

AI-Driven Tools in Strengthening the Link between Organizational Sustainability and Strategic HR Practices: An IT Sector Perspective

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ABSTRACT:

The rapid digital transformation of the Information Technology (IT) sector has intensified the need for sustainable organisational practices and Strategic Human Resource Management (SHRM). In this context, Artificial Intelligence (AI)-driven tools have emerged as critical enablers in aligning sustainability goals with HR strategies. This study examines the role of AI-driven tools in strengthening the relationship between organisational sustainability and strategic HR practices in the IT sector. This study mainly focused on analysing how AI-enabled applications such as predictive analytics, intelligent recruitment systems, employee engagement platforms, and performance management tools contribute to sustainable workforce development and strategic decision-making. Using a quantitative research design, data were collected from HR professionals and employees working in selected IT organisations through structured questionnaires. Statistical techniques such as multiple regression and structural equation modelling are employed to test the proposed relationships. The findings are expected to demonstrate that AI-driven HR tools significantly strengthen the link between organisational sustainability and strategic HR practices by enabling data-driven decisions, optimising resource utilisation, and fostering a culture of continuous learning and adaptability. Furthermore, the study highlights the importance of ethical AI implementation, transparency, and data privacy in ensuring long-term organisational sustainability. The outcomes are expected to assist HR managers, policymakers, and organisational leaders in designing technology-enabled HR strategies that promote sustainable growth, competitive advantage, and employee-centric development in a dynamic digital environment.

Keywords: AI tools, Organisational Sustainability, Strategic HR, IT Sector

1. Introduction

The contemporary business landscape is undergoing an unprecedented digital

transformation, where sustainability and technological advancement have emerged as twin imperatives for organisational survival and

growth. In the era of Industry 4.0, AI is no longer confined to operational automation but has evolved into a strategic enabler influencing core organisational functions, particularly Human Resource Management (HRM). Within the IT sector characterised by knowledge intensity, rapid innovation cycles, and global competitiveness, the integration of AI-driven tools into HR practices presents significant opportunities to align sustainability objectives with strategic human capital management.

Organisational sustainability extends beyond environmental stewardship to encompass economic viability and social responsibility, often conceptualised through the triple bottom line framework. Sustainable organisations focus on long-term value creation, ethical governance, employee well-being, diversity and inclusion, and responsible resource utilisation. Simultaneously, Strategic Human Resource Management (SHRM) emphasises aligning HR policies and practices with broader business strategies to enhance organisational performance and competitive advantage. However, despite theoretical linkages between sustainability and SHRM, organisations frequently struggle to operationalise this alignment due to limitations in data analytics, real-time monitoring, predictive capabilities, and bias-free decision-making.

AI-driven tools such as predictive analytics platforms, machine learning algorithms, intelligent talent acquisition systems, sentiment analysis tools, chatbots, workforce planning software, and performance analytics dashboards offer transformative potential in bridging this gap. These technologies enable evidence-based HR decisions, improve workforce forecasting, enhance employee engagement, support diversity management, and facilitate transparent performance evaluation. By leveraging AI, HR departments in the IT sector can embed sustainability principles into recruitment, training, performance management, employee retention, and leadership development processes. For instance, AI-powered recruitment systems can reduce unconscious bias, while predictive analytics can identify burnout risks, thereby promoting employee well-being and social

sustainability.

The IT sector provides a particularly relevant context for examining this phenomenon. As a digitally mature industry, IT organizations are early adopters of AI technologies and are simultaneously under pressure to demonstrate strong Environmental, Social, and Governance (ESG) performance. Companies operating in global markets must balance innovation-driven growth with responsible employment practices, ethical AI deployment, and sustainable talent management. Therefore, understanding how AI-driven HR tools strengthen the linkage between organisational sustainability and strategic HR practices becomes both theoretically significant and practically essential.

Despite growing scholarly attention to AI in HR and sustainability management independently, limited research has explored their integrative relationship within a sector-specific framework. There remains a conceptual gap in explaining how AI-enabled HR systems act as mediating or enabling mechanisms that translate sustainability goals into measurable HR outcomes. This research seeks to address that gap by examining the role of AI-driven tools in reinforcing the strategic alignment between sustainability objectives and HR practices in the IT sector.

By developing a conceptual and empirical understanding of this relationship, the study contributes to emerging literature at the intersection of AI, sustainability, and SHRM. It also offers managerial insights for HR leaders and policymakers aiming to leverage digital intelligence for sustainable organisational development. In doing so, the paper positions AI-driven HR technologies not merely as efficiency-enhancing tools but as strategic instruments for building resilient, responsible, and future-ready organisations in the digital age.

2. Literature Review

Organisational sustainability has evolved from a focus on environmental performance to a multidimensional construct encompassing environmental, social, and economic pillars, as explained by Elkington (1997) [1]. The Triple Bottom Line (TBL) framework, which integrates

People, Planet, and Profit, has become foundational in sustainability research (Slaper & Hall, 2011) [2]. Within this paradigm, sustainable human resource practices are increasingly recognised as central to achieving long-term organisational viability. Strategic Human Resource Management (SHRM) aims to align HR functions with organisational strategy to enhance performance and competitive advantage (Wright & McMahan, 1992) [3]. Studies suggest that sustainability and SHRM share common objectives, including workforce well-being, ethical practice, talent development, and organisational resilience (Jackson et al., 2011 & Ehnert, 2009) [4] [5]. Artificial Intelligence (AI) signifies computer systems capable of simulating human intelligence through learning, reasoning, and self-correction (Russell & Norvig, 2020) [6]. In HRM, AI-driven tools range from predictive analytics and natural language processing to machine learning-based recruitment systems, chatbots, performance analytics, and sentiment mining (Davenport, Guha, Grewal & Bressgott, 2020) [7]. Owing to advancements in big data and computational power, HR functions now increasingly rely on AI for recruitment, talent development, engagement tracking, and performance management (Minbaeva, 2018) [8]. AI-enabled recruitment systems leverage machine learning to screen resumes and reduce recruitment cycle time (Upadhyay & Khandelwal, 2018) [9]. Such systems not only improve efficiency but also have the potential to reduce unconscious bias when appropriately designed (Aguinis et al., 2020) [10]. Scholars argue that algorithmic decision-making can make hiring more equitable and inclusive, which is a key social sustainability goal (Holm, 2021) [11]. Sentiment analysis and AI chatbots are being deployed to monitor employee morale and engagement in real time. By identifying patterns in employee feedback and communication, organisations can anticipate issues such as burnout or dissatisfaction, contributing to healthier workplace environments and socially sustainable HR practices. Predictive HR analytics enable evidence-based planning and forecasting of human capital needs (Marler & Boudreau, 2017) [12]. Through modelling trends and risk factors,

organisations can make strategic workforce decisions that align with sustainability objectives such as talent retention and equitable growth opportunities (Bersin, 2019) [13]. Recent research highlights that AI-driven HR tools can act as mediators between organisational sustainability and strategic HR practices. AI can support sustainability by enhancing transparency, workforce inclusiveness, and decision quality in HR systems (Jöhnk et al., 2021) [14]. For instance, CSR-oriented HR practices can be strengthened through AI platforms that monitor compliance, assess diversity outcomes, and provide learning interventions for sustainable leadership (Garg & van der Hoven, 2020) [15]. A conceptual model by Bondarouk et al. (2019) [16] suggests that digital HRM technologies transform HR roles, enabling strategic contributions and enhancing organisational sustainability. Similarly, Parry & Tyson (2011) [17] argue that HR analytics enhances strategic decision-making, which indirectly supports sustainable outcomes such as reduced turnover, improved engagement, and ethical workforce management. The IT sector, as a digitally advanced and innovation-centric industry, is among the earliest adopters of AI in HR functions (Chaudhuri et al., 2022) [18]. Organisations in the IT sector face unique

sustainability imperatives that integrate digital transformation with ethical workforce practices and global competitive pressures (Kiron et al., 2017) [19]. Studies reveal that IT firms deploy AI tools not only to optimise operations but also to enhance workforce agility, learning, and retention (Müller et al., 2018) [20]. Digital maturity in the IT sector positions it as a fertile context for exploring how AI can reinforce sustainability-oriented HRM (Stone et al., 2020) [21]. Despite the potential benefits, AI in HRM carries risks of algorithmic bias, privacy violations, and over-reliance on quantitative metrics (Bogen & Rieke, 2018) [22]. Critics contend that without ethical governance, AI systems may replicate existing inequalities rather than mitigate them (Dastin, 2018) [23]. In sustainability research, several scholars call for a balanced application in which AI enhances ethical HR practices without undermining human dignity or autonomy (Cascio

& Montealegre, 2016; Zuboff, 2019) [24] & [25]. The reviewed literature establishes that AI-driven tools can enhance strategic HR practices by improving decision-making, reducing bias, enabling workforce forecasting, and supporting engagement factors that contribute to organisational sustainability. However, empirical research integrating AI, SHRM, and sustainability in a sector-specific frame, particularly in the IT sector, remains limited. There is a scholarly need to conceptualise mechanisms through which AI tools influence sustainable HR outcomes and strategic alignment. This study aims to fill this gap by examining how AI-enabled HR systems strengthen the connection between organisational sustainability objectives and strategic HR practices in the IT sector.

3. Research Gap

Overall, the literature reveals a theoretical and empirical disconnect between AI-driven HR technologies and sustainability-aligned strategic HR practices, particularly within the IT sector and emerging economies. Addressing these gaps will contribute to developing a robust integrative model that positions AI as a strategic enabler of sustainable human resource management.

4. Problem Statements

Based on the identified research gaps, the following problem statements are formulated:

- Despite growing literature on organisational sustainability and Strategic HRM (SHRM), there is a limited integrative understanding of how AI-driven HR tools function as a strategic mechanism linking sustainability objectives with HR practices in the IT sector.
- Existing research largely emphasises operational efficiency and automation benefits of AI in HR, while insufficient attention has been given to its role in promoting long-term sustainability outcomes such as employee well-being, diversity, ethical governance, and social responsibility.
- There is inadequate empirical evidence examining AI-driven HR tools as mediating or moderating variables between organisational

sustainability and strategic HR practices.

- Most AI–HR–sustainability studies are concentrated in Western economies, with limited contextual research from emerging economies like India, particularly within the IT industry.
- Ethical governance, algorithmic bias, and data privacy concerns in AI-enabled HR systems are rarely integrated into sustainability-aligned SHRM frameworks.
- There is a scarcity of longitudinal and sector-specific empirical studies assessing the sustained impact of AI-driven HR practices on organisational sustainability performance in IT firms.

5. Methodology

The study adopts a Positivist Research Philosophy, as it aims to empirically test hypotheses (H1–H4) and examine measurable relationships among variables such as Organisational Sustainability (OS), AI-Driven HR Tools (AI-HR), and Strategic HR Practices (SHRM Effectiveness). Since the research focuses on quantifiable constructs and statistical validation of a conceptual model, positivism is appropriate. A deductive research approach is employed. The study is theory-driven, and hypotheses are derived from the Strategic Human Resource Management (SHRM) Theory, Triple Bottom Line (TBL) Sustainability Theory, and Digital Transformation Theory. Through empirical tests, the study validates the conceptual model.

This study adopts an explanatory research design that examines the cause-and-effect relationship among organisational sustainability as the independent variable, AI-Driven HR Tools as the mediating variable, and Strategic HR practices as the dependent variable. Data are collected at a single point in time from IT sector employees using a structured questionnaire. The target population for this study comprises IT sector organisations in India that use AI-based recruitment tools, Workforce analytics systems, learning management platforms, and HR chatbots. A multistage sampling method is used in collecting the sample. In stage 1, the study uses

purposive sampling to select IT firms adopting an AI-driven HR system, and in stage 2, the study uses stratified random sampling to choose the employee categories. Using standard sample size

Conceptual Model

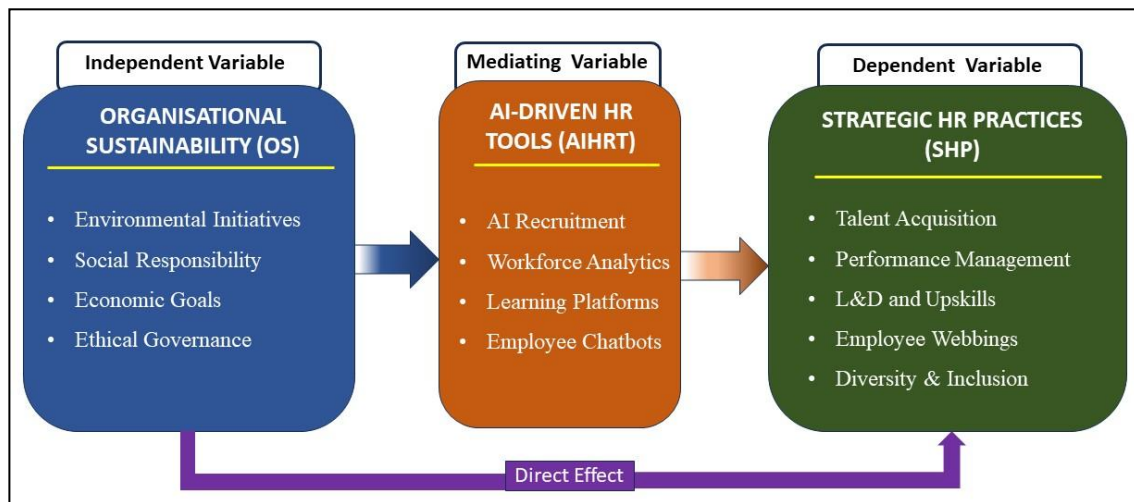


Figure 1: Conceptual Model

The conceptual model depicts a relationship between Organisational Sustainability (OS) and AI-Driven HR Tools (AIHRT) as well as Strategic HR Practices (SHP). Organisational Sustainability is the independent variable being captured using four axes: Environmental Initiatives, Social Responsibility, Economic Growth and Ethical Governance. These sustainability factors are expected to positively and negatively directly and indirectly affect the adoption and effectiveness of Strategic HR Practices. AI-Driven HR Tools serve as the mediator between the other variables and encompass technologies like AI Recruitment, Workforce Analytics, Learning Platforms, and Employee Chatbots, that optimise HR operations. The dependent variable is Strategic HR Practices, which are measured as Talent Acquisition, Performance Management, Learning and Development, Employee Well-Being, and Diversity and Inclusion. The model suggests that organisational sustainability not only positively affects strategic HR practices but can also reinforce this connection by leveraging AI tools within HR practices. In this way, AI technologies can be used as a key tool to help achieve sustainability goals and make more effective and future-oriented HR decisions, thus improving the

calculation methods, the minimum required sample was 401, while 431 valid responses were obtained, ensuring good statistical power.

performance of organisations and their sustainability.

6. Objectives

Aligned with the above problem statements, the following research objectives are proposed:

1. To explore the relationship between organisational sustainability initiatives and strategic HR practices in IT firms.
2. To evaluate the extent to which AI-driven HR tools enhance the strategic alignment between sustainability goals and HR functions.
3. To examine whether AI-driven tools act as mediating variables between organisational sustainability and SHP effectiveness.
4. To assess the impact of AI-enabled HR practices on sustainability outcomes such as Talent Acquisition, Performance Management, Learning Development & Upskilling, employee well-being, diversity, and Inclusion.

7. Hypotheses

Based on theoretical support from SHP theory, sustainability theory (Triple Bottom Line), and digital transformation literature, the following hypotheses are framed:

H1: Organisational sustainability significantly influences Strategic HR Practices.

H2: Organisational sustainability significantly influences the adoption of AI-Driven HR Tools.

H3: AI-Driven HR Tools mediate the relationship between Organisational Sustainability and Strategic HR Practices.

8. Data Analysis and Interpretation:

The study aims to examine how sustainability initiatives influence HR strategy and AI adoption. It also investigates whether AI tools mediate this relationship. Three hypotheses were developed to

Data Reliability

test these relationships statistically.

8.1 Data Reliability

Data reliability: consistency of the measurement instrument used in the study and stability of data. Reliability analysis is used to guarantee that the items on the questionnaire accurately capture the constructs being measured and result in reliable findings across different observations. Cronbach's alpha value of more than 0.70 shows that the collected data has acceptable reliability, and the data can be used for hypothesis testing and further statistical analysis.

Table 1: Data Reliability

Case Processing Summary			
		N	%
Cases	Valid	431	100.0
	Excluded ^a	0	.0
	Total	431	100.0
a. Listwise deletion based on all variables in the procedure.			

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.781	.788	11

8.2 Data Validity

Data validity is the degree to which the measurement tool is valid. Validity analysis is used to make sure that the questionnaire items reflect the concepts of the questionnaire and that they get accurate and meaningful answers. It can be

Data Validity

concluded that the data collected in the research are valid and appropriate, as the KMO test value of more than 0.70 shows that the collected data have acceptable validity and the data can be used for hypothesis testing and further statistical analysis.

Table 2: Data Validity

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.784
Bartlett's Test of Sphericity	Approx. Chi-Square	158.870
	df	55
	Sig.	<.001

The above values from the reliability and KMO-Bartlett's tests confirmed that the measurement scales are reliable and valid. This ensures consistency and accuracy of the data used for model testing.

8.3 Factor Analysis

A statistical method that is employed to discover and classify variables into constructs or factors. It helps to reduce the complexity of data and to determine whether the variables measured are

representative of the theoretical dimensions of the study. The factor loading ranges between 0.70 and up are considered good, which means the items are closely related to their constructs and the measurement model is considered to be valid.

Furthermore, factor analysis was conducted to identify underlying constructs and ensure that survey items properly represented sustainability, AI tools, and strategic HR practices.

Table 3: Factor Analysis

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.321	12.008	12.008	1.321	12.008	12.008	1.249	11.356	11.356
2	1.146	10.422	22.430	1.146	10.422	22.430	1.135	10.314	21.670
3	1.128	10.259	32.689	1.128	10.259	32.689	1.104	10.038	31.708
4	1.100	9.999	42.688	1.100	9.999	42.688	1.100	10.001	41.709
5	1.038	9.440	52.128	1.038	9.440	52.128	1.098	9.983	51.692
6	1.002	9.110	61.239	1.002	9.110	61.239	1.050	9.547	61.239
7	.971	8.825	70.064						
8	.854	7.766	77.830						
9	.836	7.597	85.427						
10	.807	7.336	92.763						
11	.796	7.237	100.000						

Extraction Method: Principal Component Analysis.

According to Table 3, the factors or eigenvalues are greater than 0.70. That means all factors are considered good, and these can be used for further statistical analysis.

Structured Equation Modeling (SEM) is a multivariate statistical method that can be used to analyse complex relationships between latent

variables and observed variables at a time. It is a mixture of factor analysis and regression analysis, and tests the measurement model and the structural model in one go. Using SEM, researchers can consider direct, indirect, and mediating effects, which help to provide a full picture of the assumed theoretical model and hypotheses.

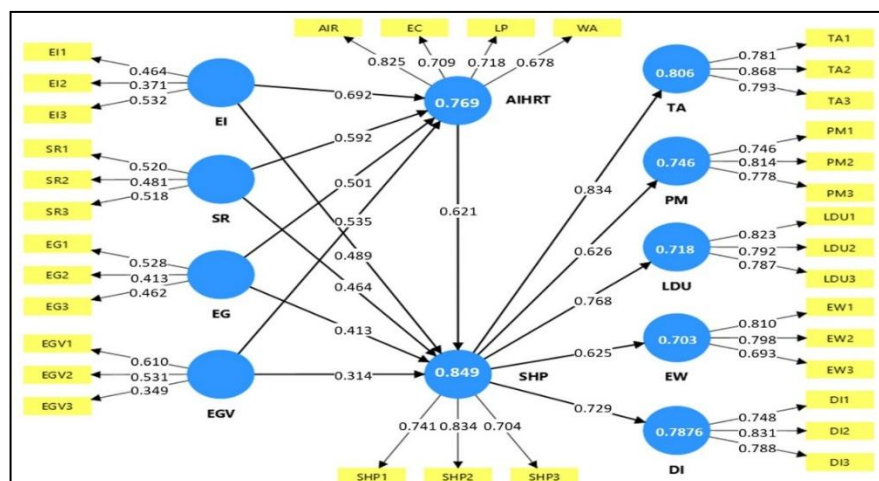


Figure 2: SEM Model

The following Table 4 shows the Chi-square values for the Saturated and Estimated Models. The Saturated Model obtained a Chi-square value of 2143.413 while the Estimated Model obtained a Chi-square value of 2251.272. The increase in the Chi-square statistic for the Estimated Model suggests that the model is as good as the model without any restrictions (the Saturated Model),

and that the imposed assumptions result in a larger difference between the observed and model-implied covariance matrices. The Estimated Model can still be deemed acceptable, however, as a function of the significance of the Chi-square test and alternative measures of goodness-of-fit.

Table 4: Value of Model Fit

Keys	Saturated Model	Estimated Model
SRMR	0.102	0.104
Chi-	2143.413	2251.272
NFI	0.89	0.96

8.4 Result of the SEM Model

According to the following Table 5, overall, the results indicate that the proposed structural model possesses high explanatory power and strong predictive relevance. The consistently high **R²**, **Adjusted R²**, and **Q²** values across all constructs confirm that the model effectively explains and predicts the relationships among AI-

driven HR tools, strategic HR practices, and sustainability-oriented organisational outcomes. These findings validate the robustness and reliability of the proposed research framework. The model demonstrates strong explanatory power and predictive relevance. High R², Adjusted R², and Q² values indicate that the framework effectively explains relationships among sustainability, AI tools, and HR practices.

Table 5: Results of SEM Model

Variables	R ²	Adjusted R ²	Q ²
Environmental Initiatives (EI)	0.862	0.812	0.625
Social Responsibility (SR)	0.873	0.825	0.712
Economic Goal (EG)	0.854	0.801	0.694
Ethical Governance (EGV)	0.884	0.831	0.733
Talent Acquisition (TA)	0.874	0.823	0.726
Performance Management (PM)	0.842	0.802	0.682
L&D and Upskilling (LDU)	0.859	0.814	0.697
Employee Wellbeing (EW)	0.878	0.861	0.731
Diversity & Inclusion (DI)	0.881	0.864	0.743
AI-Driven HR Tools (AIHTR)	0.867	0.844	0.730
Strategic HR Practices (SHP)	0.864	0.842	0.726

8.5 Path Coefficient of the Model

Path coefficients show the strength and direction of relationships between variables. All major paths were statistically significant.

Table 6: Path coefficient of the SEM Model

Path	Original Samples	Sample Mean	Standard Error	T Statistics	P Value
EI->AIHRT	0.692	3.977	0.140	4.953	0.001
EI->SHP	0.489	3.967	0.139	3.518	0.006
SR->AIHRT	0.592	3.986	0.099	5.980	0.000
SR->SHP	0.464	3.865	0.110	4.218	0.002
EG->AIHRT	0.501	4.035	0.099	5.081	0.000
EG->SHP	0.413	3.981	0.164	2.518	0.030
EGV->AIHRT	0.535	4.046	0.079	6.772	0.000
EGV->SHP	0.314	3.987	0.099	3.172	0.010
AIHRT->SHP	0.621	4.019	0.142	4.373	0.001
SHP->TA	0.834	4.007	0.198	4.211	0.002
SHP->PM	0.626	3.910	0.174	3.598	0.005
SHP->LDU	0.768	4.023	0.194	3.959	0.003
SHP->EW	0.625	3.968	0.130	4.808	0.001
SHP->DI	0.729	4.035	0.150	4.860	0.001

Table 7: Results of the Direct Effects

Direct Path	Effect	Std. Error	t-value	P Value	Significant
EI->SHP	0.489	0.139	3.518	0.006	Yes
SR->SHP	0.464	0.110	4.218	0.002	Yes
EG->SHP	0.413	0.164	2.518	0.030	Yes
EGV->SHP	0.314	0.099	3.172	0.010	Yes

Table 8: Results of the Indirect Effects

Indirect Path	Effect	Std. Error	t-value	P Value	Significant
EI->AIHRT->SHP	0.430	0.140	3.076	0.012	Yes
SR->AIHRT->SHP	0.368	0.099	3.713	0.004	Yes
EG->AIHRT->SHP	0.311	0.098	3.168	0.010	Yes
EGV->AIHRT->SHP	0.332	0.079	4.206	0.002	Yes

According to Tables 7 & 8, the analysis examined both direct effects and indirect effects. The comparison between Direct and Indirect effects. The direct and indirect effects were analysed to comprehend the impact of Environmental Initiatives (EI), Social Responsibility (SR), Economic Goal (EG) and Ethical Governance (EGV) on Strategic HR Practices (SHP). The direct effect analysis shows that all four constructs have a significant positive effect on SHP. Among them, Emotional Intelligence exhibits the strongest direct influence ($\beta = 0.489$, $t = 3.518$, $p = 0.006$), followed by Social Responsibility ($\beta = 0.464$, $t = 4.218$, $p = 0.002$), Economic Goal ($\beta = 0.413$, $t = 2.518$, $p = 0.030$), and Ethical Governance ($\beta = 0.314$, $t = 3.172$, $p = 0.010$). All the p-values are < 0.05 , meaning that these factors have direct statistically significant relationships with improving Sustainable Human Performance.

Indirect effect analysis was used to test the mediation of AIHR Technology and Smart HR Systems (AIHRT→SHP). All indirect paths are positive and statistically significant, as presented in the results. Emotional Intelligence demonstrates the highest indirect effect on SHP through the mediator ($\beta = 0.430$, $t = 3.076$, $p = 0.012$), followed by Ethical Governance ($\beta = 0.332$, $t = 4.206$, $p = 0.002$), Social Responsibility ($\beta = 0.368$, $t = 3.713$, $p = 0.004$), and Economic Goal ($\beta = 0.311$, $t = 3.168$, $p = 0.010$). The findings echo those of AIHR Technology and Smart HR Systems, significantly mediating the

relationship between the independent variables and Sustainable Human Performance.

A comparison of the two analyses reveals that most of the direct impacts are stronger than the indirect impacts, which indicates that the independent variables impact Sustainable Human Performance both directly and indirectly via AIHR Technology and Smart HR Systems. In both models, Emotional Intelligence is the most influential, whereas the indirect influence of Ethical Governance is relatively stronger than its direct influence. The importance of both direct and indirect paths suggests that these direct effects of Environmental Initiatives, Social Responsibility, Ethical Governance, and Economic Goal Value are partially mediated by AIHR Technology, and Smart HR Systems strengthen these direct effects but do not fully replace them in the context of Sustainable Human Performance. Hence, the research confirms that technological and smart HR interventions are important in enhancing the outcomes of the organisation while retaining the direct contributions of the antecedent factors.

Total Effects

According to the following Table 9, the total effect analysis indicates the overall impact of both direct and indirect effects of the independent variables on

Strategic HR Practices (SHP). The results show that each of the four constructs has a significant

positive relationship with SHP, suggesting that they all play an important role in improving

organisational outcomes.

Table 9: Results of the Total Effects

Relationship	Direct Effect	Indirect Effect	Total Effect
EI->SHP	0.489	0.43	0.919
SR->SHP	0.464	0.368	0.832
EG->SHP	0.413	0.311	0.724
EGV->SHP	0.314	0.332	0.646

The variables that show the highest total effect on SHP are direct (0.919) and mediated (0.907) effects of Emotional Intelligence (EI), which means that the direct and mediated effects of Emotional Intelligence (EI) on SHP are quite high. This discovery might show the significance of the employee's emotional competencies in order to sustain their organisation. The second-highest total effect is achieved by Social Responsibility (SR) (0.832), indicating that socially responsible practices are an important component of SHP. The overall effect is relatively high, highlighting the significance of ethical and socially responsible organisational behaviours in relation to the long-term performance goals. Likewise, Economic Goal (EG) shows a positive total effect (0.724) on SHP, which means that the effective implementation of EG significantly helps the organisation in terms of organisational sustainability and employee performance. Last but not least, the total effect of Ethical Governance (EGV) is positive, with a value of 0.646, thus indicating that perceived value gained from EGV initiatives has a positive impact on SHP. Despite its relatively small

contribution to the overall effect, its contribution is still significant and meaningful to improve the effectiveness of the organisation as a whole. The overall effect results indicate that Emotional Intelligence is the most significant predictor of SHP, followed by SR, EG and EGV. All total effects are positive, indicating that all constructs contribute positively to Strategic HR Practices, and the presence of indirect effects underscores the significant role of AIHR Technology and Strategic HR Practices in strengthening these relationships. The results of this research support the proposed theoretical framework and the study's hypotheses regarding the determinants of Sustainable Human Performance.

8.6 Demonstrating Hypotheses

The results of Structural Equation Modeling (SEM) reveal strong relationships between Organisational Sustainability (OS), AI-Driven HR Tools (AIHR), and Strategic HR Practices (SHRP). The path coefficients, t-values and p-values suggest that there is good empirical evidence for all three proposed hypotheses.

Table 10: Result of Path Relation Table for Hypotheses

Hypothesis	Path Relationship	Path Coefficient	t-value	P Value
H1	Organisational Sustainability Significantly Influences Strategic HR	0.849	6.856	0.000
H2	Organisational sustainability significantly influences the adoption of AI-Driven HR Tools	0.769	4.729	0.000
H3	AI-Driven HR Tools mediate the relationship between Organisational Sustainability and Strategic HR	0.621	5.822	0.000

8.6.1 Hypothesis H1: Organisational sustainability significantly influences Strategic

HR Practices.

As per Table 10, the findings show that

Organisational Sustainability has a high positive and significant effect on Strategic HR Practices with a path coefficient (β) of 0.849, t-value of 6.856 and p-value of 0.000. The path coefficient of 0.849 indicates that an increase in Organisational Sustainability results in an increase in Strategic HR Practices by 0.849 units. Moreover, the t-value is greater than the recommended value (1.96), and the p-value is less than 0.001, which are indicators of statistical significance of the relationship. Thus, the alternative hypothesis **H1a** is accepted and rejects the null hypothesis **H10**.

This means the Organisations that have successful sustainability programs are more likely to have effective HR strategies that lead to better employee engagement, improved talent retention, better workforce development, and better long-term organisational success, the findings show. Sustainable organisations are likely to integrate human resource management policies and strategies into environmental, social and economic goals, thereby increasing employee engagement, productivity and competitiveness. Moreover, incorporating sustainability into HR practices can help with ethical decision-making, enhance organisational resilience, and play a role in achieving long-term business success. Hence, the sustainability of an organisation is a major factor in the successful realisation of Strategic HR Practices.

8.6.2 Hypothesis H2: Organisational sustainability significantly influences the adoption of AI-Driven HR Tools.

As per Table 10, the findings show that there is a strong positive correlation between Organisational Sustainability and AI-Driven HR Tools adoption. The path coefficient is 0.769, with a t-value of 4.729 and a p-value of 0.000. This discovery suggests that companies with greater sustainability orientations are more inclined to accept and include technologies in HR processes which are powered by AI. The t-value exceeds 1.96, and the p-value is less than 0.05, which means that the relationship is statistically significant.

Thus, the alternative hypothesis **H2a** is accepted

and rejects the null hypothesis **H20**. This indicates that Organisational Sustainability is an important factor in fostering the use of AI-Driven HR Tools. Sustainable companies are more inclined to invest in new technologies that can enhance HR effectiveness, data-driven decision-making, and workforce management. By leveraging AI in HR processes, companies can boost recruitment precision, streamline employee assessment, improve talent cultivation, and boost overall efficiency, all while minimising administrative tasks and human biases. Moreover, AI-based HR tools facilitate responsible workforce planning, enhance employee experiences, and empower companies to adapt to evolving business landscapes effectively. Therefore, organisational sustainability serves as an enabler for the development of a new technology and the digital transformation of HR functions.

8.6.3 Hypothesis H3: AI-Driven HR Tools mediate the relationship between Organisational Sustainability and Strategic HR Practices.

According to Table 10, the mediation analysis reveals that the AI-Driven HR Tools significantly mediate between Organisational Sustainability and Strategic HR Practices. The indirect path coefficient is 0.621, the t-value is 5.822, and the p-value is 0.000. The indirect effect, which is significant, suggests that Organisational Sustainability has an indirect impact on Strategic HR Practices via AI-Driven HR Tools. The t-value is high, and the p-value is highly significant, thus giving strong evidence of mediation. So, the alternative hypothesis **H3a** is accepted and rejects the null hypothesis **H30**.

It is established that AI-Driven HR Tools are one of the important mechanisms that link organisational sustainability and the development and effectiveness of strategic HR practices. This discovery indicates that AI-powered HR solutions enhance the effectiveness of sustainability efforts. The use of AI-driven tools helps to support data-driven decision-making, optimise talent management, optimise employee performance, and automate human resources processes, and thus boosts the effectiveness of

sustainability initiatives in achieving strategic HR outcomes. Moreover, the mediation effect underscores the potential for organisations to become more efficient, innovative, and competitive in the long run by incorporating AI tools into their sustainable HR practices. In conclusion, AI-driven HR tools are a pivotal enabler in the pursuit of sustainability goals to become effective and forward-looking HR practices.

Overall, the assumption that all three hypotheses are supported by the findings, and they are strong empirical findings. Organisational Sustainability positively and significantly impacts Strategic HR Practices ($\beta = 0.849$, $t = 6.856$, $p < 0.001$) and positively and significantly affects the adoption of AI-Driven HR Tools ($\beta = 0.769$, $t = 4.729$, $p < 0.001$). Additionally, AI-Driven HR Tools significantly mediate the relationship between Organisational Sustainability and Strategic HR Practices ($\beta = 0.621$, $t = 5.822$, $p < 0.001$).

Based on these findings, it can be concluded that AI-powered HR tools can have a direct and indirect impact on enhancing strategic HR activities within organisations aiming for sustainability. The major direct and indirect effects also show partial mediation, which means that AI-Driven HR Tools complement sustainability efforts to create effective strategic HR practices.

9. Conclusion

In conclusion, this study highlights that the convergence of sustainability and artificial intelligence within HRM is not only inevitable but essential for building future-ready organisations.

AI-driven HR tools serve as a transformative force that enables organisations to operationalise sustainability goals, enhance strategic alignment, and foster a more inclusive, adaptive, and resilient workforce. As organisations navigate the complexities of the digital age, the integration of AI and sustainable HR practices will remain a cornerstone of long-term organisational success.

10. Recommendations

Based on the findings, the following recommendations are proposed for organisations, HR practitioners, and policymakers:

10.1 Strategic Recommendations

- **Integrate AI with Sustainability Strategy**

Organisations should align AI-driven HR tools with sustainability goals to ensure long-term strategic impact rather than using AI solely for operational efficiency.

- **Adopt Data-Driven HR Decision-Making**

HR departments should leverage predictive analytics and workforce intelligence tools for talent forecasting, employee retention, and diversity monitoring.

- **Enhance AI Capability in HR Functions**

IT firms should invest in: AI-enabled recruitment systems, learning management platforms, and employee sentiment analytics. Managerial Recommendations

To promote ethical AI practices, organisations must ensure: Algorithmic transparency, Bias-free decision-making, and data privacy protection. To strengthen Employee-Centric HR Systems, AI tools should be used to: improve employee well-being, enable personalised learning, and enhance engagement and satisfaction. To develop digital HR competencies, HR professionals need to be trained in HR analytics, AI tool usage, and strategic workforce planning.

- **Policy-Level Recommendations**

The policymakers should develop guidelines for: Ethical AI usage, ESG compliance in HR technologies.

To Encourage Sustainable Digital Transformation Government and industry bodies need to promote AI adoption in HR and sustainable workforce policies.

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