A Study on Impact of AI on Human Resource Management Practices with Reference to IT Sector in Hyderabad

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Abstract:

This study explores the impact of Artificial Intelligence (AI) on Human Resource Management (HRM) practices by focusing on key outcomes, including accuracy, automation, computing power and capacity, real-time experience, personalization, and time- and cost-saving benefits. The research aims to identify the potential advantages of adopting AI in HRM. Data for the study was collected from 274 IT employees in Hyderabad City using a well-structured online questionnaire. The analysis was conducted using IBM SPSS version 21 and AMOS version 21 software to propose a novel research framework. The findings reveal that variables such as Accuracy**,** Computing Power & Capacity, and Personalization significantly influence Time-Saving & Cost Reduction, while Automation and Real-Time Experience do not have a significant impact. The unique contribution of this study lies in its detailed exploration of the specific outcomes of utilizing AI technologies in HRM. By examining critical variables—Accuracy**,** Automation**,** Computing Power & Capacity**,** Real-Time Experience**,** Personalization**,** and Time- and Cost-Saving**—**the research provides a comprehensive understanding of the expected outcomes and the relationships among these variables when implementing AI in HRM practices.

Key Words: Artificial intelligence Human resource management practices Automation Accuracy Computing power & capacity Real-time experience Personalization Time-saving & cost reduction.

1. Introduction:

Organizations worldwide face challenges in reducing costs and saving time. Integrating technologies such as the Internet of Things (IoT), Machine Learning (ML), and Artificial Intelligence (AI) into management processes has been identified as a strategic approach to address these issues (Hemalatha et al., 2021). AI, in particular, holds significant promise for the future of Human Resources Management (HRM). However, its integration into HR processes is not without challenges. For instance, AI systems can perform efficiently only when provided with high-quality data. Additionally, there are risks associated with the misuse of confidential documents and policies shared within organizations.

Over nearly six decades of development, Artificial Intelligence (AI) has evolved into a transformative force, becoming increasingly pervasive over the last two decades (Morgenstern et al., 2021). Today, AI technologies are gaining prominence across diverse fields such as medicine, engineering, agriculture, organizational management, tourism, and transportation (Mintz & Brodie, 2019). These advancements have brought AI into both public and business environments, reshaping how tasks are performed (Haenlein & Kaplan, 2019).

As AI technologies continue to mature, their integration into daily life is expected to become as seamless and indispensable as the internet and social media. Kaplan offers a succinct definition of AI as "a system's ability to interpret external data correctly, learn from it, and use those learnings to achieve specific goals and tasks through flexible adaptation" (Haenlein & Kaplan, 2019; Morgenstern et al., 2021).

Despite the challenges associated with AI, companies remain highly interested in integrating AI into Human Resource (HR) functions. The advantages of AI in HR far outweigh the challenges (George & Thomas, 2019). Organizations can unlock the full potential of AI if they focus on transforming their workforce to collaborate effectively with intelligent machines. While this transformation process may be time-intensive, the long-term benefits are substantial (Mathipriya et al., 2019). During the COVID-19 lockdown, HR departments shifted their focus from performance management to fostering agility, resilience, and adaptability. According to the Boston Consulting Group Survey (2020), even though productivity levels were maintained, executives expressed greater concern for employee well-being and stress levels.

The pandemic accelerated digitalization, and HR functions quickly moved to automated, digital platforms, revamping various HR processes, including hiring, onboarding, and performance evaluations (Minbaeva, 2021).

AI applications have significantly enhanced HR functions by improving efficiency and effectiveness, leading to a better employee experience and optimized organizational performance (Garg et al., 2022). AI's role in HRM ranges from automating repetitive tasks to minimizing biases in HR processes. As AI continues to reshape the workplace, organizations are realizing the importance of updating their HR practices to remain competitive and improve performance. While there is theoretical understanding of concepts like AI, automation, and robotics, research on the application of AI in organizational management is still limited. HR management as a field faces several disruptions, and both academic researchers and HR practitioners must focus on reframing HR processes. Minbaeva (2021) argues that HRM has not sufficiently evolved in response to these technological advancements.

Despite acknowledging that AI can reduce the time and effort required from HR managers, allowing for a more strategic focus on productivity (Meshram, 2023), organizations still lack a comprehensive understanding of AI technologies and their impact on both organizational and employee levels (Vrontis et al., 2021). Embracing AI in the workplace can lead to enhanced employee satisfaction, improved work-life integration, and increased productivity (Malik et al., 2021). Thus, there is a need to better understand the expected outcomes of AI implementation in HRM and the relationships between those outcomes.

This study aims to analyse the academic perspectives on the use of AI in HRM, identifying the potential outcomes and how these outcomes influence each other. The research questions driving this study are:

1. What are the potential outcomes of adopting AI in HRM?
2. Do these expected outcomes influence each other?

The novelty of this research lies in examining whether AI adoption in HRM leads to specific outcomes such as accuracy, automation, computing power, real-time experience, and personalization (as causal variables), and whether these outcomes, in turn, lead to time savings and

cost reductions (outcome variables) within HR functions at selected IT companies in Hyderabad. The study aims to provide insights into how these AI-driven outcomes can contribute to time and cost efficiency in HR operations.

To address these questions, the study will first review the literature on AI technologies in HRM and explore their potential outcomes (Section 2). A conceptual framework will be presented to show the relationships among these outcomes. In the methodology section (Section 3), the study will test hypotheses regarding the relationships among these outcome variables based on previous findings and theory. The results (Section 4) and discussion (Section 5) will provide a clear understanding of the expected outcomes of integrating AI in HRM, along with the interconnections between these outcomes. The paper concludes with a summary (Section 6) and suggests areas for future research.

2. Literature review

2.1. Role of AI in HRM

The role of AI in Human Resource Management (HRM) has seen a significant rise, transforming key HR processes across organizations. As businesses deal with a large volume of data related to operations and workforce management, AI integration into HR procedures has become essential. This shift aims to foster sustainable business practices, as highlighted by Votto et al. (2021). By utilizing AI, companies can improve their recruitment processes, accessing a wider pool of skilled individuals, which leads to a more efficient and effective talent acquisition strategy (Meshram, 2023).

2.2. Potential outcomes of artificial intelligence technologies in HRM

2.2.1. Accuracy

Over the past two decades, Human Resource Management (HRM) has experienced significant advancements, with AI providing valuable solutions across the entire HR process. Research has highlighted that AI offers promising benefits, from screening job applicants to improving employee retention. By automating repetitive and time-consuming tasks, AI allows HR teams to

focus on more strategic priorities. Furthermore, AI enhances the quality of HR operations by reducing biases, ensuring fairer and more objective decision-making (Hmoud & Varallyai, 2020). This integration not only increases efficiency but also promotes a more equitable work environment.

2.2.2. Automation

AI has significantly enhanced decision-making in Human Resource Management by streamlining tasks and enabling more precise, data-driven decisions through advanced algorithms (Parry & Battista, 2019). Machine learning, in particular, can predict future outcomes and detect issues with greater accuracy than humans, positioning AI as a valuable tool in applicant selection during the hiring process.

2.2.3. Computing power & capacity

Modern businesses deal with vast amounts of data and information, making it essential for organizations to evolve into intelligent and innovative entities by leveraging technologies like AI (McCarthy et al., 2019). AI is designed with the aim of maximizing efficiency, profitability, and supporting humans in reducing monotonous tasks (Khatri et al., 2020). When integrated with Human Resources, AI empowers managers to monitor workforce dynamics in real-time, unlocking the full potential of human resources. This results in improved management practices, enhanced work efficiency, and overall organizational growth (MaWang et al., 2020).

2.2.4. Real-time experience

AI chatbots are transforming employee engagement by facilitating real-time interactions and automating HR processes, such as candidate screening and interviews (Vedapradha et al., 2019). With the help of AI, organizations can now capture and process data instantly, using the most current information to make informed decisions (Hughes et al., 2019a). AI also allows for the creation of automated, real-time employee feedback systems, enabling organizations to collect feedback on the spot. This helps solve workplace issues quickly and supports continuous improvement, contributing to employees' learning and professional development.

Technologies like the Internet of Things (IoT) are further enhancing real-time data collection by connecting physical objects to the digital world, generating vast amounts of valuable data (Sivathanu & Pillai, 2018). AI-driven real-time video interviews enable companies to interview candidates from around the world, speeding up the recruitment process and increasing the pool of applicants (Thomas et al., 2020).

2.2.5. Personalization

AI is capable of sensing, analyzing, learning, and functioning in a personalized way, similar to human behavior (Khatri et al., 2020). Organizations are leveraging AI-powered chatbots to provide tailored support and guidance to both job applicants and employees, meeting their specific needs. Traditional pay and benefits structures are being replaced by more customized compensation packages that align with both organizational objectives and individual employee goals. HR professionals, in collaboration with AI, can manage flexible and personalized compensation systems, optimizing pay and benefits to reduce employee turnover and increase engagement (Hughes et al., 2019b).

AI is also transforming employee training and development by enabling mass personalization. It helps organizations identify the unique needs of individual employees or teams, delivering training programs that are specifically tailored to those needs. Moreover, AI can offer virtual personal mentors that provide personalized support for employees (Maity, 2019). AI-driven systems can also offer real-time assistance by analyzing data to create personalized suggestions, explanations, or solutions to employee and customer queries, even for complex issues (Xu et al., 2020). This personalized approach enhances the employee experience, leading to higher productivity and satisfaction.

2.2.6. Time saving & cost reduction

According to Sołek-Borowska and Wilczewska (2018), AI-based HR processes, when combined with a skilled and competent HR team, offer significant benefits such as reduced time and cost. The adoption of modern technologies like AI in HR operations helps businesses achieve project goals while minimizing both time and expenses. One of the primary advantages of incorporating AI in HR is cost reduction, as Machine Learning (ML) algorithms can mitigate the risks of hiring

underqualified candidates or rejecting qualified ones, ultimately lowering costs (Gromov et al., 2018). Organizations aim to implement AI-powered automation across various HR functions to reduce human effort and time spent on repetitive tasks (Nawaz & Gomes, 2019).

Cognitive HR systems further enhance talent acquisition by helping organizations attract and retain skilled employees, all while building a competitive market advantage at a reasonable cost (Chwastek, 2017). Firms that incorporate AI into their recruitment processes have reported lower hiring costs and increased efficiency (Johnson et al., 2020). Overall, using AI in HRM simplifies operations and proves to be cost-effective (Nawaz, 2019). AI systems also consider real-time data to optimize decisions and actions in HR processes (Ghasemzadeh et al., 2015).

3. Theoretical background

In a world characterized by volatility, uncertainty, complexity, and ambiguity, change is the only constant. Human Resource Management (HRM) has evolved from performing basic tasks like recruitment and termination to becoming a vital strategic partner in business operations. Similarly, artificial intelligence (AI) has undergone a profound transformation, shifting from a basic tool for information retrieval to the development of intelligent robotics. AI now represents a suite of powerful technologies that are redefining a wide range of functional areas, including HRM. The integration of AI into HRM is seen as a positive shift, offering the potential to deliver optimal value at minimal cost. AI focuses on creating tools that simulate human intelligence and decision-making (Kalia & Mishra, 2023).

HRM has undergone significant modernization through the integration of digital technologies that streamline and enhance the traditionally labor-intensive tasks. By leveraging advancements in the internet and computing technologies, HRM is enhancing productivity, reducing costs, and boosting market competitiveness (Votto et al., 2021). The swift growth of Human Resource Information Systems (HRIS) has been sparked by these technological advances, introducing strategic HR practices with AI components (T-HRIS). These developments are supporting sustainable business models, enabling HR to manage large volumes of organizational, personnel, and task-related data effectively, which has led to the widespread adoption of AI in HR processes (G. M & Suganthi, 2022).

As AI continues to grow in HRM, it is crucial to understand how it integrates into tactical HR processes. This understanding requires HR professionals and researchers to explore existing literature on AI's capabilities in HR and identify areas for further improvement (Rodgers et al., 2023). AI can make real-time decisions by utilizing algorithms and computing technologies that are continuously refined through data analysis. These AI systems autonomously learn and adapt, offering increasingly sophisticated solutions to changing situations. By incorporating AI into HRM, organizations can significantly enhance the employee experience, with key benefits in accuracy, automation, computing power, real-time decision-making, and personalization. Ultimately, these advancements lead to time-saving and cost-reduction.

AI-powered recruitment tools, for example, can precisely match candidates' skills and qualifications to job requirements. AI-driven HR analytics can process vast datasets accurately, providing insights that improve decision-making (Malik, Budhwar et al., 2022). By utilizing AI's precision in HR processes, organizations can optimize various functions, leading to time and cost savings, as well as improved efficiency and employee satisfaction (Vrontis et al., 2022). AI-based automation streamlines repetitive tasks that would otherwise require human intervention, making these tasks more consistent and efficient, which reduces both time and costs (Burgess & Burgess, 2018; Malik, Thevisuthan et al., 2022).

The power of AI's computing capabilities allows for faster execution of tasks, delivering quicker results. As AI and cloud computing platforms provide on-demand access to vast resources, organizations can take advantage of AI's capabilities without heavy investments in costly hardware (Gill et al., 2019; Murshed et al., 2021; Sivathanu & Pillai, 2018). AI's real-time features enable decision-making, feedback, and adjustments based on progress and responses, saving both time and costs while enhancing productivity (Achchab & Temsamani, 2021; Rai & Singh, 2023). Additionally, by personalizing HR processes, AI helps create a more engaged and satisfied workforce, leading to increased productivity, lower turnover, and ultimately, cost and time savings (Huang et al., 2023; Modgil et al., 2022).

While previous research has examined the potential outcomes of AI in HRM, few studies have explored the relationships between these outcomes or how they influence one another.

This research gap, particularly in IT companies in Hyderabad City, is addressed in the following hypotheses:

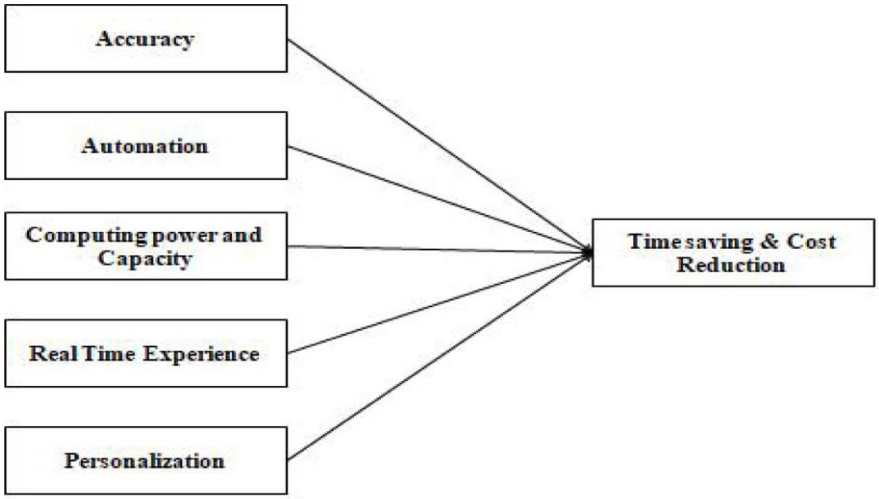
H1: Accuracy impacts Time Saving and Cost Reduction in selected IT companies.
H2: Automation impacts Time Saving and Cost Reduction in selected IT companies.
H3: Computing Power & Capacity impact Time Saving and Cost Reduction in selected IT companies.
H4: Real-Time Experience impacts Time Saving and Cost Reduction in selected IT companies.
H5: Personalization impacts Time Saving and Cost Reduction in selected IT companies in Hyderabad city.

4. Methodology

This study adopts a descriptive research design aimed at identifying the outcomes of using AI in Human Resource Management (HRM) practices and examining the relationships between these outcomes. The study relies on both primary and secondary data sources. Primary data was gathered from respondents, while secondary data was collected from various sources including reports, research databases such as Scopus, Emerald, Elsevier, Google Scholar, and open-access journals, to obtain relevant and up-to-date information on the subject matter. The study focuses on IT employees in Hyderabad City who work in organizations where AI technologies are integrated into HRM practices. A structured questionnaire, based on existing literature, was used to collect data. The questionnaire was divided into two sections: one for personal and organizational details of employees, and the other for AI-related variables—Accuracy, Automation, Computing Power & Capacity, Real-Time Experience, Personalization, and Time Saving & Cost Reduction. These AI-related variables were measured using a five-point Likert scale ranging from strongly agree to strongly disagree.

A convenience sampling technique was employed to collect the primary data, with approximately 274 IT employees in Hyderabad City participating. The data collection took place between May 2021 and September 2021 via Google Forms. The links to the questionnaire were shared through personal networks and social media platforms such as Twitter and LinkedIn.

Out of the total responses considered for further analysis. For analysis part, IBM SPSS version 21 software and AMOS version 21 software are used.



Among the 274 respondents surveyed, 55.5% are female, and 44.5% are male, suggesting that female employees were more inclined to participate and showed greater interest in the topic. The findings also reveal that the majority of respondents (51.5%) fall within the age group of 26 to 30 years, indicating that younger individuals participated in the survey more enthusiastically.

Regarding educational qualifications, respondents were categorized into undergraduates, postgraduates, and professionals. Among them, 39.1% hold a professional degree, followed by postgraduates at 35.4%. Data was collected from IT employees across various roles and levels, ranging from junior to senior management. The analysis indicates that software engineers constitute the largest group of respondents, accounting for 30.3%.

The marital status distribution shows that 81.4% of respondents are married, while 18.6% are single or unmarried. In terms of income, the majority (44.2%) earn a monthly income between ₹25,001 and ₹50,000, while 26.3% earn between ₹50,001 and ₹75,000.

When considering work experience, the largest group (37.6%) consists of respondents with 2–5 years of experience, followed by those with 6–10 years of experience at 32.1%. These findings are summarized in Table 1.

5.1. Structural equation modelling

In advanced data analysis, the Structural Equation Modeling (SEM) method is highly preferred over traditional statistical techniques due to its ability to examine both observed and latent variables. SEM enables researchers to uncover complex causal relationships among multiple constructs. Its strengths lie in accounting for measurement errors and handling multiple variables simultaneously, making it a preferred approach for this study, which aims to comprehensively understand interdependencies among diverse factors.

SEM is employed in this research to evaluate the model's appropriateness based on the collected data (R et al., 2012). The analysis of the structural model is conducted using AMOS version 16. SEM proves to be an invaluable tool for assessing causal relationships between variables and verifying model compatibility (Tobbin & Kuwornu, 2011). This integrated approach allows for a holistic exploration of the connections between factors in the context of AI adoption in HRM.

Model Fit and Analysis Results:

The model's estimated P-value is 0.051, which exceeds the threshold of 0.05, indicating that the model is fit. Gerbing and Anderson's criteria for an acceptable model include:

- **RMSEA (Root Mean Square Error of Approximation):** 0.08 or lower.
- **CFI (Comparative Fit Index):** 0.90 or higher.
- **NFI (Normed Fit Index):** 0.90 or higher (Gerbing & Anderson, 1992).

Hu and Bentler (1999) further suggest that model fit can be verified using the chi-square goodness-of-fit test, where a probability value of 0.90 or greater denotes a good fit.

In this study:

- **GFI (Goodness of Fit Index):** 0.922, exceeding the recommended value of 0.9.
- **AGFI (Adjusted Goodness of Fit Index):** 0.902, also above the threshold of 0.9.
- **CFI:** 0.987, indicating an excellent fit.
- **RMSEA:** 0.023, well below the recommended maximum of 0.08.

These results demonstrate that the model fits the data satisfactorily, as summarized in Table 2.

Table 1 Personal characteristics of employees.

Gender		
Male	122	44.5
Female	152	55.5
Age (Years)		
22–25 yrs	42	15.3
26–30 yrs	141	51.5
31–40 yrs	85	31.0
Above 40 yrs	6	2.2
Marital Status		
Single	51	18.6
Married	223	81.4
Qualification		
UG.	70	25.5
PG	97	35.4
Professional	107	39.1
Income -Monthly		
< Rs 25,000	54	19.7
Rs 25,001–Rs 50,000	121	44.2
Rs 50,001–Rs 75,000	72	26.3
> Rs 75,000	27	9.9
Designation		
Administrator	33	12.0
Business and Program Analyst	43	15.7
software engineer	83	30.3
Project and HR Manager	43	15.7
Managing Director	10	3.6
Others	62	22.6
< 2 years	27	9.9
2–5 years	103	37.6
6–10 years	88	32.1

5.2 Measurement model

Following Anderson and Gerbing's (1988) recommendations, the measurement model was assessed, and the results of the Confirmatory Factor Analysis (CFA) are outlined in Table 3. The findings confirm that the model is a good fit for the data.

Model Fit Summary:

The analysis reveals strong model alignment with the data:

- Chi-Square (χ^2): 383.133
- Degrees of Freedom (df): 260
- Chi-Square/df (χ^2/df): 1.474
- Root Mean Square Error of Approximation (RMSEA): 0.042
- Comparative Fit Index (CFI): 0.97
- Standardized Root Mean Square Residual (SRMR): 0.071
- P-close: 0.944

These results, consistent with MacCallum and Browne's (1993) standards, indicate that the CFA model effectively represents the adoption of AI in Human Resource Management variables.

Discriminant Validity and Reliability:

The analysis supports the discriminant validity of all variables, as the square root of the Average Variance Extracted (AVE) for each variable exceeds the correlations between variables (Fornell and Larcker, 1981).

- **Square Root of AVE for Each Variable:**
  - Accuracy: 0.703
  - Automation: 0.730
  - Computing Power and Capacity: 0.695
  - Real-Time Experience: 0.593
  - Personalization: 0.513
  - Time Saving & Cost Reduction: 0.538

- **Composite Reliability (CR):** Ranges from 0.800 to 0.915, exceeding the recommended threshold of 0.70.
- **Average Variance Extracted (AVE):** Falls between 0.513 and 0.730, surpassing the minimum acceptable level of 0.50.

Tables 3, 4, and 5 provide a detailed breakdown of these results, affirming the model's robustness in measuring the impact of AI on HRM processes.

5.2.1. Hypothesis results

The results reveal that the **p-values** for the constructs *Accuracy*, *Automation*, and *Real-Time Experience* are less than 0.001, indicating significance at the 1% level. Consequently, the study supports the following hypotheses:

- **H1**: Accuracy significantly influences Time Saving and Cost Reduction in selected IT companies.
- **H2**: Automation significantly impacts Time Saving and Cost Reduction in selected IT companies.
- **H4**: Real-Time Experience significantly impacts Time Saving and Cost Reduction in selected IT companies.

On the other hand, the **p-values** for the variables *Computing Power & Capacity* and *Personalization* are not significant. Thus, the hypotheses related to these variables are not supported by the findings.

Table 2

Model fit summary of the structural equation model.

Parameter	CMIN	P	CMIN/DF	GFI	AGFI	RMSEA
Outcome	296.13	0.051	1.148	0.922	0.987	0.023

Measure	Estimate	Threshold	Interpretation
CMIN	383.133	–	–
DF	260	–	–
CMIN/DF	1.474	Between 1 and 3	Excellent
CFI	0.97	>0.95	Excellent
SRMR	0.071	<0.08	Excellent
RMSEA	0.042	<0.06	Excellent
P Close	0.944	>0.05	Excellent

Table 3- Showing the Measurement model fit summary of AI adoption in HRM model

5.2.2. Confirmatory factor analysis

The relationships between the potential outcomes of implementing AI in HRM practices—Accuracy, Automation, Computing Power & Capacity, Real-Time Experience, Personalization, and Time Saving & Cost Reduction—in selected IT companies in Hyderabad City are depicted in **Figure 1** and **Figure 2**. These figures provide a clear visualization of the interconnections and the degree of influence among the variables. Key insights include:

- Accuracy and Automation are major contributors to Time Saving & Cost Reduction.
- Real-Time Experience demonstrates a moderate influence on enhancing HRM efficiency.
- Computing Power & Capacity and Personalization exhibit limited impact as observed in the study findings.

These visual representations are instrumental in understanding the complex interactions and their implications for AI-driven HRM practices in the selected IT companies.

6. Discussions

6.1. Discussions on the adoption of AI in HRM practices

The primary theoretical contribution of this research lies in identifying the potential outcomes of adopting AI technologies in human resource management (HRM), including *Accuracy*, *Automation*, *Computing Power & Capacity*, *Real-Time Experience*, and *Personalization*. Additionally, the research presents an integrated model that examines how these factors influence *Time Saving* and *Cost Reduction* in selected IT companies in Hyderabad City. The study sheds light on the causal relationships between these variables and their impact on HRM efficiency.

Discussion of Findings

Accuracy: A Key Driver of Efficiency

The study supports the hypothesis that *Accuracy* significantly contributes to *Time Saving* and *Cost Reduction*. This outcome highlights AI's ability to reduce human errors and improve the precision of workforce planning and decision-making. By delivering accurate predictions and analyses, AI streamlines HR processes, resulting in enhanced operational efficiency. The use of AI ensures consistency and precision in tasks traditionally prone to human oversight, saving both time and resources (Sugawara & Nikaido, 2014).

Automation: Transforming HR Operations

The findings confirm the second hypothesis, demonstrating that *Automation* has a substantial impact on HRM practices. The study aligns with existing research, affirming that AI-powered automation optimizes routine tasks such as candidate screening, onboarding, and payroll management. Furthermore, AI-enhanced analytics contribute to proactive decision-making, reducing employee turnover and associated costs (Hmoud & Laszlo, 2019; Sahota & Ashley, 2019). Overall, AI-driven automation accelerates HR operations, ensuring agility and resource efficiency (Johnson et al., 2020).

Computing Power & Capacity: A Mixed Outcome

Contrary to expectations, the third hypothesis—that *Computing Power & Capacity* positively impacts *Time Saving* and *Cost Reduction*—is not supported by the study findings. While prior studies emphasize the potential of increased computational power to enhance HRM efficiency, this

research suggests otherwise. The results indicate that inadequate computing resources within the selected IT companies may hinder AI's ability to process data swiftly and accurately. This limitation could lead to delays in decision-making and missed opportunities to optimize labor-intensive processes. Consequently, the anticipated benefits of AI integration, such as reduced costs and improved time management, remain unrealized (Braun et al., 2016; Duan et al., 2019).

Table 4

	CR	**AVE**	**MSV**	**MaxR(H)**	**A**	**AUT**	**CP**	**RTE**	**P**	**TSCR**
A	0.904	0.703	0.399	0.908	**0.838**					
AUT	0.915	0.730	0.256	0.917	0.506***	**0.854**				
CP	0.899	0.695	0.276	0.933	0.526***	0.198***	**0.834**			
RTE	0.851	0.593	0.187	0.889	0.416***	0.256***	0.161*	**0.77**		
p	0.800	0.513	0.187	0.842	0.428***	0.239***	0.251***	0.433***	**0.717**	
TSCR	0.851	0.538	0.399	0.871	0.631***	0.465***	0.345***	0.342***	0.264***	**0.733**

Results of validity measures.

Table 5

Model regression weights (variables in SEM analysis)

			Estimate	SE.	CR.	P	Label
TSCR	<—	A	0.422	0.06	7.042	<0.001***	H1-Supported
TSCR	<—	AUT	0.194	0.05	3.887	<0.001***	H2-Supported
TSCR	<—	CPC	0.049	0.035	1.393	0.164	H3-Not supported
TSCR	<—	RTE	0.09	0.044	2.057	0.04**	H4-supported
TSCR	<—	P	—0.025	0.058	—0.425	0.671	H5-Not supported

A: Accuracy; AUT: Automation; CPC: Computing power & Capacity; RTE: Real-time experience; P- Personalization; and TSCR: Time Saving and Cost Reduction

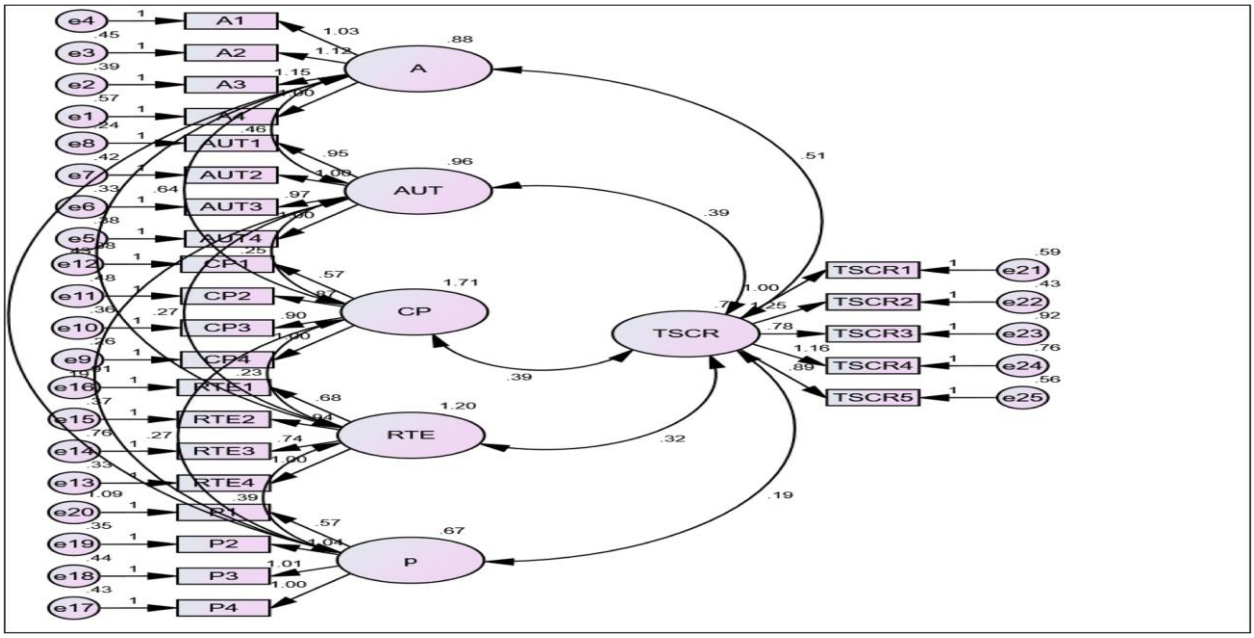


Fig. 1. Confirmatory factor analysis.

Source: Own development

The study's fifth hypothesis is not supported, as the results indicate that the causal variable of personalization does not have a significant impact on the outcome variables of time saving and cost reduction in the selected IT companies. While previous studies have strongly suggested that AI-enabled personalization leads to these benefits, this study presents findings that deviate from those claims. These results challenge the prevailing belief that organizations using AI in HRM, particularly through personalization, can achieve notable improvements in time savings and cost reductions (Maity, 2019). Although employees express optimism about the potential of AI-enabled personalization to enhance their workflows and deliver these benefits, the findings indicate that personalization alone does not directly lead to time saving or cost reduction. Instead, the process of implementing and integrating these tools is time-intensive, and any cost reduction is likely to be realized only over a longer period, rather than in the initial stages (Bhatnagar, 2007). Overall, the findings emphasize the complex relationship between causal variables and their effects on time savings and cost reduction in HRM when adopting AI technologies. They provide valuable insights into AI's potential in HRM and lay the groundwork for further research in this field.

6.2. Managerial implications

The managerial implications drawn from this study's findings offer practical guidance for organizations aiming to adopt AI technologies in HRM to achieve time-saving and cost reduction benefits. To maximize the benefits of AI technologies in HRM, organizations should prioritize accuracy and precision by investing in AI systems that offer reliable data analysis and decision making capabilities. The capitalize on time-saving and cost reduction opportunities, managers should strategically identify and automate repetitive tasks within HR operations. By reallocating HR professionals time from administrative tasks to more strategic initia tives, organizations can optimize their work force and allocate resources more effectively, contributing to enhanced operational efficiency and cost reduction. However, it is crucial for organizations to be cautious about the limitations of computing power & capacity, as revealed by the study. Managers should evaluate their IT infrastructure's readiness to support AI implementations. Adequate computing resources are imperative for AI systems to function optimally and deliver desired efficiency gains. Overlooking computing power & capacity limitations may hinder the realization of time-saving and cost reduction benefits, underscoring the importance of aligning technological capabilities with strategic AI implementation. While real-time experience positively influences employee engagement organizations should recognize the potential of real-time capabilities in enhancing employee engagement and retention. Additionally, the study's finding that personalization may not directly lead to immediate cost reduction underscores the importance of man aging expectations.

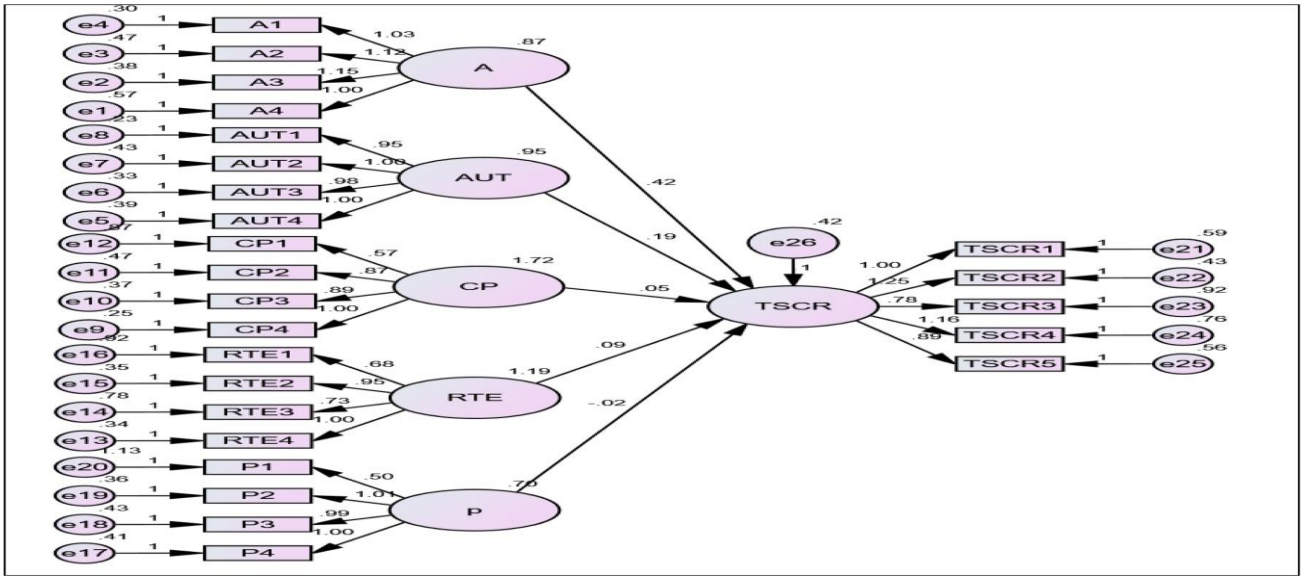


Fig. 2. Structural equation modelling. Source: Own development

6.3. Limitations & further research directions

The study established that AI technologies—specifically Accuracy, Automation, Computing Power & Capacity, Real-time Experience, and Personalization—impact the outcome variables of Time Saving and Cost Reduction. Future research could explore other potential benefits of AI in HRM, such as promoting unbiased decision-making, enhancing data-driven approaches, and providing a competitive edge. This study focused on IT organizations in Hyderabad, with a sample of 274 HR professionals. To build on these findings, future studies could include larger sample sizes from other metropolitan cities like Bangalore, Hyderabad, and Delhi. Since this research was limited to the IT sector, its findings may not be applicable to industries like Healthcare or Tourism. Additionally, future research could address the challenges organizations face when implementing AI in HRM practices.

7. Conclusion

This study investigates the adoption of AI in HRM practices and examines the impact of causal variables such as Accuracy, Automation, Computing Power & Capacity, Real-Time Experience, and Personalization. The findings demonstrate that AI technologies offer significant benefits to HR departments, enhancing various aspects of human resource management (Kumari & Hemalatha, 2019). As disruptive technologies like AI become essential, it is crucial for the workforce to acquire the necessary skills to remain competitive in the job market.Drawing from existing literature, this study identified seven potential outcomes and explored the causal relationships between these variables. The results show that variables like Accuracy, Automation, and Real-Time Experience positively influence Time Saving and Cost Reduction. However, AI technologies can also be utilized in different ways to streamline HR processes and improve overall efficiency. While respondents expressed optimism about the potential of all seven AI outcomes, there was uncertainty about whether Computing Power & Capacity and Personalization would lead to time-saving and cost-effectiveness. In conclusion, the research highlights the promising outcomes of using AI in HRM, emphasizing the interconnectedness of the causal variables and how they influence each other. While respondents were generally optimistic about the seven AI

variables, they were less confident that Computing Power & Capacity and Personalization would directly contribute to time and cost savings.

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