

Not Just Because it is Fair - The Role of Feedback Quality and Voice in Performance Evaluation

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ABSTRACT AND KEYWORDS	
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Not just because it is fair – the role of feedback quality and voice in performance evaluation

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Abstract

This paper investigates the role of feedback quality and voice in performance evaluation. A model is developed and tested in which feedback quality and voice enhance procedural fairness perceptions (procedure effects), and procedural fairness perceptions in turn lead to different positive reactions (fair process effects). Voice is distinguished in instrumental and non-instrumental voice. The findings based on questionnaire data from 60 early career accountants show that the two components of voice and feedback quality are uniquely associated with procedural fairness perceptions, and through procedural fairness with distributive justice, trust in superior, and satisfaction with the appraisal review. Beyond these fairness effects, feedback quality is directly associated with satisfaction with the appraisal review and distributive justice, while instrumental and non-instrumental voice are directly associated with interpersonal trust in supervisor. Thus, feedback quality is mainly associated with outcome-based effects, while voice primarily enhances relational effects. These findings show that feedback quality and voice serve important but different roles in performance evaluation and help promote positive attitudes and behaviour of employees beyond fair process effects.

Keywords: evaluation, fair process effect, fairness, voice, trust

1. Introduction

Performance evaluation is an important and widely studied topic across scientific disciplines. In management accounting and control, research in this area has typically focused on topics like the design and use of incentive plans (e.g., Banker et al., 2000; Ittner & Larcker, 2002), the role of non-financial measures in performance evaluation (e.g., Bouwens & Van Lent, 2007), and the use of subjectivity in performance evaluation or in providing rewards (e.g., Ittner et al., 2003; Gibbs et al., 2004; Moers, 2005). Consistent with the development in the organisational justice literature over the past two decades, however, management accounting researchers increasingly pay attention to the psychological processes in the context of formal performance evaluation sessions. Three recent examples are the studies by Lau et al. (2008), Sholihin & Pike (2009), and Hartmann & Slapničar (2009).

Lau et al. (2008) and Sholihin & Pike (2009) recently investigated how perceived fairness of performance evaluation procedures affects job satisfaction. Both studies hypothesized and found that fair evaluation procedures enhance work commitment and job satisfaction through an outcome-based path and a non-outcome based path. More precise, Lau et al. (2008) and Sholihin & Pike (2009) found that perceived procedural fairness was positively related to both distributive justice (outcome-based path) and trust in supervisor (non-outcome based path). However, both studies focused on the effects of procedural fairness perceptions, but did not include procedures that may enhance these fairness perceptions.

Hartmann & Slapničar (2009) recently developed a model to explain the interpersonal trust between supervisor and subordinate. They hypothesized and found that formal performance evaluation enhances trust through feedback quality and procedural fairness perceptions. While Hartmann & Slapničar (2009) included feedback quality as a specific procedure that may enhance fairness perceptions, their investigation of the effects of procedural fairness perceptions was limited to trust in supervisor. They did not investigate the possible effect of procedural fairness perceptions on distributive justice (the outcome-based path identified by Lau et al. (2008) and Sholihin & Pike (2009)). Additionally, they investigated the role of feedback quality, but did not control for the possible influence of voice effects. There is ample evidence that voice in performance evaluation enhances procedural fairness perceptions (e.g., Kanfer et al., 1987; Lind et al., 1990; Avery & Quinones, 2002). Earlier research suggests that such effects are especially salient when decision makers explicitly show that they acknowledge the feelings and opinions that are expressed (Tyler, 1987; Shapiro, 1993). Thus, in studying the effects of feedback quality on procedural fairness perceptions, it is important to control for the influence of voice, and vice versa.

This paper presents a model that integrates the previous models from Lau et al. (2008), Sholihin & Pike (2008), and Hartmann & Slapničar (2009) with insights from a study from the management literature on voice by Korsgaard & Roberson (1995). With regard to voice, Korsgaard & Roberson (1995) showed that voice may play a dual role in performance evaluation, similar to the outcome-based and the non-outcome based paths identified by Lau et al. (2008). They distinguished an instrumental role that is more associated with decision allocation decisions (i.e., distributive justice) and a non-instrumental role that is associated more with attitudes toward management (i.e., trust in supervisor). The model developed in this paper posits that voice (instrumental and non-instrumental) and feedback quality have an indirect effect on distributive justice, satisfaction with the

appraisal, and trust in superior through procedural fairness perceptions of performance appraisal. Additionally, the model hypothesises that instrumental voice will be more strongly associated with the effects on distributive justice and satisfaction with the appraisal, while non-instrumental voice is expected to be more strongly associated with the effect on trust in supervisor. Furthermore, feedback quality is expected to be associated with effects on distributive justice, satisfaction with the appraisal, and trust in supervisor.

By presenting and testing this integrated model, this paper aims to contribute to the existing literature in four ways. First, this paper will extend previous studies by looking at three antecedents of procedural fairness perceptions: instrumental and non-instrumental voice and feedback quality. Each of these antecedents has been studied before, but no prior study has tested the influence of these antecedents while controlling for the influence of the others. Second, while voice has been often studied in organizational justice, in management accounting literature voice effects have been mainly studied in the context of budgetary participation (cf. Sholihin & Pike, 2009; Libby, 1999), but not in the context of performance evaluation. Additionally, relatively few studies in the context of formal performance evaluations have looked explicitly at the distinction between instrumental and non-instrumental voice (e.g., Shapiro, 1993; Korsgaard & Roberson, 1995). By including both components of voice, it is possible to replicate Korsgaard & Roberson's (1995) finding that the two components of voice appear to be associated with different reactions, while controlling for the effect of feedback quality. Third, the model in this paper explicitly distinguishes procedure effects from fair process effects. The procedure effect is the effect of procedures on fairness perceptions, while the fair process effect refers to the subsequent reaction of people on fairness perceptions (Van den Bos, 2005). Since a fair process effect can only occur once a procedure is perceived as fair, Van den Bos (2005: 279) proposes an input-mediator-output model, in which a particular procedure is the input, the perceived fairness of the procedure is the mediator, and the subsequent human reactions are the output. Thus, in contrast to the studies by Korsgaard & Roberson (1995), Lau et al. (2008), and Sholihin & Pike (2009), the model in our study enables an assessment of both the procedure effect and the fair process effect. Fourth, the model in this paper extends the reactions to fair evaluation procedures beyond an outcome-based reaction (distributive justice) and a relational reaction (trust in supervisor), and includes satisfaction with the appraisal interview as a separate reaction. None of the previous studies has looked at all three reactions in a single study. By

including the three different procedures and three different reactions, the model allows testing whether the procedures may be associated differently with the reactions.

The remainder of this paper is organised as follows. In the next section, I will briefly explain psychological explanations of the fair process effect, before developing hypotheses for each of the paths in model. The third section describes the research method, sample and variable measurement. Section four describes the results, and the paper ends with a discussion and conclusion.

2. Theoretical background and development of hypotheses

2.1 Fair process effects

<INSERT FIGURE 1 HERE> The model displayed in figure 1 is based on the distinction between procedure effects and fair process effects that Van den Bos (2005) proposed in a recent review of the fair process effect. Van den Bos (2005: 277) defines the fair process effect as the ‘positive effect of people’s procedural fairness perceptions on their subsequent reactions’. The fair process effect has been demonstrated in many different settings, using different research methods, and on many different reactions. The organisational justice literature contains several explanations for fair process effect. Two explanations that have received most attention in the literature, perhaps because they were the first explanations, are the instrumental explanation based on Thibaut & Walker (1978), and the relational explanation based on Lind & Tyler (1988). The instrumental explanation (Taylor et al., 1995), also referred to as the control model of procedural justice (Erdogan, 2002; Blader & Tyler, 2003), states that in a decision-making or a dispute resolving situation people appreciate procedures that give them control over the process to resolve the dispute or make a decision because of its perceived indirect influence on the outcome. People experience the possibility to influence the outcome as having control over the outcome, and such procedures will lead them to accept the outcomes even if they are less than they wanted (Blader & Tyler, 2003). In the instrumental explanation, the emphasis is on short-term outcomes that are directly related to the decision-making process (Taylor et al., 1995). In contrast, the relational explanation (Taylor et al., 1995), or group-value model (Erdogan, 2002; Blader & Tyler, 2003), posits that people experience procedures as sources of information that tell them how valued they are as a member of the group (individual status within the group) and what the status of the group is (Blader & Tyler, 2003). Thus, procedures that are indicative of high status are perceived as fair,

while procedures that reflect low status are perceived as unfair. The relational explanation of procedural justice emphasises the impact of procedures on long-term social relationships (Taylor et al., 1995).

Another explanation for fair process effects is based on fairness heuristic theory, which states that 'once a person has established a fairness judgment, perceived fairness serves as a heuristic that guides the interpretation of subsequent events' (van den Bos et al., 1997: 1035). Using fairness heuristic theory, Van den Bos et al. (Van den Bos et al., 1997; Van den Bos, Vermunt et al., 1997) have shown that perceived process fairness may augment distributive justice. This effect is particularly strong in settings where people do not know the outcomes of comparable others: in the absence of information about the value of the outcome relative to a reference point such as peers, people will use fairness perceptions of the procedures to judge the fairness of the outcome (Van den Bos et al., 1998).

While the different explanations emphasise different reactions, the fair process effect is applicable to a wide range of human reactions, not just to outcome-related variables (such as distributive justice) and relation-related variables (such as trust in supervisor) (Van den Bos, 2005). In the model in figure 1 satisfaction with the appraisal is added as a separate, third reaction to procedural fairness perceptions. The inclusion of satisfaction with the appraisal is based on Korsgaard & Roberson (1995), but is also driven by the possible theoretical contribution to the literature by distinguishing satisfaction with the appraisal from both procedural fairness and distributive fairness. Earlier research has used the terms fairness of performance appraisal and satisfaction with the appraisal interchangeably (e.g., Landy et al., 1978; Dipboye & de Pontbriand, 1981; Dobbins et al., 1990). For example, Dobbins et al. (1990: 625) measured satisfaction with the appraisal system with twelve items that 'asked ratees to indicate on a 7-point Likert scale the extent to which they are satisfied with appraisals in their organizations and perceive them to be fair and accurate.' They recognised that these items may refer to two separate constructs: appraisal satisfaction and appraisal fairness. Yet, principal component analysis and confirmatory factor analysis supported the uni-dimensionality of the scale. Similarly, Masterson et al. (2000) used two items to measure procedural justice in their study: 'The performance evaluation system at [organization] is a fair one' and 'I am satisfied with the way performance evaluations are done at [organization].' Yet, in the context of outcome evaluations, Van den Bos et al. (1998) showed that fairness judgments and satisfaction judgments differ. They argue that parallel to the distinction between outcome fairness

and outcome favourability people may differentiate procedure fairness from procedure favourability, and call for future research to investigate the existence of such a distinction. Although it is not the purpose of this paper to investigate this issue in detail, similar to the difference between outcome fairness (justice) and outcome favourability (satisfaction) I will treat satisfaction with the appraisal review and perceived procedural fairness as two separate, but related constructs (cf. Keeping & Levy, 2000; Ambrose & Arnaud, 2005). This is also consistent with early findings of the fair process effect on overall satisfaction (e.g., Folger et al., 1979).

The discussion above leads to the following hypotheses, based on the different explanations of the fair process effect and consistent with earlier studies in management accounting (e.g., Lau et al., 2008; Sholihin & Pike, 2009):

- H1. *Perceived procedural fairness will be positively related to distributive justice perceptions.*
- H2. *Perceived procedural fairness will be positively related to satisfaction with the appraisal.*
- H3. *Perceived procedural fairness will be positively related to trust in supervisor.*

2.2 Antecedents of procedural fairness perceptions

Voice and procedural fairness perceptions

Voice is 'the most important and most prototypical procedure investigated in procedural justice research' (Van den Bos et al., 1998: 1502) and there is ample empirical evidence that voice enhances fairness perceptions in procedural justice literature (e.g., Kanfer et al., 1987; Lind & Tyler, 1988; Lind et al., 1990; Avery & Quinones, 2002). Of particular relevance for the current study is the study by Korsgaard & Roberson ((1995), who examined the role of voice as an aspect of procedural justice in performance appraisal discussions. Voice is described in their study as 'the practice of allowing individuals who are affected by a given decision to present information relevant to the decision.' (Korsgaard & Roberson, 1995: 657). Korsgaard & Roberson (1995) distinguished between the instrumental and non-instrumental explanation of why people value voice (cf. Shapiro, 2003). The instrumental explanation states that voice is valued in decision-making because

of its perceived indirect influence on the decision. As such, voice provides people with the possibility to indirectly influence a decision when no direct influence is possible. In contrast, the non-instrumental explanation posits that voice in decision-making is appreciated intrinsically, regardless of the influence of voice on the outcome of the decision. In this explanation, voice is a 'desired end in itself' (Korsgaard & Roberson, 1995: 659). According to Korsgaard & Roberson (1995: 659), 'the key distinction between these mechanisms of voice is the perceived potential to influence, regardless of whether voice had any impact on the decision'. While Korsgaard & Roberson (1995) used instrumental and non-instrumental voice as antecedents of procedural fairness, they did not explicitly measure procedural fairness. Consequently, the procedure effect and the fair process effect are blurred in their results. Despite the importance of voice in the organisational literature, the effect of instrumental and non-instrumental voice on procedural fairness perceptions has not been investigated systematically. For example, while Elicker et al. (2006) measured instrumental and non-instrumental voice separately, in their analysis these two concepts were used as indicators of an overall measure of voice. In a meta-analytic review of the literature on the reactions of employees on participation in the performance appraisal context, however, Cawley et al. (1998) found that instrumental and value-expressive participation were both strongly positively related with the perceived fairness of the appraisal session/ system.

Thus, I posit the following hypotheses:

H4. *Instrumental voice perceptions will be uniquely positively related to perceived procedural fairness.*

H5. *Non-instrumental voice perceptions will be uniquely positively related to perceived procedural fairness.*

Feedback quality and procedural fairness perceptions

Feedback quality as an antecedent of fair evaluations has been investigated in the management accounting literature recently by Hartmann & Slapničar (2009). Feedback quality refers to the degree to which feedback is consistent across time, is specific, and is perceived as useful by the recipient of feedback (Steelman et al., 2004). As such, to be considered high quality, feedback needs to be accurate and free of bias (Hartmann & Slapničar, 2009), characteristics that resemble Leventhal's (1980) criteria of procedural justice. As pointed out by Hartmann & Slapničar (2009), feedback quality is seen as an antecedent of procedural justice in several organisational justice studies (e.g., (Taylor, 1995; Cohen-Charash & Spector, 2001; Erdogan, 2002). In this perspective, feedback

quality is essentially considered part of the “due process metaphor” of performance appraisal as developed by Folger et al. (1992). According to the due process metaphor, performance appraisals can be viewed as a dispute between superiors and subordinates over the allocation of outcomes such as pay, promotion, or status (Folger et al., 1992; Taylor, 1995). To be fair a performance appraisal should contain three elements: adequate notice, fair hearing, and judgment based on evidence. Adequate notice requires that the assessed knows the performance appraisal objectives and standards in advance, that he or she is allowed input in setting these objectives and standards, and that he or she receives regular feedback during the appraisal period. Fair hearing indicates that in performance appraisal all relevant evidence should be considered. This requires that the assessor is familiar with the assessed’ performance and that the assessed is allowed to present his or her side of the story in weighting the evidence on his or her performance. Finally, the third element of due process appraisals is judgment based on evidence. This element states that steps need to be taken so that standards of performance are applied consistently, both across time and across subordinates, that judgements are adequately explained and justified, and that appeal mechanisms are in place so that subordinates can challenge the final decision.

Although emphasising different phases of the formal performance appraisal, in essence all three elements of the due process approach stress the constant need for two-way interactions. In this view, feedback quality and voice can be considered as the two sides of a coin, constituting two crucial elements of two-way communication. Where voice primarily focuses on the role of the subordinate in the performance appraisal’s communication, feedback quality focuses on the role of the superior in this communication. Furthermore, from this perspective, voice and feedback quality also seems to overlap with voice and justification. Experimental research has shown that both voice and justification enhance fairness perceptions (e.g., Bies & Shapiro, 1988; Libby, 1999). I therefore expect that feedback quality will have a unique effect on procedural justice beyond the effect of voice.

In short, I will test the following hypothesis:

H6. *Feedback quality will be uniquely positively related to perceived procedural fairness.*

2.3 Mediating role of procedural fairness perceptions

If the hypotheses 1 to 6 are all accepted, this suggests that procedural fairness perceptions are mediating the effects of the three procedural characteristics (instrumental and non-instrumental voice, and feedback quality) on the three reactions. Yet, based on the distinctive explanations of the fair process effects and consistent with the outcome-based and non-outcome based paths identified by Lau et al. (2008) and Sholihin & Pike (2009), I propose that the three procedure characteristics will be associated more or less strongly with each the three reactions, as explained below.

Voice, reactions and mediating role of procedural fairness

In their study on instrumental and non-instrumental voice, Korsgaard & Roberson (1995) argued non-instrumental voice would be more strongly related to long-term relationships with the manager (trust in supervisor) than to the immediate context and outcome of the appraisal (satisfaction with the appraisal review), while instrumental voice in contrast would be more strongly linked to the context and outcome of the appraisal than to long-term relationships with the organisation and the manager. They found that instrumental voice was uniquely related to satisfaction with appraisal review, but not with trust in superior, and that non-instrumental voice was uniquely related to satisfaction with the appraisal review and (more strongly) to trust in superior. It should be noted, however, that Korsgaard & Roberson (1995) controlled for distributive justice rather than treating distributive justice as an outcome of procedural justice, as in the outcome-based paths identified by Lau et al. (2008) and Sholihin & Pike (2009). Distributive justice as an outcome of procedural fairness would be more consistent with their theoretical explanation of the effects of instrumental voice. Thus, consistent with the instrumental explanation of fair process effects, I expect that instrumental voice will have unique effects on distributive justice and satisfaction with the appraisal that are mediated by procedural fairness perceptions, but will not have a significant unique effect on trust in supervisor. In contrast, consistent with the relational explanation of fair process effects, I expect that non-instrumental voice will have unique effects on trust in supervisor and satisfaction with the appraisal review that are mediated by procedural fairness perceptions, but will not have a significant unique effect on distributive justice. This is summarised in the following hypotheses:

H7a: *Perceived procedural fairness will mediate the relationship between instrumental voice and distributive justice.*

H7b: *Perceived procedural fairness will mediate the relationship between instrumental voice and satisfaction with the appraisal.*

H7c: *Perceived procedural fairness will not mediate the relationship between instrumental voice and trust in superior.*

H8a: *Perceived procedural fairness will not mediate the relationship between non-instrumental voice and distributive justice.*

H8b: *Perceived procedural fairness will mediate the relationship between non-instrumental voice and satisfaction with the appraisal.*

H8c: *Perceived procedural fairness will mediate the relationship between non-instrumental voice and trust in superior.*

Feedback quality, reactions and mediating role of procedural fairness

Because feedback quality is more explicitly linked to the role of the superior in the performance appraisal process, other than voice, feedback quality also seems to capture facets of interactional justice. Interactional justice focuses ‘on the quality of the interpersonal treatment people receive when procedures are implemented’ (Colquitt et al., 2001: 426). Recent research has shown that there are two distinct types of interpersonal treatment: interpersonal justice and informational justice (Colquitt, 2001). Interpersonal justice refers to the degree to which people are being treated with honesty, courtesy, timely feedback, and respect by decision-makers when carrying out the decision-making process (Greenberg, 1990; Colquitt et al., 2001). Informational justice refers to the degree to which decision-makers in implementing procedures explain their decisions (outcomes) or the procedures leading to that decision adequately and sincerely to people affected by that decision (Greenberg, 1990; Colquitt et al., 2001). As described above, feedback quality as part of a due process approach involves adequate explanation, providing justification, and applying standards in an unbiased and accurate way, aspects that are related to both interpersonal and informational justice. A similar argument was made by Kernan & Hanges (2002) in a study on survivor reactions to reorganizations. They investigated the quality of information provided by management to employees during a reorganization process. This quality of information was labelled communication in their study, and was measured by asking employees about the timeliness, accuracy and adequacy of the reorganization process. They argued, based on Tyler & Lind’s group-value model of procedural justice (!), that communication is an antecedent of interpersonal and informational justice, ‘because it signals that management is sensitive to employee desires for information and full-status membership in the organization’ (Kernan & Hanges, 2002, p. 919). Furthermore, feedback quality may also signal to the employee that the supervisor is thoroughly familiar with the employee’s job performance, as without such

knowledge feedback quality can hardly be useful, and it may contribute to the development of plans or objectives to improve performance (cf. Coletti et al., 2005; Hartmann & Slapničar, 2009). Both aspects have been used to measure interpersonal behaviour of supervisors in performance appraisal and pay decisions in previous research (1997). Thus, I expect that feedback quality will be positively related to trust in superior, even beyond the effect of procedural fairness perceptions. This is also supported by Hartmann & Slapničar (2009) who found a strong relationship between feedback quality and trust in supervisor ($r=.523$) that also remained significant after controlling for the mediating effect of procedural fairness perceptions.

Feedback quality is also likely to increase the perceived fairness of the outcome of performance appraisal, i.e. distributive justice, and to enhance satisfaction with the appraisal. Since feedback quality refers to the consistency, adequacy and usefulness of feedback, I expect that the informational value of feedback may contain elements of information on the value of the employee as a member of the organization as well as information on the performance of the employee and suggestions for improving performance in the future (cf. Steelman et al., 2004; Hartmann & Slapničar, 2009). In this sense, if the subordinate perceives this feedback on his or her performance as specific and useful, he or she may be more willing to accept the performance rating as a consequence of that feedback, even beyond the effect of perceived procedural fairness (i.e., beyond the fair process effect (Van den Bos et al., 1998)). Thus, I expect that feedback quality will be positively related to distributive justice, both indirect through procedural fairness (the outcome-based path) and direct. In a similar vein, I hypothesize that feedback quality will positively affect satisfaction with the appraisal, both direct and indirect through procedural fairness.

This leads to the following hypotheses that will be tested:

- H9a: *Perceived procedural fairness will partly mediate the relationship between feedback quality and distributive justice.*
- H9b: *Perceived procedural fairness will partly mediate the relationship between feedback quality and satisfaction with the appraisal.*
- H9c: *Perceived procedural fairness will partly mediate the relationship between feedback quality and trust in superior.*

3. Method

Sample

Data were collected from lower-level auditors in a Big Four accounting firm located in a large city in the Netherlands in the summer of 2009. The data were collected using convenience sampling rather than random sampling, as I did not get permission to distribute a written questionnaire to collect data from all accountants in the firm. A student working on his master thesis under my supervision was allowed, however, to collect data from lower-level accountants who were present at the office on three separate visits to the office. The student received a list of 120 accountants that reported to nine different supervisors. These accountants were in the early stages of their careers and did not hold management positions. Practically all accountants from this list who were approached by the student on one of his visits to the office agreed to fill out and hand in the questionnaire immediately. The collection process did not allow testing for the existence of non-response bias.

In total, 60 questionnaires were returned that were all useable. The respondents worked in functions ranging from trainee to assistant accountants. Thirty-three percent of the respondents were female. The average respondent was 25.4 years old (with a range from 19 to 31) and had worked in this organization for 3.8 years (with a range from 0.75 to 9.75 years).

The performance appraisal system used within the organisation involved the setting of specific, measurable, achievable, relevant and time bound (SMART) goals for each employee for the coming year in six different performance areas: Business Goals, Financial Targets, Skills and Behaviours, Development, Career, and Mobility. Goals were set in a goal setting session between the supervisor and the employee. Goals in the first two areas were objective, while the goals in the last four areas were predominantly subjective goals. Following Macleod's (2003: 217) definition of subjective evaluation, I use the term subjective goal to refer to a signal of performance that is common knowledge to the supervisor and the employee, but is not verifiable to a third party. During the year, each auditor normally is engaged in several audits. Each audit on average takes three weeks. After each audit, the employee has to fill out a self-evaluation form. This form asks the employee to rate his performance in that particular audit for each of the six performance areas using Likert scales. Furthermore, the project leader for each audit, which normally

is not the formal supervisor, reviews the evaluation form and, if necessary, discusses the evaluation with the employee. The goals set at the beginning of the year, the final self-evaluation forms and the supervisor's own perceptions are the input for an interim appraisal review and the final appraisal review. These two formal appraisal reviews provide the opportunity to discuss goal achievement and development plans. In the final appraisal review, the performance of each employee is rated on a 3x3 matrix, where the two dimensions are overall performance on objective goals (business and financial) and overall performance on skills and competences (the other four areas). The performance rating is used to identify opportunities for growth and promotion rather than for bonuses. Without growth, employees cannot stay. Thus, the performance appraisal system is an important part of an up-or-out system (Baker et al., 1988).

The mix of objective and subjective goals for performance appraisal implies that, despite the formal appraisal system, there is considerable discretion of individual supervisors. In combination with the up-or-out-system, this makes investigating the effects of feedback quality and voice opportunities especially salient in this setting. On the other hand, it should be noted that the use of self-evaluation forms that have been reviewed by project leaders other than the supervisor, significantly weaken the dependence of the employee on the judgment of the supervisor.

Variable measurement

To design the survey, the guidelines provided by Dillman (2000) were followed to make the questionnaire appear attractive and easy to fill out. All constructs were measured on a 5-point Likert scale ranging from *strongly disagree* to *strongly agree* using existing scales, preferably with previously reported Cronbach's alpha's higher than .7. The full questionnaire was first drafted in English, using the original scales, and then translated into Dutch independently by two persons. Differences in translations were discussed, after which the final translation was chosen.

Feedback quality. Feedback quality (*FEED*) was measured using the instrument from Steelman et al. (2004), which was also used by Hartmann & Slapničar (2009). This instrument contains four items, asking respondents to indicate the extent to which feedback was consistent, useful, and consistent. In previous studies (Steelman, Levy, & Snell, 2004; Whitaker, 2007) the scale has been shown to have high internal validity, i.e. Cronbach's alpha > .87.

Voice. Instrumental Voice (*IVOICE*), which refers to managers' perceived potential influence over the appraised discussion, was assessed by five items developed by Korsgaard & Roberson (1995). This scale has also been used by Elicker et al. (2006), but due to low factor loadings, they dropped one item ('I felt I could have introduced new topics during the appraisal'). The Cronbach's alpha for the four-item instrument reported by Elicker et al (2006) was .55, while Korsgaard & Roberson (1995) reported a Cronbach's alpha of .79 for the five-item scale.

Non-Instrumental Voice (*NIVOICE*), which refers to managers' contributions to the appraisal discussion, was assessed by the same eight items as Korsgaard & Roberson (1995). These items have also been used by Elicker et al. (2006), who report an internal reliability estimate of $\alpha = .90$, while Korsgaard & Roberson (1995) reported a Cronbach's alpha of .86.

Procedural fairness. To measure perceived procedural fairness (*PROCJ*), I used five items adapted from a nine-item instrument developed by Hartmann (1997). Three of these items refer to facets of performance evaluation that are assumed to indirectly contribute to procedural justice (controllability, relevance and completeness of performance criteria). Two other items asked respondents directly to indicate the extent to which they felt their performance was assessed fairly.

Distributive justice. Distributive justice (*DISTRJ*) was measured by four items developed by Korsgaard & Roberson (1995). They define distributive justice in performance appraisal as agreement with and perceived fairness of the superior's performance rating, following Folger (1987) and Greenberg (1986). This same instrument has also been used by Elicker et al. (2006) and by Keeping and Levy (2000). Reported Cronbach's alpha's range from .93 (Korsgaard & Roberson, 1995) to .95 (Elicker et al., 2006; Keeping & Levy, 2000).

Satisfaction with appraisal review. Satisfaction with the appraisal review (*SAT*) was measured by two items from Korsgaard & Roberson (1995) that captured respondents' attitudes toward the review in which their performance evaluation was communicated and discussed. Cronbach's alpha reported by Korsgaard & Roberson (1995) was .90.

Trust in supervisor. Trust in supervisor (*TRUST*) was measured with the same four items as used by Korsgaard & Roberson (1995). This instrument has also been used in the accounting literature by Kennedy et al. (2009), reporting a Cronbach's alpha of .91, while Korsgaard & Roberson (1995) reported a Cronbach's alpha of .90.

However, because trust in supervisor is a difficult construct to measure (Dirks & Ferrin, 2002), I decided to also use a second, alternative measure of trust in supervisor (*RELATION*). This was especially salient since the relational model of procedural justice emphasizes the interpersonal relationship with the supervisor. Although the measure of trust as used by Korsgaard & Roberson (1995) may capture this interpersonal behaviour, the instrument that Zand (1972) developed more explicitly measures interpersonal trust, as it reflects ‘the firm belief or confidence the subordinates have in the justice of their superiors’ (Lau & Buckland, 2001, p. 372). I used three of the four items reported by Lau & Buckland (2001) and adapted these measures to refer to trust in the immediate supervisor who evaluated the subordinate’s performance.

Finally, following Korsgaard & Roberson (1995), I included age, tenure and gender as control variables. However, it should be noted that in earlier research these control variables have been shown to be just weakly related to justice perceptions (Cohen-Charash & Spector, 2001). Furthermore, in comparison to Korsgaard & Roberson (1995) our sample was more homogeneous (i.e., showed less variance) in terms of age and tenure. Therefore, I tested the model and hypotheses with and without the three control variables. The pattern of findings did not change significantly with the inclusion of these control variables, so in the next section I will only present the results for the more parsimonious model without these control variables.

4. Results

To test the theoretical model, I used SmartPLS 2.0 (Ringle et al., 2005). Partial Least Squares (PLS) was chosen as the analysis technique, because the technique puts less stringent demands on the data than structural equation modelling and does not necessarily require that the data meets parametric assumptions. Although PLS is rather robust also with small sample sizes (cf. Choi & Sy, 2009), researchers should evaluate whether the sample size is sufficient to test the model with enough power (Marcoulides and Saunders, 2006). Although ten times the largest number of indicators for a latent variable or the largest number of predictors for a latent outcome is often used as a rule of thumb (Chin, 1998), it is better to assess the statistical power (Marcoulides & Saunders, 2006). Given the fact that the largest number of predictors for a latent outcome in my model is four, that the effect sizes to be expected are at least 0.25 (i.e., I expect that at least 20% of the variance will be explained), and that I am using a significance level of .05, the sample

size of 60, although small, is adequate to achieve the often used guideline of 0.80 for power.

Evaluation of measurement model

The quality of the measurement model was tested before testing the structural model. To test the reliability and validity of the measurement model I used the criteria outlined by Henseler et al. (2009, pp. 298-300) (cf. Fornell & Larcker, 1981; Henseler et al., 2009). First, to check the internal consistency reliability of each latent variable, I will report both Cronbach's alpha and the composite reliability ρ_c . The composite reliability is more appropriate for PLS, because Cronbach's alpha tends to underestimate the reliability of latent variables because it does not take into account the reliability of the indicators. Both reliability coefficients should be higher than .7.

Second, the reliability of indicators is assessed based on the loadings of each indicator on the latent variable. The loading of each indicator should exceed .71, which indicates that the latent construct explains at least 50% of the indicator's variance.

Third, convergent validity is assessed by the average variance extracted (AVE). The average variance extracted indicates the extent to which the latent variable is able to explain the variance in each of the indicators. AVE values should be at least .50, indicating that the variance captured by the construct is larger than the variance due to measurement error (Fornell & Larcker, 1981).

Fourth, discriminant validity is examined through both the Fornell-Larcker criterion and the cross-loadings. The Fornell-Larcker criterion states that for each latent variable the average variance explained should exceed the variance shared with any other latent variable. Thus, AVE should exceed the squared correlation between the latent variable and any other latent variable in the model. Cross-loadings for each indicator are examined to see whether each indicator has a higher loading on its associated latent variable than on any other latent variable.

The results of the reliability and validity tests for the original measurement model (not shown here) with all indicators indicated problems in internal reliability, convergent and discriminant validity in all three independent variables. After dropping items one by one, the final measurement model that met all criteria contained three of the four original items for feedback, three of the five original items for instrumental voice, and four of the eight items for non-instrumental voice. The original items and the items in the final measurement model are reported in Appendix 1. The reliability and validity tests for the final measurement model are displayed in table 1-3. Table 1 <INSERT TABLE 1 HERE> displays the results of the reliability and convergent reliability tests. As table 1 shows, all

Cronbach's alphas and composite reliability coefficients were above .70 (the lowest being .83). This confirms the internal reliability of the measurement model. Furthermore, table 1 reveals that all AVE values are greater than .50 (the lowest being .58), which corroborates the convergent validity. Table 2 <INSERT TABLE 2 HERE> reveals the results of the discriminant validity based on the Fornell-Larcker criterion. Since the square root of all AVE values displayed in the diagonal elements exceed the other correlations in the table, the test supports the discriminant validity of the latent variables. Finally, table 3 <INSERT TABLE 3 HERE> shows that the loadings are higher than .71 and exceed the cross-loadings for all indicators in the final measurement model. This further substantiates the conclusion that the latent variables in the model represent different constructs.

Evaluation of structural model

To evaluate the structural or inner path model, I again used the criteria by Henseler et al. (2009, pp. 303-305).

First, similar to OLS regression, the R square values (coefficients of determination) for each of the endogenous latent variable in the model should be assessed. These values demonstrate the extent to which the model is able to explain variance in the independent variables. Based on Chin (1998), Henseler et al. (2009) state that R square values for endogenous latent variables in the model of .67, .33, and .19 can be described as strong, moderate, and weak respectively. R square values should preferably be strong, although moderate values may be acceptable.

Second, the path coefficients should be evaluated in terms of sign, magnitude, and significance. The sign of each path should correspond with the predicted relationship. The magnitude and significance of path coefficients is assessed in PLS through bootstrapping. I used a bootstrap sample of 1000.

Third, the effect size f^2 for each path in the model indicates how much each predictor variable contributes to the structural model. It is measured in terms of the incremental variance explained by including the predictor variable as a proportion of the total unexplained variance in a latent endogenous variable after including the predictor variable. Based on Cohen (1988), Henseler et al. (2009) state that f^2 values of .35, .15, and .02 signify large, medium, and small effects, respectively.

Fourth, predictive relevance of the model can be assessed by Stone-Geisser's Q square or cross-validated redundancy index (Hartmann & Slapničar, 2009). Values greater than zero for a latent endogenous variable provide evidence that the predictor variables have predictive relevance. For each path in the model, the relative impact of predictive relevance for each predictor variable in explaining a latent endogenous variable can be

assessed by measuring the increase in Q square for each endogenous latent variable (incremental predictive variance) as a proportion of one minus Q square. Similar to effect sizes, values of .35, .15, and .02 signify large, medium, and small predictive relevance of a latent predictor variable in explaining a particular endogenous latent variable.

Finally, because we hypothesised both direct and indirect (mediated) effects through fairness of appraisal, I used the causal step procedure proposed by Baron & Kenny (1986) (cf. Hartmann & Slapničar, 2009).

The results are displayed in tables 4 and 5. <INSERT TABLE 4 HERE> Table 4 shows the R square and Q square values for the mediator and dependent variables, and the effect sizes and relative impact on predictive relevance for each path. The results for the variables show that the R square values are strong for DISTRJ (0,673) and SAT (0,656), and moderate to strong for the other three variables. All Q square values are well above zero, indicating that the predictor variables have predictive relevance. The results for each path show that IVOICE has a medium to large effect on procedural fairness ($f^2=0,327$), while NIVOICE ($f^2=0,069$) and FEED ($f^2=0,125$) have small to medium effects on procedural fairness. Procedural fairness has medium to strong effect sizes on all dependent variables, except on RELATION ($f^2=-0,007$). FEED has a strong effect on satisfaction with the appraisal interview ($f^2=0,614$), a medium effect on distributive justice ($f^2=0,188$), and no effect on trust in supervisor or relation with the supervisor. IVOICE only has a small effect on relation with the supervisor ($f^2=0,045$), while NIVOICE has a medium effect on relation with the supervisor, but no effect on the other variables. Overall, these results provide some preliminary evidence of a mediating effect of procedural fairness perceptions, and of different effects of the predictor variables on the reactions. The results of the formal test of the mediating effect of procedural fairness perceptions using the causal step method are shown in table 5. <INSERT TABLE 5 HERE> The path coefficients from all three predictor variables to fairness (first column) are significant: the path coefficient from FEED to FAIR is 0.296 ($p < 0.01$), from IVOICE to FAIR is 0.455 ($p < 0.001$), and from NIVOICE to FAIR 0.198 ($p < .05$). These findings lend support to hypotheses 4, 5 and 6. To test the mediating effect of fairness, each predictor variable (FEED, IVOICE, and NIVOICE) should be significantly (and uniquely) related to each outcome (DJUST, TRUST, RELATION, and SAT) when fairness is left out of the model. Next, when fairness is introduced into the model, these direct effects should no longer be significant (full mediation) or be significantly reduced (partial mediation). Additionally, fairness should be significantly related to each outcome while controlling for the effects of the predictor variables. The results in table 5 show that the path coefficients from FAIR to DJUST (0.557, $p < 0.001$), from FAIR to TRUST (0.492, $p < .05$), and from FAIR to SAT (0.367, $p <$

.05) were all positive and significant. This supports hypotheses 1, 2 and 3. Because no significant path coefficient was found from FAIR to RELATION, fairness of appraisal does not mediate the relationship between the predictors and the relation with supervisor. Therefore, hypotheses 3, 7c, 8c and 9c have to be rejected when trust in supervisor is measured using Zand's (1972) instrument.

As to instrumental voice, the results of the direct model, without including fairness, in table 5 show that the path coefficients from IVOICE to DJUST (0.325, $p < .01$), from IVOICE to RELATION (0.261, $p < .05$) and from IVOICE to TRUST (0.270, $p < .10$) were positive and significant, while the path coefficient from IVOICE to SAT was not significant. When fairness was introduced in the model, the path coefficients from IVOICE to DJUST (0.110) and from IVOICE to TRUST (0.130) were no longer significant, while the path coefficient from IVOICE to RELATION remained positive and significant (0.230, $p < 0.05$). Together, these results indicate that the relationships between instrumental voice and distributive justice and between instrumental voice and trust in supervisor (using Korsgaard & Roberson's (1995) measure) is fully mediated by procedural fairness perceptions, but no relationship, either direct or indirect, was found between instrumental voice and satisfaction with the appraisal. A direct effect was found, however, between instrumental voice and trust in supervisor using Zand's (1972) instrument. Thus, hypothesis 7a is supported, but the hypotheses 7b and 7c have to be rejected.

With regard to non-instrumental voice, the results of the direct model, without fairness of appraisal, in table 5 show that only the path coefficient from NIVOICE to RELATION (0.455, $p < 0.01$) was significant, and remained significant (0.425, $p < 0.05$) when fairness of appraisal was introduced into the model. Thus, no mediating role of fairness of appraisal was found for non-instrumental voice. Thus, hypothesis 8a is supported, but hypotheses 8b and 8c have to be rejected.

Finally, the path coefficients for feedback quality in the direct model, as shown in table 5, show that there were significant paths from FEED to DJUST (0.490, $p < 0.001$) and from FEED to SAT (0.732, $p < 0.001$), but the paths from FEED to TRUST and from FEED to RELATION were not significant. When fairness of appraisal was introduced in the model, the path coefficients from FEED to DJUST (0.325, $p < 0.01$) and from FEED to SAT (0.623, $p < 0.001$) remained significant but were (somewhat) reduced. Thus, fairness of appraisal only partially mediates the relationships between feedback quality and both distributive justice and satisfaction with appraisal review, while no mediating role of fairness of appraisal is found for the relationship between feedback quality and trust in supervisor. These results support hypotheses 9a and 9b, but hypothesis 9c is rejected.

Robustness checks

To further validate the model, I also tested modifications of the structural model. In particular, I explored models in which all other variables were regressed on one outcome at the time. In none of the models, significant path coefficients were found between the outcome variables. Furthermore, including paths between the outcomes hardly changed R square values, while the pattern of significant findings as reported in table 4 and 5 remained the same. Similar to the findings when adding the control variables age, gender and tenure, the only difference was that most of the relationships shown above that were significant at $p < 0.05$ now were only significant at $p < 0.10$. This further substantiates the treatment of distributive justice, trust, and satisfaction as separate appraisal reactions. It also substantiates that correlations between these three latent constructs are mainly spurious, because caused by shared determinants. Finally, I also tested the structural model using all original items. Again, the pattern of significant findings remained the same.

5 Discussion and conclusion

In this paper, I examined the effect of feedback quality and voice as characteristics of the performance appraisal process on subordinate's reactions to the appraisal review using a sample of 60 accountants in their early careers from one office of a Dutch Big Four accounting Firm. Based on four previous studies (Korsgaard & Roberson, 1995; Lau et al., 2008; Sholihin & Pike, 2009; Hartmann & Slapničar, 2009) and the procedural justice literature, I developed and tested a model in which the effect of feedback quality and voice (both instrumental and non-instrumental) on appraisal reactions is mediated by perceived procedural fairness. The results indicate that instrumental voice, non-instrumental voice, and feedback quality indeed have unique effects on procedural fairness perceptions (i.e., procedure effects), and that procedural fairness in turn has a significant effect on distributive justice, satisfaction with appraisal review, and trust in superior (i.e., fair process effects). Furthermore, the results show that both feedback quality and instrumental voice have a significant indirect effect on distributive justice through perceived procedural fairness of appraisal, that instrumental voice has a significant indirect effect on trust in supervisor through procedural fairness of appraisal, and that feedback quality has a significant indirect effect on satisfaction with the appraisal review. Beyond the indirect effects via procedural fairness, significant positive direct effects were found from feedback quality to distributive justice, from feedback quality to satisfaction with the appraisal review, and from both instrumental and non-

instrumental voice on interpersonal trust in supervisor. These findings suggest that voice and feedback quality are not only important because of their effects on and through procedural fairness, but also because they have effects beyond fairness perceptions.

The findings are supportive of fair process effects through two different paths, as in the studies by Lau et al. (2008) and Sholihin & Pike (2009): an outcome-based path via distributive justice and a relation-based path via trust in supervisor. The findings differ, however, from previous findings by Korsgaard & Roberson (1995) on the effects of voice, and Hartmann & Slapničar (2009) on the effects of feedback quality. In contrast to Korsgaard & Roberson (1995), in this study both components of voice were not related to satisfaction with the appraisal review, direct or indirect. Additionally, only instrumental voice was significantly indirectly related to trust in supervisor using Korsgaard & Roberson (1995)'s instrument, while Korsgaard & Roberson (1995) found that only non-instrumental voice was related to trust in supervisor. In contrast to Hartmann & Slapničar (2009), no significant direct or indirect effect of feedback quality on trust in supervisor was found in this study.

There are a number of possible explanations for these different findings. One explanation for the difference in findings is that in this study the effect of both feedback quality and voice was taken into account. The findings indicate that satisfaction with the appraisal review is primarily driven by feedback quality, while trust in supervisor seems to be driven mainly by the voice components. This suggests that in assessing the effect of either feedback quality or voice it is indeed important to control for the effect of the other procedural characteristic. Furthermore, in the model in this paper the mediating role of procedural fairness perceptions was made explicit, as in Hartmann & Slapničar's (2009) study, while Korsgaard & Roberson (1995) treated voice as an indirect measure of procedural fairness. Thus, in Korsgaard & Roberson's (1995) study the impact of voice on trust in supervisor contained both procedure and fair process effects. In this study, I find evidence for both effects, but the combined, indirect effect on trust in supervisor was not significant. Finally, an important explanation for the difference in findings from both Korsgaard & Roberson (1995) and Hartmann & Slapničar (2009) could be the specific setting in which this study was conducted. This study used a sample of early career accountants from a single office. Performance evaluation interviews are crucial events for their careers, as they are part of an up-or-out system. This may lead to a focus on the outcome-based path. Furthermore, unlike in many other organisations, in this setting the performance manager evaluating their performance is not their daily supervisor. During

the year, several other managers evaluate their performance on subsequent audits. Self-evaluation forms also play a crucial role in performance evaluation. This makes the performance appraisal review a formal and important moment. Building long-term relationships with the performance manager rather than obtaining a good performance rating is probably not the main concern of these accountants given the setting in which they operate. Thus, non-instrumental voice may not be valuable to them, in contrast to instrumental voice, which may explain the lack of significant findings for non-instrumental voice, except for a relationship with trust in supervisor using Zand's instrument. This may also explain the important role of feedback quality in explaining satisfaction with the appraisal review. It also suggests that feedback quality is more informative about performance and promotion than about the social position in the group (i.e., the relational explanation of fair process effect).

The results of this study also show that the conceptualization of trust in supervisor is important, as different concepts may lead to different findings. In this study, I used two instruments to measure trust: one from Lau & Buckland (2001) developed by Zand (1972), and one from Korsgaard & Roberson (1995). While a significant indirect effect was found of non-instrumental voice on trust in supervisor using Korsgaard & Roberson (1995)'s measure, no indirect effect was found using Zand's measure. Instead, a direct effect of both instrumental and non-instrumental voice on trust in supervisor was found when Zand's measure was used. Thus, this study suggests that different concepts of trust in superior may have different antecedents. Still, both concepts used in the present study were highly correlated ($r=0.613$). This emphasises the need to carefully consider the appropriate conceptualization of trust in supervisor. While trust in supervisor is an often-used concept in management accounting studies, future studies are needed to incorporate insights from the debate on the different concepts of trust in supervisor in the organisational behaviour literature (see for example Dirks & Ferrin, 2002).

Overall, the findings of this study suggest that instrumental voice, non-instrumental voice, and feedback quality have different (unique) effects on reactions to the appraisal process. In particular, both types of voice have stronger relation-related effects than outcome-based effects, while feedback quality is associated more with effects that are outcome- and satisfaction related. This last finding shows that both components of voice and feedback quality are not substitutes of one another, but serve different purposes in the performance appraisal process. Thus, organisations that pay attention to both types of voice and feedback quality, as informal, social interactions between employees within the

organisation, can benefit from positive attitudes and reactions of their employees.

Future studies are needed to replicate the findings from this study, as a significant limitation of this study is that the data was collected from a single organisation. While this enhances the internal and statistical validity of the study, as it controls for the influence of many possible covariates, it decreases external validity. Future studies are needed in different contexts to assess the robustness of the findings.

Additionally, the usual limitations of the survey method also apply to this study, such as that the data were collected at one point in time, the possibility of common-method bias and non-response bias, and the fact that no causal relationships can be established with this type of data. To overcome these limitations, different research methods are needed in future studies to cross-validate findings across research methods.

Finally, an important limitation of this study is the small sample size. While consideration was given to the power of the study, the small sample size does limit the complexity of the model that can be considered. Future studies should expand the model to include the outcome effects of the appraisal reactions as considered, for example, by Lau et al. (2008) and Sholihin & Pike (2009), such as commitment, job satisfaction, and performance.

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Appendix 1. List of original items per variable; items in final PLS model marked with *

Feedback quality

- FEED1 * My superior gives me useful feedback about my job performance.
FEED2 * The performance information I get from my superior is generally not very meaningful.
(reverse scored)
FEED3 The feedback I receive from my superior helps me do my job.
FEED4 * I value the feedback I receive from my superior.

Instrumental Voice

- IVOICE1 I felt I could have introduced new topics during the appraisal.
IVOICE2 * I felt I could have influenced the appraisal discussion.
IVOICE3 * My manager and I share responsibility for the way the appraisal went.
IVOICE4 * I felt I was unable to influence the direction of the discussion. (reverse scored)
IVOICE5 To what extent did you influence how your manager evaluates your work?

Non-Instrumental Voice

- To what extent did you:
NIVOICE1 Make suggestions about how your job might be done differently?
NIVOICE2 Talk about your major job responsibilities?
NIVOICE3 * Discuss what you felt your strengths and weaknesses are?
NIVOICE4 * Tell your manager about problems you are having on the job?
NIVOICE5 * State your side of the story?
NIVOICE6 * Express your views about what things are most important in your job?
NIVOICE7 Tell your manager how you would evaluate yourself?
NIVOICE8 Use the session as an opportunity to share your ideas and feelings?

Procedural fairness

- PROCJ1 * The evaluation I receive is based on factors over which I have full control.
PROCJ2 * The evaluation I receive is based on factors that also I find relevant for my functioning.
PROCJ3 * The evaluation I receive is based on a complete picture of my true performance.
PROCJ4 * In general I think that my functioning and performance is evaluated in an honest and fair way.
PROCJ5 * In general I think that the criteria my superior uses to evaluate me are honest and fair.
PROCJ6 * I am very satisfied with the way in which I am evaluated.

Distributive Justice

- DISTRJ1 * The performance appraisal was fair.
DISTRJ2 * I agree with my final rating.
DISTRJ3 * I agree with the way my manager rated my performance.
DISTRJ4 * The performance appraisal fairly represented my past year's performance.

Satisfaction with the Appraisal Review

- SAT1 * From my perspective, the interview was a satisfying experience.
SAT2 * In general, I am satisfied with the appraisal interview.

Trust in Supervisor

- TRUST1 * Taking all things into consideration, I am satisfied with my manager.
TRUST2 * My manager is honest in his/her dealing with me.
TRUST3 * I trust my manager.
TRUST4 * My manager is sincere in his/her attempt to meet my point of view.

Trust in supervisor (relation)

- REL1 * I have learned from my experience (during the past two years) that I can trust my supervisor.
REL2 * My supervisor and I both openly express differences and feelings of encouragement or disappointment.
REL3 * My supervisor and I share all relevant information and freely explore ideas and feelings.

Figure 1. *Proposed model linking feedback quality and voice (instrumental and non-instrumental) to reactions to performance evaluation through procedural fairness perceptions.*

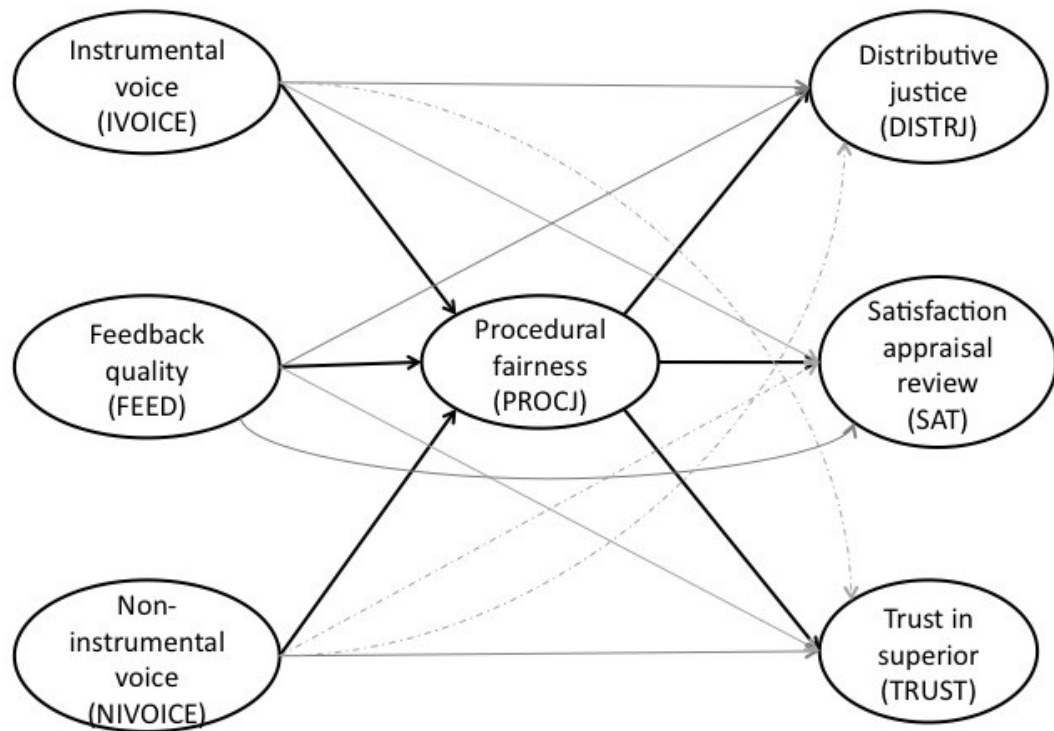


Table 1. Construct and convergent validity (n = 60)

	Cronbach's alpha	Composite reliability (Dillon- Goldstein's ρ)	Average Variance Extracted (AVE)
1. Feedback	0.711	0.839	0.635
2. Instrumental Voice	0.701	0.830	0.621
3. Non-instrumental voice	0.761	0.845	0.578
4. Procedural fairness	0.913	0.932	0.697
5. Distributive fairness	0.935	0.953	0.837
6. Trust	0.883	0.919	0.739
7. Relational trust	0.746	0.857	0.668
8. Satisfaction with appraisal	0.919	0.961	0.925

Notes:

Criteria: Cronbach's alpha and composite reliability > 0.70, AVE > 0.50

Table 2. Discriminant validity coefficients (n=60)

	1.	2.	3.	4.	5.	6.	7.	8.
1. Feedback	0.797							
2. Instrumental Voice	0.530	0.788						
3. Non-instrumental voice	0.494	0.342	0.760					
4. Procedural fairness	0.629	0.666	0.496	0.835				
5. Distributive fairness	0.682	0.581	0.381	0.777	0.915			
6. Trust	0.466	0.443	0.381	0.618	0.571	0.859		
7. Relational trust	0.414	0.441	0.547	0.459	0.452	0.631	0.817	
8. Satisfaction with appraisal	0.772	0.470	0.377	0.664	0.614	0.542	0.445	0.962

Notes:

Bold figures (diagonal elements) are the square root of average variance extracted (AVE). Off-diagonal elements are the correlations between the latent variables. For discriminant validity (Fornell-Larcker criterion), diagonal values should exceed off-diagonal values.

Table 3. *Outer (component) loadings and cross loadings of items on latent variables (n=60)*

	FEED	IVOICE	NIVOICE	FAIR	DISTRJ	TRUST	REL	SAT
FEED1	0.742	0.513	0.343	0.439	0.526	0.359	0.269	0.556
FEED2	0.800	0.291	0.395	0.506	0.561	0.291	0.373	0.569
FEED4	0.844	0.466	0.438	0.551	0.547	0.453	0.344	0.708
IVOICE2	0.455	0.806	0.224	0.517	0.311	0.410	0.274	0.454
IVOICE3	0.346	0.712	0.128	0.315	0.384	0.287	0.261	0.306
IVOICE4	0.443	0.839	0.397	0.672	0.629	0.349	0.466	0.353
NIVOICE3	0.562	0.450	0.808	0.449	0.384	0.318	0.427	0.429
NIVOICE4	0.276	0.229	0.715	0.264	0.200	0.153	0.316	0.171
NIVOICE5	0.221	0.140	0.743	0.251	0.182	0.330	0.567	0.186
NIVOICE6	0.378	0.180	0.772	0.490	0.343	0.317	0.345	0.298
FAIR1	0.554	0.503	0.445	0.768	0.548	0.347	0.360	0.593
FAIR3	0.478	0.630	0.446	0.841	0.666	0.531	0.420	0.509
FAIR5	0.468	0.403	0.389	0.795	0.579	0.476	0.295	0.419
FAIR7	0.558	0.558	0.366	0.873	0.668	0.525	0.339	0.543
FAIR8	0.506	0.621	0.427	0.885	0.709	0.653	0.429	0.551
FAIR9	0.585	0.590	0.417	0.843	0.703	0.533	0.435	0.689
DISTRJ1	0.627	0.422	0.367	0.729	0.883	0.451	0.351	0.569
DISTRJ2	0.653	0.501	0.403	0.681	0.923	0.542	0.455	0.555
DISTRJ3	0.587	0.629	0.342	0.679	0.924	0.502	0.466	0.526
DISTRJ4	0.627	0.576	0.284	0.750	0.928	0.589	0.388	0.592
TRUST1	0.526	0.391	0.412	0.611	0.608	0.843	0.704	0.590
TRUST2	0.310	0.272	0.259	0.537	0.486	0.848	0.420	0.460
TRUST3	0.302	0.353	0.268	0.428	0.419	0.868	0.529	0.341
TRUST4	0.414	0.495	0.340	0.510	0.411	0.878	0.477	0.422
REL1	0.376	0.342	0.532	0.304	0.329	0.450	0.851	0.301
REL2	0.335	0.271	0.488	0.349	0.391	0.471	0.881	0.417
REL3	0.296	0.478	0.303	0.487	0.396	0.641	0.710	0.379
SAT1	0.749	0.466	0.336	0.621	0.656	0.520	0.445	0.962
SAT2	0.735	0.438	0.389	0.656	0.525	0.522	0.410	0.962

Notes:

Loadings of each item on its latent variable (bold figures) should exceed 0.71, and should be higher than loadings on other latent constructs.

Table 4. Assessing structural model

	Original Sample (O) ¹	Sample Mean (M) ²	Standard Error (STERR) ²	T Statistics (O/STERR) ³	R square/ f square ⁴	Q square/ q square ⁵
Fairness					0.579	0.402
FEED -> FAIR	0.297	0.296	0.102	2.894**	0.125	0.062
IVOICE -> FAIR	0.441	0.455	0.090	4.916***	0.327	0.163
NIVOICE -> FAIR	0.199	0.198	0.100	1.991*	0.069	0.035
Distributive justice					0.673	0.533
FEED -> DISTRJ	0.338	0.325	0.119	2.836**	0.188	0.109
IVOICE -> DISTRJ	0.048	0.110	0.088	0.545	0.005	-0.003
NIVOICE -> DISTRJ	-0.090	-0.136	0.105	0.853	0.018	0.006
FAIR -> DISTRJ	0.577	0.557	0.134	4.312***	0.431	0.227
Trust in supervisor					0.396	0.290
FEED -> TRUST	0.098	0.178	0.146	0.669	0.009	0.035
IVOICE -> TRUST	0.036	0.130	0.103	0.353	0.001	0.033
NIVOICE1 -> TRUST	0.074	0.123	0.092	0.811	0.006	0.080
FAIR -> TRUST	0.495	0.492	0.204	2.423*	0.154	0.118
Relation					0.378	0.245
FEED -> REL	0.042	0.131	0.098	0.427	0.001	0.003
IVOICE -> REL	0.227	0.230	0.109	2.078*	0.045	0.026
NIVOICE -> REL	0.411	0.425	0.166	2.477*	0.155	0.098
FAIR -> REL	0.078	0.170	0.141	0.550	-0.007	0.042
Satisfaction					0.656	0.621
FEED -> SAT	0.626	0.623	0.102	6.139***	0.614	0.596
IVOICE -> SAT	-0.074	-0.124	0.091	0.813	0.009	0.118
NIVOICE -> SAT	-0.088	-0.124	0.087	1.008	0.015	-0.011
FAIR -> SAT	0.363	0.367	0.179	2.025*	0.161	0.167

Notes:

¹ PLS estimate of path coefficient.

² Average path coefficient (M) and standard error are based on bootstrap procedure with 1,000 samples.

³ Significance of path coefficients based on t(1000), two-tailed test: * p < .05; ** p < .01; *** p < 0.001

⁴ This column reports R square values for each endogenous latent variable (in bold), and f square values (effect sizes) for each path from predictor to endogenous latent variable. f² values of .35, .15, and .02 signify large, medium, and small effects, respectively.

⁵ This column reports Q square values for each endogenous latent variable (in bold), and q square values for each path from predictor to endogenous latent variable. q² values of .35, .15, and .02 signify large, medium, and small predictive relevance, respectively.

Table 5. Assessing structural models: testing for mediating role of procedural fairness perceptions

	Fairness		Distributive justice		Trust		Relation		Satisfaction	
	2 Mediated model	1 Direct model	2 Mediated model	1 Direct model	2 Mediated model	1 Direct model	2 Mediated model	1 Direct model	2 Mediated model	
From FEED to ->	0.296**	0.490***	0.325**	0.265	0.178	0.107	0.131	0.732***	0.623***	
From IVOICE to ->	0.455***	0.325**	0.110	0.270†	0.130	0.261*	0.230*	0.109	-0.124	
From NIVOICE to ->	0.198*	0.131	-0.136	0.188†	0.123	0.455**	0.425*	-0.097	-0.124	
From FAIR to ->			0.557***		0.492*		0.170		0.367*	
R square	0.579	0.533	0.673	0.302	0.396	0.382	0.378	0.601	0.656	
Q square	0.402	0.427	0.533	0.206	0.290	0.214	0.245	0.558	0.621	
R square change			0.140		0.094		-0.004		0.055	
Effect size f^2			0.431***		0.154**		-0.007		0.161**	
Q square change			0.106		0.084		0.031		0.063	
Predictive relevance q^2			0.227**		0.118*		0.042*		0.167**	

Notes:

Figures in the table are sample means of path coefficients from a bootstrap procedure with 1,000 samples. Direct model is model without procedural fairness, mediated model is model including procedural fairness.

Significance of path coefficients in the table based on $t(1000)$, two-tailed test:

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < 0.001$

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