

The Impact of AI-Driven HR Practices on Employees' Trust and Engagement

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Received: 24-01-2026

Revised: 07-02-2026

Accepted: 22-02-2026

Published: 09-03-2026

ABSTRACT

This study explores the rapid transformation of Artificial Intelligence (AI) in Human Resource Management (HRM). The changes have enabled data-driven recruitment, personalized training, predictive workforce analytics, and the transformation of organizational processes. This study aims to examine how AI advancements enhance efficiency and decision-making, while raising concerns about fairness and employees' well-being. It investigates the impact of AI-driven HR practices on employees' trust and engagement, while linking Social Exchange and Self-Determination theories as guiding frameworks. Data were collected from 230 respondents of various organizations autonomous in HR, across several countries worldwide, including KSA, UAE, Pakistan, China, and others (Qatar, Afghanistan, Kuwait, Iran, Bahrain, and Taiwan). The study's findings reveal that Employees respond positively to AI-enabled HR, likely due to its personalization, efficiency, and reduced prejudice. Trust is typically positive in organizational research; however, it produced an adverse indirect effect. The findings of this study suggest that employees may "trust the system" yet feel separated, underscoring the importance of balancing efficiency

with human connection. AI-driven HR strongly develops Employee Trust; however, its direct impact on engagement is negative.

Keywords: AIDHR, HRM, Employee Trust, Engagement, AI, transformed organizational process, AI performance.

JEL Classification: M10 & D23

INTRODUCTION

The goal of artificial intelligence (AI), a compelling and intricate technology, is to mimic human intelligence. AI is at the center of what has been dubbed the "fourth industrial revolution," characterized by Organizational researchers as a significant alteration in how jobs and organizations are planned, and decisions are made to enhance digitalization within organizations. Knowledge is managed, along with changing the workforce's overall composition. The precise nature of these changes is still up in the air, allowing for free, interdisciplinary discussion to investigate human-AI cooperation and further develop AI within the organization's HR systems. The trust users will primarily determine the future role of AI technology in business settings. To establish a basis for understanding how people come to trust AI, we examine the most recent empirical findings in this study from autonomous HR organizations in global countries, including the UAE, KSA, Pakistan, and China, and others (including Qatar, Afghanistan, Kuwait, Iran, Bahrain, and Taiwan) (Glikson & Woolley, 2020).

Currently, AI has emerged as a transformative force in organizational settings, particularly within Human Resource Management. AI has redefined how organizations develop, attract, and retain talent from recruitment chatbots to predictive attrition models. AI promises enhanced efficiency, precision, and personalization; its influence on employee perceptions and insights remains underexplored. Moreover, employee trust and engagement are two critical drivers of organizational performance and may be shaped by how AI systems are introduced and governed within HR practices (Krakowski, 2021). Trust in AI-driven HR practices and employee engagement are fundamental to organizational performance and employee motivation. (Murale Venugopal, 2024).

Artificial Intelligence has emerged as one of the most disruptive forces in the twenty-first century. Transforming industries, reshaping organizational structures, and redefining how work is managed were part of AI. Traditionally grounded in people-centered decision-making, this area is among the most affected by AI. The introduction of AI tools such as predictive analytics, automated recruitment systems, performance monitoring systems, and personalized training platforms has revolutionized HR practices by enhancing scalability, efficiency, and precision. Organizations are using AI-enabled systems to shortlist thousands of job applications, provide customized learning pathways for employees, and predict attrition risks more accurately than ever before. We used our definition of Human Resource Management with AI to derive the requirements. (Hillebrand et al., 2025). Unlike traditional HR practices that rely heavily on human judgment and interpersonal interactions, AI-driven HRM practices are mediated by algorithms and data-driven systems. This shift raises concerns about trust and employees' motivation to engage with the organization. (Ahmad et al., 2025).

AI-driven management is the process by which people collaborate with algorithms to perform managerial tasks in business organizations. Organizing, leading, Planning, controlling, and making decisions are all included in this definition of organizational duties. A task is considered managerial if it has a significant impact on an organization's capacity to achieve its objectives successfully and economically. Additionally, this definition includes knowledge workers and managers who deploy algorithms for management, as well as all people who engage with AI, including workers and employees who are

overseen by algorithms. These algorithms can fulfill managerial responsibilities because they can learn, adapt, and act independently. Thus, Last but not least, our definition applies to human-algorithm interactions in all kinds of organizations, including public organizations with nonprofit objectives and commercial enterprises with profit objectives. (Hillebrand et al., 2025).

Importance of Trust & Engagement in the Workplace

In the context of AI-driven HR practices in organizations, trust and engagement become fragile constructs. However, Employees may question whether algorithmic systems can truly be impartial, whether their personal data remains secure, and whether machines can replace the empathy and relational understanding typically offered by human HR professionals. It is also psychological and ethical; however, the issue is technological. (Delaney, 1996). Furthermore, employees' trust and engagement are highly predictive of administrative success. Trust represents an employee's willingness to be vulnerable to organizational decisions, while engagement reflects employees' expressive and intellectual involvement in the organization. Earlier research consistently demonstrates that trust enhances employee loyalty, reduces turnover intentions, and improves performance outcomes. However, engagement fosters resilience, creativity, and long-term organizational commitment.

Digital Transformation and HRM

The global push toward digital transformation has accelerated the acceptance of AI in HR systems in recent years. Currently, organizations in both developed and emerging economies are increasingly adopting AI to continue thriving in the “**Fourth Industrial Revolution.**” The COVID-19 pandemic further reinforced the role of digital tools, as digital HR and distant job platforms became the norm in organizations. However, the incorporation of AI into HRM also creates a global paradox. While AI offers the potential to reduce bias, standardize processes, and personalize employee experiences, it also risks generating opacity and mistrust if employees perceive the system as biased, unfair, or dehumanizing. (Hillebrand et al., 2025).

Problem and objective of the study

Although AI-driven HR practices are widely adopted globally, their impact on **employee trust and engagement remains underexplored.** In earlier literature, most studies focus on productivity, efficiency, or cost-effectiveness, neglecting the psychological and relational dimensions of AI espousal. Organizations risk undermining the very human capital they seek to empower if they fail to understand how employees perceive these systems. The main objectives of this research study are to.

- a) To examine the influence of AI-driven HR practices on employee trust.
- b) To explore how these practices affect employee engagement.
- c) To identify the conditions under which AI-driven HR enhances or undermines employee perceptions.
- d) To propose a conceptual framework linking AI-driven HR practices, trust, and engagement.

The study is guided by several key questions aimed at addressing two primary objectives: how AI-driven HR practices affect employee trust, and the relationship between these practices and employee engagement.

LITERATURE REVIEW

The infusion of AI into HR has been most visible in recruitment, learning and development, performance management, and retention. The cognitive resource concept states that concern is an additional potential source of performance-harm arising from a lack of confidence. The more time and mental effort an employee devotes to thinking about potential negative actions by management or a particular manager, the fewer cognitive resources are available for productive endeavors. It can paralyze a worker when concern gets out of control, (Mayer & Gavin, 2005).

- a) **Recruitment and Selection.** AI systems, including applicant tracking systems (ATS), screen resumes, machine-learning-based assessments, and even conduct video interviews using facial recognition and natural language processing. These tools minimize human bias and accelerate hiring decisions. However, reviewers argue that algorithmic systems may replicate existing biases embedded in training data and leading to discriminatory practices (Raisch & Krakowski, 2021).
- b) **Performance Appraisal.** AI-driven performance systems monitor employees' performance by analyzing digital footprints, including emails, keystrokes, and project outcomes. As they offer objective, real-time evaluations, employees may perceive such monitoring as intrusive, leading to decreased trust in the organization.
- c) **Learning and Development.** Personalized training modules tailored to employee skills, preferences, and career trajectories by AI-powered platforms. AI systems enhance employee engagement by offering growth opportunities in organizations, but their success depends on whether employees perceive them as supportive rather than controlling.
- d) **Retention and Predictive Analytics.** Organizations increasingly use AI to predict attrition risk and develop proactive strategies to retain talent. Although efficient, such practices raise concerns about **employee autonomy and privacy**.

AI adoption in HRM enhances operational efficiency in organizations due to its impact on employee trust and engagement, which remains complex and context dependent.

Employee Trust in Organizations and AI-driven HR (Hypothesis H2)

Trust is a fundamental component of organizational life, influencing commitment, collaboration, and performance. **Mayer, Davis, and Schoorman's (1995)** model of trust emphasizes three dimensions: benevolence, capability, and integrity. Applied to AI-driven HR practices:

- a) Capability refers to employees' belief that AI systems are competent in making decisions.
- b) Benevolence relates to whether AI tools are perceived as serving the best interests of employees.
- c) Integrity reflects the fairness and ethical grounding of AI-driven decisions.

Trust in AI systems differs from trust in human managers. While human trust is relational and experience-based, trust in AI is shaped by perceptions of explainability, transparency, and fairness. Organizational Workers are more likely to trust AI-driven HR when organizations clearly communicate how decisions are made and ensure systems are free of bias. We scrutinize how employees can be vulnerable to

management and how performance is hindered by a refusal to be vulnerable, aiming to understand the association between trust and performance. Employee vulnerability to management can be attributed to a variety of factors, including innate power imbalances. (Mayer & Gavin, 2005).

Employee Engagement and AI-Driven HR (Hypothesis H1)

Employee engagement, defined as employees' emotional and cognitive involvement in their roles, is strongly linked to organizational performance, innovation, and sustainability. (Ahmad et al., 2024). **Kahn's (1990)** model identifies 03 psychological conditions for engagement. Safety, Meaningfulness, and Availability. In AI-driven HR contexts:

- a) **Meaningfulness** may be enhanced by personalized learning opportunities or reduced administrative burden.
- b) **Psychological safety** may be threatened if employees feel constantly monitored by AI systems.
- c) **Availability** relates to whether employees feel empowered by AI tools or constrained by algorithmic control.

This empirical study suggests that it may simultaneously alienate employees if perceived as mechanistic or overly invasive, while AI can increase engagement by offering tailored career development paths (Brougham & Haar, 2018).

Theoretical Underpinnings

- a) **Social Exchange Theory.** According to SET, relationships are built on reciprocity. When employees perceive organizational practices as fair and beneficial, they reciprocate with trust and engagement. AI-driven HR practices that are transparent and equitable foster positive exchanges, whereas opaque or biased systems create distrust and disengagement. These interactions are typically viewed in SET as interdependent and reliant on other people's activities (Cropanzano & Mitchell, 2005).
- b) **Self-Determination Theory.** SDT underlines the role of independence, capability, and affiliation in the development of intrinsic motivation. AI-driven HR practices that empower employees (e.g., offering personalized learning and transparent decision-making) strengthen engagement, while those that restrict autonomy (e.g., excessive monitoring) diminish it. Humans are often described as "active organisms," a term that, although ideal, does not accurately reflect contemporary people. While our ancient ancestors might have had to get up and transfer people, in contemporary culture, people are often required to do just the opposite (2009_RyanWilliamsPatrickDeci_HJOP, n.d.).
- c) **Stakeholder Theory.** Organizations are accountable not only to shareholders but also to employees, who are critical stakeholders. From this perspective, AI-driven HR must balance efficiency with ethical considerations, ensuring that employee rights, trust, and well-being are prioritized. According to ST, firms strive to create value for various stakeholders, including communities, civil society, consumers, employees, governments, shareholders, suppliers, and others who can influence or be affected by the organization (Mahajan et al., 2023).

Synthesis of Literature

The literature suggests a paradoxical relationship between AI-driven HR practices, trust, and engagement. On one hand, AI reduces human bias, personalized development, and enhances efficiency. On the other hand, it risks creating opacity, perceived unfairness, and data privacy violations. Existing research is fragmented, with most studies focusing on either technological efficiency or ethical challenges, but few systematically explore the relational outcomes for employees. This gap underscores the need for a conceptual framework that integrates AI-driven HR practices with employee trust and engagement, moderated by fairness, transparency, and governance. To put it another way, businesses typically have a bias toward identifying and experimenting with established (rather than emerging) and familiar (rather than unfamiliar) technologies, which limits their ability to acquire the innovative knowledge required to generate distinctive value for clients. (Han et al., 2019). The majority of studies to date emphasize operational efficiency, cost reduction, and strategic competitiveness, despite the growing adoption of Artificial Intelligence in Human Resource Management. (Krakowski, 2021). They overlook the behavioral, psychological, and relational consequences of AI adoption, while these dimensions are crucial. The employees are not merely passive recipients of technology, but they are active interpreters of organizational changes, whose trust and engagement determine the long-term success of digital HR initiatives. (Raisch & Krakowski, 2021). Several research gaps are evident below:-

1. **Overemphasis on Technical Outcomes.** The current literature disproportionately focuses on algorithmic accuracy, predictive power, and decision-making speed, while neglecting employees' perceptions, experiences, and emotions.
2. **Limited Attention to Trust.** Its role in shaping employees' responses to AI-driven HR practices remains underexplored, despite trust being widely studied in organizational behavior. Existing work primarily addresses trust in leaders or institutions, not in **AI-mediated decision systems**.
3. **Underexplored Link to Engagement.** Engagement research has examined leadership, job design, and culture, but little is known about how AI technologies influence engagement through autonomy, fairness, and personalization.

These gaps in the research study highlight the urgent need for a conceptual framework that connects AI-driven HR practices to trust and engagement. (Sajjad Ahmad, 2025).

Conceptual Framework

The study's research framework proposes a relationship among AI-driven HR practices, employee trust, and employee engagement. The **AI-Driven HR Practices (Independent Variable)** include Recruitment & Selection, Performance Management, Learning & Development, and Retention & Predictive Analytics. **Employee Engagement (Dependent Variable)** includes Cognitive engagement (focus, absorption), Emotional engagement (commitment, loyalty), and Behavioral engagement (effort, proactivity). **Employee Trust (Mediating Variable)** includes Trust in the fairness of decisions, Trust in data use and privacy, and Trust in organizational intentions.

Hypotheses Development (Conceptual)

- **H1:** AI-driven HR practices directly influence employee engagement.
- **H2:** AI-driven HR practices positively influence employee trust.

- **H3:** Employee trust mediates the relationship between AI-driven HR practices and employee engagement.
- **H4:** Perceived fairness moderates the relationship between AI-driven HR practices and engagement, such that higher fairness enhances engagement.

Proposed Model. The conceptual framework can be visually represented in **Figure 1:**

Table 1: Study Variables, Roles, and Operational Definitions			
Variable Type	Variable	Description / Dimensions	Operational Definition (How it will be measured)
Independent Variable (X)	AI-Driven HR Practices	The use of AI in HR purposes, including recruitment, performance appraisal, learning & development, and predictive analytics.	Measured by employee perceptions of AI use in Recruitment & Selection, Performance Management, Learning & Development, Retention & Analytics. 5-point Likert-scale items adapted from the digital HR adoption literature.
Dependent Variable (Y)	Employee Engagement	The degree of cognitive, emotional, and behavioral investment employees display toward their work and organization.	Measured using the Utrecht Work Engagement Scale (UWES) across the scopes of vigor, dedication, and fascination.
Mediating Variable (M)	Employee Trust	The belief employees hold regarding the fairness, transparency, and integrity of AI-driven HR systems.	Measured by adapted trust scales (Mayer et al., 1995), focusing on ability (competence of AI), benevolence (serving employee interest), and integrity (fair and unbiased outcomes).

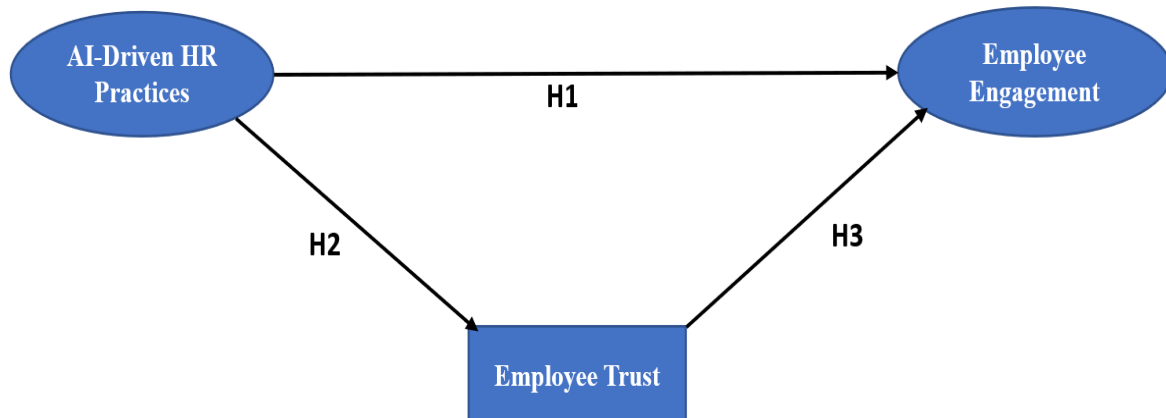


Figure 1 : Research framework

METHODOLOGY

This study adopts a quantitative exploratory research design. A conceptual approach supported by existing empirical evidence is most appropriate at this stage, as the relationship between AI-driven HR practices, trust, and engagement remains relatively underexplored. The framework is intended to guide future empirical validation through quantitative methods. The population consists of employees working in HR based organizations of different countries mentioned below, that have adopted AI-driven HR practices; the methodology is the same as in the earlier articles of Ahmad et al. (2025).

- a) **Target industries.** Technology firms, multinational corporations, and sectors such as banking, healthcare, and e-commerce (most advanced in AI adoption) from the UAE, KSA, Pakistan, China, and other countries (including Qatar, Afghanistan, Kuwait, Iran, Bahrain, and Taiwan). Details of the respondents are appended below:-

Table 2 (Country-wise respondent details)	
Country	Number of respondents
Pakistan	84
KSA	43
UAE	35
China	45
Others	13

- b) **Sampling technique.** Stratified random sampling was used to ensure representation across industries, age groups, and organizational levels, and the distribution was via the internet.
- c) **Sample size.** A Minimum of 250 were distributed; however, 230 respondents responded to the short questionnaire. The data collected were analyzed using SPSS.

A total of 230 respondents, including 123 male and 97 female employees from 10 countries, most of them from Pakistan, KSA, UAE, China, Qatar, Afghanistan, Kuwait, Iran, Bahrain, and Taiwan, took part in the study. They shared their opinions through a questionnaire. Their valuable comments allow us to finalize the study (**Figure 2**).

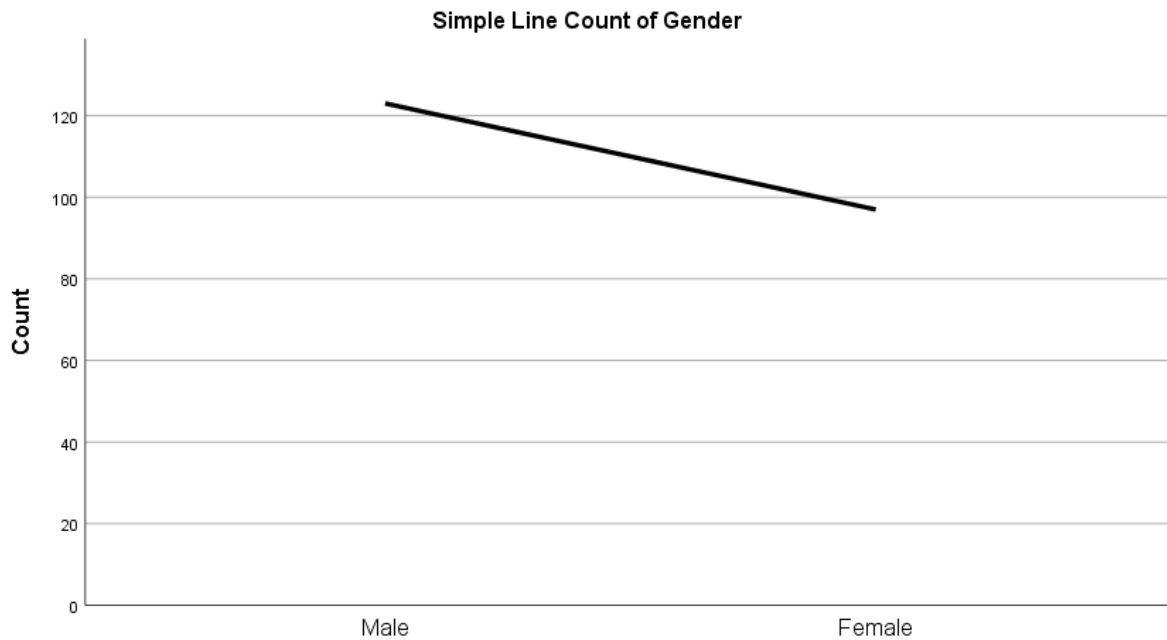


Figure 2 : Gender Chart (123 male & 97 females)

Data Collection

A structured questionnaire has been administered, containing items measured on a **five-point Likert scale** (1 = strongly disagree, 5 = strongly agree).

- a) **AI-driven HR Practices.** Adapted from prior studies on digital HR adoption.
- b) **Trust.** Measured using scales of Mayer et al. (1995), adapted to the AI context.
- c) **Engagement.** Using the Utrecht Work Engagement Scale (UWES).

Data Analysis

The primary objective of this study was to explore the role of **AI-driven HR (AIDHR)** in shaping **Employee Trust (ET) and Employee Engagement (EE)**. Special attention was given to the mediating role of trust in connection with technology-driven HRM and employee behavioral outcomes. The analysis employed descriptive statistics, factor analysis, reliability testing, correlation analysis, and regression modeling, including mediation testing with Hayes' PROCESS macro. Each section is discussed in detail, followed by the interpretation of results in line with existing literature and the implications for organizational

Descriptive Statistics

Descriptive statistics were calculated to understand the basic characteristics of the sample and the distribution of responses across the main study variables

- **AI-Driven HR (AIDHR).** Mean = 11.97 (SD = 2.60)

- **Employee Trust (ET).** Mean = 11.92 (SD = 2.88)
- **Employee Engagement (EE).** Mean = 12.00 (SD = 3.35)

The results of descriptive analysis (**Table 2**) indicate that the mean score for AI-driven HR practices (**M = 11.97, SD = 2.60**) is relatively high, considering the scale range of **3–15**. This suggests that respondents generally perceive their organizations as adopting AI-driven technologies in HRM functions. In this contest, the mean for Employee Trust (**M = 11.92, SD = 2.88**) indicates that employees, on average, have a favorable level of trust in their employers and HR processes. The highest mean among the primary constructs was for Employee Engagement (**M = 12.00, SD = 3.35**), indicating that employees show a relatively high level of enthusiasm and involvement in their work.

In terms of demographic controls, the age means (**2.33 on a 1–5 scale**) indicate that a majority of respondents fall into the younger age categories, possibly at the early- and mid-career stages. The relatively high scores across all 03 main variables indicate a workforce receptive to AI-driven HR initiatives. However, the actual dynamics of these relationships necessitate deeper statistical exploration of the study picture.

Table-3: Descriptive Statistics					
AIDHR: AI-driven HR					
ET: Employee trust					
EE: Employee engagement					
	N	Minimum	Maximum	Mean	Std. Deviation
AIDHR	230	6	15	11.97	2.602
ET	230	3	15	11.92	2.882
EE	230	3	15	12.00	3.354
Age of respondent	230	1	5	2.33	1.127
Gender of respondents	230	1	2	1.64	.481
Valid N (listwise)	230				

Correlation Analysis

Correlational analysis was performed to identify the strength and direction of relationships among the primary constructs, as shown below.

- **AIDHR ↔ ET.** $r = 0.631, p < 0.01$ → strong positive relationship.
- **AIDHR ↔ EE.** $r = 0.447, p < 0.01$ → moderate positive relationship.
- **ET ↔ EE.** $r = 0.840, p < 0.01$ → very strong positive relationship.

Employee Trust (ET) is a critical association and strongly connected to the variable Employee Engagement (EE). AI-Driven HR contributes both directly and indirectly to EE, but trust appears to be the stronger pathway, which proves the hypothesis of this study. The results revealed that AI-driven HR practices are strongly and positively correlated with Employee Trust value (**$r = 0.631, p < 0.01$**), indicating that as organizations increasingly adopt AI in HRM, employees tend to develop higher levels of trust in the system. Thus, this finding aligns with the perspective that transparent, efficient, and fair AI-enabled HR systems can reduce uncertainties and enhance employees' sense of security and fairness.

Table 3 reveals a moderate, significant correlation between AI-driven HR and Employee Engagement ($r = 0.447, p < 0.01$), indicating that AI-based HR practices contribute to employee engagement. However, not as strongly as they do to Employee trust. Interestingly, the strongest relationship observed was between the two variables, Employee Trust and Employee Engagement, with a value of $r = 0.840$ ($p < 0.01$), indicating that trust is a vital psychological mechanism that fosters employees' active participation, sustained effort at work, and emotional commitment.

		AIDHR	ET	EE
AIDHR	Pearson-Correlation	1	.631**	.447**
ET		.631**	1	.840**
EE		.447**	.840**	1

** . Correlation is significant at the 0.01 level (2-tailed). N=230

Table 4 shows that this correlation structure offers an initial indication of mediation. AI-driven HR may not directly produce high engagement, but it does so indirectly by fostering trust. When employees believe that organizational systems, including AI-based HR tools, are reliable and fair, they are more likely to respond with greater engagement. This theoretical insight supports frameworks such as Social Exchange Theory, which emphasize reciprocity as a basis of employee behavior.

	AIDHR	ET	EE
AIDHR	1.000	.631	.447
ET	.631	1.000	.840
EE	.447	.840	1.000

Reliability Statistics

The internal consistency of the measurement instruments was evaluated through Cronbach's Alpha, which shows the reliability of the data. The measurement scale used is reliable and suitable for further analysis.

- **Cronbach's Alpha = 0.840**, indicating strong internal consistency of the three constructs.

The overall Alpha coefficient (**Table 5**) was **0.840**, which falls well above the conventional threshold of **0.70**.

Cronbach's Alpha	Cronbach's-Alpha Created on Standardized Items	N of Items
.840	.842	3

Table 6 demonstrates that the items used to measure AI-driven HR, Employee Trust, and Employee Engagement are reliable and produce consistent responses. The item-total statistics further confirm this reliability. For instance (**Table 6**), removing Employee Trust from the scale would drastically lower the reliability to **0.604**, highlighting that trust is a central element in the construction structure.

	Mean if Item Deleted	Variance if Item Deleted	Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item-Deleted

AIDHR	23.92	35.779	.554	.421	.907
ET	23.97	25.820	.877	.787	.604
EE	23.89	24.537	.723	.716	.771

Reliability testing ensures that the constructions measured in this study are reliable and that the responses accurately reflect participants' perceptions. The consistency of the responses across a relatively large sample (N = 230) strengthens the generalizability of the findings within the studied context.

Validity / Factor Analysis (KMO and PCA)

Bartlett confirms that significant correlations exist, which proves the validity of the data.

- **KMO = 0.575** (mediocre, but acceptable).
- **Bartlett's Test = 401.438, p < 0.000** → factor analysis is valid.

The dataset is appropriate for factor analysis, as indicated by the Kaiser-Meyer-Olkin (KMO) sampling adequacy measure of 0.575, which falls within the acceptable range but is not exceptional. Strong enough correlations among the variables to proceed with principal component analysis (PCA) were confirmed by the significant Bartlett's Test of Sphericity ($\chi^2 = 401.438, p < 0.001$). Thus, the data are deemed reliable.

KMO Measure of Sampling Suitability.		.575
Bartlett's-Test of Sphericity	Approx. Chi-Square	401.438
	df	3
	Sig.	.000

Table 8 shows that the principal component analysis identified one dominant factor accounting for **76.4%** of the total variance, suggesting that the 03 constructs are closely related and may reflect a broader underlying dimension of employee experience with AI-enabled HR practices. This result supports the model's integrative nature; AI practices, trust, and engagement are not isolated but rather components of a cohesive system in which perception, technology, and behavior are interdependent.

- One dominant factor explained 76.4% of % variance
- This suggests the items are highly interrelated and may represent a familiar underlying construct (employee experience with AI-HRM)

Component	Initial-Eigenvalues			Extraction-Sums of Squared-Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.292	76.395	76.395	2.292	76.395	76.395
2	.580	19.318	95.713			
3	.129	4.287	100.000			

Extraction Method: Principal Component Analysis.

Table 9 reveals that the study's strong variance is explained by a single factor, suggesting that AI practices are not perceived in isolation but are inherently tied to how employees trust the system and how engaged they feel in their work roles. This validates the study's conceptual framework and lays the groundwork for regression and mediation analyses.

Regression Analysis and Mediation Testing

Regression & Mediation Analysis has been processed and analyzed using Hayes PROCESS (Model 4), which guides mediation and moderation analysis. **Table 9** reveals that the results provide deeper insights into the relationships among the variables.

Path A: AIDHR → ET (Hypothesis H2)

- $\beta = 0.6986, t = 12.28, p < 0.001$ → Strong positive effect.
- AI-driven HR practices significantly increase **Employee Trust**.

Path B: AIDHR & ET → EE (Hypothesis H1 & H3)

- **Direct effect of AIDHR → EE** (Hypothesis H1) = $-0.1775, p = 0.0028$ (relationship is negative and significant).
- **ET → EE** (Hypothesis H2) = $1.0783, p < 0.001$ → Trust strongly drives engagement.

Indirect Effect (Mediation)

- Indirect effect of AIDHR on EE via ET = $0.7533, CI [0.5586, 0.9318]$.
- Mediation is significant: Employee Trust fully mediates the relationship.\

The **direct effect** of AI-driven HR on Engagement is initially harmful, but building trust transforms the relationship into a positive, significant one. This indicates that AI practices alone may not engage employees unless trust is developed.

Table 10: Regression and mediation analysis via Andrew F. Hayes, Ph.D. Method

Model: 4

Y: EE

X: AIDHR

M: ET

Sample

Size: 230

OUTCOME VARIABLE:

ET

Model Summary

R	R-sq	MSE	F	df1	df2	p
.6309	.3981	5.0198	150.7834	1.0000	228.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	3.5551	.6968	5.1018	.0000	2.1821	4.9282
AIDHR	.6986	.0569	12.2794	.0000	.5865	.8107

OUTCOME VARIABLE:

EE

Model Summary

R	R-sq	MSE	F	df1	df2	p
.8463	.7162	3.2204	286.4488	2.0000	227.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	1.2740	.5891	2.1625	.0316	.1131	2.4349
AIDHR	-.1775	.0587	-3.0217	.0028	-.2932	-.0617
ET	1.0783	.0530	20.3279	.0000	.9738	1.1828

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-.1775	.0587	-3.0217	.0028	-.2932	-.0617

Indirect effect(s) of X on Y:

Effect	BootSE	BootLLCI	BootULCI
ET	.7533	.0960	.5586, 0.9318

The first regression tested the effect of AI-driven HR practices on Employee Trust. The study's findings showed a significant positive effect ($\beta = 0.6986$, $t = 12.28$, $p < 0.001$), indicating that higher levels of AI adoption in HR functions significantly enhance employee trust. This result proves the importance of AI in improving transparency, reducing errors, and ensuring fairness in HR processes at organizations.

The second regression, which tested the effect of AI-driven HR and Employee Trust on Employee Engagement, has been done. Fascinatingly, the direct effect of AI-driven HR on engagement was negative and significant ($\beta = -0.1775$, $p = 0.0028$). This counterintuitive finding suggests that, without trust, AI practices alone may not encourage employees to feel engaged. In fact, direct reliance on AI might create a sense of alienation or fear of surveillance, thereby reducing engagement. However, Employee Trust had a substantial positive impact on Employee Engagement ($\beta = 1.0783$, $t = 20.32$, $p < 0.001$). This reinforces the earlier correlation findings that trust is the strongest predictor of engagement. Significantly, mediation testing revealed that Employee Trust fully mediates the relationship between AI-driven HR and Employee Engagement. The indirect effect (**0.7533, CI [0.5586, 0.9318]**) was positive and significant, whereas the direct effect was adverse, indicating a suppression effect. In other words, AI practices alone might not automatically inspire engagement, but when they foster trust, the outcome becomes highly favorable. This highlights the critical role of trust as a psychological mechanism through which employees interpret and respond to AI systems in HRM.

DISCUSSION OF FINDINGS

The results of this investigation highlight the impact of implementing AI in HRM on employee trust and engagement. Its effectiveness in shaping positive employee outcomes depends heavily on building trust, though technology can increase efficiency and streamline procedures. Employees who perceive AI systems as transparent, fair, and supportive are more likely to be active in their jobs. Conversely, if employees view AI as impersonal/threatening, the engagement levels may decline. The adverse direct

impact of AI-driven HR on engagement deserves special attention. The employees may initially perceive AI as a tool of control or surveillance, which raises concerns about job security and the loss of human interaction. However, these fears are mitigated when trust is established, and employees interpret AI as a facilitator of fairness and growth rather than as a threat. This dual nature of AI reflects the “**double-edged sword**” argument in digital HR literature, where technology can either enhance or diminish human outcomes depending on contextual factors. Furthermore, the strong mediating role of employee trust is consistent with Social Exchange Theory and Self-Determination Theory in this research study. Trust acts as a resource that employees reciprocate with higher engagement from a social-exchange perspective; however, from a self-determination perspective, it satisfies basic psychological needs for security and fairness, which then translates into motivation and engagement. The findings also align with contemporary debates in organizational behavior, which emphasize that digital transformations must be accompanied by transparent, ethical, and employee-centered practices to ensure sustainability.

CONCLUSION

The analysis and discussion of the research study examine the relationship between AI-driven HR practices and employees' trust (Hypothesis H2), yielding a value of $\beta = 0.6986$, $t = 12.28$, $p < 0.001$, indicating a strong positive effect. The AI-driven HR practices significantly increase **Employee Trust**. Furthermore, AI-driven HR practices regarding employees' engagement (Hypothesis H1) have a negative and significant impact, with a value of -0.1775 ($p = 0.0028$). Employee trust and Employee engagement (Hypothesis H2) have a substantial, positive, and significant impact, with a value of 1.0783 ($p < 0.001$). This analysis shows that AI-driven HR practices significantly influence employee trust, which, in turn, enhances engagement. Trust emerges as the key mediator in this relationship, transforming potentially negative perceptions of AI into positive outcomes for employees. The findings suggest that organizations cannot rely on technology alone to drive engagement. Instead, they must focus on building trust through transparent, ethical, and employee-centric AI practices. In doing so, organizations can ensure that AI serves not only as a tool for efficiency but also as a catalyst for sustainable engagement and organizational success.

IMPLICATIONS

Managerial Implications

- **Transparent Communication.** Managers are to explain how AI systems work and how decisions are being made. Regular communication reduces fear and builds trust during the implementation of AI-driven HR.
- **Employee Involvement.** Employees are to be part of AI implementation with opportunities to give feedback and challenge unfair outcomes.
- **Augmentation, not Replacement.** AI should support HR managers rather than replace human judgment, entirely maintaining a human touch in HR processes.
- **Skill Development.** Organizations must invest in training employees to interact effectively with AI systems, thereby enhancing their confidence and competence.

Policy Implications

- **Regulatory Frameworks.** Governments must establish policies ensuring non-discrimination, fairness, and accountability in AI-driven HR practices.

- **Data Privacy Rights.** Employees must have the right to know how their data is used and to contest AI-driven decisions that affect their careers while working inside organizations.
- **Ethical Guidelines.** Ethical standards for AI adoption in HR at the organization should be promoted to safeguard employee trust.

Research Implications

- Future research should empirically validate the proposed framework using large-scale, cross-cultural datasets in relation to AI-driven HR and Employee engagement.
- Longitudinal studies are required to track the evolving perceptions of trust and engagement over time as AI systems mature during this era.
- Comparative studies should examine differences between industries and cultural contexts in relation to AI.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Limitations

- **Industry-Specific Bias.** Much of the literature comes from high-tech industries, limiting generalizability to sectors with slower AI adoption.
- **Cultural Narrowness.** Existing empirical studies are concentrated in Western contexts, overlooking cultural differences in trust and engagement.

Future Research

- a) **Cross-Cultural Studies.** Comparative research in Asian, African, and Latin American contexts would reveal cultural differences in perceptions of AI-driven HR and trust.
- b) **Longitudinal Designs.** Tracking organizations over time will show how trust and engagement evolve as employees become more accustomed to AI-driven HR.
- c) **Exploration of Moderators.** Further research should examine moderators, including organizational culture, leadership style, and employee digital literacy.
- d) **Impact on Well-Being.** Future studies should also explore the relationships among AI-driven HR, trust, engagement, and employees' mental well-being.

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