

**A STUDY ON AI INTEGRATION IN HUMAN RESOURCE MANAGEMENT: A
FUTURISTIC PERSPECTIVE**

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Abstract:

This research paper analyses and map the scope of artificial intelligence (AI) in HR processes and its overall impact, specifically in recruitment, training and development, and performance management. It also seeks to understand employees' perspectives on the inclusion of AI in the HR department. A mixed-method approach was employed, utilizing qualitative content analysis and quantitative analysis of a questionnaire with 100 employee respondents. The findings reveal that AI has a significant impact on data analysis, prediction, forecasting, recruitment, customized training, employee engagement, and talent management. Moreover, employees displayed an optimistic and receptive attitude towards AI intervention in HRM. The study concludes by triangulating the perspectives of employees and organizations, highlighting the significant role AI plays in employees' work and their trust in its application within the organization. This research provides insights into the effective utilization of AI in HRM and its implications for organizations in an increasingly technology-driven world.

KEY WORDS: Artificial Intelligence, HR Processes, Recruitment, Training and Development, Performance, Management, Employee Perspectives

Introduction:

Artificial intelligence (AI) has become a game-changing force in a time of rapid technical breakthroughs across a variety of industries. HRM is one such place where there has been a significant influence. Unparalleled opportunities to improve workforce management and transform the landscape of talent acquisition, development, and retention are presented by the integration of AI into HR operations. This thesis explores the many facets of AI in HRM, including its uses, advantages, difficulties, and the possibility for organizational transformation.

The introduction of AI into HRM marks a paradigm shift in how personnel management has traditionally been done. HR workers may streamline and speed up the hiring process by utilizing AI algorithms and machine learning, enabling more effective applicant sourcing, screening, and selection. Natural language processing (NLP) is incorporated in AI-powered chatbots to enable seamless contact with candidates, improving engagement and forming a favourable first impression of the company.

Definition:

Human resource management (HRM) is the practice of effectively managing knowledge and developing the abilities of employees. The definition of the human resource department in an Indian company context is "taking care of management and employee issues, dealing with talent development, managing benefits, and providing discipline."

NEED OF THE STUDY

This study it is aimed to clearly map the scope and significance of AI in the function of HR using grounded approach. This will help us understand how effective and efficient do organizations treat artificial intelligence.

SCOPE OF THE STUDY

This study is purely focusing on the technology of artificial intelligence at INEURON Pvt. Ltd. It is aimed to explore the different application of AI in HRM in an encyclopaedic manner INEURON Pvt. Ltd.

OBJECTIVES OF THE STUDY

- To analyse the scope of AI in recruitment, training and development, and performance management within organizations INEURON Pvt. Ltd.
- To study the effective contribution of AI in the field of HRM INEURON Pvt. Ltd.
- To observe the level of scepticism among employees regarding the intervention of AI in HRM INEURON Pvt. Ltd.
- To find out the impact of AI on job loss within organizations INEURON Pvt. Ltd.

Source of Data:

This study is completely based on both Primary and Secondary data of INEURON Pvt. Ltd., BANGALORE.

- The primary data is collected using questionnaires.
- The secondary data provided by INEURON Pvt. Ltd., BANGALORE.

HYPOTHESIS

H0: There is no significant relationship between perception and AI in human resource.

H1: There is significant relationship between perception and AI in human resource.

TOOLS AND TECHNIQUES

Tools

- Excel
- POWER BI
- SPSS

Techniques:

- Chi-Square
- Regression
- Correlation

LIMITATIONS OF THE STUDY

- This study is limited to INEURON Pvt. Ltd.
- This study is limited to time period 2019-2024

Perception and employee experience

- H0: There is no significant relationship between perception and employee experience.
- H1: There is significant relationship between perception and employee experience.

Chi-square of perception and employee experience

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	16.488 ^a	16	.419
Likelihood Ratio	19.234	16	.257
Fisher-Freeman-Halton Exact Test	16.924		
Linear-by-Linear Association	1.614	1	.204
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.404	.419
	Cramer's V	.202	.419
N of Valid Cases		101	

Source:

INTERPRETATION: The presented results indicate that, for a sample size of N=100 and a significance level of 0.05, the calculated p-value is 0.4, which exceeds the significance level. Consequently, the null hypothesis is accepted, signifying that there is no statistically significant relationship between perception and employee experience. Moreover, the phi value, which stands at 0.4, indicates no association between the two variables.

These findings lead us to the understanding that an employee's level of experience, whether more seasoned with traditional work methods or not, does not influence their perception of artificial

intelligence or the integration of technology in their work. It is evident that employees, regardless of their age and experience, hold a positive perception and are open to embracing artificial intelligence in their respective organizations.

Perception and Awareness

- H0: There is no significant relationship between perception and awareness.
- H1: There is significant relationship between perception and awareness.

Chi-square test of perception and awareness

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	30.453 ^a	16	.016
Likelihood Ratio	26.951	16	.042
Fisher-Freeman-Halton Exact Test	^b		
Linear-by-Linear Association	14.217 ^c	1	<.001
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.549	.016
	Cramer's V	.275	.016
N of Valid Cases		101	

Source:

INTERPRETATION: The presented results indicate a significance level of 0.05, the calculated p-value is 0.01, which is less than the significance level. As a result, the alternate hypothesis is accepted, indicating a significant relationship between perception and awareness. Additionally, the phi value is 0.5, signifying an association between the two variables.

From these findings, we can infer that awareness plays a crucial role in shaping employees' perceptions. Employees who possess awareness about the use of artificial technology in their organization tend to have a more positive perception towards it. Therefore, it becomes the responsibility of organizations to provide employees with knowledge about AI, its applications, and its importance in their work environment. By doing so, organizations can foster a more favourable perception of AI among their workforce and ensure successful integration and acceptance of the technology.

Perception and AI in Human resource

- H0: There is no significant relationship between perception and AI in human resource.
- H1: There is significant relationship between perception and AI in human resource.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	30.621 ^a	16	.015
Likelihood Ratio	27.156	16	.040
Fisher-Freeman-Halton Exact Test	24.554		
Linear-by-Linear Association	4.798 ^c	1	.028
N of Valid Cases	101		

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.551	.015
	Cramer's V	.275	.015
N of Valid Cases		101	

INTERPRETATION: The presented results indicate that, for a sample size of N=100 and a significance level of 0.05, the calculated p-value is 0.01, which is less than the significance level. Consequently, the alternate hypothesis is accepted, suggesting a significant relationship between perception and AI in human resource management. Additionally, the phi value is 0.5, indicating an association between the two variables.

These findings reveal a strong relationship between employees' perception and the implementation of AI in human resource functions. It can be inferred that the introduction of artificial intelligence in

human resource management receives a positive and welcoming response from both the employees and the organization as a whole. This suggests that AI's integration in HR functions is perceived positively, and it holds the potential to bring about beneficial outcomes in the HR domain, fostering efficiency and effectiveness in managing human resources.

Regression Analysis – Correlation

The level of change in one variable as a result of the change in the other is calculated using correlation analysis. If there is a strong correlation between two variables or metrics, and one of them is observed acting in a certain way, you can assume that the other one is also being affected in the same way.

Correlation analysis can uncover important connections between several measurements or groupings of metrics. Even if the measures come from separate portions of the study, information about those links can provide fresh insights and indicate interdependencies.

Correlation test Result

		Correlations			
		E	A. Total	P. Total	H. Total
E	Pearson Correlation	1	.062	.144	.037
	Sig. (2-tailed)		.535	.151	.718
	N	101	101	101	101
A. Total	Pearson Correlation	.062	1	.587	.498
	Sig. (2-tailed)	.535		<.001	<.001
	N	101	101	101	101
P. Total	Pearson Correlation	.144	.587	1	.768
	Sig. (2-tailed)	.151	<.001		<.001
	N	101	101	101	101
H. Total	Pearson Correlation	.037	.498	.768	1
	Sig. (2-tailed)	.718	<.001	<.001	
	N	101	101	101	101

Source

INTERPRETATION: The above figure shows the correlation analysis between the employee experience, awareness, perception and AI in human resource.

The correlation coefficient interpretation range are given below:

Table 4.1 Correlation coefficient

COEFFICIENT INTERVAL CORRELATION

- 0.1 – 0.29 Weak
- 0.3 – 0.49 Medium
- 0.5 – 0.69 Strong
- 0.7 – 0.89 Very Strong

Inferring the values from the figure from the values in the above table, we can see that:

Employee experience has a shaky relationship with the other three human resource components of awareness, perception, and AI. Consistently correlates with perception and AI in human resource variables is awareness. In terms of human resource variables, perception has a very strong association with AI and a significant correlation with awareness. We can therefore draw the conclusion that employee experience has little bearing on how an employee views artificial intelligence. The degree to which artificial intelligence is utilized in human resource operations and the level of awareness that an employee has are the primary determining factors.

Regression Analysis – Regression

Regression is the study of how one variable influence another, or how changes in one variable produce changes in another, i.e., cause and effect. It denotes that the result is influenced by one or more variables. Regression analysis aids in determining the functional relationship between two variables (x and y) so that the unknown variable may be estimated and future projections can be made.

Regression test output

The image shows three SPSS output tables. The first is the Model Summary table, showing R Square = .645 and Adjusted R Square = .628. The second is the ANOVA table, showing a significant F-value of 89.12 for the regression model. The third is the Coefficients table, showing significant beta coefficients for A_Total (0.401) and H_Total (0.521).

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.807 ^a	.645	.628	2.88918

ANOVA ^a						
Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	1206.988	2	603.494	89.121	<.001 ^b
	Residual	665.103	96	6.928		
	Total	1872.091	98			

Coefficients ^a					
Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	
1	(Constant)		1.195	1.503	.140
	A_Total	.401	.103	3.772	<.001
	H_Total	.521	.200	2.603	<.010

INTERPRETATION: Regression analysis has been carried out using perception as the dependent variable and awareness and AI in human resource as the independent variables, as shown in the figure, following the completion of the chi-square test and correlation analysis based on the results observed. The variable employee experience was not taken into account because chi-square and correlation analysis demonstrated that there was no meaningful relationship between perception, awareness, and AI in human resources.

Interpretation & Reporting Hypothesis:

- H0: There is no significant impact of awareness and AI in human resource on perception
- H1: There is significant impact of awareness and AI in human resource on perception

The hypothesis tests if awareness (A Total) and AI in human resource (Total) have an impact on perception (P_Total) of employee towards artificial intelligence. The dependent variables P-Total was regressed on predicting variable A_Total and H_Total to test the hypothesis. A_Total and H_Total significantly predicted P_Total, $F(2, 98) = 89.12, p < 0.001$, which indicates that A_Total and H_Total can play a significant role in shaping the P_Total ($b = 0.521, p < 0.001$).

These results clearly direct the positive effect of perception of employees.

Moreover, the $R^2 = 0.645$ depicts that the model explains 64.5% of the variance on perception.

Table shows the summary of the findings.

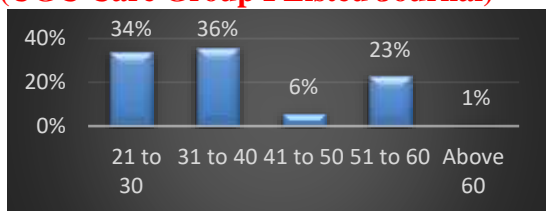
Table 4.2 Regression reporting

Hypothesis	Regression Weights	Beta Coefficient	R ²	F	p-Value	Hypothesis support t
H ₁	A_Total, H_Total on P_Total	0.401, 0.521	0.645	89.12	<0.001	Yes

TABLE 4.3. Age of the respondents

Age groups	Count	Percentage
21 to 30	34	34%
31 to 40	36	36%
41 to 50	6	6%
51 to 60	23	23%
Above 60	1	1%
Total	100	

GRAPH 4.1. Age of the respondents

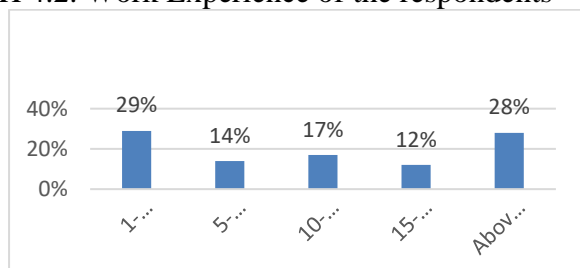


INTERPRETATION: We can see from the graph above that 34% of respondents are young workers who are familiar with technology. 36% of respondents are in their middle age and have noticed the technological change in the company. About 23% of senior staff members were working in the industry prior to technological intrusion.

TABLE 4.4. Work Experience of the respondents

Work Experience	Count	Percentage
1-5years	29	29%
5-10years	14	14%
10-15years	17	17%
15-20years	12	12%
Above 20years	28	28%
Total	100	

GRAPH 4.2. Work Experience of the respondents



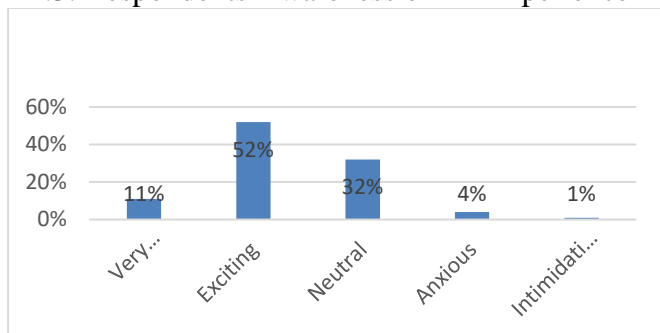
INTERPRETATION:

The same can be compared statistically with the demographics of job experience, which show that about 29% have less than five years' experience and about 28% have more than twenty years' experience. We can better comprehend respondents' perspectives on artificial intelligence thanks to the respondents' fair distribution of work experience.

TABLE 4.5. Respondents Awareness on AI Experience

AI Experience	Count	Percentage
Very Exciting	11	11%
Exciting	52	52%
Neutral	32	32%
Anxious	4	4%
Intimidating	1	1%
Total	100	

GRAPH 4.3. Respondents Awareness on AI Experience

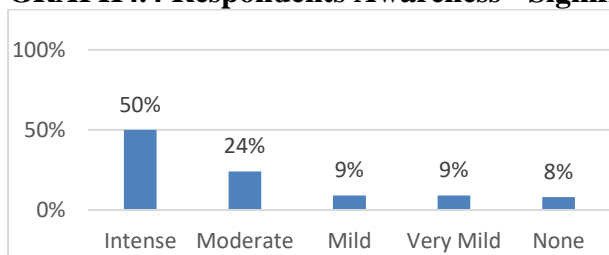


INTERPRETATION: The graph up above demonstrates how thrilled the respondents were when they first saw artificial intelligence at work. This demonstrates unequivocally that while employing AI, 52% of the respondents felt thrilled and only 1% felt intimidating. This demonstrates that employees of an organization have a favourable opinion on artificial intelligence.

TABLE 4.6. Respondents Awareness - Significant role of AI in fulfilling purpose of work

AI Significance in their role	Count	Percentage
Intense	50	50%
Moderate	24	24%
Mild	9	9%
Very Mild	9	9%
None	8	8%
Total	100	

GRAPH4.4 Respondents Awareness - Significant role of AI in fulfilling purpose of work



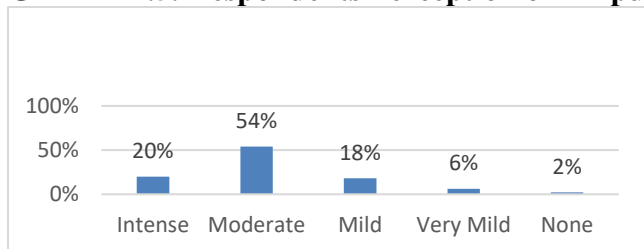
INTERPRETATION: The statistics for how much of an impact artificial intelligence have on employees' day-to-day tasks and whether it genuinely achieves its goals is shown in the two graphs up above. According to the data, 24% of respondents have mild importance, 8% have a high significance, and 50% have a moderate relevance. Only 8% of respondents said AI has no place in their jobs.

4.7. Respondents Perception on AI purpose of work

Purpose of Work	Count	Percentage
Intense	20	20%
Moderate	54	54%

Mild	18	18%
Very Mild	6	6%
None	2	2%
Total	100	

GRAPH 4.5. Respondents Perception on AI purpose of work

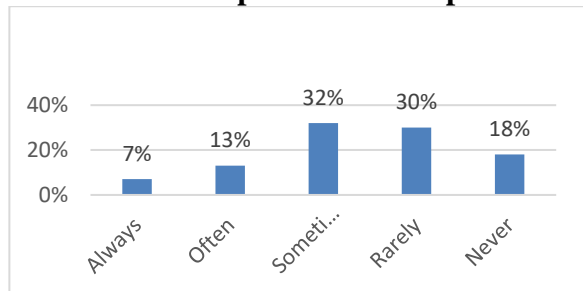


INTERPRETATION: On the other hand, a bigger percentage of respondents—54%—believe that artificial intelligence is serving both their roles and the organization's goals. 20% of people view the use of artificial intelligence in enterprises with a strong degree of positivity. This leads us to the conclusion that there is significant room for artificial intelligence to develop in employees' day-to-day work lives.

4.8. Respondents Perception on AI training

AI training by Organization	Count	Percentage
Always	7	7%
Often	13	13%
Sometimes	32	32%
Rarely	30	30%
Never	18	18%
Total	100	

GRAPH 4.6. Respondents Perception on AI training



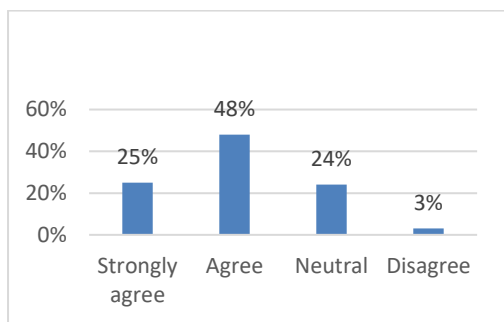
INTERPRETATION: The research to date has demonstrated that employees have a good attitude about artificial intelligence's intervention in businesses as well as their day-to-day work. The graph above illustrates the percentage of organizations that offer formal training for employing artificial intelligence while taking this into account. Only 7% of employees believe their company always

provides training, while 13% say it happens frequently. 32% of workers reported that their companies occasionally provide training.

4.9. Respondents Perception on AI course specialization

Course Specialization	Count	Percentage
Strongly agree	25	25%
Agree	48	48%
Neutral	24	24%
Disagree	3	3%
Total	100	

GRAPH 4.7. Respondents Perception on AI course specialization



INTERPRETATION:

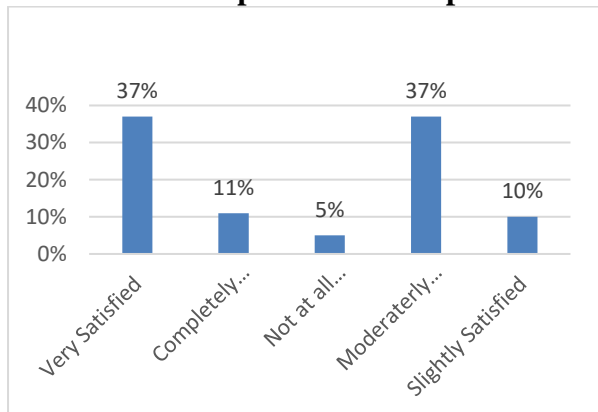
Contrarily, we can infer from the graph course specialization that 48% of respondents believe formal education in the subject of artificial intelligence will improve their career inside the firm. 25% believe it significantly enhances their job and is crucial to their professional development. Only 3% of respondents disagree, on average. We may deduce from both graphs that employees find AI training and specialization to be very important, and that enterprises must fill this gap.

4.10. Respondents Perception on AI in task allocation

Task Allocation	Count	Percentage
Very Satisfied	37	37%
Completely Satisfied	11	11%
Not at all Satisfied	5	5%
Moderately Satisfied	37	37%
Slightly Satisfied	10	10%

Total	100	
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GRAPH 4.8. Respondents Perception on AI in task allocation

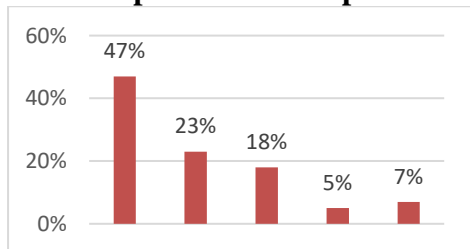


INTERPRETATION: The graph above depicts how employees feel about task allocation by artificial intelligence. It is clear that 37% of them are extremely satisfied, 11% are fully satisfied, 37% seem to be somewhat content, 10% are slightly satisfied, and only 5% are not satisfied at all. The observation suggests that artificial intelligence has been thoroughly integrated into businesses and is optimized in its operations. Additionally, it demonstrates that workers do not harbour any reservations about the age of artificial intelligence.

TABLE 4.11. Respondents Perception on Tracking the task

AI Tracking System	Count	Percentage
I detest the idea	47	47%
I like the idea but have some reservations	23	23%
I love the idea	18	18%
I dislike the idea but it has some merits	5	5%
I don't care one way or the other	7	7%
Total	100	

GRAPH 4.9. Respondents Perception on Tracking the task

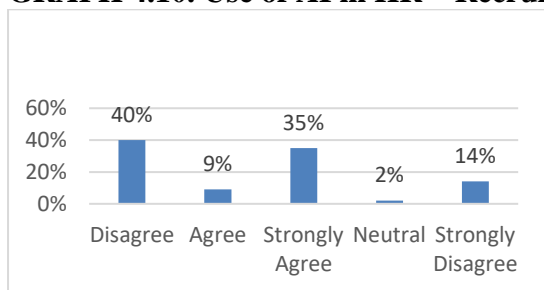


INTERPRETATION: The graph displays data on how employees feel about routine AI tracking of their behaviour. According to 47% of poll participants, they enjoy the concept yet have some reservations. However, only 7% of them dislike the concept. The thought of AI tracking their duties and actions is appealing to 23% of the survey respondents. This gives enterprises the confidence that artificial intelligence is assisting individuals in performing their jobs in the most effective way possible rather than taking the place of those employees.

TABLE 4.12. Use of AI in HR – Recruitment

AI in Recruitment	Count	Percentage
Disagree	40	40%
Agree	9	9%
Strongly Agree	35	35%
Neutral	2	2%
Strongly Disagree	14	14%
Total	100	

GRAPH 4.10. Use of AI in HR – Recruitment

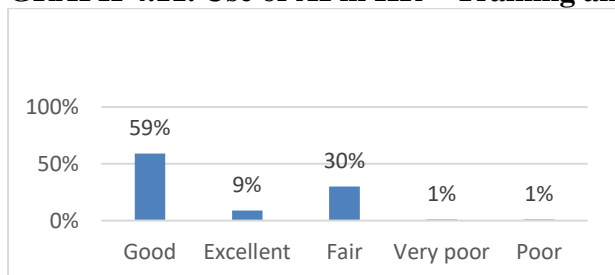


INTERPRETATION: The graph up top illustrates how artificial intelligence is used by workers in the recruitment function. 9% of respondents strongly agree that they see AI to be present in recruitment in a significant way. 40% of respondents support the use of AI in hiring. Only 2% of respondents felt that AI is not present in recruitment, compared to 35% who have a neutral opinion.

4.13. Use of AI in HR – Training and Development

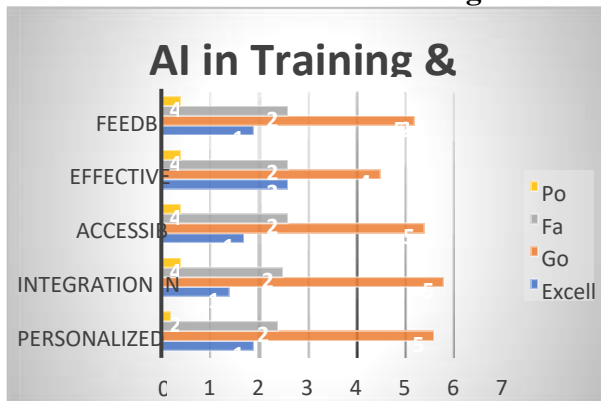
AI in Training and Development	Count	Percentage
Good	59	59%
Excellent	9	9%
Fair	30	30%
Very poor	1	1%
Poor	1	1%
Total	100	

GRAPH 4.11. Use of AI in HR – Training and Development



INTERPRETATION: The graph displays how effective employees believe the AI-based training sessions are. 9% of respondents said they thought it was great, 59% said it was very good, and 30% said it was just right. Only 1% of them think it is extremely bad. This graph shows that artificial intelligence is a wonderful way to close the skills gap between employee training and what will be needed to succeed in the corporate sector in the future.

GRAPH 4.12. Use of AI in training and development

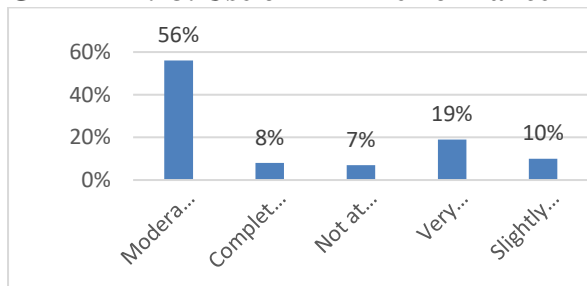


INTERPRETATION: The graph up top demonstrates how different employees view the use of artificial intelligence in training and development. According to the graph above, the majority of respondents rate the use of AI in raining and development in all five areas—personalization, integration into work, accessibility of training materials, effectiveness of training, and feedback—as excellent or good, with respective percentages of 20% and 55%. On the other hand, about 26% think its performance is fair, and 4% are dissatisfied. We can deduct from the graph that AI plays a key role in training and development but also has a lot of room for improvement from the viewpoint of employees.

4.14. Use of AI in Performance Management

AI in Performance Management	Count	Percentage
Moderately Satisfied	56	56%
Completely satisfied	8	8%
Not at all satisfied	7	7%
Very Satisfied	19	19%
Slightly Satisfied	10	10%
Total	100	

GRAPH 4.13. Use of AI in Performance Management



INTERPRETATION: From the qualitative study it was observed that performance management is an area where artificial intelligence has a new and fresh presence compared to other function like recruitment and training and development. The above graph 5.10 depicts the employee perspective of AI in performance management tasks such as reviews, talent management, compensation etc. 8% of the employees are completely satisfied, 19% are very much satisfied and 56% are moderately satisfied. 7% to 10% of the respondents are less satisfied from its effectiveness in performance management area. This also shows that AI is well perceived in the function of performance management and organizations should take the necessary measures for its improvement.

Findings

- Training and development have AI in its training modules and programs. It plays a significant role in monitoring the progress of an employee's training and development by giving a customized process.
- There is a larger scope for AI to develop in this function.
- The influence of AI in performance management is emerging in the areas of employee engagement, talent management, retention and compensation. Though employee engagement has a higher AI presence, other areas of this functions are on the path of AI too.
- AI in HRM is significantly playing its role in the function of analysis like data analysis, predictive analysis, trend analysis which helps the HR's to strategically plan for the future of the organization.
- Efficiency and speed are the most inherent advantages that AI brings. Application of AI in various aspects of HRM helps them become more data drive. With better forecast and efficient process in a very short period of time, overall profitability of the organization is grown.
- Forecast of the future trends in the business to predictions of an employee's work pattern and engagement, AI in HRM has a significant presence.
- AI, though having the most complicated process and algorithms still gives an overall exciting user experience. This makes it more approachable for them employee to tend to AI which makes him independent.
- The misconception of AI replacing the job roles and leading to job loss still prevails. Though the study it was found that AI is just redefining the skills required of the job role and does not lead to job loss in the organizations. Other the other hand it opens up more avenues for new job roles in the technical area.
- "Artificial Intelligence" as the name suggest employees feel the suggestions and decisions that AI takes are trustworthy and reliable. This is a major influencing factor of the rapid growth of artificial intelligence in organizations.

Suggestions:

- At the time of incorporating advanced technology like artificial intelligence into a corporate business structure, it is crucial for the organization and its employees to educate themselves fully. This includes developing a basic understanding of AI algorithms and core technological concepts. By doing so, the organization can effectively leverage AI and its potential impact on various functions within the company. This knowledge will empower employees to use AI technology more effectively and make informed decisions about its implementation.
- After providing education about artificial intelligence to the organization and its employees, the next step is to initiate the change phase. During this phase, employees should be introduced to AI-driven work, which will help them overcome any feelings of intimidation they may have regarding AI's role in human resource management. By familiarizing themselves with AI applications, employees can become more comfortable and confident in working with AI technology to enhance HR functions.
- In the change phase, the next step is to develop artificial intelligence in specific functions within the human resource department. By incorporating AI into existing traditional methods, employees are given sufficient time to adopt and adapt to the changes. Successful implementation can lead to process and technology improvements tailored to the organization's needs and employee convenience. This transformation will enable the organization to effectively digitize its processes and become AI-driven, enhancing efficiency and effectiveness in HR operations.
- The final phase of change management is the refreezing phase. During this stage, organizations use feedback and observations to make necessary improvements and modifications to their AI-driven processes. This iterative approach not only enhances process output efficiency but also fosters trust among employees in artificial intelligence and its decisions and suggestions. By

continuously refining and adapting AI applications, the organization can create a reliable and effective AI-driven environment that is embraced by its workforce.

- In the dynamic global workplace, continuous development is essential for sustained success. For artificial intelligence implementation, organizations must regularly improve existing AI-driven HRM functions and explore integrating AI into other HRM processes. By doing so, they can stay at the technological forefront in the competitive business environment, harnessing AI's potential to enhance HR operations and maintain a competitive advantage.

Conclusion:

HR methods that are integrated with AI-based applications have a significant impact on increasing organizational performance. Although AI applications may not be as sophisticated as human emotional and cognitive skills, these HR-based AI systems can evaluate, anticipate, and diagnose, making them a valuable resource for any firm. The main threat to global employees, however, is the way AI is demonstrating its impact on job losses in numerous industries around the world. However, it is not advanced technology that will replace humans; rather, it is how people will modify and see these technologies in order to produce prosperity and success. In fact, AI-based activities will impact a percentage of employees, thus it is the role of HR leaders and companies to focus on the needs of their employees and the potential implications. Finally, most firms successfully integrate AI-based tools into recruitment, according to our research, but AI will be pervasive in HR in the near future: Organizations are currently falling behind in integrating AI into their HR-practices, whether through recruitment, training, boarding, performance analysis, retention, and so on, due to the cost of integration. In practice, completing AI implementation should be viewed as a positive opportunity because AI improves lives and generates a better future when properly understood and applied.