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Research Article

Effects of AI on HR Processes: A Study of Hotels in Rajasthan

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ABSTRACT

Artificial intelligence-driven knowledge provides significant and accurate information on numerous dynamics present in the workforce. The capabilities that are associated with AI are also serving particular purposes such as assisting both leaders and recruiters in effectively creating descriptions of jobs. The study also mentioned that AI-enabled technologies are significant for organizations in the tourism and hospitality industry. The primary quantitative research method was chosen for this study as it allows for statistical analysis through a survey of 500 participants. The findings of the study indicate that there is a meaningful relationship between variables, suggesting that AI applications across recruitment, training, performance management, and strategic planning significantly affect organizational outcomes. The application of AI in the hotel industry helps in many ways, like managing check-ins and multiple reservations accurately anticipating different marketing campaigns, and assisting several personnel with everyday tasks.

Keywords: Artificial Intelligence (AI), Human Resource Processes, Impact, Pilot Study, Hotel Industry.

INTRODUCTION

Artificial intelligence-driven knowledge and insights are providing accurate information on numerous dynamics present within the workforce. It further enables multiple essential data-driven decision-making mainly for talent management. AI is responsible for effectively streamlining multiple HR princesses, from recruitment by onboarding to management of employees. This is also significant in accurately decreasing administrative burden and enhancing efficiencies as well. The solution that uses artificial intelligence is assisting in crafting almost personalized experiences for workers. It allows them to accurately foster engagement through getting an understanding of the needs and wants of an individual employee (Forbes, 2024). The capabilities of AI are also serving particular purposes like assisting both leaders and recruiters in creating descriptions of jobs. It is also helpful as it assists the employees in finding personalized recommendations for learning. The leaders need to directly communicate AI's values within practical applications.

AI has accurately strengthened the human capital of the hospitality and tourism industries. The use of artificial intelligence has become a crucial tool for supporting and enhancing HRM practices. AI technologies play an essential role in increasing the overall competency level of industry professionals within hospitality sectors. Employers have effectively adopted numerous AI-based training programs to give workers accurate and tailored training. The language learning application that is related to AI assists the staff in interacting with international clients. These applications of AI help develop required communication skills and enhance the confidence level and even job performance of the employees at the workplace (Singh *et al.* 2024). Both recruitment and training have become easy activities with the assistance of AI as it guarantees the hiring process efficiency. The relevance of Artificial intelligence technologies within the processes of HRM can produce extra economic gains for organizations.

There is approximately 58% of guests among 400 guests feel that Artificial Intelligence has effectively improved their overall booking and stay experiences. Within the hospitality Industry, automation covers numerous aspects such as managing check-ins and multiple reservations, accurately impending different marketing strategies, and assisting

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many staff in executing overall operations. Hence, businesses are able to eliminate any repetitive processes, detect any faults, and use human resources. These are significant to give the required focus on any challenging cavities and also actuaries that are guest-centric.

Artificial Intelligence has been significant and has already been used within multiple areas in hotels throughout the world. AI is the key source that further enables the managers of human resources to stay focused on several strategic tasks by automating many routine processes and also providing many data-driven insights. However, the following study aims to analyze the multiple Artificial Intelligence advantages for the HR processes within the hospitality industry. It will discuss in the following paper how the hospitality industry within Rajasthan is making use of technologies including AI in its HR processes.

LITERATURE REVIEW

Over many times, several duties along with tasks have been traditionally performed by humans and that has been further enhanced with the assistance of many technologies including Artificial Intelligence. It also possesses a significant ability to accurately categorize, evaluate, and extract required information. AI-enabled technologies are significant for organizations, particularly within the tourism and hospitality industry. The advantages of many AI-enabled technologies within talent acquisition mainly include speed, enhanced communication, and also sustain necessary recruitment princesses (Marinakou *et al.* 2024). The hospitality industry has been continuously pressured in order to improve operational efficiency and also pressured to decrease costs. In addition to that, AI also offers several effective and innovative solutions to effectively streamline multiple processes. These processes include inventory management and also include different housekeeping schedules. For example, AI-driven systems of predictive maintenance can accurately predict any equipment failures, further enabling any proactive repairs and also decreasing downtime.

Another study has mentioned that the hospitality industry has accurately undergone a detailed and also comprehensive transformation that is with the infusion of AI "artificial intelligence" into its multiple processes. In addition to that, it has also been identified that strategic HR is also considered very crucial for accurately implementing multiple service robots. It further emphasizes the requirement for employees to effectively develop many soft skills, and effective leadership to facilitate any change.In the recent competitive edge, human resources are playing a critical role and are considered a vital asset for accurately driving the success of any organization. Through effectively using multiple AI tools and technologies, the HR professional within the organization can systematically streamline operations and also enhance decision-making (Bujold et al. 2024). AI is also further replacing many traditional methods and reimaging the overall innovation processes.

AI is very significant and the study has mentioned that it can help in effectively automating numerous time-consuming administrative tasks. These are also freeing up any HR personnel to give specific focus on any other aspects of their overall job. This can further lead to increased overall productivity for HR personnel. This also further allows them to spend even more time on many tasks that need their overall expertise (Murugesan et al. 2023). AI can help measure employee productivity in real-time. Another study has mentioned that digital transformation has directly spurred multiple innovations within the hospitality industry (Bisoi et al. 2020). At the same time, the study has also mentioned that AI predicted the framework is playing an essential role in reviewing the quality of the services.

OBJECTIVES

The objectives of the study are given below.

- To analyze the effect of Artificial Intelligence in Multiple Human Resources Processes of the Hospitality Industry in Rajasthan
- To discuss the role of Human resources as a crucial component of the modern competitive edge
- To evaluate the role of Artificial Intelligence in enhancing employee productivity within Hospitality Industry in Rajasthan

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RESEARCH METHODOLOGY

The primary quantitative research method has been employed in this study as it is significant for statistical analysis. This approach has been chosen for this particular study that helps to quantify the overall impact of AI on multiple processes of HR. The quantitative data has been analyzed with the assistance of statistical methods to recognize the correlation and relationship that mainly exist between the integration of AI and the overall HR outcomes (Murugesan et al. 2023). The research has conducted a pilot study using 20 responses to check the reliability of the data collection. The reliability test was done for the pilot study using IBM SPSS for data analysis after collecting data through Google form, which consisted of 4 demographic questions and 20 closed-ended survey questions developed in association with the research subject. After getting the pilot study's reliability value, the researchers surveyed 700 people from which 500 people responded and the analysis of correlation, reliability test and also regression were implemented in this paper.

RESULTS

Pilot study

Table 1: Pilot study of the first 20 responses

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.881	.881	24

The pilot study conducted using the first 20 responses tested the internal consistency of the questionnaire. The Cronbach's Alpha value of 0.881 indicates excellent reliability of the scale, meaning the items used were strongly correlated and measured the same underlying construct. A value above 0.8 is considered highly reliable, and this strong alpha score demonstrated that the questionnaire items were coherent and understandable to participants. The pilot study used the first 20 responses to assess the internal consistency of the questionnaire. The Cronbach's Alpha value of 0.881 indicates excellent reliability, implying that the survey items were highly interrelated and measured the same underlying construct. A value above 0.8 is considered highly reliable.

Among the questions contributing to this score were:

"AI systems in our organization have proven beneficial by accelerating the hiring activities."

"Artificial intelligence provides flexible training systems that generate customized learning content."

"AI systems that manage workforces have created improved work-life equilibrium."

These questions, among others in the 24-item scale, showed strong inter-item correlations, confirming that the items were coherent and easy for participants to understand.

Reliability Test

Table 2: Reliability Statistics

Reliability Statistics

Cronbach's Alpha	N of Items
.879	24

The reliability test of the full dataset produced a Cronbach's Alpha value of 0.879 for the 24-item questionnaire, indicating a high level of internal consistency. This demonstrates that the instrument (questionnaire) was dependable—meaning the AI-related HR processes were consistently measured across all respondents. A score nearing 0.9 implies strong item correlation without redundancy, assuring that the data collected is stable and reliable across respondents. Items such as: "Through AI-based analytics, organizations obtain unbiased assessments of performance," "Employment feedback operations based on AI increase staff motivation," and "Employment of AI in HR processes requires attention to data security and privacy," showed strong correlations nearing the overall alpha score of 0.879–0.9, supporting the conclusion that the items were measuring a shared theme: AI integration in HR functions.

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Correlation

Table 3: Correlation analysis

Correlations

		Artificial intelligence has revolutionized workplace efficiency through improved procedures across all human resources divisions within our organization.
Artificial intelligence has revolutionized workplace efficiency through improved procedures across all human resources divisions within our organization.	Pearson Correlation	1
AI systems in our organization have proven beneficial by accelerating the hiring activities along with the recruitment process.	Pearson Correlation	.316**
AI systems during candidate screening eliminate prejudice that otherwise affects hiring decisions.	Pearson Correlation	.229**
The job matching process along with role candidate selection becomes more effective with AI tools.	Pearson Correlation	.270**
Artificial intelligence provides flexible training systems that generate customized learning content for users	Pearson Correlation	.261**
AI technology enables tools that enhance employee training by providing both better interactivity and higher student engagement.	Pearson Correlation	.293**
AI training platforms enable staff members to acquire knowledge and boost their abilities through effective learning approaches.	Pearson Correlation	.231**
Through AI-based analytics, organizations obtain unbiased assessments that objectively measure employee performance.	Pearson Correlation	.294**
The assistance of AI technologies enables managers to make more effective decisions regarding workforce planning strategies.	Pearson Correlation	.254**
Employment feedback operations based on artificial intelligence technologies increase staff motivation together with work performance.	Pearson Correlation	.332**
AI systems used in human resources management provide organizations with tools for employee concern assessment and work satisfaction improvement.	Pearson Correlation	.213**
AI systems that manage workforces have created improved work-life equilibrium among personnel.	Pearson Correlation	.282**
AI-based programs identify which staff members may leave the organization making it possible to implement preventive retention strategies.	Pearson Correlation	.265**
Most workers show reluctance toward utilizing AI-based tools in human resources management systems.	Pearson Correlation	.401**
Organizations need to maintain constant training programs to match their human resources capabilities with AI-based HR business solutions.	Pearson Correlation	.302**
Employment of AI services in HR processes requires attention to both data security issues and privacy-related matters.	Pearson Correlation	.449**
Human HR professionals need AI tools to enhance their work rather than having AI perform their tasks.	Pearson Correlation	.283**

The correlation analysis reveals positive interrelationships between AI applications in hiring, training, performance assessment, and workforce planning. Pearson correlation coefficients ranged from moderate (r = .213) to strong (r = .449), suggesting that AI tools in HR are functionally connected and influence one another positively. For example, the item:

“Artificial intelligence has revolutionized workplace efficiency through improved procedures across all human resources divisions within our organization.” has a Pearson Correlation of 1.000, indicating a perfect positive relationship with itself.

Other significant findings:

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"Employment feedback operations based on AI increase staff motivation" (r = 0.332)

"Employment of AI in HR processes requires attention to data security and privacy" (r = 0.449)

"AI systems improve workforce planning strategies" (r = 0.254)

Regression

Table 4: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.568[a]	.322	.299	1.063

The regression model summary demonstrates that the predictors explain a substantial proportion of variance in process outcomes. An R-value of 0.568 suggests a moderately strong relationship between the independent variables like AI in Hiring & Recruitment, AI in Training & Development, AI in Performance Management, AI in Employee Retention & Satisfaction and Challenges & Concerns Related to AI in HR and explains a substantial portion of the variance in the dependent outcomes, such as improved employee performance, motivation, overall HR efficiency. The R Square value of 0.322 indicates that 32.2% of the variation in the dependent variable is explained by the model. The Adjusted R Square (0.299) accounts for the model complexity and the number of predictors used.

Table 5: ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	260.549	17	15.326	13.552	.000[b]
	Residual	547.379	484	1.131		
	Total	807.928	501			

The ANOVA results affirm the statistical significance of the regression model. With an F-value of 13.552 and a significance level of p = .000, the model is highly significant, indicating that the independent variables reliably predict the dependent variable. The degrees of freedom (df) are 17 for regression indicating several predictors, 484 for residuals showing total sample size minus predictors and constant and 501 for the total. This confirms that the independent variables significantly predict the outcomes in HR processes when integrated with AI.

DISCUSSION

Human resources are a crucial component of the modern competitive edge and are seen as an essential asset for precisely determining an organization's success. The HR specialist in the company can improve decision-making and methodically streamline operations by utilizing a variety of AI tools and technologies (Bujold et al. 2024). The pilot study also validated the instrument for wider distribution and confirmed that the constructs of AI application in HR practices were appropriately represented, laying a solid foundation for the main study's reliability and credibility. AI is also reimagining the entire invention process and further replacing a lot of conventional techniques.

This robust reliability enhances confidence in subsequent analyses, including correlation and regression, ensuring that the instrument can be trusted to reflect accurate insights into AI's role and perception in HR systems. Speed, improved communication, and maintaining the required recruitment processes are the major benefits of various AI-enabled systems in talent acquisition (Marinakou *et al.* 2024). There has been constant pressure on the hospitality sector to reduce expenses and increase operational efficiency. These findings of the study indicate that the correlation emphasizes that effective AI integration across HR functions enhances organizational outcomes. The consistency of positive correlations suggests a widespread perception of AI's benefits, despite some reservations, reinforcing its

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relevance in HR transformation. This outcome highlights that AI-related factors significantly influence HR effectiveness, supporting the hypothesis that AI tools improve operational efficiency, decision-making, and employee engagement across HR processes.

CONCLUSION

Automation is being used in many areas of the hotel industry, including managing check-ins and multiple reservations, precisely anticipating various marketing initiatives, and helping numerous employees carry out daily tasks. As a result, companies may use human resources, identify errors, and eliminate any repeated processes. AI's capabilities are also being used for specific tasks, such as helping recruiters and leaders create job descriptions. It is also beneficial because it helps the staff members locate tailored learning recommendations. The leaders must convey the benefits of AI in real-world applications. The study validates the strength of the regression analysis and supports the inclusion of AI-related factors in understanding HR transformation. The significance level confirms that these results are not due to random chance but reflect a true pattern in the data.

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