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The Role of AI Technology in the HR Development: A Study of IT Companies in Kannur District

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ABSTRACT

This study explores the use of Artificial Intelligence (AI) in Human Resource Development (HRD) in IT companies in Kannur District, Kerala. With AI revolutionizing traditional HR activities by automating, predicting, and personalizing learning, the study explores its impact on recruitment, training, performance management, and manpower planning. Drawing inferences from data of 100 respondents covering HR managers, IT personnel, and trainers, the study finds high usage of AI, particularly in staff development and secretarial operations. It also finds primary challenges like low technical expertise, ethics concerns, and cost of implementation. The findings offer crucial guidelines to organizations looking to implement AI in HR, noting strategic investment, employees' preparedness, and ethical guidelines for effective implementation.

Keywords: AI Technology; HR Development; IT Companies; Kannur District

Introduction

The sudden growth of Artificial Intelligence (AI) has transformed several industries, one being Human Resource Development (HRD). AI is transforming HR practices by mechanizing mundane work, enhancing decision making, and customizing employee learning. This study examines the application of AI in HR practices in IT companies in Kannur District, Kerala a southern Indian district emerging as a technology hub. The role of AI in HR is more than the automation of administration; it gives rise to strategic HRD functions such as recruitment, training, and performance management. In Kannur's thriving IT sector, integration with AI enables employee development and operational efficiency. This research is concerned with how district IT companies employ AI for streamlining HR functions and bridging skill gaps. In addition, the study examines employee sentiment, organizational readiness, and challenges in implementing AI. It attempts to discover the ethical concerns, technical constraints, and infrastructure concerns in semi urban regions. The study provides practical insights in favor of AI implementation in HR in IT firms in Kannur and similar regions.

Objectives of the Study

- 1. To assess the influence of AI on decision making in human resources planning and management.
- 2. To study the role of AI in improving training and development programs for IT Professionals.
- 3. To study how AI is used in HR practices in IT companies.
- 4. To identify the challenges in using AI for HR tasks.

Review of literature

Several investigators from different regions of the World studied about the role of AI technology in different IT companies and also studied how it influences the quality of work of the IT professionals. Chehri, Fofana, and Yang (2021) investigated the integration of big data and artificial intelligence (AI) in modeling security concerns in smart grid critical infrastructures. The report examines the increasing threat landscape of smart grids, focusing on the problems posed by cyberattacks and system vulnerabilities. The authors emphasize the ability of AI and big data analytics to improve risk prediction, detection, and mitigation measures in the energy sector. The study also emphasizes the significance of creating resilient, adaptable security frameworks to defend smart grid systems from new vulnerabilities in an increasingly linked world.

Sharma, Arora, and Dash (2023) explores Robotics integration in the hospitality sector is examined, with a particular emphasis on the idea of 'Smart Hotel Smart Society 5.0.' The study explains about how advances in robotics and artificial intelligence (AI) are revolutionizing conventional hotel operations, boosting visitor experiences, and increasing operational effectiveness. In order to redefine the role of human employees in hospitality

environments, the authors point out how robotics can automate repetitive jobs, customize services, and offer round-the-clock help. By exploring how robots might be used to build a 'Smart Society 5.0' in which technology is incorporated into daily life to enhance social well-being, their work adds to the body of literature. Sardar, Chourasiya, and Vijyalakshmi (2023) studied the application of machine learning approaches for predicting employee turnover, which is a crucial issue for firms looking to cut costs while retaining talent. The paper examines a variety of machine learning techniques, including decision trees, random forests, and support vector machines, that have been used to predict turnover using employee data. It emphasizes the potential of these tools for analyzing trends and factors impacting employee retention, resulting in more accurate predictions and informed decision-making. The authors also explore the difficulties in adopting these models, such as data quality, model interpretability, and the necessity for regular updates to respond to changing workplace dynamics.

Singh et al. (2023) provide a thorough examination of how data-driven decision-making, aided by technology such as AI, IoT, and blockchain, is transforming business sustainability plans. According to the editors, integrating these technologies enables firms to improve operational efficiency, reduce environmental impact, and promote long-term economic growth. Using case studies, the book shows how firms can use data analytics to promote green innovation and gain a competitive advantage in the digital economy. Furthermore, the authors stress the need of developing a data-driven organizational culture in order to effectively implement sustainable practices and traverse the intricacies of the modern business landscape. Sumi and Vasanthagopal (2024) studied the business analytics and its role in improving decision-making processes. It emphasizes the growing relevance of data driven decision-making in modern enterprises, especially in competitive contexts. The authors examine numerous analytical tools, stressing their practical applicability in helping managers make informed, productive decisions. They also explore difficulties and future developments in business analytics, emphasizing the importance of continual learning and adapting to new technology.

Sattu, Das, and Jena (2024) investigated about the adoption of artificial intelligence (AI) in talent acquisition within Indian IT organizations, focusing on the perceived value derived from benefits and sacrifices. The study finds that HR professionals' intention to adopt AI is significantly influenced by this perceived value, with HR readiness serving as a moderating factor in this relationship. The study highlights that while AI can enhance recruitment efficiency and reduce biases, concerns regarding security, privacy, and innovation resistance may impact its adoption. The authors advocate for a strategic and planned approach to AI integration in talent acquisition, emphasizing the importance of HR preparedness and continuous evaluation of AI tools to align with organizational needs. Senapati, Swain, and Khilar's (2024) examines the transformative potential of artificial intelligence (AI), machine learning (ML), and deep learning (DL) in alleviating the socioeconomic effects of the COVID-19 pandemic. During the crisis, the authors examine how these technologies were used to improve healthcare outcomes, optimize resource allocation, and strengthen predictive modeling. They emphasize the promise of AI and ML techniques for solving difficulties such as pandemic response and recovery, as well as its use in forecasting and decision-making. The paper also analyzes the future of these technologies in public health and socioeconomic resilience, underlining their growing role in pandemic recovery efforts.

Manoj (2024) uses a conceptual model to analyze the possibility of artificial intelligence (AI) in changing human roles in society and industry. The study investigates how artificial intelligence (AI) might supplement human capabilities, resulting in increased production, innovation, and societal growth. It examines the expanding integration of AI in a variety of industries, with a focus on its ability to generate both economic growth and social welfare. The study also delves into ethical concerns and the significance of combining technology innovation with human- centered values in order to achieve sustainable and responsible AI deployment.

Biju and Gayathri (2024) investigated India's approach to artificial intelligence (AI) through policy debates, constitutional principles, and regulatory frameworks. The study examines the growing role of AI in India's growth, with a focus on how the country is dealing with ethical, legal, and societal ramifications in the context of its diverse and complex culture. The authors investigate the junction between AI with constitutional concepts such as privacy, equity, and justice to ensure that the technology benefits all citizens. The study also examines the difficulties in developing strong AI legislation that balance innovation with ethical concerns, as well as the necessity for inclusive policies that encourage responsible AI development and deployment.

Vadithe and Kesari (2025) studied the technological enablers like artificial intelligence, big data, and chatbots affect the deployment of HR analytics in India's IT industry. The study is based on the Resource-Based View (RBV) philosophy, which regards these technologies as strategic assets that improve organizations' analytical capacities. According to existing literature, the effectiveness of HR analytics depends not just on technology but also on organizational preparation, which includes managerial support and a data-centric culture. The study also indicates that automated decision-making and increased management efficiency serve as mediators, connecting technology use to improved HR outcomes and organizational success.

Research Gap

The research gap of the present study is that, while there is a lot of research on the global adoption of AI in HR practices, but not much focusing on IT companies in Kannur district. This study fills that gap by looking at how AI being used in Kannur. The research on AI-driven training programs mainly focuses on large companies, leaving a gap in understanding how smaller IT companies, especially in emerging IT hubs like Kannur, implement AI for personalized employee development. There is only limited research work, on how AI supports HR professionals in complicated decision-making processes. This study explores the role of AI in workforce planning, resource allocation, and organizational strategies in a localized IT setting. As AI technologies evolve rapidly, existing studies may not reflect the latest advancements or their applicability to HR practices. This study attempts to provide up-to-date detail, in AI's transformative potential in HR practices in Kannur's IT sector.

Research Methodology

Research Design

For the present investigation a descriptive research design was employed to explore AI integration into HR practices and their impact on employee development and decision making in IT companies situated in Kannur District.

Sampling Technique

Purposive sampling technique was employed for the present study to reach those respondents who were actually working in HR related positions such as HR managers, Trainers, and IT Professionals.

Sample Size

A total of 100 representatives such as HR managers, Trainers, and IT Professionals from various IT companies in Kannur District is selected as the sample of the present research work.

Data Sources

For the present investigation the primary data collected through systematic questionnaires and the secondary data sources are scholarly articles, journals, websites, books and other articles related with AI technology and their influence to different professionals.

Tools of Analysis

The tools used for the present study are,

Descriptive Statistics: Percentage analysis

Inferential Statistics: One-Way ANOVA

Software Used: SPSS

Hypotheses

H01: There is no notable difference in perceived AI adoption difficulties between designations.

H02: No significant difference in AI effectiveness perception across age groups.

Results and Discussion

The participants demographic details such as gender, age, nature of job, designation, experience, and education sets a complete context for their point of view (Table 1). The tables given below gives the data gathered from respondents in different IT companies in Kannur District, with a view to understanding the role of AI in Human Resource (HR) development. The following tables also discusses the level of AI deployment in HR activities, the exact AI applications being used, and where AI is most intensively used, including recruitment, training, performance management, and workforce planning. The answers also uncover differentiated views on the effectiveness of AI in enhancing decision-making, streamlining paperwork, employee development, and automating mundane tasks.

In addition, the tables point out both the perceived advantages of AI such as greater efficiency, personalization, and user engagement as well as some critical challenges like high costs of implementation, inadequate technical capabilities, ethical issues, and lack of trust. The last statistical examination via ANOVA tests reveals important differences in opinions based on work designation, while age comparisons yield uniform perceptions across generations. Combined, these tables provide the empirical platform of the study, providing insights into AI's reformation of HR practices in the information technology industry.

Table 1 Respondent Demographics

Category	Option	No. of Respondents	Percentage (%)
	Female	54	54
	Male	46	46
Age	Up to 30	88	88
	31–40	10	10
	41–50	1	1
	Above 50	1	1

Nature of Job	Full-time	34	34
	Part-time		66
	HR Manager	20	20
Designation	IT Employee	50	50
	Trainer	30	30
	Below 1	31	31
Experience (Vears)	1 to 5	50	50
	6 to 10	17	17
	Above 10	2	2
	Plus Two	10	10
Education	Diploma	9	9
	Bachelor's	67	67
	Master's	14	14

Table 1 provides a general demographic profile of the respondents participating in the study. The gender split is closely balanced, with a slight overrepresentation of females (54%), and this implies that the data is representative from both genders on an equal basis. The overwhelming majority of the respondents (88%) are 30 years and under, which implies that the sample mostly covers a younger workforce. This demographic profile is important in the context of AI in HR, because younger workers might be more open to technological advancements. A majority (66%) of the respondents are working part-time, perhaps because of flexible working hours common in the IT industry. In job function, the largest representation is of IT employees (50%), followed by trainers (30%) and HR managers (20%), providing a diverse professional insight. Further, 50% of them have 1 to 5 years of experience, which is indicative of a workforce that is still in its early stages of career but with some level of professional exposure. Educationally, a majority (67%) are Bachelor's degree holders, followed by Master's degree holders (14%), indicating highly educated employees with potential for technology adoption.

Table 2 AI Adoption in HR

Statement	Agree (%)	Neutral (%)	Disagree (%)
HR functions driven by AI	81	-	19
AI-based tools used (Chatbots, Screening, Performance, Analytics)	Various	_	21.8 (None)
Most AI-driven HR functions: Training (27.5%), Hiring (25.7%), etc.	-	-	-

Table 2 indicates the level of adoption of AI in HR functions in the respondents' organizations. An overwhelming majority of 81% confirmed that AI is being applied proactively across multiple HR functions, reflecting a profound inclination toward automation and technology adoption in human resource management. Certain tools mentioned include chatbots for support, resume screening through automation, performance analysis based on AI, and predictive analytics for workforce planning. Interestingly, 21.8% of the respondents indicated that the company they work for does not utilize any of the listed AI tools, indicating that even as AI adoption is prevalent, it is not yet ubiquitous. Of all HR functions, training and development are most innovative (27.5%), followed by recruitment, workforce planning, and performance appraisal, showing a balanced but strategy driven adoption of AI in key HR areas.

From Table 3, it is clear the respondents responded in a mixed view but perceptive view of the impact of AI on different HR activities. Even though 24% of the respondents concur that AI makes better decision making, a high 53% disagree or strongly disagree, showing disbelief about its strategic value. The same trends are seen in views about the impact of AI in streamlining paperwork and enhancing resource planning. This suggests that although some respondents see the value of AI in increasing operational efficiency, many remain uncertain or unconvinced. However, the belief that AI improves the accuracy of performance analysis and simplifies HR tasks is stronger, with over 50% affirming these benefits. This could indicate that while AI's strategic potential in HR is still under evaluation, its functional and operational advantages are better recognized by professionals.

Table 3 Perception of AI in HR Tasks

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
AI enhances decision-making	6	18	23	32	21

Reduces paperwork	9	12	22	35	22
Helps in better resource planning	6	11	28	38	17
Improves accurate performance analysis	16	35	28	12	9
Makes HR tasks easier	14	42	25	12	7

Table 4 AI's Role in Employee Development

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
Reduces biases in hiring/appraisal	19	31	34	9	7
Improves retention strategies	15	41	26	9	9
Identifies skill gaps	13	44	19	14	10
Enhances skill development via training	16	38	26	14	6
Personalizes learning	21	35	28	6	10
Provides feedback, boosts performance	13	44	24	10	9
Enables continuous learning	15	48	22	10	5
Increases engagement in training programs	18	37	38	2	5

Table 4 explains that most of the respondents concur that AI has a positive influence on different elements of employee development. Over half opine that AI contributes to the identification of skill gaps (57%) and customized learning experience (56%), which are important for the customization of training programs and enhancing workforce ability. Likewise, most believe that AI driven systems improve skill development and assist in retention initiatives. Interestingly, 57% are in agreement that AI offers good mechanisms for feedback, which lead to improving performance. Although 63% believe that AI facilitates continuous learning, just 55% think it leads to greater participation in training programs, indicating that the success of AI is subject to how it will be implemented and utilized in connection with worker incentives. In general, AI is a revolutionary technology in learning and development but with certain caveats.

Table 5 Practical Use and Efficiency

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
AI actively used in HR	17	33	42	4	4
Automates routine tasks	15	40	34	6	5
Trust in AI-generated HR reports	13	41	37	6	3
Promotes engagement/satisfaction	14	40	33	6	7
Improves communication & collaboration	14	42	34	5	5
Reduces administrative workload	18	40	27	10	5

Table 6 Challenges of AI Adoption

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
High implementation cost	10	36	43	6	5
Employees lack AI-related technical skills	14	34	33	11	8
HR professionals are suspicious of AI-driven decisions	12	37	42	5	4

Raises ethical and privacy concerns	13	41	32	6	8
AI tools need regular updates	10	41	40	6	3
AI creates communication issues	9	44	26	15	6

Table 5 shows the reality of AI in relation to day-to-day HR effectiveness and processes. More than half the respondents confirm that AI is being employed actively and enhances day to day processes such as the automation of tasks and administrative effectiveness. A substantial percentage also have confidence in AI powered HR reports (54%) and hold the belief that AI software positively affects employee communication and participation. These perceptions underscore AI's operational value in streamlining administrative work, reducing HR burden, and improving internal communications. However, a sizeable proportion (over 30%) remains neutral, indicating that while there is visible progress in AI integration, the confidence in its long-term benefits still vary among professionals.

Table 6 gives the key challenges and concerns associated with AI integration in HR practices. High cost of implementation (46%) and few technical skills in employees (48%) are major hurdles, noting infrastructural and training-oriented gaps. Further, 49% opine that HR professionals distrust AI decisions, noting a lack of trust. Ethical and privacy issues are a big concern, with 54% concurring that adoption of AI increases such issues. Interestingly, 51% think AI tools need to be updated frequently, reflecting continuous upkeep burdens. In addition, 53% concur that AI introduces communication problems in HR, implying that technology can sometimes inhibit and not necessarily help people interactions. Such findings necessitate improvements in change management, ethical leadership, and upskilling efforts amidst AI deployment.

ANOVA test was conducted to examine whether there is a significant difference in the perceived challenges of Al adoption among different employee designations (HR managers, IT employees, and trainers) (Table 7). Since p = 0.025 < 0.05, we reject Ho. The results showed a significant difference (F = 3.836, p = 0.025), indicating that the level of perceived challenges varies by designation. Post hoc comparisons using the Tukey HSD test revealed that IT employees reported higher perceived challenges than HR managers and trainers. Although the differences were only marginally significant, the trend suggests that IT employees face more technical and operational difficulties during Al adoption. This implies that organizations should provide targeted support and training to IT employees who are more directly involved in the implementation and management of Al technologies.

Test	Result
ANOVA	
F - value	3.836
Significance (P -value)	0.025
Post Hoc Test (Turkey HSD)	
IT Employee vs HR Managers	Mean difference = 0.451 , p = 0.081 (Marginal significance)
IT Employee vs Trainer	Mean difference = 0.411, p = 0.058 (Marginal significance)
HR Manager vs Trainer	Mean difference = 0.040, p=0.983 (Not significant)
Group Means	HR Manager = 3.20, Trainer = 3.24, IT Employee = 3.65
Conclusion	Significant different found. IT employee perceive more challenges in AI adoption.

Table 7 ANOVA and Post Hoc Results - Perceived AI Adoption Challenges by Destination

Table 8 ANOVA And Post Hoc Results - Perception of AI Effectiveness in HR Practices by Age Group

Test	Value
F - value	0.757
significance (p - value)	0.521 (Not significant)
Group Comparison	Not performed (small group size)

ANOVA test was conducted to examine if there are significant differences in employees' perception of Al's effectiveness in HR practices across different age groups. Since p = 0.521 > 0.05, we fail to reject H02. The results showed no significant difference (F = 0.757, p = 0.521), indicating that perceptions of Al effectiveness do not vary by age group. Post hoc tests were not performed because one or more age groups had fewer than two respondents, which made further comparison unreliable. This suggests that employees of all age groups have a similar view on the effectiveness of Al in HR practices.

Conclusion

The study concludes that AI has a significant role to play in redefining HR practices in Kannur's IT sector, primarily recruitment, training, and performance appraisal. Technical skill deficiency, cost, and ethics remain issues. The study highlights the need for specific training, infrastructure development, and policy support to realize the potential of AI in HRD. The outcome of this research indicates that Artificial Intelligence is slowly becoming a part of the basic element in the HR practices of IT firms in Kannur District. AI technologies are widely used in areas like recruitment, training, performance management, and workforce planning. The data indicates a positive perception of AI's role in enhancing employee development through personalized learning, performance feedback, and continuous learning initiatives. However, the study also highlights considerable challenges such as the high cost of implementation, lack of technical skills among employees, and ethical concerns including trust and data privacy. Specifically, IT staff indicated encountering greater difficulties in AI adoption, and hence the necessity for some specialized interventions regarding support, infrastructure, and training. Organizations must move toward AI integration with a long-term vision that is encompassing of employee upskilling, ethical policymaking, and inclusive change management. The study highlights the need to frame AI adoption against the requirements of different HR roles and to ensure that technology supports human judgment and doesn't substitute it. AI, through proper investment, governance, and sensitization, can become a strategic enabler of people development from a supporting function in semi-urban IT clusters such as Kannur, thus setting up a template for other emerging technology hotspots in India.

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