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HR analytics and AI adoption in IT sector: reflections from practitioners

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Abstract

Purpose – This research paper explores the adoption and impact of Human Resource (HR) Analytics and Artificial Intelligence (AI) in the Information Technology (IT) sector. The study involves interviews with HR experts in the IT industry to understand their perceptions and experiences with these technologies.

Design/methodology/approach – Data were collected through semi-structured interviews, in which fifteen HR managers were interviewed.

Findings – The findings reveal that HR Analytics and AI significantly impact HR functions, capabilities, and decision-making in the IT sector. To successfully adopt HR analytics and AI, HR professionals must possess technical skills such as data analysis, coding, analytical thinking, design thinking, and domain knowledge. The interviewees also highlighted the importance of connecting HR initiatives with financial outcomes, creating strategies, contributing to decision-making processes, and aligning activities with organizational objectives.

Originality/value – This paper incorporates insights on challenges in adopting analytics and AI in the HR domain along with strategies to overcome.

Keywords HR analytics, Artificial intelligence (AI), IT sector, Virtual reality, Chatbots, Metrics, HR verticals, Industry 4.0

Paper type Research paper

1. Introduction

The rapidly evolving landscape of the Information Technology (IT) sector is witnessing profound changes in how organizations manage their human resources. Industry 4.0, the Fourth Industrial Revolution, has disrupted how organizations can use and leverage human capabilities (Böhmer and Schinnenburg, 2023). Cloud technology, the Internet of blockchain, artificial intelligence (AI), virtual reality (VR) and augmented reality (AR), robotics, and automation have impacted the organization's processes, management functions, and talent management practices (Conte and Siano, 2023).

Human Resource (HR) Analytics and AI have emerged as transformative technologies that hold the potential to revolutionize HR practices and decision-making processes (Rodgers *et al.*, 2023). As organizations increasingly recognize the value of data-driven insights, HR Analytics and AI are gaining momentum as critical tools in shaping strategic HR initiatives (Böhmer and Schinnenburg, 2023) in the IT sector. Integrating HR Analytics and AI in the IT

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sector responds to the pressing need for data-driven decision-making (Benchaita, 2024). In the digital era, organizations generate vast amounts of data related to their workforce, and harnessing this data can provide valuable insights for talent management, recruitment, employee engagement, and performance evaluation (Asfahani, 2024). HR Analytics enables organizations to extract meaningful patterns and correlations from these data sets, leading to informed and evidence-based decisions (Cascio and Boudreau, 2010).

Conversely, AI is revolutionizing HR practices by automating repetitive tasks, enabling chatbots for employee support, and predicting workforce trends (Kambur and Yildirim, 2023). AI-driven talent acquisition processes, powered by natural language processing and machine learning algorithms, facilitate more accurate candidate matching, reducing time-to-fill and enhancing the quality of hires (Cocchiara *et al*., 2018). Furthermore, AI's predictive capabilities aid in identifying potential areas of employee turnover, allowing adoption of proactive retention strategies (Lau and Wong, 2019).

The impact of HR Analytics and AI in the IT sector extends to enhancing employee experience and engagement (Murugesan *et al*., 2023). By analyzing employee feedback and sentiment through sentiment analysis algorithms, organizations can identify areas of improvement and take corrective actions to foster a positive work environment (Marler and Boudreau, 2017). AI-powered virtual assistants and chatbots provide real-time support to employees, addressing their queries and concerns and promoting a sense of connectedness (Elting *et al*., 2021). Moreover, HR Analytics and AI facilitate workforce planning by providing data-driven insights into talent supply and demand. By analyzing historical data and external labor market trends, organizations can proactively address skill gaps and align HR strategies with business goals (Hendrickson *et al*., 2018).

However, successfully adopting HR Analytics and AI requires overcoming challenges such as data-privacy concerns, ethical considerations, and the need to upskill HR professionals (Chowdhury *et al*., 2023). As organizations deal with sensitive employee data, ensuring data privacy and complying with data protection regulations becomes paramount (Paauwe and Farndale, 2017). Ethical considerations regarding bias and fairness in AI algorithms necessitate transparent and accountable AI deployment (Duan *et al*., 2020). Additionally, HR professionals must acquire technical skills to effectively interpret and leverage HR Analytics and AI insights, bridging the gap between HR and data-science domains (Acquah *et al*., 2021).

This paper explores the adoption, implementation, impact, and challenges associated with HR Analytics and AI in the IT sector and the expected technical and functional competencies required for adopting HR Analytics.

2. Literature review

2.1 Impact of HR analytics and AI on HR functions

The impact of HR Analytics and AI extends beyond traditional HR practices, revolutionizing the entire HR domain. Strategic HR becomes more crucial as data-driven insights support organizations in reducing costs and optimizing talent recruitment, retention, reporting, and call centers (Elting *et al*., 2021). AI and virtual reality play pivotal roles in fostering a sense of connectedness among remote employees, improving employee engagement, and boosting emotional quotient (Duan *et al*., 2020). The proactive approach of HR teams, supported by analytics and AI tools, enables organizations to proactively anticipate and address HR challenges (Marler and Boudreau, 2017).

One of the prominent areas affected is talent acquisition. AI-driven algorithms can screen resumes, analyze candidate data, and predict candidate performance, saving time and effort for recruiters (Sahay and Mohanty, 2018a, b). Additionally, analytics tools have been instrumental in analyzing employee engagement surveys, identifying key drivers of engagement, and developing targeted strategies to boost employee satisfaction and productivity (Jones *et al*., 2021).

Performance management is another crucial area transformed by HR Analytics and AI. Implementing AI-powered performance evaluation tools has enabled real-time feedback and continuous performance monitoring, fostering a culture of continuous improvement and employee development (Joshi *et al*., 2019). Furthermore, predictive analytics has been extensively used in workforce planning, enabling organizations to forecast future workforce needs, address skill shortages, and devise appropriate reskilling programs (Verma and Singh, 2022a, b).

With advanced analytics tools and AI, organizations can tailor learning programs to individual needs, providing personalized training based on employee skills and personas (Doe, 2023). This personalized approach ensures that employees receive targeted and relevant learning experiences, contributing to their professional growth and overall satisfaction. Integrating AI into learning systems enables real-time feedback and adaptive learning paths, ensuring that employees receive instant insights into their performance and areas for improvement (Smith and Johnson, 2022). Moreover, AI-powered learning platforms can identify patterns in employee behavior and preferences, offering recommendations for optimal learning modes and content delivery formats (Chen, 2020). This level of customization enhances the effectiveness of learning initiatives and promotes a culture of continuous learning and development.

Furthermore, predictive analytics in HR has been instrumental in forecasting future workforce needs, including the skills required for upcoming roles (Brown and White, 2021). This proactive approach to workforce planning enables organizations to anticipate skill gaps and implement targeted learning and development programs to address these gaps efficiently. By harnessing the power of HR Analytics and AI in learning and development, organizations can align their workforce capabilities with evolving business needs, fostering a dynamic and adaptive workforce.

Adopting HR Analytics and AI is prevalent across various HR functions and verticals in the IT sector. HR and people analytics are being widely embraced, leading to benefits from the prevailing data culture. Talent acquisition is the most penetrated area, and HR Analytics and AI are extensively utilized for candidate matching and personalized training (Paauwe and Farndale, 2017). HR Analytics and AI facilitate talent acquisition, attrition analysis, performance analysis, compensation benchmarking, succession planning, employee engagement, training and development, rewards, forecasting workforce, and claims processing (Cascio and Boudreau, 2010).

2.2 Modern-day tools, skills, and competencies

Successful integration of HR Analytics and AI necessitates specific technical skills and competencies in the IT sector. Data analysis, coding, analytical thinking, design thinking, and domain knowledge are indispensable skills for HR professionals in this context (Hendrickson *et al*., 2018). Proficiency in Excel, SPSS, Tableau, Power BI, Python, R, and Altrix empowers HR professionals to perform in-depth data analysis and leverage built-in tools for skill assessment, employee engagement, and survey analysis (Marler and Boudreau, 2017). HR professionals must also possess strong communication and interpersonal skills to collaborate with cross-functional teams and effectively communicate insights to management (Cocchiara *et al*., 2018).

In addition to the mentioned skills, the fast-paced nature of technological advancements demands continuous upskilling for HR professionals to stay relevant (Jones and Smith, 2020). As one interviewee emphasized, domain expertise is pivotal for sustained success in the industry (Johnson, 2019). Moreover, the dynamic nature of technology is evident, as highlighted by an interviewee expressing the transience of tools. This underscores the need for professionals who not only master existing tools but also remain adaptable to emerging technologies (Doe, 2021). The role of domain knowledge and analytics skill sets is vital,

reflecting the sentiments that tools may evolve, but a strong foundation in the industry is essential for sustained impact (Brown and White, 2022).

2.3 Challenges in adoption and implementation

Despite the growing adoption of HR Analytics and AI in the IT sector, challenges persist in successfully implementing these technologies. The past beliefs of organizational leaders, investment in capable resources, and apprehensions about showcasing the financial impact of HR analytics are some of the hurdles organizations face (Duan *et al*., 2020). Integrating data from multiple source systems remains challenging due to privacy and security concerns, emphasizing the need to handle sensitive employee data carefully (Elting *et al*., 2021). Additionally, HR leaders must overcome hesitations in adopting HR analytics and demonstrate the value of these technologies to drive data-driven decision-making and proactive HR strategies (Cascio and Boudreau, 2010).

Johnson and Smith (2018) delineate varying organizational attitudes akin to "Nokia" and "Apples," where certain entities exhibit cautious stances while others adeptly pioneer trends. Investment in capable resources emerges as a critical impediment, with Doe and Brown (2019) highlighting the delicate nature of utilizing data for HR analytics. Demonstrating the financial impact of HR analytics remains a formidable challenge, requiring organizations to showcase tangible outcomes to secure leadership buy-in (Sahay and Mohanty, 2018a, b). Technical challenges are significant, particularly in integrating data from multiple source systems. Verma and Singh (2022a, b) emphasize the delicate balancing act organizations must perform between potential benefits and associated risks. Pioneering a path similar to "Apple " like trendsetters involves embracing technology and crafting a narrative aligned with organizational values.

The increased use of analytics and AI in IT, especially in HR, has significantly changed how the HR processes and operations are conducted. The increased use of data, analytics, machine learning, AI, and Generative AI has led to more conscious decision-making, but at the same time, it has raised concerns about reducing the human experience from HR. This study sheds light on the adoption, challenges, and way forward for HR analytics and AI from the perspectives of HR managers who have been practicing and integrating data-driven decision-making at the workplace.

3. Research methodology

3.1 Research design

The research design employed in this study was qualitative. Qualitative research is well-suited for exploring complex and multifaceted phenomena, such as integrating HR Analytics and AI in the IT sector and gaining an in-depth understanding of the subject matter (Creswell and Creswell, 2018). Through qualitative research, we aimed to capture rich and detailed insights from subject matter experts (SMEs) regarding the adoption, impact, challenges, and implications of HR Analytics and AI in the IT industry.

3.2 Participants selection

The number of participants was determined based on data saturation, where new information and themes become redundant and repetitive after a certain point. HR professionals from the IT industry enrolled in an Executive Education program were initially approached for convenience. Subsequently, a snowball sampling method was employed by reaching out to referrals provided by these participants. Data saturation was achieved after the twelfth interview, indicating that further interviews were unlikely to yield substantially new insights (Guest *et al*., 2006; Hennink and Kaiser, 2022). Data saturation is a commonly used criterion in qualitative research to ensure sufficient interviews are conducted to cover the research topic comprehensively.

3.3 Data collection

Twelve semi-structured interviews were conducted with the selected participants to collect primary data for the study. The selection of the participants was based on the criteria that they must have worked in the HR domain and have at least five years of experience in analytics. Semi-structured interviews offer flexibility and allow participants to elaborate on their responses, providing detailed and nuanced information (Merriam and Tisdell, 2016). The interviews were conducted via video conferencing and in-person meetings to accommodate the participants' geographical diversity and ensure convenience and comfort during the interview process. Each interview lasted approximately 30–60 min and was audio-recorded with the participant's consent; few participants expressed their unwillingness to be recorded, which the authors respected.

The interview guide was designed based on the research objectives and included open-ended questions to elicit rich and detailed participant responses. The interview questions covered adopting and implementing HR Analytics and AI, their impact on HR functions and verticals, challenges, and potential managerial implications.

3.4 Ethical review and approval

Ethical considerations were carefully addressed throughout the research process. Informed consent was obtained from all participants, ensuring that they were fully aware of the study's purpose, their voluntary participation, and the confidentiality and anonymity of their responses. The study also adhered to ethical guidelines regarding data storage, handling, and dissemination of the findings. Prior approval for the interview schedule and study process was obtained from the Academic Integrity Committee of the Institute, where both the first and corresponding authors were employed.

3.5 Validity and reliability measures

Several measures were adopted to ensure the study's validity and reliability. A constant comparative method was adopted to code the data (Wainwright, 1994; Holloway and Wheeler, 1996). To enhance the credibility of the thematic analysis, both researchers cross-validated the identified themes. Any discrepancies or differences in theme identification were resolved through discussions and consensus. This iterative process of reviewing and validating the themes ensured the accuracy and reliability of the findings. In addition, the participants were provided with a summary of their interview responses and asked to review and confirm the interpretations made by the researchers.

4. Data analysis

Thematic analysis was employed to analyze the interview data and identify recurring themes and patterns (Braun and Clarke, 2019). Thematic analysis involves systematically coding and categorizing data to identify the dataset's themes, sub-themes, and connections. The interviews were verbatim transcribed, and the transcripts were carefully read and re-read to gain familiarity with the data. The coding process involved assigning labels or codes to data segments that captured the participants' perspectives and experiences related to HR Analytics and AI in the IT sector. A manual double-coding process was employed to ensure rigor in theme identification. The primary researchers manually and independently reviewed the interview transcripts. They systematically read the transcripts multiple times to identify recurring patterns, concepts, and themes related to the adoption and impact of HR Analytics and AI in the IT sector. The codes were collated into potential themes, reviewed, and refined to ensure coherence and consistency. Finally, themes that emerged consistently across multiple interviews were identified.

Thematic analysis revealed the following themes:

Theme 1. Adoption of HR Analytics and AI in the IT Sector.

Interviewees believe HR Analytics and AI will transform HR into a business-aligned function, enhancing decision-making, evaluating proposals, predicting outcomes, and optimizing resource allocation strategically.

As underscored by one interviewee,

> The future of HR Analytics and AI in the IT sector is vast and promising. With advanced tools, organizations can make more informed decisions resulting in fruitful outcomes.

AI-powered support systems enhance the tracking of employee engagement, satisfaction, and performance. They provide actionable insights through surveys and exit analyses, monitor diversity metrics, and address gaps in gender ratios, pay equity, and career challenges.

Predictive and prescriptive analytics, along with improved data integration, enhance capability building, employee engagement, and HR process automation. Funnel reporting helps recruiters streamline shortlisting and predict performance. Fragmented HR data requires effort to consolidate, but AI can unify systems for seamless insights. AI tools detect low morale through employee satisfaction scores, promoting well-being. Respondents emphasized flexibility, particularly for working mothers.

Interviewees highlighted the vast potential of HR Analytics and AI in IT industries, applied in two ways: offering AI solutions to clients and leveraging them internally. AI aids in identifying target segments, refining communication, measuring key HR metrics, enhancing decision-making, and enabling proactive retention strategies through timely engagement.

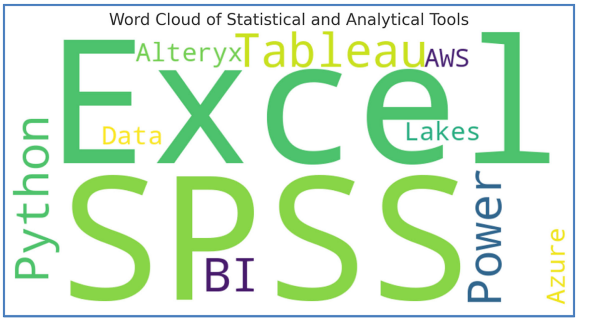
Theme 2. Modern-day tools, skills, and competencies.

The IT sector's adoption of HR Analytics and AI demands a diverse skill set, including data analysis, coding, analytical and design thinking, and domain expertise. Proficiency in tools like Excel, SPSS, Tableau, Power BI, Python, and R enhances analysis. Python replaces R, while AWS, Azure, and Data Lakes support scalable HR solutions and data storage. The Word Cloud of the skill sets mentioned by the respondents is shown in Figure 1.

HR Analytics professionals need analytical thinking, technical skills in statistics, machine learning, and deep learning, along with domain expertise in talent management, recruitment, and compensation. Essential competencies include data analysis, coding, soft skills, cross-functional collaboration, and adaptability to continuous learning. As one interviewee aptly puts it,

> HR person can work on the data, but to reach the level of knowledge and wisdom where a decision can be made requires the skill set of these technical people who are experts in analytics and AI.

This assertion underscores the multifaceted nature of expertise required to derive meaningful insights from the amalgamation of human resources and advanced analytics. A resonating



Source(s): Authors' own creation/work

Figure 1. Word cloud of tools used for HR analytics

sentiment lies in the transient nature of technological tools, as highlighted by another interviewee:

> If I talk about the history of the tools, they will keep coming and going because the tool that is relevant today might not be relevant tomorrow. However, the role of the domain is vital to sustaining the industry. One has to have a good combination of the domain plus analytics skillset.

This recognition underscores the vital role of domain expertise in maintaining the relevance and effectiveness of analytics within the evolving IT sector. Interviewees emphasize linking HR initiatives to financial outcomes, shaping strategies, aiding decision-making, and aligning efforts with organizational goals. HR must integrate analytics and AI expertise while fostering communication and collaboration. Professionals should prioritize data security, adapt to technological shifts, and continuously upskill to remain industry-relevant. The Word Cloud of the Skill sets mentioned by the respondents is shown in Figure 2.

Theme 3. Impact of Analytics and AI on HR as a Domain.

Interviewees agreed that analytics and AI will transform HR, making strategic HR as vital as business finance. HR is shifting from a support role to a key strategic function, driving long-term goals. Data-driven insights will link engagement to financial outcomes, proving HR's impact on retention, hiring, and profitability.

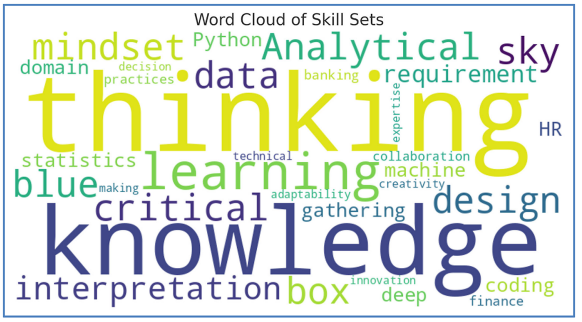
AI and virtual reality will create a sense of connectedness and belongingness for remote employees. Additionally, one interviewee emphasized,

> HR is transitioning from a reactive to a proactive approach, using analytics and AI tools to generate solutions and identify problems proactively.

HR is undergoing a transformation, shifting from a reactive to a proactive approach through AI and analytics. Predictive tools help prevent issues like high attrition and slow hiring, boosting efficiency. Automation, including chatbots, cuts costs by handling routine queries, allowing HR to focus on strategy. AI streamlines recruitment by filtering candidates and ensuring better matches. Success requires integrating technology with HR expertise. Companies embed HR analytics into their strategy by investing in virtual tools and SLAs to enhance connectivity and shorten hiring cycles.

Theme 4. Impact of Analytics and AI on HR verticals.

The insights gleaned from the interviewees underscore the anticipated profound influence of emerging technologies like virtual reality, analytics, and AI on diverse HR functions and verticals. As one interviewee emphasized,



Source(s): Authors' own creation/work

Figure 2. Word cloud of skill sets required for HR analytics

> Chatbots and AI can automate back-end work and improve HR processes like policy-related concerns and hiring, rewards, performance management, and employee engagement.

This aligns with another perspective shared during the interviews:

> Attrition and forecasting of manpower is a big thing because they have the stringent process and have a significant impact in terms of cost.

Virtual reality tools like virtual meeting rooms and office tours foster a sense of connection and belonging among remote employees, enhancing loyalty and cultural engagement—key factors for retention. However, they cannot fully replace real interpersonal relationships. While these technologies improve efficiency and enable predictive analysis, understanding human skills remains crucial. Automation minimizes errors, enhances accuracy, and removes biases in manual processes, yet complex HR tasks still require human oversight. AI streamlines recruitment but may overlook diverse talent. A balanced approach integrating technology with HR expertise ensures optimal outcomes.

Theme 5. Challenges in adoption and implementation.

> Some are Nokia in this journey; they are still struggling. They do not want to do it. Some are Apple who want to be the trendsetters and are looking at how they can make their employees look at it in a very, very positive manner and support them in their journey.

Amidst the landscape of the IT sector, the implementation of HR Analytics and AI strides at a measured cadence, hindered by persistent challenges, including entrenched leadership paradigms, allocation of requisite resources, and balancing between organizational priorities and employee centric analytics. With more focus on customer and financial metrics, employee metrics take backseat.

All the interviewees agree that the IT industry is moving towards implementing HR analytics, but at a slower pace, due to challenges such as leaders past beliefs, investment in capable resources, and dealing with business leaders.

As one of the interviewees expressed:

> So yeah, so I would definitely say there is progress; organizations are moving towards implementing HR Analytics. However, at the same time, the pace is comparatively slower, and it is a new area, or results are yet to come, and often it happens since the decisions are made the way like how they have worked in the past or how have been the how has, how have been the beliefs of the leader whom we are working with.

Companies leveraging HR analytics have experienced enhanced employee satisfaction, reduced attrition, and improved metric reporting. However, challenges persist, including HR leaders lacking technical expertise and demonstrating financial impact. The focus is shifting towards employee satisfaction and talent attraction through analytics. While some companies lead in adoption, others remain hesitant. IT sector expert highlighted concerns over data sensitivity and confidentiality. Integrating data from multiple sources is complex, and privacy breaches can outweigh benefits. Many firms use HR systems for recruitment, but fragmented data from various in different spreadsheets complicates integration. Effective use of HR analytics demands careful handling of sensitive information.

One interviewee believes they are mature in implementing HR Analytics and have launched benchmarks for their clients. Another interviewee notes that being a large and complex organization, they may have HR analytics initiatives they need to be aware of. While progress is being made, challenges remain, and companies need to continue investing in HR analytics and addressing these challenges to realize their full potential.

Theme 6. Adoption of Analytics and AI in HR verticals.

Most IT firms are investing in HR and people analytics by hiring data analysts and scientists to leverage today's data-driven culture. AI and HR analytics are widely used in talent acquisition,

attrition analysis, performance evaluation, succession planning, engagement, training, rewards, workforce forecasting, and claims processing. Personalized training is also facilitated through AI, though talent acquisition remains the priority. As per one interviewee stated:

> Talent acquisition has seen the most adoption of HR analytics in the IT sector. Organizations invest in HR and people analytics to leverage organizational data for better decision-making.

Additionally, one interviewee expressed:

> One is the hiring, and the second is the team managing the employee engagement, which includes performance and also your training and development.

As per HR processes, there is high maturity of analytics adoption in talent acquisition, moderate adoption in training, engagement, and performance management, with an emerging focus on predictive and succession planning analytics. As adoption deepens, AI and analytics are expected to transform HR functions, making them more data-driven, personalized, and efficient.

Theme 7. Metrics.

HR metrics and parameters can vary based on the specific sub-function within HR and the context of the business challenge. As one interviewee pointed out:

> Common HR metrics include attrition percentage, employee tenure, manpower requirements, offer to join conversion, and employee engagement scores.

This variety of metrics allows organizations to assess various aspects of their workforce. Another interviewee highlighted the significance of understanding employee satisfaction:

> Consider an employee satisfaction score; it encompasses various facets. Are you content within the organization? Is your compensation satisfactory? Do you receive adequate support from your managers? How do you perceive the well-being initiatives?

This sentiment underscores the multifaceted nature of employee contentment.

Furthermore, an interviewee emphasized the contextual nature of metrics, stating:

> In my perspective, the applicability of metrics hinges on the specific context of the business issue at hand. This context-driven approach gives rise to pertinent metrics. What is measured in X company might be very different from Y company, but more or less core metrics would remain the same.

This perspective acknowledges that while specific metrics may differ between companies, fundamental metrics hold consistent value.

HR metrics vary based on sub-functions and business needs. Key metrics include attrition rate, employee tenure, workforce demand, and offer-to-join conversion. Employee engagement is measured through engagement scores, compensation benchmarking, and per-person costs. Learning and development metrics, such as training hours, learning preferences, completed certifications, and training effectiveness, help enhance employee skills. Employee satisfaction and employee net promoter scores assess workplace experience, highlighting areas for improvement like managerial support and mental health initiatives. Attrition metrics include annual attrition rates and demographic trends, while satisfaction metrics consider enrollment and opportunity-related factors. Compensation and benefit metrics cover internal and market benchmarking, per-person costs, and offer-to-join conversion. Talent acquisition performance is evaluated using referral success, vendor scorecards, and hiring target alignment. While companies may have unique metrics, fundamental HR measures remain constant. Analytical mapping of the employee journey enhances their experience, with HR teams leveraging subjective and quantitative data for strategic decision-making. Figure 3 is a pictorial depiction of functional area wise metrics that are being used in IT companies.

Note(s): Metrics in blue, indicators in green circles
Source(s): Authors' own creation/work

Figure 3. Metrics used for HR analytics

5. Discussion

The research findings reveal that the predictive and prescriptive capability of technology could significantly impact HR functions, capability building, and decision-making, leading to more informed decisions and better outcomes. HR analytics and AI are used for various HR functions, including hiring quality, employee engagement, diversity, pay gaps, and learning and development. The findings reinforce the assertion of Stone *et al*. (2024) about the application of AI across HR functions such as sourcing high-quality employees, talent management, performance and compensation management, training and development and retention and motivation of employees. Prikhat *et al*. (2023) also highlighted that AI-augmented HR has been gaining strategic importance for achieving sustainable functional an organizational outcomes leading to the competitive advantage.

To successfully adopt HR analytics and AI, HR professionals must possess technical skills such as data analysis, coding, analytical thinking, design thinking, and domain knowledge. Some of these skills have also been identified by Giraud *et al*. (2023) under two categories: skills that will be augmented by AI intervention or skills that would optimize the application of AI in the HR domain. According to a 2023 survey of global executives by IBM Institute of Business Value due to AI intervention, 40% of employees will need to be reskilled and employees' job roles are expected to be augmented more so in a procurement role. According to a report of the World Economic Report, by the end of 2030, 170 million new job roles will be created on emerging technologies, 92 million existing positions will be transformed.

Emerging technologies like virtual reality, analytics, and AI significantly impact HR functions. AI-powered chatbots enhance hiring, rewards, performance management, and engagement. Virtual reality fosters belonging among remote employees, improving loyalty.

Allal-Chérif *et al*. (2021) detail AI-driven e-recruitment, including gamified hiring and chatbot interviews. Vardalier and Zafer (2020) report Unilever cutting hiring time from four months to four weeks using AI. The World Economic Forum cites a 20–40% cost reduction in HR through AI adoption.

However, challenges exist in adopting and implementing HR analytics and AI. Some organizations still hesitate to adopt HR analytics, while others are trendsetters. Tambe *et al*. (2019) have identified challenges to the implementation of HR Analytics are: complexity of HR functions, resistance from employees, ethical concerns and quality of data. HR leaders need to gain technical knowledge or show the financial impact of HR analytics, which is also a challenge. Interestingly, firms with higher financial outcomes a perform better in implementing digitization of HR processes, and AI can significantly change the HR domain, leading to data-driven decision-making, proactive approaches, and technology becoming the norm. Companies must continue investing in HR analytics and addressing these challenges to realize their full potential.

6. Theoretical and practical implications

The findings of this study have significant managerial implications for existing and future HR professionals and organizational leaders. Understanding the adoption and impact of HR Analytics and AI will enable managers to make well-informed decisions and leverage these technologies to enhance HR functions and overall organizational performance. Firstly, the insights obtained from this research can guide HR managers in selecting and implementing appropriate HR analytics and AI tools tailored to their organizational needs. By understanding successful use cases and challenges faced by other organizations in the IT sector, managers can make informed decisions regarding technology adoption and integration. Secondly, this study provides insights into the skills and competencies required for HR professionals to utilize HR analytics and AI tools effectively. Managers can use this information to identify skill gaps among their HR teams and invest in relevant training and upskilling programs to ensure their workforce is proficient in using these technologies.

Thirdly, the research sheds light on the impact of HR analytics and AI on HR functions such as talent acquisition, performance management, and employee engagement. Managers can use these insights to design and implement HR strategies that leverage data-driven decision-making, leading to improved efficiency and employee satisfaction. Lastly, understanding the challenges faced during adopting and implementing HR analytics and AI will help managers proactively address these issues in their organizations. By addressing concerns related to data privacy, integration of data from multiple sources, and technical knowledge of HR leaders, managers can create a conducive environment for successful implementation. HR departments must embrace a strategic outlook by leveraging data-driven insights to optimize HR processes and align them with organizational objectives (Hendrickson *et al*., 2018). Transparent and accountable deployment of AI algorithms is crucial to ensure ethical considerations and minimize biases (Lau and Wong, 2019). Upskilling HR professionals to bridge the gap between the HR and data science domains will empower them to harness the full potential of HR Analytics and AI (Cocchiara *et al*., 2018).

The following are some of the key recommendations based on the study:

Industries should implement cross-functional training programs to foster collaboration among HR, data science, and IT teams, maximizing the potential of emerging technologies. HR leaders must align initiatives with organizational goals and financial outcomes, positioning HR as a strategic partner. Companies should cultivate a data-driven culture, strengthen data security, and effectively communicate the benefits of HR Analytics and AI to business leaders. AI-powered recruitment tools can help identify top talent, predict performance, and create personalized training programs to improve employee satisfaction and retention.

Business schools should emphasize technical skills in data analytics, AI, and Generative AI. Their curriculum should train future leaders in data-driven, cross-functional decision-making and incorporate AI, chatbots, and virtual reality to enhance recruitment, employee engagement, and motivation.

7. Scope for future work

While HR Analytics and AI hold immense potential in the IT sector, there is a vast scope for future research. Studies can explore the long-term impact of HR Analytics and AI on employee satisfaction, performance, and career development. Additionally, it would be valuable to investigate the optimal integration of HR Analytics and AI in different HR verticals and its effect on organizational performance (Marler and Boudreau, 2017). Integrating HR Analytics and AI in the IT sector has emerged as a transformative force, revolutionizing HR practices and decision-making processes.

While this research provides valuable insights into the adoption and impact of HR Analytics and AI in the IT sector, there are several avenues for future research to deepen our understanding of this evolving field. The following are potential areas for future exploration (Table 1).

8. Conclusion

HR analytics and AI can aid in making better decisions related to crucial business questions such as revenue, capability, skill availability, and employee retention. These technologies can help remove unpredictability from the system by evaluating alternatives and improving preparedness for various scenarios. However, humans should be involved in decision-making, and technology should aid decision-making rather than replace it entirely. Furthermore, data privacy and security are crucial considerations when using HR analytics in the IT sector, as integrating data from multiple source systems can be challenging. Integrating data from different source systems to make the overall data more powerful is challenging. Many companies use HR systems for recruitment, but the data often fit into different tables from different source systems, making integration challenging. Thus, careful consideration is required to handle sensitive data effectively. In addition, HR teams should collaborate closely to identify the skills required for new requirements. Overall, HR analytics and AI can help HR teams make data-driven decisions, but it is vital to consider the potential challenges involved in using sensitive data effectively.

Table 1. Area of future study

Areas for future studies	
Longitudinal Studies	Tracking HR Analytics and AI implementation over time helps identify adoption trends, impacts, and challenges. Long-term data provides insights into their sustained effects on HR practices and organizational success
Comparative Studies	Comparing HR Analytics and AI across industries reveals sector-specific differences and best practices, helping organizations customize strategies to their needs
Ethical Considerations	Research should examine ethical issues like data privacy, bias, and transparency to ensure responsible AI use in HR. For example: Investigate frameworks for fairness in AI algorithms to ensure equitable recruitment and employee evaluations (Rigotti and Fosch-Villaronga, 2024; Kelan, 2023)
HR Analytics Maturity Models	HR maturity models help assess current adoption levels and guide organizations toward data-driven HR practices
Impact on Organizational Performance	Examining HR Analytics' impact on revenue, productivity, and satisfaction highlights its return on investment

Source(s): Authors' own creation/work

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