

# Personnel Manager Type (Human and AI) and Selection Process Satisfaction: Procedural Justice as a Moderator

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<https://doi.org/10.5392/IJoC.2022.18.3.049>

Manuscript Received 28 January 2022; Received 22 September 2022; Accepted 22 September 2022

**Abstract:** *The purpose of this study was to investigate the satisfaction of personnel selection process according to type of personnel manager and to examine whether the relationship between the type of personnel manager and the satisfaction with the personnel selection process was moderated by the applicant's perception of procedural justice. This study was conducted using a between-group design with 208 students from a four-year university in Korea. One group watched a video in which a human personnel manager selected employees and the other group watched a video in which an AI personnel manager selected employees. Participants were randomly assigned to a condition, responded to a demographic questionnaire, and answered measures of procedural justice and satisfaction with personnel selection after watching the video. As a result, the selection process satisfaction was significantly higher when the human personnel manager conducted the selection process than when the AI personnel manager conducted such process. In addition, when procedural justice was perceived as low, there was a significant difference in satisfaction between human and AI groups. However, when procedural justice was perceived as high, there was no significant difference in satisfaction between the two groups. Based on study results, the significance and limitations of this study and suggestions for future studies are discussed.*

**Keywords:** AI Interview; Personnel selection process; Satisfaction of the personnel selection process; Procedural justice

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## 1. Introduction

Recently, Artificial Intelligence(AI) technology has been widely introduced in the selection process. According to a survey conducted by a HR evaluation solution developer, about 500 companies and 20 public institutions in Korea are using AI technology for resume screening and interview process [1]. Personnel selection using AI is ahead of humans in terms of efficiency, accuracy, and fairness [2], and is expected to expand further in the field of personnel selection in the future [3]. On the other hand, it is difficult to know on what basis the information processing process is judged for AI decision-making, and there are cases where the results were biased toward a specific group during the hiring process, which raises controversy over the fairness of the appropriateness of use. Therefore, it is necessary to examine the perception of potential job applicants for AI personnel managers when personnel selection using AI is expanding.

Applicants' perceptions of the personnel selection process have a significant impact on the organization. For example, an applicant's negative reaction to the selection process may undermine their motivation to do well in the selection examination [4] and may lead to drop out of the selection process [5]. If these results continue to occur, not only will the validity and effectiveness of the selection process be significantly lowered, but it will also have a negative impact on the image of the organization in the future [6]. Also, as in previous studies that perceived justice in the selection process can affect the applicant's self-efficacy and self-esteem, the

applicant's perception of the selection process is a factor that affects the individual's psychological stability [6]. Even if the superiority of the AI selection tool has been shown, if it negatively affects the perception of applicants, it may be difficult to maintain the use of the selection tool. Therefore, it is necessary to confirm the sustainability of AI selection tools through research with applicant perceptions for selection process using AI.

People's perceptions about decision-making using AI are mixed. Looking at existing studies, there is no difference in perception depending on whether the personnel selection process is carried out by humans or AI [7, 8], or there are studies that show that potential job applicants trust AI more [9]. On the other hand, in another previous study, there are reports that AI interviews are considered less important in terms of procedures and behaviors than traditional interviews [10], and there is a concern that applicants may feel uncomfortable or invasion of privacy [11]. Considering that the current personnel selection process using AI is not completely accepted or rejected by our society, but has differences in individual perceptions, additional research is needed to compare the perceptions of applicants for AI and human personnel managers.

Therefore, this study will examine the perceptions of potential job applicants for human and AI personnel managers. In the selection process, we compared the satisfaction and perceived fairness of the personnel selection process according to the personnel manager type (human vs. AI), and expected that the perceived procedural justice of the selection process was a moderator in the relationship between selection process satisfaction and personnel selection manager type.

## 2. Literature Review

### 2.1 Personnel Selection Process Satisfaction

Satisfaction with the personnel selection process indicates the applicant's perception and judgment about whether participating in the selection process was a positive experience for the individual applicant as well as the applicant's overall satisfaction with the personnel selection process [12]. The personnel selection process is a process that meets the mutual needs of individuals and organizations rather than simply filling vacancies. This does not cover the applicant's point of view. Therefore, it is also necessary to consider that the personnel selection process is the process of collecting information about the organization and job to the individual applicant [6]. In particular, the interview is a mutual communication method, unlike other selection tools such as self-introduction letters, resumes, and job examinations, and is a process in which the HR manager evaluates applicants and provides appropriate information about the organization to applicants. It performs an interactive function to respond favorably to job offers [6]. On the other hand, an organization's understanding of applicant preferences can ultimately contribute to increasing the overall effectiveness of the selection system [13]. In order to select competent applicants, the organization must first understand the preferences of applicants for the personnel selection process and satisfy them. Therefore, this study focused on applicants' perceptions of the personnel selection process, and in particular, how potential job applicants feel about the recent AI-based interview process.

Selection satisfaction has nothing to do with organizational attractiveness or labor market opportunities, and is influenced by interviewer characteristics [6]. According to a previous study comparing the characteristics of AI interviews and human interviews, digital/AI interviews generally have low interactivity, that is, the degree to which interaction is possible during a conversation. The interviewer and interviewee cannot direct each other's non-verbal actions, and the interviewer only watches the recorded video in which the applicant answers the question, and the interaction is limited [11]. A high degree of transparency is provided if the applicant is unaware that there are no obstacles in the communication and that the communicator is using the medium to communicate [14], but most digital interviews require that the interviewee record their responses while continuing to see themselves on the screen. Transparency is low in that it only communicates with the media rather than with other people. Similarly, applicants may display high concerns about personal information disclosure, feeling that it may be possible for a third party to interfere with or monitor a conversation, i.e., being monitored in a digital interview. According to a meta-analysis of Blacksmith and his colleagues [15], interviewees were less likely to accept technology-based interview methods than face-to-face interviews [11]. Meanwhile, according to a study examining applicants' intention to apply for a job in the recruitment process using AI, applicants are likely to accept AI reviewing and filtering applications (weak AI) but are uncomfortable when AI conducting the job interviews (strong AI) [16, 17]. On the other hand, the human interviewer's warm attitude, comfortable interview and communication atmosphere where one can express oneself positively affect

the applicant's perception of the interview [18, 19]. The process makes applicant's sense of control to be increased.

Previous studies suggest that applicants' perceptions of the AI selection process, especially the perception of interviews conducted by AI personnel managers, may still be uncertain and negative compared to selection by human personnel managers. In addition, it suggests that applicants are more likely to experience the interactive process if they are human personnel managers rather than AI personnel managers, and may eventually be satisfied with the personnel selection process more positively.

**H1:** Applicants will be more satisfied with the human than the AI personnel manager in the selection process.

## 2.2 Selection Process Satisfaction and Personnel Selection Manager (Human vs AI)

According to a study by Shin and Jang [20] investigating the perception of AI interview introduced in the college admissions process, many of the participants felt negative about the AI interview. Whereas the participants who viewed the AI interview positively, they answered that AI analysis would make an accurate and fair evaluation. On the other hand, Macon and Smith [21] identified four factors that were closely correlated with satisfaction with the personnel selection: perceived procedural justice, face validity, perceived control, and perceived performance of the selection process [12]. Among them, perceived procedural justice means recognition of procedural fairness in the selection process. At present, perceived procedural justice is being discussed as a major topic in various fields such as culture, politics, and economy, and in the field of industrial and organizational psychology, the Selection Procedural Justice Scale (SPJS) is an important element to be dealt with in the future.

Procedural justice refers to the fairness of the distribution process, which emerged by supplementing the limitations of the existing fairness theory that the perception of procedural justice is determined according to the result of the distribution of compensation or responsibility [22]. When people judge that the process leading up to a decision is fair, the results derived from such a process are also fair, and they are satisfied with the results [23]. According to prior organizational studies, employees who believe that their employer has used a fair selection process have more positive work performance attitudes and higher performance than those who believe that their employer has used unfair practices [24]. Job seekers who view the selection process as unfair are less likely to accept the job offer [25, 26], but if the applicant perceives the interview to be fair, the acceptability of the job offer increases [6]. In addition, from the point of view of signal theory, job applicants do not have complete information about the organization, so they use organizational cues or signals to draw conclusions about the organization's intentions, behaviors, and characteristics [5]. If they get a signal from the interview scene that the organization uses a fair recruitment process, they will be more satisfied with the personnel selection process [20]. According to such previous studies, we expected that the perception of procedural justice will act as a meaningful factor in satisfaction with the hiring process.

In other words, it is expected that applicants' perception of satisfaction with AI personnel managers and human personnel managers will depend on the applicant's perception of how fair the personnel selection process is.

**H2:** Applicants' perception of procedural justice will moderate the relationship between personnel manager type (human vs. AI) and applicant's satisfaction.

## 3. Methods

### 3.1 Participants

This study was conducted with 4-year college students. Participants who voluntarily responded to the on-line flyer to recruit participants participated in the study. Prior to the experiment, the purpose and procedure of the study were verbally explained and an additional summary was delivered. The experimental questionnaire was made available only to participants who agreed to participate in the study. The experiment took about 30 minutes, and participants who responded to the experimental questionnaire were rewarded a gift certificate worth about 4,000 won. A total of 208 subjects (81 males, 127 females) were included in the final analysis of

this study, excluding 3 incomplete respondents. The average age was 24 years old, and the most of them have not decided their major, yet, other popular majors were Counseling Psychology, Social Welfare, and Business Administration. The degree of job readiness was measured on a Likert scale ranging from 1 (not at all) to 5 (very active), with an average score of 2.12, indicating that the majority of students not yet seriously preparing for employment. Of the participants who responded, 95.7% answered that they had no prior AI interview experience.

### 3.2 Experimental design

In this study, using a between-group design method, participants were randomly assigned to the AI personnel manager condition or the human personnel manager condition. Upon arrival at the laboratory, the participants received a brief introduction to the study and signed a consent form to participate. After that, they responded to the demographic questionnaire and watched a recorded video of selection process conducted by human or AI personnel manager. After watching the video, they responded to the second questionnaire to measure the applicant's perception of procedural justice and satisfaction with personnel selection.

### 3.3 Research tool

#### 3.3.1 Interview video

Prior to the start of the video, it was announced that the video was a simulation video about the personnel selection process of Company A. In addition, it was mentioned in the video that the selection process of Company A proceeds in the order of reviewing the applications, document screening, interview, and final decision. In the video, the virtual job applicant directly filled out and submitted the documents, and through the actual interview and active speech, the participants felt like a real applicant. In addition, the subtitles clearly state that the personnel in charge will make the final selection decision through this process. Both videos were produced in less than 3 minutes, and in the video of the AI and human personnel manager, the same messages were delivered that the person in charge has reviewed 8,000 applicants, and the turnover or resignation rate of the hired staff is less than 10%, and there were no cases of litigation and complaints received. The experience and hiring ability were controlled equally except for the personnel manager (human vs. AI).

#### 3.3.2 Selection Process Satisfaction

To measure the satisfaction of the personnel selection process, the Korean version of the satisfaction scale developed by Macan and his research team and translated by Min was used [12]. It consists of a total of two items, and on a Likert 5-point scale, 1 point for 'not at all' and 5 points for 'strongly agree'. An example item is "It was a positive experience to participate in such a personnel selection process."

#### 3.3.3 Procedural Justice

In order to measure procedural justice in the personnel selection process, seven items of procedural justice among the Organizational Justice Measure developed by Colquitt in 2001 were used [27]. Each item is on a Likert 5-point scale, ranging from 1 point for 'not at all' to 5 points for 'strongly agree', indicating that the higher the score, the higher the level of feeling that the personnel selection process is fair. Examples of questions are "Is the procedure applied consistently?" and "Do you think the procedure is based on accurate information?"

### 3.4 Data Analysis and Procedure

In this study, data were analyzed using SPSS. Descriptive statistical analysis was performed for each variable, and an independent sample t-test was performed to analyze whether there was a significant difference in satisfaction with the personnel selection process and procedural justice between human and AI personnel managers. In addition, hierarchical regression analysis was performed to examine whether procedural justice moderates the relationship between personnel manager type (human vs. AI) and selection process satisfaction.

## 4. Results

### 4.1. Personnel selection process satisfaction and procedural justice between human and AI personnel managers.

Table 1 presents the results of analyzing the difference in satisfaction with the personnel selection process and procedural justice between the group that watched the video recorded by the human personnel manager and the group that watched the video recorded by the AI personnel manager. As a result of the analysis, satisfaction with the personnel selection procedure for the procedure conducted by the human personnel manager was statistically significantly higher than that conducted by the AI personnel manager ( $t(100)=5.083$ ,  $P<.01$ ). There was no significant difference in procedural justice between the two groups ( $t(100)=1.059$ , ns). Therefore, hypothesis 1 was supported that applicants would show higher satisfaction in the human than in the AI personnel manager.

**Table 1.** T-test for personnel selection process satisfaction and procedural justice between human and AI personnel managers.

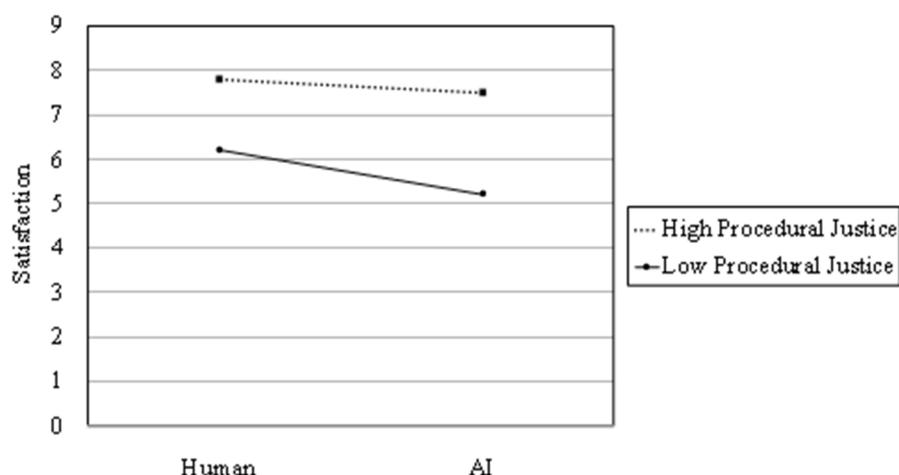
Variables	Recruiter	N	M	SD	t
Procedural Justice	Human	100	24.51	4.186	1.059
	AI	108	23.93	3.771	
Satisfaction	Human	100	7.63	1.376	5.083**
	AI	108	6.47	1.887	

### 4.2. Perceive procedural justice as a moderator

A hierarchical regression analysis was performed to confirm that the justice perceived by applicants for the personnel selection process moderates the relationship between the type of personnel manager (human vs. AI) and satisfaction with the personnel selection procedure. As a result, the applicant's perception of procedural justice statistically moderated the relationship between the type of personnel manager and satisfaction with the personnel selection process ( $\Delta R^2 = .025$ ,  $P<.01$ ). The results of the moderation effect are presented in Table 2 and Figure 1.

**Table 2.** Perceive procedural justice as a moderator in the relationship between personnel selection satisfaction and personnel manager type

Variable	B	$\beta$	SE	t	R <sup>2</sup>	$\Delta R^2$
Outcome: Satisfaction						
Step 1						
Recruiter Type	-1.030	-.294	.025	-5.216	.352	
Procedural Justice	.218	.494	.198	8.772		
Step 2						
Recruiter Type x Procedural Justice	.140	1.056	.049	2.864	.377	.025**



**Figure 1.** Perceive procedural justice as a moderator in the relationship between personnel selection satisfaction and personnel manager type

As shown in Figure 1, procedural justice was a moderator in the relationship between the type of personnel manager (human vs. AI) and satisfaction with the personnel selection process. People who perceived procedural fairness low had significantly lower satisfaction in the AI personnel manager condition than in the human personnel manager condition, but those who perceived procedural fairness high had no significant difference in satisfaction according to the personnel manager type. Also, the group that perceives high level of procedural justice had a higher level of satisfaction with the personnel selection process than the group that perceives low level of procedural justice. Therefore, hypothesis 2 that applicants' perception of procedural justice would moderate the relationship between personnel manager type and selection process satisfaction was supported.

## 5. Discussion

As a result of the study, the participants showed higher satisfaction with the human personnel manager than when the AI. In addition, it was found that the relationship between the type of personnel manager (human vs. AI) and satisfaction with the selection process depends on the individual's perception of procedural justice in the selection process.

The results of this study are interpreted as follows. First, the participants were more satisfied with the human personnel manager than the AI because people seemed to think that the entire personnel selection process, especially the interview process, was a job that required human skills rather than mechanical skills therefore, people tend to have a negative view of AI conducting the selection process. Second, the satisfaction of the personnel selection process differed according to the degree to which they felt that the interview they participated in was procedurally fair. In the case of perceiving the procedural justice of personnel selection was low, the satisfaction level was significantly lower when the personnel manager was an AI than when the human. This can be interpreted as that applicants' low perception of procedural justice has a negative effect on satisfaction with AI personnel managers. In general, the possible main reason could be that people who perceive AI interview positively is from the expectation that AI will make an accurate and fair evaluation without discrimination [20]. In other words, people who showed satisfaction with the personnel selection using AI in the sense that AI could meet high standards for fairness, however if it does not meet, then people prefer the judgment of humans like themselves.

In this study, we derived new findings on personnel selection satisfaction and procedural justice perception according to personnel manager type through an experimental research, but limitations could not be avoided. First, the concept of procedural justice used in this study does not provide a clear answer as to which part of the human and AI personnel selection process feels fair to applicants after all. For example, in the study of Shin and Jang [20], there are those who view AI interviewers as fair because AI does not have emotions, while those, who think that AI will not understand themselves as humans because they do not have emotions, believe that AI cannot make good judgments. The difference in satisfaction with the personnel selection process and perception of fairness may be due to differences in how applicants define fairness. Accordingly, it will be

interesting if a follow-up study is conducted to investigate the key factors that influence applicants' perception of fairness in the recruitment process and how those differences in individual's concept of fairness have an effect on the perception of personnel selection. Second, it may be difficult to apply the results of this study directly to the actual workplace. The most appropriate environment to measure satisfaction with the personnel selection process and procedural justice is to directly implement a simulated interview situation that is similar to the actual hiring and interview situation. Therefore, in the follow-up study, if actual interviewers are recruited and potential job applicants experience the two types of interviews (human vs. AI), then the results of the research can be strengthened. Third, it was reported that most of the college students participating in this study had relatively little experience in job preparation and had relatively little understanding of the hiring process and interview. In the follow-up study, it seems that the external validity of the research results can be further improved if the representative sample is secured by limiting the experimental participants to those who have experienced AI and human interviews.

Nevertheless, this study has several significances at the present time when AI is actively being introduced into the personnel selection process. First, this study conducted an experimental study targeting potential job applicants by using a video scenario that contained the entire process of human and AI personnel in charge of personnel selection. Watching video in a lab setting controlled the factors that interfered with the responses of the participants, and the content of the video, which focused on the interview process during the personnel selection process, made the interview process more realistic, even if it was not the actual interview situation. Second, this study suggests to organizations that the fairness of the selection process should be improved as a way to make applicants more satisfied with the AI personnel selection process. Applicants' perception of procedural justice was found to be higher in a more job related selection procedures [28-31], and higher favorability in procedures with strong scientific evidence [32]. Therefore, organizations should help AI personnel managers to learn from a sufficient sample of unbiased data, disclose the key principles that make up the algorithm to increase the transparency of the algorithm [33], and enhance interaction with candidates during the interview process to increase the satisfaction of the selection process. It is necessary to find ways to make the AI interview procedurally fair for applicants, such as by providing opportunities to ask questions about the hiring process, allowing applicants to voice, and provide interview feedback. Now that more and more companies are using AI in the selection process, if potential job applicants perceive the AI selection process to be procedurally fair, the satisfaction with AI-based selection will increase, and AI will be a valuable asset in the actual recruitment system.

**Conflicts of Interest:** The authors declare no conflict of interest.

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