

Digital Gatekeepers: How ATS Design Impacts Applicant Satisfaction and Hiring Fairness

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Abstract

The digitalization of recruitment has positioned Applicant Tracking Systems (ATS) as central gatekeepers in modern hiring, influencing how candidates are screened, evaluated, and selected. This study investigates the impact of ATS design on candidate satisfaction and perceptions of hiring fairness, integrating applicant reactions and organizational justice perspectives. Using a quantitative research design, data were collected from 285 job applicants across retail, healthcare, and information technology sectors through structured questionnaires. Regression analyses reveal that effective ATS design significantly predicts candidate satisfaction ($\beta = 0.609$, $p < 0.001$) and strongly enhances perceptions of hiring fairness ($\beta = 0.838$, $p < 0.001$). Findings underscore the importance of usability, transparency, feedback, and explainability in promoting trust and procedural justice in digitally mediated recruitment. The study highlights that ATS are not merely administrative tools but socio-technical mechanisms shaping experiential and evaluative outcomes, with implications for HR practitioners, system designers, and organizational policy aimed at fostering equitable, candidate-centered recruitment processes.

Keywords: *Applicant Tracking System, ATS Design, Candidate Satisfaction, Hiring Fairness, Digital Recruitment.*

Introduction

The digitalization of human resource management has fundamentally reconfigured recruitment and selection processes, with Applicant Tracking Systems (ATS) and AI-enabled tools now embedded within the hiring architectures of organizations worldwide. These systems increasingly govern how applicants are screened, evaluated, and advanced, operating at scale and with minimal human intervention. While ATS adoption is often justified by improvements in efficiency, consistency, and administrative control, their growing role in shaping access to employment has prompted renewed scholarly attention to candidate experience, fairness, and trust in digitally mediated hiring environments.

Recruitment represents a critical point of contact between organizations and potential employees, serving not only as a mechanism for talent acquisition but also as a signal of organizational values and legitimacy. Applicant reactions research has long demonstrated that candidates actively interpret recruitment practices, forming judgments about procedural integrity, respect, and transparency that extend beyond hiring outcomes. In digitally mediated contexts, these evaluations are increasingly shaped by system design features rather than interpersonal interactions, raising important questions about how automated hiring technologies influence perceptions of fairness and satisfaction.

ATS function as more than administrative tools; they act as digital gatekeepers that structure opportunity by determining which applicants are visible, comparable, and selectable. Design choices embedded within ATS, such as interface usability, transparency of screening criteria, feedback provision, and the degree of automation, implicitly encode assumptions about merit and efficiency. As a result, candidates' experiences of recruitment are shaped not only by organizational policies but also by the socio-technical characteristics of the systems through which those policies are enacted.

Although prior research documents widespread organizational reliance on ATS, much of this work adopts an efficiency-oriented or managerial perspective, emphasizing reductions

in time-to-hire, recruitment costs, and recruiter workload. In contrast, growing evidence suggests that applicants frequently experience ATS-based recruitment as opaque, impersonal, and difficult to interpret. Limited insight into how applications are evaluated, combined with minimal feedback and reduced human interaction, has been shown to undermine trust and satisfaction, even when selection procedures are perceived as technologically advanced.

These concerns are amplified by the increasing integration of AI and large language models into recruitment systems. Algorithmic screening tools promise objectivity and standardization, yet scholars caution that automated decision-making may reproduce existing biases, obscure accountability, and weaken perceptions of procedural justice if not carefully designed and governed. Importantly, fairness in digital recruitment is not a purely technical issue but a perceptual and relational one, shaped by how candidates interpret system behavior, information availability, and opportunities for voice.

Organizational justice theory offers a useful lens for understanding these dynamics, particularly in relation to procedural and interactional fairness. In the absence of sustained human contact, applicants rely on system cues to infer whether selection processes are consistent, transparent, and respectful. When ATS design limits explanation or communication, candidates may experience a loss of control and reduced confidence in hiring decisions, negatively affecting overall satisfaction with the recruitment process. Conversely, user-centered and explainable systems may mitigate these concerns by enhancing perceptions of fairness, even in highly automated environments.

Despite growing interest in AI ethics and algorithmic bias, empirical research examining ATS design from an applicant-centered perspective remains limited. Existing studies often treat fairness, satisfaction, and automation as isolated constructs or focus primarily on technical performance and regulatory compliance. Consequently, the role of ATS design as a socio-technical mechanism shaping candidate experience and justice perceptions is underexplored within the digital HRM literature. Addressing this gap, the present study examines how ATS design influences candidate satisfaction through perceptions of hiring fairness. By conceptualizing ATS as digital gatekeepers

within recruitment systems, this research integrates applicant reactions and organizational justice perspectives to advance understanding of how design choices in automated hiring systems affect experiential and evaluative outcomes. In doing so, the study contributes to ongoing debates on digital HRM, fairness in algorithmic decision-making, and the human consequences of recruitment automation.

Reviews of literature

The incorporation of digital technologies into recruitment has progressively reshaped employee selection, positioning Applicant Tracking Systems (ATS) and AI-enabled tools as core infrastructural components of contemporary hiring. These systems increasingly mediate how applicants are screened, evaluated, and progressed through recruitment pipelines. While their adoption is frequently justified by gains in efficiency, consistency, and scalability, a growing body of research questions how technologically mediated selection affects applicant perceptions, particularly with respect to fairness, transparency, and trust. As hiring processes become more automated, scholars emphasize the need to re-examine recruitment not only as a technical process but also as a socio-psychological experience for candidates.

Research on applicant reactions indicates that digital recruitment practices can enhance perceptions of organizational sophistication and professionalism. Technology-driven selection is often interpreted as signaling innovation and operational competence, contributing to employer attractiveness. However, these favorable impressions are commonly accompanied by concerns regarding procedural integrity. Folger et al. (2021) demonstrate that applicants associate automated selection tools with efficiency while simultaneously expressing uncertainty about the fairness of evaluation procedures, especially during algorithmic screening and automated interviews. Notably, fairness concerns are more pronounced among individuals without direct experience of digital recruitment, suggesting that justice perceptions evolve through interaction rather than existing as fixed predispositions.

From an organizational standpoint, the diffusion of ATS has been particularly pronounced among large employers facing high application volumes. Such systems are routinely used to

centralize applicant data, automate resume processing, and streamline administrative tasks, thereby reducing recruiter workload (Peicheva, 2022). Chavan et al. (2014) describe ATS as end-to-end recruitment infrastructures that support activities ranging from application intake to interview coordination and hiring documentation. By transforming unstructured applicant information into standardized formats through techniques such as natural language processing, ATS enable faster and more uniform assessments. When integrated with broader process management frameworks, ATS adoption has been linked to reduced recruitment costs and shorter time-to-hire (Laumer, 2014). However, this stream of research remains largely organization-centric, offering limited insight into applicant-facing consequences.

Recent scholarship has increasingly shifted attention toward candidate experience, highlighting structural limitations of automated recruitment systems. A central concern involves the opacity of algorithmic decision-making and the limited provision of feedback to applicants. Bhattacharya and Verbert (2025) show that opaque automated outcomes erode applicant trust and satisfaction, whereas systems incorporating explainability and user-oriented design features generate more positive evaluations of procedural fairness. These findings resonate with organizational justice theory, which posits that access to information and clarity of procedures are critical drivers of fairness perceptions in selection contexts.

The rapid integration of AI and large language models into recruitment has further intensified debates surrounding bias, discrimination, and ethical accountability. Rigotti and Fosch-Villaronga (2024) argue that fairness in AI-based recruitment cannot be treated as a singular construct, as its interpretation varies across stakeholders and institutional contexts. Absent robust governance mechanisms, algorithmic systems risk reproducing historical inequalities embedded in training data and decision rules. Empirical evidence reinforces this concern: Koh et al. (2023) find that AI-driven screening tools may perpetuate societal biases unless subjected to continuous evaluation, auditing, and corrective intervention.

Applicant responses to increasing levels of automation further reveal ambivalence toward algorithmic authority in hiring decisions. Armstrong and Metaxa (2025) report that perceptions

of trust and fairness decline as human involvement diminishes, particularly when automated judgments are not accompanied by explanation or interpersonal interaction. Their findings also suggest that social capital continues to shape hiring outcomes despite algorithmic screening, complicating claims that automation inherently enhances meritocratic selection. Consistent with this perspective, Babaei and Shank (2025) show that applicants often evaluate AI-led recruitment as less fair and less appealing than human-led processes, raising concerns about the potential deterrence of high-quality candidates.

From an applicant reactions perspective, fairness perceptions in recruitment extend beyond individual outcomes and carry broader organizational implications. Truxillo et al. (2017) emphasize that perceptions of unfair or opaque selection procedures can undermine employer legitimacy, increase applicant withdrawal, and heighten legal and reputational risks. Building on this work, Hilliard et al. (2022) demonstrate that algorithm-based recruitment may reduce perceived empathy and applicant autonomy, thereby altering the psychological experience of selection and producing mixed justice evaluations. These findings suggest that automation reshapes not only evaluative mechanisms but also how applicants interpret organizational values and intent.

Research on AI-based recruitment recommender systems further illustrates the persistence of inequality within digital hiring environments. Kumar et al. (2023) show that recommender algorithms may unintentionally reinforce gendered patterns and group-based disadvantages, even when designed to operate neutrally. Moreover, although a range of technical solutions aimed at enhancing algorithmic fairness has been proposed, their compatibility with existing legal and regulatory frameworks remains inconsistent across jurisdictions, particularly between the European Union and the United States. This regulatory fragmentation underscores the unresolved nature of fairness in digitally mediated recruitment.

In sum, existing scholarship indicates that ATS and AI-enabled recruitment systems offer substantial efficiency and standardization benefits while simultaneously generating enduring concerns related to candidate satisfaction, transparency, fairness, and inclusion. Prior research has tended to address these issues in isolation and primarily from organizational or

technical perspectives, leaving the role of ATS design as a socio-technical gatekeeping mechanism underexplored. By examining how specific ATS design features influence candidate satisfaction and fairness perceptions, the present study seeks to contribute to ongoing debates in digital HRM, applicant reactions, and organizational justice research.

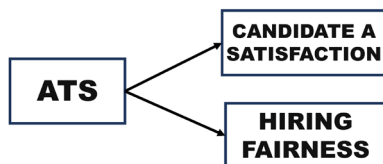


Figure 1: Research Model

Null Hypothesis

H₀: The use of an Applicant Tracking System (ATS) has no significant impact on candidate satisfaction

H₀: The use of an Applicant Tracking System (ATS) has no significant effect on hiring fairness.

Methodology

Research Design

The present study employs a quantitative research design to explore the extent to which Applicant Tracking System (ATS) design shapes candidate satisfaction and perceptions of hiring fairness. This approach is well-suited to examining theoretically specified relationships and allows for the systematic evaluation of associations between system-level features and applicant responses. Consistent with established practice in digital HRM research, the design facilitates statistical inference across heterogeneous organizational settings.

Sampling Strategy and Participants

A stratified random sampling procedure was used to obtain representation from industry sectors characterized by intensive and technology-mediated recruitment activity. Stratification was based on sectoral context to account for differences in

recruitment volume, process formalization, and reliance on ATS-enabled hiring systems. The sampling frame comprised three sectors, retail, healthcare, and information technology, each of which has been widely identified in the HRM literature as a frequent user of digital recruitment infrastructures. This sampling approach was adopted to enhance representativeness and mitigate sector-specific bias.

Sample size adequacy was assessed using Cochran's (1977) formula for large populations:

$$n_0 = \frac{Z^2 \cdot p(1-p)}{E^2}$$

where Z = corresponds to a 95% confidence level, $p = 0.50$ reflects a conservative estimate of population proportion, and $E = 0.05$ represents the acceptable margin of sampling error. The resulting calculation indicated a minimum recommended sample size of 385 respondents.

Data Collection Procedure

Data were collected through a structured questionnaire administered to job applicants with recent exposure to ATS-mediated recruitment processes. A total of 500 questionnaires were distributed across the three industry sectors during the period from December 2024 to April 2025. Of these, 285 completed responses met the criteria for inclusion in the analysis, yielding a response rate of 57%. Although the achieved sample size was lower than the initial estimate, the adjusted margin of error was $\pm 5.8\%$, which remains within acceptable bounds for empirical HRM research and is comparable to response levels reported in prior applicant reactions studies.

Measurement Reliability

The survey instrument consisted of 22 items assessing perceptions of ATS design characteristics, hiring fairness, and overall candidate satisfaction. Internal consistency reliability was evaluated using Cronbach's alpha. The composite scale produced a coefficient of 0.794, exceeding the commonly accepted threshold of 0.70 and indicating adequate reliability for subsequent statistical analysis.

Analytical Strategy

Hypothesis testing was conducted using regression analysis. This analytical technique is appropriate for estimating the predictive influence of ATS design on applicant fairness perceptions and satisfaction while accounting for variability across respondents.

Result

Table 1: Regression Model Summary: Effect of Applicant Tracking System (ATS) Design on Candidate Satisfaction

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.756 ^a	.571	.568	2.14
a. Predictors: (Constant), ATS				
b. Dependent Variable: Candidate_Satisfaction				

The regression results indicate a positive association between ATS design and candidate satisfaction ($R = 0.756$). ATS design explains 57.1% of the variance in candidate satisfaction ($R^2 = 0.571$), with the adjusted R^2 (0.568) indicating minimal reduction. The standard error of the estimate (2.14) represents the average deviation between observed and predicted satisfaction scores and falls within the range typically observed for perceptual measures in recruitment research.

Table 2: ANOVA Results for Regression Model Predicting Candidate Satisfaction

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2858.803	1	2858.803	166.589	.000b
	Residual	4856.509	283	17.161		
	Total	7715.312	284			
a. Dependent Variable: Candidate_Satisfaction						
b. Predictors: (Constant), ATS						

The ANOVA results indicate that the regression model is statistically significant, $F(1, 283) = 166.589$, $p < .001$. This suggests that ATS design explains a significant proportion of variance in candidate satisfaction relative to unexplained variance.

Table 3: Regression Coefficients for the Effect of ATS Design on Candidate Satisfaction

Coefficients ^a						
Model B		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		Std. Error	Beta			
1	(Constant)	3.976	2.076		1.915	.056
	ATS	.405	.031	.609	12.907	.000
a. Dependent Variable: Candidate Satisfaction						

The regression analysis examined the effect of the Applicant Tracking System (ATS) on candidate satisfaction. Results indicate that ATS significantly predicts candidate satisfaction ($B = 0.405$, $\beta = 0.609$, $t = 12.907$, $p < 0.001$), suggesting that for every one-unit increase in ATS effectiveness, candidate satisfaction increases by 0.405 units. The large standardised coefficient reflects a strong positive influence, highlighting that effective ATS implementation substantially enhances candidates' recruitment experience.

Table 4: Model Summary of the Effect of ATS on Hiring Fairness

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.838a	.703	.702	2.39
a. Predictors: (Constant), ATS				
b. Dependent Variable: Hiring_Fairness				

The Applicant Tracking System (ATS) strongly predicts hiring fairness, explaining 70.3% of the variance ($R = 0.838$, $R^2 = 0.703$, Adjusted $R^2 = 0.702$), highlighting its role in promoting transparent and equitable recruitment.

Table 5: ANOVA Results for the Regression of ATS on Hiring Fairness

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3849.813	1	3849.813	668.983	.000b
	Residual	1628.587	283	5.755		
	Total	5478.400	284			
a. Dependent Variable: Hiring_Fairness						
b. Predictors: (Constant), ATS						

The regression model significantly predicts hiring fairness ($F(1, 283) = 668.983, p < 0.001$), indicating that ATS is a strong and meaningful predictor of unbiased recruitment.

Table 6: Regression Coefficients of ATS Predicting Hiring Fairness

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.475	1.202		.395	.693
	ATS	.470	.018	.838	25.865	.000
a. Dependent Variable: Hiring Fairness						

The Applicant Tracking System (ATS) strongly and significantly predicts hiring fairness ($B = 0.470, \beta = 0.838, t = 25.865, p < 0.001$), indicating that improved ATS functionality enhances perceptions of equitable recruitment.

Conclusion

This study examined how Applicant Tracking System (ATS) design influences candidate satisfaction and perceptions of hiring fairness, framing ATS as a digital gatekeeper in modern recruitment. Results show that effective ATS design significantly enhances candidate satisfaction ($\beta = 0.609, p < 0.001$) and perceptions of hiring fairness ($\beta = 0.838, p < 0.001$), highlighting the importance of usability, transparency, feedback, and explainability. Poorly designed systems, by contrast, can undermine trust and deter high-quality applicants.

Aligning with organizational justice theory, the findings underscore that candidates rely on system cues to assess fairness, even in highly automated processes. The study contributes to digital HRM research by emphasizing applicant-centered perspectives and socio-technical implications of ATS design. Practically, organizations should prioritize user-oriented, transparent, and explainable systems to enhance trust, fairness, and engagement. Future research could explore cross-cultural differences, AI-driven screening impacts, and long-term effects on employer brand and talent retention, reinforcing that candidate experience must remain central in digital recruitment strategies.

Implications

HR practitioners should design user-friendly, transparent, and explainable ATS, combining automation with human interaction. Tailoring features to industry needs and using effect sizes to guide continuous improvements can enhance candidate satisfaction and fairness.

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