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A STUDY OF IMPACT ARTIFICIAL INTELLIGENCE IN HUMAN RESOURCE FUNCTIONS ON ORGANIZATIONAL PRODUCTIVITY: WITH IT SECTOR VIEW

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Abstract
It has been recognized by many scholars that significant influence can be generated through the suitable application of artificial intelligence (AI) in HR management which eventually shapes organizational productivity, particularly within IT sector. The primary data was collected from 120 HR professionals in different IT firms; using structured questionnaire. Statistical analyses gathered insight and association, including reliability testing (Cronbach's Alpha), descriptive statistics, Pearson's correlation, multiple regression, and factor analysis through the SPSS version 28 software. Results reflect a significant positive relationship between the adoption of AI-based HR practices, especially in hiring, training, performance appraisal, and talent management applications within organizations and organizational improvements in productivity.

Keywords
Artificial Intelligence, Human Resource Management, Organizational Productivity, SPSS, IT Sector, Statistical Analysis, Digital Transformation, AI Challenges

1. Introduction
Organizational transformation is already well underway in the knowledge-driven economy, especially industries like Information Technology (IT) where Artificial Intelligence (AI) has become a key enabler. Within Human Resource Management (HRM), it manifests in how an entity operates, makes decisions and generally conducts itself on a daily basis. AI can be a useful tool to help IT firms hire smarter, continuously learn, apply predictive analytics and keep their team engaged as competition and employee churn run rampant. The objective of this study is to investigate empirically, based on primary data from HR professionals, the impact of AI-enabled interventions in HR processes on organizational productivity.

2. Literature Review
The Transformative Role of AI in Human Resource Management: Bridging the Gap in the Indian IT Sector. As the digital landscape continues to evolve, Artificial Intelligence (AI) is making significant strides in

redefining Human Resource Management (HRM). The growing body of literature underscores the potential of AI to automate administrative tasks, enable data-driven decisions, and enhance employee experiences (Yawalkar, 2019; Alqahatani, 2022). In this blog post, we will explore the various applications of AI in HRM, the challenges that accompany these advancements, and how empirical research can help address existing gaps in understanding, particularly within the Indian IT sector.

3. Objectives

a. The IT organization should examine that AI is adopted at every possible level.
b. To determine the statistical relationship between AI-driven HR practices and organizational productivity.
c. To identify and categorize key barriers to AI implementation through factor analysis.
d. To suggest practical strategies for effective AI integration in HRM.

4. Research Methodology

Research Design: Descriptive and analytical
Population: HR professionals employed in IT companies across India
Sample Size: 120 respondents
Sampling Method: Non-probability convenience sampling

Tool: Self-reported measurement using the Likert method

(1–Strongly Disagree to 5–Strongly Agree)

Statistical Tool: SPSS version 28

The analysis techniques used were Cronbach's Alpha (reliability), Descriptive statistics (Mean, SD), Pearson correlation coefficient, Multiple linear regression and Factor analysis using Principal Component Analysis (PCA).

5. Results and Discussion

5.1 Reliability Test

Variable	Cronbach's Alpha
AI in Recruitment	0.84
AI in Training	0.82
AI in Performance Mgmt	0.79
AI in Retention	0.81
Productivity Impact	0.87

Interpretation: All variables exceeded the acceptable threshold of 0.7, indicating high internal consistency.

5.2 Descriptive Statistics

Variable	Mean	Std. Deviation
AI in Recruitment	4.20	0.65
AI in Training	4.0	0.72

AI in Performance Mgmt	3.90	0.70
AI in Retention	3.8	0.74
Productivity Impact	4.30	0.60

Interpretation: Respondents showed high agreement with statements related to AI integration and productivity.

5.3 Correlation Analysis

Variable	**Productivity Impact (r)**
AI in Recruitment	0.68**
AI in Training	0.60**
AI in Performance Mgmt	0.57**
AI in Retention	0.65**

Note: $p < 0.01$

Interpretation: AI in recruitment and retention shows a strong positive correlation with productivity.

5.4 Regression Analysis

Predictor Variable	**Beta**	**T-value**	**Sig.**
AI in Recruitment	0.35	4.12	0.000
AI in Training	0.28	3.76	0.001
AI in Performance Mgmt	0.21	3.05	0.003
AI in Retention	0.32	3.88	0.000

Model Summary: $R^2 = 0.42$, $F = 25.67$, $p < 0.001$

Interpretation: AI in recruitment is the strongest predictor of productivity, followed closely by retention strategies.

5.5 Factor Analysis – (Barriers to AI Adoption)

Factor Extracted	**Variance Explained**	**(%) Key Items**
Data Privacy Concerns	32.5	confidentiality risks, GDPR
Lack of AI Skills	28.3	Training gaps, lack of awareness
Resistance to Change	18.7	Job insecurity, fear of automation

Interpretation: These three factors together explain nearly 80% of the total variance in resistance to AI adoption.

6. Key Findings

Strong correlation (r = 0.68) between AI-driven HR functions and productivity.

Recruitment and retention are the most impactful domains.

Employees also need to make up their minds, and organizational support is also equally important to adopt new technology.

Privacy concerns- This is still a major issue, especially with the use of AI tools in cloud environment.

7. Recommendations

a. Pilot AI Initiatives: Begin with low-risk uses of AI (e.g., resume screening).
b. Training Programs: Permanently reskill HR professionals with their capabilities in AI tools and analytics.
c. Cyber security and compliance with data protection laws — invest in Data Governance.
d. Change Management: Alleviate fears of job elimination by being as transparent and involving employees in any new process.

8. Conclusion

Over the period of time AI is continuously introducing innovative solutions and efficiency and the employee experience in human resource management. It is also important for an organizations to assess the barriers that company go through while transformations from being conventional to tech-savvy.

However, it is crucial to address the challenges that accompany these advancements and to bridge the gap in empirical research, particularly within the Indian IT sector. By doing so, organizations can ensure they are not only leveraging AI effectively but also fostering a fair, transparent, and ready workforce for the future. However, it is important to tackle the challenges that come with these advancements and to close the gap in research, especially in the Indian IT sector. By doing this, organizations can make sure they are using AI effectively while also building a fair, transparent, and prepared workforce for the future.

References

Appendices

Appendix A – Sample Questionnaire Items

1. AI tools are used for candidate shortlisting in my organization.
2. AI-based training platforms have improved employee learning.
3. AI-based performance management improves fairness.
4. AI analytics have reduced attrition.
5. AI integration has improved overall productivity.

Appendix B – Sample SPSS Dataset (Partial View)

Respondent	ID Recruitment	Training	Performance	Retention	Productivity
1	4	5	4	4	5
2	5	4	3	5	4
3	3	4	4	3	4