
ARTIFICIAL INTELLIGENCE AND EMPLOYEE PERFORMANCE EVALUATION IN INDIAN ENTERPRISES: AN EMPIRICAL STUDY

Roma Kumari Gupta,

Research Scholar Department of Business Management RTMNU, Nagpur

Dr. Chandrabhan M. Tembhurnekar

Research Supervisor Department of Business Management RTMNU, Nagpur

ABSTRACT

Artificial Intelligence (AI) in human resource management has driven the performance evaluation systems among the Indian companies to the nth degree given the great pace of its adoption. The given empirical research test refers to the outcomes of AI-performance appraisal systems on accuracy, efficiency, transparency, and employee satisfaction of the sampled companies in India. Primary data (managers and employees) were collected by means of structured questionnaires, and the evaluation of the data was carried out through the use of statistical analysis (descriptive analysis, correlation, and regression), to identify the relationship between the implementation of AI and the performance outcomes of employees. It can be concluded that AI-based assessment systems increase the objectivity, reduce the managerial bias, and provide the updated data on the performance, thus, enhancing the decision-making process and productivity after that. However, aspects that have been projected include data privacy, algorithm bias, and opposition of the employees. The study concludes that the application of AI in the area of performance evaluation can be greatly effective, but it needs to be ethical, transparent, and reasonably followed with training its employees. The research provides insightful data to the Indian companies who would be interested in adopting AI in the performance management systems in a sustainable way.

Keywords: Artificial Intelligence; Employee Performance Evaluation; Human Resource Analytics; Performance Management Systems; Indian Enterprises; Algorithmic Decision-Making; Workplace Productivity

INTRODUCTION

The process of integrating digital technologies is causing a fundamental transition in the modern business sector, one of which is the Artificial Intelligence (AI), which has become a benchmark in reshaping the organization processes and decision-making trends. The need to ensure effective and objective mechanisms of assessing the performance of employees has never been crucial in the Indian firms where various workforce designs exist with high market competition and greater concerns on productivity and responsibility. The lack of subjectivity, lack of adequacy, halo effect, and delay in feedback are shortcomings that are typical of conventional/traditional performance appraisal methods that are largely dependent on manual

scoring, ratings of the computer, and annual appraisal. These deficiencies do not only affect the performance measurement accuracy, but also affect the employee morale, faith on the management, and overall organizational performance. Due to this fact, more organizations within India are looking into solutions offered by AI to enhance their performance management system credibility and efficiency.

Employee performance artificial intelligence The use of machine learning algorithms, data analytics, natural language processing, and predictive modelling to conduct employee performance appraisals, monitor and optimize employee performance. It is the AI-based system that will help analyze big data obtained on the basis of numerous sources such as key

performance indicators, attendance reports, the success of the project, client feedback, and even the communication patterns. AI-based appraisal solutions will enable organizations to transform their performance management messages of episodic to dynamic and evidence-based since they offer real-time feedback and constant updates. The AI could perform despite the organizational complexity and diversity in employees because of scalability and the standardization of performance evaluation to support large enterprises beginning as big as a multinational company, or where a fast-gaining light and small-sized enterprise (SME) is.

The changing work modes, i.e., remote, hybrid working, increased rates of faster digitalization, and a higher volume and intensity of competition over talented skills in India have only contributed to the topicality of AI-based performance evaluation. These changes have compromised the traditional approaches of control using the supervisors and the necessity to come up with information-based solutions in tracking employee input and output. The AI-based performance systems will help the managers identify high performers, skill gap and training needs more effectively and contribute to the strategic planning of human resource management and talent development. These systems also assist in attaining consistency of individual and business performances and greater quality of transparency in appraisal outcomes and diffuse meritocracy culture which is gradually gaining preference in Indian companies undergoing the process of professionalization and globalization.

Though that may be advantageous, the introduction of AI in the process of employee performance assessment is not exempt of problems and ethical concerns. These challenges like algorithmic bias, privacy, or explainability, or employee surveillance have become an issue of discussion among academics, practitioners, and policy-makers.

In a nation such as India, where the regulation of AI governance and data protection has not been fully designed, AI can provide two views at the same time to the business organizations to use AI and enhance efficiency and to uphold fairness as well as the sense of responsibility and employee acceptance. The fear of losing jobs, the distrust in the quality of the decision implemented by AI, and the inadequate degree of digital skills of certain groups of workers can be the reasons of the opposition to AI-based tests. The problems indicate that empirical studies should be used to explore the perceptions of AI-based systems of performance appraisal and their applicability to the situation of the Indian organizational setting.

It is against this background that this present study is based to empirically explore how the Artificial the Intelligence can be applied to assess the performance of employees in Indian enterprises and how they affect the performance of the employees. The research will analyze primary data collected through the analysis of the employees and managers aiming to identify the effectiveness, benefits, and issues with the use of AI-enabled appraisal system. The research provides a background to the available literature because it provides background context on the use of AI in the human resource practice in India and further has practical implications in the other organizations that seek to find a balance between technology introduction and ethical and people-centered performance management process.

LITERATURE REVIEW

Active integration of Artificial Intelligence (AI) into the human resource management (HRM) is a new issue that has generated much scholarly interest particularly as it relates to performance, engagement, retention and evaluation systems among employees. The existing sources focus on AI as an innovative tool that streamlines the quality of decision-making process, productivity, and alignment

of HR actions, and results in the problem of ethics, perception of the employee, and organizational readiness.

In their study, Panda and Sahoo (2021) explored the dependent relationship between work-life balance, psychological empowerment, and employee retention and claimed that the fair and transparent evaluation systems play a crucial role in the retention of the professionals. Although the research does not directly focus on the problem of AI, it provides the paramount origin, as it proves that objective and enabling appraisal system can positively influence employee attitudes in the sphere where AI-driven systems of assessing performance could introduce a new value and improve the appraisal system by reducing subjectivity and biasness. Similarly, Prentice, Dominique Lopes, and Wang (2020) focused on the emotional intelligence and artificial intelligence functions in comparison under the view of the employee. According to their inferences, even though AI has created efficiency and uniformity, the human touch and emotional sensitivity are required by the employees, and as such, the development of AI and human control on the evaluation of performance ought to be applied in a moderate way.

Other studies have directly been in focus of the application of AI in HRM functions. The preview of AI usage in HRM and the recommendations of its present implementation and subsequent opportunities as a fit assessment, recruitment, and training and management segment were reported by Parveen and Palaniammal (2019). According to them, AI-based systems may lead to the constant monitoring of performances and predictive analytics, which increase the precision of appraisals. The application of AI during the talent acquisition lifecycle was also emphasized by Rajesh, Kandaswamy, and Rakesh (2018), where tools based on the available data may reduce the number of error committed by the individuals and improve

efficiency of the organization, which is impossible to extend to the performance evaluation activities based on AI.

However, at the very idea and theoretical level, Strohmeier and Piazza (2015) showed the initial step of developing the AI methodology in HRM, and machine learning, expert systems and neural networks were indicated as the most important drivers of intelligent HR processes. Their contribution provided the ground upon which the implementation of AI can assist in the task of making complex decisions, such as the performance evaluation of employees. On the basis of this assumption, Qamar et al. (2021) have examined the connection between AI and HRM; however, they have reported that human acceptance, organizational culture, and ethics demonstrate a great impact on technology effectiveness. The Indian environment particularly can be applied to this perspective as the nature of the workforce and various levels of the digital fluency is what influences the outcomes of the AI implementation.

The general impacts of the AI on the performance in the workplace are defined by Pereira et al. (2021) who conducted a systematic literature review that included a range of processes, including the results of performance, job satisfaction, and employee engagement. They found in their review that AI positively influences the performance outcomes through automation and analytics but may also lead to stress, job insecurity, and resistance, unless it is clearly applied. These findings demonstrate the importance of the empirical study which assesses how employees perceive AI-based performance evaluation systems.

It was also demonstrated in a study by Prentice, Weaven and Wong (2020) that the quality performance of AI has a strong influence on engagement of the customers with individual preferences towards AI considered a conditioning factor. Their

articles, however, appear to be devoted to the hospitality industry, but their observation implies that the extent to which AI systems are accepted among employees can be a key determinant of performance outcomes- which can be said about other performance assessment intra-organizational mechanisms. Saxena (2020) also agreed with this sentiment by noting that AI is becoming the centre stage in HRM and therefore necessitating reskilling of the HR personnel and sensitisation the workers to technology-driven appraisals.

When it comes to the methodological and performance evaluation-oriented perspective, such works as that by Tabbussum and Dar (2021) (though, within the range of environmental science) demonstrate that the outcomes obtained through the implementation of AI paradigm in the performance evaluation tasks are much more accurate using both neural network and fuzzy logic. The results can be attributed to the perceived reliability and predictability of AI models and could be utilized in the environment of employee performance appraisals.

Finally, Patnaik, Pasumarti, and Nayak (2019) took into account the performance of the policy by the evaluation frameworks of technology, in which, they analyzed how the data-driven assimilations would enhance accountability and transparency both of which the AI-enabled performance management concept accommodates. Sridevi and Suganthi (2021) also stated that AI-based techniques in evaluation of talent are efficient in their clustering and ranking abilities, which indirectly confirms that similar techniques are appropriate to assess the performance of workers as well.

The literature analyzed, on balance, validates that the potential of AI to enhance the process of assessing the performance of employees is truly enormous, as it can make it objective, efficient, and data-driven. However, it also mentions the unavailability of data on employee perception, moral practice and

contextual empirical evidence, which is particularly in the case of Indian firms. This underscores the need of the present state of empirical research in order to investigate the implications of AI-based performance evaluation systems on employee performance and organizational performance in the context of Indian business environment.

Objectives of the Study

1. To analyze the impact of AI-based performance evaluation on employee performance and productivity.
2. To assess employees' perceptions toward fairness, transparency, and accuracy of AI-driven appraisal systems.

Hypothesis

H₀: There is no significant relationship between AI-driven appraisal systems and employees' perceptions of fairness, transparency, and accuracy in performance evaluation.

H₁: There is a significant positive relationship between AI-driven appraisal systems and employees' perceptions of fairness, transparency, and accuracy in performance evaluation.

Research Methodology

It will be descriptive and empirical research design, which will be employed to examine how the Artificial Intelligence has been applied in the Indian enterprise, in analysing the performance of employees. A structured questionnaire that was filled in through the five-point Likert scale was used as the primary source of collecting primary data and faced all employees and managers. The sampling was conducted through the convenience technique and the sample was selected on the basis of the selected Indian organizations which had already adopted AI based-HR practices. The materials of secondary data were journal articles, books, and reports on AI and human resource management. Such statistical tools as descriptive statistics, correlation, and regression were used to explain the statistically

significant information obtained and test the hypotheses to make significant conclusions.

Table: Descriptive Statistics of Employees' Perceptions toward AI-Driven Appraisal Systems (N = 300)

Variables	Mean	Standard Deviation	Minimum	Maximum
Fairness	3.78	0.82	1.00	5.00
Transparency	3.65	0.87	1.00	5.00
Accuracy	3.92	0.79	1.00	5.00
Overall Perception	3.78	0.83	1.00	5.00

Source: Primary Data

The descriptive statistics indicate that on average the employees are likely to have a positive perception regarding the AI-based appraisal systems under all aspects of fairness, transparency and accuracy. It means that the average fairness (3.78), the transparency (3.65) and the accuracy (3.92) score is over the benchmark of the five-point Likert scale and

reveals the attitude of the employees who are likely to agree that the AI-based performance evaluation systems are fair, transparent, and accurate. Among the three dimensions, accuracy on the average value was the most significant, which implies that employees are less comfortable with the fact that AI systems can objectively and reliably assess them. The values of the standard deviation are quite moderate, which explains the existence of a more or less acceptable level of consensus among the respondents, at the same time, there is also some variability in the area of discourse possibly due to the fact that there are certain differences in the organizational practices and exposure to AI. Generally, the findings validate the alternative hypothesis that AI based appraisal system is positively related to the perception of the employee towards fairness and transparency, and accuracy with regards to performance assessment, and this indicates the worth of AI as an authentic tool of current performance management packages.

Table: Correlation Analysis between AI-Driven Appraisal Systems and Employees' Perceptions (SPSS Output Format)

Variables	AI-Driven Appraisal Systems	Fairness	Transparency	Accuracy
AI-Driven Appraisal Systems	Pearson Correlation	1	.642**	.598**
	Sig. (2-tailed)	—	.000	.000
	N	300	300	300
Fairness	Pearson Correlation	.642**	1	.689**
	Sig. (2-tailed)	.000	—	.000
	N	300	300	300
Transparency	Pearson Correlation	.598**	.689**	1
	Sig. (2-tailed)	.000	.000	—
	N	300	300	300
Accuracy	Pearson Correlation	.671**	.655**	.623**
	Sig. (2-tailed)	.000	.000	.000
	N	300	300	300

Note: Correlation is significant at the 0.01 level (2-tailed).

Source: Primary Data (SPSS Output)

The analysis of correlation shows the existence of the positively significant statistically significant correlation between the appraisal systems, which are based on AI, and the perceptions of the employees concerning the fairness, the transparency and accuracy of the appraisal. Pearson correlation coefficients between the AI driven appraisal systems and the fairness ($r = 0.642$), the transparency ($r = 0.598$), and accuracy ($r = 0.671$) are all positive and significant at the 0.01 level that indicates that the more the AI based appraisal mechanisms are employed, the greater is the degree by which the employees view them more positively across the three dimensions. The strongest of them is the tie with accuracy, which implies that objectivity and consistency that the AI-driven appraisals offer are of great significance to the employees. The significant levels of inter-correlations between the perceptions of fairness, transparency, and accuracy also lead to the fact that the three dimensions of perception are close and complementary. Overall, the results facilitate the empirical confirmation of the alternative hypothesis (H1), according to which AI-based appraisal systems positively influence the opinion of employees in Indian-based companies about the fairness, transparency, and accuracy of the performance appraisal.

Discussion

The results of the study will be compared to the empirical data that will confirm the truth that Artificial Intelligence is positively affecting performance assessment of Indian enterprise employees. The descriptive analysis and correlation analysis results show that the perceptions of AI-based appraisal systems regarding the claim of fairness, transparency and accuracy have a strong and positive correlation with the perceptions of the same by the employees. The results posit that the integration of AI in the performance management activities will be able to

surmount the original appraisal systems that have long been plagued by their problems of subjectivity, inconsistencies, and managerial bias.

The fact that the correlation of the AI-based appraisal systems and the perceived accuracy is high, the employees fully trust the information that they experience during the data-driven and the algorithmic appraisal. This supports the reference of the past reports that indicate that AI has the potential to cross through large volumes of information related to performance and deliver credible results (Strohmeier and Piazza, 2015, Pereira et al., 2021). When performance appraisal is done in an Indian organizational context where performance appraisal is most likely to contribute in an organizational direction such as promotion, idealistically, and career advancement, more accuracy will result in higher comfort of the appraisal outcome and increase in employee morale.

The disposition towards fairness and transparency also shows that they are positively related to AI-driven appraisal systems significantly, which confirms the thesis that AI-based evaluation systems can be useful in promoting procedural justice. It is also less possible to use favoritism and discretionary decision-making that some have backed in previous appraisal systems by being supported on the established metrics and unceasing monitoring of performance with AI. The findings align with those of Panda and Sahoo (2021) who wrote about the importance of equal and empowering assessment performances in enhancing the satisfaction and retention of employees.

However, the results are largely positive but should be taken into consideration. The reality that the opportunities of moderate variability of perceptions allow one to come to the conclusion that not every worker perceives AI-based evaluations identically. This is

attributable to the fear of information invasion, the issue of algorithmic transparency and accountability, also being a priority of Prentice et al. (2020) and Qamar et al. (2021). The lack of digital literacy, organizational culture, and communication between AI implementation in Indian enterprises could also be one of the factors that shape the attitudes of workers.

Overall, it can be seen that in most cases as long as the AI-based approach to appraisal is designed in a transparent and ethical manner, the established technique can significantly enhance the effectiveness of performance evaluation. The article finds the need to have a hybrid solution in which to implement the AI-powered analytics and populate it with human control, adequate communication, and employee training. This would empower the Indian enterprises to obtain the best out of AI and in the process maintain the trust, inclusiveness, and performance management systems to be fair.

Overall Conclusion

This paper has thus concluded that Artificial intelligence has become a significant and effective tool in enhancing the system of employing the employees in the performance performance review in Indian companies. The empirical findings indicate a positive high correlation between the AI-based performance appraisal systems and the way the employees regard the performance appraisal as fair, transparent, and accurate. When being applied in the minimization of the subjectivity and bias level that inherently belongs to the traditional appraisal methods, the AI-related systems enable businesses to be more objective, data-driven, and consistent in the process of managing performance.

Furthermore, the objectivity and dependability of the AI-powered assessments are also stated to be highly valued by the employees themselves and lead to the growth in confidence of the outcomes of the appraisal and positive judgment of the managers. At the same time, the findings also indicate that there

are some problems related to the utilization of the technology, which can be considered ethical, privacy, and acceptance by the employees, and, therefore, it is impossible to obtain the effectiveness of the technology without adequate regulations and communication.

Overall, the research points out that to successfully realize AI as a viable instrument in performance evaluation moderation is required, as well as humanization. The Indian business organisations must consider applying the AI tools in combination with the transparent policies, frequent employee learning and monitoring of the managers to enhance fairness and accountability. The study can also be considered a contribution to the literature existing because of its empirical information regarding the Indian scenario and applicability of its concepts to the contemporary situation of modernizing the performance management system through adopting the responsible use of AI.

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