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Antecedents and Consequences of Procedural Fairness Perceptions in Personnel Selection:
A Three-Year Longitudinal Study

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Abstract

Drawing on Gilliland's (1993) selection fairness framework, we examined antecedents and behavioral effects of applicant procedural fairness perceptions before, during, and after a personnel selection procedure using a six-wave longitudinal research design. Results showed that both perceived post-test fairness and pre-feedback fairness perceptions are related to job offer acceptance and job performance after 18 months, but not to job performance after 36 months. Pre-test and post-test procedural fairness perceptions were mainly related to formal characteristics and interpersonal treatment, whereas pre-feedback fairness perceptions were related to formal characteristics and explanations. The impact of fairness attributes of formal characteristics and interpersonal treatment diminished over time, while attributes of explanation were only associated with pre-feedback fairness. Results are discussed in terms of theoretical implications for fairness research and for hiring organizations.

Keywords: Applicant reactions, procedural justice, personnel selection

Antecedents and Consequences of Procedural Fairness Perceptions in Personnel Selection:
A Three-Year Longitudinal Study

One of the major functions of human resources management is to ensure that the organization has access to the right types of employees at the right time. In a recent study of over 4,000 managers, the process of finding and hiring the best qualified candidates was regarded as the most impactful HR function for revenue growth and profit margins (Boston Consulting Group, 2012). Thus, recruitment and selection of employees has been an important focus of study. While a stream of research examines the best methods to select individuals for desired competencies or validity issues (e.g., Sackett & Lievens, 2008), a newer, but rich body of literature investigates how perceptions of fair treatment shape applicant reactions to the selection systems, and to the organization in general (Gilliland & Steiner, 2012).

[Gilliland \(1993\)](#) developed a comprehensive model and theorized that ten procedural justice rules, including job relatedness, two-way communication, and honesty, would have implications for reactions such as intentions to accept the job as well as for post-hire behaviors such as job performance. [Gilliland's \(1993\)](#) model, and the subsequent development of the Selection Procedural Justice Scale (SPJS, Bauer et al., 2001) to operationalize these procedural justice rules, motivated a rich body of literature exploring the implications of applicant reactions for employees and organizations. Studies indicate that many of the relationships proposed in this model, particularly as they relate to pre-hire intentions, such as intentions to accept the job and organizational attraction, and self-related outcomes including self-efficacy and self-esteem are supported (e.g., [Bauer et al., 2006](#); [Chapman, Uggerslev, Carroll, Piasentin, & Jones, 2005](#); [Hausknecht, Day, & Thomas, 2004](#)).

Yet, as Truxillo, Steiner, and Gilliland (2004) observed, while applicant reactions have been related to “soft” or attitudinal and perceptual outcomes, research relating applicant reactions to “hard” or objective outcomes are either missing or equivocal. For example, to our knowledge, only two studies examined the implications of applicant reactions for subsequent job performance. In Gilliland’s (1994) experimental study, undergraduate students applying for a temporary job received a selection procedure consistent or inconsistent to procedural justice rules (i.e., job relatedness and explanation). Perceptions of procedural justice were unrelated to post-hire performance. McCarthy, Van Iddekinge, Lievens, Kung, Sinar, and [Campion \(2013\)](#) showed that applicant reactions predicted student GPA one year later, and that applicant reactions predicted supervisory ratings concurrently during the selection process. Consequently, there is only relatively weak evidence that applicant fairness reactions are related to post-entry performance.

Research on whether applicant reactions relate to acceptance of the job offer has also been limited as evidenced by the key relationships that could not be examined in past meta-analyses (e.g., Chapman et al., 2005), and the null results of existing studies (Truxillo & Bauer, 2011). In other words, we have evidence that applicant reactions, in the form of procedural justice, shape intentions and perceptions towards the organization, but we do not yet know whether applicant reactions have any effects on the two behaviors organizations care about: Accepting the job offer, and post-selection job performance. These are key omissions in the literature because scholars postulate that the signals organizations send during the hiring process have long-lasting implications, and such arguments are often evoked when researchers make a case for the continued attention to applicant reactions (e.g., Walker, Bauer, Cole, Bernerth, Feild,

& Short, 2013). Thus, going beyond self-reported outcomes has been identified as a key direction in applicant reactions research (Sackett & Lievens, 2008).

In addition to the absence of findings showing a relationship between applicant reactions and objective outcomes, an especially salient gap in the extant literature is an examination of applicant reactions at different points in time as they go through the selection process. Applicants may revise and change their opinions at various times during the selection process, and their attitudes and reactions afterwards may evolve as new pieces of information become available. In fact, [Truxillo et al. \(2004\)](#) noted that, *when* applicant reactions are assessed may be the key to understanding the absence of findings in some studies examining post-hire outcomes such as employee job turnover. Therefore, studies relating applicant reactions to post-hire outcomes would benefit from measuring applicant perceptions at several points pre-selection in order to ensure that the full range of applicant reactions to the system are captured, and to examine whether applicant reactions measured at different stages of employee selection procedures exert an influence over eventual behaviors. For example, if applicant reactions measured at particular stages of the process have no relationship with the eventual behavior, such knowledge would be useful both to future researchers on the timing of applicant reaction measurement, and to practitioners in pointing out the time at which applicant reactions have a significant impact on eventual behaviors.

In this study, we examine applicant reactions (in the form of procedural justice perceptions toward the selection system) as applicants take part in a selection process. We focus on procedural justice perceptions employees have at three points during the selection process: procedural justice expectations employees have prior to taking part in the selection process (pre-

test), procedural justice perceptions right after taking part in the test (post-test), and three weeks after taking part in the selection system but prior to receiving feedback (pre-feedback). At each time period, we hypothesize that procedural justice perceptions would be a function of formal process characteristics, as postulated by [Gilliland \(1993\)](#). We examined two natural outcomes of the hiring process: whether the job applicants actually accepted the job offer, and the level of performance of the applicants at two time points post-hire. Given our design, we did not examine the distributive justice of the outcome of receiving a job offer (the only stage in which we could have gathered such information), as we were interested in accepting or rejecting the job offer based on procedural justice.

Our model aims to make three contributions to the literature. First, we address a critically important gap in the applicant reactions literature by relating applicant reactions to two objective outcomes that are often discussed, but not empirically investigated. These outcomes are essential to study, to resolve the debate around whether applicant reactions have long lasting implications for organizations that go beyond intentions and perceptions applicants develop in the moments following taking part in a selection process. Second, we examine applicant procedural justice reactions at different points as they go through the selection process, and such a longitudinal approach can more readily answer the question of whether applicant reactions measured at different stages of the process continue to have implications for eventual behavior and whether the strength of the relationship differs as applicants move through the selection process. In addition to examining applicant reactions at two times following taking part in the selection process, we extend Bell, Wiechmann, and Ryan's (2006) work showing the relation between justice expectations and applicant intentions by examining how expectations of fair treatment

may relate to post-hire outcomes. Finally, Gilliland (1993) recognized that different procedural characteristics might be more salient at different times during the selection process. Similarly, [Chan and Schmitt \(2004\)](#) noted that applicants might weigh different aspects of the selection system differently in forming their reactions to the system. Yet, empirical studies examining the degree to which the predictors of applicant reactions at different stages of the selection system differ or remain the same are lacking. By examining the relationship between procedural justice rules and procedural justice perceptions at three time points, our study has the potential to address this gap.

Theoretical Background

Reactions of job applicants toward the selection systems are thought to have implications for intentions towards the organization, perceptions of the organization, as well as potential behavioral outcomes such as withdrawal and job acceptance ([Gilliland, 1993](#); Ryan & Ployhart, 2000). In understanding how applicant reactions relate to attitudes and behaviors, Gilliland's work based on organizational justice theory has been instrumental. [Gilliland \(1993\)](#) proposed a justice model of applicant reactions, including perceptions and relevant behavior, that has been widely accepted in fairness research (e.g., [Holtz, Ployhart, & Dominguez, 2005](#)). According to this model, ten procedural justice rules determine how applicants perceive fairness of a selection procedure, which, in turn, triggers their cognitive, behavioral, and affective reactions. [Drawing on](#) Greenberg's (1990) organizational justice theory, procedural justice rules are divided into three dimensions that are represented as secondary factors, namely, formal characteristics, explanation, and interpersonal treatment. *Formal characteristics* capture whether a prescribed job-related and applicant-oriented selection process exists. *Explanation* comprises supplying the

applicant information on how the selection process is carried out and on how hiring decisions are made. Finally, *interpersonal treatment* covers the applicant's need for respectful treatment by the organization's representatives. Research to date has shown that the procedural justice rules are associated with outcomes such as organizational attractiveness and intentions to recommend the organization to other job applicants ([Hausknecht et al., 2004](#); [Truxillo, Bodner, Bertolino, Bauer, & Yonce, 2009](#)). Following this work, we regard the procedural justice rules as antecedents of procedural justice perceptions at every step, as displayed in our theoretical model in Figure 1.

Fairness Expectations and Fairness Perceptions

Applicants are likely to react to a selection process long before they actually participate in it. The applicant attribution-reaction theory (AART; [Ployhart & Harold, 2004](#)) posits that perceptions such as fairness and test attitudes are consequences of the individual's attributional processing. Applicant attributions and the resulting perceptions about a selection system will be functions of the match between their observations and expectations. Thus, [Ployhart and Harold \(2004\)](#) identified a key role for expectations in the selection system. Applicant procedural justice expectations (or initial perceptions) are "probabilistic beliefs about the characteristics of the forthcoming selection procedure" ([Schreurs, Deros, Proost, Notelaers, & De Witte, 2008](#), p. 170). Expectations about a situation will influence how individuals perceive a situation by guiding the type of information individuals pay attention to and the attributions they make.

This is supported by various scholars who have discussed the importance of fairness expectations in affecting subsequent cognitions and behaviors. Ryan and Ployhart (2000), for example, supported this view but noted that very few fairness studies have examined applicants' initial perceptions gathered before the selection process. In a similar vein, Celani, Deutsch-

Salamon, and Singh (2008) theorized that expectations or pre-conceived notions play an important role in the formation of fairness judgments during the selection process. To date, the only empirical study of justice expectations in a selection context showed that among applicants for firefighter positions, pre-test justice expectations were related to post-test intentions to accept the job and to post-test justice perceptions (Bell et al., 2006). Thus, to date, the research examining these has been slow to test these theoretical assumptions across a long period of time.

However, the findings of expectation research across different occupational and non-occupational areas across shorter periods of time also suggest that individuals demonstrate a bias toward the confirmation of their expectations, and information tends to be interpreted in line with (i.e., supporting or confirming) expectations (Higgins & Bargh, 1987). Additionally, Lind, Kray, and Thompson (1998) demonstrated that fairness schemas are relatively stable across the selection procedure and are rarely revisited, until information is radically different from an individual's expectations (e.g., unexpected fair/unfair treatment). Related research in the area of personnel selection demonstrates that pretest fairness expectations are positively related to perceptions of the subsequent selection procedure and continued to influence their post-test attraction to the hiring organization (e.g., Deros, Born, & De Witte, 2004; Schreurs et al., 2008). On the basis of expectancy theory it appears that the applicant's fairness expectancies are likely to be largely congruent with the person's fairness perceptions. Thus, consistent with Bell, Ryan, and Wiechmann's theoretical model (2004), we hypothesize that pre-test expectations will relate to subsequent justice perceptions:

Hypothesis 1: Pre-test procedural fairness expectations are positively related to post-test procedural fairness perceptions and to pre-feedback procedural fairness perceptions.

Fairness Perceptions and Applicant Behaviors

According to Gilliland's (1993) organizational justice model, applicant justice perceptions are positively related to applicants' pre-hire behaviors, including job pursuit behavior and actual job choice, which is the actual acceptance or rejection of a job offer involving a real job. However, published research linking applicant reactions to actual rejection of a job offer are nonexistent, and studies linking applicant reactions to dropping out of the selection process have revealed mixed results. Meta-analytic findings indicate that perceived fairness of the selection system is related to *intentions* to accept the job if offered ([Hausknecht et al., 2004](#)). However, studies examining actual acceptance of job offers remain few and inconclusive, leading to the conclusion of Truxillo and Bauer (2011) that "the effects of applicant reactions on behavioral outcomes remain unclear because few studies have been conducted on these outcomes" (p. 386).

Interestingly, the studies examining applicant withdrawal from the selection process were conducted on police applicants ([Ryan, Sacco, McFarland, & Kriska, 2000](#); [Schmit & Ryan, 1997](#); [Truxillo, Bauer, Campion, & Paronto, 2002](#)). Truxillo and Bauer (2011) observed that the nature of police work may have been responsible for the lack of significant findings, because the applicants for a police job may be highly attracted to this job and may ignore how they are treated while deciding whether to take the job. We contend that how applicants are treated as part of the selection process is likely to relate to acceptance of the job offer. While applicants may turn down a job due to factors such as better pay or job conditions, the impressions created during the selection process about the company and people within it may play a role as well. How applicants are treated as part of the selection process will signal to applicants the type of

treatment they may expect from the organization upon being hired and therefore signaling theory provides a plausible explanation for why applicant reactions should relate to the likelihood of accepting a job offer ([Hausknecht et al., 2004](#)). Despite rejecting a job offer being a rare event, we hypothesize that acceptance of a job offer will be an outcome of applicant perceptions of justice in the selection system, with fairness perceptions toward the end of the selection process being the salient influences. This is consistent with Uggerslev, Fassina, and Kraichy's (2012) meta-analysis, which shows that procedural justice perceptions became more important during the later stages of recruitment.

Hypothesis 2: Post-test and pre-feedback procedural fairness perceptions are positively related to the probability of acceptance of a job offer.

[Gilliland's \(1993\)](#) model of applicant reactions also suggests that fairness perceptions that are formed during the selection process should contribute to post-hire reactions such as work performance, reapplication behavior, and turnover. Likewise, fairness heuristic theory ([Lind, 2001](#)) suggests that past fairness perceptions contribute to the new employee's long-term investment in the organization and subsequent turnover. Vandenberg and Seo's (1992) model of organizational entry explains these relationships by proposing that positive attitudes, such as intrinsic satisfaction with the decision of organizational entry, are related to positive attitudes, behaviors of job performance, and employment stability. Empirical evidence for the role of fairness perceptions in short- and long-lasting behavior and outcomes after organizational entry, however, is sparse. In a study relating applicant reactions to actual performance, [Gilliland \(1994\)](#) conducted an experiment where students took part in a selection process to be hired for a brief one-time journal-coding task. This study showed that fairness perceptions and job performance

were not related. [McCarthy et al. \(2013\)](#) examined this question as well, and they did find that candidate reactions were related to test scores and test scores were related to job performance.

Thus, consistent with these suggestive findings, we contend that job applicants with more positive perceptions about the selection procedures will start the employment relationship with the right foot forward. Fair selection procedures should serve as important signals to applicants regarding how they can expect to be treated after they are hired ([Walker et al., 2013](#)). Signaling theory indicates that this is the case, because signals serve to provide some information in the face of uncertainty during the job search process. In support of that idea during the early stages of recruitment, [Walker et al. \(2013\)](#) found that the perceived signals of justice led to the signaling outcome of relational certainty and higher organizational attraction. Employees may be in a better starting position upon entry if they received positive signals prior to entry. This is hypothesized to be true, because having positive expectations coming into an organization should help a new employee engage more fully in their new environment, which helps employees do better when they start their new jobs ([Liden, Wayne, & Stilwell, 1993](#)). Thus, we extend the theoretical idea of the signaling value of fair treatment perceptions to the later stages of the selection process in the current study as well.

Hypothesis 3: Post-test procedural fairness perceptions and pre-feedback procedural fairness perceptions are positively related to mid-term and long-term job performance.

Determinants of Procedural Fairness Perceptions at Different Stages of Selection

Another important factor in the applicant fairness process is, what procedural fairness information applicants use to make inferences about procedural fairness perceptions. Research has suggested that specific methods emerge as most favorable, including selection interviews and

work samples, which candidates believe to be face-valid, or appear to measure what they were designed to measure, as well as enable job applicants to perform (e.g., [Hausknecht et al., 2004](#)). Regarding characteristics of the selection procedures, uses of job-related and face-valid procedures were the major determinants of fairness perceptions (e.g., [Bauer, Maertz, Dolen, & Campion, 1998](#); [Hausknecht et al., 2004](#)). The few studies that have manipulated procedures suggest that violations of administrative consistency and voice in the process negatively affected fairness perceptions and perceived face validity ([Rolland & Steiner, 2007](#); [Truxillo et al., 2002](#)). Additionally, meta-analytic evidence suggests a weak positive relationship of explanations to fairness perceptions ([Truxillo et al., 2009](#)). With regards to computer-based testing, studies find that consistency, treatment of the applicants, and opportunity to perform were the strongest predictors of fairness perceptions ([Dineen, Noe, & Wang, 2004](#); [Konradt, Warszta, & Ellwart, 2013](#)).

While procedural justice rules such as formal characteristics, explanations, and interpersonal treatment have been identified as predictors of justice perceptions ([Truxillo et al., 2002](#)), it is also plausible that different procedural justice rules may become more salient at different periods during the selection process. [Gilliland \(1993\)](#) proposed that early on, information about the system may be more relevant, while in the post-test stage, candidates would value and weigh selection information more, as they would be waiting to hear the results. Similarly, [Chan and Schmitt \(2004\)](#) argued that applicants might differentiate among different procedural justice rules more or less as time passes and as the candidates move from earlier to later stages. Yet, studies have only begun to examine the possibility of different procedural justice rules having stronger or weaker influence over justice perceptions at different stages.

In the only study that examined the relationship between procedural justice rules and justice perceptions over time, [Bauer et al. \(1998\)](#) showed that job relatedness, the chance to perform, and information about the test predicted procedural justice perceptions post-test, whereas job relatedness and consistency predicted justice perceptions pre-feedback. Because previous research does not offer a straightforward rationale to the temporal development of how applicants react to different attributes of the selection situation, and given the lack of empirical research, we do not formulate any specific predictions. Nevertheless, it is important to explore this issue, as the changes over time in the salience of different procedural justice rules will be informative in indicating how stable the effects of different justice rules are, and which ones are more salient at different stages of the selection process. While we do not have enough theoretical or empirical guidance to determine a priori which procedural justice factors will be most salient for determining long-term outcomes, we do know from past research that job-relatedness, face validity, predictive validity, and opportunity to perform are especially important ([Bauer et al., 1998](#); [Hausknecht et al., 2004](#); [Schleicher, Venkataramani, Morgeson, & Campion, 2006](#)). Drawing on the entire set of Gilliland's (1993) procedural justice rules, we pose the following research questions:

Research Question 1: Which procedural justice rules are associated with procedural fairness expectations and fairness perceptions throughout the selection process?

Research Question 2: Are the attributes that are associated with procedural fairness expectations and procedural fairness perceptions subject to change during the selection process?

Method

Participants and Procedure

We carried out a three-year longitudinal study with six data collection points in a sample of 182 applicants to an apprenticeship program of a large German industrial firm. This high-level training program, which is accredited and follows nationwide standards, entails a 3-year basic vocational training in which an apprentice spends three to four days a week at the work site, where he or she is trained on the job, and one or two days a week visiting a state-financed vocational training school. In Germany, these programs are the most frequent way for young adults to enter the labor market. Sixty percent of all high school graduates go through these programs, and 1.5 million people are trained annually. Apprenticeship graduates who successfully complete an intermediate (after 18 months) and a final assessment (after 36 months) receive a professional degree (i.e., nationally recognized skill certificate) typically leading to high employment security, often becoming regular employees within the same organization.

Applicants were being considered for jobs in business and management (e.g., industrial business management assistant, and sales manager), and 39% were male. The age of the applicants ranged between 15 and 28 years with a mean of 18 years ($SD = 1.3$). The majority of participants had post-secondary school levels of education (96%). The study used a multiple-hurdle situation (also known as multi-stage sampling procedure), where applicants have to pass a specific test (i.e. hurdle) to progress or else drop out (Mendoza, Bard, Mumford, & Ang, 2004). Our study consisted of six hurdles, based on four important temporal phases in the selection process (i.e., pre-test, post-test, pre-feedback, and post-feedback) and two occupational follow-up time stages (i.e., midterm and final exam).

(1) *Time 1, pre-test.* After an initial screening of application documents (hurdle 1), a total of 182 candidates who were invited to take a selection test (hurdle 2) received a questionnaire by mail. Participants received a questionnaire packet, which included a cover letter explaining the purpose of the study, a questionnaire, and a postage-paid envelope. They were asked to voluntarily complete a questionnaire including items related to procedural fairness expectations. Demographic variables were extracted from application documents. One hundred and twenty-eight participants returned their questionnaires (a response rate of 70%).

(2) *Time 2, post-test.* The selection procedure consisted of a series of personality and cognitive tests, a semi-structured interview and a group discussion exercise, which took one full day. As part of the test-taking day (hurdle 2), which took place in the company, but immediately following the selection procedure, the participants filled in the same questionnaire delivered to them personally, following instructions analogous to those at T1. At this point, applicants had not yet received any feedback about their test performance. A total of 182 candidates (response rate = 100%) completed the questionnaire.

(3) *Time 3, pre-feedback.* Three weeks after test-taking, participants were once more asked to fill in a questionnaire - mailed to their home address - following instructions analogous to those at T1 and T2. Again, no applicant had received any feedback or had accepted a position. Ninety-four applicants returned the questionnaires (response rate = 52%).

(4) *Time 4, post-feedback, pre-hire.* At T4, we collected for the 47 applicants (26%) who received a job offer, whether they accepted ($N = 40$) or rejected ($N = 7$) the job offer.

(5) *Time 5, post-hire.* After midterm assessment (18 months after organizational entry) performance scores were obtained from company records. Of the 40 apprentices who were

employed, scores from 29 apprentices were available. Out of the 11 for whom no scores were available, 5 were hired on short-term employment contracts that had expired, and six entered a vocational training program for highly qualified staff (i.e., study at universities combined with practical experience at the firm) before they completed their apprenticeship program.

(6) *Time 6, follow-up 2.* After final assessment (on average 36 months after organizational entry), final performance scores of 29 individuals were obtained from the company records.

Measures

Instructions and items were provided in German. We followed the standard back-translation procedure (Brislin, 1980) to translate all the items into German, which involved translation into the target language by bilingual individuals and then back-translation to the source language by an independent translator to determine the equivalence of the translated version with the original. Unless stated otherwise, all self-reported items were rated on a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*).

Procedural fairness expectations. To measure applicant pretest expectations, we rephrased all items of the SPJS (Bauer et al., 2001) into the future tense and added the term ‘I expect...’ A sample item was, “Overall, I expect that the selection process will be fair.” ($\alpha = .84$).

Procedural fairness perceptions. The three-item procedural justice scale developed by Bauer et al. (2001) was used to measure perceived fairness. A sample item is, “I think that the selection procedure itself was fair.” ($\alpha = .91$ post-test and $.88$ pre-feedback).

Procedural justice rules. Procedural justice rules were measured with the German

adaptation (Konradt et al., 2013) of the 40-item SPJS (Bauer et al., 2001), which consists of 10 subscales (each including 3 to 5 items) nested in 3 secondary factors, referring to formal characteristics (represented by rules of job relatedness, opportunity to perform, reconsideration opportunity, consistency of administration), explanation (feedback, information known, and openness), and interpersonal treatment (treatment of the applicants, communication with the applicants, and propriety of questions).

The measurement model of the SPJS can be defined as either reflective or formative. The reflective model is used for a construct that is viewed as the underlying factor for the observable variables (MacKenzie, Podsakoff, & Jarvis, 2005; for an ongoing debate of the fallacies underlying formative measurement, see Bagozzi, 2011, and Edwards, 2011). In contrast, the formative model is used for a construct that is modeled as explanatory combinations of its indicators. Konradt et al. (2013) provided evidence that the SPJS is a reflective first-order, formative second-order model consisting of three second-order justice factors of formal characteristics, explanation, and interpersonal treatment modeled by formative indicators representing the procedural justice rules. Thus, the attribute categories of formal characteristics, explanation, and interpersonal treatment were conceptualized to be formative, as being explained by its indicators (rules). By modeling the three secondary factors of justice as formative constructs, which are composed of reflective first-order justice rules, this study allows the identification of specific influence(s) of each justice rule. For reasons of parsimony, rules were modeled by averaging the items of each rule (α ranged between .72 and .90).

Acceptance of job offer. Job acceptance was measured at Time 4 and coded as a dummy variable (1 = *no*, 2 = *yes*).

Job performance. Job performance scores were obtained from the company records at Times 5 and 6. For apprentices, performance assessment had both theoretical and practical components, and was conducted in the form of written and oral evaluations. Performance in these two assessments determined whether the apprentice received the interim grade certificate and the final grade certificate (certificate of proficiency) by the German Chamber of Commerce and Industry. Theoretical parts included written exercises and oral questions to test apprentice's job knowledge (e.g., fundamentals of cost accounting). Practical parts involved performing specific tasks that included completing price calculations and making decisions to adapt different accounting techniques to changing conditions. Supervisors of apprentices were involved in both preparing the questions and grading of the apprentices. Percentage points achieved in these two assessments constituted performance scores. (Range = 45 - 95, $M = 77.8$, $SD = 11.9$ for T5, post-hire, 67 - 98, $M = 88.2$, $SD = 7.2$ for T6, follow-up). Scores on these two performance assessments were not only important to apprentices due to their role in determining their certification, but were also important to the organization as indicators of high potential and when deciding on job offers.

Controls. We also acknowledged the potential role of other factors related to applicants' reactions. Age (in years) and gender (0 = *male*, 1 = *female*) were explored as potential control variables (Hausknecht et al., 2004; Viswesvaran & Ones, 2004). However, as age and gender had no effects on the outcome variables and also did not change the path coefficients, we omitted them from further analyses to preserve statistical power for model testing.

Analyses

We used SPSS 20.0 and SmartPLS 2.0 (Ringle, Wende, & Will, 2005) for data analysis. Partial least squares (PLS; [Wold, 1985](#)) structural equation modeling (SEM) was chosen, which is a robust non-parametric method that generates estimates of standardized regression coefficients for model paths. Although the use of PLS is not without disadvantages (see [Antonakis, Bendahan, Jacquart, & Lalive, 2010](#); [McIntosh, Edwards, & Antonakis, 2014](#), for an ongoing debate), it has less restrictive assumptions about the data than covariance-based-SEM methods (e.g., data distributions, independence, variable metrics; [Henseler, Ringle, & Sinkovics, 2009](#); [Sosik, Kahai, & Piovosio, 2009](#)) and thus often result in more robust estimations of the structural model (see [Hair, Ringle, & Sarstedt, 2011](#) for an overview). In addition, PLS allows for estimating complex models with relatively small sample sizes ([Chin & Newsted, 1999](#)), which is typically the case in a longitudinal multiple hurdles designs in which the sample size decreases automatically.

Additionally, PLS has been shown to be a superior technique when it comes to analyzing second-order factors ([Chin, Marcolin, & Newsted, 2003](#); [Hulland, 1999](#)). As recommended by [Hair et al. \(2011\)](#), we tested the significance of the indicator loadings using bootstrapping procedure with 2,000 resamples.

Sample size. Due to the longitudinal multi-stage sampling procedure, our sample size decreased from 182 (T1, pre-test, and T2, post-test) to 29 (T5, post-hire, and T6, follow-up). If the sample size is as low as at T5 and T6, PLS is recommended ([Hair et al., 2011](#)). For PLS, there are several recommendations of minimal sample size, which vary from an overall recommendation of 20 cases to using the portion of the model with the largest number of

predictors. While existing research suggests that PLS can be used when there are at least five observations per parameter ([Falk & Miller, 1992](#); [Shamir, Zakay, Brainin, & Popper, 2000](#)), more conservative recommendations based on Monte Carlo simulations have suggested a sample size either ten times the variable with the largest number of indicators of formative constructs or ten times the number of structural paths leading to a latent variable ([Chin & Newsted, 1999](#); [Hair et al., 2011](#)). In our model, the greatest number was 4 (i.e., the latent variables of rules that form formal characteristics), thereby requiring a sample size of 40. For T1 (pre-test) to T4 (post-feedback) our sample size reaches the minimal sample size required. Thus, it is deemed adequate for producing reasonable and stable parameter estimates. For T5 (post-hire) and T6 (follow-up), our sample size satisfies at least the weaker recommendations ($N > 20$; five observations per parameter) and thus is also adequate. Regarding the sample size on T4 (post-feedback), we had 40 participants who accepted the job offer and only 7 participants who rejected. For analyzing differences between two groups of participants a sample size of 7 per group is reasonable, if the power is sufficient (i.e., .80; [Wilson Van Voorhis & Morgan, 2007](#)).

Thus, we used post-hoc sensitivity analyses for a more accurate assessment. Power analyses revealed that our sample size ($N = 182$) has reasonable power for explaining small population effects ($f^2 = .15$, $\alpha = .05$, Power = .93) and that even small effect sizes ($f^2 = .073$, $\alpha = .05$; $f^2 = .10$, $\alpha = .01$; $f^2 = .14$, $\alpha = .001$) have a power above the recommended size of .80 ([Mazen, Hemmasi, & Lewis, 1985](#)).

Measurement model. The assessment of PLS model structure follows a two-step process ([Chin, 1998](#)). PLS models consist of a measurement model (outer model, step 1) and the path model (inner model, step 2), which is tested in the Results section. Regarding the measurement

model, traditional parametric-based techniques assessing goodness-of-fit (e.g., CFI, GFI, SRMR and RMSEA) were not appropriate as they failed to identify misspecifications ([Diamantopoulos, Riefler, & Roth, 2008](#)), so other criteria for validity and reliability should be used. Following the validation guidelines of Chin (1998) and [Diamantopoulos et al \(2008\)](#) summarized by [Hair et al. \(2011\)](#), we tested the measurement model for internal consistency reliability, indicator reliability, and convergent and discriminant validity separately for reflective and formative indicators. For reflective indicators all constructs exceeded the recommended threshold of .70 for Cronbach's α (Nunnally & Bernstein, 1994) and for composite reliabilities. Nearly all indicator loadings (except for procedural fairness perception item 2 on T2, post-test) were above the recommended threshold of .7 ([Chin, 1998](#)) and showed significant t-values (see Appendix A). For all constructs the average variances extracted (AVE, convergent validity) was above the threshold of .50 ([Fornell & Larcker, 1981](#)).

We used two criteria to test for discriminant validity. The square root of the variance shared between a construct and its measures was greater than the correlations between the construct and any other construct in the model. In addition, the loading of each indicator was higher for its particular construct than for any of the others. Regarding the formative indicators, indicator's weight and loading need to be evaluated. All items show weights higher than .10, with significance at the .05 level, which demonstrates a sufficient level of reliability ([Lohmöller, 1989](#)). Each of the constructs loaded highest with its assigned items (see Appendix A for additional details). These crossloadings were obtained by correlating the component scores of each latent variable with all items ([Chin, 1998](#)). The loading of each indicator is higher for its respective construct than for any of the others. To assess the influence of multicollinearity, we

used the variance inflation factor (VIF). Each indicator's VIF value was lower than 5, indicating no threat of multicollinearity ([Hair et al., 2011](#)). To summarize, all fit indices suggested good fit of the measurement model and provide support for our constructs and measures.

Comparison of respondents and non-respondents. To determine whether the attrition in sample size from T1 (pre-test) to T2 (post-test) and from T2 to T3 (pre-feedback) was due to any systematic effect, a series of analyses were run following [Goodman and Blum's \(1996\)](#) recommendations. The participants who responded to the questionnaire with regard to procedural fairness at T1 (pre-test) and T3 (pre-feedback) were compared with those who did not, using information obtained from the full sample at T2 (post-test). These two groups were contrasted with regard to four variables, including procedural fairness perceptions, age, gender, and educational level. Logistic regression analyses revealed no significant differences between respondents and non-respondents. Therefore, attrition is not likely to bias the estimates made from these longitudinal data.

Results

Means, standard deviations, and bivariate correlations are presented in Table 1. The results of the tests performed on the structural model are depicted in Figure 2. Hypothesis 1, which stated that pre-test procedural fairness expectations are positively related to post-test procedural fairness perceptions, and post-test procedural fairness perceptions to pre-feedback perceptions, received support ($\beta = .33, p < .001, f^2 = .19$, and $\beta = .14, p < .05, f^2 = .03$, respectively). Supplemental analyses among fairness measures revealed that pre-test procedural fairness expectations were not related to pre-feedback procedural fairness perceptions ($\beta = .04$, ns).

Hypothesis 2, which stated that procedural fairness perceptions at post-test and pre-feedback are positively related to the probability of acceptance of a job offer, received partial support. Candidates who perceived post-test procedural fairness were more likely to accept an offer ($\beta = .12, p < .05, f^2 = .01$), while pre-feedback procedural fairness, controlling for post-test procedural fairness, was not associated with actual behavior ($\beta = .00, ns$). Also, pre-test procedural fairness expectations were unrelated to acceptance of the job offer ($\beta = -.04, ns$). In order to statistically test at which point procedural fairness matters more, we need to compare the β -coefficient at different time points. But as we used a variance-based approach (PLS), which is designed for these kinds of comparisons, we employ an approach for covariance-based approaches (i.e., comparing β -coefficients in regression analysis) as a substitute. Thus, we used t -tests to compare the β -coefficients (Paternoster, Mazerolle, & Piquero, 1998). Our results showed that the β -coefficient for post-test procedural fairness was significantly different ($p < .10$) from the β -coefficient for pre-feedback procedural fairness ($t(86) = 1.94, p = .06$) and pre-test procedural fairness expectations ($t(86) = 1.65, p = .09$), indicating that post-test procedural justice is significantly more important for the acceptance of a job offer. The β -coefficients for pre-feedback and pre-test procedural fairness showed no significant differences ($t(86) = 0.43, p = .67$).

In Hypothesis 3, we argue that perceptions during selection should be positively related to post-hire job performance. This hypothesis was partially supported, as both post-test procedural fairness ($\beta = .18, p < .05, f^2 = .03$) and pre-feedback procedural fairness ($\beta = .14, p < .05, f^2 = .02$) were significantly related to post-hire performance at 18 months. However, perceived post-

test procedural fairness and pre-feedback procedural fairness were not positively related to post-hire final-term score ($\beta = .03$, ns, and $\beta = .00$, ns). We found no significant differences between the β -coefficients for post-test and pre-feedback procedural fairness for post-hire job performance ($t(50) = 0.36$, $p = .72$) and for performance at 18 months ($t(50) = 0.12$, $p = .91$).

In Research Question 1, we examined whether procedural fairness attributes (i.e., formal characteristics, explanation, and interpersonal treatment) are associated with expectation and perception before, during, and after selection. As presented in Figure 2, results revealed that (1) procedural fairness expectations were significantly related to interpersonal treatment ($\beta = .40$, $p < .001$, $f^2 = .15$), mainly formed by treatment of the applicants, communication with the applicants, and propriety of questions, and to formal characteristics ($\beta = .30$, $p < .001$, $f^2 = .09$), mainly formed by rules of job relatedness, opportunity to perform, reconsideration opportunity, and consistency of administration; (2) post-test procedural fairness perceptions were also significantly related to interpersonal treatment ($\beta = .23$, $p < .001$, $f^2 = .07$) and to formal characteristics ($\beta = .38$, $p < .001$, $f^2 = .23$); and (3) pre-feedback procedural fairness perceptions were significantly related to formal characteristics ($\beta = .45$, $p < .001$, $f^2 = .24$) and explanation ($\beta = .18$, $p < .05$, $f^2 = .04$), mainly formed by feedback, information known, and openness. At the level of justice rules, analyses showed that (1) the rules of opportunity to perform and consistency of administration were most strongly associated with formal characteristics; (2) the rule of openness was most strongly related to explanation; and (3) the rules of propriety of questions and treatment of the applicants were most strongly associated with interpersonal treatment across all time points. In terms of explanatory power, procedural fairness dimensions were good predictors of perceptions and explained 46% to 51% of the variance, suggesting

substantive explanatory power (Chin, 1998). Previous self-perceptions explained an additional 1.4% (Study 1) and 9.2% (Study 2) on subsequent procedural fairness perceptions.

In order to explore Research Question 2, whether the attributes associated with procedural fairness expectation and procedural fairness perceptions are subject to change throughout the selection process, we used mean differences. Analyses revealed significant differences over time for overall procedural fairness and procedural fairness attribute categories (fairness: $F(2, 543) = 3.42, p = .030$; formal characteristics: $F(2, 543) = 29.82, p < .001$; explanation: $F(2, 543) = 114.44, p < .001$; interpersonal treatment: $F(2, 543) = 18.27, p < .001$) (see Appendix A, for a table). Post-hoc contrasts (see Table 2) revealed that pre-test procedural fairness and post-test procedural fairness scores were higher than for pre-feedback procedural fairness scores ($t(543) = 2.13, p = .03$; $t(543) = 2.38, p = .020$). For interpersonal treatment, all three contrasts were significant, revealing an increase over time (Pre-test–Post-test: $t(543) = 2.67, p = .01$; Pre-test–Pre-feedback: $t(543) = 6.03, p < .001$; Post-test–Pre-feedback: $t(543) = 3.37, p < .001$), whereas the mean of formal characteristics significantly decreased over time ($t(543) = 3.05, p < .001$; $t(543) = 7.67, p < .001$; $t(543) = 4.62, p < .001$). Regarding explanation, our analyses revealed no differences between post-test and pre-feedback procedural fairness scores ($t(543) = 1.64; p = .10$), but a significant increase between pre- and post-test procedural fairness ($t(543) = 12.20, p < .001$) and pre-test and pre-feedback procedural fairness ($t(543) = 13.84, p < .001$).

Discussion

Organizational fairness theories ([Gilliland, 1993](#); [Lind, 2001](#)) suggest that applicants' fairness perceptions influence their subsequent pre- and post-hire organizational behaviors. Our

aims for this study were to examine this suggestion by focusing on applicants' pre-hire procedural fairness perceptions at three time points and on three post-hire behavioral measures (i.e., acceptance of a job offer, as well as job performance 18 months and 36 months after hire). We responded to the call for studies examining objective outcomes of applicant reactions and the call for research utilizing longitudinal designs to understand determinants of procedural fairness perceptions at multiple stages (e.g., Truxillo & Bauer, 2011). Finally, we studied applicants' reactions occurring in an authentic selection context with actual applicants and thus, provide ecological validity to our data. As a result, our study adds to the understanding of applicant procedural fairness perceptions in selection procedures and their work-related behaviors, and yielded several important findings. These findings also address a large number of calls for research suggesting the importance of examining post-hire implications of applicant reactions (e.g., [Hülshager & Anderson, 2009](#); [Truxillo et al., 2004](#)).

First, our study is the first to show that objective outcomes of the selection process are associated with justice perceptions relating to selection systems. Specifically, we found that whether applicants accepted the job offer or not was significantly related to post-test justice perceptions. In other words, offer acceptance was not related with pre-test expectations or pre-feedback justice perceptions measured three weeks after test taking, but with immediate post-test reactions. Moreover, job performance at 18 months after organizational entry was related to both post-test justice perceptions and pre-feedback justice perceptions, indicating that applicant reactions may play a role in explaining performance of new hires post hire, but the effects of such reactions do not persist in the long term. This finding could indicate the existence of a

'honeymoon-hangover effect' ([Boswell, Boudreau, & Tichy, 2005](#)), a pattern that satisfaction with a new job increases but then gradually disappears.

Second, by measuring applicant reactions at different stages of the process, we were able to examine the role applicant reactions play at different stages. Specifically, the role of justice expectations was restricted to shaping post-test justice perceptions. Post-test justice perceptions measured immediately after test taking were most strongly associated with acceptance of a job offer. It is plausible that as applicants wait to hear from the company, they experience uncertainty, anxiety, and frustration, which results in a drop in perceived fairness levels. While the waiting period may be frustrating, it seems that these perceptions formed in the absence of any new information or experience, and therefore even though these perceptions are more proximal to the offer acceptance and performance stages, they are less predictive of how employees will behave during and after the offer stage compared to their immediate and vivid experiences of how they were treated during the actual test taking and assessment process. For the less proximal outcome of performance, post-test and pre-feedback procedural justice perceptions did not differ in the strength of relationship, suggesting that even though post-test procedural justice perceptions were more predictive of the proximal outcome of acceptance of the job offer, post-test and pre-feedback procedural justice perceptions were equally predictive of job performance.

Third, our findings suggest that depending on the stage of the recruitment process, different attributes contribute to procedural fairness perceptions. Results show that attributes of formal characteristics were influential throughout the selection process, whereas attributes of interpersonal treatment were indicative of pre-test procedural fairness expectations and post-test

procedural fairness perceptions, and at later stages, pre-feedback procedural fairness perceptions were mainly associated with attributes of explanation. Research on preferences for selection procedures suggests that applicants preferred even less attractive procedures (e.g., cognitive ability tests, integrity tests) if information about a test or process were provided ([Ployhart & Ryan, 1998](#); [Rolland & Steiner, 2007](#); [Truxillo et al., 2002](#)). As an explanation for this finding, attributes of formal characteristics (including job relatedness, opportunity to perform, reconsideration opportunity, consistency of administration) and interpersonal treatment (including treatment of the applicants, communication with the applicants, propriety of questions) may directly and immediately be perceived by candidates and may trigger a variety of automatically cognitive evaluation processes. These processes create social expectancies that influence subsequent information-processing, perceptions, and behavior during the recruitment process ([Barry & Crant, 2000](#); [Burgoon & LePoire 1993](#)). Attributes of explanation (e.g., feedback, information, openness) can be regarded instead as a more time-demanding and conscious process, which requires candidates to use higher cognitive processes including reflection of the specific selection procedures and becoming aware of any discrepancies. Research on justice appraisals in incomplete or insufficient information situations has revealed that individuals process fairness information heuristically ([Bell et al., 2004](#)). Additionally, the results of a study by [Kohn and Dipboye \(1998\)](#) demonstrated that individual fairness attributes influence and may supersede or superimpose each other, which indicate the need to explore possible interaction effects.

Finally, this is the first study that distinguishes between post-test procedural fairness perceptions (during, or immediately after completing the selection procedure) and pre-feedback

procedural fairness perceptions (several days after the selection process) obtained prior to being notified about the decision of the organization. Our results clearly suggest that perceptions at these different stages are unique and distinct in terms of its predictive drivers and causative effects. Additional evidence for this argument is provided by a recent study of [Konradt et al. \(2013\)](#) who found that explanations (conceived as a post-test measure) did not predict process fairness. The differentiation of short- and long-term measures might also explain the differences in direction and magnitude found between experimental studies that typically monitor short-term post-test fairness measures and field studies using pre-feedback fairness ([Hausknecht et al., 2004](#); [Truxillo & Bauer, 2011](#)). Our results suggest that interpersonal treatment and formal characteristics were predictive of procedural justice perceptions at pre-entry and post-test. However, perceptions of explanation that capture information on the selection procedure, timeliness of feedback, and general feelings of transparency were predictors of justice perceptions only a few days after the selection procedure has been completed, and might thus be the result of a deep cognitive reflection rather than an immediate impression.

Practical Implications

The results of this study have practical value for hiring organizations in several ways. The most important finding is that applicant reactions are of considerable importance, because perceptions of procedural fairness immediately after taking part in the selection process is positively related to the likelihood of accepting the job offer, while perceptions of procedural fairness captured immediately after the selection process and three weeks later had implications for job performance. In other words, applicant reactions are clearly worth paying attention to from the perspective of the organization, as those organizations that do not pay close attention to

how these systems are perceived run the risk of losing their qualified candidates to the competition as well as not starting the employment relationship on a positive note, which seems to affect post-hire effectiveness.

Our findings confirm that procedural fairness expectations, which are positively related to procedural fairness perceptions during the selection procedure, should be influenced among potential applicants by providing sufficient and realistic information. In doing so, recruiters might make use of different sources of information, including (1) direct experience by providing exercises or simulations for their applicants prior to the selection procedure or using selection procedures of similar organizations, (2) indirect experience by providing application or recruiting materials and through general organizational communication (via website or mass media), and (3) existing beliefs stemming from culture or global differences in norms of accepted practices or general belief in testing.

Keeping in mind that the validity has the highest priority and that selection procedures perceived as highly fair could have lower validity ([Hausknecht et al., 2004](#)), organizations will be able to positively influence fairness expectation and perceptions (see [Fodchuk & Sidebotham, 2005](#); [Ployhart, 2006](#), for further suggestions). Our results also point to the benefits of formal characteristics (e.g., job relatedness, opportunity to perform, reconsideration opportunity, and consistency of administration) across all stages of the selection procedure. To improve formal characteristics, organizations should (1) use selection methods with high face validity where possible and appropriate, (2) rely to a greater extent on job-related measures of performance to assess a variety of skills, and (3) make it possible that applicants will review the results of their selection with trained staff. With regard to interpersonal treatment prior to and during the

selection procedure, organizations may train recruiters and selection staff on how to answer questions appropriately, and include phases where applicants are asked for questions and commentaries. Finally, explanations (e.g., feedback, selection information, and openness) which positively influence post-fairness perception can be fostered by a transparent and informative feedback process to increase the acceptance of the job offer by the applicant ([Gilliland, 1993](#); [Truxillo et al., 2002](#)).

Potential Limitations and Future Research

There are potential limitations to the current study. A main strength of our study is the longitudinal design with six time points. But inherent to the multi-stage sampling procedure, our sample was successively reduced to the selected group of persons above cutoffs with resulting in a sample size of 29 for T5 (post-hire) and T6. This selection procedure leads to range restriction for the restricted sample and likely contributes to underestimating the obtained coefficients for behavioral effects ([Sackett & Yang, 2000](#)). Statistical estimations by [Mendoza et al. \(2004\)](#) on multiple-hurdle designs indicated that maximum likelihood estimators are generally conservative as long as the sample size is not too small ($N = 30$). As our smallest sample size nearly reaches this criterion, is at the criterion level, and all of the correlations are above zero, we conclude that our estimates were somewhat conservative estimates of population parameters. Additionally, we used PLS analyses, which have increased efficiency in parameter estimation and greater statistical power than covariance-based SEM even with small sample sizes ([Hair et al., 2011](#); [Majchrzak, Beath, Lim, & Chin, 2005](#)). Besides, power ([Goodhue, Lewis, & Thompson, 2006](#)) and reliable dependent variables ([Wilson Van Voorhis & Morgan, 2007](#)), which were satisfying in our study, are even more important than sample size. Also, the small sample size implicates a

conservative test of the hypotheses for behavioral effects, as we lack statistical power to detect potentially significant relations. This is not surprising, as Chin and Newsted (1999) provided evidence from Monte Carlo simulations that researchers are not able to detect low structural path coefficients in studies with small sample sizes ($N = 20$). Still, replicating our results with larger samples is important to explore the generalizability of our findings.

Second, the sample of apprentices and the unique selection procedures that were used may limit the generalizability to the variety of different groups of applicants, positions to be filled, and selection settings. Although the study by Becker, Connolly, and Slaughter (2010) that examined applicant acceptance and outcomes of both student and experienced candidates demonstrated that applicant experience did not moderate any relations, the generalizability of our results to more skilled workers and managers needs to be explored. More specifically, more experienced candidates could have more accurate schemas and expectations for the selection process and may have different motivations to apply, such as testing their own market value or increasing their bargaining power with their current employer ([Bretz, Boudreau, & Judge, 1994](#); [Gilliland, 1993](#)). Future research should thus replicate the results of our study across groups of applicants, occupations, organizations, and selection systems, and should control for candidates' motivations. Additionally, our longitudinal study is particularly susceptible to threats to internal validity, including maturation, testing (i.e., subjects are likely to remember survey instrument items and prior answers), and regression to the mean ([Schwab, 1999](#)), which might have distorted responses or inflated or deflated scores.

Similarly, we set out to examine the role of procedural justice over time. However, Gilliland's (1993) model also includes distributive justice, which has been shown to matter in the

context of applicant reactions to selection systems as well ([Bauer et al., 1998](#)). While applicants did not know their outcomes until they were offered a job or not, it will be useful for future research to examine the role of multiple hurdle selection processes over time in terms of *both* procedural and distributive justice such as equity perceptions ([Adams, 1965](#)). And, while we asked applicants about their expectations, we did not explicitly measure whether or not they were met. Thus, a fruitful line for future research would be to address this question.

A final issue that deserves mention relates to the causal design of our study. Even though longitudinal studies that map the entire course of selection have been called for in fairness research (e.g., [Truxillo & Bauer, 2011](#)), results do not necessarily demonstrate causation. Because causal relationships may also have been based on third variables that were not investigated in this study, such as recruiters' characteristics, applicants' personality characteristics or timely employer responses (e.g., [Chapman et al., 2005](#)), our study cannot rule out the existence of this possibility. Further research using longitudinal designs and covariance-based SEM ([Antonakis et al., 2010](#); [McIntosh et al., 2014](#)), which include additional variables and experimental designs, is desirable to examine causality between applicant perceptions and job-relevant behaviors.

Conclusion

In conclusion, this study adopted a six-wave (pre-test, post-test, pre-feedback, and three follow-up time points) longitudinal approach to examine predictors and various behavioral outcomes of procedural fairness perceptions in a sample of real applicants. Results indicate that pre-feedback procedural fairness perceptions were positively related to job acceptance and midterm job performance, but were not associated with long-term performance outcomes.

Further, depending on the stage of the recruitment process, different attributes seemed relevant. Procedural fairness expectation and perception were most strongly related to formal characteristics and interpersonal treatment explanation at pre-test and post-test stages, and formal characteristics and explanation at the pre-feedback stage. This study contributes to an in-depth theoretical and empirical understanding of the determinants and behavioral responses and outcomes of applicant justice perceptions before and after organizational entry.

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Table 1
Descriptive Statistics and PLS Estimates for Latent Variable Correlations

| | <i>M</i> | <i>SD</i> | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|------------------------------|----------|-----------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|----|----|----|----|
| <i>Time 1 (pre-test)</i> | | | | | | | | | | | | | | | | |
| Proc. 1 fairness | 3.00 | 0.73 | — | | | | | | | | | | | | | |
| 2 Treatment | 2.89 | 0.38 | .60** | — | | | | | | | | | | | | |
| 3 Formal | 2.75 | 0.49 | .56** | .64** | — | | | | | | | | | | | |
| 4 Explanati on | 2.69 | 0.51 | .35** | .51** | .44** | — | | | | | | | | | | |
| <i>Time 2 (post-test)</i> | | | | | | | | | | | | | | | | |
| 5 Proc. fairness | 3.02 | 0.67 | .52** | .29** | .33** | .29** | — | | | | | | | | | |
| 6 Treatment | 2.99 | 0.39 | .38** | .42** | .34** | .30** | .53* | — | | | | | | | | |
| 7 Formal | 2.60 | 0.41 | .26** | .24** | .33** | .20** | .58* | .47** | — | | | | | | | |
| 8 Explanati on | 3.28 | 0.43 | .21** | .21** | .18* | .24** | .30* | .51** | .30** | — | | | | | | |
| <i>Time 3 (pre-feedback)</i> | | | | | | | | | | | | | | | | |
| 9 Proc. fairness | 2.89 | 0.70 | .13 | .01 | .06 | .04 | .29* | .13 | .23** | .06 | — | | | | | |
| 10 Treatment | 3.11 | 0.30 | .07 | .08 | .09 | .06 | .19* | .31** | .29** | .22** | .45** | — | | | | |
| 11 Formal | 2.38 | 0.46 | -.00 | -.04 | .05 | -.05 | .18* | .18* | .40** | .11 | .61** | .53** | — | | | |

PROCEDURAL FAIRNESS PERCEPTIONS

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| | | | | | | | | | | | | | | |
|---------------------------------|-------|-----------|------|------|------|------|------|------|------|------|-------|-------|-------|---------------|
| 1 Explanati 2 on | 3.35 | 0.43 | .04 | .14* | .06 | .14 | .14 | .15* | .19* | .16* | .50** | .59** | .40** | — |
| <i>Time 4 (post-feedback)</i> | | | | | | | | | | | | | | |
| 1 Acceptanc 3 e ^a | 1.15 | 0.36 | .09 | .03 | -.09 | .03 | .14 | -.06 | -.06 | .06 | .04 | .13 | -.08 | .20* |
| <i>Time 5 (post-hire)</i> | | | | | | | | | | | | | | |
| 1 Job 4 performan ce | 77.82 | 11.9 6 | .05 | -.04 | .02 | .07 | .22* | .12 | .17* | -.00 | .19** | .16* | .21** | .11 n/a |
| <i>Time 6 (follow-up)</i> | | | | | | | | | | | | | | |
| 1 Job 5 performan ce | 88.17 | 7.13 | -.03 | -.04 | -.05 | -.03 | .03 | -.01 | -.06 | -.10 | .01 | -.05 | .04 | -.03 n/a .57* |

Notes. ^a Acceptance of job offer 1 = "no", 2 = "yes". Proc. Fairness = Procedural Fairness. n/a= not applicable.

* $p < .05$. ** $p < .01$.

Comment [BE1]: Something is wrong with the formatting of this table – needs to be fixed!

PROCEDURAL FAIRNESS PERCEPTIONS

Table 2

Overall Comparison of Procedural Fairness Means over Time

| | Contrast | Value | SE | t-value | df | p |
|------------------------|----------|-------|-----|---------|-----|------|
| Procedural Fairness | T1 – T2 | -0.20 | .06 | 0.25 | 543 | .80 |
| | T1 – T3 | 0.13 | .06 | 2.13 | 543 | .03 |
| | T2 – T3 | 0.14 | .06 | 2.38 | 543 | .02 |
| Treatment | T1 – T2 | -0.10 | .04 | 2.67 | 543 | .01 |
| | T1 – T3 | -0.23 | .04 | 6.03 | 543 | .001 |
| | T2 – T3 | -0.13 | .04 | 3.37 | 543 | .001 |
| Formal Characteristics | T1 – T2 | 0.15 | .05 | 3.05 | 543 | .001 |
| | T1 – T3 | 0.36 | .05 | 7.67 | 543 | .001 |
| | T2 – T3 | 0.22 | .05 | 4.62 | 543 | .001 |
| Explanation | T1 – T2 | -0.58 | .05 | 12.20 | 543 | .001 |
| | T1 – T3 | -0.66 | .05 | 13.84 | 543 | .001 |
| | T2 – T3 | -0.08 | .05 | 1.64 | 543 | .100 |

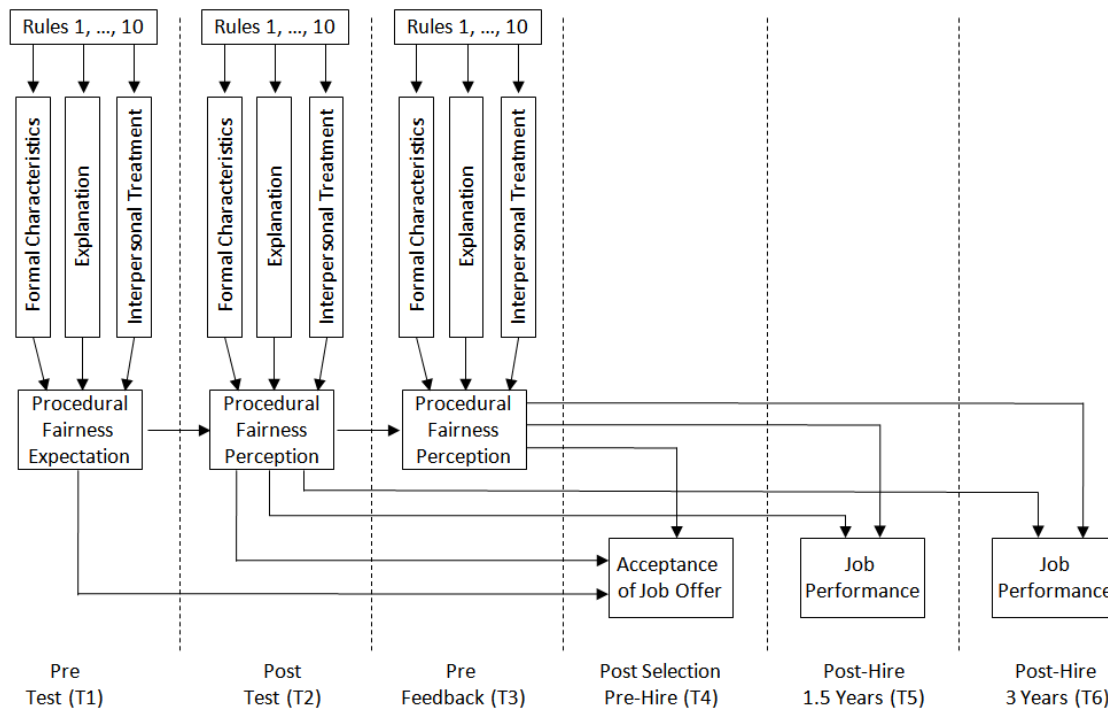


Figure 1. Hypothesized model of the causal relationship between expected procedural fairness, perceived procedural fairness, and job-related outcome measures across six time points.

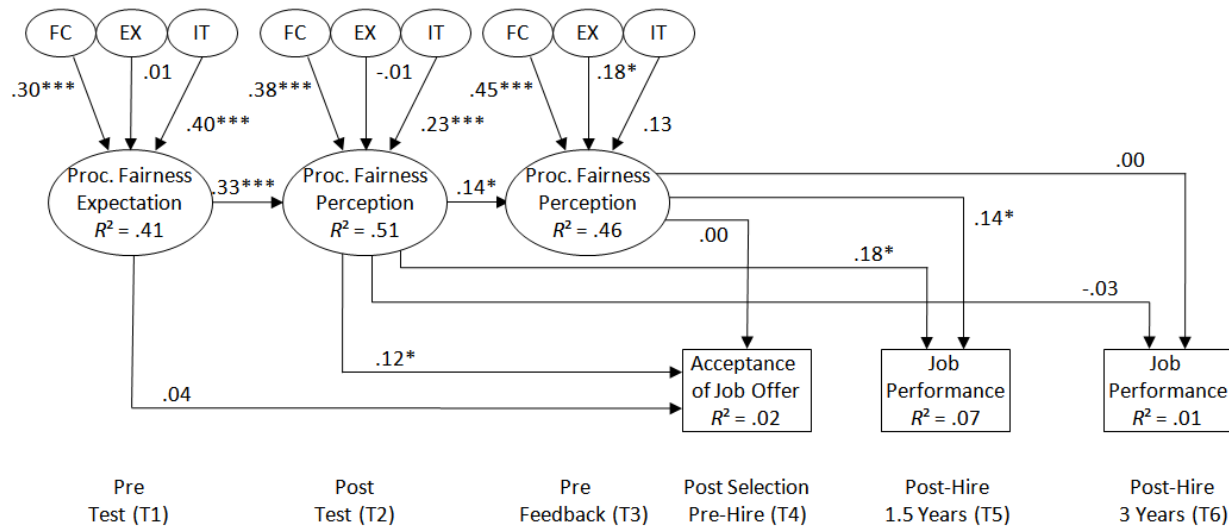


Figure 2. Results of the structural analysis.

* $p < .05$, *** $p < .001$. Rectangles: observed indicators; ellipses: latent variables. All coefficients are standardized estimates.

Proc. = Procedural; FC = Formal characteristics; EX = Explanation; IT = Interpersonal treatment.

Appendix A

Table A1

Indicator Reliability of Reflectively Measured Constructs

| Construct | Item | Loading | <i>t</i> -value |
|------------------------------------|--------|---------|-----------------|
| Procedural Fairness expectation T1 | F_P_11 | .79 | 11.95 |
| | F_P_21 | .76 | 9.95 |
| | F_P_31 | .74 | 8.93 |
| Procedural Fairness perception T2 | F_P_12 | .75 | 11.45 |
| | F_P_22 | .69 | 10.66 |
| | F_P_32 | .78 | 12.79 |
| Procedural Fairness perception T3 | F_P_13 | .71 | 12.06 |
| | F_P_23 | .74 | 14.02 |
| | F_P_33 | .76 | 15.35 |

Table A2

Crossloadings of Reflectively Measured Constructs

| Item | Procedural Fairness expectation T1 | Procedural Fairness perception T2 | Procedural Fairness perception T3 |
|----------|---------------------------------------|--------------------------------------|--------------------------------------|
| F_P_1_T1 | .79 | .33 | .07 |
| F_P_2_T1 | .76 | .24 | .06 |
| F_P_3_T1 | .74 | .33 | .09 |
| F_P_1_T2 | .33 | .75 | .19 |
| F_P_2_T2 | .32 | .69 | .16 |
| F_P_3_T2 | .34 | .78 | .20 |
| F_P_1_T3 | .07 | .18 | .70 |
| F_P_2_T3 | .03 | .10 | .74 |
| F_P_3_T3 | .09 | .15 | .76 |

Note. Bold numbers represent factor loadings $\geq .40$.

Table A3

Assessment of Formatively Measured Fairness Category Constructs

| Stage | Dimension | Rule | Weights | t-value | VIF |
|-----------------|------------------------|-------------------------|---------|---------|------|
| Pre-Test T1 | Treatment | Propriety of questions | .44 | 6.24 | 3.23 |
| | | Treatment of applicants | .33 | 4.22 | 2.77 |
| | | Communication | .26 | 4.06 | 2.44 |
| | Formal Characteristics | Job relatedness | .10 | 1.08 | 1.74 |
| | | Opportunity to perform | .50 | 4.10 | 3.25 |
| | | Reconsideration | .35 | 2.76 | 2.67 |
| | | Consistency | .43 | 4.41 | 2.50 |
| | Explanation | Feedback | .32 | 2.49 | 1.69 |
| | | Information known | .24 | 1.60 | 2.02 |
| | | Openness | .67 | 3.84 | 2.99 |
| Post-Test T2 | Treatment | Propriety of questions | .46 | 10.93 | 2.02 |
| | | Treatment of applicants | .33 | 4.61 | 1.88 |
| | | Communication | .22 | 4.28 | 2.46 |
| | Formal Characteristics | Job relatedness | .23 | 2.53 | 1.95 |
| | | Opportunity to perform | .36 | 3.54 | 2.96 |
| | | Reconsideration | .21 | 3.16 | 3.52 |
| | | Consistency | .62 | 11.01 | 2.05 |
| | Explanation | Feedback | .25 | 1.62 | 2.40 |
| | | Information known | .32 | 1.93 | 2.16 |
| | | Openness | .42 | 8.00 | 3.17 |
| Pre-Feedback T3 | Treatment | Propriety of questions | .30 | 5.32 | 1.97 |
| | | Treatment of applicants | .31 | 6.69 | 4.85 |
| | | Communication | .17 | 2.66 | 3.18 |
| | Formal Characteristics | Job relatedness | .26 | 3.00 | 2.55 |
| | | Opportunity to perform | .29 | 3.42 | 2.49 |
| | | Reconsideration | .20 | 3.03 | 2.78 |
| | | Consistency | .60 | 10.71 | 3.21 |
| | Explanation | Feedback | .32 | 7.24 | 3.91 |
| | | Information known | .10 | 0.25 | 1.87 |
| | | Openness | .39 | 3.13 | 2.28 |

Note. VIF = Variance Inflation Factor.

Table A4

Overall Comparison of Procedural Fairness Means over Time

| | | Sum of Squares | df | <i>F</i> | <i>p</i> |
|------------------------|---------|----------------|-----|----------|----------|
| Procedural Fairness | Between | 2.26 | 2 | 3.42 | .03 |
| | Within | 179.71 | 543 | | |
| | Total | 181.97 | 545 | | |
| Treatment | Between | 4.77 | 2 | 18.27 | .001 |
| | Within | 70.82 | 543 | | |
| | Total | 75.59 | 545 | | |
| Formal Characteristics | Between | 12.29 | 2 | 29.82 | .001 |
| | Within | 111.84 | 543 | | |
| | Total | 124.13 | 545 | | |
| Explanation | Between | 47.61 | 2 | 114.44 | .001 |
| | Within | 112.94 | 543 | | |
| | Total | 160.55 | 545 | | |