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Artificial Intelligence's Impact on Hr and Talent Acquisition



Abstract: - Artificial intelligence (AI) is fundamentally changing the continuously changing in Human Resource Management (HRM) scene especially in cost containment and talent acquisition. This study uses a mixed-method research approach combining qualitative interviews with quantitative data analysis to find how AI-driven solutions are improving HR cost efficiency. This study aims to find how well many artificial intelligence technologies could streamline procedures and save recruiting costs. These technologies include virtual assistants to predictive analytics to automate on boarding systems and resume analysis algorithms. By means of semi-structured interviews with human resources experts from diverse backgrounds, the qualitative element of the research aggregates information on the benefits, drawbacks, and pragmatic applications of artificial intelligence in the workplace. Concurrent with other cost-related evaluations, the quantitative analysis compares staff attrition rates before and after artificial intelligence implementation as well as cost-per-hire and time-to-hire. Among the initial benefits are higher process efficiency, less recruiting costs, and closer alignment of applicant profiles with organisational goals. Studies reveal ethical, privacy, and job displacement concerns even as artificial intelligence improves regular, data-intensive HR activities. Most people agree artificial intelligence will supplement rather than replace human work, therefore human resources departments will have more time for strategic planning and staff development. Based on the findings of this article, AI shows a possible response for HRM cost efficiency when used properly. The mixed-method approach of this study will enable academics, lawmakers, and practitioners ready to use artificial intelligence into HR strategies to fully comprehend both quantitative results and human points of view.

Keywords: Artificial Intelligence, Human Resource Management, Talent Acquisition, Cost Efficiency, AI in HR.

INTRODUCTION

Especially in relation to talent acquisition, in accordance with this technologically driven era, AI is fast transforming HRM. By use of AI, human resources departments may now significantly reduce running costs, streamline the recruiting process, and improve decision-making. This is very different from the labour-intensive conventional approaches. Companies may now save time by using technologies such on boarding chatbots, predictive analytics, virtual interview platforms, and automated resume screening to better applicant matching and thereby streamline the hiring process. By increasing production and enabling human resource managers to focus on more strategic tasks than administrative ones, AI is becoming a strategic enabler helping organisations remain competitive and nimble. Still, this shift raises serious questions about system openness, data security, ethical system usage, and the appropriate human to automated ratio of judgements made. Under a cost-effective perspective, this study intends to investigate how AI has impacted HR and talent acquisition. This is accomplished by compiling qualitative interviews with HR directors together with quantitative research on recruitment-related statistics. This project has a mixed-method based research plan. This work aims to investigate how application of artificial intelligence alters operational performance and cost structures of HRM. Combining data-driven evaluation with actual knowledge will enable us to do this. The quantitative side examines outward outcomes like better process efficiency and lower recruiting-related expenses. On the other hand, the qualitative element highlights the real experiences, seeming benefits, and difficulties faced by experts using artificial intelligence tools. The effective plan continuously evolving, so AI is becoming more and more relevant in altering HR strategy. This paper contributes to the ongoing scientific and commercial discussions on how AI may produce scalable, reasonably priced strategic human resource plans while maintaining permitting the human aspect important in talent management. This page presents evidence-based research (Mikhaylov et al., 2018).

1. BACKGROUND OF THE STUDY

Combining artificial intelligence with HRM has transformed HR processes and given formerly unheard-of degrees of efficiency. More and more businesses are utilising AI-powered solutions to streamline their HR operations in the fast-paced technologically advanced world with limited resources, especially with regard to identifying and using top talent. Human resource management has traditionally comprised very labour-intensive duties. Among

them include poring over applications, setting up interviews, and welcoming new workers. Following these traditional approaches might show to be a difficult and costly path. Development of artificial intelligence has brought about a historical turning point. This creativity might enable chatbots to interact with one another, do menial tasks, and utilise predictive analytics to review resumes. These kind of projects not only help to save a lot of money but also speed the employment of fresh employees. Recent studies point to financial gains from using artificial intelligence in HRM. Claims companies that have implemented artificial intelligence into their HR systems have seen a 20–40% operating cost cut (Zalaris, 2024). Artificial intelligence thereby accelerates employment and production. Artificial intelligence affects not only other spheres but also labour strategy, benefits administration, and pay, according to El (Ouakili, 2025). It is also used for recruitment and offers a full cost control plan. Artificial intelligence presents various challenges even if it helps management of human resources in many ways. Considering issues with algorithmic discrimination, data privacy, and the loss of human employment, integration of artificial intelligence requires for a moral and cautious approach. Many elements influence the effectiveness of artificial intelligence systems. These include the degree of technological fit for company objectives as well as the quality of the data sources. This work investigates, utilising artificial intelligence, the cost-effective HRM employing a mixed-method research approach. The main objective of the research is to clarify the benefits and drawbacks of using artificial intelligence into HR activities. We will combine qualitative comments of HR experts with quantitative assessments of activities related to expenses in order to reach this aim. By integrating statistical patterns with first-hand narratives, this approach lets one thoroughly investigate the problem. As companies confront the difficulties of digital transformation, the deliberate application of artificial intelligence in HRM has become a major instrument for obtaining operational excellence and cost effectiveness. This study aims to contribute to the body of knowledge currently existing on how artificial intelligence influences HR function optimisation by way of real-world data and pragmatic insights. This will help future strategies to combine HR approaches with technology to grow (Zalaris, 2024).

2. PURPOSE OF THE RESEARCH

The aim in performing this study is to better know how HRM may save money using AI. As more and more businesses use these tools, growing demand to know how these developments in AI automate and streamline HR processes—including hiring, on boarding, engagement, and performance monitoring—helps in declining operational expenses and improving general efficiency. This paper will investigate how the deployment of artificial intelligence influences HRM practice savings in order to identify where it really shines and how it may increase productivity. This is meant to provide evidence-based insights to HR managers and decision-makers thus enabling them to make informed choices on the use of artificial intelligence technology into workforce management plans. Apart from arguing the pros and drawbacks of such strategies, the article will also provide reasonable guidance for the ethical and effective acceptance of AI-driven HR practices.

3. LITERATURE REVIEW

The incorporation of artificial intelligence with HRM has brought about a sea shift in the time-honoured procedures of talent acquisition and recruitment, therefore making these processes significantly more efficient and cost-effective. Many recent studies on many facets of how artificial intelligence affects HRM have shown advantages and disadvantages connected to the use of the technology.

Among the usual human resources chores that may be much automated using artificial intelligence are application communication, resume analysis, and interview scheduling. This will mean less need for time and money spent on hiring campaigns. Artificial intelligence's use in hiring has allegedly yielded a variety of advantages including more efficiency, lower employment-related expenses, and a more varied pool of candidates. (Zalaris, 2024) therefore showed that companies which used artificial intelligence for human resource operations had operating expenses twenty to forty percent lower. Policies that give higher efficiency and shortened recruiting time a priority might help to explain some of the savings.

AI used in HRM comes with some challenges. Artificial intelligence drives towards a strict and ethical path under questions like algorithmic injustice, data privacy, and the possible ultimate replacement of human labour by robots. Research emphasises the importance of handling ethical issues in AI-driven employment practices. The results of this study ought to be helpful in helping businesses guarantee justice, responsibility, and openness in their AI implementations (Hunkenschroer & Luetge 2023).

Furthermore influencing the value of the AI tools are the accuracy of the data sources and the fit of the technical solutions with the goals of the company. For human resource managers to properly use and control artificial intelligence in their own businesses (Gong et al., 2024). Furthermore underlined by them was the need of always monitoring and evaluating artificial intelligence systems to guarantee they provide the promised benefits while preventing inadvertent support of injustices and prejudices.

Apart from increasing output and lowering expenses, artificial intelligence might help to enhance the complete application procedure. Using AI-powered recruiting solutions backed by real-time, customised data could raise applicant involvement and satisfaction. Research by (Zhai et al., 2024) indicates that the evolution of algorithms has essentially supplanted an earlier focus on user experience and practical applications in AI applications for human resource management. This makes it appear as if HR powered by artificial intelligence is looking for more complete and user-centric answers.

AI in HRM calls for cautious implementation even if it's obvious benefits. Effective artificial intelligence system management calls for businesses to answer ethical questions, guarantee data security, and provide HR employees pertinent training. AI should improve HR systems rather than replace human judgement and decision-making (El Ouakili, 2025).

Studies show that artificial intelligence significantly affects human resource management, hence improving the cost-effectiveness of talent acquisition and other HR operations. Although artificial intelligence development presents some difficulties, careful use of these technologies offers chances for major operational benefits and cost savings. Future studies on the long-term consequences of artificial intelligence in HR Management should still include ethical issues, employee attitudes, and the evolution of best practices for including AI.

4. RESEARCH QUESTIONS

What is the impact of AI implementation on HR outcomes in relation to cost efficiency?

5. RESEARCH METHODOLOGY

6.1 Research Design: The objective of qualitative and quantitative research is to identify statistically significant correlations between variables by gathering numerical data on those variables and inputting it into statistical models. Quantitative studies seek to get a deeper comprehension of society. Researchers often use quantitative approaches when investigating events having a personal impact. Quantitative investigations provide empirical data presented as tables and graphs. A quantitative research depends significantly on numerical data, requiring a systematic approach to data collection and analysis. It may be used in several capacities, such as data averaging, forecasting, investigating correlations, and projecting findings to larger populations. Quantitative studies are fundamentally distinct from qualitative investigations, which depend on comprehensive interviews and observations. Quantitative research methodologies are extensively used across several academic fields, including biology, chemistry, psychology, economics, sociology, and marketing, among others.

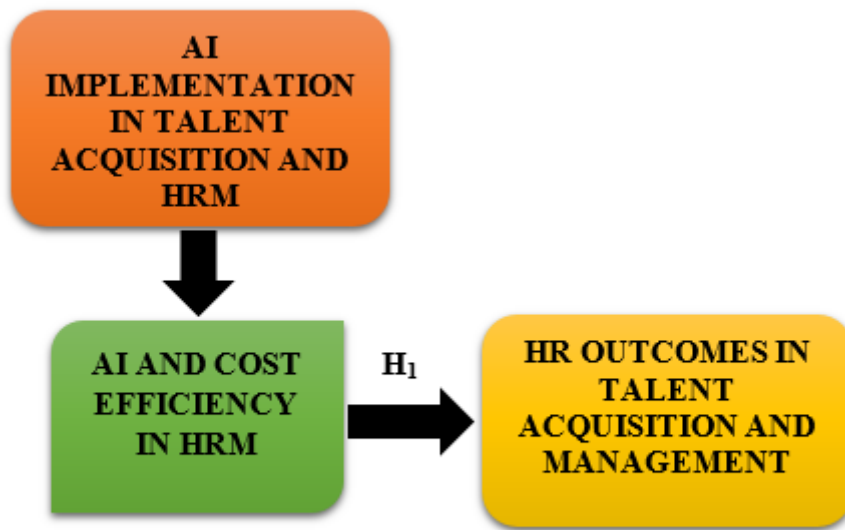
6.2 Sampling: A total of 350 questionnaires were sent to the respondents. A total of 336 questionnaires were returned, yielding a response rate of 96%. Conversely, sixteen surveys were excluded due to missing information, resulting in a total sample size of 320. The Statistical Package for Social Sciences (SPSS Version 25.0) software was used to analyse 320 valid responses to assess the influence of artificial intelligence on talent acquisition and human resource management processes.

6.3 Data and Measurement: The research study's primary data was obtained using a questionnaire survey. The questionnaire had two sections: (A) Demographic information and (B) Factor answers measured on a 5-point Likert scale for both online and offline methods. Secondary data was gathered from several sources, mostly online sites.

6.4 Statistical Software: MS-Excel and SPSS 25 will be used for Statistical analysis.

6.5 Statistical Tools: Descriptive analysis was used to comprehend the fundamental characteristics of the data. The validity will be assessed by factor analysis.

6. CONCEPTUAL FRAMEWORK



7. RESULT

Factor Analysis: Factor Analysis is often used to validate the latent component structure of a measurement set. Latent factors may influence the scores of observable variables. Model-based accuracy assessment (FA). It delineates causal relationships among observable events, unidentified factors, and measurement inaccuracies. The Kaiser-Meyer-Olkin (KMO) test evaluates data suitability for factor analysis. The model and its variables are evaluated for adequate sampling. Statistics quantify the shared variance across many variables. Factor analysis is more effective with reduced percentages. KMO yields values ranging from 0 to 1. Sampling is considered sufficient if the KMO value ranges from 0.8 to 1. If the KMO value is below 0.6, the sample is insufficient and corrective measures are required. Exercise your discretion within the range of 0.5 to 0.6. Certain writers choose 0.5. Kaiser-Meyer-Olkin A value close to 0 indicates relatively weak overall correlations in comparison to partial correlations. Significant correlations complicate component analysis. Kaiser's criteria for acceptance: Kaiser's acceptance criteria: 0.050–0.059. 0.60–0.69 subpar Middle grade: 0.70–0.79. Quality point value: 0.80 to 0.89. A range of 0.90 to 1.00 will be exceptional.

TEST FOR HYPOTHESIS

❖ INDEPENDENT VARIABLE

Ai implementation in talent acquisition and HRM

Any business involved in talent acquisition or human resource management will shortly see major changes brought about by AI. AI automates tasks such resume screening, application assessment, and interview scheduling thus freeing HR employees for more strategic decision-making. Furthermore used are artificial intelligence-powered chatbots to provide quick responses to application questions, thus improving communication and the applicant experience. These technical developments reduce the need for human labour, therefore lowering the time-to-hire and the recruitment costs. AI supports data administration, performance monitoring, even behaviour prediction—that is, the possibility of turnover or the need for training in HRM generally. Mountains of HR data may be sieved by artificial intelligence algorithms in quest of insights that could guide more informed planning and decisions. AI may help us identify top candidates or raise staff engagement depending on our goals. All things considered, using artificial intelligence into HRM contributes to both accuracy and efficiency improvement as well as financial savings. It helps companies enhance HR management to stay up with the always changing business scene of today. Two areas that would probably benefit most from AI's ongoing progress are human resource management and talent recruiting (Hamilton & Sodeman, 2020).

❖ **FACTOR****AI and cost efficiency in HRM**

AI is quickly being used in HRM to increase production and reduce costs. Using artificial intelligence to automate common HR chores such as applicant shortlisting, resume screening, and interview scheduling will help companies save time and money when they hire new staff members. Human resources departments may operate more efficiently and make better judgements with less resources by employing these artificial intelligence technologies to examine data faster and precisely. AI provides automated, tailored solutions for onboarding, performance monitoring, and training in addition to hiring—all of which help to save money. AI-powered learning systems may, for instance, provide staff members training courses depending on their performance and ability, therefore saving costs on pointless courses. Artificial intelligence might enhance labour demand projections, resource allocation, and worker turnover. All these advantages lead to better utilisation of resources—financial as well as human ones. Though AI technologies have a high starting cost, over time their cost savings and efficiency gains more than make sense. AI is turning out to be a great tool for contemporary HR departments enabling them to be more cost-effective, efficient, and productive (Guerra et al., 2023).

❖ **DEPENDENT VARIABLE****HR outcomes in talent acquisition and management**

HR initiatives in talent acquisition and management provide outcomes that either directly or indirectly effect the building and maintenance of a competent workforce. These results may be either positive or negative. A few of the few good advantages that human resources may achieve in talent acquisition are decreased expenses associated with recruiting, enhanced employee retention, improved time-to-hire, and the attraction of quality applicants. When human resources departments make use of the appropriate tools and methods, including technological advancements such as artificial intelligence, they are able to discover the most qualified individuals in a more expedient and accurate manner. Individuals are supported in their growth via training, career promotion, and performance management, which are all examples of good human resource outcomes in talent management. As a result of these initiatives, employee turnover is reduced, workers are happier, and job performance is improved. A workforce that is more devoted, knowledgeable, and productive is the result of well-planned human resource strategies that are backed by intelligent systems. Open lines of communication, rules that are fair, and continuous assistance from human resources all contribute to the creation of a healthy workplace. These outcomes are very significant since they have an immediate impact on the success of a company in the market as well as its capacity to compete with other businesses. Generally speaking, successful human resource outcomes in talent acquisition and management assist businesses in attracting, retaining, and cultivating elite talent, which is very important for the company's continued existence over the long run (Adda et al., 2022).

Relationship between AI in cost efficiency and HR outcomes in management

Modern businesses are understanding more and more that successful human resource management, the status of the economy, and AI are indeed linked. Mostly connected to human resource management, artificial intelligence helps with recruiting, onboarding, performance reviews, personnel planning, etc. Artificial intelligence lets one rapidly go over enormous amounts of data, therefore reducing operational expenses. This is accomplished by automating everyday yet required chores and doing away with human labour requirements. Should they save money, human resources departments may be able to contribute more funds for critical projects such as employee engagement and development. Among the most important advantages human resource management might provide are improvements in employee happiness, talent retention, recruitment success, and dependability of performance reviews. The use of analytical tools motivated by artificial intelligence aimed to assist businesses in talent deficit identification and targeted training might help to increase staff development efficiency. Artificial intelligence accelerates and improves the quality of HR decisions, thereby helping businesses to improve their performance. It is interesting, nonetheless, that the degree of efficiency relies on understanding and use of technology using artificial intelligence. Insufficient suitable artificial intelligence development might lead to data bias or compromise of employee confidence. There is no doubt that artificial intelligence driven cost efficiency improves

HR outcomes to some degree. This is so because long-term HR objectives are determined by ethical, clever, balanced use of technology (Marquis et al., 2024).

On the basis of the above discussion, the researcher formulated the following hypothesis, which was analyse the relationship between AI in cost efficiency and HR outcomes in management.

“H₀: There is no significant relationship between AI in cost efficiency and HR outcomes in management.”

“H₁: There is a significant relationship between AI in cost efficiency and HR outcomes in management.”

Table 2: H₁ ANOVA Test

ANOVA					
Sum					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	39588.620	155	5655.517	1055.883	.000
Within Groups	492.770	195	5.356		
Total	40081.390	350			

In this study, the result will significant. The value of F is 1055.883, which reaches significance with a p-value of .000 (which is less than the .05 alpha level). This means the ***“H₁: There is a significant relationship between AI in cost efficiency and HR outcomes in management.”*** is accepted and the null hypothesis is rejected.

8. DISCUSSION

The results of this article imply that artificial intelligence is affecting HRM more and more, especially with relation to cost economy and improved HR results. Automation and data-driven choices may help businesses if artificial intelligence made personnel management, performance monitoring, on boarding, recruiting, tracking, and simpler. Human resources processes now heavily rely on AI, which results in major time and financial savings. This particularly holds true in the field of talent acquisition. AI-driven solutions are automating methodical chores such application interaction, interview scheduling, and resume checking.

These cost reductions will directly cause human resources performance to improve right away. By means of speedier recruiting procedures, more accurate applicant matching, and real-time data analysis, smarter choices taken by human resource managers result in happier employees, reduced attrition rates, and a more productive team. Artificial intelligence's capacity to monitor employee growth and provide tailored training and education initiatives might potentially help human resource management. We have found, nonetheless, a few communication problems. Though AI has numerous advantages, its progress hinges on ethical issues and careful application. Should issues such algorithm bias, privacy concerns, and opaque data not be sufficiently addressed, human resources results and cost efficiency may suffer. Businesses should make sure their artificial intelligence systems devoid of bias, user-friendly, and assist HR objectives. Moreover, the statistics indicates that rather than aiming to replace human judgement, artificial intelligence should concentrate on improving its efficiency. Human resources managers should give strategy, communication, and employee engagement top priority even if artificial intelligence can handle data-driven chores. These skills will be really helpful in human resources. The suitable degree of control and the usage of artificial intelligence have a strong and favourable association with HR performance, cost savings, and cost reductions. Based on the findings of this research, companies which use artificial intelligence with well-defined goals and enough control may see improvements in operational efficiency and HRM. Much required is research on the long-term effects of artificial intelligence on employee satisfaction and productivity as well as HR performance across sectors and company sizes.

9. CONCLUSION

With the end, this study shows how artificial intelligence affects HRM, especially with respect to HR results that assist worker acquisition and management, thus reducing expenses. Human resources departments have greatly reduced operational costs, increased productivity, and improved the accuracy of their decision-making by means of AI-driven performance monitoring, predictive analytics for workforce planning, chatbots for candidate engagement, and automated resume screening. Forecasting and data-driven personalisation help to simplify the hiring process, therefore enhancing employee engagement, retention, and growth among other aspects. Artificial intelligence might usually provide cost efficiency as the paper stresses by means of resource management, time-to-hire lowering, and quality enhancement of HR services. This helps to cut expenses. Still, it's crucial to underline that artificial intelligence is not exempt from problems like algorithmic biases, privacy concerns, and too much reliance on technology. If artificial intelligence is to be a complement rather than a substitute for human judgement, it requires a complete strategy. Businesses should use moral artificial intelligence technology, train their employees, and have a well-defined strategy to make sure AI serves HR values and objectives. The results reveal that careful design of artificial intelligence integration might help to increase human-centered results and cost-effectiveness. Click this link to observe how technology advancements have turned a basic administrative tool into a strategic partner. Performance criteria enable to establish the direct relationship between the deployment of artificial intelligence and the road human resource management will take. Future studies might include the long-term effects on workers, the influence on certain industries, and the changing ratio of human to automated processes across various business systems. The total result of the research might be rather helpful for academics, legislators, and HR managers willing to use reasonably cost, employee-centric AI-based strategic HR solutions.

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