AI's Transformative Role in Strategic HRM: Insights and Practices in the Industry 5.0 Era

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Abstract

The arrival of Industry 5.0 marks a significant shift, with a renewed emphasis on human-centricity and sustainable practices. AI has the potential to revolutionize HRM by enhancing decision-making, improving employee experiences, and optimizing processes through its capacity to process vast data and recognize patterns. Through AI-powered tools, employers can address talent shortages, streamline processes, and create a more engaged workforce. This study explores the strategic integration of Artificial Intelligence (AI) in Strategic human resource management (SHRM) within Mysuru City, emphasizing Industry 5.0's human-centered approach. Industry 5.0 promotes sustainability, productivity, and well-being by leveraging advanced technologies like AI. Using primary data from 76 respondents, this research examines the extent of AI adoption in HRM functions, the perceived benefits and challenges and the strategies businesses employ to manage AI's impact on human capital. The research focuses on AI usages in HRM, the perception of the stakeholders, assessing the benefits and difficulties of this integration. Exploring the intersection of Industry 5.0, AI, and SHRM, this research would addto the contemporary areas of organizational studies and highlighting AI's evolving role in strategic HR practices and its implications for future workforce management.

Keywords: *Industry 5.0, Strategic Human Resource Management, Artificial Intelligence*

Introduction

In Industry 5.0, Strategic Human Resource Management (SHRM) represents a paradigm shift in which artificial intelligence (AI) and human intelligence (HRM) work together to achieve organizational excellence. Industry 5.0 emphasizes human-centric innovation, sustainability, and customized approaches to problem-solving, going beyond automation and efficiency. Predictive analytics, data-driven decision-making, and improved employee experiences are made possible by the incorporation of AI into SHRM. These days, traditional HR procedures like hiring, training, and performance management are being completely transformed by AI tools. AI-powered systems, for example, can accurately evaluate candidate profiles to make sure the right talent matches organizational requirements. Platforms for personalized learning also encourage ongoing skill development, preparing staff for positions that require constant change. Using the advantages of both, SHRM in Industry 5.0 promotes the coexistence of humans and machines. Human intuition and creativity drive

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innovation and ethical considerations, while AI manages repetitive tasks and complex data analysis. This integration fosters agility, adaptability, and inclusivity—all of which are critical for meeting the demands of a quickly changing industrial landscape. HR can develop a workforce that flourishes in an augmented environment by coordinating AI with strategic objectives, striking a balance between the capabilities of technology and a strong human touch. In the end, this strategy presents businesses as resilient, creative, and prepared for the future.

Industry 5.0: Human-Centric Transformation And Ai Integration In Hrm

Industry 5.0 represents a transformative shift in manufacturing, emphasizing human-centric approaches, sustainability, and resilience. Unlike Industry 4.0, which focused on automation, Industry 5.0 integrates advanced technologies with human creativity, ensuring that workers remain central to the production process. This fosters collaboration between humans and machines, enhancing worker well-being and societal value (Adel & Amr, 2022). Sustainability is crucial, aiming to reduce waste and carbon footprints through cleaner technologies, while resilience enables businesses to quickly adapt to disruptions like the COVID-19 pandemic (Demir, Kadir & Cicibaş, Halil, 2019). AI plays a pivotal role in this shift, particularly within Human Resource Management (HRM), where it streamlines processes like recruitment, performance management, and employee engagement. By integrating AI, HR professionals can focus on strategic goals, improving both efficiency and organizational performance. However, this also introduces ethical challenges such as bias, privacy, and transparency, requiring HR to ensure fairness and data protection while fostering a workplace that balances human skills with technology (Demir, Kadir & Cicibaş, Halil, 2019).

3. REVIEW OF LITERATURE

Recent studies show AI's transformative impact on human resource management, with predictive models achieving 89% accuracy in turnover prediction and skill gap forecasting. Cross-cultural influences influence AI adoption, talent development, and sustainability. The European Commission and World Bank have advanced regulatory frameworks for AI in Industry 5.0.

Table No. 1 Review of Literature

Author(s) & Year	Title	Research Type	Methodology	Sample Size/Context	Key Findings	Implications
Raji et al. (2020)	*Gender Bias in AI Recruitment Systems*	Quantitative Study	Gender Disparity Analysis	Male-dominated industries (e.g., technology)	AI systems replicate gender disparities, disadvantaging women in hiring.	Build gender-inclusive frameworks for AI-driven hiring.
Cannon & Kitay (2022)	*Digital Skills and Age Correlations in AI Recruitment*	Comparative Study	Regression Analysis	Cross-industry age-related technological profiles	AI links digital competency to younger candidates, creating	Ensure AI algorithms decouple technological competency from age.

Author(s) & Year	Title	Research Type	Methodology	Sample Size/Context	Key Findings	Implications
					unconscious biases.	
Madsen & Heffernan (2021)	*Gendered Task Distribution in AI Workload Management*	Quantitative Study	Statistical Analysis	Workplace task distribution data	AI tools reproduce workplace inequities, disproportionately assigning multitasking tasks to women.	Develop AI tools that incorporate equitable workload distribution mechanisms.
Tambe et al. (2021)	*Trust in AI Transparency Among Experienced Managers*	Mixed-Methods Study	Surveys and Interviews	500 managers across various organizations	Experienced managers demand interpretable AI models for trust-building.	Prioritize transparency mechanisms for experienced professionals.
Kraus et al. (2022)	*Opaque AI Systems and Trust in Decision-Making*	Quantitative Study	Surveys and Decision-Making Scenarios	Professionals with 10+ years of experience	Opaque AI systems reduce trust, with experienced professionals seeking clarity and accountability.	Enhance interpretability in AI design to meet experienced users' expectations.
Clark et al. (2022)	*Work-Life Balance and Gender in AI Workload Tools*	Regression Analysis	Mixed Methods	Gender-specific workplace roles	AI risks reinforcing traditional gender roles while offering flexibility.	Design AI systems to balance flexibility and prevent gender role reinforcement.
Rodriguez et al. (2024)	*Predictive Analytics in Strategic HRM*	Quantitative Study	Predictive Model Development	100,000 employee records	Predictive models achieve 89% turnover prediction accuracy.	Integrate predictive analytics for skill gap forecasting in HR strategy.

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Author(s) & Year	Title	Research Type	Methodology	Sample Size/Context	Key Findings	Implications
Johnson et al. (2024)	*Machine Learning in Workforce Planning*	Mixed-Methods Study	Surveys and Predictive Modeling	500 HR professionals and 50 interviews	Workforce planning accuracy improved by 76% with AI.	Focus on AI training for HR professionals to improve workforce strategies.
Ahmed & Singh (2024)	*AI-Driven Talent Development*	Action Research	Longitudinal Study	Five organizations over two years	AI enhanced skill development and learning effectiveness by 45%.	Use AI for personalized career development and training programs.
Brown et al. (2024)	*Sustainability in AI-Enhanced HRM*	Mixed-Methods Study	Surveys and Environmental Metrics Analysis	300 organizations	AI improved environmental and social sustainability metrics.	Develop sustainability-focused frameworks for AI in HRM.
European Commission (2024)	*Human-Centric AI and Industry 5.0*	Policy Study	Mixed Methods	EU-wide study across 27 member states	Regulatory frameworks for human-centric AI in Industry 5.0.	Establish guidelines for ethical and sustainable AI integration.
World Bank (2024)	*Global Impact of AI on Workforce Management*	Economic Analysis	Statistical and Policy Analysis	180 countries	Comprehensive skills gap analysis and global workforce transformation strategies.	Offer policy recommendations for global workforce AI integration.
Chen et al. (2024)	*Employee Acceptance of AI in HRM*	Cross-Cultural Study	Quantitative Surveys	1,200 employees across eight countries	Cultural, age, and education levels significantly influence AI adoption.	Tailor AI adoption strategies to cultural contexts.

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The literature review highlights AI implementation trends in HRM and Industry 5.0, emphasizing human-centric AI, ethical considerations, and sustainability metrics. AI enhances organizational performance and change management, but research gaps persist, especially in developing economies and SME implementation.

4. RESEARCH GAP

The current literature on strategic HRM is largely dominated by methodological constraints, highlighting the need for a comprehensive exploration of how AI transforms workforce management across diverse organizational contexts, despite the challenges posed by rapid technological evolution.

5. SIGNIFICANCE OF THE STUDY

The research aims to develop a theoretical framework for AI-HR integration, provide empirical insights, and bridge knowledge gaps. It will guide organizational AI adoption strategies, inform policy development, and support ethical AI implementation. From a societal perspective, it aims to enhance understanding of human-technology interactions, promote responsible AI deployment, and support workforce adaptability in an increasingly digital landscape.

6 OBJECTIVES OF THE STUDY

The following are the Objectives of the study:

1. To analyse the influence of demographic variables on perceptions of AI in SHRM practices.
2. To evaluate the impact of professional roles and industry sectors on AI integration in workforce planning, recruitment, and retention.
3. To explore organizational size implications on ethical practices and decision-making quality in AI-driven SHRM systems.
4. To investigate AI's effectiveness in talent acquisition, workforce planning, and employee retention, focusing on its correlation with innovation.
5. To examine AI's alignment with Industry 5.0 principles, emphasizing sustainability and human-centric collaboration.

7. RESEARCH DESIGN

This study adopts a quantitative research design to examine the influence of demographic variables, professional roles, industry sectors, and organizational size on perceptions of AI-driven strategic human resource management (SHRM) systems. Utilizing descriptive and inferential statistical methods, the research investigates the integration of AI tools across various SHRM constructs, including Talent Acquisition and Management (TAM), Employee Experience and Wellbeing (EEW), Strategic Workforce Planning (SWP), Implementation and Ethics (IAE), Organizational Impact (OI), and Industry 5.0 Alignment. The population consists of employees in Mysore City, with a sample of 76 respondents selected through simple random sampling. Data is gathered through structured questionnaires with a

5-point Likert scale, assessing perceptions of AI in SHRM and Industry 5.0. Secondary data is sourced from literature, case studies, and industry reports on AI adoption in HRM. Data analysis includes descriptive statistics, hypothesis testing (ANOVA, t-tests, Chi-square tests), reliability analysis (Cronbach's Alpha score of 0.942), and correlation analysis (Pearson/Spearman methods). Limitations include response bias and the potential for the rapid evolution of AI technologies, which may reduce the relevance of findings. Despite these constraints, the design provides a thorough investigation of AI's role in SHRM and its alignment with Industry 5.0.

8. RESEARCH HYPOTHESES

Table No. 2 Depicting Research Hypothesis of the study

Demographic Variables	Hypothesis	Details	Earlier Literature Support
Age	**H1**	There is a significant difference in perceptions of AI-powered recruitment tools among different age groups.	Raghavan, Ajunwa, and Cannon & Kitay have all raised concerns about age-related biases in AI recruitment algorithms, with Köchling & Wehner's study revealing that AI tools may perpetuate age discrimination by learning from historically biased hiring data.
Gender	**H2**	There is a significant difference in perceptions of AI-driven workload distribution helping work-life balance across genders.	Madsen, Clark, and Rodriguez's research highlights gender disparities in AI workload management, with tasks often assigned based on gender-coded profiles. They also highlight the complex interactions between technological intervention and work-life balance experiences.
Years of Experience	**H3**	Years of experience significantly affect trust in AI decision-making transparency.	Tambe et al. (2021) found that experienced managers demand interpretable AI models, while Kraus et al. (2022) found that professionals with over 10 years of experience show lower trust in opaque systems. Transparency mechanisms, as noted by Doshi-Velez & Kim (2017), improve trust across all experience levels, but are especially impactful for less experienced users. McKnight et al. (2011) highlighted experienced professionals' prioritization of ethical alignment in transparency mechanisms, while Adadi & Berrada (2018) highlighted the critical role of interpretability in building trust.

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Demographic Variables	Hypothesis	Details	Earlier Literature Support
Professional Role	**H4**	Different professional roles have varying perceptions of the effectiveness of AI-powered succession planning.	Cappelli, Adadi & Berrada's research highlights the importance of understanding perceptions of senior leadership, HR professionals, managers, and employees when implementing AI in succession planning, focusing on accuracy and fairness.
	H5	The perception of AI's balance between automation and human-centric values differs across professional roles.	Stone et al.(2020) and Binns et al.(2018) highlight the importance of ethical considerations and human oversight in decision-making, while HR professionals trust AI for reducing manual bias in recruitment and succession planning. Doshi-Velez & Kim emphasize the need for actionable and interpretable AI outputs to maintain trust. Employees, both skeptics and beneficiaries, often perceive AI as a double-edged sword, promoting fairness but potentially lacking empathy. Trust in AI depends on the perceived balance between automation and respect for individual circumstances.
Industry Sector	**H6**	The impact of AI on resource utilization significantly differs across industry sectors.	Lee and Chien et al. (2020) highlight AI's significant impact on manufacturing, technology, services, and healthcare, optimizing production processes, reducing downtime, and enhancing supply chain efficiency, while reducing energy consumption.
	H7	The industry sector influences perceptions of AI's impact on employee retention rates.	Bates et al.,(2020) Rüßmann, Bessen, and Topol have explored the role of AI in various industries. In manufacturing, AI can upskill workers, improve job stability, and reduce turnover. However, excessive AI reliance can lower morale. In healthcare, AI can optimize workflows, reduce administrative burdens, and prevent burnout. Topol's research showed that AI-enabled workload optimization reduced nurse turnover by 25%. Bates et al. (2021) reported a 15% improvement in retention rates in hospitals using AI for burnout detection.
Organization Size	**H8**	Organization size significantly influences perceptions of AI's	Kamble(2021), Tambe,(2021) and Huang et al(2022) have all highlighted the benefits of AI

Demographic Variables	Hypothesis	Details	Earlier Literature Support
		impact on overall HR decision-making quality.	in small organizations, with studies showing a 25% increase in HR productivity and a 20% increase in decision-making accuracy. However, concerns about bias and transparency have been raised by larger firms, while large organizations have seen a 35% improvement in leadership pipeline effectiveness.
	H9	Employees in smaller organizations perceive AI ethics differently compared to those in larger organizations.	Ransbotham's(2020) study reveals that small firms adopt AI with minimal ethical oversight, leading to a pragmatic, benefit-focused perception of AI ethics. Floridi & Cowls'(2019) research highlights larger organizations investing in ethical AI frameworks and governance structures due to regulatory pressures and reputational risks. Deloitte's 2022 report shows that 70% of employees in large organizations prioritize fairness and transparency, contrasting with 45% in smaller firms.
E. HYPOTHESIS RELATED TO ALL ASSOCIATED VARIABLES			
Talent acquisition and management	**H10**	Perceptions of AI-powered recruitment tools differ based on gender.	Raji's(2020) study highlights the impact of biased AI recruitment systems on gender disparities, particularly in male-dominated fields like technology. Cowgill's (2021) research emphasizes the need for greater transparency from AI systems, while McKinsey's report(2022) reveals that industries with higher male dominance, such as engineering, exhibit more significant gender-based disparities in AI recruitment outcomes.
Strategic workforce planning	**H11**	Perceptions of AI's ability to predict future workforce requirements are influenced by the industry sector.	Deloitte and PwC's(2022) cross-sector analysis shows 78% of technology firms trust AI for workforce needs prediction, but only 60% of service-based industries trust it due to challenges.
Hypotheses on overall impact	**H12**	AI's impact on employee retention rates is positively	McKinsey & Company's(2021) research shows that AI-driven HR technologies

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Demographic Variables	Hypothesis	Details	Earlier Literature Support
		correlated with perceptions of improved innovation capabilities in HR processes.	enhance talent management innovation, leading to higher employee satisfaction and retention. Deloitte's report(2019) on AI in HR found that applications that predict employee turnover and enhance career development pathways improve retention rates. Gartner's study found that organizations integrating AI for employee engagement and retention strategies experience up to a 20% improvement in retention rates.
Industry 5.0 alignment	**H13**	AI's ability to balance automation with human-centric values is significantly associated with perceptions of sustainability improvements.	McKinsey & Company's(2021) research shows that AI-driven HR technologies enhance talent management innovation, leading to higher employee satisfaction and retention. Deloitte's report(2019) on AI in HR found that applications that predict employee turnover and enhance career development pathways improve retention rates. Gartner's study found that organizations integrating AI for employee engagement and retention strategies experience up to a 20% improvement in retention rates.
Integration of ai into SHRM practices in industry 5.0	**H14**	The integration of AI with Strategic Human Resource Management (SHRM) practices is strongly and positively correlated with the advancement of Industry 5.0 initiatives.	The European Commission and IEEE (2024) have published research on HCAI's integration into Industry 5.0, highlighting its benefits in enhancing collaboration, productivity, and workplace safety.

9. DATA ANALYSIS AND INTERPRETATION

Table No. 3 showing Demographic details

Demographic Profile of the Respondents					
Age	21-30 Yrs	31-40 Yrs	41-50 Yrs	> 50 Yrs	Total
Frequency	**47**	**13**	**15**	**1**	**76**
%	**61.8**	**17.1**	**19.7**	**1.3**	**100**
Gender	**Male**	**Female**	**Others**	**-**	**-**
Frequency	**44**	**32**	**-**	**-**	**76**
%	**57.9**	**42.1**	**-**	**-**	**100**
PROFESSIONAL ROLE	Hr Professional / Manager	Senior Management	Employee	Other	**Total**
Frequency	12	6	47	11	**76**
%	15.8	7.9	61.8	14.5	**100**
Area of Occupation	Manufacturing	Technology	Services	Others	**Total**
Frequency	4	23	29	20	**76**
%	5.3	30.3	28.9	9.2	**100**
Organisation Size	<100	101-500	501-1000	> 1000	**Total**
Frequency	16	13	6	41	**76**
%	21.1	17.1	7.9	53.9	**100**

Source: Primary Data

The majority of respondents (61.8%) are aged 21-30, with a higher proportion of males (57.9%) than females (42.1%). Most are employees, with 57.9% having more than 5 years of experience. The respondents primarily work in technology and services sectors, with a significant portion (53.9%) working in organizations with over 1000 employees.

INFERENTIAL STATISTICS

Rodriguez & Chen, Madsen & Heffernan, McKinsey, Deloitte, and Binns have all contributed to the understanding of the integration of AI into Strategic Human Resource Management (SHRM). Age, gender biases, and professional roles also influence AI perceptions. Younger employees are more likely to embrace AI tools, while older groups may perceive AI as perpetuating age discrimination. Professional roles also influence AI perceptions, with senior leaders viewing AI as a tool for operational efficiency, while employees are concerned about job security. The effectiveness of AI in strategic workforce

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planning is heavily influenced by industry, with technology sectors showing greater trust in AI's ability to predict workforce needs.

Table No. 4 showing significance of the hypothesis testing

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Variables	Hypothesis	Hypothesis	Statistical Test	F/t/r value	Sig Value	Accepted/Rejected
Age	**H1**	There is a significant difference in perceptions of AI-powered recruitment tools among different age groups.	Anova	F 1.078	0.392	H0 Not Rejected
Gender	**H2**	There is a significant difference in perceptions of AI-driven workload distribution helping work-life balance across genders.	T-Test	T 0.814	0.418	H0 Not Rejected
Years of Experience	**H3**	Years of experience significantly affect trust in AI decision-making transparency.	Anova	F 0.796	0.500	H0 Not Rejected
Professional Role	**H4**	Different professional roles have varying perceptions of the effectiveness of AI-powered succession planning.	Anova	F 1.770	0.161	H0 Not Rejected
	H5	The perception of AI's balance between automation and human-centric values differs across professional roles.	ChiSqaure	Prof Role 56.125 Balance automation with human centric values 42.583	0.000	H0 Rejected
Industry Sector	**H6**	The impact of AI on resource utilization significantly differs across industry sectors.	Chi Square	RU 87.421 Sector 21.237	0.000	H0 Rejected
	H7	The industry sector influences perceptions of AI's impact on employee retention rates.	Chi Square	Sector 21.237 Empl Retention 45.74	0.000	H0 Rejected

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Variables	Hypothesis	Hypothesis	Statistical Test	F/t/r value	Sig Value	Accepted/Rejected
Organization Size	**H8**	Organization size significantly influences perceptions of AI's impact on overall HR decision-making quality.	Anova	F 0.961	0.416	H0 Not Rejected
	H9	Employees in smaller organizations perceive AI ethics differently compared to those in larger organizations.	Anova	F 0.334	0.801	H0 Not Rejected
Talent acquisition and management	**H10**	Perceptions of AI-powered recruitment tools differ based on gender.	Anova	F 1.487	0.227	H0 Not Rejected
Strategic workforce planning	**H11**	Perceptions of AI's ability to predict future workforce requirements are influenced by the industry sector.	Anova	F 1.920	0.117	H0 Not Rejected
Hypotheses on overall impact	**H12**	AI's impact on employee retention rates is positively correlated with perceptions of improved innovation capabilities in HR processes.	Correlation	r 0.563	0.000	H0 Not Rejected Moderately Correlated

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Variables	Hypothesis	Hypothesis	Statistical Test	F/t/r value	Sig Value	Accepted/Rejected
Industry 5.0 alignment	**H13**	AI's ability to balance automation with human-centric values is significantly associated with perceptions of sustainability improvements.	Correlation	r 0.464	0.000	H0 Not Rejected Moderately Correlated
Integration of ai into SHRM practices in industry 5.0	**H14**	The integration of AI with Strategic Human Resource Management (SHRM) practices is strongly and positively correlated with the advancement of Industry 5.0 initiatives.	Correlation	r 0.815	0.000	H0 Not Rejected Very Strong Correlation
EEWF, TAMF, SWPF, IEF, OIF, and I5AF	**H15**	There is a significant positive relationship between the variables (e.g., EEWF, TAMF, SWPF, IEF, OIF, and I5AF)	Correlation		0.000	Correlation coefficients ranging from moderate (0.436) to strong (0.838).

Source: Primary Data

The study explores the relationship between demographic variables, professional roles, industry sectors, and organizational sizes with perceptions of AI in HR processes and AI's alignment with Industry 5.0 principles. Statistical analysis reveals no significant differences in perceptions based on age, gender, years of experience, or organizational size regarding AI-powered recruitment tools,

work-life balance, or trust in AI decision-making (F = 1.078, p = 0.392; T = 0.814, p = 0.418; F = 0.796, p = 0.500). However, there is a highly significant association between professional roles and AI's ability to balance automation with human-centric values (χ^2 = 42.583, p = 0.000). Industry sectors show a significant influence on perceptions of AI's impact on resource utilization (χ^2 = 87.421, p = 0.000) and employee retention rates (χ^2 = 45.74, p = 0.000). No significant differences are found across organization sizes regarding HR decision-making quality (F = 0.961, p = 0.416) or AI ethics (F = 0.334, p = 0.801). Gender and industry sector have no significant impact on perceptions of AI-powered recruitment tools or workforce predictions (F = 1.487, p = 0.227; F = 1.920, p = 0.117). Correlation analysis shows significant positive relationships across all six variables, with the strongest correlations between OIF and EEWF (0.838) and OIF and I5AF (0.810), confirming robust connections. Additionally, AI's impact on employee retention correlates moderately with improved HR innovation (r = 0.563, p = 0.000), and its human-centric approach positively influences sustainability (r = 0.464, p = 0.000). The highest correlation (r = 0.815, p = 0.000) underscores AI's crucial role in advancing Industry 5.0 objectives. These findings indicate that the variables are not independent but interrelated, reflecting complex interactions in AI integration within HRM and Industry 5.0 practices.

H15: There is a significant positive relationship between the variables (e.g., EEWF, TAMF, SWPF, IEF, OIF, and I5AF)

The correlation matrix reveals statistically significant positive relationships among all six variables (EEWF, TAMF, SWPF, IEF, OIF, and I5AF) across 76 observations, with correlation coefficients ranging from moderate (0.436) to strong (0.838). The hypothesis suggests that these variables are interconnected, potentially indicating shared underlying factors or mutual influences within the studied context. The strongest correlations exist between OIF and EEWF (0.838), and between OIF and I5AF (0.810), implying a robust relationship between these specific variables. The consistently low p-values (0.000) across all correlations indicate that these relationships are highly unlikely to have occurred by chance, providing strong statistical evidence of meaningful connections. The most moderate correlation is between IEF and TAMF (0.436), which still suggests a positive relationship, albeit less intense compared to other variable pairs. Overall, the data supports the proposition that these variables are not independent but demonstrate systematic interrelationships, potentially reflecting complex interactions within the system or phenomenon being studied.

10 FINDINGS

The data analysis and interpretation for hypotheses related to AI in HR reveal the following key insights across various dimensions:

1. The study reveals a nuanced landscape of technological attitudes across age, gender, and professional experience, with ANOVA and t-test results showing no significant variations. Age groups showed similar views on AI recruitment tools (F = 1.078, p = 0.392), gender comparisons showed no significant differences in AI-driven workload distribution (T = 0.814, p = 0.418).

2. The analysis of professional roles and AI effectiveness revealed a nuanced landscape of technological perceptions. ANOVA: F = 1.770, p = 0.161 showed no significant variation across roles, suggesting a uniform understanding of AI-driven succession strategies. However,

a highly significant association ($\chi^2 = 42.583$, $p = 0.000$) was found between professional roles and technological perceptions, highlighting the complex interplay between roles and technological integration.

3. The industry sector-specific analysis of AI impacts revealed significant variations in perceptions and effectiveness across sectors. Resource utilization testing showed substantial differences, with a strong chi-square result ($\chi^2 = 87.421$, $p = 0.000$), highlighting the varying approaches to AI-driven resource optimization. Similarly, the employee retention analysis also showed sector-specific influences, with a chi-square result ($\chi^2 = 45.74$, $p = 0.000$), indicating that AI's role in workforce retention is context-dependent and varies by industry. These findings emphasize the importance of tailoring AI integration to each industry's unique dynamics and challenges, as a generalized approach is ineffective

4. The analysis of organizational size and AI ethics showed consistent perceptions across organizations of different scales. HR decision-making quality was unaffected by organization size (ANOVA: $F = 0.961$, $p = 0.416$), indicating uniform views on AI-driven HR decisions. Similarly, ethical considerations showed minimal variation (ANOVA: $F = 0.334$, $p = 0.801$), suggesting that AI ethics in HRM are perceived similarly regardless of organizational size. These results challenge traditional views on technological adoption, implying a universal approach to AI integration and ethics.

5. The analysis of talent acquisition and workforce planning revealed consistent perceptions of AI technologies across gender and industry sectors. The gender-based examination of AI recruitment tools showed no significant differences, with an ANOVA result of $F = 1.487$ and $p = 0.227$, suggesting uniform understanding of AI recruitment across genders. Similarly, the workforce prediction analysis indicated no significant sectoral influence, with an ANOVA result of $F = 1.920$ and $p = 0.117$. These results challenge the idea that technological perceptions differ by gender or industry, highlighting a broader, sector-independent acceptance of AI tools in HR practices and emphasizing technological neutrality in strategic human resource management.

6. The correlation analysis revealed significant insights into the interrelated dynamics of AI technologies within strategic human resource management (SHRM). A moderate positive correlation ($r = 0.563$, $p = 0.000$) was found between employee retention and innovation, suggesting that AI's influence on workforce stability is closely tied to the organization's innovative capabilities. Additionally, a weak-to-moderate positive correlation ($r = 0.464$, $p = 0.000$) emerged between sustainability efforts and human-centric AI, indicating a growing emphasis on considering both environmental and human factors in AI implementation. Most notably, the analysis revealed a strong positive correlation ($r = 0.815$, $p = 0.000$) between AI integration and Industry 5.0 initiatives, highlighting AI's critical role in driving sustainable, human-centered, and technologically advanced organizational strategies. These findings reinforce that AI is not merely a technological tool but a transformative force that enhances innovation, retention, sustainability, and organizational adaptation across multiple strategic areas.

7. The correlation matrix analysis revealed strong, statistically significant positive relationships across all six studied variables, with correlation coefficients ranging from moderate ($r = 0.436$)

to very strong (r = 0.838). The most notable correlation was between Organizational Innovative Factors (OIF) and Employee Engagement Work Factors (EEWF) (r = 0.838, p = 0.000), signifying a strong connection between organizational innovation and employee engagement. This was followed closely by the correlation between OIF and Industry 5.0 Adaptation Factors (I5AF) (r = 0.810, p = 0.000), indicating a robust link between organizational innovation and readiness for Industry 5.0. These findings highlight the critical role that innovation at the organizational level plays in enhancing employee engagement and ensuring alignment with Industry 5.0 objectives, underlining the interconnectedness of organizational innovation and strategic workforce planning in the evolving business landscape.

11 CONCLUSION

The research presents a comprehensive investigation into the multifaceted impacts of Artificial Intelligence (AI) on Strategic Human Resource Management (SHRM), revealing nuanced insights across various organizational dimensions. Demographic analyses demonstrated no significant variations in AI perceptions based on age, gender, or professional experience, suggesting a relatively uniform understanding of AI technologies across different workforce segments. However, the study uncovered significant associations between professional roles and AI's ability to balance automation with human-centric values, indicating a complex interplay between technological implementation and organizational culture.

The research highlighted a robust relationship between AI integration and Industry 5.0 initiatives, with the strongest correlation (r = 0.815, p = 0.000) underscoring AI's pivotal role in driving human-centric, sustainable, and resilient organizational objectives. Correlation analyses exposed intricate interconnections among variables, with notable strong positive relationships observed between organizational innovative factors, employee engagement work factors, and industry adaptation factors.

The statistical analysis revealed significant relationships, with correlation coefficients ranging from moderate (0.436) to strong (0.838), and p-values of 0.000, indicating these results are highly unlikely to be random. Notably, AI's impact on employee retention and HR innovation (r = 0.563, p = 0.000) and its human-centric approach to sustainability (r = 0.464, p = 0.000) both showed positive correlations, highlighting AI's role in enhancing HR practices and promoting sustainability.

Despite variations across organizational contexts, the research consistently showed that AI technologies have the potential to enhance strategic human resource management practices. Interestingly, organization size did not significantly impact perceptions of AI's effectiveness in HR decision-making or ethical considerations, suggesting that AI's transformative potential is relatively consistent across different organizational scales. The comprehensive analysis reveals AI not as a disruptive force, but as a sophisticated tool capable of supporting and enhancing human-centric organizational strategies, with the potential to drive innovation, improve workforce management, and contribute to sustainable organizational development.

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