Research Paper

Artificial Intelligence in Human Resource Management in Public Sector

*Kumar Ankit

iankit3729@gmail.com
Human Resource, Galgotias University, Greater Noida, India

Abstract-*In the competitive world industries, collect the accurate data and analysed the collected data for the use of company's growth and daily working is essential. The world is constantly becoming more prone to technology due to globalization which implies organizations have to stay up to date in order to be competitive. Human resource management (HRM) is more important than ever. With technological advances also comes the opportunity to streamline activities that previously have had to be carried out by humans. Therefore, it is of the highest importance to consider and*

evaluate the impact technology might have on the area of HRM and specifically Talent acquisition, talent management, compensation & benefit and learning & development.
The main purpose of the study is to analyses the lack of AI in HR. It aims to investigate where AI can be implemented in HR process and possibly make the process more effective, as well as that the implications would be of having AI.
Keywords: *human resource, artificial intelligence*

I. INTRODUCTION

Artificial intelligence (AI) refers to technology used to do a task that requires some level of intelligence to accomplish — in other words, a tool trained to do what a human can do. Why is AI different than ordinary software? Three core components highspeed computation, a huge amount of quality data and advanced algorithms differentiate AI from ordinary software. Core AI technologies provide better accuracy and stability to everyday processes using an algorithm that connects quality data with fast computation services.

AI technologies offer significant opportunities to improve HR functions, such as self-service transactions, recruiting and talent acquisition, payroll, reporting, access policies and procedures. We are living in an era in which AI capabilities are reaching new heights and have a major impact on how we operate our business. Human resources executives have faith that merging AI into HR administration functions will benefit and improve the overall employee experience. This will provide more capacity, more time and budget, and more accurate information for decisive people management.

Humans and learning machines are working together to produce an ever-increasing amount of HR data in the cloud, and the use of artificial intelligence analyses offer better insight into how to execute and operate. The success of any organization depends on how effectively it combines people, process and technology intelligently to deliver transformational value at optimized cost. AI will help to efficiently automate many back-office functions for reliable HR transactions and service delivery.

In the competitive world Industries, collect the accurate data and analyzed the collected data for the use of company's growth and daily working is essential. The world is constantly becoming more prone to technology due to globalization which implies organizations have to stay up to date in order to be competitive. Human Resource Management (HRM) is more important than ever. With technological advances also comes the opportunity to streamline activities that previously have had to be carried out by humans.

Therefore, it is of the highest importance to consider and evaluate the impact technology might have on the area of HRM and specifically Talent Acquisition, Talent Management, Compensation & Benefit and Learning & Development. The main purpose of the study is to analyses the lack of AI in HR. It aims to investigate where AI can be implemented in HR process and possibly make the process more effective, as well as what the implications would be of having AI.

AREA OF INDUSTRY:

Artificial intelligence offers tremendous potential for industry. It's already making production more efficient, more flexible, and more reliable. Industry is becoming increasingly digitalized; the digital enterprise is already a reality. Data is continuously generated, processed, and analysed.

II. REVIEW OF LITRATURE

There are many definitions of human resource management brought forward by a range of researchers, however most of the definitions do complement each other. A definition by Schemerhorn (2001) is that HRM is how you are able to gain and develop a workforce which is talented, to help the company achieves its goals, as well as its mission, vision and different objectives at hand. Another definition is that HRM is an approach to employee management with the aim of retaining a workforce which is both capable and committed by different techniques, such as cultural, structural and personnel to bring the organization a competitive advantage (Storey, 2004). For the purpose of this study, HRM will be defined as the process of acquiring and maintaining new skills, capabilities and competences in an organization through its workforce by the means of different management techniques.

HRM practices include recruiting new employees, managing employees, hiring employees and developments (Wall & Wood, 2005). Most of these practices have a specific focus on retaining new employees and keeping up their satisfactory level. This is because human resources are such a dynamic part of the company and is ever changing, therefore it needs the right management by an organization (Bibi, Pangil & Johari, 2016). The management and retention of HRM can be argued to have a special importance within manufacturing companies which beholds a focus on innovation within manufacturing to get a comparative advantage and better performances (Youndt, Snell, Dean & Lepak, 1996). The role that HRM have within an organization have changed severely during many years and are no longer just used as a way to manage an organization's internal costs of labor (Becker & Gerhart, 1996). More recent researches are looking into HRM as being a strategic asset to organizations where employees are the key assets and how to acquire and manage these play the most important role (Bas,2012). In the following section recruitment in HRM will be discussed followed by a section on selection in HRM.

2.1.1 Recruitment in HRM

The research conducted within recruitment as a part of HRM has increased in the later decades and there is now more available research on how recruitment actually impact applicant behaviors and employee behavior (Taylor & Collins, 2000). Recruitment is defined as the practice of finding the right candidates which make up a candidate pool which fits an open job vacancy that a company have (Stoilkovska, IIieva & Gjakovski, 2015). Recruitment can also be said to be the centerpiece within HRM, as it is those employees that are hired who will be subject later on to the other HRM practices. (Griepentrog, Harold, Holtz, Klimoski & Marsh, 2012). This is further supported by Newell (2005) who states that it is very important to have competent personnel in organizations, which is fulfilled with an effective recruitment and selection process. If the wrong person is hired, the organization can suffer from several economical losses instead (Newell, 2005; Muir 1988). However, being able to hire the most competent and best employees on the market is becoming increasingly hard amongst the competition on the job market (Taylor & Collins, 2000; O'Donovan, 2019). The way recruitment is being conducted has therefore, due to the competition, changed. It is no longer possible to use the same recruitment sources as before, instead companies nowadays use more innovative ways of recruiting their employees as a way to stand out from competitors. (Taylor & Collins, 2000). What can be drawn from this is how important it is for every organization to try to keep up with recruitment trends and how recruitment is developing.

2.1.2 Selection in HRM

Selection is the second process which is undergone when hiring new employees. It usually takes place after the organization have been doing initial recruitment where they establish a pool of possible qualified applicants, and now have to select the right applicant for the job (Newell, 2005; Stoilkovska et al. 2015). A comparison which can be done of selection is to that of a jigsaw puzzle, as stated by Newell (2005), where a company tries to select the correct piece to the puzzle out of a bunch of wrong pieces. Selecting the right employees is most commonly conducted by traditional methods, such as interviewing the candidates. However, this is a practice which companies slowly exchange to more non-traditional methods as a way to increase the reliability of the selection (Elearn, 2009). One of the important things to consider when doing the selection is everyone in the established pool of candidates should have an equal chance to be selected for the job (Stoilkovska et al. 2015).

Some methods used for selection includes pre-selection, interviews and assessment centers. To evaluate the right selection method for an applicant there are three methods, usually applied as follows: reliability, validity and usefulness. In validity, applicants can be scored on a scale with job performance on y axis and team-working score on the x axis according to "false negatives" or "false positives" - either people were thought to be bad, but they were good, or people were thought to be good but ended up performing badly (Newell, 2005). The final selection decision is usually taken by one person in the end, most often a recruiter with experience within the job who can take adequate decisions on who would fit the job. There is also the possibility in larger corporations to have the final selection be decided by a panel with some of the main personnel in charge of the employees, such as line managers and chairman. This method eliminates the pressure of experience and abilities the individuals need to have and can also help eliminate some factors of biases toward candidates (Muir, 1988).

2.2 The traditional recruitment process

The traditional recruitment process does not have a determined model for how it should be conducted, rather it is described and theorized slightly different by many researchers (Acikgoz, 2019). Acikgoz (2019) argues that there are two views to the traditional recruitment process: either the organizational view or from the job-seekers view. However, there is a lack of models which refers one view to the other. Therefore, when investigating the recruitment process it is important to keep in mind from what view it is taken. Among these different suggested models of the recruitment process, it is possible to see some common steps emerge. Usually, the first step taken is for the company to determine if a spot or vacancy within the organization needs to be filled, secondly is to conduct an analysis of the job opening, thirdly to write a description of the job and lastly to determine a description of the preferred employee (Carroll, Marchington, Earnshaw & Taylor, 1999; Mueller & Baum, 2011; Thebe & Van der Waldt, 2014). One recruitment process model as proposed by Breaugh (2008) consists of five different interconnected steps (see Figure 1). The first step begins with the organization establishing recruitment objectives, which is the specification of how many positions should be filled and what characteristics, such as skills, work experience, education, the desired hire should inhabit.

The second step is the development of strategy, where the organizations should choose what kind of employee they want to recruitment, through what source, what message they want to reach out with and if there would be any budget constraints (Breaugh, 2008). The sources being internal, external or walk-ins (Moser, 2005). Third step is the recruitment activities where the method of recruitment should be decided, which recruiters should do the recruitment or if they need to extend the time for the job offering. Up to the third step the recruitment process by Breaugh is described according to the organizational view, the fourth step thereafter is where the variable of the job applicant comes into the model. This includes the interest of the applicant, such as how interesting they think the position is, what they expect from the job offer or what other opportunities they have. It also includes the self-insights and decision-making process of the applicant. The fifth and final step is the recruitment results, which is interconnected with all the previous steps of the recruitment process. This is the final results of the whole recruitment, which should be connected with the recruitment objectives the organization had from the beginning and be visible through both the development of the strategy and the recruitment activities (Breaugh, 2008). With all these steps implemented is when according to Breaugh (2008) an organization has successfully recruited a new employee for a vacant position.

OBJECTIVES OF THE RESEARCH
- To assess the level of adoption of artificial intelligence (AI) technology in human resource management (HRM) functions within NTPC Limited.
- To examine the familiarity and usage of AI applications in HRM among employees at NTPC Limited.

- To explore employees' perceptions of the effectiveness and potential impact of AI in HRM, including its ability to improve diversity and inclusion.
- To identify the challenges and concerns faced by NTPC Limited in implementing AI in HRM.
- To provide insights into NTPC Limited position in the AI adoption curve and its future outlook regarding AI technology in HRM.

- To compare the findings from NTPC Limited with existing industry trends and literature on AI adoption in HRM within the Indian public sector.

NEED OF THE STUDY
Artificial intelligence (AI) has emerged as a transformative technology in various sectors, including human resource management (HRM). In the context of the Indian public sector, where organizations like NTPC's

operate, there is a growing need to understand the adoption, challenges, and implications of AI in HRM. Several factors contribute to the significance of this study:

1.   Enhancing HR Efficiency: As organizations seek to streamline HR processes and improve efficiency, the adoption of AI technologies presents opportunities for automation, data- driven decision-making, and enhanced employee experience.

2.   Addressing Talent Challenges: The Indian public sector faces challenges related to talent acquisition, retention, and skill development. AI solutions offer potential solutions to these challenges by enabling smarter recruitment, talent management, and upskilling initiatives.

3.   Navigating Technological Change: With rapid advancements in AI technology, organizations need to stay abreast of trends and best practices to remain competitive. Understanding how NTPC Limited and similar organizations in the Indian public sector are adopting AI in HRM can provide valuable insights into navigating technological change.

4.   Promoting Diversity and Inclusion: AI has the potential to improve diversity and inclusion efforts by minimizing bias in recruitment and performance evaluation processes. Exploring employees' perceptions of AI's impact on diversity and inclusion is crucial for promoting a fair and equitable workplace.

5.   Policy and Strategy Development: Insights from this study can inform policy development and strategic planning within NTPC Limited and other public sector organizations, helping them leverage AI effectively to meet their HR objectives.

6.   Contribution to Research: This study contributes to the growing body of literature on AI adoption in HRM within the Indian context, providing empirical evidence and practical insights for researchers, policymakers, and practitioners.

By addressing these needs, this study aims to provide a comprehensive understanding of AI adoption in HRM at NTPC Limited and its implications for the broader Indian public sector.

CURRENT HR PRACTICES IN INDIAN PUBLIC SECTOR

In the Indian public sector, human resource practices have been evolving with the integration of artificial intelligence (AI) technologies. Here are some of the current HR practices utilizing AI in the Indian public sector:

1.   Recruitment and Talent Acquisition:
-    AI-driven resume screening: AI algorithms are used to screen resumes, match candidate profiles with job requirements, and identify top talent efficiently.
-    Automated candidate sourcing: AI tools help in sourcing candidates from various online platforms and databases based on specific criteria and keywords.

2.   Employee Onboarding and Training:
-    Chatbots for onboarding: AI-powered chatbots provide new employees with on-demand support, answering common questions, providing information about company policies, and guiding them through the onboarding process.
-    Personalized training recommendations: AI analyzes employee performance data to recommend personalized training programs and learning resources tailored to individual needs and skill gaps.
3.   Performance Management:
-    AI-driven performance evaluation: AI tools analyze employee performance metrics, feedback, and other data to provide objective assessments and identify areas for improvement.
-    Predictive analytics for performance forecasting: AI algorithms predict future performance trends based on historical data, enabling proactive interventions and talent management strategies.
4.   Employee Engagement and Retention:
-    Sentiment analysis: AI tools analyze employee feedback from surveys, social media, and other channels to gauge sentiment, identify issues, and suggest measures for improving employee engagement and retention.
-    Predictive modeling for attrition: AI algorithms predict employee attrition risk factors, allowing HR to implement retention strategies such as targeted interventions and personalized career development plans.
5.   Workforce Planning and Optimization:
-    Predictive analytics for workforce planning: AI algorithms analyze historical data, market trends, and business goals to forecast future workforce needs, optimize staffing levels, and align talent with organizational objectives.
-    Skill mapping and gap analysis: AI tools assess the skills of existing employees, identify skill gaps, and

recommend strategies for upskilling or hiring to meet current and future business needs.

6. Employee Support and HR Operations:
-    AI-powered HR helpdesk: Chatbots and virtual assistants provide employees with instant support for HR-related queries, such as leave management, policy information, and benefits administration.
-    Automation of routine HR tasks: AI automates repetitive and time-consuming tasks, such as data entry, scheduling interviews, and processing payroll, freeing up HR professionals to focus on strategic initiatives.
These AI-driven HR practices in the Indian public sector contribute to improving efficiency, effectiveness, and employee satisfaction while supporting organizational goals and objectives. However, challenges such as data privacy, ethical considerations, and skill gaps among HR professionals need to be addressed to maximize the benefits of AI adoption.

COMPANY OVERVIEW

NTPC is India's largest energy conglomerate with roots planted way back in 1975 to accelerate power development in India. Since then it has established itself as the dominant power major with presence in the entire value chain of the power generation business. From fossil fuels it has forayed into generating electricity via hydro, nuclear and renewable energy sources. This foray will play a major role in lowering its carbon footprint by reducing green house gas emissions. To strengthen its core business, the corporation has diversified into the fields of consultancy, power trading, training of power professionals, rural electrification, ash utilisation and coal mining as well.

NTPC became a Maharatna company in May 2010. As of January 2020, there are 10 Maharatnas CPSEs in India. NTPC is ranked No. 2 Independent Power Producer(IPP) in Platts Top 250 Global Energy Company rankings.

Growth of NTPC installed capacity and generation

The total installed capacity of the company is 73,874 MW (including JVs) own stations include 26 coal based, 7 gas based, 1 Hydro, 15 Solar and 1 Small hydro project. Under JVs and Subsidiaries, NTPC has 9 coal based, 4 gas based, 8 hydro based and 19 renewable energy projects. By 2032, non fossil fuel based generation capacity shall make up nearly 50% of NTPC's portfolio.
NTPC has been operating its plants at high efficiency levels. As on 31.03.2023 the company has 17% of the total national capacity and, it contributes 25% of total power generation of India due to its focus on high efficiency.

In October 2004, NTPC launched its Initial Public Offering (IPO) consisting of 5.25% as fresh issue and 5.25% as offer for sale by the Government of India. NTPC thus became a listed company in November 2004 with the Government holding 89.5% of the equity share capital. In February 2010, the Shareholding of Government of India was reduced from 89.5% to 84.5% through a further public offer. Government of India has further divested 9.5% shares through OFS route in February 2013. With this, GOI's holding in NTPC has reduced from 84.5% to 75%. The rest is held by Institutional Investors, banks and Public. Presently, GOI holding in NTPC is 51.10%.

NTPC is not only the foremost power generator; it is also among the great places to work. The company is guided by the "People before Plant Load Factor" mantra which is the template for all its human resource related policies. In 2019, NTPC is recognized as "Laureate" for consistently ranking among "Top 50 Best Companies to Work for in India" for last 11 years in the Great Place to Work and Economic Times survey. Besides, NTPC was also recognized as the best among PSUs and in Manufacturing.

DATA ANALYSIS, INTERPRETATION AND FINDINGS
The following consist of the data analysis and interpretation of my questionnaire:
The below graph shows the result of the survey in which employees where asked about the Artificial Intelligence in Human Resource Management In NTPC. The total number of respondents of the survey was 130. The total number of questions is 20 in the survey. The data analysis & interpretation are given below: -

Question no.1 :- Your organization embrace AI tech in HR functions?

| Scale	No. Of Responses	Percentage
Strongly Agree	14	10.8%
Agree	41	31.5%
Neutral	47	36.2%
Disagree	21	16.2%
Strongly Disagree	7	7%
Total	130	100%

Figure no.1:-

6. Your organization embrace AI tech in HR functions?
130 responses
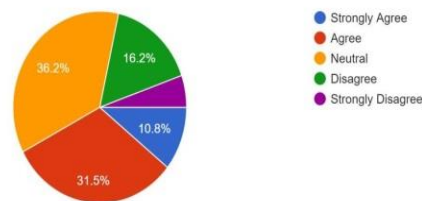
Interpretation :- According to survey, 10.8% of people choose Strongly Agree, 31.5% of people choose Agree, 36.2% of people choose Neutral, 16.2% of people choose Disagree and 7% of people choose Strongly Disagree.

Question no.2 :- Based on your experience, which is more effective?

Scale	No. Of Responses	Percentage
Answering queries manually	22	16.9%
AI answering the queries	70	53.8%
Manually supervised AI led answering of queries	38	29.2%
Total	130	100%

Figure no.2:-

7. Based on your experience, which is more effective?
130 responses
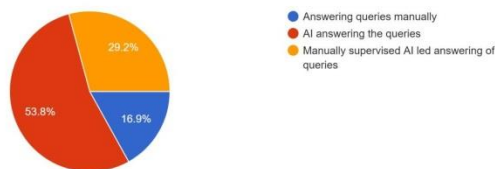
Interpretation :- According to survey, 16.9% of people choose Answering queries manually,53.8% of people choose AI answering the queries, 29.2% of people choose Manually supervised AI led answering of queries

Question no.3 :- Does your organization use chatbots? Table no.3 :-

Scale	No. Of Responses	Percentage
Yes	54	41.5%
No	46	35.4%
Maybe	30	23.1%
Total	130	100%

Figure No.3:-

8. Does your organization use chatbots?
130 responses

- Yes
- No
- Maybe

35.4%   23.1%
41.5%
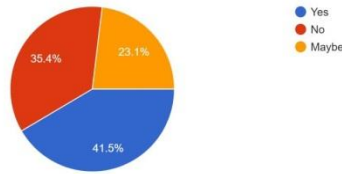
According to survey, 41.5% of people choose Yes, 35.4% of people choose No, 23.1% of people choose Maybe.

Question no. 4 :- What percentage of your internal/external users uses chatbots?

Table no.4 :-

Scale	No. Of Responses	Percentage
1%-25%	23	17.7%
26%-50%	32	24.6%
51%-75%	56	43.1%
Above 75%	13	10%
None	6	4.6%
Total	130	100%

Figure no.4:-

9. What percentage of your internal/external users uses chatbots?
130 responses

- 1%-25%
- 26%-50%
- 51%-75%
- Above 75%
- None

43.1%   10%
24.6%   17.7%
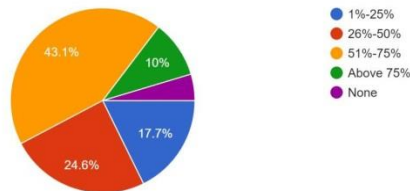
Interpretation :- According to survey, 17.7% of people choose 1%-25%, 24.6% of people choose 26%-50%, 43.1% of people choose 51%-75%, 10% of people choose Above 75% and 4.6% of people choose none.

Question no. 5 :- How familiar are you with the concept of Artificial Intelligence (AI) in Human Resource Management?

Scale	No. Of Responses	Percentage
Very Familiar	50	38.5%
Somewhat Familiar	65	50%
Not Familiar at all	15	11.5%
Total	130	100%

Figure 5:-

10. How familiar are you with the concept of Artificial Intelligence (AI) in Human Resource Management?

130 responses

- Very familiar
- Somewhat familiar
- Not familiar at all
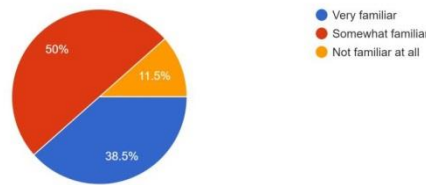
Interpretation :- According to survey, 38.5% of people choose Very Familiar, 50% of people choose Somewhat Familiar and 11.5% of people choose Not Familiar at all.

Question no.6:- Which AI applications are you currently using or considering for HR purposes? (Check all that apply)

Scale	No. Of Responses	Percentage
Resume screening	47	36.2%
Candidate sourcing	56	43.1%
Employee performance evaluation	75	57.7%
Predictive analytics for workforce planning	69	53.1%
Chatbots for HR inquiries	52	40%
Training and development recommendations	57	43.8%
Employee engagement and sentiment analysis	35	26.9%
Other	16	12.3%
Total	130	100%

Figure no.6

11. Which AI applications are you currently using or considering for HR purposes? (Check all that apply)

130 responses
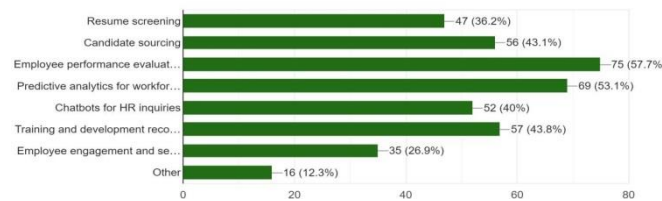
Interpretation :- According to survey, 36.2% of people choose Resume screening , 43.1% of people choose Candidate sourcing, 57.7% of people choose Employee performance evaluation, 53.1 of people choose Predictive analytics for workforce planning, 40% of people choose Chatbots for HR inquiries, 43.8% of people choose Training and development recommendations, 26.9% of people choose Employee engagement and sentiment analysis and 12.3% of people choose other.

Question no. 7:- Artificial Intelligence technology has the potential to improve diversity and inclusion .

Table no.12 :-

Scale	No. Of Responses	Percentage
Strongly Disagree	25	19.2%
Disagree	31	23.8%
Neutral	40	30.8%
Agree	30	23.1%
Strongly Agree	4	3.1%
Total	130	100%

Figure no.7 :-

12. Artificial Intelligence technology has the potential to improve diversity and inclusion
130 responses
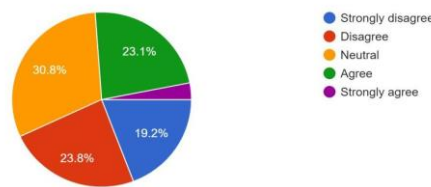
Interpretation :- According to survey, 19.2% of people choose Strongly Disagree, 31.5% of people choose Disagree, 30.8% of people choose Neutral, 23.1% of people choose Agree and 4% of people choose Strongly Agree

Question no. 8:- About what percentage of AI tech is used to develop diversity and inclusion in your organization?

Scale	No. Of Responses	Percentage
1%-25%	23	17.7%
26%-50%	50	38.5%
51%-75%	40	30.8%
Above 75%	11	8.5%
None	6	4.6%
Total	130	100%

Figure no.8 :-

13. About what percentage of AI tech is used to develop diversity and inclusion in your organization?
130 responses
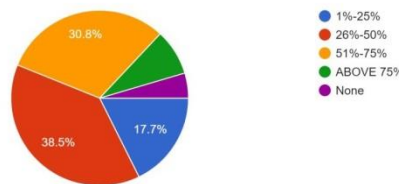
Interpretation :- According to survey, 17.7% of people choose 1%-25%, 38.5% of people choose 26%-50%, 30.8% of people choose 51%-75%, 8.5% of people choose Above 75% and 4.6% of people choose none.

Question no. 9:- With regard to AI adoption at your company, which is true?

Scale	No. Of Responses	Percentage
We are ahead of the curve	12	9.2%
We are behind the curve	66	50.8%
We are tracking roughly with everyone else	36	27.7%
I don't know where we are	16	12.3%
Total	130	100%

Figure no. 9 :-

14. With regard to AI adoption at your company, which is true?
130 responses
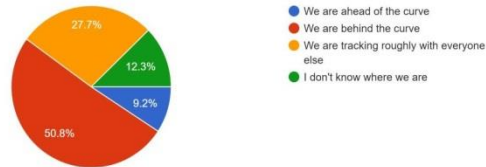
Interpretation :- According to survey, 9.2% of people choose We are ahead of the curve , 50.8% of people choose We are behind the curve, 27.7% of people choose We are trackingroughly with everyone else and 12.3% of people choose I don't know where we Are.

Question no. 10:- What do you perceive as the main challenges or concerns in implementing AI in HR management?

Scale	No. Of Responses	Percentage
Increased efficiency in recruitment processes	39	30%
Enhanced decision-making based on data analysis	69	53.1%
Improved employee experience and engagement	70	53.8%
Better alignment of talent with organizational goals	49	37.7%
Cost savings	29	22.3%
Other	10	7.7%
Total	130	100%

Figure no.10:-

15. What do you perceive as the main challenges or concerns in implementing AI in HR management?
130 responses
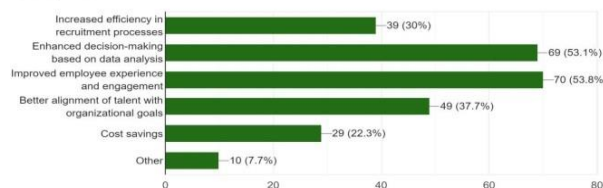
Interpretation :- According to survey, 30% of people choose Increased efficiency in recruitment processes, 53.1% of people choose Enhanced decision-making based on data analysis, 53.8% of people choose Enhanced decision-making based on data analysis, 37.7% of people choose Better alignment of talent with organizational

goals, 22.3% of people choose Cost savings and 7.7% of people choose other.

Question no. 11:- To what scale extent can application of AI tech be effective in recruitment practices at your organization?

Table no.11:-

Scale	No. Of Responses	Percentage
1	4	3.1%
2	7	5.4%
3	26	20.2%
4	21	16.3%
5	28	21.7%
6	19	14.7%
7	12	9.3%
8	6	4.7%
9	6	4.7%
10	0	0%
Total	130	100%

Figure no. 11:-

16. To what scale extent can application of AI tech be effective in recruitment practices at your organization?
129 responses
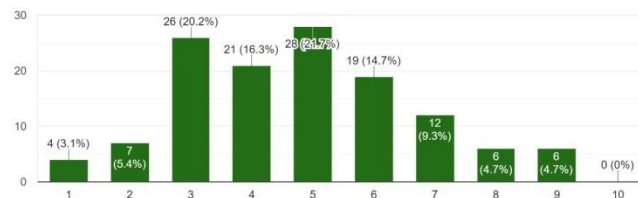
Interpretation :- According to survey, 3.1% of people rated 1, 5.4% of people rated 2, 20.2% of people rated 3, 16.3% of people rated 4, 21.7% of people rated 5, 14.7% of people rated 6, 9.3% of people rated 7, 4.7% of people rated 8 and 4.7% of people rated 9.

Question no. 12:- To what extent can applications of AI tech be effective in performance management at your organization?

Scale	No. Of Responses	Percentage
To Great Extent	24	18.5%
To some Extent	76	58.5%
Neutral	28	21.5%
Disagree	2	1.5%
Total	130	100%

Figure no.12:-

17. To what extent can applications of AI tech be effective in performance management at your organization?

130 responses

- To Great Extent
- To some Extent
- Neutral
- Disagree
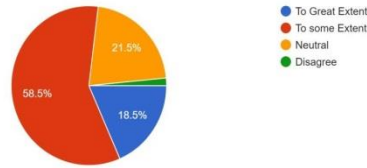
Interpretation :- According to survey, 18.5% of people choose To Great Extent, 58.5% of people choose To some Extent 21.5% of people choose Neutral and 1.5% of people choose Disagree.

Question no. 13:- Which of the following is a limitation to AI being implemented at your enterprise (check all that apply)?

Table no.13:-

Scale	No. Of Responses	Percentage
Not enough technical talent	22	16.9%
Not enough data	43	33.1%
Too busy with other projects	51	39.2%
No idea what projects we would do	48	36.9%
No support from senior management	36	27.7%
No clear ownership in the corporate hierarchy	16	12.3%
Total	130	100%

Figure no.13:-

18. Which of the following is a limitation to AI being implemented at your enterprise (check all that apply)?

130 responses
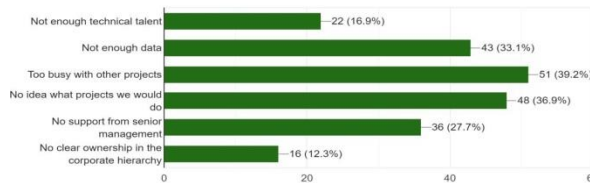
Interpretation :- According to survey, 16.9% of people choose Not enough technical talent, 33.1% of people choose Not enough data, 39.2% of people choose Too busy with other Projects, 36.9% of people choose No idea what projects we would do, 27.7% of people choose No support from senior management and 12.3% of people choose No clear ownership in the corporate hierarchy
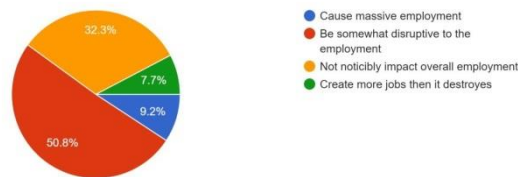
Question no. 19:- Over the next ten years, will AI and automation:

Table no.19:-

| Scale	No. Of Responses	Percentage
Cause massive employment	12	9.2%
Be somewhat disruptive to the employment	66	50.8%
Not noticeably impact overall employment	42	32.3%
Create more jobs then it destroys	10	7.7%
Total	130	100%

Figure no. 19 :-

Interpretation :- According to survey, 9.2% of people choose Cause massive employment, 50.8% of people choose Be somewhat disruptive to the employment, 32.3% of people choose Not noticeably impact overall employment and7.7% of people choose Create more jobs then it destroys

Question no. 20:- Overall, do you think AI will be Table no.20:-

Scale	No. Of Responses	Percentage
A force for good	58	44.6%
A force for Evil	31	23.8%
Its complicated	41	31.5%
Total	130	100%

Figure no. 20 :-
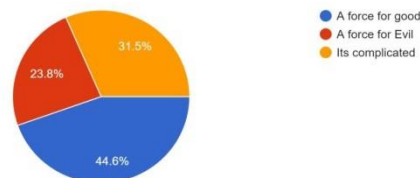
Interpretation :- According to survey, 44.6% of people choose A force for good, 31.5% of people choose A force for Evil and 31.5% of people choose Its complicated.

III.   FINDINGS:-

1. Demographic Insights:
-    The survey captured responses from a diverse demographic, with a majority of male participants. This suggests that males may be more inclined to participate in surveys related to AI in HR compared to females and other genders.
2. Age and Experience:
-    The age distribution indicates a significant representation from the younger to middle-aged population, with the majority falling within the age range of 18-40 years. This demographic trend aligns with the

expectation that younger individuals are more likely to engage with emerging technologies like AI.

3. Income and Education:
-    The income distribution reflects a predominant presence of respondents within the middle-income bracket, with a considerable proportion holding Graduate degrees. This suggests that individuals with higher education levels and stable incomes are more likely to participate in surveys related to AI in HR.
4. Occupational Insights:
-    The majority of respondents were employees, indicating that individuals currently engaged in the workforce are interested in the integration of AI technologies in HR practices. This underscores the relevance of AI in enhancing employee experiences and organizational effectiveness.
5. Perceptions and Adoption of AI in HR:
-    While there is a significant level of familiarity with AI in HR management among respondents, there is a mixed sentiment regarding the effectiveness and adoption of AI technologies within organizations. A notable portion expressed a neutral stance, suggesting a need for further education and awareness regarding the benefits of AI in HR.
6. Challenges and Concerns:
-    Respondents identified various challenges and concerns related to the implementation of AI in HR, including the availability of technical talent, data limitations, and organizational barriers such as lack of support from senior management. These findings highlight the importance of addressing these obstacles to facilitate the successful integration of AI in HR practices.
7. Future Outlook:
-    While respondents anticipate AI and automation to have a significant impact on employment, opinions vary regarding the extent and nature of this impact. Additionally, there is a diverse range of perspectives on whether AI will be a force for good, evil, or a more nuanced combination of both.
Overall, the survey findings provide valuable insights into the current perceptions, adoption levels, and challenges surrounding the integration of AI in Human Resources. These insights can inform strategic decision-making and policy development aimed at harnessing the potential of AI to enhance HR practices and organizational performance.

LIMITATIONS:-
1. Sample Bias: Acknowledge that the survey sample may not fully represent the entire workforce at NTPC Kahalgaon or the broader population of organizations utilizing AI in HR. Certain demographic groups or departments may be overrepresented or underrepresented in the survey responses, which could skew the findings.
2. Self-Reporting Bias: Recognize that survey responses rely on self-reporting, which can introduce bias due to respondent subjectivity or social desirability. Respondents may provide answers they perceive as favorable rather than reflecting their true beliefs or experiences, potentially impacting the accuracy of the data.
3. Limited Generalizability: Note that while the survey provides insights into attitudes and perceptions within NTPC Kahalgaon, the findings may not be generalizable to other organizations or industries. Factors such as organizational culture, size, and industry-specific dynamics can influence the adoption and effectiveness of AI in HR practices differently across contexts.
4. Response Rate: Mention any challenges related to the response rate of the survey. If the response rate was low, it may raise questions about the representativeness of the sample and the reliability of the findings. Additionally, respondents who chose to participate may have different characteristics or perspectives compared to those who did not, leading to potential bias.
5. Limited Scope of Questions: Highlight any limitations associated with the survey questions themselves. For example, certain aspects of AI in HR may not have been adequately addressed or explored, potentially overlooking important nuances or emerging trends in the field.
6. Cross-Sectional Nature: Acknowledge that the survey represents a snapshot in time and does not capture changes or developments in attitudes, practices, or technologies over time. Longitudinal studies or follow-up surveys may be needed to track evolving trends and assess the long-term impact of AI in HR at NTPC Kahalgaon.
7. Organizational Constraints: Discuss any organizational constraints or limitations that may have influenced the implementation or effectiveness of AI in HR at NTPC Kahalgaon. These could include factors such as budgetary constraints, technological infrastructure, or resistance to change among stakeholders.
By addressing these limitations, you demonstrate a critical awareness of the potential constraints and biases inherent in your research methodology, enhancing the credibility and rigor of your findings.

IV.   RECOMMENDATION

1. Enhancing AI Adoption in HRM:
-    Encourage NTPC Kahalgaon to invest in training programs to enhance employees' familiarity with AI technologies and their applications in HRM.
-    Provide incentives for HR professionals to explore and implement AI solutions that streamline HR processes and improve efficiency.

2. Addressing Challenges:
-    Allocate resources for addressing key challenges identified in AI adoption, such as technical talent shortage, data availability, and organizational support.
-    Foster collaboration between HR, IT, and other relevant departments to overcome barriers and promote a culture of innovation.

3. Improving Diversity and Inclusion:
-    Implement AI-driven tools and initiatives to enhance diversity and inclusion in recruitment, performance evaluation, and talent management processes.
-    Monitor and evaluate the impact of AI technologies on diversity and inclusion metrics, with a focus on minimizing bias and promoting fairness.

4. Future-Proofing HR Practices:
-    Stay abreast of emerging trends and best practices in AI adoption in HRM through continuous learning and engagement with industry forums and networks.
-    Develop a long-term strategy for integrating AI technologies into HR practices, with a focus on scalability, flexibility, and sustainability.

5. Employee Engagement and Well-being:
-    Leverage AI-powered tools to enhance employee engagement, satisfaction, and well-being through personalized support, feedback mechanisms, and development opportunities.
-    Ensure transparency and communication around the use of AI technologies in HR to build trust and confidence among employees.

6. Monitoring and Evaluation:
-    Establish metrics and key performance indicators (KPIs) to track the impact of AI adoption on HR outcomes, such as recruitment efficiency, employee satisfaction, and organizational performance.
-    Conduct regular reviews and assessments to monitor progress, identify areas for improvement, and make necessary adjustments to AI initiatives.

7. collaboration and Knowledge Sharing:
-    Foster collaboration with other public sector organizations, industry partners, and academia to share insights, best practices, and lessons learned in AI adoption in HRM.
-    Participate in industry forums, conferences, and workshops to exchange ideas and stay informed about the latest developments in AI and HRM.

V.   CONCLUSION

This study aimed to investigate the adoption, challenges, and implications of artificial intelligence (AI) in human resource management (HRM) within NTPC Limited, as well as the broader context of the Indian public sector. Through a survey conducted among employees, several important insights were gained:

1. Current State of AI Adoption: The findings reveal that while there is a moderate level of familiarity with AI in HRM among employees, the adoption of AI technologies within NTPC Limited remains varied. While some HR functions have embraced AI to some extent, there are opportunities for further integration and optimization.

2. Perceptions and Attitudes: Employees generally perceive AI as a potential driver of efficiency and effectiveness in HR processes. However, there are concerns regarding challenges such as technical talent shortage, data availability, and organizational support, which hinder widespread adoption.

3. Challenges and Concerns: Key challenges identified include the need for more technical talent, adequate data infrastructure, and clearer organizational support and strategy for AI   adoption in HRM. Addressing these challenges is crucial to unlocking the full potential of AI technologies in HRM.

4. Future Outlook: Despite challenges, there is optimism about the potential of AI to improve HR practices, enhance diversity and inclusion, and drive organizational performance. However, careful consideration and proactive measures are necessary to mitigate risks and maximize benefits.

In conclusion, the findings of this study underscore the importance of strategic planning, investment, and collaboration in harnessing the power of AI in HRM within the Indian public sector. NTPC Limited and similar organizations must prioritize the development of AI capabilities, address challenges, and foster a culture of innovation to remain competitive in the digital age.

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