



Full length article

Information as a double-edged sword: The role of computer experience and information on applicant reactions towards novel technologies for personnel selection

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ARTICLE INFO

Article history:

Received 13 June 2017

Received in revised form

22 November 2017

Accepted 23 November 2017

Available online 25 November 2017

Keywords:

Information

Computer experience

Personnel selection

Applicant reactions

Human-computer-interaction

ABSTRACT

Technologically advanced selection procedures are entering the market at exponential rates. The current study tested two previously held assumptions: (a) providing applicants with procedural information (i.e., making the procedure more transparent and justifying the use of this procedure) on novel technologies for personnel selection would positively impact applicant reactions, and (b) technologically advanced procedures might differentially affect applicants with different levels of computer experience. In a 2 (computer science students, other students) \times 2 (low information, high information) design, 120 participants watched a video showing a technologically advanced selection procedure (i.e., an interview with a virtual character responding and adapting to applicants' nonverbal behavior). Results showed that computer experience did not affect applicant reactions. Information had a positive indirect effect on overall organizational attractiveness via open treatment and information known. This positive indirect effect was counterbalanced by a direct negative effect of information on overall organizational attractiveness. This study suggests that computer experience does not affect applicant reactions to novel technologies for personnel selection, and that organizations should be cautious about providing applicants with information when using technologically advanced procedures as information can be a double-edged sword.

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1. Introduction

The use of technology has become more and more common as people are constantly being exposed to novel technologies and unfamiliar technologically-enhanced situations. It comes as no surprise that the area of personnel selection is no exception. With the objective of screening the best possible applicants, applicants might soon undergo employment interviews with virtual characters (Langer, König, Gebhard, & André, 2016). Compared to more classical technology-mediated selection interview procedures like videoconference interviews, these novel technologies would lack any interpersonal interaction in the interview. However, former research implies that applicant reactions (i.e., how do applicants react to a personnel selection situation) can be detrimentally

affected by novel technologies (e.g., Blacksmith, Willford, & Behrend, 2016). Consequentially, some applicants might self-select out of the application process if they experience distinct negative feelings towards technologically-advanced selection procedures (cf., Uggerslev, Fassina, & Kraichy, 2012). In particular, less computer-experienced applicants might be more prone to negative reactions towards novel technologies for personnel selection (e.g., Bauer et al., 2006).

According to previous research, negative applicant reactions can be mitigated by providing information (Lahuis, Perreault, & Ferguson, 2003; McCarthy et al., 2017; Truxillo, Bodner, Bertolino, Bauer, & Yonce, 2009). Information provided could include diverse topics, but applicants are generally given information focused on uncertainty reduction, guarantees of respectful treatment, increasing transparency, and pronouncing job validity of the selection procedure (McCarthy et al., 2017; Truxillo et al., 2009).

The first goal of this study was therefore to examine the relationship between computer experience and applicant reactions to novel technologies for personnel selection. The second goal was to

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test if procedural information (i.e., information about what is happening during the procedure and justifying the use of this procedure) improves applicant reactions in the context of novel technologies for personnel selection.

The section background and hypotheses development is structured as follows: We start by introducing the evolution of the use of technology in personnel selection and by providing an overview of research about the relation of technology and applicant reactions. Following, we describe the importance of the variables computer experience and information and their interplay in the context of novel technologies for personnel selection. We then develop hypotheses regarding applicant reaction variables (i.e. job relatedness, information known, open treatment, transparency, consistency, interpersonal treatment, opportunity to perform, fairness, creepiness and privacy concerns) that are likely affected by our independent variables and propose that these variables will mediate the relationship of computer experience and information on organizational attractiveness.

2. Background and hypotheses development

2.1. Technology in personnel selection

The most extensively studied area of technology in personnel selection are technologically-mediated forms of the employment interview. For instance, [Bauer, Truxillo, Paronto, Campion and Weekley \(2004\)](#) used interactive voice response technologies such that applicants called a hotline and answered automatically administered questions by pressing the keypad. Other studies have used telephone and videoconference interviews and investigated their effects on the interview and on applicants ([Chapman, Uggerslev, & Webster, 2003](#); [Sears, Zhang, Wiesner, Hackett, & Yuan, 2013](#)).

Recent research has shown that technology offers more sophisticated possibilities for personnel selection processes. For example, instead of pressing the keypad of a telephone, applicants in so-called digital interviews record themselves answering interview questions using their webcam and submit these videos to the hiring organization ([Brenner, Ortner, & Fay, 2016](#)). There is even more to come as enhancements in machine learning and sensor technologies (e.g., cameras) allow automated recognition, analysis, and interpretation of social behavior ([Schmid Mast, Gatica-Perez, Frauendorfer, Nguyen, & Choudhury, 2015](#)). For instance, a study by [Schmid Mast, Frauendorfer, Gatica-Perez, Choudhury, and Odohez \(2017\)](#) showed that novel technologies can be used to automatically recognize nonverbal behavior (e.g., voice pitch) and to predict job performance for a sales job. This suggests that a virtual interviewer combined with sensing technologies could be used to automatically interview and screen applicants.

It is important to note that some of the discussed technological possibilities are already being used in personnel selection procedures. The biggest companies offering automatic interview solutions are HireVue ([HireVue, 2017](#)) in the American market and Precire ([Precire, 2017](#)) in the German market. Although there is no company offering interviews with a virtual interviewer, the use of virtual interviewers is one small step in comparison to the aforementioned job interview solutions (cf., [Langer et al., 2016](#)).

These technologies are attractive for organizations because of their efficiency and flexibility (no need for interview scheduling). They could also potentially reduce the impact of bias, and provide more analytical possibilities during the automatic evaluation (e.g., dedicated focus on many aspects of nonverbal behavior and verbal behavior) (cf., [Chamorro-Premuzic, Winsborough, Sherman, & Hogan, 2016](#)). However, there is only scarce research showing how applicants react to such procedures.

2.2. Applicant reactions towards technology in personnel selection

Applicant reaction research has generated much research over the last decades ([Anderson, Salgado, & Hülsheger, 2010](#)). Two theories (by [Gilliland, 1993](#); [Schuler, 1993](#)) are particularly relevant to understand the aspects that impact applicant reactions to selection procedures. First, [Gilliland \(1993\)](#) presents three distributive justice rules (describing the fairness of selection outcomes, e.g., equality), and ten procedural justice rules (covering the fairness of selection processes, e.g., job relatedness, selection information, honesty) that relate to the overall fairness of selection results and processes. [Gilliland \(1993\)](#) states that these factors should impact important organizational outcomes like organizational attractiveness. Second, in his social validity approach, [Schuler \(1993\)](#) assumes that information about a selection procedure, transparency of the procedure, and applicants' perceived controllability of a procedure are especially impactful in forming positive applicant reactions.

These models are similar in that they point to the importance of fairness and justice in selection processes ([Stone, Lukaszewski, Stone-Romero, & Johnson, 2013](#)). If applicants react negatively to selection procedures, then fairness perceptions ([Bauer et al., 2001](#); [Gilliland, 1993](#)) and organizational outcomes (e.g., organizational attractiveness, job performance) are likely to suffer ([Highhouse, Lievens, & Sinar, 2003](#); [Truxillo & Bauer, 2011](#)). These theories also present key factors with which organizations can improve fairness of selection procedures (e.g., providing information, increasing transparency, showing job validity). Therefore, they might be especially helpful to overcome the extensively debated negative effects of technology on applicant reactions ([Blacksmith et al., 2016](#)).

Studies on perceptions of technology in personnel selection and job interviews emerged in the early 2000's when face-to-face interviews were compared to telephone interviews and videoconference interviews ([Bauer et al., 2004](#); [Chapman et al., 2003](#)), and this research was recently meta-analytically summarized ([Blacksmith et al., 2016](#)). According to this meta-analysis, applicants react more favorably toward face-to-face interviews rather than toward technology-mediated job interviews ([Blacksmith et al., 2016](#)).

It is difficult to determine if more advanced technology (compared to technology-mediated interviews) evokes similar detrimental effects on applicant reactions since research on applicant reactions has not yet caught up to the recent technological developments ([Blacksmith et al., 2016](#)). However, if applicants are unfamiliar with a technology, they might have trouble using it or may not understand how or why it is used for personnel selection ([Blacksmith et al., 2016](#); [Stone et al., 2013](#); [Wiechmann & Ryan, 2003](#)). Therefore it is conceivable that more advanced technology could also elicit more negative reactions towards the selection situation.

2.3. Computer experience and applicant reactions

In contrast, the use of technology in selection might be more strategic for jobs that require computer skill. Previous research proposed that technology in personnel selection can attract people with high computer experience ([Bauer et al., 2006](#); [Stone, Deadrick, Lukaszewski, & Johnson, 2015](#); [Wiechmann & Ryan, 2003](#)). In fact, people with distinct computer experience (e.g., computer science students) are less anxious when interacting with computers (cf., [Beckers & Schmidt, 2003](#); [Potosky & Bobko, 1998](#)). Although most people use technology and have computers at home or at work, being exposed to technology and computers does not automatically imply that people understand how these technologies work,

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