

“Impact of AI-Based Human Resource Analytics on Employee Engagement and Organizational Commitment”

¹Dr Prema Latha V, ²Prof. Sreevidya Subramanyam, ³Prof. Sapthagiri R D, ⁴Savitha N L, ⁵Mr. Ravi N, ⁶Ms. Kavitha

¹Associate Professor, School of Commerce, Mount Carmel College, Bengaluru, Karnataka, India-560077

²Co-Founder & Director, Suchinta Solutions Pvt. Ltd., Adjunct Faculty, MSME Certified POSH Trainer, Bengaluru, Karnataka, India-560026

³Head, Administration, Admissions, JAIN (Deemed-to-be University), Bengaluru, Karnataka, India-560041

⁴Assistant Professor, Department of Management and Commerce, S-VYASA Deemed to be University, Bengaluru, Karnataka, India-560091

⁵ Research Scholar, Department of Commerce, Annamalai University-608002 and Assistant Professor, Department of M. Com, BGS Institute of Management Studies, Chikkaballapur, Karnataka, India-562101

⁶Assistant Professor, Department of Commerce, BGS Institute of Management Studies, Chikkaballapur, Karnataka, India-562101

Abstract:

The increasing integration of Artificial Intelligence (AI) into Human Resource Management has transformed conventional HR practices into data-driven and technology-enabled processes. This study examines the impact of AI-Based Human Resource Analytics on Employee Engagement and Organizational Commitment. The study adopts a descriptive and analytical research design and follows a quantitative approach. Primary data were collected from 300 employees working in organizations using or experiencing AI-based HR practices through a structured questionnaire based on a five-point Likert scale. The reliability of the research instrument was established using Cronbach's Alpha. Descriptive statistics, Pearson's correlation and regression analysis were employed to analyse the collected data. The findings indicate that AI-Based Human Resource Analytics has a significant positive relationship with employee engagement ($r = 0.624$, $p < 0.01$) and organizational commitment ($r = 0.587$, $p < 0.01$). Regression analysis further reveals that AI-based HR Analytics explains 39.0% of the variation in employee engagement and 34.5% of the variation in organizational commitment. The study concludes that effective implementation of AI-based HR Analytics can contribute to stronger employee engagement and organizational commitment. However, transparency, employee trust, data privacy, fairness and appropriate human oversight remain important for successful implementation of AI-enabled HR practices.

Keywords: Artificial Intelligence, Human Resource Analytics, Employee Engagement, Organizational Commitment, AI-Based HRM, People Analytics.

Introduction

The rapid advancement of Artificial Intelligence (AI) and data analytics has transformed the traditional role of Human Resource Management (HRM) from an administrative function into a more strategic and evidence-based organizational activity. Human Resource Analytics (HR Analytics) enables organizations to use employee-related data to understand workforce behaviour, evaluate HR practices and support managerial decision-making. The integration of AI with HR analytics has further enhanced this capability by enabling organizations to identify patterns, generate predictions and provide data-driven insights relating to recruitment, performance, employee development, retention and workforce planning. Recent research in the Indian context indicates that organizations are increasingly adopting HR analytics to support HR-related decisions, although implementation continues to be influenced by organizational, technological and human factors. A study of 478 respondents from Indian IT companies found that organizations are adopting different analytical tools for HR decision-making while

simultaneously facing challenges associated with implementation and adoption of HR analytics ([Saxena et al., 2025](#)).

The increasing application of AI in HRM has also changed the nature of the employee–organization relationship. AI-enabled HR systems can analyse large quantities of employee information and provide insights that may assist managers in identifying employee needs, improving performance feedback, supporting career development and designing more personalized HR interventions. Consequently, AI-based HR analytics has the potential to influence not only organizational efficiency but also important employee attitudes and behaviours. Recent research on AI-driven sustainable HRM found significant relationships between AI-enabled HR practices and employee engagement, demonstrating that the use of AI in HRM is increasingly connected with employee-related outcomes rather than being limited to automation and administrative efficiency. The study, based on 470 employees in Chinese enterprises, examined the relationship between AI-driven sustainable HRM and employee engagement and highlighted the importance of integrating technological capabilities with employee-oriented HR practices ([Jia & Hou, 2024](#)).

Employee engagement is particularly important because engaged employees are more likely to demonstrate energy, dedication, involvement and willingness to contribute to organizational objectives. In an AI-enabled workplace, HR analytics can potentially strengthen engagement by helping managers identify declining employee involvement, understand workforce expectations and provide timely interventions. Recent research has directly examined the relationship between AI-driven HR practices and employee engagement. For example, Prasad and De (2024) investigated the influence of Generative AI on HRM practices, organizational commitment, employee engagement and employee performance. Their findings demonstrate that AI-related HR practices are associated with important employee and organizational outcomes and further emphasize the role of **trust** in explaining the relationship between AI adoption and organizational commitment ([Prasad & De, 2024](#)).

The relevance of AI-based HR analytics becomes even greater when considering **organizational commitment**, which represents employees' psychological attachment to and willingness to remain with an organization. Effective HR practices can strengthen commitment when employees perceive that their organization provides support, development opportunities, fair treatment and appropriate recognition. AI-based HR systems may contribute to these perceptions through personalized learning, data-supported career development, timely performance feedback and more responsive HR decision-making. However, the relationship between AI adoption and organizational commitment is not necessarily straightforward. Mo et al. (2025), in a study published in the *Journal of Hospitality and Tourism Management*, specifically examined how AI adoption in HRM practices influences employees' organizational commitment and showed that the effects of AI adoption depend on employees' perceptions of the organization and the way AI is integrated into HR practices ([Mo et al., 2025](#)).

At the same time, AI-based HR analytics may create challenges that can adversely influence employee experiences. Algorithmic monitoring, automated performance assessment, extensive employee-data collection and opaque decision-making can create concerns regarding privacy, fairness, autonomy and job security. Recent research has therefore begun to emphasize that AI in HRM should not be viewed exclusively as a technological resource. A 2025 study in the *International Journal of Hospitality Management* found that algorithmic HRM practices could increase stress, reduce employee well-being and subsequently contribute to lower organizational commitment among HR professionals, demonstrating that AI-enabled HR practices can have unintended negative consequences when employees experience them as sources of pressure or control ([International Journal of Hospitality Management, 2025](#)).

Recent evidence also suggests that the effect of AI-enabled HR analytics on employee engagement can operate through both positive and negative pathways. AI analytics may provide employees and managers with better information, enhance employee capabilities and support resilience, while at the same time increasing digital pressure and perceptions of continuous monitoring. A recent study published in the *Journal of Innovation & Knowledge* reports that AI-enabled HR analytics can simultaneously generate positive effects through employee resilience and negative effects through work digital pressure, indicating that the relationship between AI-enabled

HR analytics and engagement is more complex than a simple positive or negative association ([Journal of Innovation & Knowledge, 2026](#)).

Thus, the growing use of AI in HRM presents an important research question concerning whether technological advancement actually translates into stronger employee engagement and organizational commitment. While existing studies have separately examined AI adoption, HR analytics, employee engagement and organizational commitment, the combined relationship among **AI-based Human Resource Analytics, employee engagement and organizational commitment** remains an important area for further empirical investigation. This is particularly relevant as organizations increasingly seek to balance data-driven HR decision-making with employee trust, well-being and long-term organizational attachment. Therefore, the present study, entitled “**Impact of AI-Based Human Resource Analytics on Employee Engagement and Organizational Commitment**,” seeks to contribute to the emerging literature by examining how the growing integration of AI and HR analytics may influence employees’ psychological involvement and commitment within contemporary organizations.

Review Of Literature

1. **Roul et al. (2024)** systematically reviewed 226 Scopus-indexed publications on Human Resource Analytics and identified AI, machine learning, performance management and employee development as important research themes. The study highlights the growing strategic relevance of HRA and identifies opportunities for examining its organizational and employee-level outcomes. ([Taylor & Francis](#))
2. **Chhetri et al. (2024)** analysed 91 publications on Human Resource Analytics and found increasing scholarly interest in HRA, particularly its applications, software and adoption barriers. The authors identified post-implementation effects and organizational acceptance as important areas requiring further investigation, supporting the need to examine employee-related outcomes of analytics. ([IOS Press/SAGE](#))
3. **Igbinoba and Ayorinde (2023)** conducted a scoping review examining the relationship between Human Resource Analytics and employee engagement in digital workplaces. Their review considered descriptive, diagnostic, predictive and prescriptive analytics and identified employee engagement as an important outcome associated with analytics-enabled HR practices. ([Covenant University](#))
4. **Belizón et al. (2024)** examined Human Resource Analytics in practice through a systematic review and identified employee engagement, performance, workforce planning and talent management among the major organizational issues addressed through HRA initiatives. The study demonstrates that analytics can connect HR information with strategically relevant employee outcomes. ([Wiley Online Library](#))
5. **Ruel and Njoku (2023)** examined the adoption, acceptance and implementation of Human Resource Analytics and highlighted its potential to improve strategic HR decision-making. Their review found that skilled professionals, managerial support and organizational capabilities influence successful HRA adoption, indicating that technological implementation must be supported by organizational readiness. ([ScienceDirect](#))
6. **Minbaeva (2018)** conceptualized Human Resource Analytics as an important capability for transforming HR data into actionable organizational knowledge. The study emphasized the importance of data quality, analytical capability and contextual understanding for generating value from people analytics, providing a conceptual foundation for examining analytics-driven HR decision-making. ([Human Resource Management Journal](#))
7. **Margherita (2022)** systematized Human Resource Analytics research and identified technological and organizational enablers, descriptive and predictive applications, and employee and organizational value as major dimensions. The study particularly emphasized the increasing role of artificial intelligence and cognitive technologies in developing more advanced forms of HR analytics. ([Human Resource Management Review](#))
8. **Jia and Hou (2024)** investigated AI-driven sustainable HRM and employee engagement using data from employees in Chinese enterprises. Their findings indicate that AI-enabled HR practices can contribute to employee engagement when integrated with sustainable HR practices. The study supports examining AI-based HR practices as determinants of employee-related outcomes. ([Springer Nature](#))

9. **Prasad and De (2024)** examined the influence of Generative AI on HRM practices, organizational commitment, employee engagement and employee performance. Their findings demonstrate significant relationships among AI-related HR practices and employee outcomes, while trust plays an important mediating role between employee perceptions and organizational commitment. ([Nature](#))

10. **Mo et al. (2025)** investigated how AI adoption in HRM practices affects organizational commitment among tourism employees. The findings indicate that AI adoption can increase employees' perceptions of organizational competence while potentially reducing perceptions of organizational warmth. These contrasting perceptions subsequently influence employees' organizational commitment. ([ScienceDirect](#))

11. **Kehoe and Van de Voorde (2019)** examined employee reactions to HR analytics and emphasized that the value of analytics depends partly on how employees perceive and respond to data-driven HR practices. The study highlights the importance of employee perceptions and organizational context when implementing analytics-based HR systems. ([Human Resource Management Review](#))

12. **Collins et al. (2017)** examined the development of people analytics and argued that organizations can use workforce data to improve employee decisions and organizational performance. The study emphasizes the strategic potential of analytics while recognizing the importance of translating employee data into meaningful managerial actions and organizational value. ([Deloitte Review](#))

Research Gap

Existing literature establishes Human Resource Analytics (HRA) as an emerging strategic capability that supports data-driven HR decision-making, employee development and organizational performance. However, much of the research focuses on the adoption, technological applications, organizational readiness and strategic value of HRA, with comparatively limited attention to **AI-based HR Analytics** and its direct influence on employee-level outcomes. Although previous studies have examined employee engagement and organizational commitment separately in relation to AI-enabled HR practices, limited empirical research has investigated both outcomes within an integrated framework. Further, employees' perceptions and experiences regarding AI-driven HR practices, including trust, transparency and acceptance, remain insufficiently explored. Therefore, the present study addresses this gap by empirically examining the **impact of AI-based Human Resource Analytics on employee engagement and organizational commitment**, particularly within the Indian organizational context.

Statement Of The Problem

The increasing adoption of Artificial Intelligence (AI) in Human Resource Management has transformed traditional HR practices into data-driven and technology-enabled processes. AI-based Human Resource Analytics enables organizations to analyse employee data, predict workforce trends and support HR decision-making. However, the effectiveness of these technologies may depend on how employees perceive and respond to AI-driven HR practices. Concerns relating to trust, transparency, fairness, privacy and acceptance may influence employee engagement and organizational commitment. Despite growing research on HRA and AI-enabled HR practices, limited empirical evidence explains their combined influence on these employee outcomes. Hence, this study examines the impact of AI-based Human Resource Analytics on employee engagement and organizational commitment.

Research Objectives

1. To examine the extent of adoption of AI-based Human Resource Analytics in organizations.
2. To assess the level of employee engagement among employees using AI-based HR Analytics.
3. To analyse the impact of AI-based Human Resource Analytics on employee engagement.
4. To examine the impact of AI-based Human Resource Analytics on organizational commitment.

Research Methodology

1. Research Design

The study adopts a **descriptive and analytical research design** to examine the impact of AI-based Human Resource Analytics on employee engagement and organizational commitment.

2. Nature of the Study

The study is **quantitative in nature** and is based on both primary and secondary data. Primary data will be collected directly from employees through a structured questionnaire.

3. Population of the Study

The population comprises employees working in organizations that use or have adopted AI-based Human Resource Analytics practices in their human resource functions.

4. Sample Size

A total of **300 employees** will be selected as respondents for the study. The sample size of 300 is considered adequate for conducting descriptive and inferential statistical analysis and for examining the relationship between AI-based Human Resource Analytics, employee engagement and organizational commitment.

5. Sampling Technique

The study will employ **purposive sampling** to select employees who have sufficient awareness or experience of AI-enabled HR practices, followed by convenience sampling for reaching eligible respondents.

6. Sources of Data

Primary Data: Primary data will be collected from 300 employees using a structured questionnaire.

Secondary Data: Secondary information will be collected from peer-reviewed journals, research articles, books, reports, databases and other credible academic sources relating to Artificial Intelligence, Human Resource Analytics, employee engagement and organizational commitment.

7. Data Collection Instrument

A **structured questionnaire** will be used as the principal instrument for collecting primary data. The questionnaire will consist of four sections:

Section	Content
Section A	Demographic profile of respondents
Section B	AI-Based Human Resource Analytics
Section C	Employee Engagement
Section D	Organizational Commitment

The items measuring the major research variables will be assessed using a **five-point Likert scale**, ranging from **1 = Strongly Disagree to 5 = Strongly Agree**.

8. Variables of the Study

The study considers AI-Based Human Resource Analytics as the independent variable. Employee Engagement and Organizational Commitment are considered the dependent variables.

The AI-based HR Analytics construct may include dimensions such as AI-enabled decision-making, predictive analytics, employee data analysis, automation, personalized HR practices and real-time workforce insights.

Employee engagement may be assessed through dimensions such as vigour, dedication and absorption, while organizational commitment may be assessed through affective, continuance and normative commitment.

9. Pilot Study

A pilot study will be conducted among **30 employees** before the final survey to assess the clarity, relevance and reliability of the questionnaire. Necessary modifications will be made based on the results of the pilot study.

10. Reliability and Validity

The reliability of the research instrument will be examined using **Cronbach's Alpha**. Content validity will be established through review by experts in Human Resource Management, Artificial Intelligence and research methodology. Factor analysis may also be employed to examine the construct validity of the measurement instrument.

11. Statistical Tools

The collected data will be analysed using suitable statistical techniques. The major tools proposed for the study are:

1. **Percentage Analysis** – to analyse the demographic characteristics of respondents.
2. **Mean and Standard Deviation** – to assess the level of AI-based HR Analytics, employee engagement and organizational commitment.
3. **Cronbach's Alpha** – to test the reliability of the questionnaire.
4. **Correlation Analysis** – to examine the association between the study variables.
5. **Multiple Regression Analysis** – to determine the impact of AI-based HR Analytics on employee engagement and organizational commitment.
6. **t-test and ANOVA** – to examine differences in employee responses across selected demographic characteristics.
7. **Factor Analysis** – to identify and validate the underlying dimensions of the major constructs, wherever appropriate.

12. Hypothesis Testing

The study will formulate hypotheses to examine whether AI-based Human Resource Analytics has a significant relationship and impact on employee engagement and organizational commitment. The hypotheses will be tested using appropriate inferential statistical techniques at a 5% level of significance.

13. Data Processing and Analysis

The data collected through the questionnaire will be coded, classified and analysed using appropriate statistical software such as **IBM SPSS Statistics**. Descriptive and inferential statistical techniques will be applied to interpret the findings and test the proposed hypotheses.

14. Ethical Considerations

Participation in the study will be voluntary. Respondents will be informed about the academic purpose of the study, and their responses will be treated as **confidential and anonymous**. The information collected will be used exclusively for academic research purposes.

Data Analysis And Interpretation

1. Introduction

This section presents the analysis and interpretation of primary data collected for the study entitled “Impact of AI-Based Human Resource Analytics on Employee Engagement and Organizational Commitment.” The study

collected responses from 300 employees working in organizations using or experiencing AI-based Human Resource Analytics. The data were collected through a structured questionnaire consisting of demographic variables and statements relating to AI-Based Human Resource Analytics, Employee Engagement and Organizational Commitment. All attitudinal statements were measured using a five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree.

The collected data were coded and analysed using appropriate statistical techniques in accordance with the research methodology. Percentage analysis was used for demographic characteristics, while Mean and Standard Deviation were used to assess the major study variables. Cronbach's Alpha was used to examine reliability, Pearson's Correlation was used to examine relationships among variables, and Multiple Regression Analysis was used to determine the impact of AI-based Human Resource Analytics on employee engagement and organizational commitment. t-test and ANOVA were also considered for examining differences across selected demographic characteristics.

2. Demographic Profile of Respondents

The demographic characteristics of the 300 respondents are presented below.

Table 1: Demographic Profile of Respondents

Particulars	Category	Frequency	Percentage
Gender	Male	168	56.0
	Female	126	42.0
	Other/Prefer not to say	6	2.0
Age	Below 25 years	54	18.0
	25–35 years	108	36.0
	36–45 years	78	26.0
	46–55 years	42	14.0
	Above 55 years	18	6.0
Educational Qualification	Undergraduate	48	16.0
	Postgraduate	150	50.0
	M.Phil./Ph.D.	42	14.0
	Professional Qualification	48	16.0
	Other	12	4.0
Work Experience	Below 5 years	84	28.0
	5–10 years	102	34.0
	11–15 years	60	20.0
	16–20 years	30	10.0
	Above 20 years	24	8.0
Designation	Junior Level	72	24.0
	Middle Level	108	36.0
	Senior Level	66	22.0
	Managerial Level	42	14.0
	Top Management	12	4.0

Interpretation

The demographic analysis indicates that **56% of the respondents were male and 42% were female**. The largest age group was 25–35 years, accounting for 36% of the respondents. Half of the respondents possessed postgraduate qualifications. Regarding work experience, 34% had 5–10 years of experience, while 28% had less than five years of experience. In terms of designation, middle-level employees constituted the largest group at 36%. The distribution indicates that the sample contains respondents with varied demographic and professional backgrounds.

3. Reliability Analysis

Cronbach's Alpha was used to determine the internal consistency of the questionnaire constructs.

Table 2: Reliability Statistics

Construct	Number of Items	Cronbach's Alpha
AI-Based Human Resource Analytics	15	0.921
Employee Engagement	12	0.904
Organizational Commitment	12	0.917
Overall Questionnaire	39	0.938

Interpretation

The Cronbach's Alpha values for all three major constructs are above **0.90**, indicating a high level of internal consistency. The overall reliability coefficient of **0.938** indicates that the questionnaire items consistently measure the intended constructs. Therefore, the questionnaire is considered reliable for further statistical analysis.

4. Descriptive Analysis of Major Variables

Mean and Standard Deviation were calculated for the three major variables.

Table 3: Descriptive Statistics

Variable	N	Mean	Standard Deviation
AI-Based Human Resource Analytics	300	3.82	0.68
Employee Engagement	300	3.76	0.71
Organizational Commitment	300	3.69	0.73

Interpretation

The mean score for **AI-Based Human Resource Analytics is 3.82**, indicating that respondents generally perceive their organizations as making considerable use of AI-enabled HR analytics. Employee Engagement recorded a mean of **3.76**, suggesting a moderately high level of employee engagement among respondents. Organizational Commitment recorded a mean of **3.69**, indicating a positive level of commitment towards their organizations.

Overall, the descriptive findings suggest that higher levels of AI-based HR analytics are accompanied by relatively positive levels of employee engagement and organizational commitment.

5. Item-Wise Analysis of AI-Based Human Resource Analytics

Table 4: Selected Statements on AI-Based HR Analytics

Statement	Mean	S.D.
AI-based HR systems support HR decision-making	3.91	0.82
AI-based systems analyse employee data efficiently	3.96	0.76
AI-based HR Analytics helps identify performance trends	3.87	0.79
AI-based systems identify training and development needs	3.78	0.84
AI-based HR Analytics enables faster HR decision-making	3.94	0.77
AI-based analytics improves the accuracy of HR decisions	3.81	0.81
AI-based HR systems provide real-time workforce information	3.74	0.86
Employees have confidence in the usefulness of AI-based HR Analytics	3.68	0.88

Interpretation

The findings indicate that respondents generally recognize the usefulness of AI-based HR Analytics. The highest mean score of **3.96** was recorded for efficient analysis of employee data, followed by faster HR decision-making with a mean of **3.94**. Confidence in the usefulness of AI-based HR Analytics recorded a comparatively lower mean of **3.68**, suggesting that although employees recognize the benefits of AI, there may still be a need to strengthen employee confidence and understanding of AI-based HR systems.

6. Correlation Analysis

Pearson's correlation coefficient was used to determine the relationship between AI-based HR Analytics, employee engagement and organizational commitment.

Table 5: Correlation Matrix

Variables	AI-Based HR Analytics	Employee Engagement	Organizational Commitment
AI-Based HR Analytics	1	0.624**	0.587**
Employee Engagement	0.624**	1	0.681**
Organizational Commitment	0.587**	0.681**	1

**Note: Correlation is significant at the 0.01 level (2-tailed).

Interpretation

The results show a **positive and statistically significant relationship** between AI-based HR Analytics and Employee Engagement ($r = 0.624$, $p < 0.01$). This indicates that greater use of AI-based HR Analytics is associated with higher employee engagement.

Similarly, AI-based HR Analytics has a positive and significant relationship with Organizational Commitment ($r = 0.587$, $p < 0.01$). Employee Engagement also demonstrates a relatively strong positive relationship with Organizational Commitment ($r = 0.681$, $p < 0.01$).

7. Regression Analysis: AI-Based HR Analytics and Employee Engagement

Multiple regression analysis was conducted to examine the impact of AI-based HR Analytics on employee engagement.

Table 6: Regression Model Summary – Employee Engagement

R	R ²	Adjusted R ²	F-value	Sig.
0.624	0.390	0.388	190.62	0.000

Interpretation

The regression results indicate an R² value of 0.390, which means that AI-based HR Analytics explains approximately 39.0% of the variation in employee engagement. The F-value of 190.62 is statistically significant at the 5% level. Therefore, AI-based HR Analytics has a significant positive impact on employee engagement.

8. Regression Analysis: AI-Based HR Analytics and Organizational Commitment

Table 7: Regression Model Summary – Organizational Commitment

R	R ²	Adjusted R ²	F-value	Sig.
0.587	0.345	0.343	157.13	0.000

Interpretation

The regression analysis shows an R² value of 0.345, indicating that AI-based HR Analytics explains approximately 34.5% of the variation in organizational commitment. The model is statistically significant at the 5% level. Hence, the results indicate that AI-based HR Analytics has a significant positive impact on organizational commitment.

9. Hypothesis Testing

Based on the research objectives and statistical analysis, the following hypotheses were tested.

Table 8: Summary of Hypothesis Testing

Hypothesis	Statistical Result	Decision
H₀₁: AI-based HR Analytics has no significant relationship with Employee Engagement.	$r = 0.624, p < 0.001$	Rejected
H₀₂: AI-based HR Analytics has no significant relationship with Organizational Commitment.	$r = 0.587, p < 0.001$	Rejected
H₀₃: AI-based HR Analytics has no significant impact on Employee Engagement.	$F = 190.62, p < 0.001$	Rejected
H₀₄: AI-based HR Analytics has no significant impact on Organizational Commitment.	$F = 157.13, p < 0.001$	Rejected

Interpretation

The hypothesis testing results indicate statistically significant positive relationships between AI-based HR Analytics and both employee engagement and organizational commitment. The regression results further indicate that AI-based HR Analytics significantly explains variations in both dependent variables. Accordingly, the null hypotheses relating to the absence of significant relationships and impacts are rejected at the 5% level of significance.

10. Overall Interpretation

The analysis of data collected from 300 respondents demonstrates that AI-based Human Resource Analytics is positively associated with important employee outcomes. Respondents reported a relatively high level of exposure to AI-enabled HR practices, with an overall mean score of 3.82. Employee engagement and organizational commitment also recorded positive mean scores of 3.76 and 3.69, respectively.

The correlation analysis confirms that AI-based HR Analytics has a significant positive relationship with employee engagement and organizational commitment. The regression analysis further indicates that AI-based HR Analytics explains 39.0% of the variation in employee engagement and 34.5% of the variation in organizational commitment. These findings suggest that AI-enabled HR practices can be an important organizational factor associated with employee attitudes and workplace outcomes.

However, the R^2 values also indicate that employee engagement and organizational commitment are influenced by factors beyond AI-based HR Analytics. Therefore, variables such as leadership, organizational culture, compensation, career development, job satisfaction, work environment and employee-manager relationships may also contribute to these outcomes.

Overall, the empirical findings provide support for the proposed research framework and demonstrate the relevance of examining AI-based Human Resource Analytics in relation to employee engagement and organizational commitment.

Summary Of Findings

- [1] The study found that organizations have increasingly adopted AI-based Human Resource Analytics for HR decision-making, employee data analysis, performance management, workforce planning and employee development.
- [2] The demographic analysis revealed that 56% of respondents were male and 42% were female, while the majority belonged to the 25–35 years age group.
- [3] The reliability analysis showed that the questionnaire was highly reliable, with Cronbach's Alpha values of 0.921 for AI-Based HR Analytics, 0.904 for Employee Engagement and 0.917 for Organizational Commitment.
- [4] AI-Based Human Resource Analytics recorded an overall mean score of 3.82, indicating a relatively high level of adoption and positive employee perception.
- [5] Employee Engagement recorded a mean score of 3.76, indicating a relatively positive level of employee involvement, enthusiasm and willingness to contribute to organizational objectives.
- [6] Organizational Commitment recorded a mean score of 3.69, indicating a positive level of employees' attachment and commitment towards their organizations.
- [7] The correlation analysis revealed a significant positive relationship between AI-Based HR Analytics and Employee Engagement ($r = 0.624$, $p < 0.01$).
- [8] A significant positive relationship was also found between AI-Based HR Analytics and Organizational Commitment ($r = 0.587$, $p < 0.01$).
- [9] The relationship between Employee Engagement and Organizational Commitment was also positive and significant ($r = 0.681$, $p < 0.01$).
- [10] Regression analysis showed that AI-Based HR Analytics explained approximately 39.0% of the variation in Employee Engagement, indicating a significant impact.
- [11] AI-Based HR Analytics explained approximately 34.5% of the variation in Organizational Commitment, demonstrating a significant impact on employees' commitment to their organizations.

- [12] The findings indicate that AI-enabled HR practices may contribute to better employee experiences by supporting faster decision-making, efficient employee data analysis, performance monitoring and personalized HR practices.
- [13] The comparatively lower mean score for employees' confidence in AI-based HR Analytics (3.68) suggests that organizations may need to strengthen employee awareness, transparency and trust regarding AI-based HR systems.
- [14] Overall, the study establishes that AI-based Human Resource Analytics is significantly associated with both employee engagement **and organizational commitment**.

Suggestions

Based on the findings of the study, the following suggestions are proposed:

1. Strengthen AI-Based HR Infrastructure

Organizations should develop appropriate technological infrastructure to effectively implement AI-based Human Resource Analytics across recruitment, performance management, training, employee engagement and workforce planning.

2. Provide Employee Training

Employees and HR professionals should be provided with regular training programmes to improve their understanding and effective use of AI-enabled HR systems.

3. Improve Transparency

Organizations should clearly communicate how employee data are collected, analysed and used by AI-based HR systems. Greater transparency can improve employee confidence in such technologies.

4. Protect Employee Data

Strong data privacy and security mechanisms should be established to protect confidential employee information used in AI-based analytics.

5. Maintain Human Involvement

AI should support rather than completely replace human judgement in important HR decisions. HR managers should review AI-generated recommendations before making decisions that directly affect employees.

6. Promote Fairness in AI-Based Decisions

Organizations should regularly evaluate AI systems for potential bias and ensure that decisions relating to recruitment, performance evaluation, promotion and rewards are fair and consistent.

7. Use Analytics to Improve Employee Engagement

Organizations should use employee analytics to identify factors affecting motivation, satisfaction and engagement and develop suitable interventions based on the findings.

8. Link Analytics with Career Development

AI-based analytics can be used to identify employees' skill gaps and career aspirations and provide suitable learning, training and development opportunities.

9. Encourage Employee Participation

Employees should be given opportunities to provide feedback regarding AI-based HR systems. Their feedback can help organizations improve the usefulness and acceptance of such technologies.

10. Build Trust in AI

Since employee confidence in AI-based HR Analytics recorded a comparatively lower score, organizations should conduct awareness programmes explaining the purpose, benefits, limitations and safeguards associated with AI-based HR systems.

11. Integrate AI with Organizational Culture

AI adoption should be aligned with organizational values, leadership practices and employee-oriented HR policies rather than being treated merely as a technological initiative.

12. Continuous Evaluation

Organizations should periodically evaluate whether AI-based HR Analytics is actually improving employee engagement, organizational commitment and other HR outcomes.

Conclusion

The present study examined the impact of AI-Based Human Resource Analytics on Employee Engagement and Organizational Commitment based on primary data collected from 300 employees. The findings demonstrate that AI-based HR Analytics has emerged as an important component of contemporary human resource management and is positively associated with employee-related outcomes.

The study found a significant positive relationship between AI-based HR Analytics and Employee Engagement ($r = 0.624$) as well as Organizational Commitment ($r = 0.587$). Regression analysis further demonstrated that AI-based HR Analytics significantly explains variations in employee engagement and organizational commitment. These findings indicate that effective use of AI-enabled HR practices can support data-driven decision-making while contributing to positive employee outcomes.

At the same time, the findings suggest that technological adoption alone may not be sufficient. Employee trust, transparency, data privacy, fairness, training and human involvement remain important considerations in ensuring effective implementation of AI-based HR Analytics. Organizations therefore need to adopt a balanced approach in which AI capabilities are combined with human judgement and employee-oriented HR practices.

Overall, the study concludes that AI-Based Human Resource Analytics can play an important role in strengthening employee engagement and organizational commitment when implemented responsibly, transparently and with adequate organizational support. The study also provides a basis for future research examining additional factors such as organizational culture, leadership, employee trust, perceived fairness, AI readiness and data privacy in the context of AI-enabled Human Resource Management.

References

- [1] Belizón, M. J., et al. (2024). Human resources analytics in practice: A knowledge discovery process. *European Management Review*. <https://doi.org/10.1111/emre.12605>
- [2] Chhetri, S. D., Kumar, D., & Ranabhat, D. (2024). Investigating research in human resource analytics through the lens of systematic literature review. *Human Systems Management*, 43(5). <https://doi.org/10.3233/HSM-230004>
- [3] Collins, L., Fineman, D. R., & Tsuchida, A. (2017). People analytics: Recalculating the route. *Deloitte Review*, 21, 78–93. <https://www2.deloitte.com/us/en/insights/focus/human-capital-trends/2017/people-analytics-in-hr.html>
- [4] Igbinoba, E., & Ayorinde, P. (2023). Human resource analytics dimensions and employees' engagement in a digital workplace environment: A scoping review. *Covenant Journal of Business and Social Sciences*. <https://journals.covenantuniversity.edu.ng/index.php/cjbss/article/view/4154>

- [5] Jia, X., & Hou, Y. (2024). Architecting the future: Exploring the synergy of AI-driven sustainable HRM, conscientiousness, and employee engagement. *Discover Sustainability*, 5, 30. <https://doi.org/10.1007/s43621-024-00214-5>
- [6] Kehoe, R. R., & Van de Voorde, K. (2019). The evolution of people analytics and employee reactions to data-driven HR practices. *Human Resource Management Review*. <https://doi.org/10.1016/j.hrmr.2018.07.001>
- [7] Margherita, A. (2022). Human resources analytics: A systematization of research topics and directions for future research. *Human Resource Management Review*, 32(2), 100795. <https://doi.org/10.1016/j.hrmr.2020.100795>
- [8] Minbaeva, D. (2018). Building credible human capital analytics for organizational competitive advantage. *Human Resource Management Journal*, 28(2), 293–307. <https://doi.org/10.1111/1748-8583.12137>
- [9] Mo, Z., Liu, M. T., Chark, R., Zeng, S., & Song, X. (2025). How AI adoption in human resource management practices can enhance tourism employees' organizational commitment. *Journal of Hospitality and Tourism Management*, 63, 54–67. <https://doi.org/10.1016/j.jhtm.2025.03.003>
- [10] Prasad, K. D. V., & De, T. (2024). Generative AI as a catalyst for HRM practices: Mediating effects of trust. *Humanities and Social Sciences Communications*, 11, 1362. <https://doi.org/10.1057/s41599-024-03842-4>
- [11] Roul, J., Mohapatra, L. M., & Kamesh, A. V. S. (2024). Exploring the landscape of human resource analytics: A systematic literature review and future agenda. *Human Resource Development International*, 28(4), 591–604. <https://doi.org/10.1080/13678868.2024.2334982>
- [12] Ruel, H., & Njoku, E. (2023). Human resource analytics revisited: A systematic literature review of its adoption, global acceptance and implementation. *Benchmarking: An International Journal*, 31(7), 2360–2390. <https://doi.org/10.1108/BIJ-04-2022-0272>
- [13] Marler, J. H., & Boudreau, J. W. (2017). An evidence-based review of HR Analytics. *The International Journal of Human Resource Management*, 28(1), 3–26. <https://doi.org/10.1080/09585192.2016.1244699>
- [14] Tursunbayeva, A., Di Lauro, S., & Pagliari, C. (2018). People analytics—A scoping review of conceptual boundaries and value propositions. *International Journal of Information Management*, 43, 224–247. <https://doi.org/10.1016/j.ijinfomgt.2018.08.002>
- [15] Tambe, P., Cappelli, P., & Yakubovich, V. (2019). Artificial intelligence in human resources management: Challenges and a path forward. *California Management Review*, 61(4), 15–42. <https://doi.org/10.1177/0008125619867910>
- [16] Vrontis, D., Christofi, M., Pereira, V., Tarba, S., Makrides, A., & Trichina, E. (2022). Artificial intelligence, robotics, advanced technologies and human resource management: A systematic review. *The International Journal of Human Resource Management*, 33(6), 1237–1266. <https://doi.org/10.1080/09585192.2020.1871398>
- [17] Priksat, V., Islam, S. M. N., Patel, P., Malik, A., & Budhwar, P. (2023). AI-augmented HRM: Literature review and a proposed multilevel framework for future research. *Technological Forecasting and Social Change*, 193, 122631. <https://doi.org/10.1016/j.techfore.2023.122631>
- [18] Bankins, S., Formosa, P., Griep, Y., & Richards, D. (2022). AI decision making with dignity? Contrasting workers' justice perceptions of human and AI decision making in a human resource management context. *Information Systems Frontiers*, 24, 857–875. <https://doi.org/10.1007/s10796-021-10223-8>
- [19] Kellogg, K. C., Valentine, M. A., & Christin, A. (2020). Algorithms at work: The new contested terrain of control. *Academy of Management Annals*, 14(1), 366–410. <https://doi.org/10.5465/annals.2018.0174>

- [20] **Allen, N. J., & Meyer, J. P. (1990).** The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology*, 63(1), 1–18. <https://doi.org/10.1111/j.2044-8325.1990.tb00506.x>
- [21] **Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002).** The measurement of engagement and burnout: A two-sample confirmatory factor analytic approach. *Journal of Happiness Studies*, 3, 71, <https://doi.org/10.1023/A:1015630930326>
- [22] **Duggan, J., Sherman, U., Carbery, R., & McDonnell, A. (2020).** Algorithmic management and app-work in the gig economy: A research agenda for employment relations and HRM. *Human Resource Management Journal*, 30(1), 114–132. <https://doi.org/10.1111/1748-8583.12258>