

# AI-Driven Performance Evaluation and Employee Perceptions of Fairness

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## Abstract

By offering data-driven assessments that strive to improve efficiency and objectivity, artificial intelligence (AI) is revolutionizing conventional appraisal systems and how they evaluate employees' performance. It is essential, however, to continue researching how AI-driven performance reviews affect workers' views of fairness. Examining the effects of AI-based assessment systems on workers' perceptions of fairness, this study zeroes in on characteristics including honesty, impartiality, and confidence. The study used a quantitative method, gathering primary data from 115 randomly selected employees from different companies using AI-driven evaluation systems through structured surveys. The study's results show that there are pros and cons to AI. On one hand, workers are excited about the possibility of less bias, but on the other hand, they are worried about things like transparency and AI's inability to fully grasp qualitative performance aspects. The findings of this study should help with HR policy formulation by suggesting ways to make AI-driven evaluations seem fairer.

**Keywords:** Performance, Artificial Intelligence, Fairness, Transparency, Trust

## I. INTRODUCTION

The use of artificial intelligence (AI) is changing the way companies measure employee success. Human judgment, which is prone to biases, inconsistencies, and time limits, has traditionally been used to evaluate employees. This method has the potential to effect the impartiality and accuracy of evaluations. A new trend in performance reviews is the use of data-driven, automated systems that use AI to evaluate workers based on quantitative measurements and predictive analytics. In order to draw conclusions from a wide variety of data sources, including measurements for productivity, comments from customers, and patterns of behavior, these systems employ machine learning algorithms, NLP, and data analytics. In an effort to provide more objective and consistent assessments, an increasing number of enterprises are relying on AI-driven solutions.

But there are new problems with using AI for performance reviews, especially when it comes to how employees feel about the system's fairness. Among the most important management principles is fairness, which has a direct bearing on employee happiness, motivation, and confidence in the workplace. If employees believe their performance reviews are honest and objective, they will be more invested in their work and more motivated to do their best. Outcome fairness (distributive fairness), evaluation process fairness (procedural fairness), and interactional fairness (quality of interpersonal treatment during evaluations) are the three basic foundations on which fairness opinions are typically formed. Perceptions of fairness in AI-managed evaluations can be impacted by elements including trust in the technology, data privacy, algorithmic interpretive capability, and transparency.

Opinions on the use of AI to assess employees' performance have been divided. By standardizing assessments, decreasing human biases, and offering real-time feedback, AI may, on the one hand, improve fairness. To reduce the potential for bias or favoritism stemming from managers' personal interactions with their staff, machine-driven evaluations can be objective by centering on quantifiable criteria. There may be more faith in the review process if it is objective, according to those who support AI-driven assessments. Alternatively, workers may doubt AI systems' impartiality if they perceive algorithms as being secretive or failing to adequately represent the subjective elements of their job. For instance, in order to get a complete picture of an employee's performance, AI systems could struggle to understand subtleties in context like innovation, teamwork, and flexibility.

Transparency in the operation and decision-making of AI systems is another factor impacting views of fairness. Employees are understandably wary of artificial intelligence algorithms since, in contrast to human evaluators, they are frequently seen as opaque "black boxes" with no room for explanation. If an AI system labels some actions as low performance without providing an explanation, for instance, workers can see it as a random decision and lose faith in it. Workers may feel uneasy about the constant monitoring and analysis of their work behaviors by AI systems, which can lead to worries about data privacy and surveillance, which in turn might impact their perceptions of justice.

The success of an organization is highly dependent on how employees perceive the fairness of AI-driven evaluations. When employees feel unappreciated or underestimated by a faceless system, it can have a negative impact on their motivation, productivity, and retention rates. On the flip side, when employees have a favorable impression of the process, they are more inclined to trust it because they believe it is fair and reasonable. In light of these multifaceted issues, businesses must meticulously plan and execute AI-driven assessment systems to promote impressions of fairness. In order to improve how fairness is perceived, it is vital to implement strategies like making algorithms transparent, giving employees visibility into how their data is used, and integrating quantitative and qualitative assessments.

Examining the pros and cons, this study seeks to understand how AI-driven performance reviews affect employees' views of fairness. This study aims to analyze statistical data and employee feedback to determine what elements impact how fairness is viewed. These factors may include how accurate AI assessments are, how much people believe these evaluations are unbiased, and how much they consider context when making their decisions. The study's overarching goal is to help businesses better understand how to use AI-based assessments in a way that is consistent with workers' expectations of justice, leading to a more engaged and trustworthy workforce.

## II. REVIEW OF RELATED STUDIES

Chukwuka, Ernest & Dibia, K.. (2024). The purpose of this research report is to provide a balanced picture of the pros and cons that workers face when their employers use AI vs the tried-and-true traditional HR processes. Whether you're using AI or the tried-and-true traditional HR techniques, it breaks out the pros and cons of HR development. Design/Methodology/Approach—An exploratory and qualitative research methodology was used for this study. Exploratory research is the main component of the qualitative approach that is modified to understand the literature, theories, motivations, perspectives, and opinions in order to address the research question. Information for this study came from secondary sources. The research showed that some companies spend more than two million hours a year on human resources evaluations and reviews. Spending so much time on an untrustworthy process that depends on human

judgment and past results is ridiculous. Assessments powered by real-time AI not only make it easy to provide instant feedback and incentives for excellent work, but they also keep everyone on the same page and raise an alert if goals aren't reached on time or if performance is falling below expectations. Human resources' performance evaluation function is positively and significantly impacted by AI, according to a comprehensive literature study. Implications for Practice - The research calls for stronger AI at the highest levels of the entrepreneurial ecosystem and for its application to the HR role of evaluating employee performance. Uniqueness/value –This study's qualitative discovery will change the entrepreneurial ecosystem for the better by increasing employee happiness and productivity.

Ghanghas, Dr &Riaz, Hina. (2024). Human resource management is just one of many areas that has been impacted by the exponential growth in IT usage and AI adoption over the past decade. Every department is racing to stay up-to-date and competitive, and HR is no exception.

Xiuqing, Duan et al., (2024). In this chapter, we look at how AI-based performance evaluation tools have changed the game in Asia. It explores the changing landscape of evaluation systems, moving away from biased old methods and towards data-driven AI approaches. Examining how these technologies have been customized to fit the distinct cultural and organizational settings of Asian companies, this talk is backed by real-life examples and facts. Finally, the chapter delves into the future of AI and how it might help Asian companies with staff development, retention, and growth.

Nyathani, Ramesh. (2023). There has been a shift in workplace dynamics brought about by the digital age, which has put conventional approaches to performance evaluation to the test. In this article, we take a look at how AI is revolutionizing performance reviews, an important part of HR in the modern digital world. We explore how performance metrics have progressed from static, cookie-cutter measurements to individualized, dynamic indications that provide real-time feedback and encourage objective evaluations with the help of AI. In this paper, we will look at AI-driven analytics as a means to design personalized development plans and predictive management techniques that take into account both the professional trajectory of individuals and the overall objectives of the company. Research from trailblazing companies shows how AI-enhanced evaluations work in practice, the results they achieve, and the difficulties they encounter. Furthermore, we deal with privacy and ethical issues related to artificial intelligence and big data as they pertain to performance reviews. Speculating on the future of performance management in the digital era, the paper concludes with strategic recommendations for HR professionals and businesses getting ready for AI-driven performance solutions. In order to better manage talent in a constantly changing technological landscape, this research intends to give a thorough overview of AI's ability to improve the evaluation process.

Roohani, Faezah. (2023). One area where artificial intelligence (AI) is playing an increasingly important role is human resource management (HRM). Helping customer service agents with mood identification and self-correction is only one of many possible uses for this technology. It can also assist new hires with onboarding questions. This study delves into the ways in which governmental and commercial enterprises in the UAE's HRM sectors use and perceive AI. Based on a comprehensive literature review that centers on the six core characteristics of HRM theory and is augmented with empirical analysis, this research utilizes data from two surveys that target HR professionals in Abu Dhabi. The main text presents the findings of the primary survey, while the appendix contains supplementary results. Employees' views on AI integration and their worries about its effects on HR are highlighted by important findings. Human resources departments are only one of several areas that have felt the effects of artificial intelligence (AI). Human resources

operations such as wage transfers and job recruitment have been enhanced by it. AI has the potential to improve HRM processes by decreasing prejudice and favoritism and increasing efficiency. Still, many worry that AI will eventually displace human workers. Additional research should be conducted to properly grasp the potential of AI. This research should include industry segmentation and a combined strategy. It is important to ensure that different age and gender groups are represented. To get a complete picture of the effects across all businesses, AI deployment should target a wide range of sectors.

Arifah, Ika et al., (2022). Organizations in the service and banking industries are undergoing fast change, and this study seeks to investigate how employees see the role of change leadership in implementing AI and how it will affect their performance and engagement on the job. The study's methodology and design are based on quantitative research techniques. To analyze the data, the researchers employed structural equation modeling (SEM) with the help of the AMOS 22.0 computer program. Only 254 out of 357 participants met the criteria for inclusion in this study. The participant in this research is an employee of a business in the banking and service industry based in East Java, Indonesia. The results show that AI significantly improves employee engagement and performance on the job. Leadership during times of transition mitigates the negative effects of AI on productivity and morale in the workplace. Adding the moderating variable of the function of change leadership to this model's development adds originality and value because, in contexts undergoing fast transition, leaders play a crucial role. Leaders ultimately make decisions for the company. Research on service and banking businesses is crucial to the evolution of this idea. In order to boost the organization's performance, employee performance is a crucial factor. To top it all off, there will be chaos when it comes to AI applications in enterprises, thus leaders are absolutely necessary for achieving success with employee engagement on the job.

### III. RESEARCH METHODOLOGY

#### Research Design

The effect of AI-driven performance reviews on workers' views of equity is examined using quantitative data in this study.

#### Sample of the Study

Using a random sampling approach, 115 participants were chosen to participate in the survey.

#### Data Collection

In order to gather primary data, AI-based performance evaluation systems distribute structured surveys to workers at different companies. Preexisting literature, reports from the industry, and case studies are examples of secondary sources of data.

#### Data Analysis

Trends in employees' opinions of fairness in AI-driven evaluations are uncovered by analyzing survey responses using statistical methods.

### IV. RESULTS AND DISCUSSION

**Table 1: Demographic Information of Respondents (Sample Size: 115)**

Demographic Variable	Category	Frequency	Percentage (%)
Age	21-30	40	35%
	31-40	45	39%

	41-50	20	17%
	51 and above	10	9%
<b>Gender</b>	Male	62	54%
	Female	53	46%
<b>Education Level</b>	Bachelor's Degree	50	43%
	Master's Degree	55	48%
	Ph.D.	10	9%
<b>Job Position</b>	Entry-Level	30	26%
	Mid-Level	50	43%
	Senior-Level	25	22%
	Executive	10	9%
<b>Years in Organization</b>	Less than 1 year	15	13%
	1-5 years	50	43%
	6-10 years	30	26%
	10+ years	20	18%

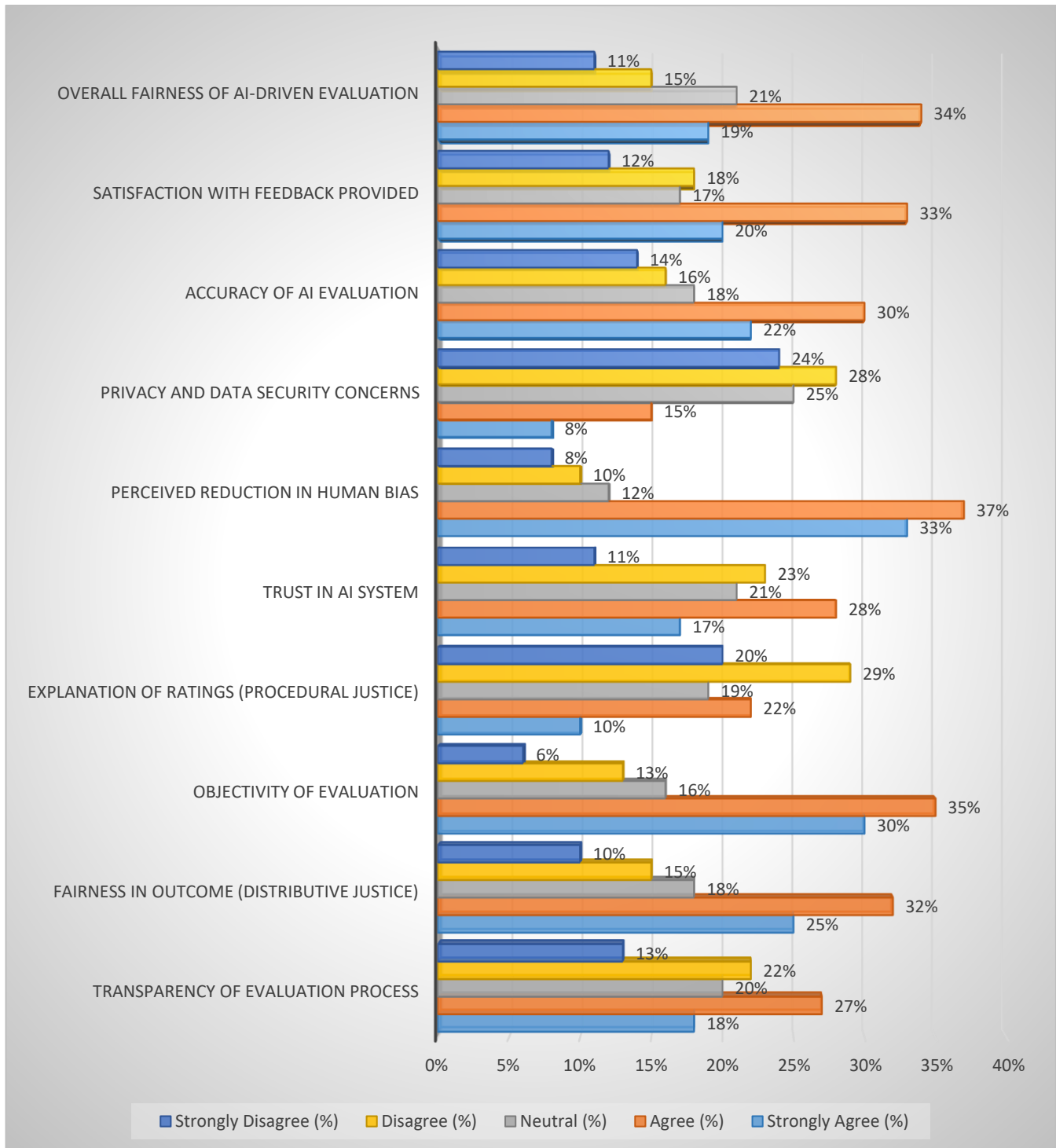
The survey sample had a somewhat even distribution across gender, age, education level, employment position, and years in the organization, according to the demographic breakdown. The age bracket of 31–40 years old accounts for 39% of the total, with the 21–30 age bracket coming in a close second at 35%. Among the participants, just 17% fall into the 41–50 age bracket, and 9% are 51 and up. The sample is fairly balanced in terms of gender, with 54% men and 46% women taking part. While 48% of respondents have a Master's degree, 43% have a Bachelor's, and a smaller fraction (9% to be exact) have a Ph.D. The middle-level group accounts for 43% of the total, with the entry-level group coming in at a distant second with 26%. Only 22% and 9% of the total hold senior-level or executive-level jobs, respectively.

Respondents' average length of service ranges from 1 to 5 years (43%), with lower percentages falling into the 6–10-year (26%), less than 1 year (13%), and 10+ year (18%) groups. Understanding varied perceptions of AI evaluation methods is made easier by this demographic distribution, which offers a wide range of opinions across different age groups, education levels, work positions, and organizational tenure.

**Table 2: Results on AI-Driven Performance Evaluation and Employee Perceptions of Fairness (Sample Size: 115)**

Evaluation Aspect	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
Transparency of Evaluation Process	18% (21)	27% (31)	20% (23)	22% (25)	13% (15)
Fairness in Outcome (Distributive Justice)	25% (29)	32% (37)	18% (21)	15% (17)	10% (11)
Objectivity of Evaluation	30% (34)	35% (40)	16% (18)	13% (15)	6% (7)
Explanation of Ratings (Procedural Justice)	10% (12)	22% (25)	19% (22)	29% (33)	20% (23)
Trust in AI System	17% (20)	28% (32)	21% (24)	23% (26)	11% (13)
Perceived Reduction in Human Bias	33% (38)	37% (43)	12% (14)	10% (12)	8% (9)
Privacy and Data Security	8% (9)	15% (17)	25% (29)	28% (32)	24% (28)

Concerns					
<b>Accuracy of AI Evaluation</b>	22% (25)	30% (35)	18% (21)	16% (18)	14% (16)
<b>Satisfaction with Feedback Provided</b>	20% (23)	33% (38)	17% (20)	18% (21)	12% (13)
<b>Overall Fairness of AI-Driven Evaluation</b>	19% (22)	34% (39)	21% (24)	15% (17)	11% (13)



**Figure 1 Results on AI-Driven Performance Evaluation and Employee Perceptions of Fairness (Sample Size: 115)**

The table shows the breakdown of replies for different AI system evaluation criteria. On the topic of perceived reduction in human bias, the most agreement was noticed (33% strongly agreed and 37% agreed), suggesting a large amount of trust in AI's capacity to mitigate human bias in evaluations. With 30% highly agreeing and 35% agreeing, there is a strong sense of AI systems being objective in their evaluations. Conversely, reactions were more divided or negative regarding issues like data security and privacy and explanations of scores (procedural justice). In terms of the AI's ability to adequately explain its ratings, for instance, just 10% were in agreement, while 29% were opposed and 20% were extremely opposed. Concerns about privacy and data security were also high; 28% of respondents disagreed with the statement about data security, and 24% strongly disagreed.

With 25% highly agreeing on fairness and 22% strongly agreeing on accuracy, there was reasonably high agreement regarding the fairness of AI evaluations and their results. This suggests that people generally have a favorable impression of AI. Only 18% strongly agreed, while 22% disagreed, regarding the evaluation process's transparency. While 23% expressed some doubt, 17% firmly agreed that the AI system could be trusted. Lastly, there is space for development in the areas of happiness with feedback and overall fairness of AI-driven evaluation. The majority of respondents were either neutral or agreed, but not strongly, suggesting that these areas might use some work.

**Table 3: Correlation Analysis between Demographics and Perceptions of Fairness in AI-Driven Evaluations**

Variable	Transparency Perception (r)	Fairness of Outcome (r)	Objectivity Perception (r)	Trust in AI System (r)
Age	-0.12	0.15	-0.08	0.10
Gender	0.05	-0.04	0.02	-0.03
Education Level	0.18	0.22	0.16	0.20
Job Position	0.25	0.27	0.30	0.32
Years in Organization	0.20	0.24	0.18	0.28

The table below shows the correlation coefficients (r) between different demographic variables and perceptions of AI systems' fairness, transparency, objectivity, and trustworthiness. The demographic variables include age, gender, education level, work position, and years in the organization. The four perception categories—fairness, objectivity, faith in AI systems, and occupational status—show the largest positive connections among the variables. People with more education tend to view AI systems as more fair and objective, since there is a positive correlation between education level and both fairness ( $r = 0.22$ ) and objectivity ( $r = 0.16$ ). There are strong positive associations between job status and trust ( $r = 0.32$ ), suggesting that people in higher positions may have more faith in AI systems. Transparency and objectivity are more strongly correlated with younger age groups, but gender demonstrates little correlation across all aspects. Having been with the same company for a while may increase confidence in the fairness of AI systems, since there is a moderately favorable correlation between years of service and several organizational traits, including trust and fairness. Taken together, these results point to the importance of one's occupation, level of education, and length of service in an organization in determining one's opinion of AI systems.

## V. CONCLUSION

The results of this study highlight the intricate connection between employees' views of fairness and AI-driven performance reviews. People were worried about AI's lack of transparency, contextual awareness, and trust, even while they acknowledged AI's ability to make people more objective and less biased. Due to their knowledge with the system's mechanics and aims, employees in higher-level positions or with advanced education levels tended to consider AI evaluations as fair. However, there were a few doubters among the staff who voiced their concerns about AI's ability to measure intangible qualities like cooperation, creativity, and personal contributions.

Organizations should emphasize open communication and give sufficient training on the system's methods and constraints for AI-driven reviews to be successful. To further address issues about fairness and context sensitivity, a hybrid method might be used, where human judgment is supplemented with AI-driven insights. Organizations who want to improve the trust and contentment of their employees with AI-based performance management systems should use this research to better align their AI-driven evaluation procedures with employees' expectations of fairness. To further hone these findings, future research can investigate the effects of AI-driven evaluations over time and look for industry-specific subtleties in how people perceive them.

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