capital Management
SMEs	Small and Medium Enterprises
SaaS	Software-as-a-Service
GDP	Gross Domestic Product
OECD	Organisation for Economic Co-operation and Development
CSO	Central Statistics Office
MSME	Micro, Small and Medium Enterprise
HRMS	Human Resource Management System
CRM	Customer Relationship Management
CEO	Chief Executive Officer
ML	Machine Learning
IoT	Internet of Things
GDPR	General Data Protection Regulation
SHRM	Society for Human Resource Management
HRIS	Human Resources Information Systems

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Abstract

As a result of technological advancements, our economy, society, and culture have all been radically altered. Human resource management has been impacted by these new technologies regularly. A new digital platform for HR management has emerged because of rapid technological advancements. It is the Internet that has revolutionised Human Resources Management (HRM). In the past, academics in this field have emphasised the need for HRM to adapt to a changing environment and the abilities required to do so.

Innovative technology-based solutions must be considered if Human Resources Management (HRM) remains a sustainable practice. For companies to anticipate and manage organisational change, HR needs technology.

It's easy to be an HR manager. The quantitative complexity of HRM necessitates the use of IT to keep up with recordkeeping and massive databases. Human Resources (HR) must reassess its needs as big data analytics, and Artificial Intelligence (AI) emerge. There are many new technology-based HR management methods and tools that have been developed as a result of e-HRM, Big Data analytics, HR analytics, strategic HRM, Human Resources Information Systems (HRIS)

The future of HRM is uncertain in light of the emergence of cutting-edge technologies. There are advantages and disadvantages to using technology. People's personal and professional lives are affected by new technologies, which creates a sense of uneasiness. Individuals or groups may object to the evolution of organisations if the advantages of the organisation clash with the interests of the employees. Change, danger, and uncertainty should be resisted by individuals and organisations alike. New technologies often cause fear and trepidation in people. A new wave of innovations is coming to stay. As a result, HRM needs to change. Recruitment, for example, has been significantly impacted by technological advancements in HR.

Big data analytics and Artificial Intelligence (AI) have the potential to modify the recruitment process significantly. It is predicted that today and in the future, company operations will be influenced by big data.

To make the criterion more than simply a phrase, new technical solutions provide a quick way to explore and analyse enormous volumes of search data using algorithms—this aids in the recruitment process.

Recruiters, for example, are finding that big data is increasingly valuable. Today's technology makes it possible for HR professionals to access Big Data. The use of analytics helps recruiters better understand the actual data of potential employees, hence increasing the quality and number of new hires.

Big data can be helpful to businesses, even when it comes to recruiting. Artificial Intelligence (AI) technology can significantly benefit recruitment and other HRM tactics. Selection, development, and recruitment of new employees can be made easier with the use of Artificial Intelligence (AI).

This study investigates the utilisation of new technologically based recruitment tools. What are the advantages and disadvantages of new technology for recruiting in India? It is also essential to consider HR managers' issues with AI tools. This research looks at how the organisation uses AI to find new employees. The future of recruitment will undoubtedly be influenced by the activity of organisations. As a result, you must comprehend what they are saying. Technology-based recruitment solutions may provide recruitment specialists with more cost-effective ways to operate.

In order to better understand how managers perceive AI in recruitment and the obstacles, they may encounter while using AI in recruitment, the researcher has developed a set of objectives that will guide the research study. Also, the researcher will try to discover which aspects of candidate recruitment can be evaluated using AI. Additionally, the researcher will examine whether or not AI is capable of producing high-quality results when it comes to recruiting new employees. For the last time, the researcher will try to identify the risks and benefits of employing AI in the recruitment process.

Using eight hypothetical statements, the researcher attempts to demonstrate his point about the various aspects of AI in recruitment, including the barriers and adoption factors association, recruitment time and cost burdens, age and perceived AI use, and finally, the differences in manager opinions about AI use in different recruitment functions.

The researcher surveyed recruitment managers from international IT organisations in Pune to perform this study. The researcher has specified some conditions for the population: the manager must be a recruitment manager at an MNC in Pune's IT industry. This enabled him to define the research study's focus, which was Pune exclusively and hone in on responders from these companies.

Though researchers endeavored to acquire the required sample size, 250 recruitment managers were interviewed. As per Cochran's formula, the least number of samples required to conduct this study was 196, however, the final analysis used 250, which is reasonable because it uses more than the required sample, hence more is better.

In the current research study, researchers decided to use two-stage cluster sampling. First, they determined where multinational I.T. corporations are located, and then they randomly selected recruitment managers from each cluster. A probabilistic sampling includes gathering and interpreting data objectively.

The researcher chose Hinjewadi, Kharadi, and Magarpatta I.T parks. Aundh, Tatahawade, Bavdhan, and Kothrud I.T. parks weren't chosen. The first three locations have the most global IT corporations, thus researchers focused on them.

Data were analysed quantitatively. The positivist research strategy was chosen for the study's methodology.

Researchers evaluated each questionnaire item using graphs and frequency counts. The researcher employed Friedman, Chi-square, One-Way ANOVA, and correlation tests to evaluate the hypothesis. The interview replies were coded by the researcher.

After the due course of analysis of gathered data, the researcher has concluded various aspects such as: IT had many unfilled positions. Due to the availability of jobs and career changes, attrition and retention have begun in the IT business. IT organisations want the best employees, so recruiters must balance attrition and retention.

Demographic data shows that MNC IT companies hire from top business schools whose HR classes are dominated by women. As managers learn how AI fits into different recruitment phases, they can visualise its influence and know where AI may help.

Technological advances have brought AI to recruitment. AI helps companies access new areas in seconds. This widespread AI application allows companies to search for best-fit individuals versus unfilled positions from the bigger market and even competitors. Digital platforms make it easier for companies to reach applicants and post job openings.

When we analysed managers' thoughts on traditional or conventional recruitment processes, we determined that it's uncomfortable because it needs a lot of labour and paperwork, which increases recruitment time and resources. Complexity makes recruitment costly and error-prone. This allowed AI hiring.

AI automates recruiting, eliminating manual or repetitive processes. Automation eliminates labour from recruitment methods, minimising biases. Recruiters have less manual work due to automation.

The recruitment manager understood AI's broader benefits. 90%+ companies utilise AI for hiring. It reduces hiring time with faster processes, fewer errors, and better prospects.

AI can use descriptive and prescriptive analytics for recruitment. AI scans resumes and portfolios. It helps employers find qualified candidates.

AI may give recruiting managers numerous services, such as chatbots monitoring internet presence, thus examining social activity helps them find and filter out candidates. This generates high-quality applications.

As AI optimises the recruitment process and uses resources efficiently, qualified candidates are hired faster. This makes companies invest in AI. AI speeds up organisations' recruitment procedures by identifying recruiters' trends and tendencies.

AI helped recruiting managers make smarter decisions about their firms' recruitment strategies. AI helps organisations test candidates' general to niche and soft to hard skills, resulting in quality hiring due to social scanning and behaviour analysis. As AI breaks borders, whether it's assessing applications from numerous viewpoints, laying out their market requirements, reaching out to a bigger candidate pool, or tapping cross-continental talent, it's helping businesses find a great job fit.

AI reduces human bias, making recruitment more ethical. AI speeds up and optimises the recruitment process, allowing managers to plan budgets and team growth. AI helps organisations develop a candidate and recruiter experience, but managers don't think it can

totally replace the recruitment process. Human values still remain true, and human connection can open up new avenues to know each other well, which can be used to choose an onboard individuals. According to the study, candidates dislike AI-based interviews and dialogues.

Since recruiting managers believe recruiters to gain AI skills, we may deduce that if they are knowledgeable, they can discern between past, present, and future data projections, minimising bias. Since some recruitment managers aren't confident in AI, they won't proactively understand the AI structure in recruitment, which will help them assess how AI models can help them boost their productivity by building good two-way interactions with candidates. Recruiting managers should analyse data objectively and educate their teams.

The researcher based on conclusions has suggested some points for future research. Future researchers can compare the cost, time, and recruiting quality of organisations that use AI vs. those that don't. Researchers can compare how organisations using AI for the interview process gather candidate data versus a manual interview by a recruiting manager. Also, researchers can examine how staffing and recruiting firms screen candidates with AI. The researchers can also compare the Traditional vs AI-hired candidates.

Keywords: Artificial Intelligence, Human Resource Management, Information Technology, Big Data, Machine Learning, HR professionals.

Chapter-1

Introduction

The application of Artificial Intelligence (AI) in the recruitment process

Introduction

Approach to Traditional Recruitment

Recruiting is the most crucial task an organization has to execute. Employees are an important aspect of any firm, and finding new employees that will help the organization grow and improve is more difficult than it appears.

The entire recruitment process involves job analysis, writing a job description, attracting job seekers, screening resumes, scheduling and interviewing suitable candidates, candidate engagement, and the final selection. Using traditional recruitment methods like newspaper job ad printing, manual resume screening, face-to-face interviews would consume a lot of valuable time and can be high-cost hiring. With the limited reach of the print media job posting, companies may not reach out to a large number of passive candidates, which is a huge pool of talent.

But in a technological era, these traditional recruitment methods are not efficient enough. With the assistance of technology, the hiring process can be more streamlined and can become an effective recruitment process. Modern-day recruitment strategies have grown in importance and made a difference in recruiting individuals for businesses all around the world in the 21st century, owing to considerable advances in technology.

Brief Description of AI

The simulation of human intelligence processes by machines, particularly computer technologies, is known as artificial intelligence (AI). When we think of AI in general, we think about intelligent robots and virtual reality, but the basis of AI is machine learning and cognitive algorithms. There are specialized hardware and software that help design and train these machine learning into AI. AI technologies improve the speed with which a complete program is executed, which is generally impossible for humans to achieve.

Why AI for Recruitment?

Artificial intelligence (AI) for recruiting is the use of artificial intelligence in the recruiting process with the goal of streamlining or automating some aspect of the recruiting process, particularly repetitive high-volume operations. AI is a sophisticated, human-designed solution to automating both routine and important jobs. Artificial Intelligence for recruiting,

goes without saying, saves a lot of time and effort when it comes to identifying the ideal asset for your organization.

The last thing we want is for our judgment not to be influenced by bias when it comes to identifying the appropriate applicant for the position. Fortunately, there are some innovative AI-based recruitment solutions that can assist decrease that unconscious bias.

Current Applications of AI assessment tools in Recruitment

For several years now, AI has been consolidating its presence in the recruitment technology scene. We can identify the best suppliers, the use cases that sound right, and what to expect when one adopts Artificial Intelligence into the recruitment process after we study the AI assessment tools market.

Job Posting and Candidate Sourcing Tools Powered by AI

- [Textio](#) - Recruiters can use Textio to improve the content and quality of their job postings. It uses features such as Natural Language Processing (NLP) and Text Analytics, and many others. It is mostly used for job ad postings.
- [Entelo](#) - Recruiters can use Entelo to find applicants from various categories depending on factors such as gender, ethnicity, and experience. Their method makes use of predictive analytics and natural language processing, and it's very useful for attracting passive candidates.
- [Hiretual](#) - Hiretual is a candidate sourcing and engagement service based on Artificial intelligence that helps businesses locate the top candidates quicker.
- [Hiredscore](#) - Hiredscore assists businesses with a variety of tasks, including hiring. Clients can use its patented AI for talent acquisition to create custom-built algorithms for applicant selection and sourcing automation across a variety of talent categories, including external, internal, active, passive, daily, and remote workers.
- [Arya](#) - The AI-powered technology enables recruiters to fully engage with applicants while also sourcing the best talent from more than 50 business social platforms.

Advanced AI Candidate Screening tools

- [Pomato](#) - Pomato assists in skills assessment and resumes evaluation. Machine learning and pattern recognition techniques are used in their solution.

- [Ceipal](#) - Ceipal is an AI-driven recruiting software firm that operates in resume processing and social media coalescing, which aids in the scanning of resumes from a large pool of candidates.
- [CVVIZ](#) - Their resume screening technology goes beyond keyword matching by provisionally evaluating resumes and learns from the hiring process to find the finest applicants.

Candidate Assessment Tools Powered by AI

- [Mya](#) -NLP and machine learning are used to create this chatbot. Mya has the ability to initiate a conversation with candidates as well as to conduct candidate assessments.
- [Harver](#) - Harver creates AI-powered pre-employment assessment software that leverages data and research to forecast the employees' performance by assessing a candidate's IQ, organizational fit, soft skills, and potential to flourish throughout their employment.
- [HackerRank](#) - HackerRank is a technology hiring tool that has become the industry standard for evaluating developer aptitude.

Interviewing Tools with Artificial Intelligence

- [HireVue](#) - Hirevue is a platform for pre-employment assessment and video interviews. Their video interviewing software seeks to boost team productivity, improve results, and provide a positive candidate experience.
- [Calendly](#) - Calendly is artificial intelligence (AI)-powered tool for finding ideal interview times. Through the use of simultaneous emotional analytics, the tool focuses on efficiency, scheduling, speed, and prospect acquisition.

The top AI recruiting solutions to enable HR and talent acquisition teams, to accelerate their work by integrating smart and automated processes that reduce repetitive activities and allow recruiters to focus on the most strategic aspects of the hiring process.

Benefits of Using AI Recruitment Software

Apart from automating administrative tasks, modern recruitment software has other advantages. Employers can also use more specific tools to see how a candidate applies his or her skills in the real world.

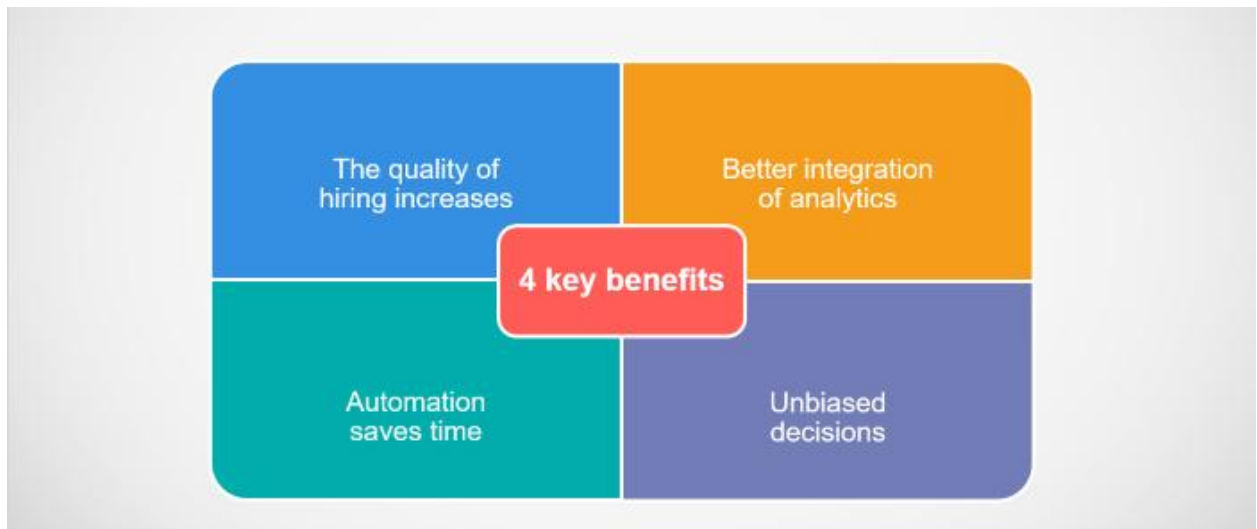


Figure 1: Benefits of AI in Recruitment

1. **The quality of hiring increases**

Recruiters must choose the best candidates from a large pool of candidates. Recruiters will gather more information on each recruit and hence more productively evaluate them. Many AI-based alternatives are available that use unique algorithms to assess candidates' skills and experience.

2. **Better integration of analytics**

HR managers have the ability to pick candidates based on their talents and locate the perfect position where a certain candidate's skills are most required with a higher level of accuracy, resulting in increased business efficiency and employee motivation.

3. **Automation saves time**

AI-based software can evaluate large volumes of data in a matter of seconds and deliver clear conclusions that decision-makers can analyze. AI solutions not only save time but also funds and effort.

4. **Unbiased decisions**

Human influence always entails some kind of bias, whether unconscious or conscious. Companies have a unique opportunity to select only the best people based on their full potential and character because AI solutions make all of the judgments based solely on data and resumes.

The benefits of AI in different phases of the recruitment process are:

1. **Job Advertisements and Automated Matching**

Companies struggle to recruit qualified candidates and frequently receive an excessive number of irrelevant applications. While there are various ways to attract more qualified people, such as employing targeted advertisements, AI matching could be one answer to the problem. Matching tools could be used to recommend the best applicants for a company or a specific role automatically. Applications, internet platforms, talent pools, and networks can all be used to find and propose candidates.

It also addresses unstructured textboxes using natural language processing (NLP) and semantic similarity, enhancing the match between job needs and candidates' education, experience, and talents without requiring recruiters to turn their textual descriptions into rigid form fields beforehand.

2. **Initial Screening and Sourcing**

Recruiters can locate and engage with talent rapidly with AI-based sourcing tools. To fill an unfilled position, several technologies focus on looking for profiles across job sites or company databases. Others assist in optimizing marketing efforts and establishing a meaningful connection with candidates. There are also AI chatbots that can engage with candidates to assess which role is the perfect match for them and advise them on how to apply on the job site.

To shorten this stage, AI screening systems try to swiftly extract information from applications. The approaches taken by AI screening systems span from resume parsing to personality and skill tests. Because a skill test reflects current understanding and aptitude, rather than the historic character of resumes, prediction accuracy based on skill assessment is a superior approach to match individuals with job vacancies.

3. **Candidate Experience: Matching, Engagement, and Re-engagement**

The new recruitment landscape is a candidate-driven industry. Employers who do not meet candidates on their terms and connect with them on-demand risk losing them to a competitor who does. Candidates now want recruiters to be available 24 hours a day, seven days a week to address questions they might have had about a position or to just provide an update on their status in the employment phase as a result of technological advancements.

When a chatbot begins to offer appropriate positions to candidates via their own registration portals, it takes your candidate engagement to the next level. A chatbot, which is often powered by AI and machine learning, recommends the best job for

each candidate based on prior work experience, positions they've applied for, and previous hires in the database.

It may be difficult to provide individual feedback to all if there are a large number of applicants due to the high volume of hiring. Some assessment tools go even further, allowing the company to choose whether or not to share assessment results with candidates after they complete the application. By giving unsuccessful candidates feedback, they can understand where their weaknesses and strengths are, which will help them in their future jobs.

4. Interviews and Decision Making Assessment

One of the primary issues with the current method of interviewing prospects is that it is mostly unstructured, limiting the questioning to the interviewer's wish. Every candidate can be provided with the same series of questionnaires and given the same opportunity to share their potential by using technologies to construct a highly structured and comprehensive interview experience, which boosts the video's psychometric properties.

Because interviewers convey and strive to validate their own biases, traditional interviews can cause biased decision-making. AI has the potential to transform the way we recognize talent by lowering the cost of producing accurate forecasts about one's potential while also removing the bias and prejudices that often muddle decision-making.

Risks

HR managers must remember that no technology is flawless, and it will never be able to completely replace the human touch. The greatest risk of using AI in recruitment is the loss of human touch in the process – the process becomes robotized and dehumanized. Adopting AI technologies necessitates a tiered process to achieve that the algorithms aren't performing poorly. Because artificial intelligence filters resume before they are examined by a human, there is always the risk of an applicant being dismissed too early in the process even though they may be completely fit for the role. When applicants realize they're speaking with a machine, some applicants may become overwhelmed or frustrated, and never bother to finish

the pre-interview criteria. Again, there are always job seekers who will lie and do everything to gain a job, including outwitting a computer.

The Matter of Justice

Employees must have a clear idea of what they will be undertaking, and business executives must take measures to guarantee that their companies use their technologies ethically. Biased and discriminatory treatment of people must be avoided - for example, if AI tools lurk in the background to obtain past information that aids it in making intelligence and personality judgments, there is a serious risk that employers will be infringing on individuals' private data rights.

AI-recruitment technologies, according to some, are designed to reduce unconscious bias in the employment process. However, note that configuring the software still requires a human worker, which might effectively raise the rate and amount of biased decisions taken. Any machine learning algorithm can only be as effective as the data sets it learns from, thus if the data is prejudiced, to begin with, the tool will invariably reflect that bias. Even if candidates go to the following phase, the recruiter may still make a personal judgment about them.

One of the difficulties with AI is that it is generally built based on the credentials and histories of job candidates who have been employed. As a result, if a company tends only to employ a certain type of individual - for example, white males or younger people – the AI tool may highlight candidates who have similar profiles to the company's existing employees.

Guidelines for the Applications of AI

Barriers to consider before the Implementation of AI Recruitment tools

Although AI has made a strong foundation for itself in the recruitment industry, it is still in its infancy. The majority of AI-based recruiting solutions are still in their development stage. They are still learning about data and may have several discrepancies and mistakes.

The nature and scope of the benefits firms can gain from AI initiatives are limited by poor preparation of the change management activities that must follow its adoption. The organization's IT infrastructure is not equipped to enable the implementation of AI projects, including not only IT infrastructure generally, but also the connectivity of technologies needed to generate and establish models with current management platforms, and so on. The

lack of internal expertise required to allow AI's modernization and proper execution delays its adoption in businesses.

Responsible Application of AI Recruitment Assessment tools

Digital advancements and AI breakthroughs have resulted in a slew of new talent discovery and assessment tools. Organizations now have unparalleled power to make data-driven human capital choices thanks to these tools. They also can homogenize feedback, provide data-driven insights into the strengths, development needs, and prospective career and culture fit for millions of job hopefuls. Any company that wants to use AI or other emerging technologies to improve their employment and recruitment processes ought to be aware of the increasing scrutiny – as well as the underlying public, industry, and legal skepticism –to avoid the risks and unexpected consequences of misusing AI.

In the case of AI, the main possible concerns that have been explored include security attacks that can compromise users' privacy and accidental conduct. As a result, competent AI recruitment system design should include tools to address potential security threats and rethink individuals who have been discriminated against by the algorithm.

How to apply AI Recruitment tools to be successful

AI for recruiting is a critical component of the HR technology system but the most serious issues about AI recruiting tools are data integrity and reliability. For an AI algorithm to be able to generate insights, it requires a massive volume of high-quality data. An implementation strategy is critical since it can determine whether the AI initiative succeeds or fails. Here are nine pointers to help you deploy AI recruitment technology successfully.

1. Educate and enable employees

The entire team should understand how to use the AI tool to achieve the best possible results. Employees must be trained on how to utilize the tools and the ramifications of the application, and managers must give this training. They will see the program as an asset if they recognize and comprehend its role.

2. Employee empowerment

The program should not make people feel that they are being replaced, but rather should support them. Employees must be encouraged to think critically and identify problems that AI can solve, but humans must still make the decisions.

3. Picking the right metric

Select the appropriate performance metric, which entails providing specific instructions to the software on how to achieve the desired outcome. Like chatbots should be trained with more questions so that they can learn more.

4. Metric adjustment

As the AI keeps learning, the data and metrics must be adjusted to the more difficult tasks and better performances.

5. Humans in the loop

Although AI is essential in the recruitment process, the most important decisions should be taken by humans, to avoid algorithmic errors, and undesired biases because the system is not familiar with cultural barriers.

6. Constant data gathering

The more data the algorithm has, the better its predictions are and the more it may be utilized to hire in the future. So, constant data must be collected whether of performances or applications or hire records.

7. Data review

That same data must be constantly analyzed, evaluated, and upgraded.

8. Transparency

It includes informing staff about the system's goals, predictions, data collected, factors influencing decisions, and desired accuracy.

9. Anticipation of incentives

Fraudulent actions like tinkering with the data sets and metrics by employees and applicants must be anticipated and taken care of.

Implications

The more we embrace new technology, the more we become aware of its limitations and applications. Are AI and its benefits worth the effort and investment?

Finding and recruiting excellent potential candidates can be significantly sped up with AI. Instead of having a person spend hours scouring LinkedIn, job advertisements, and touring career fairs, AI can automate the process and find top talent while you focus on other tasks. This also cuts down on the time spent reviewing applications, allowing hiring managers to focus on other tasks.

With the introduction of chatbots, AI can act as a representative that caters to the candidates 24/7. This has increased candidate engagement. It can also reach out to qualified candidates to inform them about their status and also to schedule an interview.

Because AI is a machine and not a person in flesh and blood, it cannot have feelings and consequently cannot have prejudices and biases while making a decision. With AI as an asset to the selection process, any kind of discrimination based on gender, ethnicity, age, and physical attributes will be eliminated and the decision will be purely based on skill and merit.

But, AI does have the potential to get biases into its systems. The technology needs to learn from patterns that may be altered according to a person's biases and partiality towards people of certain categories. This can be removed with the proper administration of these patterns and the databases put into the AI system.

There is of course a dire need for human interactions in the recruitment process. AI cannot understand personalities or attitudes or character or work ethics while talking to a candidate. Soft skills are as important as technical skills for a proper job prospect. AI can only understand keywords that could be tampered with and have the potential to be outsmarted.

Future of Recruitment

AI technology is changing the way hiring managers are sourcing, screening, and assessing candidates in the new digital ecosystem. As we know that AI is quickly streamlining the whole recruitment process with the help of automation, matching candidates to the right jobs, and helping find a large pool of talented applicants for the recruiters. But the accuracy of AI's predictions on whether that candidate is really the best fit for the job and their job performance is still under development. AI is sure mechanical but not entirely predictive.

So it is not wise for AI to take important decisions for the time being. AI can provide the correct analysis of the hiring process which will, in turn, help the recruiters to better understand the results of the selection of suitable candidates. AI can merely assist the real decision-makers – the HR professionals and recruiting heads.

By taking over the more repetitive and high-volume tasks AI gives space and time for the employers to attend to the rather useful, creative, and exciting tasks. The usual fear that AI might replace humans and that their jobs will be taken up by machines is far-fetched but not impossible. Machines are already doing the automation tasks and may well do decisive tasks but not in the near future.

Even if AI takes over most of the tedious jobs, it will more room for the employers to focus on the more essential work for– relationship building and humanistic connections. So, the future of using AI in recruitment can only be beneficial for the employers as well as the candidates. Humans will get more freedom to unleash their innovativeness, creativity, and networking.

Conclusion

With the huge benefits that AI poses for the recruitment process, the companies need only to prepare themselves for the changes in technological landscapes. It is crucial to change and adapt to the ever-evolving atmosphere of digital recruitment. To ace in the process of hiring the best talent for the organization, recruiters must reap the power of an asset like AI into their recruitment system.

Chapter-2

Review of Literature

Chapter-2: Review of Literature

How Technology is changing the field of Human Resource Management

Following the Covid 19 outbreak, a new way is surfacing in workplaces and organizations, or the 'new normal,' as it is referred to by Netizens. Given that the pandemic is likely to persist, it's a never-ending cycle of illness. Employers have settled on remote work places over working in a physical area with all of your coworkers. For the 'new normal' to work, it required a pivot, particularly in HR. When we think of HR, we think of people in one place, not disembodied voices on the other end of the line. The fact that businesses had to adopt new software and equipment to send their entire workforce home. As a result, there was an immediate scramble to prepare and ensure that people had connectivity and infrastructure to continue working. This is where technology enters into the picture.

Information technology has had a significant impact on human resources (HR) operations and activities in the last decade. Information technology has influenced practically every area of our culture. Technology has changed the way we buy things, connect with others, get health care, manage our money, and educate our children ¹. And now it is affecting recruitment systems like Human Resource Management (HRM). Human Resource (HR) is a set of individuals who make up the workforce of an organization, business sector, or economy. HRM is a central system of many organizations. The HR departments are responsible for activities spanning a wide variety of core functions namely staffing, development, compensation, safety and health, inquiry, and labor relations. To comprehend how technology is influencing HRM, we must first comprehend what HRM is and what its primary functions are.

HRM systems can serve as a source of organizational capabilities, allowing the company to learn and take advantage of new opportunities. HRM aids the organization in attracting and retaining the skilled, dedicated, and well-motivated workforce it requires. Individuals in managerial and leadership positions must ensure that when new employees are hired, they are provided with adequate training ². The functions of HRM include:

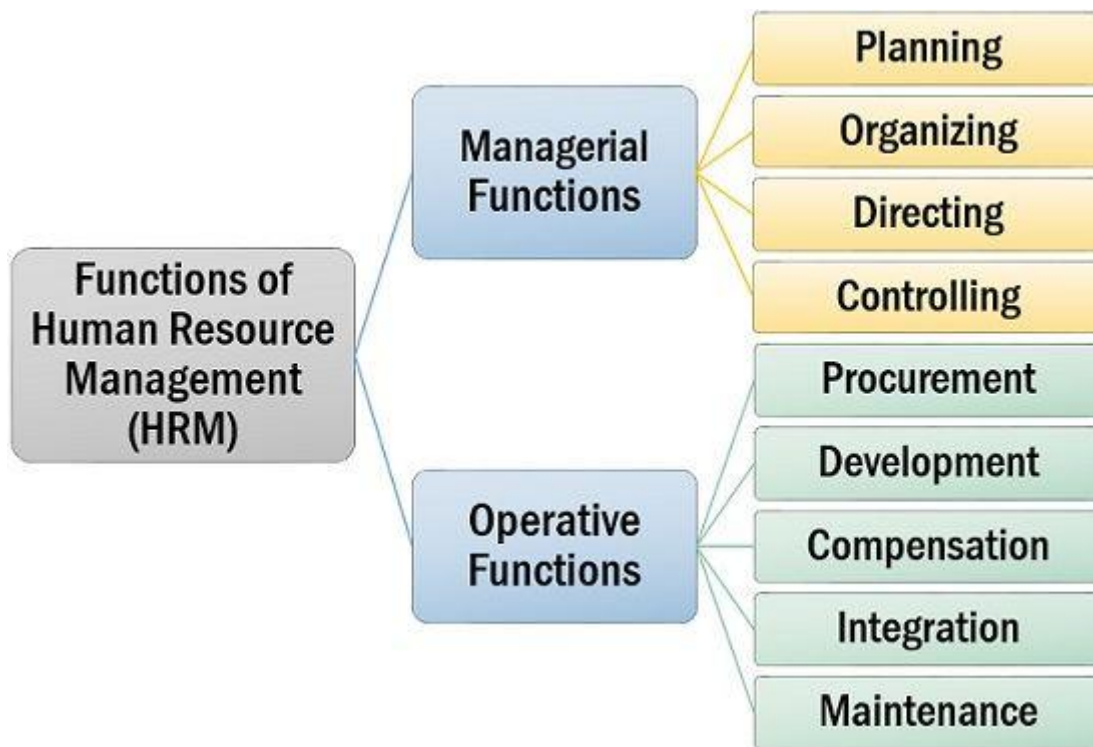


Figure 1: Functions of Human Resource Management (HRM) ³

1. **Managerial Functions** - The management is in charge of developing strategies and providing guidance for putting them into action. They plan, organize, direct and control the framework of the workforce requirement of the organization.
2. **Operative Functions** - The calculation of personnel requirements, recruitment and selection of eligible applicants, and placement and orientation of the workforce in the appropriate role are all part of human resource acquisition.

Employee engagement, talent retention, competitive compensation, and creating tomorrow's organizational leaders are all key human capital concerns, according to the Society for Human Resource Management ⁴. With the emerging trends, companies are adapting to the new technological landscape. The evolving Internet and IT are changing employee experiences, the perspectives of HR teams and the strategies to handle the challenges many faces.

How technology is changing the face of HRM are:

1. **Staffing and recruiting based on technology** – Third-party websites assist businesses in developing new HR processes and applications like e-recruitment, virtual learning, and self-services.

2. **Employee training, supervision, and assessment** – The Information and Communication Technology systems include skills and competencies of employees, valuable information regarding the vacation time and policy details, and also information about employee performances and their feedbacks.
3. **Growth of an Organization** – The system's data can aid firms in better aligning HR functions with their strategic plans and turn to help in the development of the organization.
4. **Communication** – The exchange and flow of communication between managers and other staff are facilitated by communication technologies, resulting in better decision-making inside the organization.
5. **Applicant Tracking System** – ATP as a software application helps streamline the recruiting process for recruiters, reducing the time it takes for a hiring manager to contact applicants who appear to be a good fit for the job.

Recruitment as a part of HRM

HRM is an organizational function that is in-charge of facilitating the organization's all-inclusive goals through effective human capital management, concentrating on people as the company's most valuable asset. The first process in increasing an organization's human capital is recruitment.

While HR is involved in a variety of areas such as employee engagement, training, regulatory compliance, and database management, one of the key areas of focus for HR is the recruitment, selection, and onboarding of qualified candidates for the organization. Recruitment is the process of finding and picking the appropriate candidate for a job position, whereas selection is the process of finding and choosing the best candidate for that job. According to a 2012 study, companies who excelled at recruiting had 3.5 times greater revenue growth and twice the profit margin as companies that were less skilled at recruiting⁵. As a result, choosing the correct individual for the job is crucial.

Human Resource planning and workforce planning are often the first steps in the recruitment process. Human resource planning determines whether or not an organization will hire. Organizations have various choices to make when HR planning reveals the need for additional labor.

Linking Organizational Strategy to Human Resource Planning

Employment Planning and The Strategic Planning Process

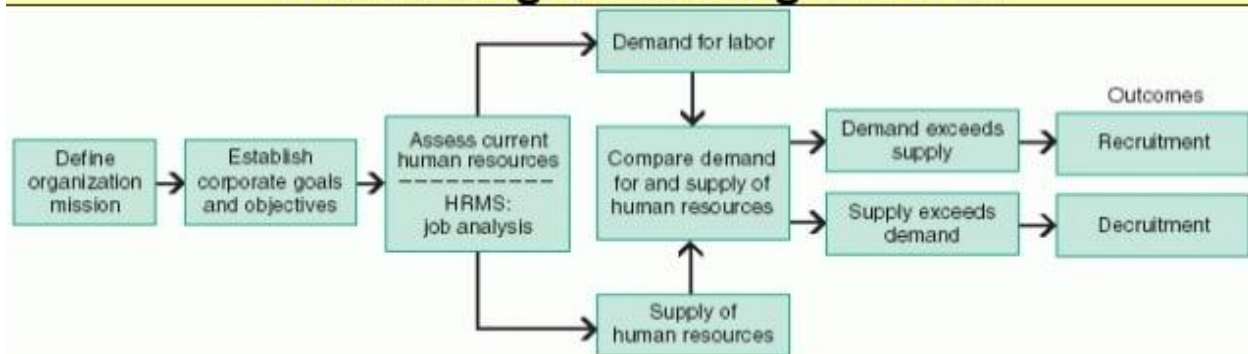


Figure 2: Linking Organizational Strategy to Human Resource Planning ⁶

1. HR examines the tasks to be completed and determines how to organize them into jobs.
2. The next step is to figure out how many workers and what skills they'll need to fill those positions.
3. HR must decree or cut down the number of workers if the supply of workers exceeds the number required. If the number of workers available is insufficient to complete the organization's objective, HR must recruit more staff.

After the planning and forecasting of factors like annual budget and overall organizational life-cycle, the typical steps that the HR follows are:

1. **Decide whether or not recruitment is required** – Look at whether there is a vacancy and if the post could be filled from within. Acknowledge the fact that a job opening is necessary.
2. **Analyze the job** – A job analysis provides information about the job specifics and determines the necessary responsibilities required of the post-holder. A job diagnostic

survey should be used to diagnose job characteristics before any redesign of a job, according to research by Hackman and Oldham ⁷.

3. **Make a job description or a competency profile, as well as a person specification**
- The objective, responsibilities, and circumstances of the employment, are all stated in the job description. The person specification outlines the skills and talents that are most appropriate for the position.
4. **Choose the best application and selection procedures** – The choices are between application forms and CVs or Resumes. Also, choose selection processes through interviews or other specific selection tests.
5. **Choose a strategy for attracting candidates** – This is a necessary step that ensures that you market the vacancy appropriately so that it reaches the potentials candidates without costing you much.
6. **Market the job** – Deciding on how to market the job ensures that not only the job is advertised but also how your organization is represented.

After the necessary marketing for the job is done, and enough applicants have applied for the position, then comes the Selection Process which is a different topic in itself.

Recruitment and Selection

With the increasing global competition and the constantly changing market trends, it becomes essential for the companies to attract and hire the finest individuals who can respond productively to this competent global domain. The recruitment and Selection Process is the most important HR function that ensures that the right candidate is chosen at the right place at the right time. This implies that the persons employed are an asset to the organization rather than a liability.

Implementing effective recruitment and selection process ensures that only the ‘right’ hires are selected. Selecting a ‘wrong’ candidate might cost the employer’s capital. Lower productivity, potential customer loss, training costs, advertising costs, recruitment fees, and redundancy packages are all examples of these costs ⁸.

A company’s recruitment and selection process reflect the company’s professionalism and competence. “Recruitment and selection is a process of selecting the correct jigsaw piece (the

‘right’ individual) from the incorrect pieces (the ‘wrong’ individuals) to fit into a particular hole in a jigsaw puzzle ⁹.

RECRUITMENT VERSUS SELECTION

RECRUITMENT	SELECTION
Recruitment is the process of advertising for vacancies, attracting, interviewing, selecting, and hiring employees	Selection is the process where a company picks the best candidates out of the hundreds of applicants received
Involves everything from the identification of a hiring need to filling	Involves choosing the right candidate from the applications received
Occurs first	Follows recruitment
The main objective is to encourage a large number of candidates to apply for a post	The main objective of recruitment is to select the right candidate for the post
	Visit www.PEDIAA.com

Figure 3: Recruitment vs Selection ¹⁰

The main difference between Recruitment and Selection is that recruitment entails finding people and encouraging them to apply for open positions inside the company, whereas selection is selecting the best candidate for the open position. Recruitment is a positive activity that tries to attract a large number of applicants for a specific position. The greater the number of people who apply for a position, the more likely it is that you will find a

suitable employee. Advertising is the first step of recruitment that can be done through newspapers, professional broadcasting, job center, or campus interviews. Among the different activities engaged in the recruitment process are:

- a. **the assessment of several labor market sources**
- b. **evaluation of their reliability**
- c. **selecting the most appropriate source or sources**
- d. **potential individuals are invited to apply for the available positions.**

The organization may recruit candidates from within the company or from outside, so there are internal and external sources.

The process of discovering and selecting the best candidate for a job from a pool of candidates is known as **Selection**. The management examines all of the candidates' qualifications and experience and connects them to the job roles to select the best candidates for the job. There are a lot of steps in the selection process.

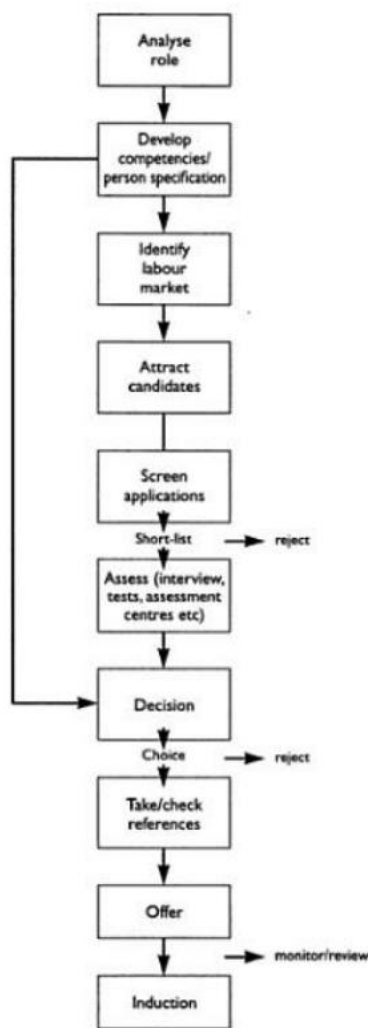


Figure 1. Selection process flow-chart (Roberts, 1997, p5)

This is a typical framework of what goes on in the selection process. From the need to realize the job to the successful hiring of the right employee, the organizations have to go through all these steps. After receiving applications from candidates, an organization reviews the content of the applications to ensure that the candidates meet the minimum eligibility requirements in terms of age, experience, and relevant qualifications and abilities. This is called **Screening**. It is through Screening that the unqualified job seekers are eliminated. After Screening **Selection tests** are done to measure the skills and abilities of the candidates in terms of job requirements. Next is the formal face-to-face **interview** to help in assessing the candidate in depth. **Reference and background checks** help in verifying information and gaining information apart from the educational backgrounds of the applicants. Now the organization takes the **final decision** among the applicants. Finally, the organization presents the selected applicant with the **job offer** containing the date of joining, job salary details, terms of employment, etc. If the candidate finds the job offer acceptable, he must attest to the **employer contract**.

Figure 4: Selection Process Flowchart¹¹

For a successful organization, they must carry the Recruitment and Selection process effectively. With a powerful onboarding process, the company will acquire a high-quality set of individuals that work perfectly towards the company's goals.

Recruitment Process

In the current scene of globalization, it's a vital environment for the growing industries. As there is an increase in businesses, so there is an increase in competition in those businesses. So it becomes imperative that every company has to have the most efficient manpower working for them to cater to this escalating competitiveness. Effective recruitment strategies

help in securing the highest-qualified employees for their companies. Recruitment is the first stage in value-based modules for successful businesses.

According to Business Dictionary. com, “Recruitment is the process of finding and hiring the best-qualified candidate (from within or outside of an organization) for a job opening, in a timely and cost-effective manner. The Recruitment Process includes analyzing the requirements of a job, attracting employees to the job, screening and selecting applicants, hiring and integrating the new employee to the Organization”¹².

The recruitment process might be intimidating for small businesses. Following a variety of separate stages is necessary for selecting the best person for the job. There is a straightforward approach that can be utilized to fill any type or level of employment. The recruitment process is also efficient, effective, and fair as a result of the procedure of the following steps.

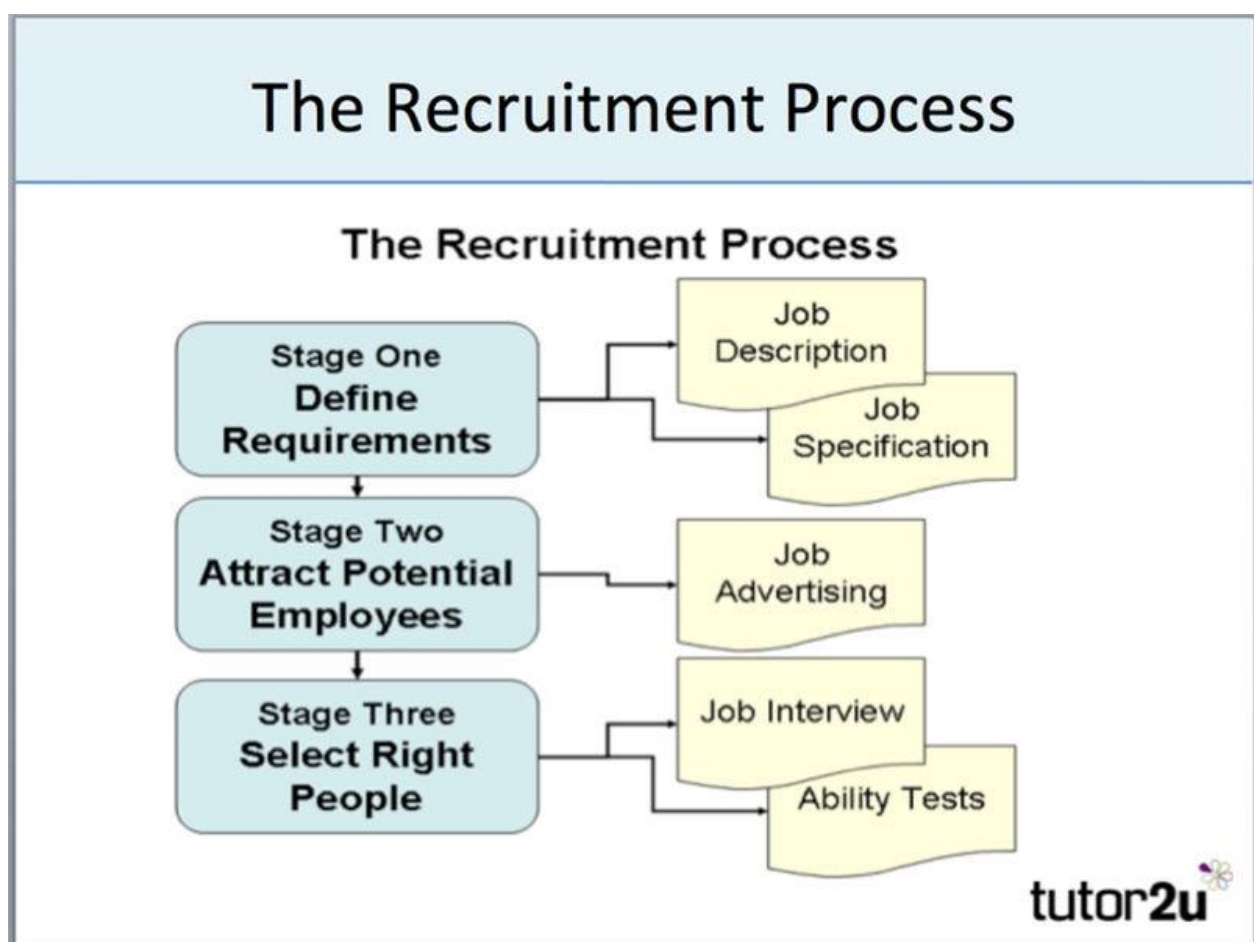


Figure 5: The Recruitment Process¹³

Let's take a quick look at each of these stages:

1. **Determine what role is to be filled** – When you’ve decided that hiring someone is the top option for your company and that hiring someone directly is the best option. Then before you rush out to hire someone, consider the role, the job’s actual requirements, and how it fits into the company’s and your plans. Create a job description to assist you to understand the position, purpose, tasks, and responsibilities. And keep in mind that this is about the work, not the individual.
2. **Create a profile for the ideal candidate for this position** – a person specification will assist you in conducting a methodological selection and interview process.
3. **Attracting candidates** – You must begin looking for potential people right away. Consider where you might advertise to attract a diverse group of qualified candidates, you want to receive the best response for the least amount of money. You must also consider the ad itself, in addition to where to place it. A good job advertisement sells both the job and the company. Because the company name may not be well known, this is especially crucial for small and new firms. A study shows that 45 members of total respondents were recruited through newspapers and 40 members from total through campus selections ¹⁴. Keep your ad brief and to the point. Also, make sure it’s non-discriminatory and free of gender or cultural references. When recruiting, you might want to consider using an application form. This implies you won’t have to rely on each candidate’s unique response. You can rest assured that the candidate will submit all necessary relevant information for the position. It also makes comparing like with like and making an initial judgment easier.
4. **The selection of the right candidate** – Make a list of selection criteria first. It’s a good idea to make a checklist based on the required abilities and experiences, whether they’re essential or desirable. Assess how well candidates match the job and human specifications using your checklist. You could want to enlist the help of a business counsel or a business partner in the selection and interview process. This ensures that the procedure is free of personal bias. It’s also beneficial if at least one member of the selection panel has received Equality and Diversity training. When you’ve narrowed down your list of candidates, write them a note asking them for an interview. Take your time during the interview. Make sure that each candidate has been given the same opportunity to show themselves in the best light, establish their sustainability, and ask the interviewer questions. Tell the candidate what happens next and when they may expect to hear from you at the end of each interview. When you’ve made your decision, let the unsuccessful candidate know as well. Finally, once you’ve made

your decision and chose your candidate, there are a few things to consider before they start working for you.

If you follow these procedures anytime you're recruiting, you'll find it much easier and ensure that your hiring process is efficient, effective, and fair.

Current Trends in the Recruitment Process

2021 is well underway and we have seen a huge change in the recruiting industry in the last year and this year. According to Recruiting industry specialist Dea Wilson, "Innovation and social expertise will change recruitment in 2021, focusing on natural language processing, social media recruiting, and soft skills"¹⁵. Here are some current trends in recruitment:

1. **Remote Work** – remote work is one of the most current trends in the recruitment industry. During the COVID-19 epidemic, where work-from-home regulations have been implemented and candidates are unable or reluctant to fly by air for office work, remote work has become a requirement for recruitment. Companies increase their talent pool by letting people work remotely because they can now access top global talent without being confined by geographical boundaries. In a study, 56% of respondents have reported placing candidates in remote roles¹⁶.
2. **Increasing the Diversity of the Workforce** – Organizations now devote more time and effort to customizing job openings to attract a broader range of candidates, recruiting job descriptions to be more gender-neutral, and advertising jobs in a variety of ethnic groups. According to a 2018 McKinsey report, companies in the top-quartile for workforce diversity are 33% more likely to financially outperform their less diverse counterparts¹⁷.
3. **Using Technology to implement the latest Recruitment Methods** – With the pandemic still around, it is difficult to have a conventional face-to-face interview. Technology can be used to conduct remote interviews utilizing video conferencing software such as Zoom, Microsoft Team, Cisco Webex, and specific video interview platforms like HireVue and Montage.
4. **Use of Automation and AI techniques to simplify Bulk Selection Process** – Skills, talents and potentially obtained from candidate profiles, resumes, and social media, the AI software can source, screen, sort, and rate prospects to establish a pool of competent candidates who are likely to be successful in empty positions. Natural

language processing (NLP) tools and AI chatbots may also be used to connect with potential applicants and provide individually tailored communication. **Ideal's** report says that AI-powered software has seen their cost per screen reduced by 75%, their revenue per employee improve by 4%, and their turnover decrease by 35% ¹⁸.

5. **Emphasis on Soft Skills** – Employers are increasingly interested in understanding from a candidate's body language, phrasing as well as prior social behaviors, teamwork interactions, conflict resolution, moral questions, and similar factors. According to a LinkedIn survey, 89% of failed recruits often lack soft skills like innovation, persuasion, teamwork, partnership, flexibility, and time management ¹⁹.
6. **Developing a Positive Brand Image and Working Environment** – Based on the CareerArc survey, 75% of job searchers examine an employer's brand before applying, therefore creating content that revolves around employee experience is crucial ²⁰. 'Candidate Experience' is the term given to a candidate's comprehensive perception about a company's recruitment procedure as well as work culture. Employers have improved candidate experiences by enhancing career sites and using surveys to gather feedback from candidates.

There are merely the most adopted trends from the many different trends that the year 2020-2021 came to see. With the technological advancement paired with the pandemic and its effects, it is fairly enough easy to imagine a new recruitment scene that is different than the traditional methods. And once the companies get used to them, some of these trends are here to stay.

Different Recruitment Methods

Employee recruitment refers to the processes that influence the amount and types of people that apply for a position, as well as whether they accept it. "Recruitment is the process of searching for prospective employees and stimulating them to apply for jobs in the organization," according to Edward B. Flippo ²¹.

With a disordered market and relocated employees with great skills dispersed throughout the marketplace in 2020, understanding a way to notify and hire the right talent for the right firm will be critical. With technological advancement, organizations are adopting new methods of recruitment to attract the very best from the talent pool and for the best of the recruitment outcomes panned out as the organization's goals.

Here are the current recruitment methods that help employers to seek recruits of the highest streak. Based on the recruitment environment we can divide the methods into Internal and External.



Figure 6: Methods of Recruitment²²

Internal Recruitment

Job Posting – The traditional method of making a job vacancy advertisement is a job posting either on the HR bulletin board or through emails. A job posting ensures that the job opening announcement is available to all the employees within the organization.

Promotions and Transfer – Promotions are the best traditional method that ensures the right candidate is recruited internally for the hiring position within a time-tested procedure. It is also one of the safest methods of recruitment. Transfer also ensures the right candidate works at the right branch based on his/her capabilities but without the benefits of promotion like a pay increase.

Employee Referrals – Employee referral systems' main advantage and significance arise from their ability to harness local assets to target individuals who are most likely to match the company's culture and create a great effect. Employee referrals outperformed employees

recruited through print ads, college placements, or job agencies in terms of pre-hire results, according to research ²³.

External Recruitment

Direct Advertising – Job Advertisement is a great way to spread the job opening announcement across a lot of potential candidates via the internet, print media, career sites, job centers, etc. According to research, the company's image according to the job description and information provided increases the chances to receive better applicants ²⁴.

Internet Recruitment – With the advent of social media platforms, online recruitment has become more significant. It is a cost-effective, time-saving, quick-response method of recruitment. The applicant pool especially the modern and the youth have a Twitter, Facebook, LinkedIn, and an Instagram account, which is a storehouse of talent. The proper use of social media for recruitment leads to an increase in brand value, which in turn drives the recruitment of new personnel.

There is another method of recruitment that is one of the most used methods for screening of candidates –

Third Party Recruitment

Recruitment Agencies – these private agencies do the job of recruitment right from generating an applicant pool, to the screening of the unqualified candidates, to the interview process on behalf of the organization. This saves a huge amount of time however it may be costly.

Campus Recruitment- the best source of young talent for entry-level jobs are the college campuses. Organizations send representatives to campuses for interviews and company brand promotion and ultimately the screening process.

Depending on the requirements and preferences of the organization, employers can adopt any one or a mix of the above-mentioned methods.

The Impact of Technology on Recruitment

Technology has taken over the world with its new digitalization, computers, and various automation programs. It has influenced the field of business organizations especially the department of recruitment and selection. Organizations are embracing technology to increase

productivity in human resource management since today's modern business climate is extremely competitive and favors only the most innovative of the lot. Technology has changed the face of the subject, attracting significant study interest not just in employment psychology and HRM, but also in the internet, data science, and analytics ^{25,26}. Technology has had an impact on all four stages of the recruitment and selection cycle.



Figure 7: Technology in Recruitment ²⁷

Technology in Talent Attraction

One of the first technical advancements in the sector to gain considerable interest in HRM was online recruitment ²⁸. There are several career sites specifically dedicated to advertising job openings by companies that attract a wide variety of applicants and maintain their interests. Technology helps in not just attracting candidates but also for company branding with Content Management Systems and Social Media Management.

Technology in Screening

Screening is the most time-taking and challenging process in recruitment. Recruiting the best employees for the company ensures the success of the firm. With increasing vacancies, the number of applications also increases. This makes it difficult to go through every resume manually but technological tools can help in speeding up the process with fewer amount of errors. For instance, significant usage of applicant tracking systems (ATS) can shorten the screening process by allowing for efficient resume archiving, processing, and search engine for huge amounts of applications. Recruiters must identify tools that can support them and enable them with the process to stay current and effective²⁹.

Technology in Selection

The selection process is another important stage in the recruitment process. The use of technology can improve this selection process and there are many ways to do so. Remote interviews are the trend of the times where the recruiter, their co-workers, and the candidate can conduct a live video interview or a one-way, pre-recorded video interview. These are all part of the online interviewing processes and can save a lot of time and cost owing to the current remote situation. Another way technology can make recruitment into “recruitainment” is through gamification. Hiring firms can add a fun factor to the generally tedious recruiting process by using quizzes, puzzles, or cognitive assessments. It helps in evaluating a candidate’s problem-solving abilities, aptitude, and creativeness instead of their pre-scripted answers to general interview questions.

Technology in the Onboarding process

Onboarding is the process when the selected candidates join the company as new employees and they get to socialize with their co-workers and employers in the organization. This may include the training process, formal or informal orientation, mentoring, etc. Technology in this stage helps to sort the huge amount of paperwork when a new hire is welcomed into the company. Companies are also resorting to e-mentoring, where the mentor and the new hire operate through online modes.

Thus we see that technology has had a lot of impact on the whole recruitment and selection process.

The Artificial Intelligence and Recruitment

Finding quality candidates is one of the most difficult aspects of recruitment, according to staffing managers. Recruiters have to find ways to make their jobs easier when there are a large number of applicants contending for a select number of jobs. Physically screening profiles might take several hours, if not days. Studies are being performed to see if technology may make the recruitment process go more smoothly and efficiently [30]³⁰. Many firms are experimenting with robots at the initial stages of their hiring process these days. But what exactly is Artificial Intelligence or AI?

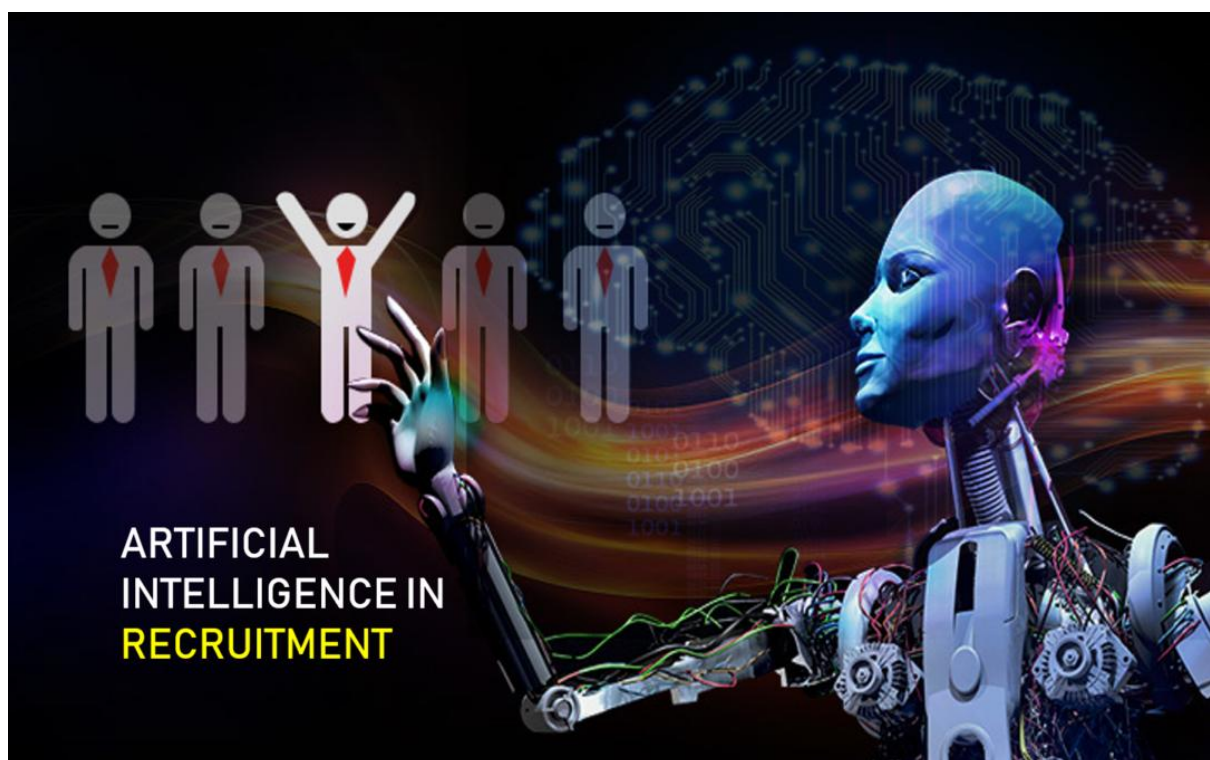


*Figure 8: Artificial Intelligence in Recruitment*³¹

AI was described by Salin and Winston (1992)³² as a set of approaches that allow computers to perform activities that would otherwise require the reasoning abilities that human intelligence brings. AI includes a robot or a machine or software that does the executing jobs that humans usually do. By harnessing the power of AI, firms can enhance the recruitment process from the start to finish. The sourcing is handled by AI. With a couple of clicks, you can select and optimize search keywords, as well as match and rank candidates. This involves decision-making, visual and voice recognition, and translation, among other things.

Chatbots are AI-driven recruitment assistants that provide personal and up-to-date communication possibilities with candidates via emails, text messages, or dialogue boxes, according to ³³. Video interviews for the hiring process have become a major recruiting technique among businesses. HireVue is one of those applications where the AI can read and analyze the applicant's body language, facial expressions, and speech tone. The application compares the interviewees to the company's top talent staff and then recommends the best candidates to recruiters ³⁴. It is economical, as a robot may interview over a thousand applicants every day. Furthermore, firms that have developed such robots claim that they are bias-free, claiming that an algorithm determines decisions regardless of the individual's age, race, gender, or ethnicity. Is it true?

However, some studies have demonstrated that algorithms replicate the biases of individuals who program them, perpetuating stereotypes instead of eradicating them. According to Stuart and Norvig (2016), manipulation of AI can lead to many issues, including employment loss due to automation ³⁵. According to a survey, having an automated application process has a bad connotation for business culture, implying that recruiters may lose out on top talent in the field. Furthermore, some candidates believe that having an automated application process limits their ability to communicate ³⁶. AI requires a lot of historical data to figure out how to make decisions, so if that data is skewed, AI might start replicating those decisions. Of course, the best way to overcome this is to ensure that you have people who understand these biases and, more importantly, the subject matter.

AI has significantly impacted the area of recruitment in recent years. But to fully implement AI into the system means that we will lose the human component of HRM. Of course, AI is a beneficial application that speeds up the screening process but to fully utilize the capability of AI, we must also pair an effective use of human capabilities and the human touch. By incorporating AI software into the traditional recruitment process, a company may witness improvements in applicant communication, a wider candidate pool, the rediscovery of forgotten skills, and overall recruitment results ³⁷.

Different Companies Offering Artificial Intelligence Services in Recruitment

Have you applied for a job at IKEA before? If that's the case, you may have received a call from Vera, the Russian robot who conducts interviews. Vera is an artificial intelligence-driven system that has been trained to identify and understand human voices, such as those

used by IKEA. There is numerous other AI-powered software that companies are adopting in their daily recruitment tasks. AI apps are the means of making recruiters' lives easier and let HR play a more strategic role.

Because HR departments are expected to meet the expectations of the digital generation who are accustomed to more instinctive and modern interactions, it is unsurprising to know that firms are becoming more tech-savvy to appeal more to the cyber natives. The use of AI in the Recruitment and Selection process brings the detailed and time-consuming process of examining and separating the best resumes one by one manually into a whole different realm of virtual reality. With the automation technique of select keywords, the evaluation and screening of applications can be done at the tip of your fingers. This automation also helps in understanding the candidate and his/her skillsets based on the requirements of the job vacancy. Not just that, with Gamification, Chatbots, and Machine Learning algorithms, the recruitment process must be made less tedious both for the recruiters and the job seekers.

Some companies are entirely utilizing the capabilities of AI and they are also offering their services to other companies to ease out the process of recruitment. Here are some examples of the Top Companies offering AI-powered Recruitment Services:

HireVue

HireVue is the most well-known AI-powered hiring platform, with 700+ firms including Unilever, Maxis, Goldman Sachs, and Oracle using it. HireVue uses pre-hire assessment, video interviewing, game-based assessments, coding assessments that analyze candidates' diction, speaking style, facial expressions, accent, and body language in addition to voice and facial recognition software to identify which candidates are appropriate for a certain job. Unilever used HireVue AI-driven assessments and saw a £1 million yearly cost savings, a 90% reduction in hiring time, and a 16% increase in hiring diversity³⁸.

Mya Systems

Conversational AI is used by Mya Systems to help 460 corporations like Hays, Adecco, L'Oreal, Deloitte, and Anheuser Busch. Mya uses a technique of NLP and Machine Learning algorithm to understand the meanings from complex statements and dialogues with humans (candidates) and thus improves on giving quick and accurate responses. L'Oréal witnessed this entire procedure of screening, scheduling, and conducting a phone interview condensed

within 4-5 minutes with Mya. Mya streamlined the time-consuming, repetitive activities that were slowing down their recruiters and increased diversity by 30% across their retail sales and internship opportunities, leaving candidates with a 99 percent satisfaction rate ³⁹.

Wade and Wendy

For both job seekers and recruiters, Wade & Wendy's AI-powered technologies streamline task-driven recruitment procedures. Wade works for job seekers in guiding them towards the right job opportunities based on their personal preferences and skillsets. Wendy works for recruiters in pacing up the sourcing and screening process and selecting the best talent and also schedules the interview. Through the use of this software, the staff at Cronofy have seen an average cost per hiring decrease of 82 percent for their customers ⁴⁰.

HiredScore

HiredScore uses machine learning integrated into the company's hiring process and uses applications that enhance the larger quantity of hiring process in a quicker time duration with mobile recruiting programs. HiredScore has helped Alcoa, a significant corporation that pioneered the aluminum business by streamlining the talent management with a data-forward approach, thus optimizing their recruitment process ⁴¹.

Hiretual

Hiretual is yet another AI-driven company that uses an integrated Applicant Tracking System (ATS) to streamline the employment tasks and carry on a time-saving and effective workflow in the firms. Poshmark saved 40% on sourcing time, increased response rates by 75%, and increased the number of qualified leads by 60% when they used Hiretual ⁴².

The Growth of Artificial Intelligence in Recruitment

Technology has been around for over a decade in multiple fields but Artificial Intelligence (AI) in the employment recruitment industry has seen a huge growth in light of the Covid-19 pandemic during 2020. Industries have adopted Artificial Intelligence so quickly in their systems, right from telecommuting to virtual meetings, the pandemic paired with the technological practices has changed the entire scene of the office environment. Over the last year, the increased usage of AI tools in Automation and Chatbots by recruitment professionals has introduced thousands of positions to the worldwide market especially in

Talent Acquisition, and, more significantly, has transformed various business processes. Among all the business areas, AI has affected Human Resource Management the most.

HRM is responsible for a variety of critical tasks in a business, including recruiting, selection, and hiring, as well as training, development, and talent acquisition ⁴⁶. The challenge of finding, attracting, recruiting, and maintaining outstanding talents has become increasingly difficult for HR managers as a result of technological advances. With smart memory-based decisions, AI assists HR managers in speeding up the task of screening and matching the candidates to the proper jobs based on their skillsets. Volvo, a leading Swedish luxury car manufacturer, received high praise at the Brussels Motor Show for showcasing its AI-enabled automobile, which was used to interview candidates for the position of service technician ⁴³. There are various steps involved in the recruitment process. According to Breugh's model of the organizational recruitment process, there are 5 steps for effective recruitment as in Table 1 ⁴⁴.

Table 1. Breugh Model of Recruitment Process

Step 1	Recruitment Objectives
Step 2	Strategy Development
Step 3	Recruitment Activities
Step 4	Interviewing Job Applicant Variables
Step 5	Recruitment Results

Any inaccuracy in the above-mentioned steps may be caused by human error, biases, and racism and a bad hire may cost a huge amount of economic loss to the company. The application of AI in the recruitment process remedies these errors and on top of it increases productivity coupled with a healthy dose of applicant interactions and feedbacks. AI is defined as a software or hardware application that can think like a human and make data-driven intelligent decisions ⁴⁵. AI-powered tools can automate the process of evaluating prospects, scheduling meetings, conducting interviews, checking references, analyzing results, and delivering job offers to the best candidates. Candidates have a one-on-one experience with employers thanks to AI tools like Chatbot. Only 10% of businesses are now

adopting AI in a high-level setting, with 36% expecting to do so shortly ⁴⁶. According to SelectSoftwareReviews (Report of March 2021), the top 12 AI-powered recruitment platforms are:

1. **Paradox** - Machine learning is used by Paradox to communicate with candidates via a conversational UI (Olivia, the Chatbot) that allows candidates to get responses to critical queries they may have during the hiring process. Its clients are Wendy's US Express, Houston Methodist, and Koch Trucking.
2. **XOR** - XOR is an artificial intelligence-based recruiting and HR Chatbot that can screen candidates, arrange interviews, and respond to queries via text message, email, live chat on career sites, recorded videos, and WhatsApp messaging. Its clients are McDonald's, Ikea, Manpower, Mars, and UC Davis.
3. **Hiretual** - Hiretual uses artificial intelligence to assist the talent acquisition team in locating and engaging qualified candidates. Its clients are Intel, Nike, Continental, Wayfair, and Ceridian.
4. **Textio** - Textio helps recruiters optimize their brand's language in the eyes of the finest talent by combining big data and machine intelligence. Its clients are McDonald's, P&G, Spotify, Slack, and Atlassian.
5. **Eightfold** – eightfold's AI software can scan millions of prospective candidates in a matter of seconds, providing your team with an immediate pool of qualified candidates. Its clients are Tata Communications, Air Asia, Booking.com, Mercado Libre, Capital One, and Bayer.
6. **AmazingHiring** - AmazingHiring collects data from over 70 different sources to compile the professional backgrounds of technical candidates. Its clients are Dell, EPAM, Alexander Mann Solutions, Akamai Technologies, and ABBYY.
7. **MyInterview** - MyInterview employs artificial intelligence (AI) and machine learning to decipher crucial characteristics of candidate responses, such as professionalism, logic, and so on. Its clients are Facebook, Six Flags, Biffa, and Mondelez International.
8. **Seekout** - Based on job requirements, it makes customized shortlists of candidates. This shortlist can originate from ATS or Seekout's 500 million talent profiles. Its clients are Twitter, Salesforce, VMware, 23andMe, Activision Blizzard.
9. **HireVue** - HireVue's HR chatbot package incorporates artificial intelligence. Their products assist recruiting teams in locating, screening, and scheduling applicants,

saving time and money. Its clients are Intel, Unilever, Boston Red Sox, Honeywell, and Randstad.

10. **Arya** - Depending on your job description, Leoforce's Arya AI recruiting platform generates shortlists of qualified individuals. Its clients are Lenovo, Kelly, American Century Investments, Parsons, and Regis.
11. **Humanly** - The recruiting staff can screen and schedule applicants in a DEI-oriented method that also interacts directly with the ATS, eliminating the need for recruiters to log into another system. Its clients are Swiss Monkey, BPM, Oakland Roots, Tiny Pulse, and Armoire.
12. **Loxo** - Loxo's aims to increase the efficiency of the entire recruitment process, not just one component of it. Its clients are Amazon, Randstad, Stanford Rose Associates, Endevis, and Kensington International.

According to Upadhyay and Khandelwal (2018), human recruiters used to perform repetitive duties, but AI would make some of these operations unnecessary. Recruiters may now subcontract these time-consuming activities to AI systems, giving them more time to focus on strategic challenges. Digital recruitment is the answer to the rapidly changing scenario of human and technology-integrated business practices. AI not only improves the quality of the hiring process, but also saves up time, money, and effort. According to a study performed by Oracle and Future Workplace, 50% of employees are already using AI at work, which is a significant increase from the previous year's figure of 32% ⁴⁷. Now all that is left to do is to utilize the capabilities of AI in a more strategic so that recruiters can still carry on the more important administrative tasks.

The Challenges of using Artificial Intelligence in Recruitment

In recent years, the recruitment procedure has undergone some significant adjustments. Global economic fluctuations, job market changes, changing corporate processes, and the introduction of new technologies are a few of the developments that have an impact on a recruiter's responsibilities and activities. According to a Deloitte survey, 33% of employees want AI to be integrated into their job soon ⁴⁸. If digital systems and automated software can help with monotonous chores, it will be easier for people to devote more time to invention and creativity. There are many business benefits of AI:

1. AI upgrades the products' features, functions, and performance.

2. AI streamlines the company's internal procedures.
3. AI does automation tasks so that staff could take up more creative jobs.
4. AI makes more informed judgments and decisions.
5. AI algorithm collects and applies limited data when it is needed.
6. AI optimizes external processes like company marketing and sales.

However, with the application of new technology, especially with something like using Artificial Intelligence in an office environment, the challenges also pop up.

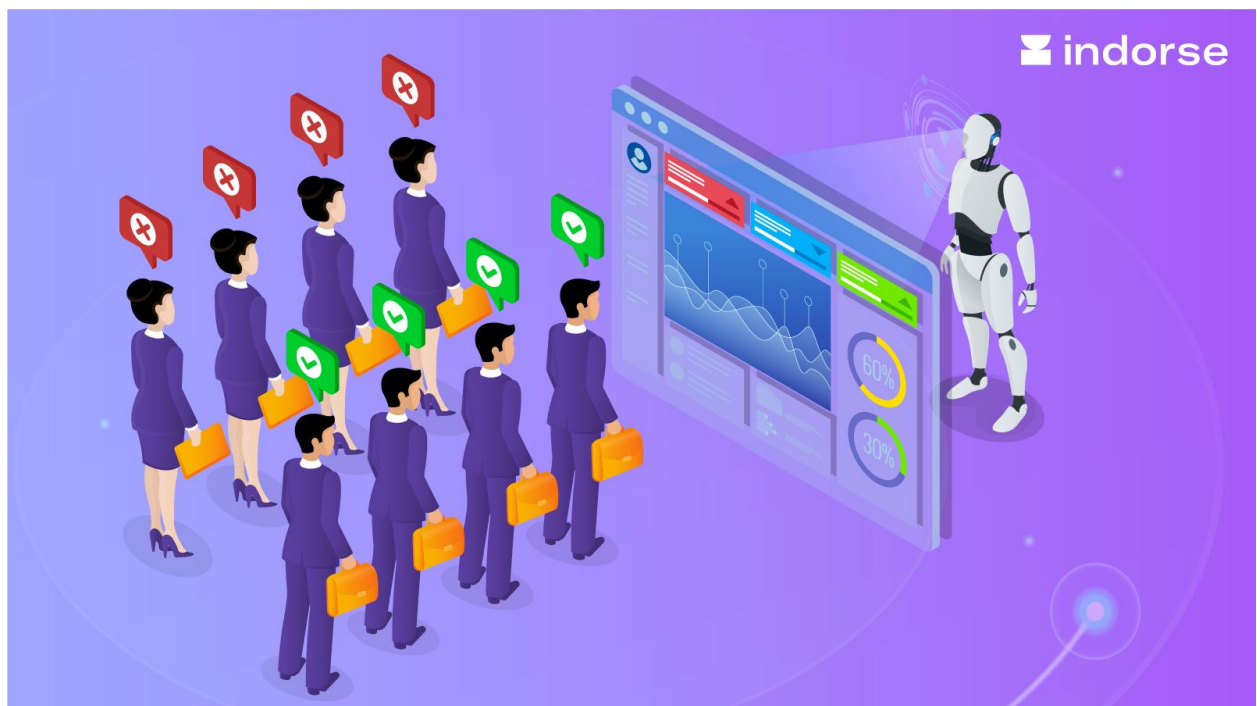


Figure 9: Pros and Cons of AI in Recruitment⁴⁹

Some of these challenges are:

1. **AI demands a large amount of data**

To teach AI to learn accurate human intelligence, a lot of data is required. For example, AI has to go through millions of resumes to learn the correct algorithm for screening out the best resumes. AI can only train to give a result as precise as a human recruiter and the exact way a recruiter expects it to deliver is if it analyses a large number of data.

2. **AI may still pick up patterns that are to be avoided including human biases**

The data that is delivered to AI is used to train it. By ignoring information like a candidate's age, gender, and ethnicity, AI for recruiting claims to decrease unconscious bias. But at the end of the day, AI learns from the patterns of those data

and if the pattern itself is corrupted or biased, it cannot identify those human biases. The decision even though is neutral can still be biased. Campolo et al. (2017) take a critical approach to analyze AI's social and economic impact, explaining that ML programs use current data points to make decisions, which could result in the transmission and entrenchment of cultural and gender prejudice⁵⁰.

3. The Question of Validity and Reliability Remains Unanswered

AI integrated into Applicant Tracking Systems uses certain filters based on specific keywords for specific job positions. Candidates who understand how an Application Tracking System works can easily insert keywords in their resumes to fool the system into thinking they are a good fit for the role. At the same time, recruiters may miss out on talented applicants who are experts in their industries but are unfamiliar with ATS technologies and cannot format their resumes with the correct keywords.

Technologies are supposed to aid humans, not replace them. If the implementation of technology in recruitment removes the human from HR, the process might become more efficient but it might never become as authentic as a human decision. For Human Resource Management to work, the recruiters must display a sense of empathy, intuitiveness, sensitivity, and emotional intelligence. Moreover, not all applicants like to be interviewed by a machine.

AI must be used in such a way that it does not diminish the human interactions necessary during the initial stages of the hiring process. AI should be used to enhance the scope of human work, not dull it.

The Advantages of using Artificial Intelligence in Recruitment

In an era when labor markets are shifting, Human Resource Management is the most precious asset in a firm. With the advancement of technology, comes the great task of recruiting the best talents in a pool of competitive candidates. The recruitment process includes not just the hiring process but also the function of attracting, obtaining, and maintaining those candidates. And so, the job of a recruiting manager becomes so much more important especially in terms of integrating that technology in Human Resources in innovative ways. Artificial Intelligence is the newest technology that recruiters are leveraging in their recruitment systems.

By removing the repetitive, time-consuming tasks from your team's hands like interview scheduling, resume screening, automation of relevant information, etc, AI allows you to focus

on the more important tasks. According to a Bian & Co. study, 87% of HR executives agree that digital technology would transform the way fundamental HR functions ⁵¹. You can attract the appropriate people, ask the correct questions, and make wiser decisions about who will best fit your vacant positions by incorporating AI into every stage of the recruitment and hiring process. There are several advantages of using AI and AI-powered tools in the recruitment process.

1. *Improvement in the quality of hires*

The early applicants you attract with your job advertisement determine the quality of your candidates. AI can help you improve the quality of your applications in a variety of ways by incorporating it into your recruitment process. According to studies, candidates were satisfied with websites that were tailored to specific job openings than with those that weren't ⁵². The main reason for this is that applicants can opt out of the selection process if they do not feel they are a good fit for the position or organization. AI can assist in creating concise, detailed job descriptions that clarify exactly what one is searching for in applicants. With programmatic job advertising, which is targeted to job seekers based on statistics and patterns, AI may be used to find just the appropriate people online. Companies can also use AI to create games that help potential employees comprehend what the new office environment might be like, what the company expects of them, and analyze how well their attitude or ideas, or skillsets match with those of the company. The Puzzle was recently employed by Texas A&M University for its Resident Assistant screening and employment process. The facilitators moved between teams of 5-6 kids to examine how they interacted and performed on the puzzles, with roughly 30 students participating ⁵³.

2. *Automation of Time-Consuming Manual Tasks*

Finding the right candidate for your company in a pool of millions of resumes is like finding a needle in a haystack. Automation can assist you in locating the best applicants before they are lured away by competitors. Keyword scanning systems can be used by e-recruiting to evaluate if applicants match basic job requirements, and letters can be swiftly sent to applicants informing them of their status in the screening process ⁵⁴. We have also seen that a lot of time is wasted if HR professionals are sifting through a ton of unqualified candidate resumes that can amount to up to 88% of their time ⁵⁵. Chatbots or automated message systems can help you automate these time-consuming chores. Using

chatbots and AI to filter potential prospects, your recruiters can find top talent faster among their stacks of resumes, without taking away time from employers' busy schedules.

3. *Better Candidate Experience*

Job hopefuls and applicants will feel more compelled to stay engaged with your organization if they can receive the information they need promptly and conveniently. Software like chatbots increases the efficiency of candidate experience by giving instant replies to questions and queries guiding them throughout the interview process. According to a study, applicants are more likely to apply for employment in organizations with good administrative procedures rather than those with poor administrative processes⁵⁶. AI may also produce letters to job candidates informing them if they are qualified or not for the position, as well as details with the next steps in the process⁵⁷.

4. *Hiring at a Low Cost*

Although initially incorporating AI into the recruitment process incurs additional expenditures, it results in a more successful hiring channel and hence has a favorable influence on the annual turnover of the company. The entire process of posting job applications, screening candidates, conducting interviews, and training staff is a costly enterprise. By using AI in each of the above steps, the company does not need to hire additional staff only to recruit. According to a study, e-recruitment may reduce recruiting expenditures by 95% and hiring cycles by 25%⁵⁸.

5. *Recruiting Passive Job Seekers*

Sometimes, some candidates may currently not be looking for jobs but may turn out to be the perfect fit for the company. These passive candidates are truly an asset to your organization and are difficult to attract and find. AI connected with Applicant Tracking Systems can do the manual task of sifting through social media especially recruitment platforms like LinkedIn to find the right candidates who fit the accurate requirements. Research has found that using professional social media sites such as LinkedIn was very effective in identifying and attracting qualified job applicants⁵⁹.

Implementing AI in the recruitment process can help a company in more ways than one and the potential of AI is huge concerning recruitment and business in general. There are also some challenges to initially using AI in an office environment but with proper study

and training and understanding of the capabilities of AI, it can be a huge benefit for the company and its recruitment process.

The Impact of Artificial Intelligence on Employer and Candidate

With the introduction of Artificial Intelligence in the changing scenario of the recruitment industry, the roles of employers and candidates are also changing. Artificial Intelligence and its tools have software that can streamline recruiting tasks with much ease. According to Ideal, 96 percent of top HR professionals believe AI can significantly improve talent acquisition and retention ⁶⁰. The impact of AI on Recruitment can be broadly divided into four areas with how this technology affects the roles of employer and candidate.

Experience – Both for the employer and the candidate

The HR workplace is improved for both employer and candidate experience with AI and it can be utilized for better customization and recommendations for both the staff and candidates.

Employer Experience

HR has a significant opportunity to consider the use of AI in their organizations. There is a big boom of technology and new market providers for HR managers to consider and use to assist with their cases. According to the results of a survey conducted by HR.com, approximately 80% of HR professionals believe that chatbots will be used to address employee questions in the future ⁶¹. Time-consuming operations such as sourcing and resume screening can now be automated with AI, saving recruiters a significant amount of time. In addition, using AI for blind hiring at the initial stages of the recruitment process is an excellent method to ensure that the most qualified candidates, regardless of ethnic, or social, or financial background, get offered an interview.

Candidate Experience

Job searchers' expectations are shifting, particularly in this market, when they can pretty much work anywhere they choose. They'll go with the company that is the quickest and serves them the best. According to a survey, if they receive frequent updates throughout the application process, 67% of job seekers have a strong view of the organization ⁶². Recruiter chatbots are being developed right now to provide candidates with real-time engagement by

asking questions based on job requirements and delivering feedback, updates, and next-step ideas.

AI in Recruitment Process

There are various points of contact in the recruitment process where one can take advantage of technology or AI to make things better, such as selection or assessment, or adopting a chatbot to truly engage with the candidate. Previously, candidates applied for jobs based on job ads, and a hiring manager sifted through a stack of resumes and conducted web research on the applicant. A number of these processes may be completed swiftly using artificial intelligence, allowing recruiting managers to focus on more important jobs. The greatest practical use of AI is in video and creative evaluations, which include large amounts of "unstructured data" ⁶³. The use of AI also removes unconscious human biases and creates a more diverse selection.

Both internal and external candidates can use a chatbot to ask inquiries about the hiring process. AI can also optimize and improve the applicant selection experience by permitting open-ended replies in personality tests and situational judgment exams. Video interviews may be used much earlier in the selection process thanks to AI.

In Learning and Development

In the same way as platforms like Netflix, if we consume content daily, platforms can learn about our interests and the types of content we enjoy viewing, allowing us to make personalized suggestions. A training program based on Artificial Intelligence can be flexible, meaning the modules can be changed to meet the needs of each individual. Learning cognizance also aids in the development of a broader understanding of a learner's behavior, resulting in the development of predictive capabilities. AI will revolutionize how learning data is provided and retained, resulting in enhanced alignment with business objectives. This helps both the employer and candidate in simplifying the learning process by recommending only the courses that the employee requires to develop their job skills.

People Analytics

According to Deloitte, 75% of businesses believe that adopting people analytics is "essential," yet only 8% say their company is "strong" in this area ⁶⁴. AI in people analytics and HR operations can set up a system in which new employees are given the names, locations, and contact information of existing employees so that they can quickly

communicate with them. AI can evaluate what data to gather, monitor, analyze, and administer in the future of people analytics. Oracle HCM simplifies the system by recommending compensation modifications and even customizing the panels you view depending on your role and behavior ⁶⁵. AI is now being used by companies like Spring Health to evaluate your mental health and provide the best recommendations, counselors, and doctors ⁶⁶.

However, a large majority of HR professionals believe that they are still not knowledgeable enough about AI. As a result, major structural modifications will be required in the next 5 years to execute the full potential of AI, resulting in significantly better hiring results, cheaper day-to-day costs, and a competitive advantage over rival talent teams ³⁶. If recruiters and organizations can learn to connect with a specific AI, they may train it to grasp a company's mission and culture, giving recruiters the impression that chatbots and other similar technology are extensions of their teams rather than substitutes.

The Top Management Perspectives on AI and Recruitment

Artificial intelligence is a term that describes technology that is used to perform a task that needs some level of human intelligence. In today's millennial corporate world, which is undergoing a breakthrough in work-life balance, workplace climate, and ethics, the use of new science-based technologies is essential.

In many respects, AI is still very much in its infancy when it comes to employment. AI serves a very defined objective: to provide organizations with more effective and precise predictions of a candidate's work-related activities and potential performance. We can create specialized environments for each employee using AI systems so that they have an individualized experience that enables them to use corporate platforms and provides them with data in the same way that they do in their personal lives, where it means that the system understands them and assists them in improving their work experience. Only 22% of companies say they've implemented analytics in human resources HR, and it's unclear how sophisticated the analytics are in those companies ⁶⁷. The optimal applications of Artificial intelligence to HR issues face some challenges, including the possibility that big data analyses, when applied to people-related choices, can lead to major conflicts.



Figure 10: The Impact of AI on Human Resource Decision ⁶⁸

AI systems analyze and compare the profiles of diverse job candidates to the "model" employees they've developed using the training data. AI will only increase the problem of bias in recruiting and corporate homogenization if the training dataset, statistics, or both are skewed, and algorithms are not thoroughly verified. For this reason, Amazon learned in 2018 that its hiring algorithm had the same issue. It was based on historical job performance data, which showed that white men were the top employees (indeed, white men made up the majority of the workforce), and as a result, the algorithm gave white male candidates better scores. When the gender of applicants was not taken into account, characteristics associated with women candidates, such as courses in "Women's Studies," led to their exclusion. Because there was no easy method to fix the system, the corporation soon ceased adopting it ⁶⁹.

Many lessons have been learned by IBM in its AI implementation, and interviewers shared many that could be useful to practitioners ⁷⁰. These are:

- **Don't wait until you've found the ideal solution** - People were urged to ask questions that would challenge the performance management chatbot when IBM released it, knowing that it was ready but not flawless. This allowed IBM to swiftly deploy the AI solution while also allowing the chatbot to improve.
- **AI should be used to empower people** – AI should be used in such a way that the managers feel empowered by it, where their decisions are augmented and not replaced. They should have the option to override AI recommendations if not found optimal.
- **Ensure that everything is in order** - This should include explaining to managers and employees what the recommendation was intended to achieve, what data was used to consider making the recommendation, which variables influenced the

recommendation the most, trying to identify all the variables on which the recommendations were based and the predicted accuracy of the recommendation.

- **Take into account the language and culture** - To learn and make suitable recommendations, AI requires context, which is reflected in data from various places where AI will be applied. Even if both regions speak the same language, an AI solution developed in one part of a multinational organization's operations may need to be completely retrained before being deployed in another.
- **Each app should be designed with other apps in mind** - It's a good idea to keep a holistic perspective of the end objective in mind when you build AI solutions. This will prevent, for example, a proliferation of unconnected chatbots that all answer similar questions but don't share infrastructure or data.

Finding, training, and retaining the appropriate talent has never been more critical, especially in light of the epidemic. In every industry, the ability to forecast the evolution of people's skills and map them to future business needs is what separates the winners from the losers.

How SMEs can explore Artificial Intelligence in Recruitment?

When we think about Small and Medium Enterprises (SMEs), we think about relatively small business firms that are slowly paving their way into the big leagues. For a technology as advanced as Artificial Intelligence, the company must be ready to invest a large sum of money into it. Large corporations have largely embraced some of these opportunities, but SMEs have yet to achieve the same level of success but can do so. The maturity of the company determines which technologies are necessary and how they must be adapted ⁷¹. SMEs are often dependent on their suppliers and customers and so the supply chain must be more efficient to increase the customers.

The fundamental challenge is that SMEs frequently lack knowledge and experience in deploying new technologies, and SMEs have fewer success stories than larger enterprises ⁷². "One of the biggest benefits of AI is that it helps to optimize or make a process more efficient," says IBM India/South Asia, Cloud Leader, Amit Kumar ⁷³.

AI can help SMEs

1. By changing their work environment and making it easier for them to do business,

2. Allowing them to adapt their business strategies and procedures, which could permit them to expand up and enhance production and accessibility.

We can already see that a good percentage of companies have integrated AI into their HR systems making recruitment better organized and expeditious. For example, chatbots are created to interact and communicate with customers through social media and popup windows on a company's website. By administering and grading a pre-employment skill test, AI can assist in the screening of candidates. In substantial-volume hiring fairs, big firms are employing AI to automate mundane and time-consuming processes such as collecting resumes, scheduling interviews, and updating candidates.

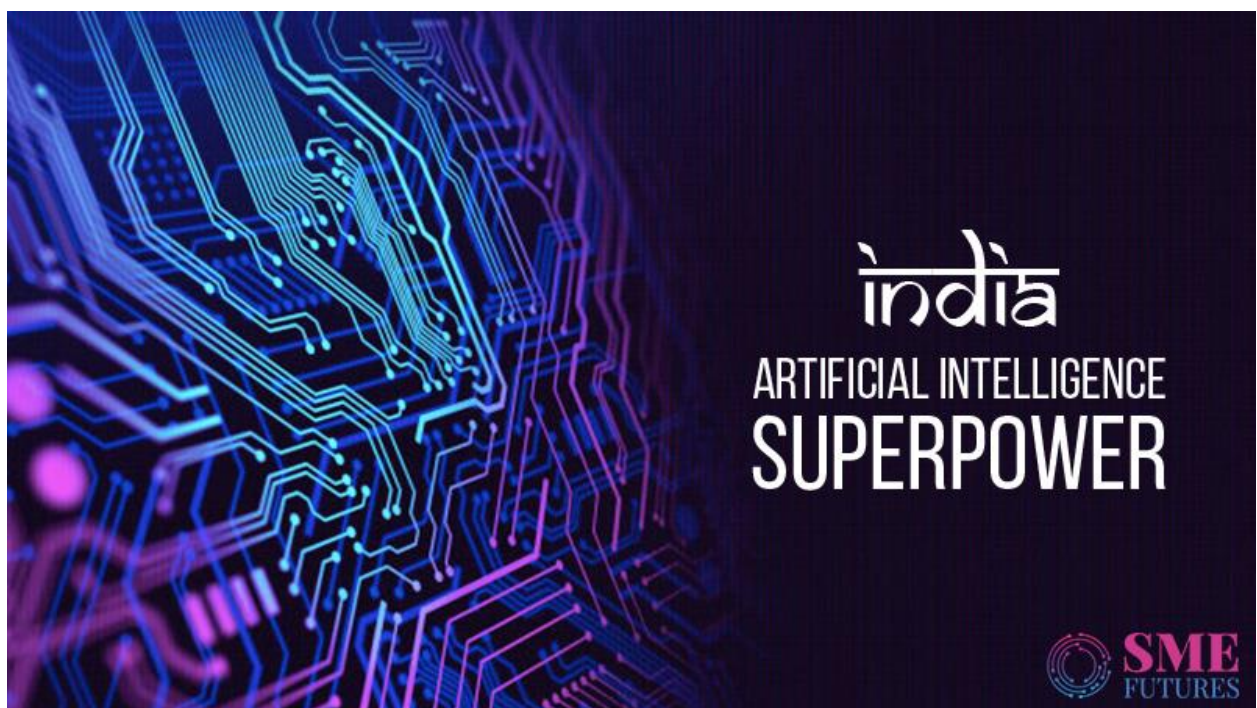


Figure 11: India as the next emerging superpower in AI ⁷⁴

There are a lot of ways that SMEs can adopt AI into their system, especially in the HR department. Here are some ways SMEs can explore AI in recruitment:

- **Sourcing**

The AI software that is integrated into the Applicant Tracking Systems (ATS) can compile vast pools of active candidates from a variety of online and offline sources, that can then screen through these prospects based on specific parameters.

- **Matching and Evaluation**

AI helps in filtering through millions of resumes every day, and for the SMEs sector that does not have a well-defined HR department, a single AI software is equally beneficial. Based on multiple data sources, machine learning algorithms can improve the shortlist from good candidates to the very best of the lot.

- **Creative Interviews**

Not just video interviews, but recorded interviews are the new method of remote selection owing to the COVID 19 situation, so AI helps in sifting from those recorded video interviews, also provides a range of creative questions that help in evaluating candidates on their soft skills.

- **Role Specific Assessments**

AI creates assessments focusing on the specific job roles so that businesses can assess candidates by asking candidates to complete specific assignments or evaluations to ensure that they are capable of tackling real-world problems.

Intelligent talent recruitment tools may benefit SMEs just as much as they can benefit large corporations. In the end, it's all about resolving speed and scaling issues. AI technologies equip us with solutions that assist businesses of all sizes.

The Challenges and Opportunities for using Artificial Intelligence in Recruitment

Processing systems are growing in productivity as a result of increased available data, more computation processing and memory capacity, and significant advances in algorithmic accuracy. With its objective of enhancing the automation and prediction capability of enterprises and businesses, or bringing natural language processing and visual identification to a transformation, AI is becoming widely available across numerous areas of business and social life. But all businesses are not on an equal level when it comes to integrating the AI transition and arranging the necessary changes in attitudes, strategies, and procedures ⁷⁵.

The challenges that SMEs have when adopting AI in Recruitment:

1. **Implementing and maintaining an AI system is still an expensive investment**

Small businesses may lack the working capital and financial resources to cover these capital requirements, especially since evaluating the cost of establishing an AI system and its advantages can be difficult ⁷⁶.

2. To apply AI solutions effectively, SMEs must create and utilize additional technologies, whereas large companies lead in all technology fields, it is difficult for SMEs

SMEs lack the advanced technologies like virtual and augmented reality and robotics that are essential for AI systems to interface with the real-world environment or the heavy technologies like 5G and high-speed internet infrastructure for better digital connectivity.

3. Wider adoption of AI will necessitate expenditures in integrating the technology into company operations and skillsets

Adaptation of an AI-enhanced working environment requires staff retraining to equip employees with the necessary skills for training complex algorithms, machine learning, AI applications, and deciphering outcomes.

4. The AI transition may not provide immediate benefits and efficiency increases, resulting in sunk costs for SMEs before they can fulfill their growth potential

According to Gartner a technology consulting firm, most powerful AI technologies will take at least two years to become common place ⁷⁷.

According to a McKinsey Global Institute study on AI, more than 30% of Southeast Asia's largest corporations cited terms like "machine learning" and "AI" in their most recent annual reports, up from only 6% in 2011, indicating that AI is becoming increasingly prominent in corporate plans ⁷⁸. There are huge opportunities for AI adoption in Recruitment in SMEs. You can use AI for small scale business recruitment in the following areas:

- With the digitization of business, an increasing number of SMEs are turning to cloud storage to take advantage of its capabilities for data storage of resumes, interview records from the recruitment process for effective hiring, operations, and better future hires.
- Leveraging chatbot services help in reaching out to candidates who are actively looking for jobs as well as the candidates that are passively looking for jobs. These chatbots not only improve candidate experience but also saves up a lot of cost for SMEs for reaching out to candidates which would otherwise be a costly endeavor.

- AI helps in producing better job descriptions and posting job ads and open positions in places where they can be seen like social media platforms LinkedIn, Facebook, and even Instagram.
- Benefits from Software-as-a-Service (SaaS) have grown to include human resource management in addition to other business operations. These are specially targeted to SMEs to help them in their daily tasks with a ton of specific services. This helps in getting more information and insights into HR decisions.

According to a report by Vistage, 13.6% of small businesses are adopting AI into their systems ⁷⁹. So AI holds strong opportunities for SMEs to maximize recruiting results on a small business budget.

The SMEs' mindset about using technology for Recruitment

Technology has transformed recruiting, radically altering how businesses and recruiters access potential candidates, from business networking platforms and job sites to online applicant systems. Technology has made recruitment easy not just for the larger corporations but also for the small and medium enterprises (SMEs).

SME's in any country do more than only generate jobs: they're also engines of economic growth and social development. SMEs account for more than half of GDP in most OECD nations, and some global estimates put the figure as high as 70% ⁸⁰. The top three difficulties encountered by SME players in India, according to the PeopleMatters SME HR Landscape Survey 2017, are 'Managing turnover and retaining high performing people,' 'Engaging and encouraging employees to go the additional mile,' and 'Developing leaders' ⁸¹.

Even under the best of circumstances, running a small business can be difficult. However, when the odds are stacked against you in the workplace, productivity and innovation suffer. Small and Medium Enterprises (SMEs) have been under great pressure to integrate with domestic as well as global suppliers and customers in order to maintain their viability since the globalization of trade. In this situation, having the appropriate workforce at the right time is critical for meeting the rapidly changing market demands. SMEs must start harnessing the power of technology to manage their tasks especially the task of Talent Acquisition.



Figure 12: SMEs and Technology⁸²

The 4 ways in which technology has transformed recruitment in SMEs:

1. To locate suitable applicants, SMEs now have a global reach.
2. In the recruitment process, there is now an abundance of data.
3. The workforce is more flexible but less controlling.
4. Removal of unconscious biases, but can introduce specific bias.

Many Indian companies, led by Oracle, a top talent recruiter, are already embracing emerging HR technologies⁸³. "The ability to skip steps and trench technologies is an advantage with the Indian market," says Shaakun Khanna, a Senior Director for the company's Asia Pacific operations. "Indian companies are relatively young, so they can embrace technology more quickly and leap into the future," he says⁸².

People Matters conducted "The Small and Medium Enterprises HR Landscape Study 2017," which polled 135 organizations in a variety of industries, including IT, healthcare, and financial services, with employee bases ranging from fifty to five thousand, and analyzed the data which found 64% of the SMEs use technological services for recruitment⁸⁴.

To grow and maintain a business requires experienced and intelligent management. Due to budget constraints, small firms may not always be able to afford to hire and keep the best management. Larger organizations can provide significantly more appealing salaries, incentives, and stock options. Small businesses can adopt innovative uses of technological strategies on a small budget to attract the best set of candidates.

If SMEs approach digital transformation with a balanced mindset, they can gain significant rewards.

The Financial Aspects of using Artificial Intelligence in Recruitment from SMEs' perspective

In both developing as well as developed economies, small and medium-sized firms (SMEs) play a critical role. MSMEs are expanding their sphere of influence across the economy, generating a diversified range of products and services to fulfill the needs of both domestic and international markets. According to data from the Central Statistics Office (CSO), M/o Statistics & Programme Implementation, the MSME sector's contribution to GDP increased from 29.34% to 30.27% at current prices from 2014-15 to 2018-19 ⁸⁵.



Figure 13: SME Investing in Artificial Intelligence ⁸⁶

AI breakthroughs are also benefiting the growing sector of SME finance. Artificial Intelligence is destined to be the business game-changer of our time, thanks to increased

connectivity, data, and computers. According to an Accenture analysis, AI has the potential to contribute \$957 billion, or roughly 15%, to India's current gross domestic product by 2035⁸⁷. Professions and career patterns are changing, talent disparities are expanding, and businesses of all sizes are finding it more difficult to discover and keep good-fit candidates. Talent acquisition and retention in this uncharted environment will become increasingly more crucial for SMEs to compete and expand as breakthroughs in artificial intelligence (AI), accessibility, and automation continue to redefine workplaces and the quality of the work itself.

Some examples of AI-powered recruitment software are:

- Oorwin
Oorwin, a SaaS platform established in San Francisco, provides a fully integrated ATS, CRM, and HRMS platform for staffing and consulting organizations to increase productivity and growth.
- ZipRecruiter
ZipRecruiter is a small business recruiting platform that implemented a tool termed 'Candidate Calibration' in 2018 that allows users to either like or dislike different job applications so the platform's AI can locate better-fit applicants for future openings⁸⁸.
- Clustree
Cornerstone has acquired Clustree, an AI-driven platform that matches employees' skills to job specification tasks, which the vendor wants to incorporate into its product line, including the PiiQ for small businesses.

Smaller budgets provide financial and psychological barriers to installing AI systems, as the self-built CEO avoids outsourcing jobs that would otherwise rely on his or her gut instinct. The most significant problem that small firms will encounter when integrating AI into their HR processes is obtaining enough data to develop algorithms. The strengths of a small business are based on its distinct organizational culture, which is primarily reliant on natural, human contact and well-designed teams. Small organizations can choose the plug-and-play system which is based on external datasets when implementation costs are high and internal resources are limited⁸⁹.

The government has proposed a nationwide AI adoption initiative to encourage MSMEs. The Indian government has increased funding for Digital India to ₹ 3,073 crores as part of its efforts to promote research, IoT, and AI⁹⁰. The government's major initiatives, Make in India

and Startup India, are further driving this trend. Through innovation and the adoption of modern technology, smaller and handier startup companies are now becoming powerful rivals to the existing industry leaders. This indicates that AI/ML has a lot of room to expand in India. Large IT services firms are already developing AI platforms, while smaller specialty AI start-ups are focusing on specific issues, resulting in a comprehensive environment for AI to develop in India.

How SMEs are leveraging Artificial Intelligence in the current scenario for Recruitment processes?

The primary goal of AI is to obtain a competitive advantage in e-commerce by providing more fluid, customizable, and engaging solutions tailored to the interests and needs of customers. When AI is paired with human intelligence, Gartner predicts that by 2021, AI will restore 6.2 billion productivity hours and generate \$2.9 trillion in commercial value⁹¹. One of the most widespread myths is that AI technologies are only suitable for big enterprises and are therefore inaccessible to small firms and start-ups. AI for SMEs is already a possibility, thanks to the progressive evolution and value of this technology.

Natural language processing, automation, data analytics, image/face recognition, and decision making are the most common business uses of AI, with the latter incorporating improved data management and predictive capability especially in the recruitment process.

Natural Language Processing (NLP)

When it comes to improving the effectiveness of these conversations, AI advancements such as Natural Language Processing (NLP) and its capacity to improve job description classification, point to a bright future. Applications like chatbot and virtual assistants, smart document analysis, resume search, and match can now find relevant positions for job searchers and motivate them to apply when the algorithm's assessment indicates that their qualifications are a good match for a post.

Automation

SME business owners who frequently oversee the full employment process know how difficult and time-consuming it is to accurately and quickly review hundreds of applications. AI will be able to supplement resumes by automating these types of analyses, providing hiring managers with an unbiased evaluation of candidates' qualifications. Job portals like

CareerBuilder can be scanned by AI to assist you to find the appropriate candidate for your position. For example, a tool like Ideal employs artificial intelligence (AI) that has been trained to work on past employment decisions made by other businesses ⁹².

Image/Face Recognition

The most intriguing recruitment feature is facial recognition technology, which uses facial analysis in the hiring process. Before they have a shot at employment, potential employees will be examined by employers by their faces. This sophisticated program easily detects all of the facial expressions, vocal tone shifts, word choice anomalies, verbal and non-verbal signals, and so on. Face recognition using machine learning is common nowadays, notably in automated interview systems like IDVerity, Montage, and HireVue.

Data Analysis

According to the Corporate Research Forum, specialized data analytics teams are used by 69% of companies with 10,000 or more employees ⁹³. Data analytics may play a big role in determining which recruiting software is appropriate for your company. Using data in recruiting allows companies to assess all of a candidate's qualifications. These data sets can be used by recruiters to guarantee that they hire someone who will flourish in the role and contribute to the company's long-term success.

Decision Making

The true value of data is when it assists decision-makers in making better decisions. Companies will hire more valuable people with long-term potential and extract more value from their data if making these correct decisions becomes standard. While filtering through enormous data and modifying their algorithms, AI systems are smart enough to make statistical predictions, which involves inferring assessment and analysis of already gathered information. The primary distinction between AI and traditional predictive modeling is that AI allows for a large reduction in prediction price and makes data-driven decision-making easier in the business setting ⁹⁴.

SMEs should feel like they have established a working commercial organization that runs with or without them, but instead, it might feel like a job, if the limited staff always remains busy with numerous tasks. When one is running a business on their own, it is challenging to find and hire suitable individuals for the enterprises, one needs time to sort through the coming resumes, and that is where AI tools help SMEs. Small businesses are making use of

AI Recruitment tools like Vervoe, ZipRecruiter, BambooHR, SmartRecruiters, Breezy, etc. to optimize the step of the recruitment and the hiring process.

Which sectors of SMEs are using Artificial Intelligence in the recruitment process?

Recognizing the impact of Industry 4.0 on business, countries all over the world are becoming more aware of the potential economic and social benefits of creating and implementing AI. Not to be left behind, India is fully determined to give AI a boost and developing it as a means of doing business that can be used to help the country's economy.



*Figure 14: AI/ML for Small Businesses*⁹⁵

Retail, transportation and logistics, tourism, automotive and assembly, and consumer packaged products are among the industries where AI might make a significant contribution to value creation, according to the McKinsey Global Institute⁹⁶. AI is now being used by SMEs in a variety of domains and roles like business operations, customer engagement, talent management, and hiring, and financial reporting. What does AI do in the recruitment process for SMEs?

An HR department is having trouble keeping up with its workload and finding qualified candidates for senior positions. To increase the efficiency of its procedures, it begins by scheduling interviews with prospects using an AI-powered assistant and then uses an intelligent application to automatically locate and rank candidates based on their qualifications and skills.

Some SME sectors that have AI-powered software for recruitment and their uses:

Table 2: SME sectors and uses of AI in Recruitment

SME sectors	Use of AI in Recruitment
1. The retail industry	Machine Learning for matching resumes to job descriptions, Data Analytics for seeing patterns in the hiring process.
2. Services in Marketing and Advertisements	Customized job ads, Prediction Systems through machine learning (NLP), using big data for social media posts, improved candidate experience with augmented reality.
3. Services in the healthcare department	Smart applications and IoT devices for a better connection with the candidates and employees, using data analysis from medical records.
4. Agriculture	Image/Face Recognition, Predictive Data Analysis
5. Logistics and transportation	Cognitive Ability Tests and Skill Tests for understanding candidates' ability of autonomous vehicles.
6. Services in the fields of Professional, Scientific, and Technological Expertise	Software Skill Tests, Coding Tests, Programming Tests.
7. Food and Accommodation	AI-powered chatbots for better candidate experience, Machine Learning Technology for brand image.
8. Wholesale Services	Automation and data analytics

According to Future Workplace research, 90% of HR executives are concerned that they would not be able to respond to AI's rapid adoption ⁹⁷. But, SMEs that embrace artificial intelligence soon will be able to reap the benefits of a variety of operational competencies and gain a competitive advantage. For SMEs, using AI will be critical, but owners will need to be future-focused and ready to tap into cutting-edge technology.

Current application of AI Assessment Tools in Recruitment

There are a lot of steps involved in the recruitment process. A pre-employment assessment is one of the ways that help in filtering out the great candidates from the good ones. These tests are also a good predictor of what the candidate has to offer in an office environment and their potential job performance. There is no one-size-fits-all evaluation instrument that can be employed to measure all candidates. How businesses conduct recruitment drives to analyze prospects during the hiring process has changed in the last decade.

An AI Assessment Tool is an AI-driven application that helps in the selection of suitable candidates for the job and thus helps in the improvement of the quality of the hiring process. There are tons of AI assessment tools in the market these days that depend on the objectives of the organization, the type of vendors that provide these, and the different types of tests that they offer.

Because they have been demonstrated to be both accurate and reliable, AI-based assessments produce the best results in recruitment. AI aids in providing a business with all of the information needed to identify the best applicants. Because evaluation is quantifiable and consistent, assessments can provide a clear, simple suggestion without needing any effort from the recruiter, and they allow for easy and fair analysis of prospects.

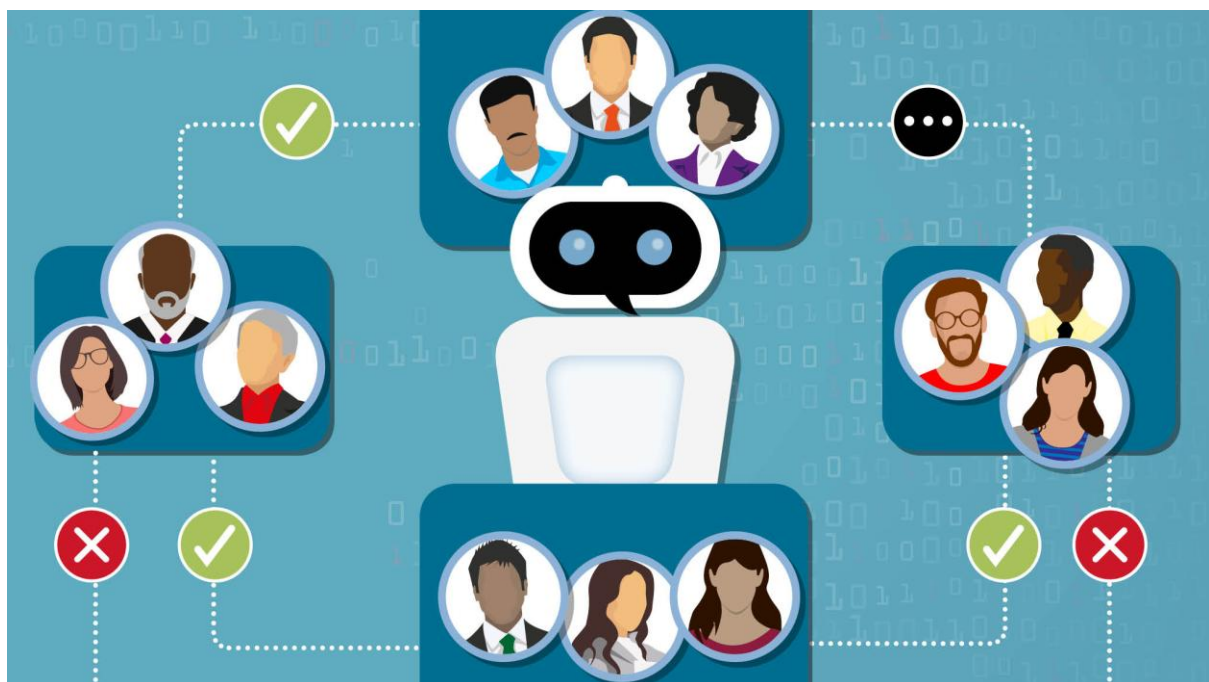


Figure 15: How Artificial Intelligence helps companies recruit talented staff⁹⁸

The category AI-assessment tools are divided into based on their use are:

- *Skills and Knowledge tools* – Recruiters can use these tools to design role-specific tests that help in guaranteeing that the candidates have the required knowledge and skills for the job position. For Example, Python test for coding roles ⁹⁹.
- *Intrinsic Aptitude* – Soft skills like empathy, body language, attitude as well as reasoning and logic are the current requirements for a successful candidate hire because strong aptitude means better work performance. Aptitude tests help in assessing these soft skills.
- *Workplace Personality and Behavior* – Office scenario-based assessments can help determine how the candidates react in an office situation, what roles they best are suitable for, and if they are a good fit for the work culture of the company.

In the latest technological advancement, there have risen numerous vendors that provide AI-powered software catering to the recruitment process among other things. The most popular AI-assessment tools and their current applications are:

1. **Wade and Wendy** – While Wade is like a career advocate, Wendy is Wade's sister. She's a recruiting assistant with artificial intelligence. She examines candidate profiles and compares them to job openings to recommend the most qualified people. Wendy has been trained to assist in most of the functions and responsibilities of a recruiting manager as a team member.
2. **MyInterview** – MyInterview employs artificial intelligence (AI) and machine learning in a video interview format to decipher crucial characteristics of candidate responses, such as competence, logic, and so on. They use AI in their analytics as well.
3. **Monster 6Sense** – Monster 6Sense reads CVs automatically using its semantic search engine. It then compares them to job descriptions and assigns a score. Following that, the results are displayed in order of best match. Comparisons between candidates are much easier with side-by-side displays.
4. **Pymetrics** – Pymetrics enables businesses to screen new candidates using artificial intelligence. Your present employees complete a series of tests (which resemble video games), and an algorithm creates a persona of people who fit that job. The applicants are then put through comparable testing to evaluate if they are a good match.

5. **Pomato** - Pomato is a platform that helps recruiters evaluate and test higher-tech applicants. Pomato evaluates and validates IT applicants' CVs using AI and machine learning. It will also create a visual representation of the candidate's skills and experience that can be compared.
6. **HireVue** – HireVue combines deep machine learning with organizational psychology in the workplace. The program works by gathering thousands of attributes from a video interview with a candidate. HireVue will then transcribe the audio and record the differences in someone's voice, as well as assess the visual nuances in the response that the candidate presents, and score them appropriately.

Using AI-assessment tools for recruitment and selection, such as pre-employment assessment tests, is a good idea, but only when used in conjunction with the involvement of HR managers and recruiters. At the end of the day, candidates prefer to be hired by people, not machines.

Risks associated with AI in recruitment

AI-enabled recruitment solutions make it feasible to make the recruitment process more efficient while also speeding up the hiring process. AI has the ability to streamline or even entirely automate many common and time-consuming recruitment procedures, and it has already shown promising outcomes. When AI replaces human functions there are some potential risks that the company needs to consider before implementing it.



Figure 16: AI in recruitment field¹⁰⁰

Some risks are:

1. *Issues increasing with developing Technology*

AI tools predict which candidates are suitable for a job based solely on the contents of a CV and social media profiles using algorithms. Predicting this way is by AI tools is faster or less expensive, but does not solve the core challenge of recruitment – the necessity for credible criteria or indicators of an employee's performance in his or her role or the firm. According to Okolie et al., E-Recruitment has disadvantages such as impersonalizing the process on both sides and discriminating against individuals who do not have access to the internet in the early phases ¹⁰¹.

2. *Legal Implications of AI*

Companies may face unpleasant shocks in the form of unanticipated lawsuits and brand damage if HR teams and recruiters are unaware of how the technology works. There are a variety of laws play here, ranging from anti-discrimination legislation to data privacy regulations such as GDPR, as well as the potentially significant fines that can follow from errors in processing personal data ¹⁰².

3. *Ethical Issues*

The use of artificial intelligence (AI) has the potential to decrease ethical guidelines for fact-based selection processes. If AI uses cyber-snooping to obtain background information that aids it in making intelligence and personality assessments, there's a serious concern that employers will be infringing on people's data rights.

4. *The risk of the assumption that AI is unbiased*

We assume that machines are objective and fact-oriented by default, rather than making personal judgments, yet this is not the case. The issue is that the “facts” on which they generate their solutions are provided to robots by humans. Campolo et al. (2017) take a critical approach to analyze AI's social and economic impact, explaining that ML programs use current data points to make judgments, which could result in the transmission and entrenchment of cultural and gender-based prejudice ⁵⁰.

HR technology has advanced tremendously, yet it has frequently lost sight of the human element. Changes are required as a result of the adoption of AI in order to maximize the benefits while also limiting the risks.

Guidelines for the application of AI in recruitment

The more closely the companies fit the individual to the role's requirements, the more effective they will be. Artificial Intelligence isn't required to accomplish this, but it will assist in doing it more swiftly and efficiently. Artificial intelligence (AI) in recruitment is a revolutionary technology that enables recruiters to automate administrative processes and create insights, resulting in increased productivity and effectiveness by optimizing the recruitment process, widening the reach, finding talent, and analyzing applicants, AI recruitment tools are being used. According to SHRM, 88% of organizations in the world employ AI in some form for HR ¹⁰³. But even seasoned HR professionals can become puzzled when discussing AI-driven innovation in the hiring process.

The benefits of AI in recruitment are many:

- Saves time by streamlining the process
- A method that is focused on the candidates
- Improved reaction time
- Elimination of any potential bias
- Candidates will have a better experience

Organizations all over the world are slowly adopting AI technology in more ways than one. In recruitment, there are numerous AI recruitment tools available thereby making the hiring process more digitally advanced and more profitable.

According to Vervoe ¹⁰⁴, the 3 main applications of AI in recruitment are:

1. Sourcing
2. Screening
3. Interviewing

Despite the popular fear that machines would take over jobs, AI is supporting people. A human-oriented outlook at AI in recruitment is the way to go – one that allows recruiters to evolve, not diminish ¹⁰⁵. The correct guidelines to use AI in recruitment can allow the recruiter to make better decisions,

The primary objectives are defined by recruiters, not AI systems.

It should always be the people that should be the major decision-makers. They should come up with initial ideas and goals for the company and also make the final decision in the hiring

process. The role of AI is to simply assist and improve the decision-making process by giving new data and increasing efficiency by automation.

Interviews should be conducted by humans

In a research, it was found that 90% of candidates wanted a human to interview them and only a mere 10% were willing to be interviewed by a computer ¹⁰⁶. A candidate assesses the company as much as the company assesses them. And sometimes, it leaves a bad taste in the mouth of the candidate when they see a lack of humans during the interview process. It implies that the company thinks so little of them that they won't even waste a real person's time with them.

Custom AI systems will be the only way to get a competitive edge

Custom AI systems can be programmed to evaluate candidates in the same way that your evaluators and rating agencies would. In other words, customized AI systems mimic human activity and copy your evaluators' and raters' industry standards. They do, however, take time to set up because you must pre-feed the system with important data. Unless data is used, AI is nothing more than a black box ¹⁰⁷.

Recruitment becomes more efficient as a result of AI, but there is also more accountability

Big companies like IKEA, Unilever, McDonalds, and Facebook use algorithmic decision-making in their recruitment processes across industries and countries. Many recruiters regard technological advancements such as machine-learning algorithms as a significant time-saver, while also improving fairness, transparency, and consistency. However, there is widespread public worry and skepticism about the use of AI in hiring decisions. “There is a mismatch between the enthusiasm for algorithmic decision-making as a panacea for inefficiencies and labor shortages on the one hand and the threat of discrimination and unfairness of algorithmic decision-making on the other hand,” a recent academic review concluded ¹⁰⁸. Good data handling methods should be adopted not just for confidentiality, but also for transparency and the reputation of your company.

One can accurately estimate which candidates will be the most productive in the role—and the most interested by your company—by employing Artificial Intelligence. Recruiting the "perfect candidate" has the added benefit of increasing productivity, participation, and loyalty in the long run.

Chapter-3

Research Methodology

Chapter-3: Methodology of Research

This chapter outlines the research approach. It will offer a bird's-eye view of the research methodology. This chapter also describes the approach used to gather data, how it was accomplished, and how it was used to carry out the goals of this study.

The philosophy behind the Research study:

There are different approaches to the study: positivism, critical realism, interpretivism, postmodernism, and pragmatism. The positivism approach was the most appropriate for this study since it attempts to understand how organizations and individuals participate in the recruiting cycle and are influenced by artificial intelligence. This thesis considers the environment and other factors, such as the location of the study and the subjects questioned. Those variables can affect the outcome of this thesis.

The positivist philosophy emphasizes that only factual information obtained via measurement or survey is credible. As far as positivism is concerned, the researcher's job is restricted to data collection and the translation of the findings into an objective interpretation.

The Research Approach

There are different approaches to conduct the research study such as inductive, deductive, and abductive. The major distinction between deductive and inductive approaches is whether the research study starts with theory or data and the last approach abductive one is the combination of both.

Researchers use deductive techniques to find new knowledge, which starts with a theory based on academic literature. Once the researcher constructs a technique to explore the hypothesis using academic literature, he or she develops a research framework.

Drawing on the descriptions of the three research methodologies listed above, a deductive methodology has been chosen to best suit this research study. This is because the study is aimed at investigating the impact of artificial intelligence on recruitment. This deductive technique enabled researchers to collect early information on how AI effects recruiting and then able, through established theory, to compare and support this.

The Research Design

To conduct this research study smoothly, researcher has chosen the population which is comprised of recruitment managers from multinational IT companies in Pune city. Researcher has defined certain criteria for the population where the manager should be working into the capacity of recruitment manager secondly the company should be an MNC from IT sector in Pune. This helps him defining the scope of the research study which in this case is Pune only and also zero down the respondents who are working for IT company.

As the researcher has decided to conduct this current research study in Pune after defining the population now it's time to understand the sample population and figure out how much sample size should be appropriate considering the current research study in order to generalize the findings and results of the study to the IT companies.

The Sample Size:

In circumstances with huge populations Cochran's formula is deemed especially suited. There is more information about a sample of any given size than a larger population, hence there is a "rectification" to minimize the number given by Cochran when the entire population is relatively small.

The Cochran formula is:

$$n_0 = (Z^2 * p * q) / e^2$$

Where:

e - is the amount of accuracy sought (i.e. error margin) and

p - is the (estimated) share of the population with the relevant property,

q is 1 - p.

$$n_0 = (1.96^2 * 0.5 * (1 - 0.5)) / 0.07^2$$

$$n_0 = 196$$

Hence the minimum number of samples required to conduct this study is 196.

Though researcher has tried to collect the required sample size and end up with interviewing the 250 recruitment managers. So, for final analysis researcher has used the sample size of 250 which is justifiable since it is using more than the required sample hence more the better.

The sampling method:

Now the researcher has to actually decide in which particular way he will select the samples, for this, sampling method can give the direction. In the current research study researcher has decided to consider two stage cluster sampling, where in first stage the areas will be decided where the multinational IT companies are located and in the second stage from each cluster randomly researcher will select the recruitment managers from these respective IT companies. This kind of sampling method is also called as probabilistic sampling approach, which involves objectively collecting the data and analyzing it to get the results.

Finally, the researcher has chosen the three clusters which are namely hinjewadi, kharadi, and magarpatta IT parks. Researcher has not chosen other areas such as aundh, tatahawade, bavadhan as well as Kothrud IT parks. The reason for choosing the earlier three areas is because these area have the maximum representation of the multinational IT companies hence researcher will stick to this only.

The list of companies and interviewed respective managers count has been given below:

Sr. No.	Cluster	Name of Company	No. of Recruiting Managers
1	Hinjewadi	Company 1	25
2	Hinjewadi	Company 2	35
3	Hinjewadi	Company 3	20
4	Hinjewadi	Company 4	30
5	Hinjewadi	Company 5	10

Sr. No.	Cluster	Name of Company	No. of Recruiting Managers
1	Kharadi	Company 6	15
2	Kharadi	Company 7	10

3	Kharadi	Company 8	10
4	Kharadi	Company 9	10
5	Kharadi	Company 10	15

Sr. No.	Cluster	Name of Company	No. of Recruiting Managers
1	Magarpatta	Company 11	15
2	Magarpatta	Company 12	15
3	Magarpatta	Company 13	10
4	Magarpatta	Company 9	10
5	Magarpatta	Company 10	10

The Data Collection Process:

The core data for this thesis was gathered using a structured questionnaire designed specifically for this purpose. The interview with the above-mentioned managers was conducted to better understand the thought processes of recruitment managers regarding the use of artificial intelligence in recruitment and its various aspects. This is appropriate for the purposes of this study because the goal of this study is to investigate the underlying perceptions of managers regarding artificial intelligence in recruiting as well as their experiences with artificial intelligence.

A variety of journal articles, theses, and company reports on artificial intelligence and recruitment were used to compile the secondary data for this study. The many components have been investigated by the researcher to develop the research questionnaire that will be used in the investigation.

The pilot process is conducted by the researcher using 30 responding managers and the research instrument has used 57 questions. The research questionnaire has been tested for reliability and the reliability is good enough and no questions has been dropped due to less reliability. The reliability statistics has been given below for the same. The two questions were of demographic which is about gender and age. Hence to calculate the reliability of survey instrument only 55 items has been tested.

Reliability Statistics	
Cronbach's Alpha	N of Items
.826	55

The validity of the questionnaire has been tested using the face validity. The face validity is the extent to which a test is subjectively considered to cover the measurement idea. It relates to the transparency or pertinence of a test as participants appear to be testing.

The Ethical Approach of Study:

A respondent's confidence in the validity of a study depends on how much they trust the interviewer. According to Collis and Hussey, interviewees who can stay anonymous are more likely to divulge their identity, thought process, and ideas because their privacy would be protected. The respect of those who were interviewed is the primary reason that their names and their companies were not disclosed.

The Research Objectives

The following research objectives have been defined by the researcher for which the whole research study is being carried out, these are mentioned below:

1. To understand the recruitment managers perspective on how they perceive the usage of AI in recruitment
2. To understand the various aspects of AI in recruitment cycle
3. To understand the risk, barriers and success parameters perceived by the recruitment managers due to the presence of AI in recruitment.
4. To understand which are the aspects of candidates are being evaluated using AI from recruitment managers perspectives.
5. To identify whether the AI is helping recruitment managers to deliver quality outcome using AI in recruitment.
6. To understand whether the automation and efficiency in recruitment is getting varied based on the age groups of the responding recruitment managers.

7. To understand how traditional recruitment practices are different element related to each other.
8. To identify whether the gender-based difference is there to understand the risk associated with using AI in recruitment.

The Data Analysis

The quantitative analysis was the method used to assess the data. The study methodology was selected based on the positivist research approach, as this methodology is well suited to the study. With this study, researcher employed graphs and frequency counts to evaluate each questionnaire item. Researcher also used numerous statistical tests to test the hypothesis, including the Friedman test, Chi-square test, One-Way ANOVA, and correlation tests. The researcher has done the coding of the interview responses to achieve this result.

Chapter-4

Analysis of Data

Chapter 4: Analysis of Data

This chapter is dedicated to discuss the findings of the interviews researcher has conducted with recruitment managers, all of whom had strong opinions about the usage of AI in recruitment. The chapter will follow the findings which researcher has discovered through the data analysis. The analysis of the data is presented below:

1. Gender of Recruitment Manager

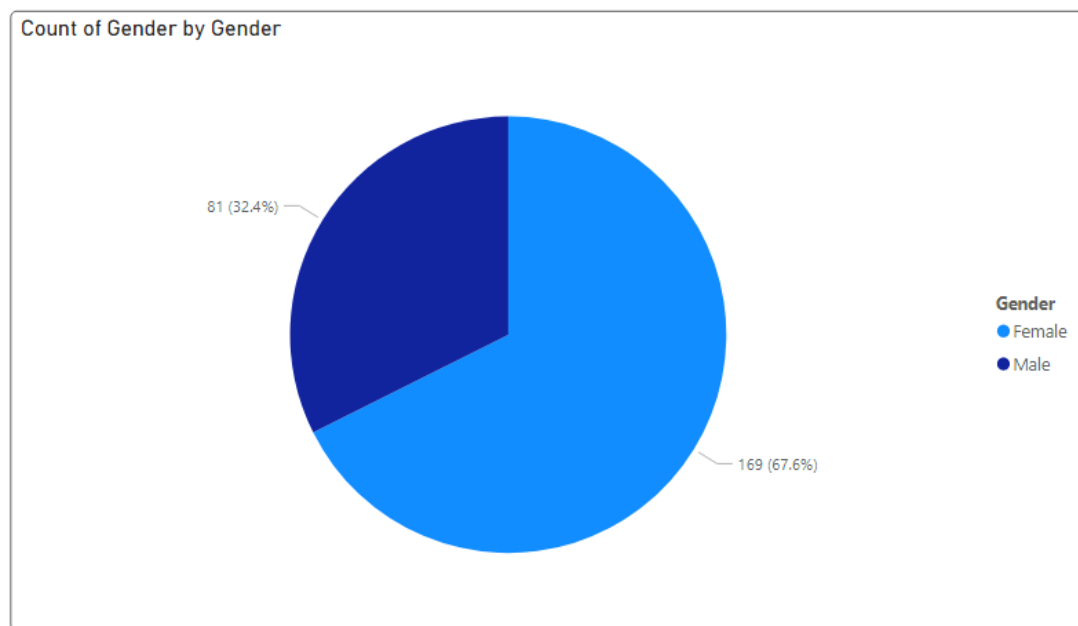


Figure 1: Gender of Recruitment Manager

Gender of Recruitment Manager	Count
Female	169
Male	81

Table 1: Gender of Recruitment Manager

Finding: From the above pie chart and frequency table we can say that female recruitment managers were more than their male counterparts. They show that the female representation is quite more in IT industry specifically in terms of recruitment function of the organization.

2. Age Group of Recruitment Manager

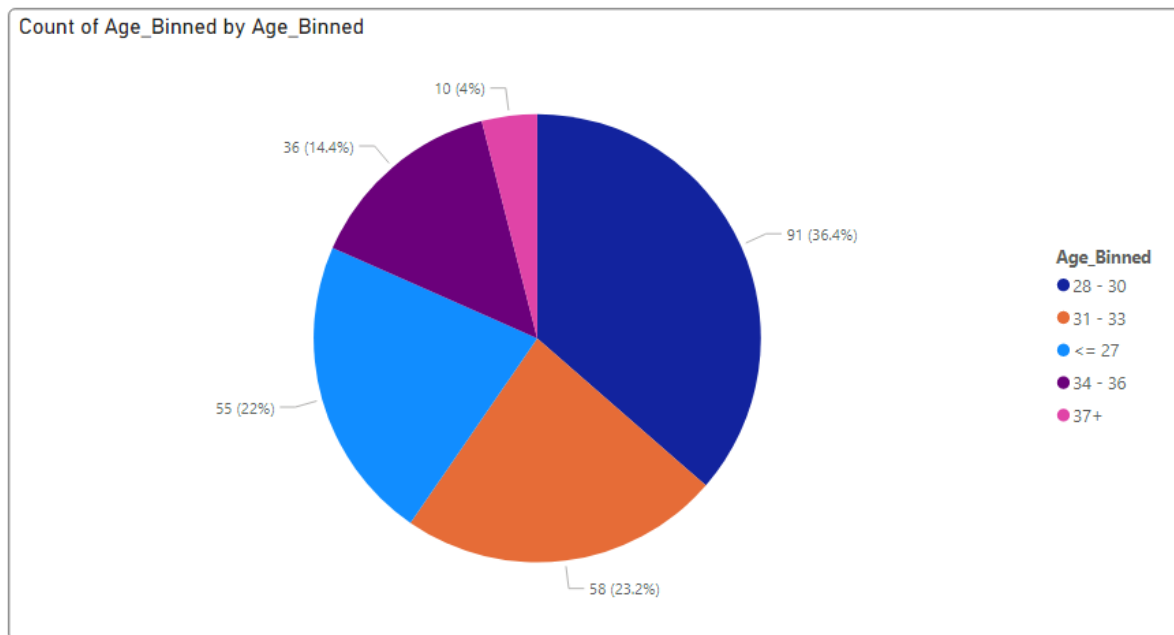


Figure 2: Age of Recruitment Manager (Binned)

Age of Recruitment Manager	Count
28 – 30	91
31 – 33	58
<= 27	55
34 – 36	36
37+	10

Table 2: Age of Recruitment Manager (Binned)

Finding: From the above pie chart and frequency table, the researchers had recorded the age of all the recruitment managers who had participated into research study. After recording the ages, the researchers have classified them into the groups which falls into five groups less than equal to 27, 28–30, 31- 33, 34-36, 37+.

The researchers found that maximum recruitment managers were belonging to age group of 28-30 and least were from 37+ age groups.

3. How you perceive AI in recruitment?

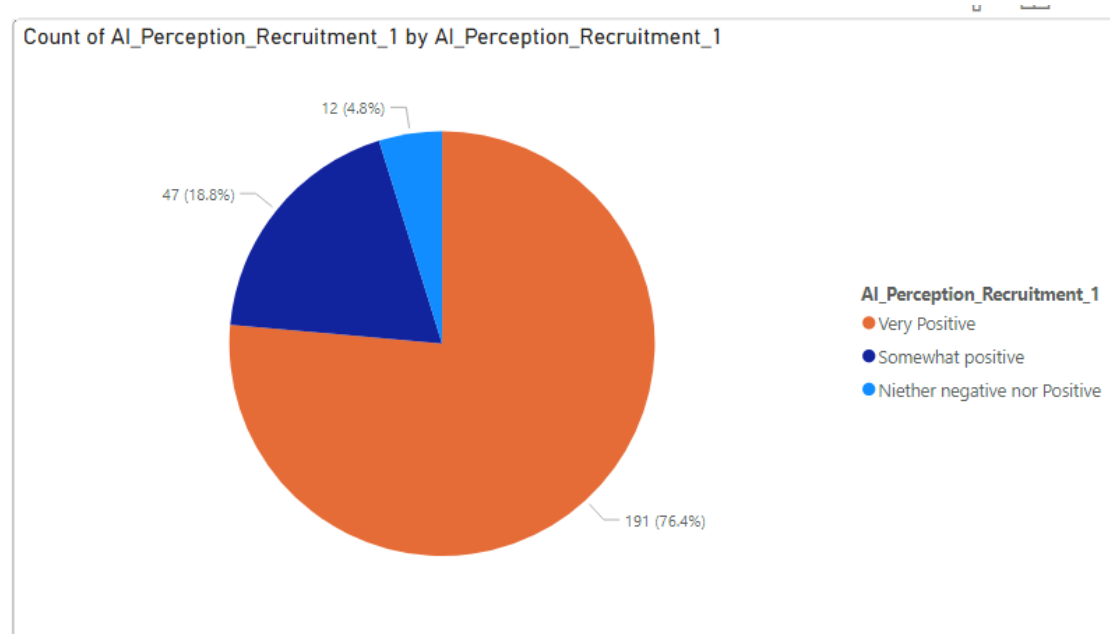


Figure 3: How you perceive AI in recruitment

How you perceive AI in recruitment	Count
Very positive	191
Somewhat Positive	47
Neither negative nor positive	12

Table 3: How you perceive AI in recruitment

Finding: From the above pie chart and frequency table we can say that when the recruitment managers were asked about what they think about using AI in recruitment and its respective outcomes, most of the recruitment managers were of opinion that AI will have very positive influence on the recruitment practice and they are pretty much sure about this.

4. Are you aware of how does AI got implemented into the recruitment procedures?

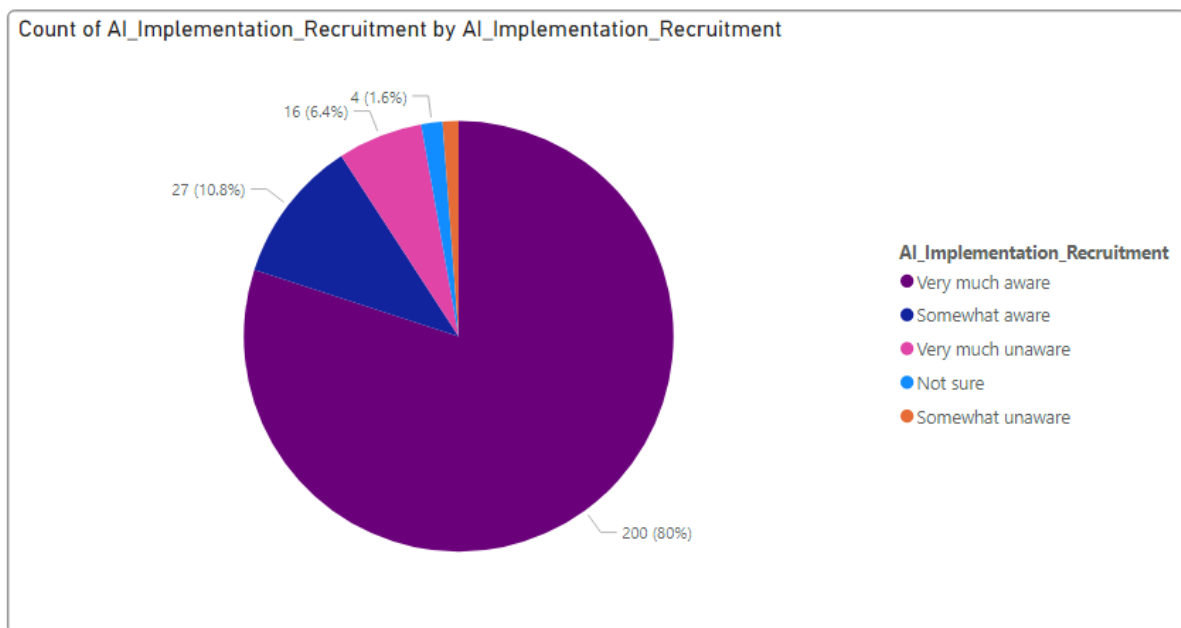


Figure 4: Are you aware of how does AI got implemented into the recruitment procedures.

Are you aware of how does AI got implemented into the recruitment procedures?	Count
Very much aware	200
Somewhat aware	27
Very much unaware	16
Not sure	4
Somewhat unaware	3

Table 4: Are you aware of how does AI got implemented into the recruitment procedures.

Finding: From the above pie chart and frequency table when recruitment managers ask about their awareness in terms of uses of AI into the different functions of recruitment such as screening, selecting, assessing, onboarding.

We got to know that almost every recruitment manager is aware of how AI will be use in different recruitment process except a few.

5. According to you in which area of recruitment your organization uses AI most

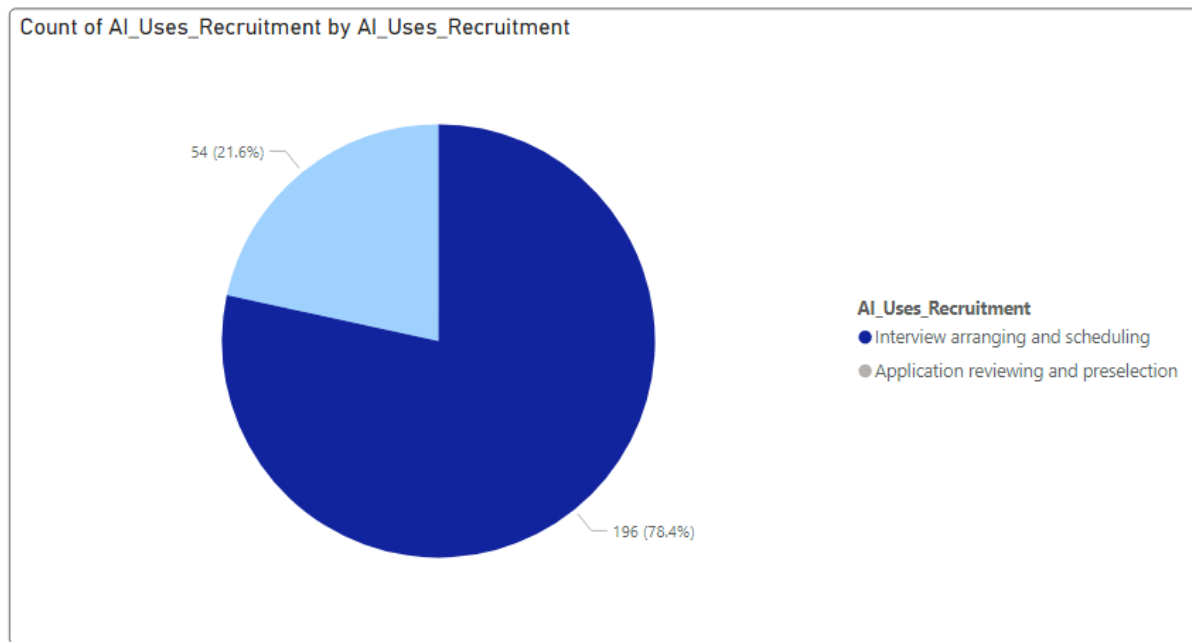


Figure 5: According to you in which area of recruitment your organization uses AI most

According to you in which area of recruitment your organization uses AI most	Count
Interview arranging and scheduling	196
Application reviewing and preselection	54

Table 5: According to you in which area of recruitment your organization uses AI most

Finding: From the above pie chart and frequency table we can say that recruitment managers of the opinion that from the different areas of recruitment AI is mostly uses in interview scheduling and application reviewing and preselection activities, while on the other side no one from the responding recruitment managers have responded the uses of AI during the interview process and communication assessments.

6. Do you believe that AI has changed the way recruitment use to happen?

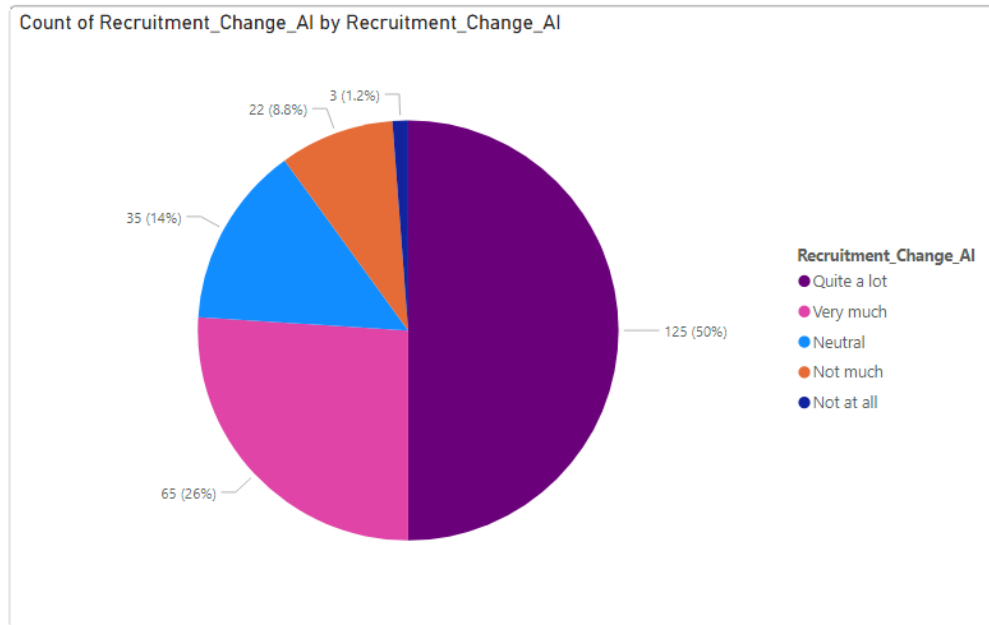


Figure 6: Do you believe that AI has changed the way recruitment use to happen?

Do you believe that AI has changed the way recruitment use to happen	Count
Quite a lot	125
Very much	65
Neutral	35
Not much	22
Not at all	3

Table 6: Do you believe that AI has changed the way recruitment use to happen

Finding: From the above pie chart and frequency table we can say that when the recruitment managers were asked, they think that today's recruitment procedures have been changed as compared to conventional recruitment process due to advent of technology such as AI, Recruitment managers were of opinion that AI will have quite a lot influence on the recruitment practice and they are pretty much sure about this.

7. Do you feel that AI based software are helping you to attract the best talent?

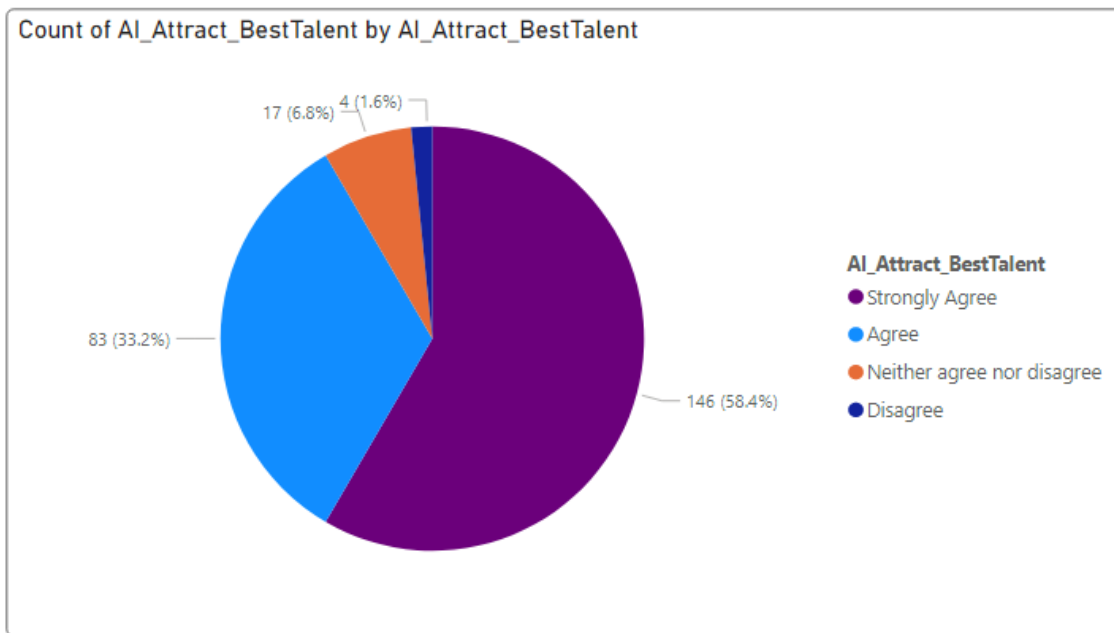


Figure 7: Do you feel that AI based software are helping you to attract the best talent

Do you feel that AI based software are helping you to attract the best talent?	Count
Strongly Agree	146
Agree	83
Neither agree nor disagree	17
Disagree	4

Table 7: Do you feel that AI based software are helping you to attract the best talent

Finding: From the above pie chart and frequency table we can say that when the recruitment managers has been posed with a question that does AI really help them in attracting the best talent into the market recruitment managers were of opinion that AI is efficiently helping them to attract the best talent available into the market.

8. Do you think AI will eliminate the manpower requirement of an organization specially in recruitment?

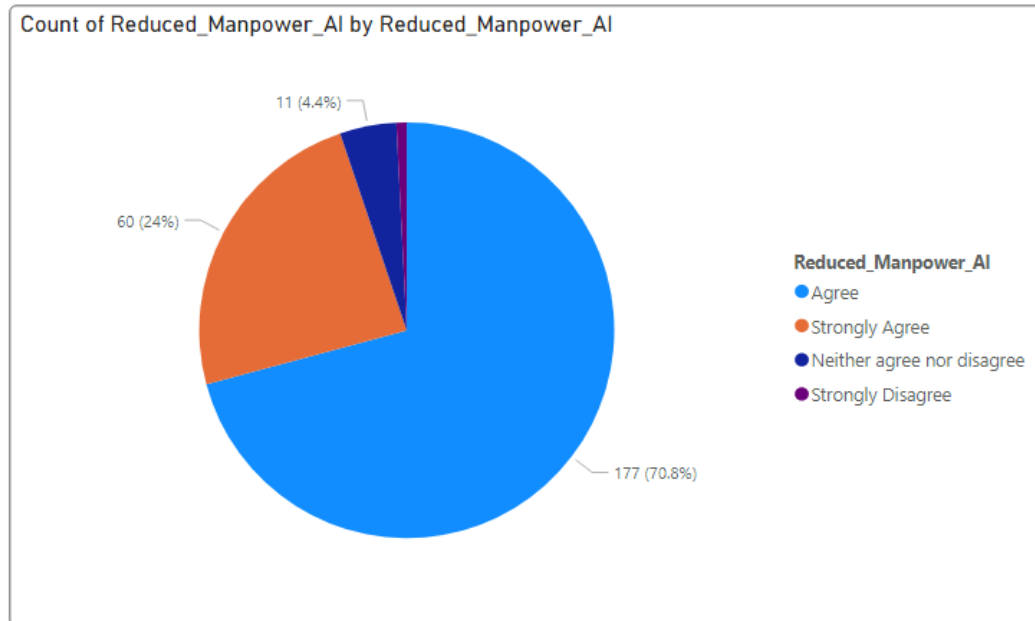


Figure 8: Do you think AI will eliminate the manpower requirement of an organization specially in recruitment

Do you think AI will eliminate the manpower requirement of an organization specially in recruitment?	Count
Strongly Agree	60
Agree	177
Neither agree nor disagree	11
Strongly Disagree	2

Table 8: Do you think AI will eliminate the manpower requirement of an organization specially in recruitment

Finding: From the above pie chart and frequency table we can say that recruitment managers were opinion that AI will make the processes faster with less manpower hence definitely AI will reduce the requirement of manpower in recruitment process up to certain extent.

9. Do you think so that traditional recruitment processes are time consuming?

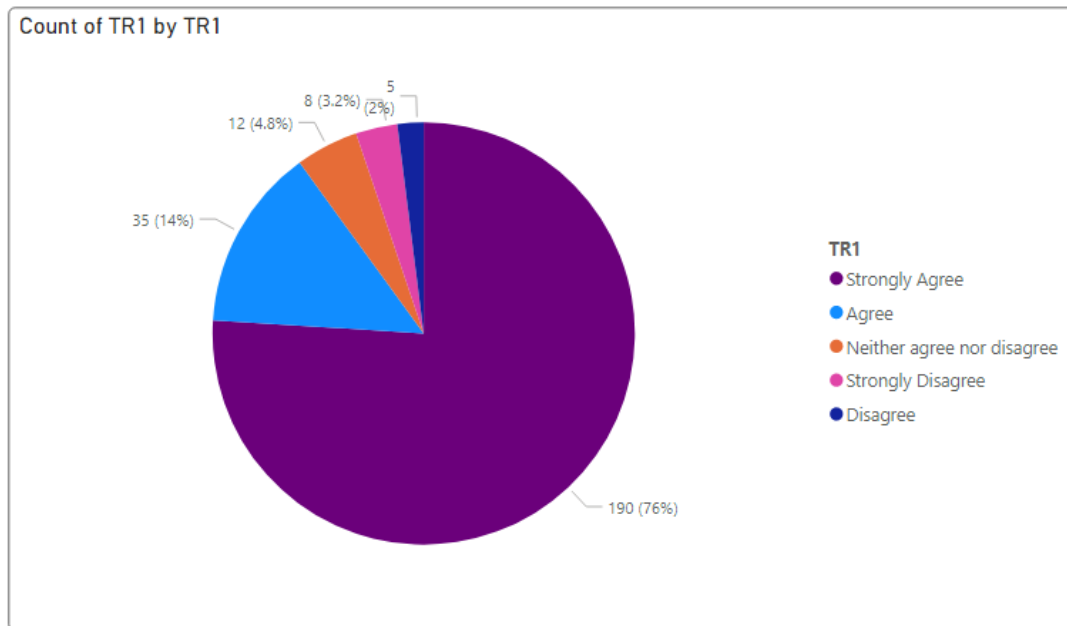


Figure 9: Do you think so that traditional recruitment processes are time consuming?

Do you think so that traditional recruitment processes are time consuming?	Count
Strongly Agree	190
Agree	35
Neither agree nor disagree	12
Strongly Disagree	8
Disagree	5

Table 9: Do you think so that traditional recruitment processes are time consuming

Finding: From the above pie chart and frequency table we can say that recruitment managers were opinion that they strongly believe that traditional recruitment procedures were time consuming.

10. Do things so that traditional recruitment processes are costly

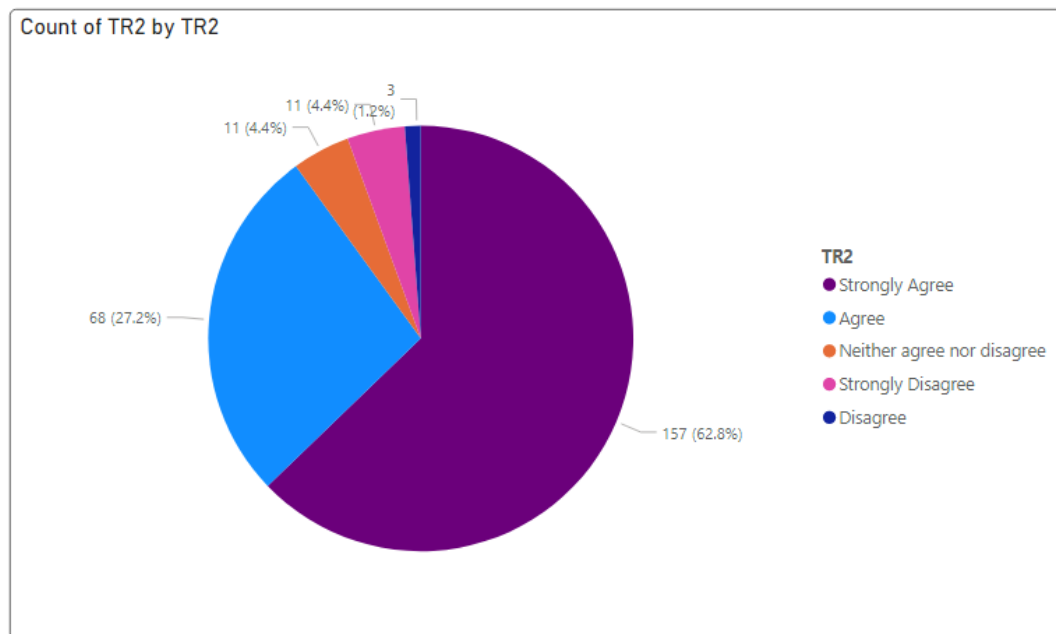


Figure 10: Do things so that traditional recruitment processes are costly

Do things so that traditional recruitment processes are costly	Count
Strongly Agree	157
Agree	68
Neither agree nor disagree	11
Strongly Disagree	11
Disagree	3

Table 10: Do things so that traditional recruitment processes are costly

Finding: From the above pie chart and frequency table we can say that recruitment managers were opinion that they strongly believe that traditional recruitment procedures incurred lot of costs/expenses due to non-automation.

11. Do you think so that traditional recruitment processes involve human biases?

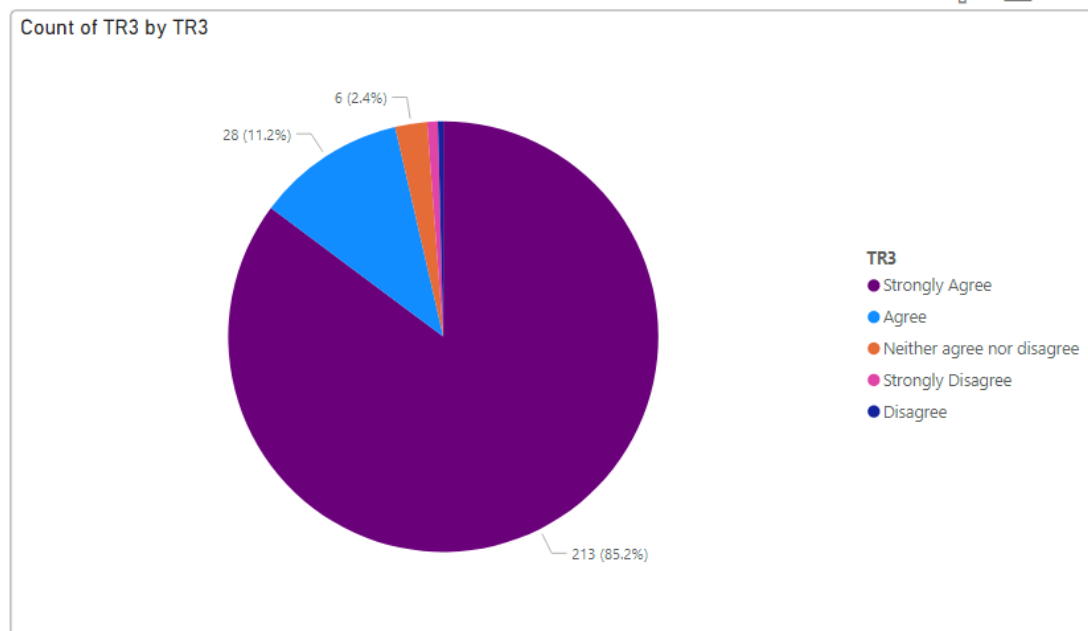


Figure 11: Do you think so that traditional recruitment processes involve human biases?

Do you think so that traditional recruitment processes involve human biases?	Count
Strongly Agree	213
Agree	28
Neither agree nor disagree	6
Strongly Disagree	2
Disagree	1

Table 11: Do you think so that traditional recruitment processes involve human biases

Finding: From the above pie chart and frequency table we can say that recruitment managers were opinion that they strongly believe that traditional recruitment procedures involve lot of humans hence there is a strong chance of biases.

12. I consider myself knowledgeable about the topic of using AI for the purposes of enhancing the recruitment function

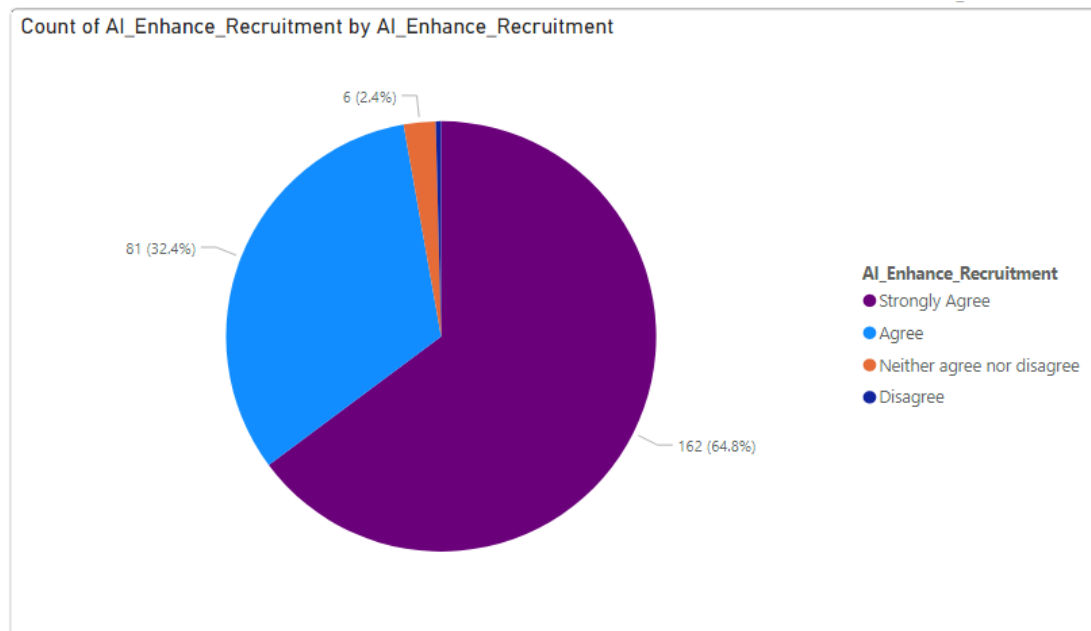


Figure 12: Count of *i* consider myself knowledgeable about the topic of using AI for the purposes of enhancing the recruitment function

I consider myself knowledgeable about the topic of using AI for the purposes of enhancing the recruitment function	Count
Strongly Agree	162
Agree	81
Neither agree nor disagree	6
Disagree	1

Table 12: *I consider myself knowledgeable about the topic of using AI for the purposes of enhancing the recruitment function*

Finding: From the above pie chart and frequency table it has been found that recruitment managers are very much knowledgeable about the utility of AI in different functions of recruitment. They understand how AI fits into the end-to-end recruitment cycle.

13. For recruitment purposes, to what degree your organization making use of AI today

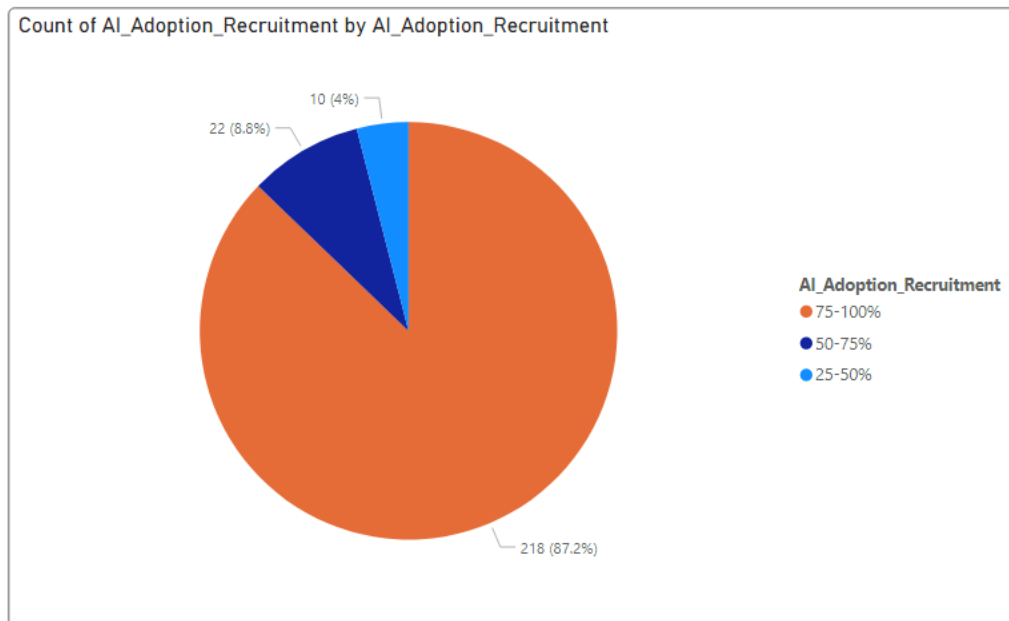


Figure 13: For recruitment purposes, to what degree in your organization making use of AI today

For recruitment purposes, to what degree in your organization making use of AI today	Count
75 – 100%	218
50 – 75%	22
25 – 50%	10

Table 13: For recruitment purposes, to what degree in your organization making use of AI today

Finding: From the above pie chart and frequency table we can say that in most of the organization AI is used in end-to-end recruitment procedure. Less than 10% of the recruitment managers are of the opinion that AI is used in recruitment at a moderate level.

14. Select the feature you would most likely to see in an AI-Powered HR application in recruitment

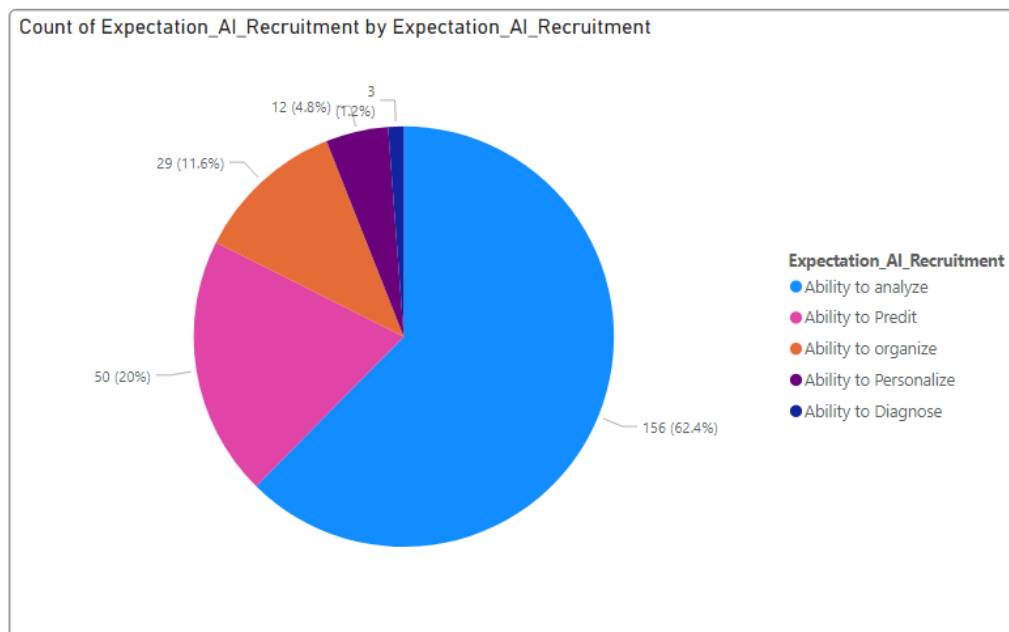


Figure 14: Features you would most likely see in an AI-Powered HR application in recruitment

Features you would most likely see in an AI-Powered HR application in recruitment	Count
Ability to analyse	156
Ability to predict	50
Ability to organize	29
Ability to Personalize	12
Ability to Diagnose	3

Table 14: Features you would most likely see in an AI-Powered HR application in recruitment

Finding: From the above pie chart and frequency table we can say that recruitment managers are of the opinion that when it comes to AI in recruitment their expectation from AI is highest in terms of its applicability in analysing the recruitment data heavily followed by predictive ability and at last ability to organise and personalised the recruitment data efficiently.

15. Do you think that using AI based algorithms to scan work samples, resumes, and other materials presented by applicants improves the recruitment and selection Process?

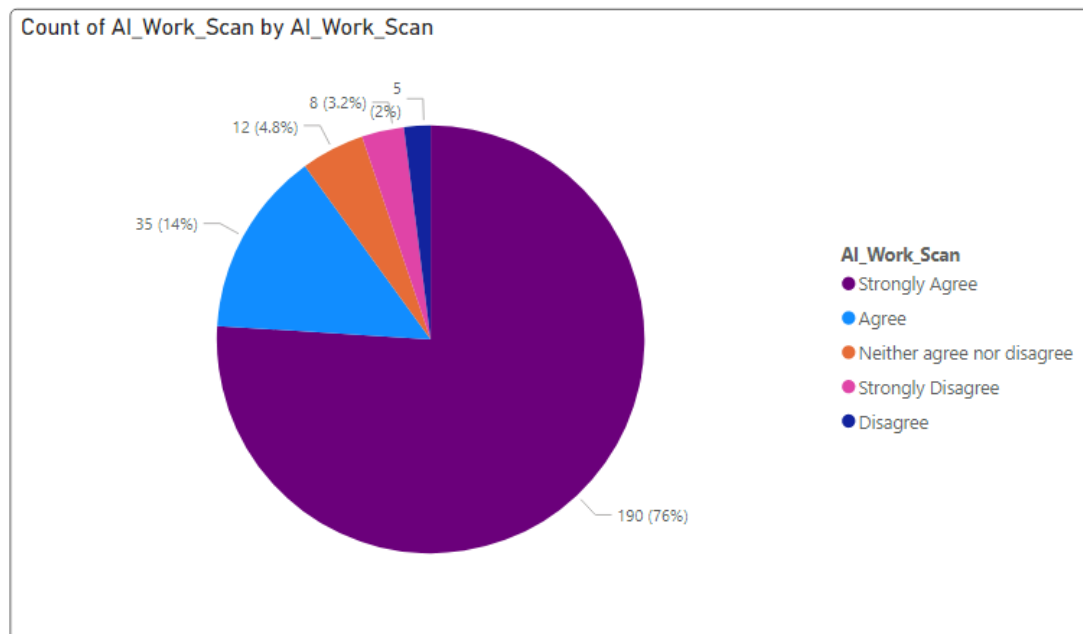


Figure 15: AI based algorithms to scan work samples, resumes, and other materials presented by applicants improves the recruitment and selection Process

AI based algorithms to scan work samples, resumes, and other materials presented by applicants improves the recruitment and selection Process	Count
Strongly Agree	190
Agree	35
Neither agree nor disagree	12
Strongly Disagree	8
Disagree	5

Table 15: AI based algorithms to scan work samples, resumes, and other materials presented by applicants improves the recruitment and selection Process

Finding: From the above pie chart and frequency table we can say that since the AI is used positively as well as attracting the best talent, we asked the manager that does AI is helpful in scanning the working portfolios, resumes/CV and majority of them come of with the answer that AI is really helpful and does the job scanning appropriately, and hence the recruitment and selection practice become more efficient.

16. Do you think that AI interfaces such as chatbots and virtual assistant will become an increasingly viable way for engaging prospective candidates to fill the open positions?

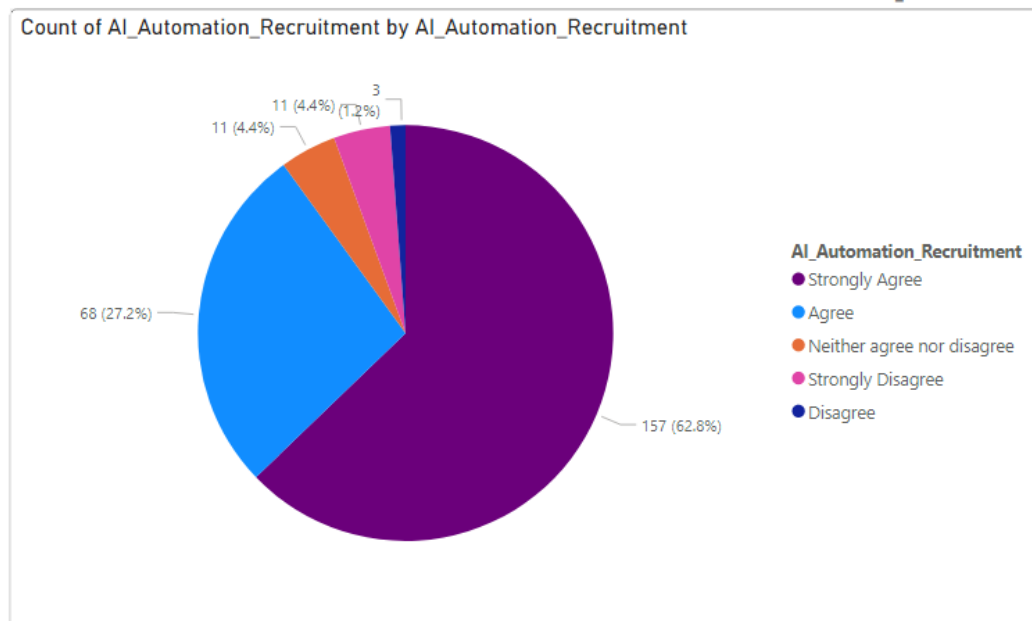


Figure 16: Do you think that AI interfaces such as chatbots and virtual assistant will become an increasingly viable way for engaging prospective candidates to fill the open positions

AI interfaces such as chatbots and virtual assistant will become an increasingly viable way for engaging prospective candidates to fill the open positions	Count
Strongly Agree	157
Agree	68
Neither agree nor disagree	11
Strongly Disagree	11
Disagree	3

Table 16: AI interfaces such as chatbots and virtual assistant will become an increasingly viable way for engaging prospective candidates to fill the open positions

Finding: From the above pie chart and frequency table, as we see that lot of time prospective candidate who wish to apply to certain role through company websites before the introduction of AI was monotonous. With the advent of AI in recruitment companies have incorporated the same on their websites such as chatbots.

17. Do you think that using AI based algorithms to scan and analyse social media posts, photos and other candidate related online materials improves the recruitment process?

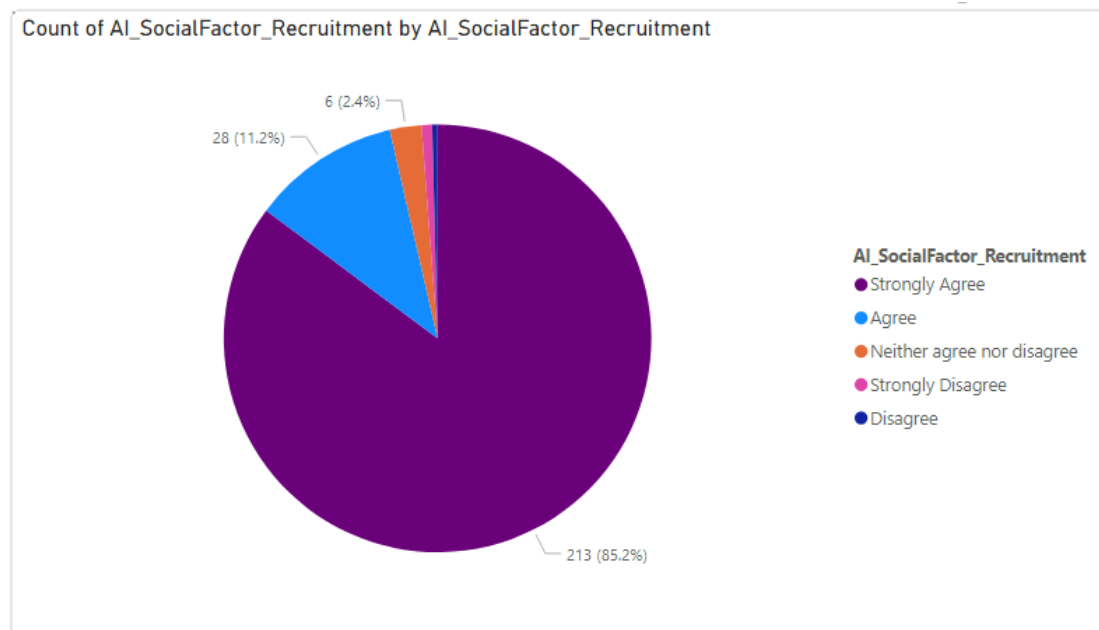


Figure 17: AI based algorithms to scan and analyse social media posts, photos and other candidate related online materials improves the recruitment process

AI based algorithms to scan and analyse social media posts, photos and other candidate related online materials improves the recruitment process	Count
Strongly Agree	213
Agree	28
Neither agree nor disagree	6
Strongly Disagree	2
Disagree	1

Table 17: AI based algorithms to scan and analyse social media posts, photos and other candidate related online materials improves the recruitment process

Finding: From the above pie chart and frequency table, as the technology is developing its uses in different area are also increasing such as in the case of recruitment. So, AI is helping recruitment manager to understand the candidates from their social personas as it helps them to validate their decisions in recruitment and selection.

18. Do you think that using AI based algorithms to analyse interviews, facial expression, word choice and other areas is a good way of assessing areas such as candidate engagement and emotion?

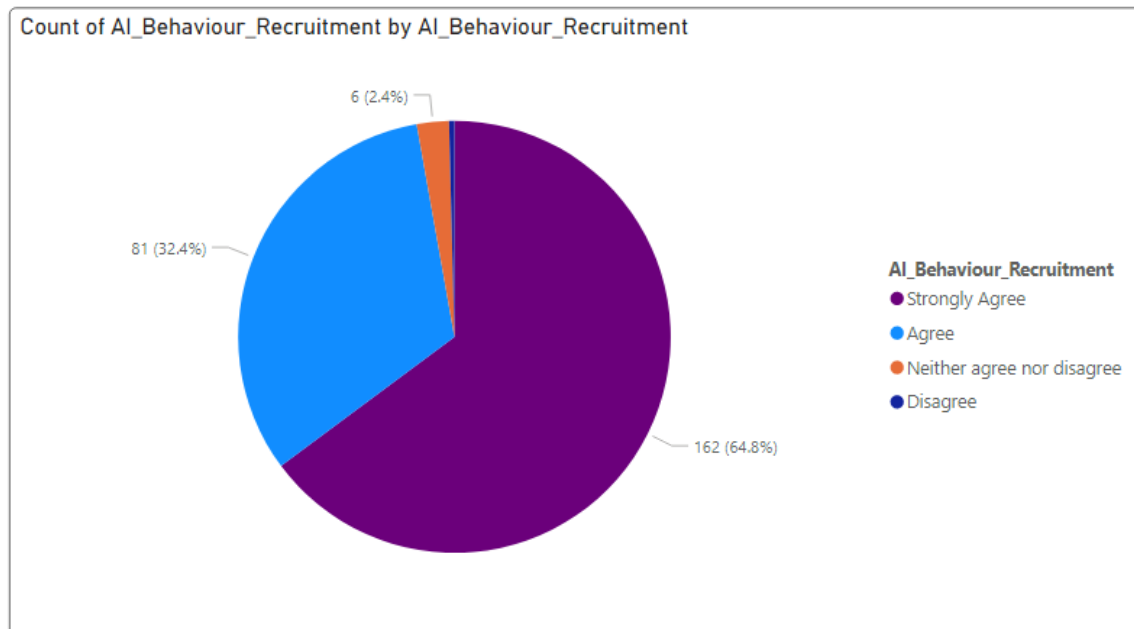


Figure 18: AI based algorithms to analyse interviews, facial expression, word choice and other areas is a good way of assessing areas such as candidate engagement and emotion

AI based algorithms to analyse interviews, facial expression, word choice and other areas is a good way of assessing areas such as candidate engagement and emotion	Count
Strongly Agree	162
Agree	81
Neither agree nor disagree	6
Disagree	1

Table 18: AI based algorithms to analyse interviews, facial expression, word choice and other areas is a good way of assessing areas such as candidate engagement and emotion

Finding: From the above pie chart and frequency table we can say that recruitment managers are of the opinion that using AI to behaviourally assess the candidate is a good option since it gives more insights about the candidates. There are various companies who are extending their services and products to the recruiting companies in order to fully use the capacity of AI in behaviourally assessing candidates.

19. The company uses Artificial Intelligence (AI) to perform operations without human intervention

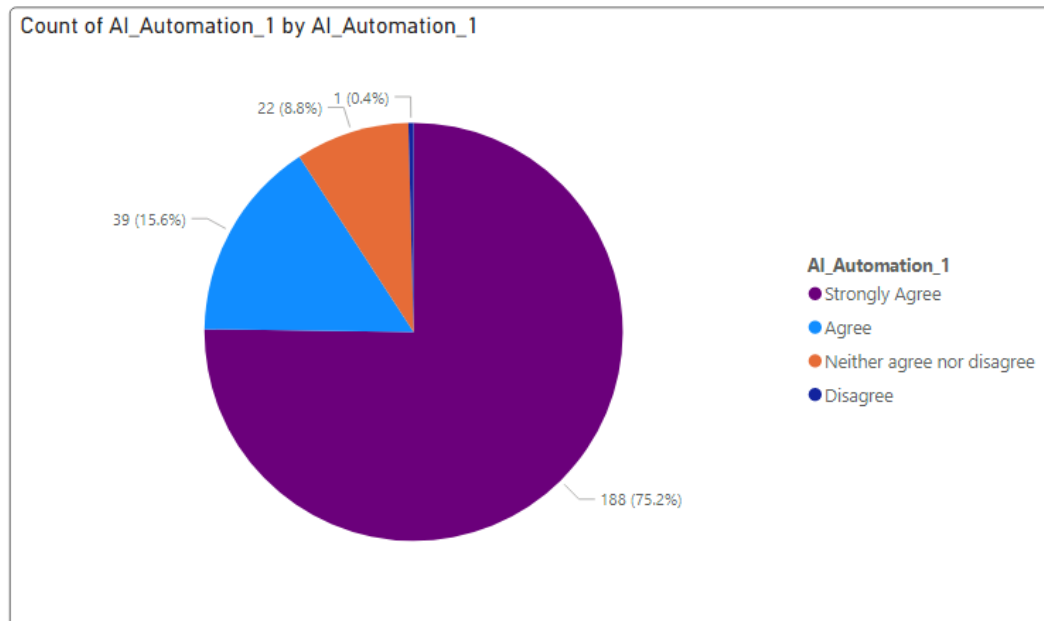


Figure 19: The company uses Artificial Intelligence (AI) to perform operations without human intervention

The company uses Artificial Intelligence (AI) to perform operations without human intervention	Count
Strongly Agree	188
Agree	39
Neither agree nor disagree	22
Disagree	1

Table 19: The company uses Artificial Intelligence (AI) to perform operations without human intervention

Finding: From the above pie chart and frequency table we can say that due to the AI manpower is reducing due to the automation and hence managers are the opinion that AI is being used in recruiting operations without much of human intervention.

20. The company uses Artificial Intelligence (AI) to ease the administrative workload from recruitment process

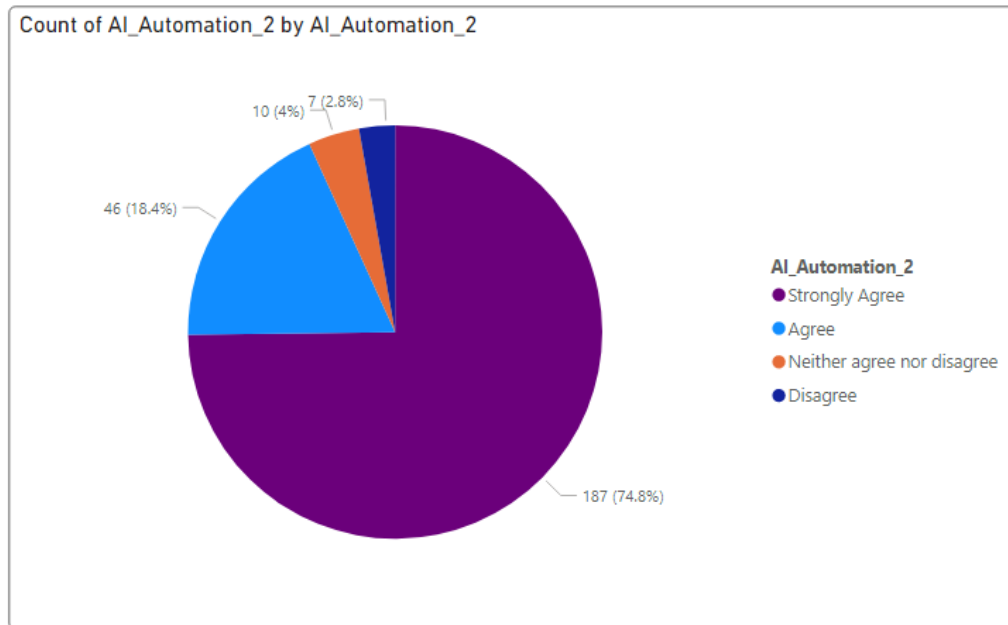


Figure 20: AI_Automation_2

AI_Automation_2	Count
Strongly Agree	187
Agree	46
Neither agree nor disagree	10
Disagree	7

Table 20: AI_Automation_2

Finding: From the above pie chart and frequency table we can say that as AI is automating the things in end-to-end recruitment procedures. Managers are of the opinion that it helps in reducing the administrative workload on the recruiters in screening, scheduling, filing and like wise other issues involved in recruitment.

21. The company is using Artificial Intelligence (AI) to replace manual tasks from recruitment process

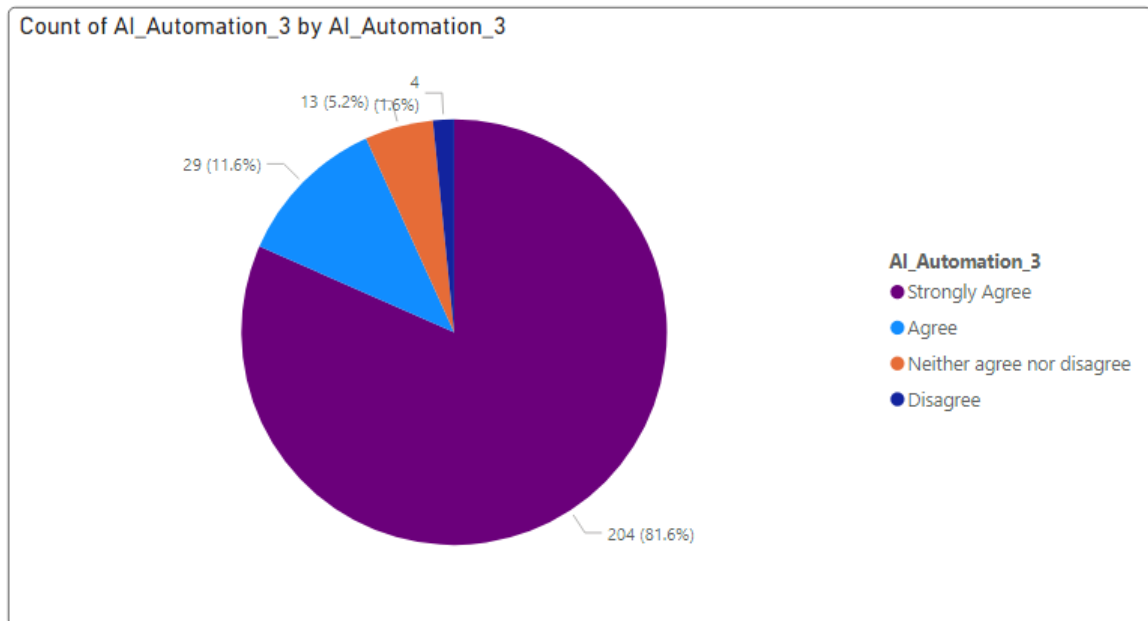


Figure 21: AI_Automation_3

AI_Automation_3	Count
Strongly Agree	204
Agree	29
Neither agree nor disagree	13
Disagree	4

Table 21: AI_Automation_3

Finding: From the above pie chart and frequency table we can say that in every function of the business most of the times employee perform the similar tasks hence if we eliminate those manual tasks with the use of AI it will save time and cost for the companies from recruitment perspective.

22. The company uses Artificial Intelligence (AI) to replace repetitive tasks from recruitment process

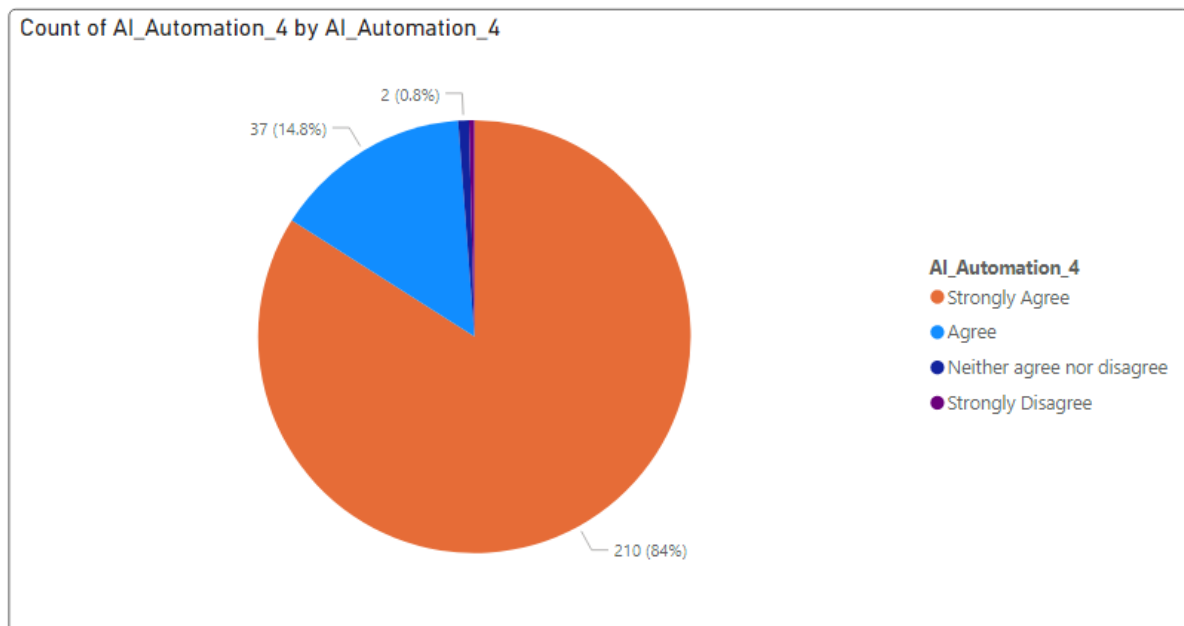


Figure 22: AI_Automation_4

AI_Automation_4	Count
Strongly Agree	210
Agree	37
Neither agree nor disagree	2
Disagree	1

Table 22: AI_Automation_4

Finding: From the above pie chart and frequency table we can say that in every function of the business most of the times employee perform the similar tasks hence if we eliminate those repetitive tasks with the use of AI it will save time and cost for the companies from recruitment perspective.

23. The company uses Artificial Intelligence (AI) to avoid errors automatically from recruitment process.

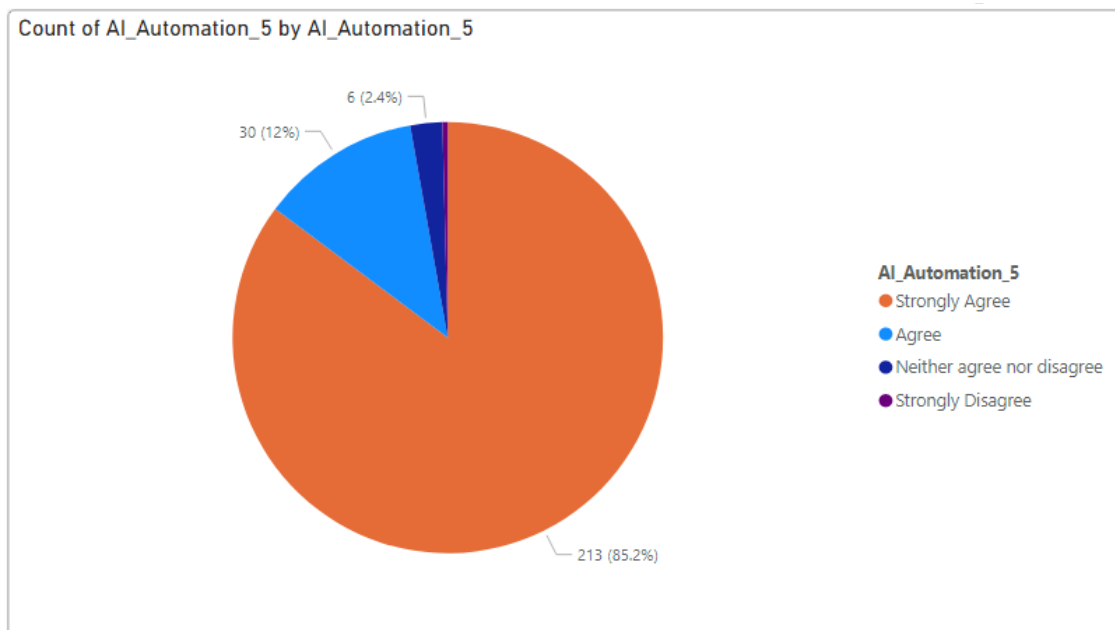


Figure 23: AI_Automation_5

AI_Automation_5	Count
Strongly Agree	213
Agree	30
Neither agree nor disagree	6
Disagree	1

Table 23: AI_Automation_5

Finding: From the above pie chart and frequency table we can say that from the end-to-end recruitment cycle point of view lot of time recruiters does the typical mistake such as not keeping candidate database update, calling to rejected candidates, not giving the call to the candidate in stipulated time and like wise such error can be ruled out with the help of AI.

24. The company will use Artificial Intelligence (AI) to shift resources efficiently (fewer inputs) required for recruitment process.

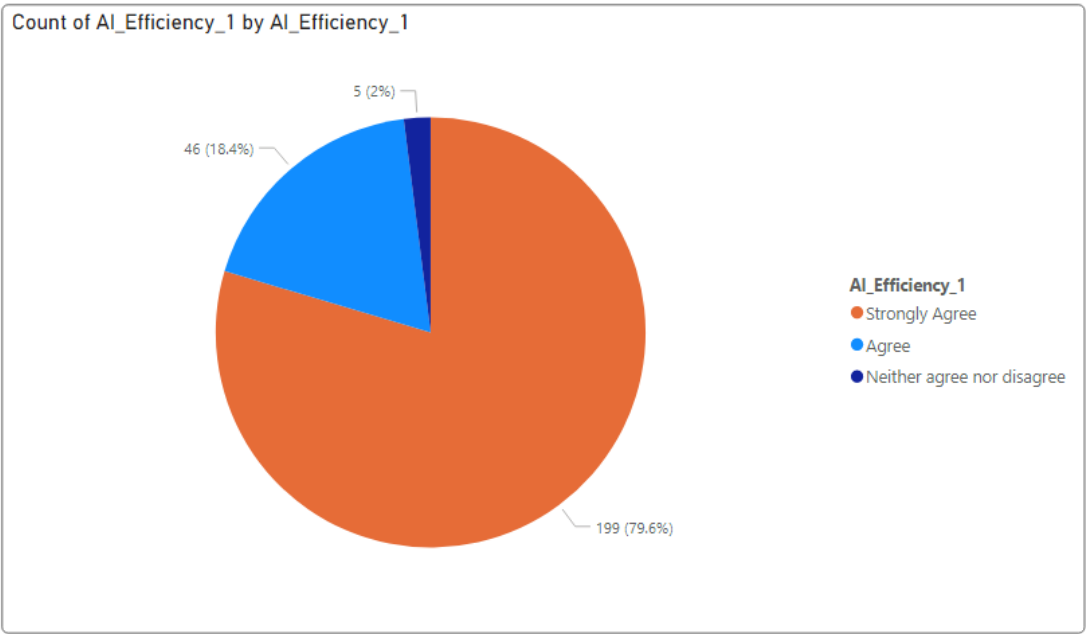


Figure 24: AI_Efficiency_1

AI_Efficiency_1	Count
Strongly Agree	199
Agree	46
Neither agree nor disagree	5

Table 24: AI_Efficiency_1

Finding: From the above pie chart and frequency table we can say that AI helps to understand the resource utilization and optimization very well because of which company can mobilize their resources within the recruitment function efficiently.

25. The company uses Artificial Intelligence (AI) to convert inputs into high quality outputs involved in recruitment.

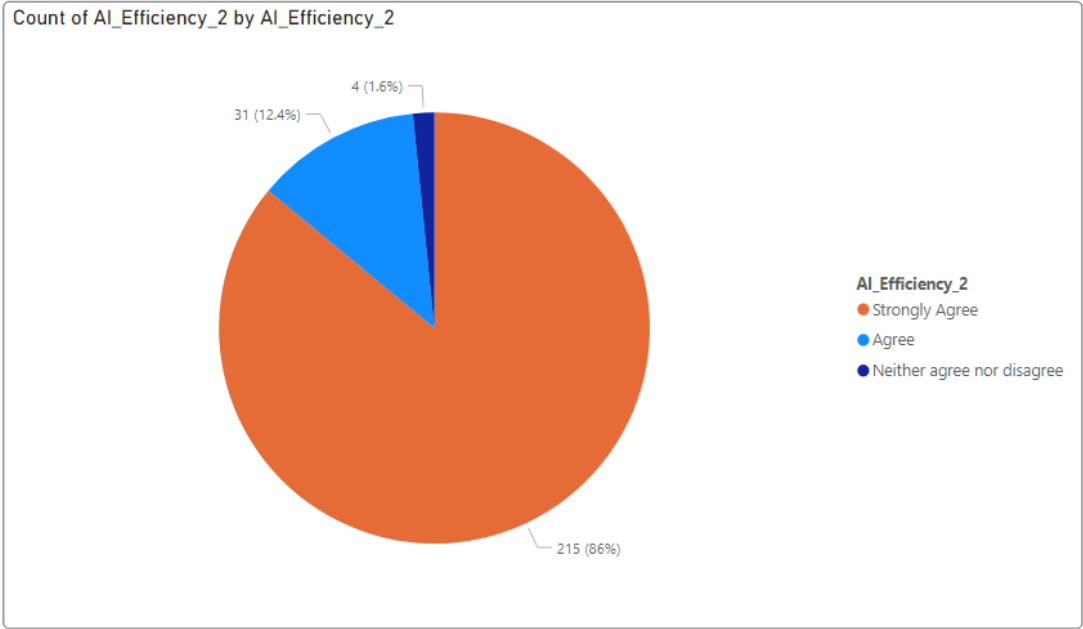


Figure 25: AI_Efficiency_2

AI_Efficiency_2	Count
Strongly Agree	215
Agree	31
Neither agree nor disagree	4

Table 25: AI_Efficiency_2

Finding: From the above pie chart and frequency table we understood that the input for recruitment function is quality candidates and recruitment managers are of the opinion that AI is helping them to achieve that quality hiring so that the outcome of recruitment procedure is quality hire with good performances and retention.

26. The company uses Artificial Intelligence (AI) in a cost-effective manner for recruitment.

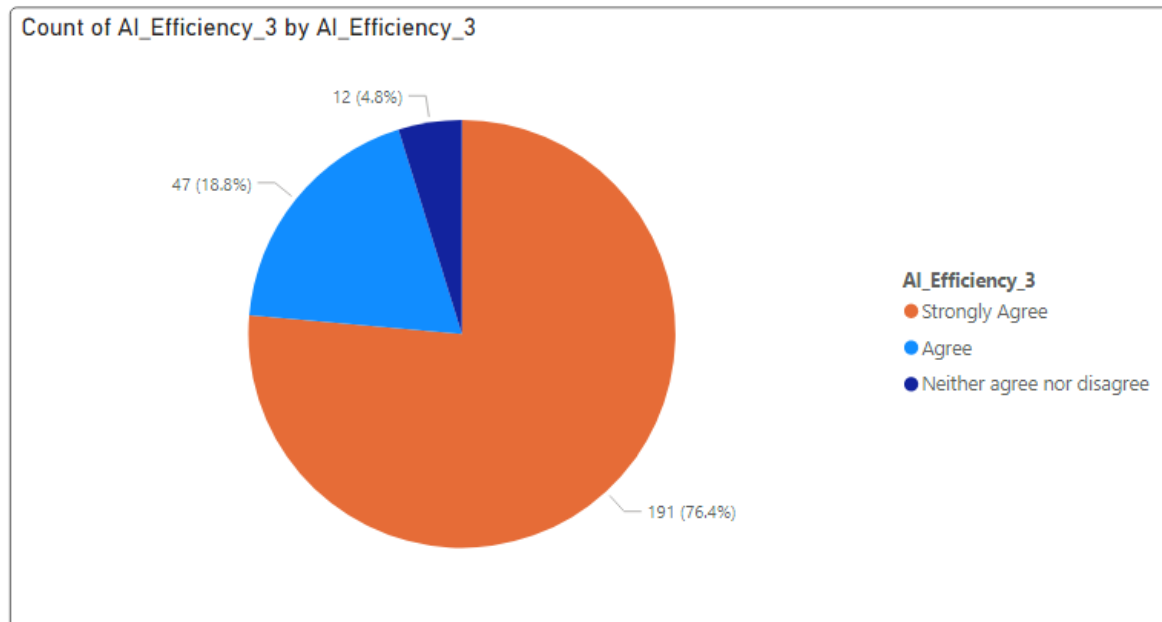


Figure 26: AI_Efficiency_3

AI_Efficiency_3	Count
Strongly Agree	191
Agree	47
Neither agree nor disagree	12

Table 26:AI_Efficiency_3

Finding: From the above pie chart and frequency table we understood that the input for recruitment function is quality candidates and recruitment managers are of the opinion that company invests in AI very diligently and majors it closely for the pros and cons and tries to optimize it from time to time in order to keep the cost at minimum level.

27. The company is using artificial intelligence (AI) to improve productivity of recruiters.

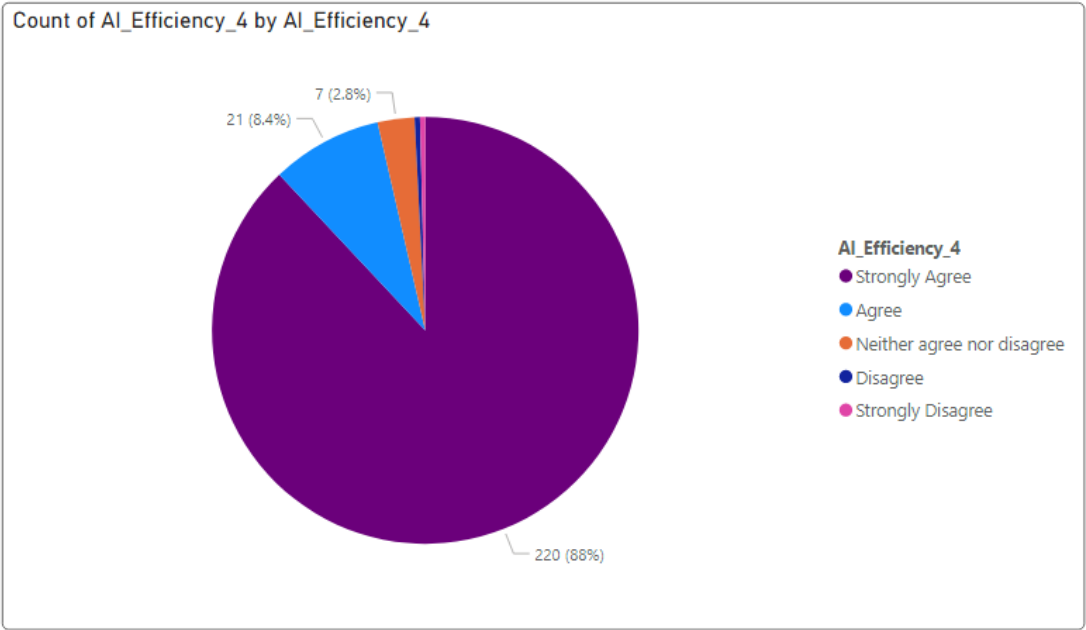


Figure 27: AI_Efficiency_4

AI_Efficiency_4	Count
Strongly Agree	220
Agree	21
Neither agree nor disagree	7
Strongly disagree	1
Disagree	1

Table 27: AI_Efficiency_4

Finding: From the above pie chart and frequency table we understood that the input for recruitment function is quality candidates and recruitment managers are of the opinion that they strongly believe that AI helps in improving the productivity of their recruiters.

28. The company uses Artificial Intelligence (AI) to speed up business processes

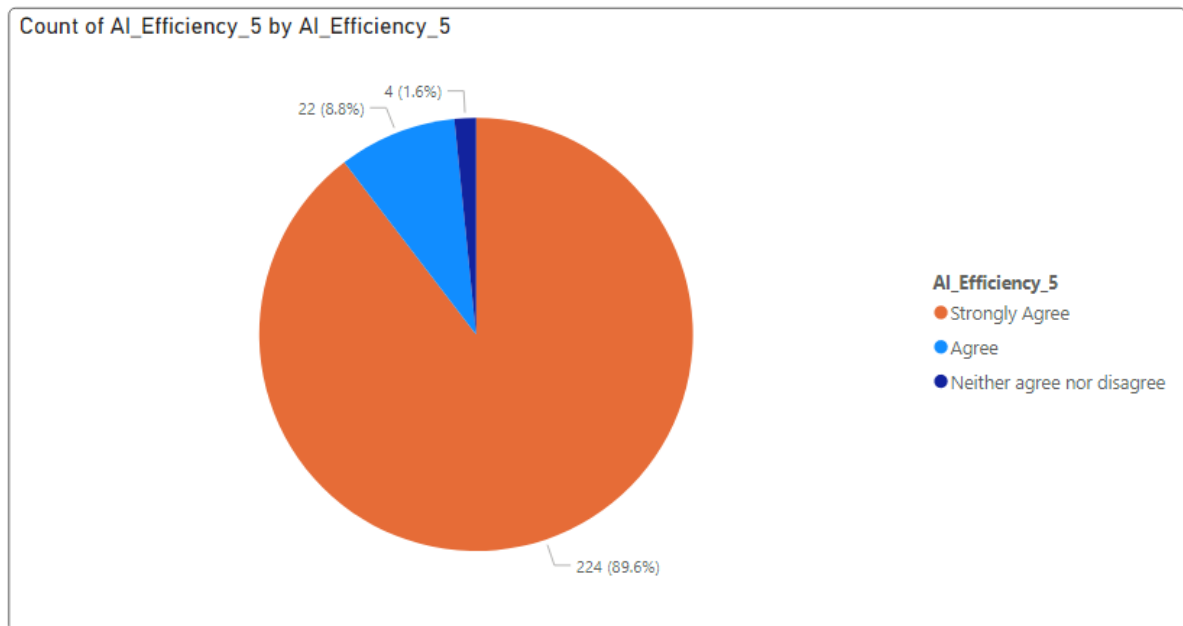


Figure 28: AI_Efficiency_5

AI_Efficiency_5	Count
Strongly Agree	224
Agree	22
Neither agree nor disagree	4

Table 28: AI_Efficiency_5

Finding: From the above pie chart and frequency table we understood that the input for recruitment function is quality candidates and recruitment managers are of the opinion that majority of managers strongly believe that AI helps in speed up business processes efficiently.

29. Artificial intelligence (AI) easily understands different aspects of recruitments

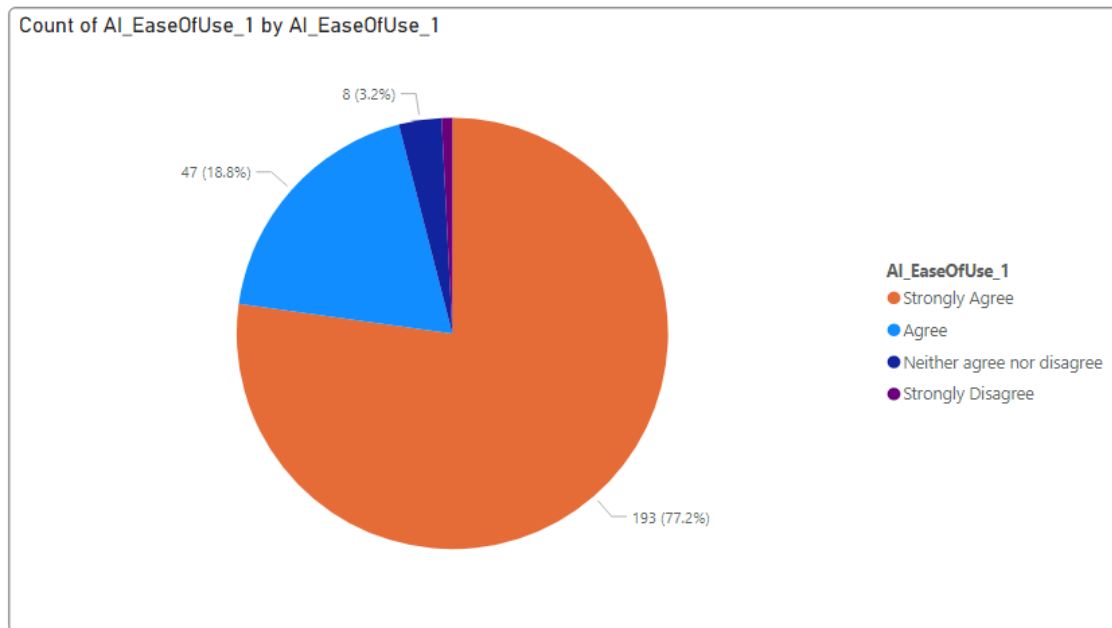


Figure 29: AI_EaseOfUse_1

AI_EaseOfUse_1	Count
Strongly Agree	193
Agree	47
Neither agree nor disagree	8
Strongly Disagree	2

Table 29: AI_EaseOfUse_1

Finding: From the above pie chart and frequency table since we are talking about automating and fastening recruitment processes this helps AI systems to understand different activities of the recruiter engaged into very closely. AI can understand time spent on different task and the outcome of the task easily.

30. Recruiters are able to make the best use of AI at their disposal

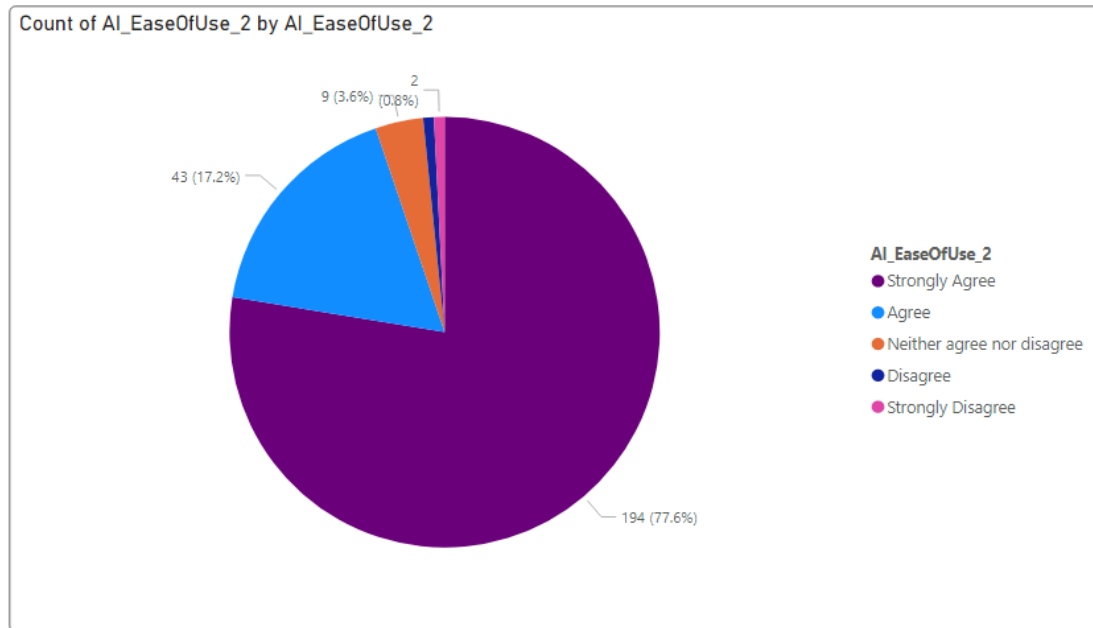


Figure 30: AI_EaseOfUse_2

AI_EaseOfUse_2	Count
Strongly Agree	194
Agree	43
Neither agree nor disagree	9
Disagree	2
Strongly Disagree	2

Table 30: AI_EaseOfUse_2

Finding: From the above pie chart and frequency table we understood that the input for recruitment function is quality candidates and recruitment managers are of the opinion that recruiters in their team understand use of AI and how to use them effectively and using it consciously. In short, managers strongly believe that recruiters are using AI at their disposal.

31. Recruiters can complete their task with minimal supervision from their managers because of AI.

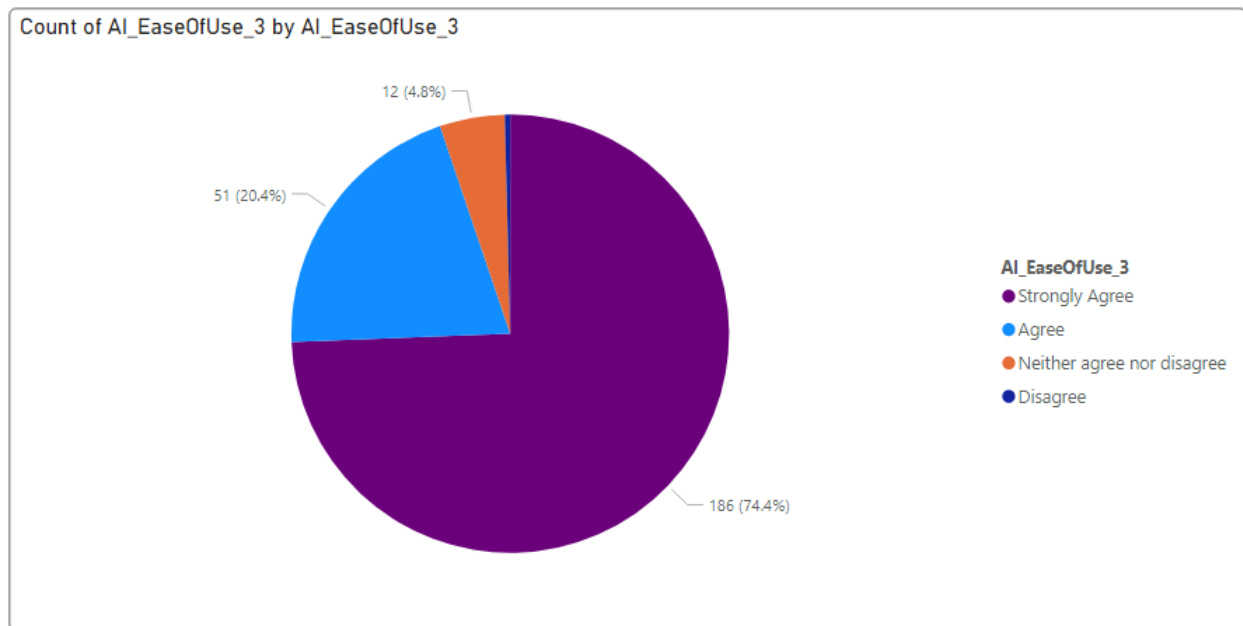


Figure 31: AI_EaseOfUse_3

AI_EaseOfUse_3	Count
Strongly Agree	186
Agree	51
Neither agree nor disagree	12
Disagree	1

Table 31: AI_EaseOfUse_3

Finding: From the above pie chart and frequency table since AI opens up different avenues of services in end-to-end recruitment such as analysing candidates data, generating insights from applicant tracing system, turnover data which makes them to take decision wisely and accordingly.

32. Because of AI usage in recruitment most of the tasks are simplified for recruiters.

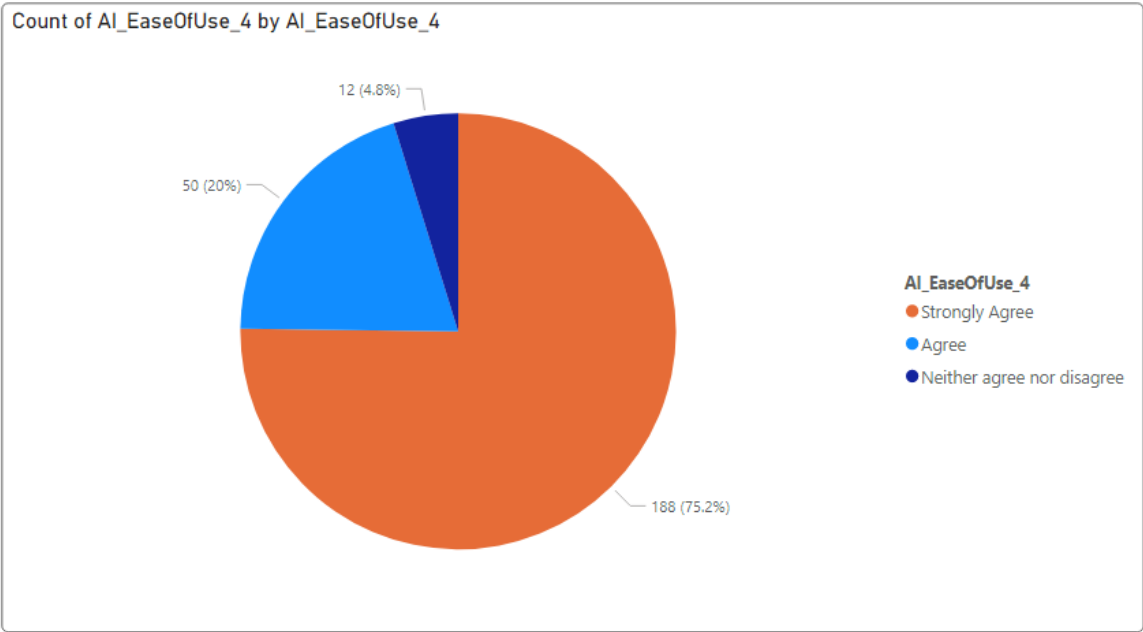


Figure 32: AI_EaseOfUse_4

AI_EaseOfUse_4	Count
Strongly Agree	188
Agree	50
Neither agree nor disagree	12

Table 32: AI_EaseOfUse_4

Finding: From the above pie chart and frequency table in conventional recruitment process, processes are lengthier one but in the modern recruitment systems which due to the advent of AI understood different aspect of recruitment and hence knows how to optimize the process leading it from complexity to simplicity.

33. The company uses Artificial Intelligence (AI) to predict employee success.

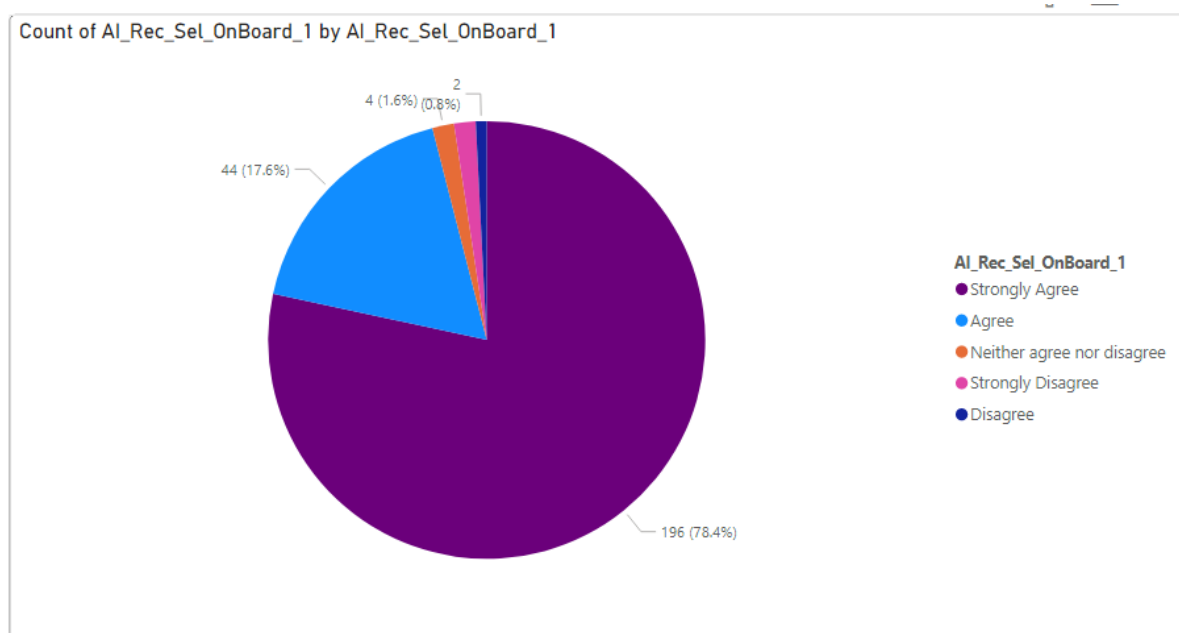


Figure 33: AI_Rec_Sel_OnBoard_1

AI_Rec_Sel_OnBoard_1	Count
Strongly Agree	196
Agree	44
Neither agree nor disagree	4
Strongly Disagree	4
Disagree	2

Table 33: AI_Rec_Sel_OnBoard_1

Finding: From the above pie chart and frequency table we understood that the input for recruitment function is quality candidates and recruitment managers are of the opinion that AI helps in quality hiring procedures & since the hired candidate quality is good and hence therefore company is into a better condition to understand monitor and evaluate performance critically with the help of AI.

34. The company uses Artificial Intelligence (AI) to evaluate candidates for vacant positions.

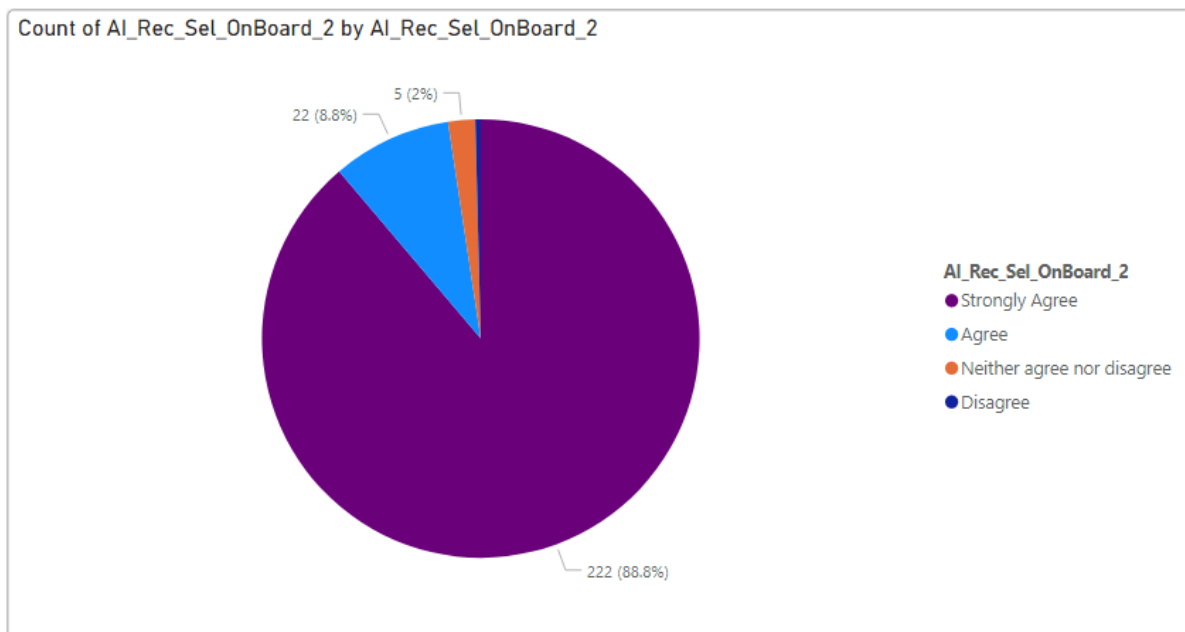


Figure 34: AI_Rec_Sel_OnBoard_2

AI_Rec_Sel_OnBoard_2	Count
Strongly Agree	222
Agree	22
Neither agree nor disagree	5
Disagree	1

Table 34: AI_Rec_Sel_OnBoard_2

Finding: From the above pie chart and frequency table since AI help companies greatly in their workforce planning, companies can leverage the AI to streamline the sourcing of candidate by appropriately evaluating them against the vacant position which are coming from workforce plan.

35. The company uses Artificial Intelligence (AI) to test employees for a specific job.

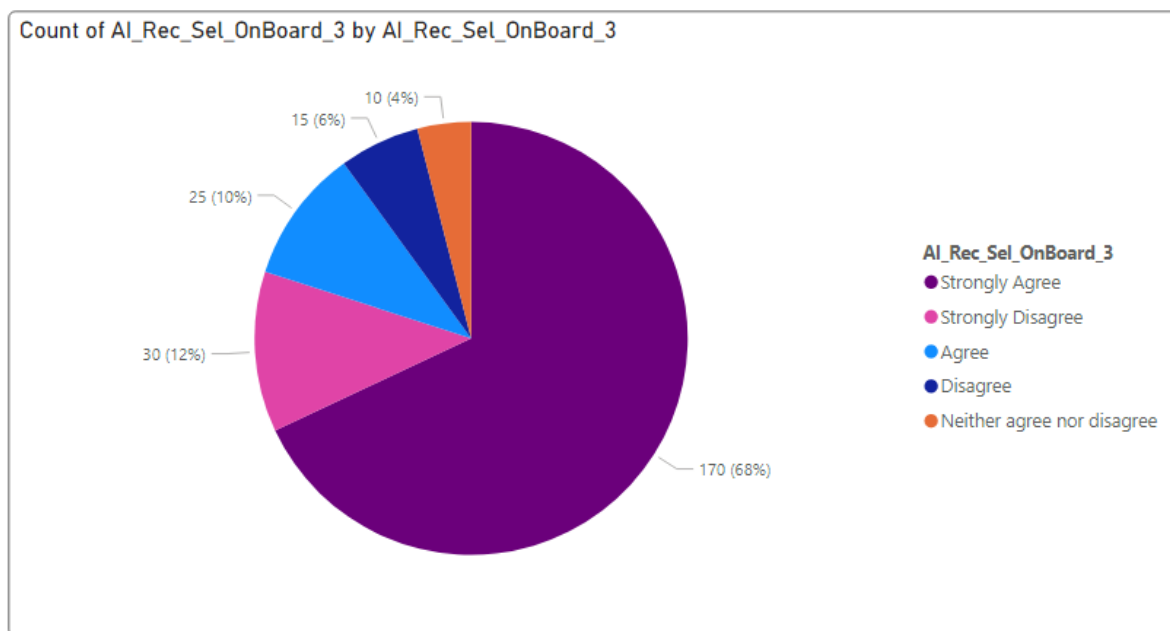


Figure 35: AI_Rec_Sel_OnBoard_3

AI_Rec_Sel_OnBoard_3	Count
Strongly Agree	170
Agree	25
Neither agree nor disagree	10
Disagree	15
Strongly Disagree	30

Table 35: AI_Rec_Sel_OnBoard_3

Finding: From the above pie chart and frequency table now a days various companies require niche skills for which evaluating that candidate is becoming very critical task for recruiter. Hence with the help of AI this niche skill can be tested and evaluated appropriately, for example skills required in designing, research, behavioural sciences, etc.

36. The company uses Artificial Intelligence (AI) to reduce human bias.

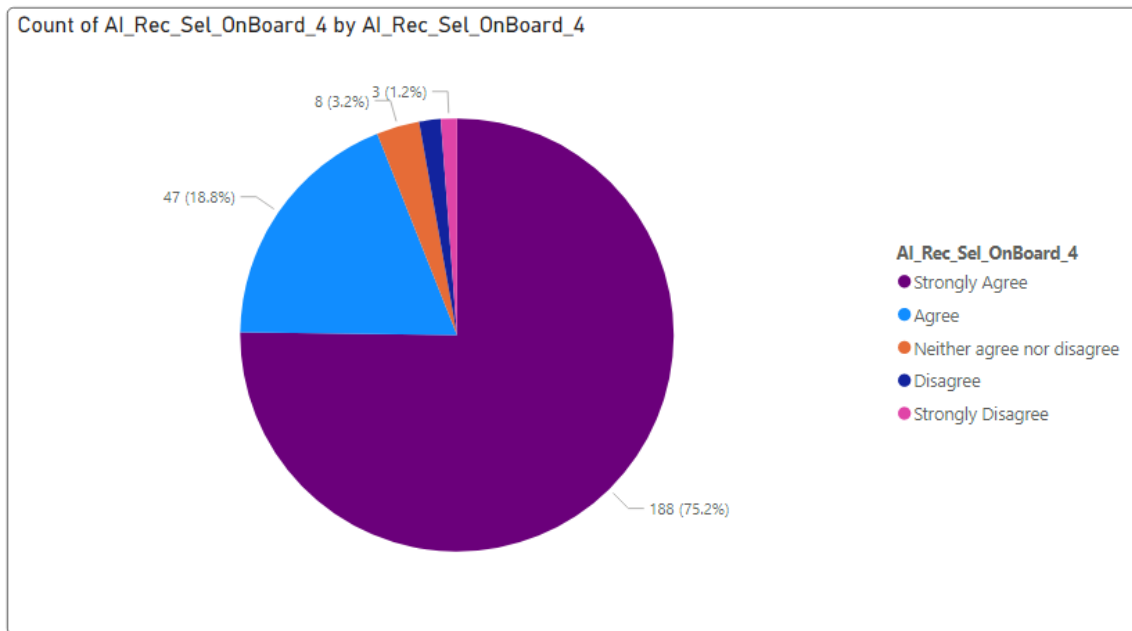


Figure 36: AI_Rec_Sel_OnBoard_4

AI_Rec_Sel_OnBoard_4	Count
Strongly Agree	188
Agree	47
Neither agree nor disagree	8
Disagree	4
Strongly Disagree	3

Table 36: AI_Rec_Sel_OnBoard_4

Finding: From the above pie chart and frequency table we can say that AI reduces human intervention into the recruitment process and enhance the quality of hire by testing the skill from generic to niche of the candidate which subsequently results into minimizing human biases from the recruitment processes.

37. The company uses Artificial Intelligence (AI) to put the right person in the right job.

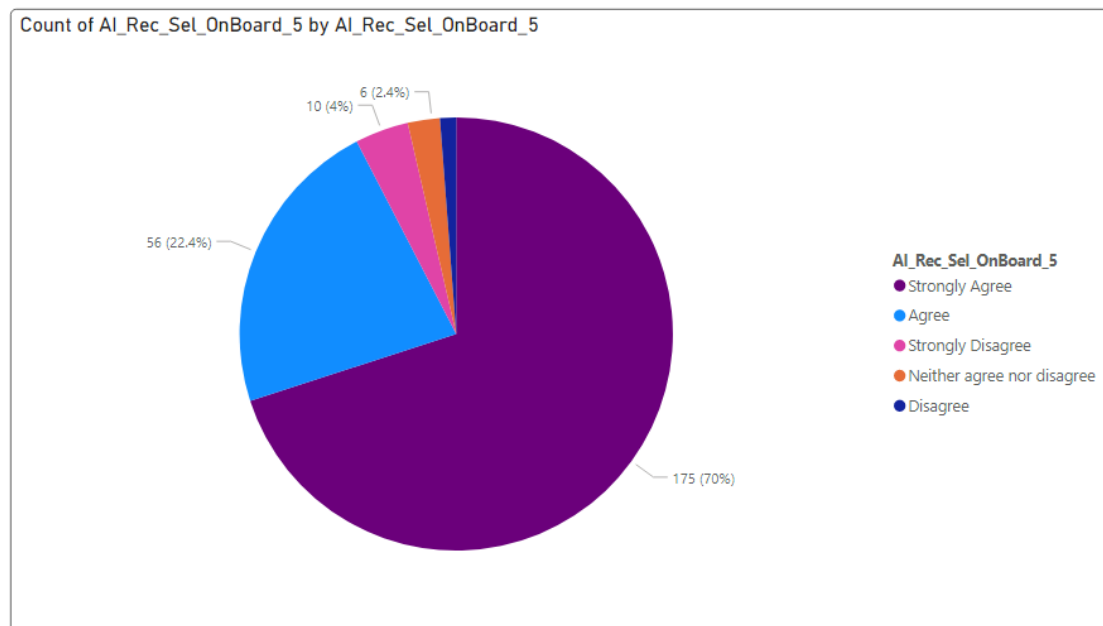


Figure 37: AI_Rec_Sel_OnBoard_5

AI_Rec_Sel_OnBoard_5	Count
Strongly Agree	175
Agree	56
Neither agree nor disagree	6
Disagree	3
Strongly Disagree	10

Table 37: AI_Rec_Sel_OnBoard_5

Finding: From the above pie chart and frequency table we can say that success of any company depends upon whether they have hired the right candidate for the job or not.

In the management field this is also called as person-job fit, AI plays important role over here by evaluating the candidate by soft and hard skills and match it to the respective job descriptions and job specifications. So we can say that managers are of the opinion that AI will helps strongly in matching person-job fit.

38. The company uses artificial intelligence (AI) to schedule interviews

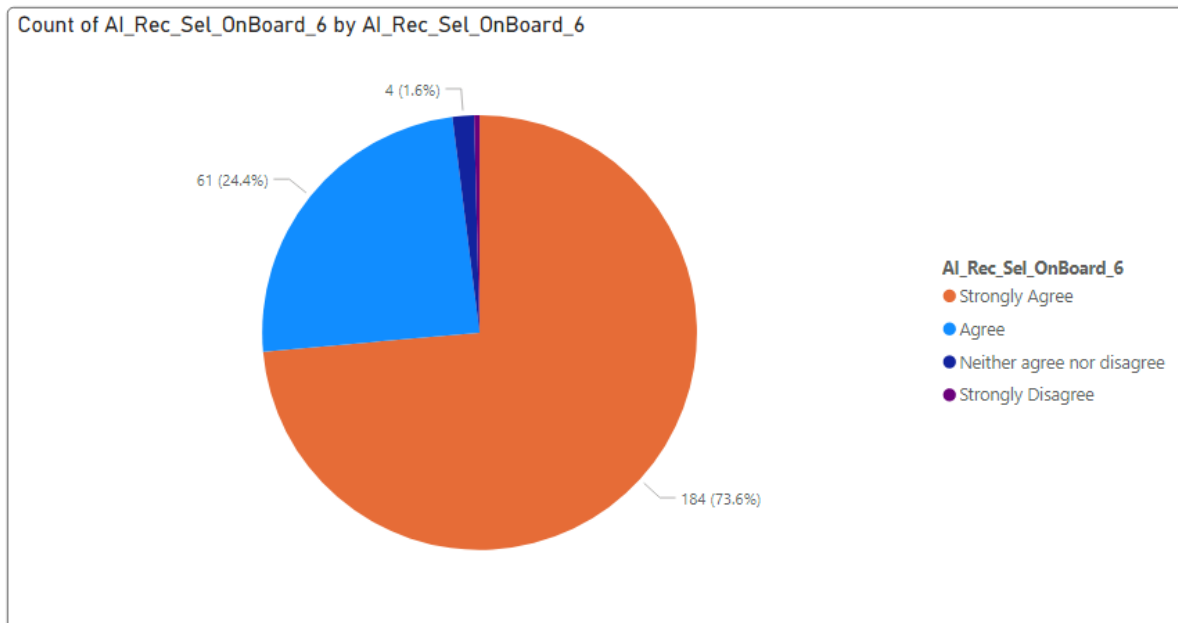


Figure 38: AI_Rec_Sel_OnBoard_6

AI_Rec_Sel_OnBoard_6	Count
Strongly Agree	184
Agree	61
Neither agree nor disagree	4
Strongly Disagree	1

Table 38: AI_Rec_Sel_OnBoard_6

Finding: From the above pie chart and frequency table one of the key areas of recruitment cycle is scheduling the interviews and if it has been done manually it will be very trickier one to manage but AI helps in scheduling the interviews dynamically and it also helps in setting up reminder and follow-up calls for the interviews promptly.

39. The company uses artificial intelligence (AI) to approve applicants for suitable jobs.

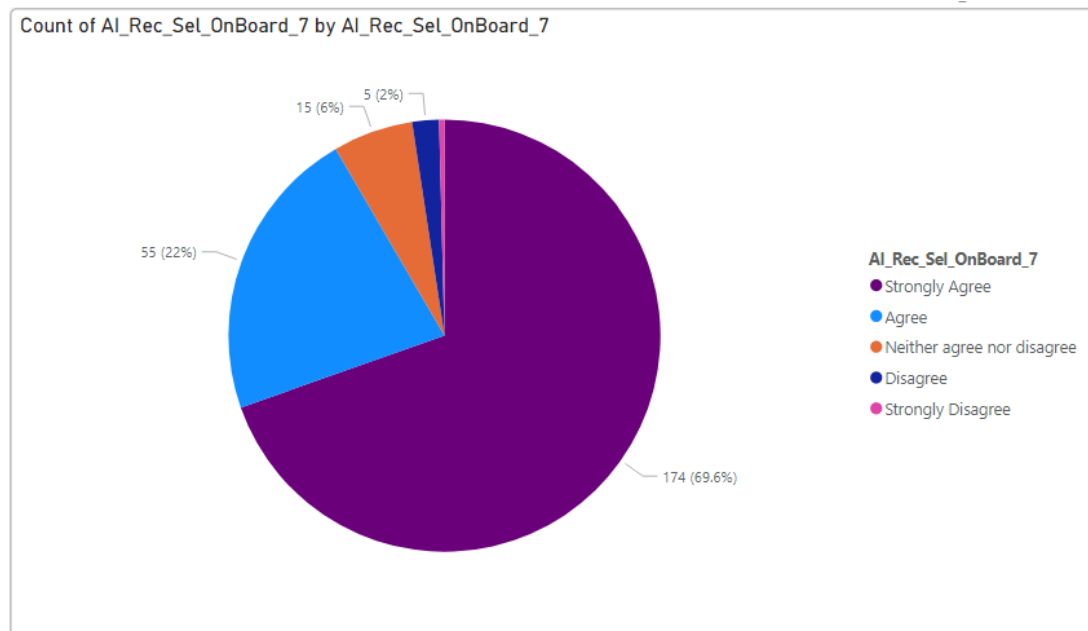


Figure 39: AI_Rec_Sel_OnBoard_7

AI_Rec_Sel_OnBoard_7	Count
Strongly Agree	174
Agree	55
Neither agree nor disagree	15
Disagree	5
Strongly Disagree	1

Table 39: AI_Rec_Sel_OnBoard_7

Finding: From the above pie chart and frequency table AI plays a major role in screening the application made by the candidates effectively before it reaches out to the application tracking system of the company. Hence, we can say that majority of the managers are of the opinion that AI consciously make decisions whether to reject or approve the candidature of the candidate for the appropriate jobs.

40. The company uses Artificial Intelligence (AI) to improve candidate engagement for the job

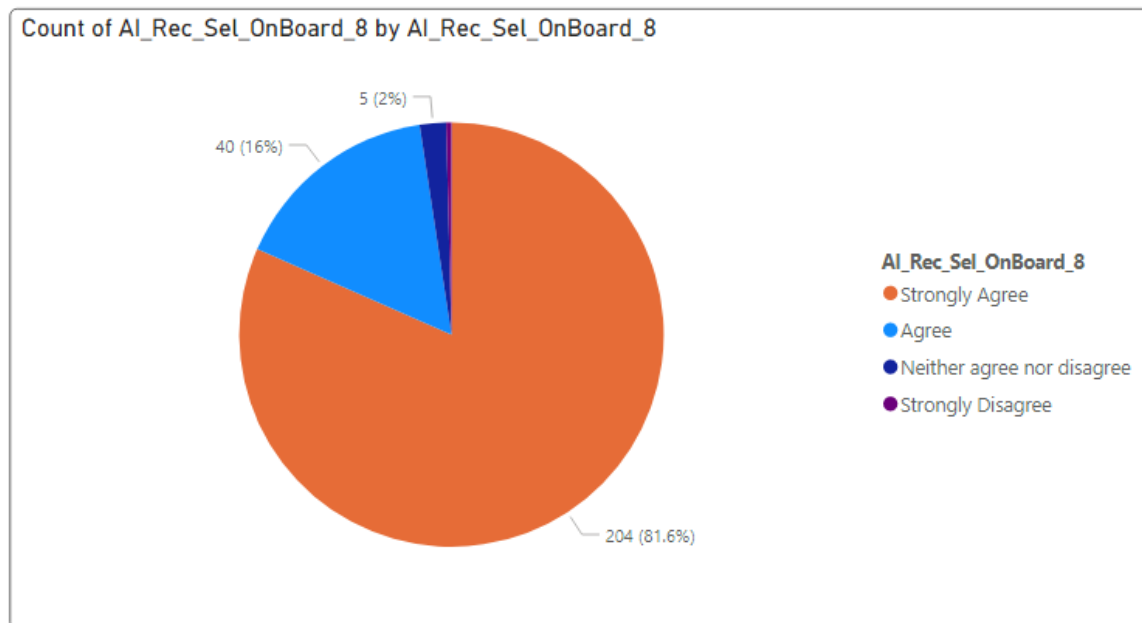


Figure 40: AI_Rec_Sel_OnBoard_8

AI_Rec_Sel_OnBoard_8	Count
Strongly Agree	204
Agree	40
Neither agree nor disagree	5
Strongly Disagree	1

Table 40: AI_Rec_Sel_OnBoard_8

Finding: From the above pie chart and frequency table now a days companies are finding out innovative ways to engage candidate on their platforms even before they float the requirement into the market. Here the AI system try to capture maximum data about the candidate action while interacting with the platform or the systems. Hence majority of the managers say that they strongly believe in the uses of AI in engaging the candidates.

41. The company uses Artificial Intelligence (AI) to select candidates based on their interpersonal skills

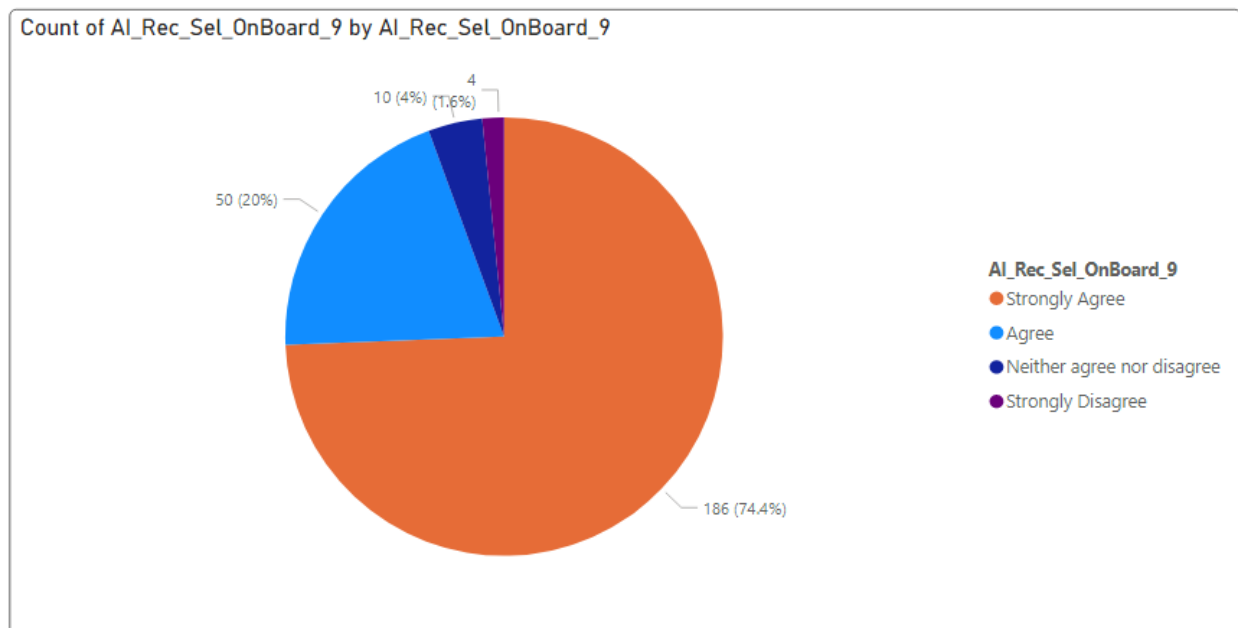


Figure 41: AI_Rec_Sel_OnBoard_9

AI_Rec_Sel_OnBoard_9	Count
Strongly Agree	186
Agree	50
Neither agree nor disagree	10
Strongly Disagree	4

Table 41: AI_Rec_Sel_OnBoard_9

Finding: From the above pie chart and frequency table we can say that recruitment managers are of the opinions that AI helps them to understand the interpersonal skills of the candidate through various AI programs such as stimulations and virtual interaction. Majority of the managers have same opinion.

42. The company uses Artificial Intelligence (AI) to reduce hiring time

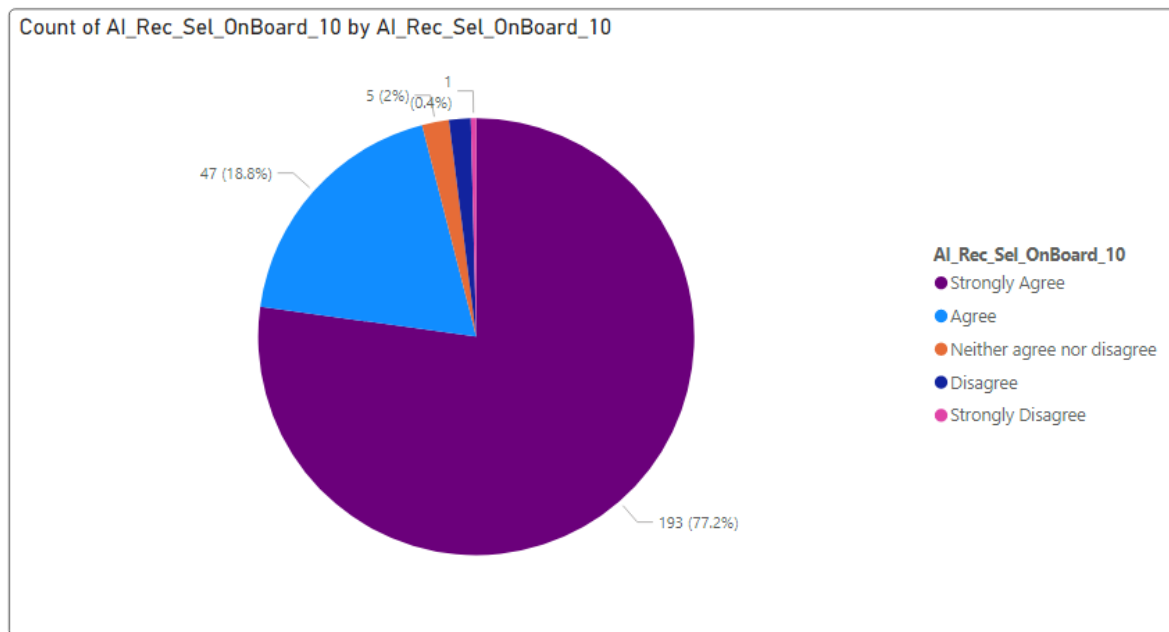


Figure 42:AI_Rec_Sel_OnBoard_10

AI_Rec_Sel_OnBoard_10	Count
Strongly Agree	193
Agree	47
Neither agree nor disagree	5
Disagree	4
Strongly Disagree	1

Table 42: AI_Rec_Sel_OnBoard_10

Finding: From the above pie chart and frequency table as we have seen that AI has help recruitment managers to optimize recruitment processes, do quality hiring, understanding workforce planning based on which identify vacant position and screening application based on the same. This all manifest into reducing lead time of recruitment and making recruitment faster.

43. The company uses Artificial Intelligence (AI) to make ethical hiring decisions

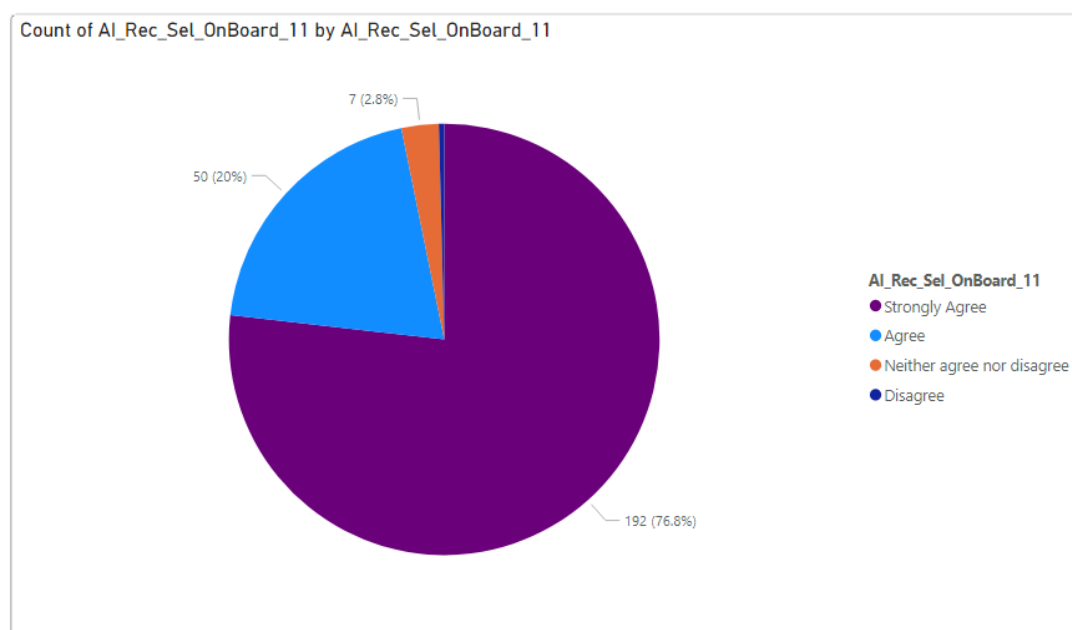


Figure 43: AI_Rec_Sel_OnBoard_11

AI_Rec_Sel_OnBoard_11	Count
Strongly Agree	192
Agree	50
Neither agree nor disagree	7
Disagree	1

Table 43: AI_Rec_Sel_OnBoard_11

Finding: From the above pie chart and frequency table as we have seen from earlier data as AI helps to fetch the data related to candidate professional information as well as social personals. All these things help recruiters to recruit candidates on the basis of ethics as well as AI also helps to eliminate the human biases from the recruiter sides making the hiring more ethical.

44. If the majority of an interview process was delivered by AI than a human recruiter, do you think candidates perception about the company will change

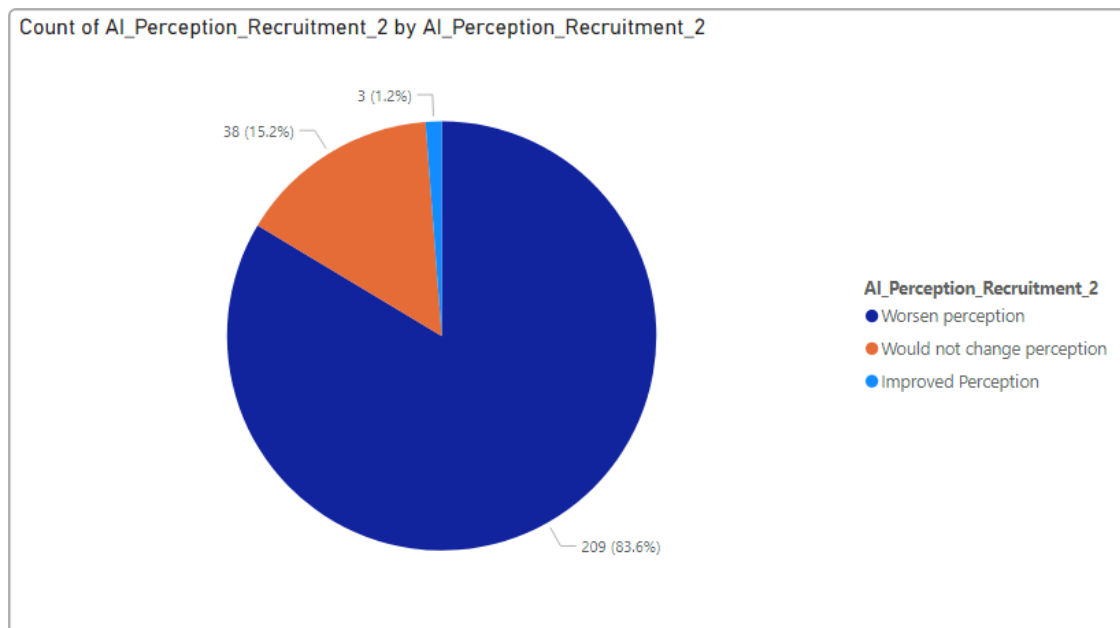


Figure 44: AI_Perception_Recruitment_2

AI_Perception_Recruitment_2	Count
Worsen Perception	209
Would not change Perception	38
Improved Perception	3

Table 44: AI_Perception_Recruitment_2

Finding: From the above pie chart and frequency table recruiter managers are of the opinion that from operational point of view and for the identification of some niche skills AI is fine to be used in recruitment but if whole experience is based on AI without using human intervention it will miss out the social connect between the candidate and recruiters hence majority of the managers strongly believe that it very create negative impact on the brand identity of the organization since they are missing out on human values.

45. Do you think usage of AI in salary negotiation will be great idea?

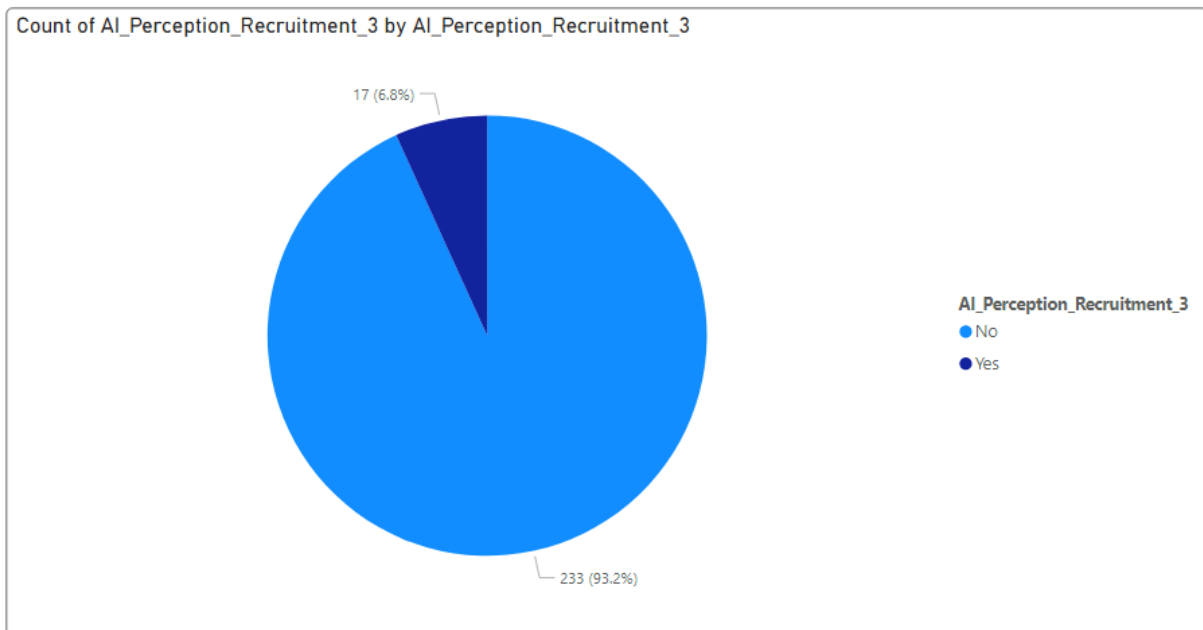


Figure 45: AI_Perception_Recruitment_3

AI_Perception_Recruitment_3	Count
Yes	17
No	233

Table 45: AI_Perception_Recruitment_3

Finding: From the above pie chart and frequency table we can say that recruitment managers are of the opinion that to understand the salary requirement of individual depends on various factors & AI have the capability to perform those negotiation but it will not be perceive in a good spirit if AI based salary negotiation happens.

46. The quality of hiring is better due to AI as compared to traditional system

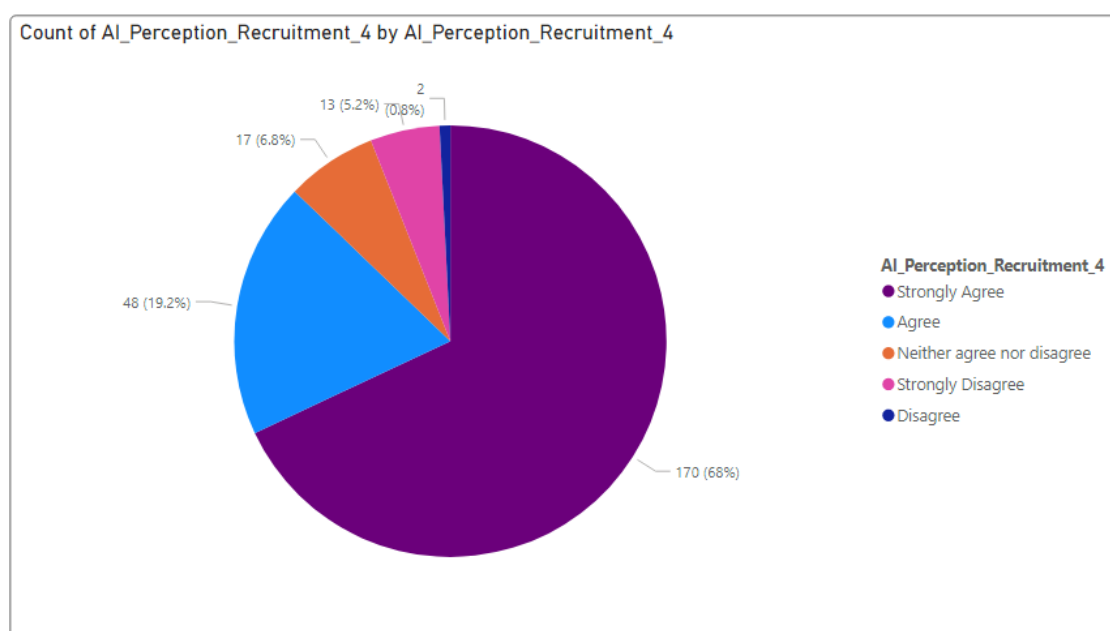


Figure 46: AI_Perception_Recruitment_4

AI_Perception_Recruitment_4	Count
Strongly Agree	170
Agree	48
Neither agree nor disagree	17
Disagree	2
Strongly Disagree	13

Table 46: AI_Perception_Recruitment_4

Finding: From the above pie chart and frequency table we can say that AI is able to offer different functionalities which are of use to the recruitment managers and their teams from the end-to-end recruitment cycle point of view which reduces human biases and speed up the recruitment processes which was not the case in case of traditional recruitment practices.

47. Does your organization have long term vision in implementing AI in broader sense as compared to today in recruitment process?

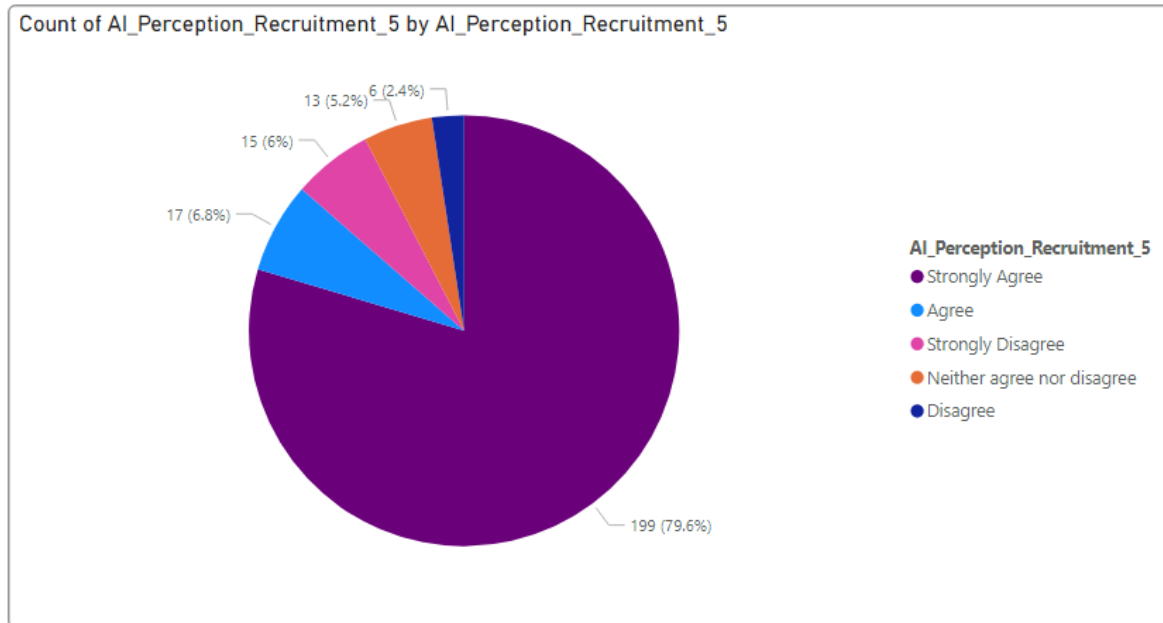


Table 47: AI_Perception_Recruitment_5

AI_Perception_Recruitment_5	Count
Strongly Agree	199
Agree	17
Neither agree nor disagree	13
Disagree	6
Strongly Disagree	15

Figure 47: AI_Perception_Recruitment_5

Finding: From the above pie chart and frequency table we can say that majority of the organization are looking forward to invest heavily in AI and would like to take the experience of AI to the next level for both candidates and recruiters.

48. Do you think that there is a scope for optimizing AI usage in recruitment process?

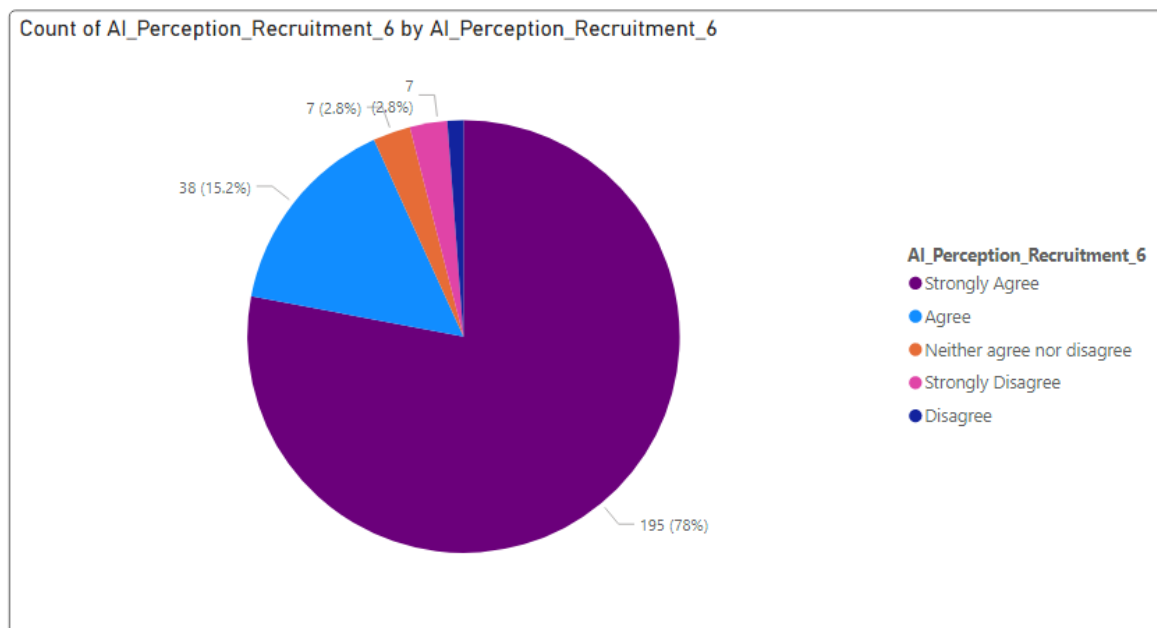


Figure 48: AI_Perception_Recruitment_6

AI_Perception_Recruitment_6	Count
Strongly Agree	195
Agree	38
Neither agree nor disagree	7
Disagree	3
Strongly Disagree	7

Table 48: AI_Perception_Recruitment_6

Finding: From the above pie chart and frequency table we can say that since recruitment managers had experience in having first hand experience of how AI is responding to their requirements how much accuracy they are getting in terms of results, which processes involved into the recruitment can be redesigned or reengineered for better results. hence we can say that managers are of the opinion that AI can be optimized.

49. Do you think recruiters will have more time to do other task and acquire new skills due to the uses of AI?

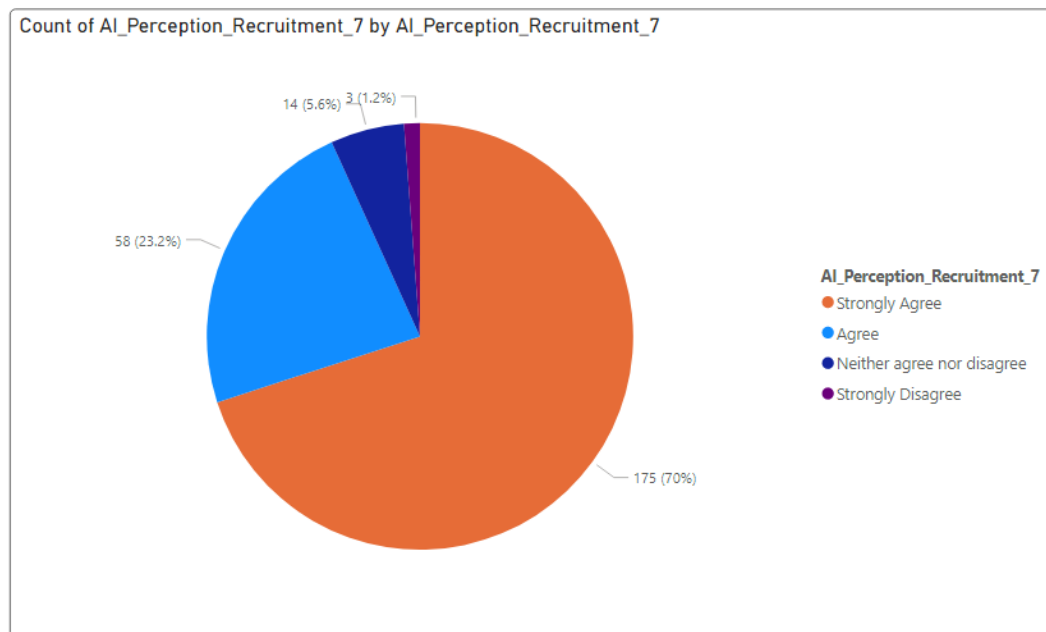


Figure 49: AI_Perception_Recruitment_7

AI_Perception_Recruitment_7	Count
Strongly Agree	175
Agree	58
Neither agree nor disagree	14
Strongly Disagree	3

Table 49: AI_Perception_Recruitment_7

Finding: From the above pie chart and frequency table we can say that since AI is helping the recruiters to reduce their administrative work load and give them sometime to breath which recruitment managers believe that they should put this into good use by upskilling or reskilling themselves according to the companies learning and development policies. Majority of the managers are of the same opinion.

50. Do you think that because of AI recruiting managers will be able to maintain their schedules or deadline?

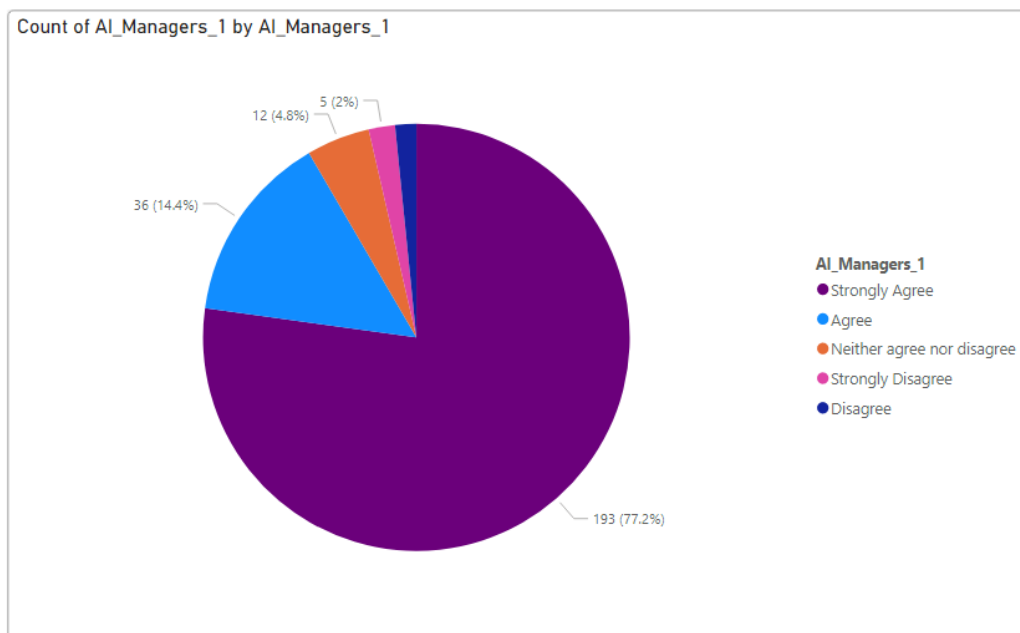


Figure 50: AI_Managers_1

AI_Managers_1	Count
Strongly Agree	193
Agree	36
Neither agree nor disagree	12
Strongly Disagree	5
Disagree	4

Table 50: AI_Managers_1

Finding: From the above pie chart and frequency table we can say that AI is helping recruitment managers to keep a tab on recruiters activity from the end-to-end recruitment cycle is perspective which ultimately helps recruitment managers to schedule their own activities in such a manner that they will delivering deadline on time.

51. Do you think that because of AI recruiting managers will be able to manage their budgets well?

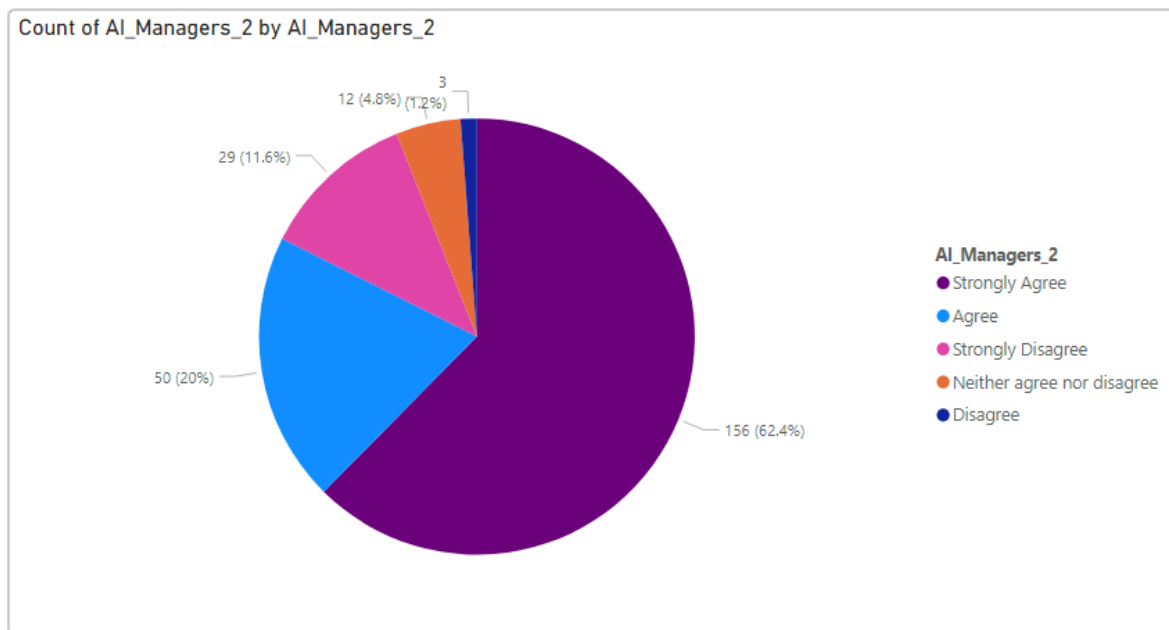


Figure 51: AI_Managers_2

AI_Managers_2	Count
Strongly Agree	156
Agree	50
Neither agree nor disagree	12
Strongly Disagree	29
Disagree	3

Table 51: AI_Managers_2

Finding: From the above pie chart and frequency table as AI helps to generate insights in much more detail about different activities of recruiters and recruitment processes, this will helps recruitment managers to understand the need of the budget based on recruitment cycle such as from the sourcing of the candidates till onboarding of the candidates.

52. Do you think that because of AI recruiting managers will be able to evaluate team performance well?

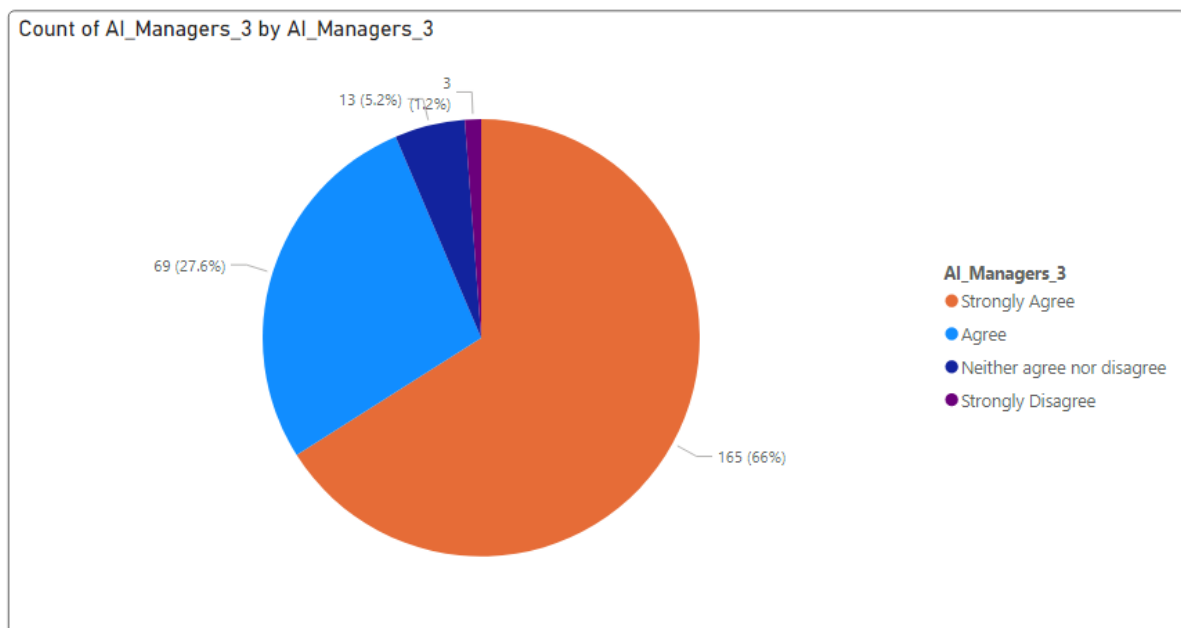


Figure 52: AI_Managers_3

AI_Managers_3	Count
Strongly Agree	165
Agree	69
Neither agree nor disagree	13
Strongly Disagree	3

Table 52: AI_Managers_3

Finding: From the above pie chart and frequency table we can say that ability of AI applications is much more proven in today's recruitment world which not only helps in evaluating the candidates for vacant positions but also gives fair insights on recruiters performance which ultimately helps recruitment managers to evaluate their performances without any biases.

53. What do you think what keeps organizations away from implementing and utilizing AI in their respective organizations in full-fledged manner?

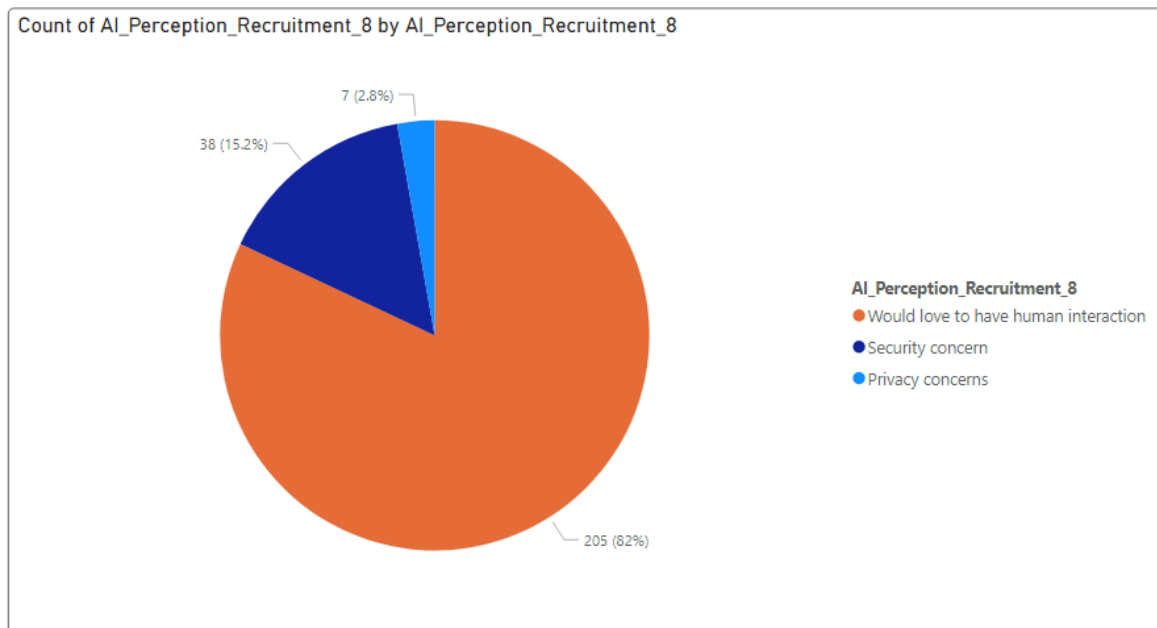


Figure 53: AI_Perception_Recruitment_8

AI_Perception_Recruitment_8	Count
Would love to have human interaction	205
Security concern	38
Privacy concerns	7

Table 53: AI_Perception_Recruitment_8

Finding: From the above pie chart and frequency table we can say that even in the world of AI human still believes in human values and that's why when the question comes of embracing AI fully into the recruitment process humans still shows some resistance and keep the AI away to take on the full control of recruitment process. Hence, we can say that majority of managers believe that human interaction is of importance and at the same time it can also be served as an obstacle into the full-fledged AI implementation in recruitment process.

54. What do you think will be the key motivation for an organization to use AI in their recruitment practices?

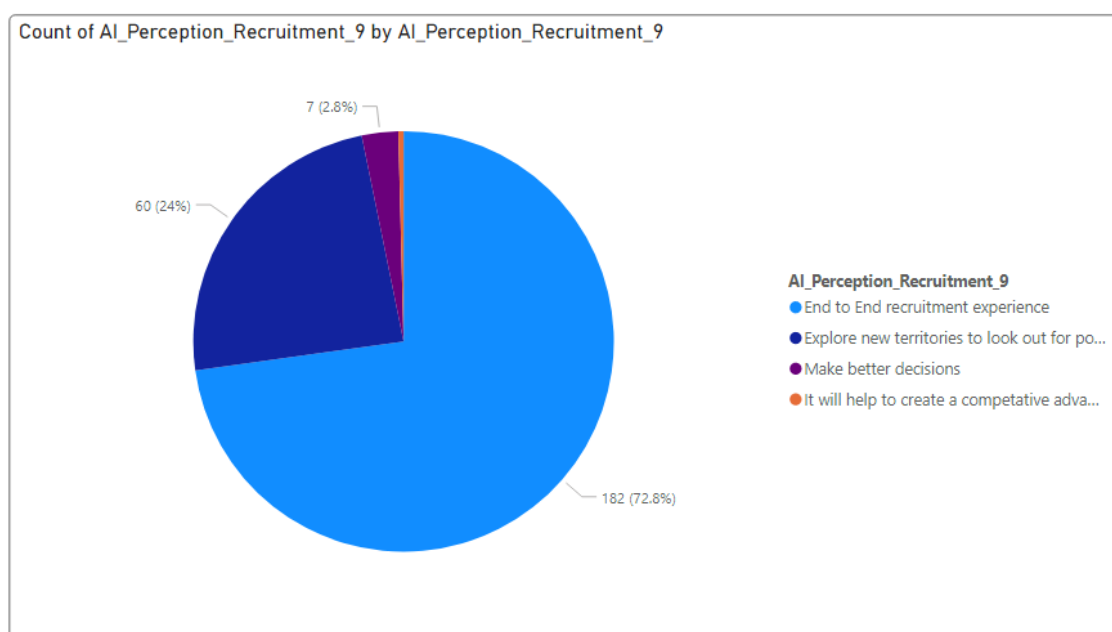


Figure 54: AI_Perception_Recruitment_9

AI_Perception_Recruitment_9	Count
End to End recruitment experience	182
Explore new territories to look out for potential talents	38
Make better decisions	7
It will help to create a competitive advantage	1

Table 54: AI_Perception_Recruitment_9

Finding: From the above pie chart and frequency table we can say that majority of the recruitment managers believe that end to end experience of recruitment, from both candidate and recruiter perspective this experience will always serves as torch bearer to the recruitment managers to always do something new with the help of AI and create a competitive advantage for the organization.

55. What risk do you consider while using AI in recruitment?

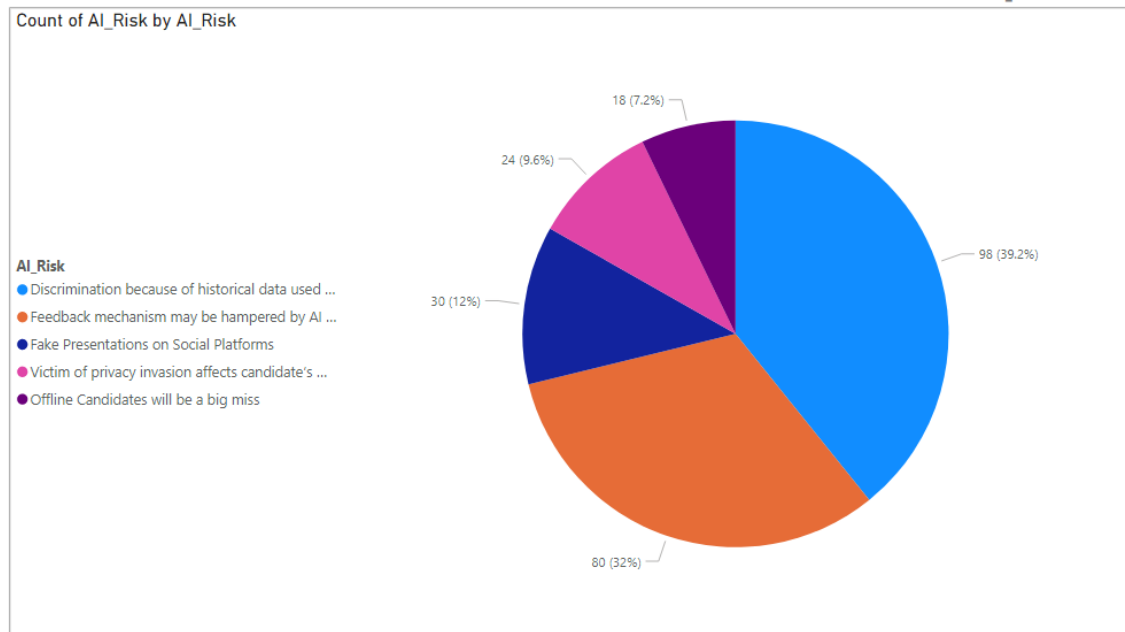


Figure 55: AI_Risk

AI_Risk	Count
Discrimination because of historical data used in AI programming	98
Feedback mechanism may be hampered by AI decision models	80
Fake Presentations on Social Platforms	30
Victim of privacy invasion affects candidate's motivation to apply for a job	24
Offline Candidates will be a big miss	18

Table 55: AI_Risk

Finding: From the above pie chart and frequency table we can say that recruiting managers are of the opinion that Discrimination because of historical data used in AI programming and Feedback mechanism may be hampered by AI decision models.

56. What barriers do you feel are most recruiters afraid of using AI?

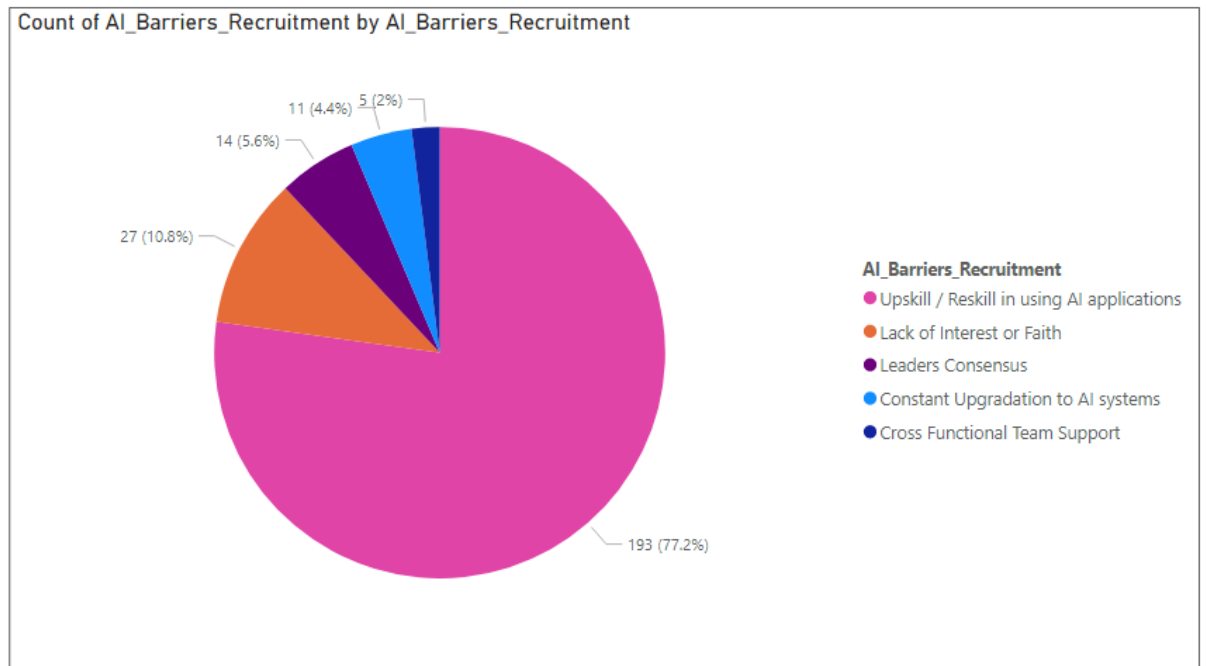


Figure 56: AI_Barriers_Recruitment

AI_Barriers_Recruitment	Count
Upskill / Reskill in using AI applications	193
Lack of Interest or Faith	27
Leaders Consensus	14
Constant Upgradation to AI systems	11
Cross Functional Team Support	5

Table 56: AI_Barriers_Recruitment

Finding: From the above pie chart and frequency table we can say that recruiting manager are of the opinion that Upskill / Reskill in using AI applications and Lack of Interest or Faith.

57. Which parameters you think will contribute more to the success of using AI in recruitment

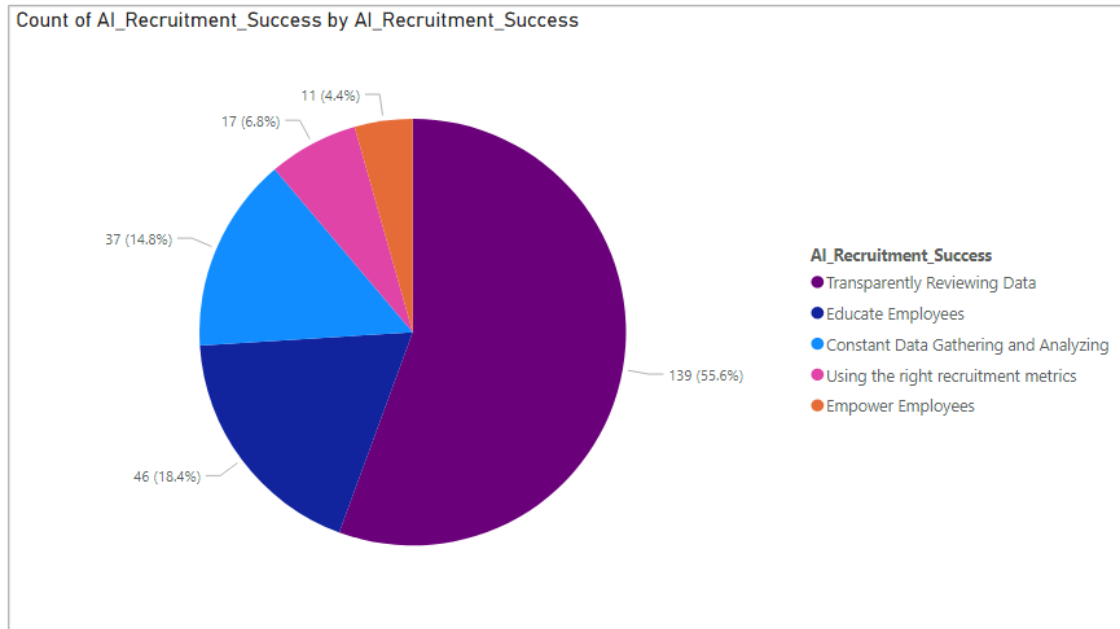


Figure 57: AI_Recruitment_Success

AI_Recruitment_Success	Count
Transparently Reviewing Data	139
Educate Employees	46
Constant Data Gathering and Analysing	37
Using the right recruitment metrics	17
Empower Employees	11

Table 57: AI_Recruitment_Success

Finding: From the above pie chart and frequency table we can say that recruiting manager are of the opinion that Transparently Reviewing Data and Educate employees.

Hypotheses Testing

Hypothesis-1

Research Question: Is there any difference in the opinion of the recruitment managers about how AI is being used in different functions of recruitment cycle.

Statistical Test: Friedman Test

Hypothesis Statement:

H0: There is no difference in the opinion of the recruitment managers about how AI is being used in different functions of recruitment cycle.

H1: There is a difference in the opinion of the recruitment managers about how AI is being used in different functions of recruitment cycle.

Test Statistics

N	250
Chi-Square	61.466
df	10
Asymp. Sig.	.000

Observation $\chi^2(10) = 61.466$, $p < 0.01$

After testing the hypothesis, we got to the finding that we reject the null hypothesis due to the p-value which is less than 0.01. Hence the alternate hypothesis seems to be true, which tells us that there is a difference in the opinion of the recruitment managers about how AI is being used in different functions of recruitment cycle. To explore how it differs we refer to the mean ranks of each variable, which is given below:

	Mean Rank
The company uses Artificial Intelligence (AI) to evaluate candidates for vacant positions.	6.75
The company uses Artificial Intelligence (AI) to improve candidate engagement for the job.	6.32
The company uses Artificial Intelligence (AI) to predict employee success.	6.12
The company uses Artificial Intelligence (AI) to reduce hiring time.	6.1
The company uses Artificial Intelligence (AI) to make ethical hiring decisions.	6.06
The company uses Artificial Intelligence (AI) to reduce human bias.	5.97
The company uses Artificial Intelligence (AI) to select candidates based on their interpersonal skills	5.97
The company uses artificial intelligence (AI) to schedule interviews	5.96
The company uses artificial intelligence (AI) to approve applicants for suitable jobs.	5.68
The company uses Artificial Intelligence (AI) to put the right person in the right job.	5.65
The company uses Artificial Intelligence (AI) to test employees for a specific job.	5.41

Looking at the above mean rank table we can say that from the recruitment managers perspective, the top three areas where company is focusing to use artificial intelligence is evaluating candidates, improve engagement of candidates in the recruitment process and predicting their success ratio.

Hypothesis-2

Research Question: Is there any difference in the opinion of the recruitment managers about how AI is evaluating the candidates.

Statistical Test: Friedman Test

Hypothesis Statement:

H0: There is no difference in the opinion of the recruitment managers about how AI is evaluating the candidates.

H1: There is a difference in the opinion of the recruitment managers about how AI is evaluating the candidates.

Test Statistics:

N	250
Chi-Square	46.681
df	3
Asymp. Sig.	.000

Observation: $\chi^2(3) = 46.681$, $p < 0.01$.

After testing the hypothesis, we got to the finding that we reject the null hypothesis due to the p-value which is less than 0.01. Hence the alternate hypothesis seems to be true, which tells us that there is a difference in the opinion of the recruitment managers about how AI is evaluating the candidates. To explore how it differs we refer to the mean ranks of each variable, which is given below:

	Mean Rank
Do you think that using AI based algorithms to scan and analyse social media posts, photos and other candidate related online materials improves the recruitment process	2.78
Do you think that using AI based algorithms to scan work samples, resumes, and other materials presented by applicants improves the recruitment and selection Process	2.53
Do you think that using AI based algorithms to analyze interviews, facial expression, word choice and other areas is a good way of assessing areas such as candidate engagement and emotion	2.41
Do you think that AI interfaces such as chatbots and virtual assistant will become an increasingly viable way for engaging prospective candidates to fill the open positions	2.28

Looking at the above mean rank table we can say that from the recruitment managers perspective the top two areas where company is using AI to evaluate candidates is the social persona and professional details like scanning resume and portfolios.

Hypothesis-3

Research Question: Is there an association between how AI has changed the way recruitment used to happen and its manifestation into quality outputs in the recruitment process.

Statistical Test: Chi-square Test

Hypothesis Statement:

H0: There is no association between how AI has changed the way recruitment used to happen and its manifestation into quality outputs in the recruitment process.

H1: There is an association between how AI has changed the way recruitment used to happen and its manifestation into quality outputs in the recruitment process.

Test Statistics:

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	16.441	8	.036
N of Valid Cases	250		

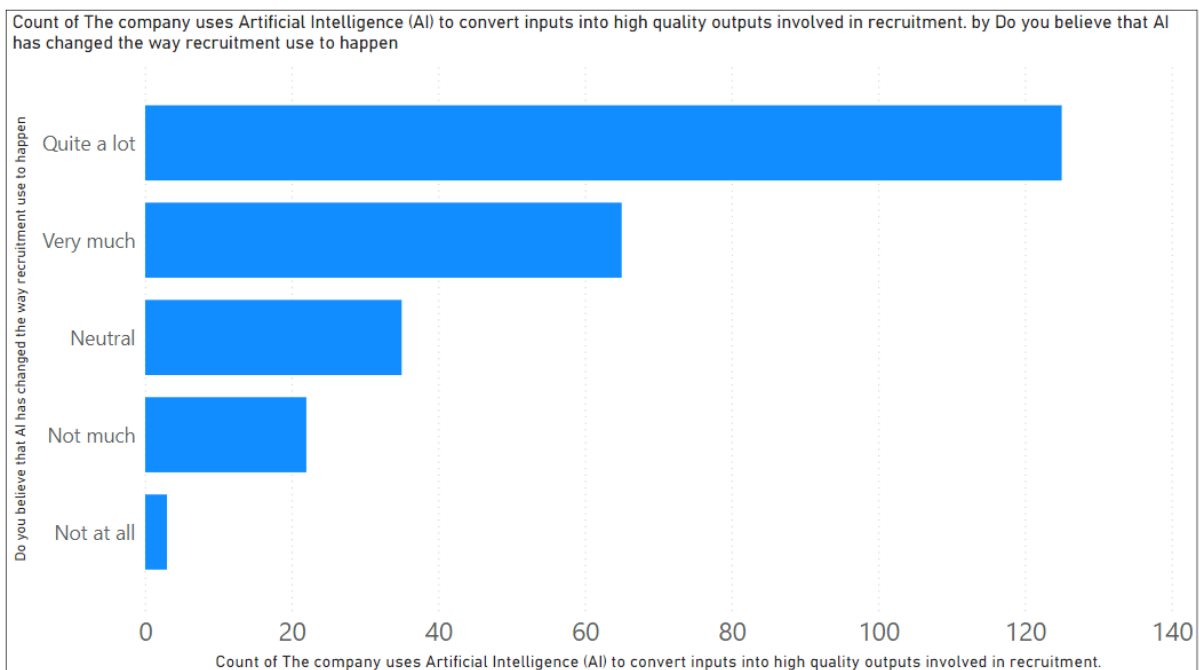
Observation: $\chi^2 (8) = 16.441, p = 0.036$

After testing the hypothesis, we got to the finding that we reject the null hypothesis due to the p-value which is less than 0.01. Hence the alternate hypothesis seems to be true, which tells us that there is an association between how AI has changed the way recruitment used to happen and its manifestation into quality outputs in the recruitment process.

To understand the association in detail we refer to the below mentioned table and graph:

Do you believe that AI has changed the way recruitment use to happen * The company uses Artificial Intelligence (AI) to convert inputs into high quality outputs involved in recruitment. Crosstabulation

		The company uses Artificial Intelligence (AI) to convert inputs into high quality outputs involved in recruitment.			Total
		Neither agree nor disagree	Agree	Strongly Agree	
Do you believe that AI has changed the way recruitment use to happen	Not at all	0	1	2	3
	Not much	0	1	21	22
	Neutral	0	1	34	35
	Quite a lot	1	14	110	125
	Very much	3	14	48	65
Total		4	31	215	250



From the above table and graph we can say that as AI has changed the way recruitment used to happen and it has manifested into more quality outputs for recruitment purpose. There are more than 90% plus responding managers are of the same opinion.

Hypothesis-4

Research Question: Whether the perceived level of automation in recruitment due to AI differed based on recruitment managers' age groups, dividing managers into five independent groups.

Statistical Tests: One-Way ANOVA

Hypothesis Statement:

H0: The perceived level of automation in recruitment due to AI doesn't differ based on recruitment managers age groups, dividing managers into five independent groups.

H1: the perceived level of automation in recruitment due to AI does differ based on recruitment managers age groups, dividing managers into five independent groups.

Test Statistics:

ANOVA					
AI Recruitment Automation					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.642	4	.911	6.923	.000
Within Groups	32.227	245	.132		
Total	35.869	249			

ANOVA F (4,245)=6.923, $p < 0.05$

The above table is giving the ANOVA analysis, which suggests that there is a statistically significant difference between our age group means. Since our significance value is 0.000, which is way below 0.05. and, therefore, there is a statistically significant difference in the mean perceived level of automation in recruitment due to AI. To know more which Age

group differs, we can find this out in from the Multiple Comparisons table based on Tukey post hoc test is given below:

Multiple Comparisons						
Dependent Variable: AI_Recruitment_Automation						
Tukey HSD						
(I) Age of Recruitment Manager (Binned)	(J) Age of Recruitment Manager (Binned)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
<= 27	28 - 30	-.14532	.06194	.134	-.3156	.0249
	31 - 33	-.29869*	.06826	.000	-.4863	-.1111
	34 - 36	-.33493*	.07775	.000	-.5486	-.1213
	37+	-.26364	.12468	.217	-.6063	.0790
28 - 30	<= 27	.14532	.06194	.134	-.0249	.3156
	31 - 33	-.15337	.06094	.090	-.3208	.0141
	34 - 36	-.18961	.07141	.064	-.3859	.0066
	37+	-.11832	.12083	.864	-.4504	.2137
31 - 33	<= 27	.29869*	.06826	.000	.1111	.4863
	28 - 30	.15337	.06094	.090	-.0141	.3208
	34 - 36	-.03624	.07695	.990	-.2477	.1752
	37+	.03506	.12418	.999	-.3062	.3763
34 - 36	<= 27	.33493*	.07775	.000	.1213	.5486
	28 - 30	.18961	.07141	.064	-.0066	.3859
	31 - 33	.03624	.07695	.990	-.1752	.2477
	37+	.07130	.12964	.982	-.2850	.4276

37+	<= 27	.26364	.12468	.217	-.0790	.6063
	28 - 30	.11832	.12083	.864	-.2137	.4504
	31 - 33	-.03506	.12418	.999	-.3763	.3062
	34 - 36	-.07130	.12964	.982	-.4276	.2850
*. The mean difference is significant at the 0.05 level.						

We can see from the above table below that there is a statistically significant difference in perceived automation due to AI in recruitment between the recruiting managers age group of 31-33 and 34-36. However, there were no differences between the groups who falls into age group of <27, 28-30 and 37+ years.

To understand the groups view we will follow the descriptive table for the groups mentioned below:

Descriptives								
AI_Recruitment_Automation								
Age Group	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
31 - 33	58	4.8017	.20816	.02733	4.7470	4.8565	4.17	5.00
34 - 36	36	4.8380	.22708	.03785	4.7611	4.9148	3.83	5.00

Recruiting managers between the age group of 34-36 perceives that automation in recruitment due to AI is more, followed by the age group of 31-33 years old.

Hypothesis-5

Research Question: Whether the perceived efficiency of AI in recruitment differed based on recruitment managers age groups, dividing managers into five independent groups.

Statistical Tests: One-Way ANOVA

Hypothesis:

H0: The perceived efficiency of AI in recruitment doesn't differ based on recruitment managers age groups, dividing managers into five independent groups.

H1: the perceived efficiency of AI in recruitment does differ based on recruitment managers age groups, dividing managers into five independent groups.

Test Statistics:

ANOVA					
AI_Efficiency_Recruitment					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.061	4	.265	3.480	.009
Within Groups	18.676	245	.076		
Total	19.737	249			

ANOVA F (4,245)=3.480, p<0.05

The above table is giving the ANOVA analysis, which suggests that there is a statistically significant difference between our age group means. Since our significance value is 0.000, which is way below 0.05. and, therefore, there is a statistically significant difference in the mean perceived efficiency of AI in recruitment which differ based on recruitment managers age groups, dividing managers into five independent age groups. To know more which age

group differs, we can find this out in from the Multiple Comparisons table based on Tukey post hoc test is given below:

Multiple Comparisons						
Dependent Variable: AI_Efficiency_Recruitment						
Tukey HSD						
(I) Age of Recruitment Manager (Binned)	(J) Age of Recruitment Manager (Binned)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
<= 27	28 - 30	-.06757	.04716	.607	-.1972	.0620
	31 - 33	-.14533*	.05196	.044	-.2881	-.0025
	34 - 36	-.18747*	.05919	.015	-.3501	-.0248
	37+	-.01636	.09491	1.000	-.2772	.2445
28 – 30	<= 27	.06757	.04716	.607	-.0620	.1972
	31 - 33	-.07776	.04639	.451	-.2052	.0497
	34 - 36	-.11990	.05436	.181	-.2693	.0295
	37+	.05121	.09198	.981	-.2016	.3040
31 – 33	<= 27	.14533*	.05196	.044	.0025	.2881
	28 - 30	.07776	.04639	.451	-.0497	.2052
	34 - 36	-.04215	.05858	.952	-.2031	.1188
	37+	.12897	.09454	.651	-.1308	.3888
34 – 36	<= 27	.18747*	.05919	.015	.0248	.3501
	28 - 30	.11990	.05436	.181	-.0295	.2693
	31 - 33	.04215	.05858	.952	-.1188	.2031
	37+	.17111	.0986	.415	-.1001	.4423

			9			
37+	<= 27	.01636	.09491	1.000	-.2445	.2772
	28 - 30	-.05121	.09198	.981	-.3040	.2016
	31 - 33	-.12897	.09454	.651	-.3888	.1308
	34 - 36	-.17111	.09869	.415	-.4423	.1001
*. The mean difference is significant at the 0.05 level.						

We can see from the above table below that there is a statistically significant difference in perceived efficiency of AI in recruitment between recruitment managers age groups of 31-33 and 34-36. However, there were no differences between the groups who falls into age group of <27, 28-30 and 37+ years.

To understand the groups view we will follow the descriptive table for the groups mentioned below:

Descriptives								
AI_Efficiency_Recruitment								
Age Groups	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
31 - 33	58	4.8690	.24149	.03171	4.8055	4.9325	4.00	5.00
34 - 36	36	4.9111	.18170	.03028	4.8496	4.9726	4.20	5.00

Recruiting managers between the age group of 34-36 perceives that efficiency of AI in recruitment is more followed by the age group of 31-33 years old group.

Hypothesis-6

Research Question: Is there any correlation between time consumption, cost and biases in recruitment process happening in traditional way.

Statistical Test: Spearman Rank Correlation

Hypothesis Statement:

H0: There is no correlation between time consumption, cost and biases in recruitment process happening in traditional way.

H1: There is a correlation between time consumption, cost and biases in recruitment process happening in traditional way.

Test Statistics:

Correlations					
			time consuming	costly	human biases
Spearman's rho	time consuming	Correlation Coefficient	1.000	.411**	.329**
		Sig. (2-tailed)	.	.000	.000
		N	250	250	250
	costly	Correlation Coefficient	.411**	1.000	.202**
		Sig. (2-tailed)	.000	.	.001
		N	250	250	250
	human biases	Correlation Coefficient	.329**	.202**	1.000
		Sig. (2-tailed)	.000	.001	.
		N	250	250	250
**. Correlation is significant at the 0.01 level (2-tailed).					

From the above correlation table we come can say that the strength between time consumption and cost is strong as compare to time consumption and human biases. Whereas the human biases and cost is having less strong relationship comparing to time consumption. Hence traditional recruitment process involves more time and cost as compared to AI based recruitments.

Hypothesis-7

Research Question: Is there any association between the gender and the risk perceived by the recruiting managers about the usage of AI in recruitment.

Statistical Test: Chi-square Test

Hypothesis Statement:

H0: There is no association between the gender and the risk perceived by the recruiting managers about the usage of AI in recruitment.

H1: There is an association between the gender and the risk perceived by the recruiting managers about the usage of AI in recruitment.

Test Statistics:

Chi-Square Test			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	16.675	4	.002
N of Valid Cases	250		

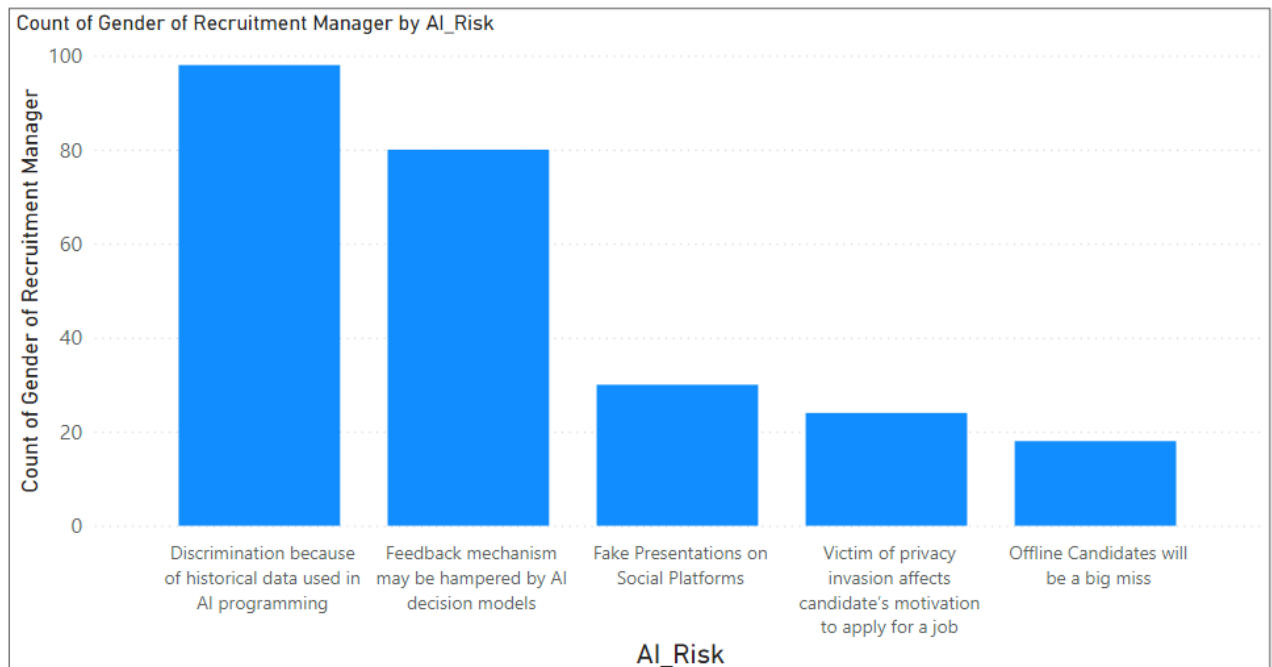
Observation: $\chi^2(4) = 16.675, p = 0.002$

After testing the hypothesis, we got to the finding that we reject the null hypothesis due to the p-value which is less than 0.01. Hence the alternate hypothesis seems to be true, which tells us that there is an association between the gender and the risk perceived by the recruiting managers about the usage of AI in recruitment.

To understand the association in detail we refer to the below mentioned table and graph:

**What risk do you consider while using AI in recruitment * Gender of Recruitment Manager
Crosstabulation**

		Gender of Recruitment Manager		Total
		Male	Female	
What risk do you consider while using AI in recruitment	Fake Presentations on Social Platforms	1	29	30
	Offline Candidates will be a big miss	7	11	18
	Victim of privacy invasion affects candidate's motivation to apply for a job	9	15	24
	Discrimination because of historical data used in AI programming	41	57	98
	Feedback mechanism may be hampered by AI decision models	23	57	80
Total		81	169	250



From the above table and graph we can say that discrimination due to historical data used in AI programming and Feedback mechanism hampered by AI decision models are the two

strong points which show association between genders where both male and female are of the same opinion.

Hypothesis-8

Research Question: Is there any association between the barriers perceived by the recruiting managers in using AI in recruitment and the success parameters perceived by them of using AI in recruitment.

Statistical Test: Chi-square Test

Hypothesis Statement:

H0: There is no association between the barriers perceived by the recruiting managers in using AI in recruitment and the success parameters perceived by them of using AI in recruitment.

H1: There is an association between the barriers perceived by the recruiting managers in using AI in recruitment and the success parameters perceived by them of using AI in recruitment.

Test Statistics:

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	75.373	16	.000
N of Valid Cases	250		

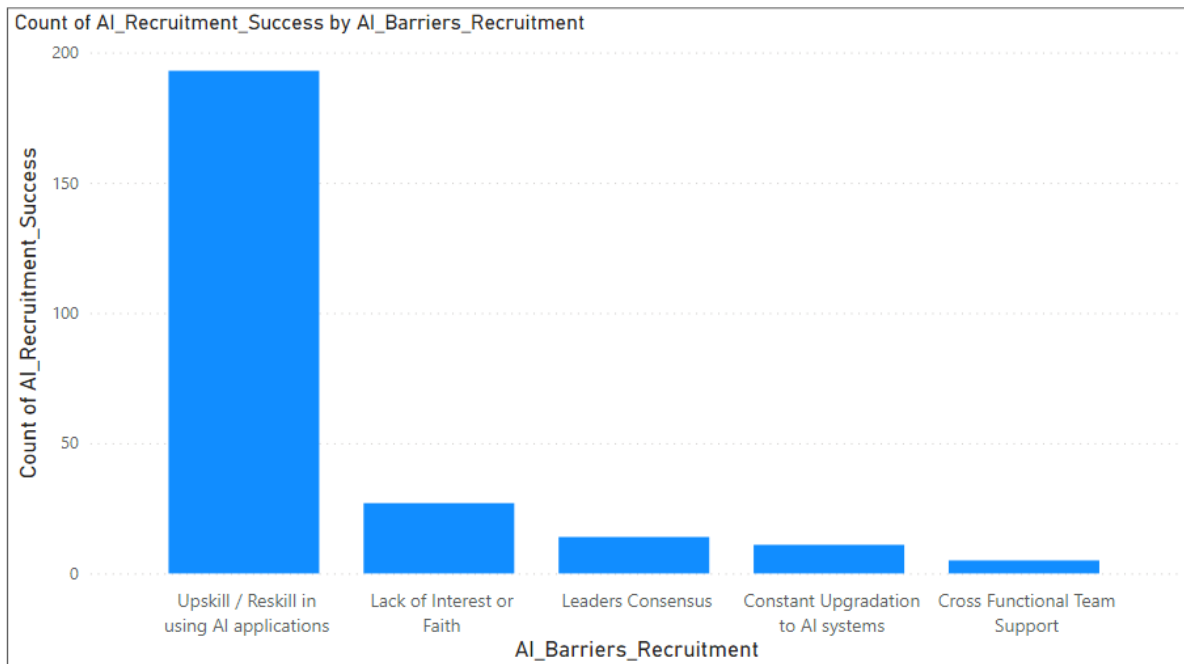
Observation: $\chi^2(16) = 75.373, p < 0.01$

After testing the hypothesis, we got to the finding that we reject the null hypothesis due to the p-value which is less than 0.01. Hence the alternate hypothesis seems to be true, which tells us that there is an association between the barriers perceived by the recruiting managers in using AI in recruitment and the success parameters perceived by them of using AI in recruitment.

To understand the association in detail we refer to the below mentioned table and graph:

What barriers do you feel are most recruiters afraid of using AI * Which parameters you think will contribute more to the success of using AI in recruitment Crosstabulation

		Which parameters you think will contribute more to the success of using AI in recruitment					Total
		Educate Employees	Empower Employees	Using the right recruitment metrics	Constant Data Gathering and Analyzing	Transparently Reviewing Data	
What barriers do you feel are most recruiters afraid of using AI	Upskill / Reskill in using AI applications	26	8	10	32	117	193
	Cross Functional Team Support	5	0	0	0	0	5
	Leaders Consensus	8	1	4	0	1	14
	Constant Upgradation to AI systems	2	0	3	4	2	11
	Lack of Interest or Faith	5	2	0	1	19	27
Total		46	11	17	37	139	250



From the above table and graph we can say that upskilling employees, transparently reviewing data and educating employees are the three strong points which show association between barriers and success of using AI in recruitment.

Chapter-5

Conclusions, recommendations and Scope for future research

Chapter 5: Conclusions, Recommendations and Scope for future research

Conclusions of Research study

The researcher has taken efforts to collect and record and analyse the data of this research. The data has been analysed and findings have been generated based on which the researcher is making the following conclusions:

There have been tremendous requirements or vacant positions in the IT industry.

Due to the availability of jobs, candidates who are looking for jobs or change in their career are always on the lookout or searching for the jobs, because of this the play of attritions and retention starts in the IT industry.

There is always a race amongst IT companies to look out for the best talent, this makes recruitment managers to be on their toes and plan accordingly to maintain a balance between attrition and retention.

After understanding the analysis regarding demographic data, we can conclude that early 30 female recruitment managers are more because MNCs IT companies use to hire from top business schools where the HR specialization class representation is also dominated by females.

As the managers are very much knowledgeable about how AI fits into different recruitment phases, it puts them into a position where they can visualize its impact on the outcome of the recruitment process and that's why they know where AI can help them out in the recruitment cycle.

There has been tremendous advancement in the technology field which has made the introduction of AI into various fields and recruitment is one of them. Technology specifically AI is helping organizations to reach out to different geographical territories in just a matter of seconds and this wide spread application of AI is making organizations capable to scan for best fit candidates against the vacant position from the larger market and even in some cases from competitors, for example it is easier for the organization to reach out to the candidates digitally and also leverage different digital platforms to broadcast vacant positions as well as search for the appropriate candidates.

When the managers' responses have been analysed with respect to their views on traditional or conventional recruitment processes we came to the conclusion that traditional type of recruitment process is very pain staking since it involves lot of manpower as well as paperwork which leads to higher recruitment time as well as considering all the resources the cost of recruitment process is also high and the most important aspect is there are the chances of making errors due to this complex process. This paves the way for AI introduction in recruitment process.

We also come to the conclusion that AI automates the recruitment process thereby minimizing or eliminating the manual or repetitive task. Since automation is there, AI strategically replaces the workforce requirement from certain processes of the recruitment hence there will be minimal chances of biases.

Since most of the processes are automated, we can conclude that recruiters will be having less pressure of performing manual task.

Since we got to know that the recruitment manager understood the larger picture of AI in recruitment, they do understand the benefits of using in recruitment. Since 90% plus organizations are using AI heavily in their recruitment processes, it is helping organization by reducing the hiring time because of faster processes, less human errors leading to more quality candidates.

As we have found from the analysis that AI have different functionality specifically for the recruitment functions because of its power to take the data through the journey of descriptive analytics to prescriptive analytics. Since the AI is helping the organizations to scan the different aspects of candidate's candidature such as resume, portfolios. It allows organization to spot the candidate who had right fit to the respective jobs available in the organizations.

Since AI is capable of to offer different services to the recruitment managers such as chatbots scanning the digital presence of candidates, in some cases analysing their social interaction is helping them to identify and filter out the candidates for the respective vacant positions. This creates a precision environment where the candidate pool will be of good quality.

As AI helps in optimizing the recruitment process and also helps in efficiently mobilizing and utilizing resources for the recruitment, it results into hiring quality candidates in minimal time. This result motivates companies to invest appropriately in AI and allocates the budget for same.

As we understood that AI is helping the companies in speeding up their recruitment processes by understanding trend and patterns of their recruiters and giving insights to the respective recruitment managers, we conclude that recruiters are able to perform better the insights received from their managers based on AI and also remains productive with the time in their hand.

As we understood from the analysis that AI simplified the things for recruitment managers it was becoming easier for recruitment manager to make conscious and wise decisions regarding the recruitment practices in their respective organizations.

Since the AI is helping companies to test the skills of the prospective candidates from general to niche and from soft to hard skills, we come to the conclusion that this is resulting into quality hiring as the aspect of social scanning and analysing their respective behaviour is also getting covered before actually taking them onboard.

As AI is breaking barriers whether it's related to analysing the candidates from different perspective, voicing out their requirements in market, reaching out to the larger candidate pool, tapping cross continental talent also leads to the conclusion that it is helping the companies to find an ideal person job fit against their open positions.

Since human biases get eliminated due to the introduction of AI, we come to the conclusion that the recruitment process is being more ethical as compared to the traditional one.

The time and performance related to recruitment process is improving with the help of AI and hence we can conclude that recruitment managers are in a position to plan their budget schedule as well as learning and development plans for their respective teams very much in place.

The AI is helping the organizations to create an experience for both candidates and recruiters but still managers have the belief that AI can't take on the recruitment process fully and this leads to the conclusion that the human values still hold true value and the connection between humans & AI can opens up more avenues to know each other very well which can be served as an important indicator while selecting and onboarding the candidates. That's why the data shows that candidates are not much in favour of AI based interviews or negotiations.

Since we got to know that recruiting managers are of the opinion that the recruiter should be able to develop their skillsets regarding the uses of AI in recruitment which will lead to the conclusion that if they are knowledgeable, they are able to differentiate between past, present

and future predictions based on the data so that there will be a minimal room for bias. Since there is certain percentage of responding recruitment managers who are not much confident about AI which leads to the conclusion that they will not proactively takes steps to understand the AI structure in recruitment which will help themselves to assess how AI models will help them improving their productivity by creating positive two-way communication with candidates. Finally, this all boils down to the conclusion that recruiting managers should focus on that they as a team of recruiters should analyse the data from time to time without any biases and keep educating employees of their team time to time.

Recommendations

1. The companies must focus on the culture where transparency, integrity, ethics is developed and maintained, specially considering the recruitment function because these are the three pillars on which recruitment manager and their teams build their believe on AI in recruitment as well as reviewing the data involved in recruitment transparently and unbiasedly.
2. Since AI is very dynamic in nature whose approaches got change with the time and data availability hence to remain relevant with respect to changes of AI in recruitment recruiting manager and their respective companies should make sure that their recruiting teams should upgrade themselves in terms of their knowledge and skills relevant to application of AI in different phases of recruitment.
3. The companies must focus on developing a specialized team who will specially look after the actions of recruitment team like a watchdog who will make sure that AI is not discriminating based on historical data or candidates cast, cred, gender and the feedback of the recruitment team is provided to their respective managers and candidates should be justifiable one.
4. Companies should also focus on gender diversity because most of the managerial positions are held by female managers as compared to male. Male representation

should get increase and to make that happen company should focus on developing their recruitment strategies according to that.

5. Since we have noticed that traditional recruitment procedures incurred cost to the companies very high as compared to AI and also the time for whole recruitment cycle is required more in traditional as compared to recruitment happening through AI hence if companies are having any traditional recruitment practice pertaining to in a specific job role, they should try to minimized this and switch to AI based recruitment.
6. As analysis and conclusion suggest that if AI completely takes over the recruitment process and eliminates the recruitment team's role it is going to worsen the perception about the company in the market. Hence company should focus on not to over use AI in recruitment process.
7. Since AI gives capabilities to the recruitment team to analyze the candidates' professional as well as personal life's information, this can put the candidates on anxious mode if they are aware about this. Hence companies should focus on not to revel all this insight to candidates where they will feel that it's a hammer on their privacy.
8. Since the managers who are senior in the age particularly from this research study managers who are 33 and above understands that AI is much better than their younger one. Hence companies should divide their strategies to make such people as their recruiting managers who can give a better understanding of AI in recruitment in companies.

Scope for Future Research

1. Researchers can focus on studying the organizations who doesn't use AI in their recruitment process versus the companies who uses AI in their recruitment process where we can compare the cost and time involved in the whole recruitment cycle as well as the hiring quality candidates.

2. Since AI has been advance in lot of sense from its applicability point of view in recruitment, researchers can study the uses of high-level AI application in recruitment where companies which are using AI for the interview process and how does they fairly capture the candidate's data as compared to manual interview process by a recruiting manager.
3. A study can be perform based on the uses of AI in screening the potential candidates by the staffing companies vis-a-vis the recruiting companies.
4. Researchers can also study the performance of the hired candidates from the view point of traditional recruitment against the companies who uses AI for hiring the candidates.

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Appendices

TILAK MAHARASHTRA VIDYAPEETH, PUNE

TOPIC- TO STUDY THE EFFECTIVENESS OF ARTIFICIAL INTELLIGENCE IN
RECRUITMENT PRACTICES OF INDIAN I.T. COMPANIES

Research Guide: Dr.Pranati Tilak

Research student: Kamal Kishor

Questionnaire

(Survey to be filled by Recruiting Managers)

Name of the company :

Place :

City :

Name of Recruiting Manager :

Mobile No. :

Email ID :

Date :

1. Gender of Recruitment Manager

Mark only one oval.

☐ Male

☐ Female

2. Age of Recruitment Manager

Mark only one oval.

☐ <=27

☐ 28-30

☐ 31-33

☐ 34-36

☐ 37+

3. How you perceive AI in recruitment?

Mark only one oval.

☐ Very negative

☐ Somewhat negative

☐ Neither negative nor positive

☐ Somewhat positive

☐ Very Positive

4. Are you aware of how does AI got implemented into the recruitment procedures.

Mark only one oval

☐ Very much unaware

☐ Somewhat unaware

☐ Not sure

☐ Somewhat aware

☐ Very much aware

5. According to you in which area of recruitment your organization uses AI most

Mark only one oval

- ☐ Interview arranging and scheduling
- ☐ Application reviewing and pre-selection
- ☐ In the interview
- ☐ Applicant communication
- ☐ Something else

6. Do you believe that AI has changed the way recruitment use to happen

Mark only one oval

- ☐ Not at all
- ☐ Not much
- ☐ Neutral
- ☐ Quite a lot
- ☐ Very much

7. Do you feel that AI based software are helping you to attract the best talent

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither disagree nor agree
- ☐ Agree
- ☐ Strongly agree

8. Do you think AI will eliminate the manpower requirement of an organization specially in recruitment.

Mark only one oval.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither disagree nor agree
- ☐ Agree
- ☐ Strongly agree

9. Do you think so that traditional recruitment processes are time consuming

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither disagree nor agree
- ☐ Agree
- ☐ Strongly agree

10. Do you think so that traditional recruitment processes are costly

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither disagree nor agree
- ☐ Agree
- ☐ Strongly agree

11. Do you think so that traditional recruitment processes involve human biases

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither disagree nor agree
- ☐ Agree
- ☐ Strongly agree

12. I consider myself knowledgeable about the topic of using AI for the purposes of enhancing the recruitment function

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither disagree nor agree
- ☐ Agree
- ☐ Strongly agree

13. For recruitment purposes, to what degree your organization making use of AI today

Mark only one oval

- ☐ 0-25%
- ☐ 25-50%
- ☐ 50-75%
- ☐ 75-100%

14. Select the feature you would most likely see in an AI-Powered HR application in recruitment

Mark only one oval

- ☐ Ability to analyze
- ☐ Ability to predict
- ☐ Ability to personalize
- ☐ Ability to diagnose
- ☐ Ability to organize

15. Do you think that using AI based algorithms to scan work samples,resumes,and other materials presented by applicants improves the recruitment and selection Process

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither disagree nor agree
- ☐ Agree
- ☐ Strongly agree

16. Do you think that AI interfaces such as chatbots and virtual assistant will become an increasingly viable way for engaging prospective candidates to fill the open positions

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither disagree nor agree
- ☐ Agree
- ☐ Strongly agree

17. Do you think that using AI based algorithms to scan and analyze social media posts, photos and other candidate related online materials improves the recruitment process

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither disagree nor agree
- ☐ Agree
- ☐ Strongly agree

18. Do you think that using AI based algorithms to analyze interviews, facial expression, word choice and other areas is a good way of assessing areas such as candidate engagement and emotion

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

19. The company uses Artificial Intelligence (AI) to perform operations without human intervention

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

20. The company uses Artificial Intelligence (AI) to ease the administrative workload from recruitment process

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

21. The company is using Artificial Intelligence (AI) to replace manual tasks from recruitment process

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

22. The company uses Artificial Intelligence (AI) to replace repetitive tasks from recruitment process

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

23. The company uses Artificial Intelligence (AI) to avoid errors automatically from recruitment process.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

24. The company will use Artificial Intelligence (AI) to shift resources efficiently (fewer inputs) required for recruitment process.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

25. The company uses Artificial Intelligence (AI) to convert inputs into high quality outputs involved in recruitment.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

26. The company uses Artificial Intelligence (AI) in a cost-effective manner for recruitment.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

27. The company is using artificial intelligence (AI) to improve productivity of recruiters.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

28. The company uses Artificial Intelligence (AI) to speed up business processes.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

29. Artificial intelligence (AI) easily understands different aspects of recruitments.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

30. A recruiters are able to make the best use of AI at their disposal.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

31. Recruiters can complete their task with minimal supervision from their managers because of AI.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

32. Because of AI usage in recruitment most of the tasks are simplified for recruiters.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

33. The company uses Artificial Intelligence (AI) to predict employee success.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

34. The company uses Artificial Intelligence (AI) to evaluate candidates for vacant positions.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

35. The company uses Artificial Intelligence (AI) to test employees for a specific job.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

36. The company uses Artificial Intelligence (AI) to reduce human bias.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

37. The company uses Artificial Intelligence (AI) to put the right person in the right job.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

38. The company uses artificial intelligence (AI) to schedule interviews.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

39. The company uses artificial intelligence (AI) to approve applicants for suitable jobs.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

40. The company uses Artificial Intelligence (AI) to improve candidate engagement for the job.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

41. The company uses Artificial Intelligence (AI) to select candidates based on their interpersonal skills.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

42. The company uses Artificial Intelligence (AI) to reduce hiring time.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

43. The company uses Artificial Intelligence (AI) to make ethical hiring decisions.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

44. If the majority of an interview process was delivered by AI than a human recruiter do you think candidates' perception about the company will change.

Mark only one oval

- ☐ Improved perception
- ☐ Would not change perception
- ☐ Worsen perception

45. Do you think usage of AI in salary negotiation will be great idea.

Mark only one oval

- ☐ Yes
- ☐ No

46. The quality of hiring is better due to AI as compared to traditional system.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

47. Does your organization have long term vision in implementing AI in more broader sense as compared to today in recruitment process.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

48. Do you think that there is a scope for optimizing AI usage in recruitment process.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

49. Do you think recruiters will have more time to do other task and acquire new skills due to the uses of AI.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

50. Do you think that because of AI recruiting managers will be able to maintain their schedules or deadline.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

51. Do you think that because of AI, recruiting managers will be able to manage their budgets well.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

52. Do you think that because of AI, recruiting managers will be able to evaluate team performance well.

Mark only one oval

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly agree

53. What do you think what keeps organizations away from implementing and utilizing AI in their respective organizations in full fledged manner.

Mark only one oval

- ☐ Not convinced of its impact
- ☐ Fear of laying off employees
- ☐ Privacy concerns
- ☐ Security concerns
- ☐ Would love to have human interaction

54. What do you think will be the key motivation for an organization to use AI in their recruitment practices.

Mark only one oval

- ☐ It will help to create a competitive advantage
- ☐ Optimizing internal business operations
- ☐ Make better decisions
- ☐ Explore new territories to look out for potential talents
- ☐ End to end recruitment experience

55. What risk do you consider while using AI in recruitment.

Mark only one oval

- ☐ Fake presentations on social platforms
- ☐ Offline candidates will be a big miss
- ☐ Victim of privacy invasion affects candidate's motivation to apply for job
- ☐ Discrimination because of historical data used in AI programming
- ☐ Feedback mechanism may be hampered by AI decision models

56. What barriers do you feel are most recruiters afraid of using AI.

Mark only one oval

- ☐ Upskill/Reskill in using AI applications
- ☐ Cross functional team support
- ☐ Leaders consensus
- ☐ Constant upgradation to AI systems
- ☐ Lack of interest or faith

57. Which parameters you think will contribute more to the success of using AI in recruitment.

Mark only one oval

- ☐ Educate employees
- ☐ Empower employees
- ☐ Using the right recruitment metrics
- ☐ Constant data gathering and analyzing
- ☐ Transparently Reviewing Data