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Fairness perceptions of supervisor feedback, LMX, and employee well-being at work

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In a field study we examined employees' fairness perceptions of supervisor feedback and their relationships with employee well being (job depression, job anxiety, job satisfaction, turnover intentions) and perceived control at work. We hypothesized quality of leader member exchange (LMX) to partially mediate these relationships. We measured the above constructs in two different industries at two separate times over an interval of 6 months. Results from hierarchical regression analyses based on data from 99 employees supported our hypotheses. Perceived fairness of feedback was positively related to job satisfaction and feelings of control at work, and negatively related to job depression and turnover intentions. These relationships were mediated by the quality of LMX. Job anxiety was neither related to fairness perceptions of feedback nor to LMX, but positively related to frequency of negative feedback from the supervisor. Our research contributes to both, the feedback and leadership fairness literature, in connecting fairness of leader feedback to LMX and important work related outcomes.

***Keywords*:** Performance feedback; Feedback fairness; Well being; LMX; Perceived control.

Providing performance feedback to employees, i.e., giving them information about how their performance is evaluated (Ilgen, Fisher, & Taylor, 1979), is a core task within efficient leadership (Leung, Su, & Morris, 2001; Yukl, 2002). Leadership behaviour including feedback delivery and fair treatment has been shown not only to influence employees' self-conceptions (van Knippenberg, van Knippenberg, De Cremer, & Hogg, 2004) and employees' performance (Gerstner & Day, 1997), but also employee well-being

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(e.g., van Dierendonck, Haynes, Borrill, & Stride, 2004). In an empirical study, leaders as well as subordinates indicated that they believed feedback from the supervisor to be negatively related to stress at work (Offermann & Hellmann, 1996). These findings highlight the meaning of supervisor feedback as an important resource at work that reduces uncertainty, enhances role clarity, and helps to create competencies (Ashford & Cummings, 1983). Feedback is widely acknowledged to be central not only to employee motivation and performance, but also to job satisfaction (Ashford & Cummings, 1983; Fedor, 1991; Hackman & Oldham, 1976; Ilgen et al., 1979; Kluger & DeNisi, 1996). Therefore, it is important to explore how specific features of feedback and feedback delivery are related to the supervisor–subordinate relationship and to well-being at work.

One condition for feedback to unfold its beneficial effects is that it is accepted and trusted by the recipient (Ilgen et al., 1979). For feedback to be accepted by the recipient it is necessary that it is perceived to be fair (McDowall & Fletcher, 2004). Leung et al. (2001) revealed that recipients had higher levels of trust in and satisfaction with the supervisor and accepted negative feedback more readily when they perceived this feedback to be interpersonally fair. These findings suggest that fair feedback delivery is relevant to the employee's relationship with his or her supervisor. Although the importance of giving feedback might be salient to supervisors, they often perceive giving feedback as unpleasant, especially when the feedback is negative (Larson, 1984, 1986, 1989; Moss & Sanchez, 2004). Therefore, it is important to find ways for supervisors to make feedback delivery more interpersonally fair in order to have their feedback accepted by the employee and to improve the supervisor–employee relationship.

In this study, we examined the quality of leader–member exchange (LMX; Graen & Uhl-Bien, 1995) as a partial mediator in the relationship between fairness perceptions of supervisor feedback and employee well-being at work. Figure 1 displays our research model. With this study we aimed to further connect feedback and leadership fairness research and to add to both,

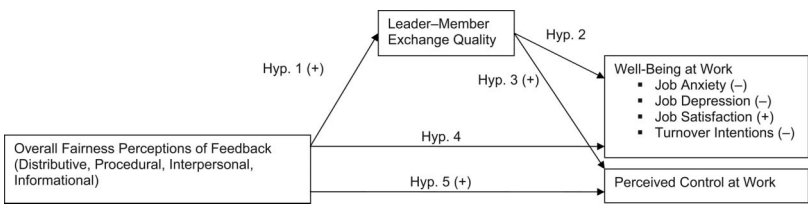

Figure 1. Model examined in the study. Partial mediation between fairness of feedback and well being and control at work via LMX is hypothesized in Hypotheses 6 and 7. Signs in parentheses indicate the direction of the postulated relationships.

the feedback and the leadership fairness literature in several ways: First, studying fairness perceptions of feedback promises to provide valuable insight into the properties feedback needs to have in order to benefit employee affect, cognitions, and behaviour at work. We argue that feedback needs to be perceived as fair in order to contribute positively to the exchange relationship between supervisor and employee and to the employee well-being at work. Second, while several studies have previously examined the relationship between fairness, LMX, and important work-related outcomes (cf. Cohen-Charash & Spector, 2001; Colquitt, Conlon, Wesson, Porter, & Ng, 2001; van Knippenberg, De Cremer, & van Knippenberg, 2007), we focus on the fairness of one specific important leadership behaviour, namely feedback delivery, which has been neglected in leadership fairness research so far. Considering the fairness of specific leadership behaviours such as feedback delivery, and examining their relationships with work-related outcomes, will enhance our understanding of which leadership behaviours are important to employees and how they can be improved. Practical implications of our study are obvious: Supervisors should be encouraged and trained to provide fair feedback in order to invigorate their relationships with their employees, to enhance employee performance, and to increase employee feelings of control and well-being at work.

FEEDBACK AND FAIRNESS

Fairness perceptions at work influence employees' attitudes and behaviours in organizations (Blader & Tyler, 2005). Employees care about being treated fairly, because fairness serves psychological needs, including "control, belonging, self-esteem and meaningful existence" (Cropanzano, Byrne, Bobocel, & Rupp, 2001, p. 175). We assume that employees also care about the fairness of the feedback they receive from their supervisors. To examine fairness of feedback, we relied on organizational justice research (Colquitt, 2001; Colquitt et al., 2001) as a starting point. Based on an extensive literature review, Colquitt (2001) suggested four justice dimensions, namely distributive, procedural, interpersonal, and informational justice, and developed a measure to assess these dimensions. Distributive justice refers to the outcomes of decisions and is determined by equity or equality norms. Procedural justice is concerned with justice of the procedures employed for decision making and is affected by the application of fair process criteria like accuracy or consistency. Interactional justice can be defined as fairness of the treatment employees receive from the decision makers. This justice dimension itself includes two subdimensions, interpersonal and informational justice. While interpersonal justice refers to a respectful treatment, informational justice refers to the truthfulness and adequacy of explanation of the decision. The distinction between these different justice dimensions is

not indisputable; empirical research has shown that oftentimes the dimensions are highly intercorrelated (cf. Colquitt, 2001) and some authors argue that the justice dimensions are very similar (Cropanzano & Ambrose, 2001).

With respect to feedback, we define distributive justice as the fairness of the feedback content. A feedback message will be perceived as fair if it properly reflects the employee's effort, performance, and results of work. Procedural fairness regarding to feedback refers to the process in which information was gathered that formed the feedback message. This process is considered as fair if it relies on accurate information, is free from bias and is based on adequate procedures. Interpersonal feedback fairness refers to the way the feedback source treats the feedback recipient. Fair treatment is characterized by politeness and respectfulness. Finally, informational feedback fairness encompasses the sincerity of the communication and provision of adequate explanations of the feedback message.

FAIRNESS PERCEPTIONS OF FEEDBACK AND LMX

Leader–member exchange (LMX) refers to the quality of the supervisor–employee relationship (Graen & Scandura, 1987). LMX theory assumes that a supervisor has a unique relationship to each of his or her employees (Graen & Uhl-Bien, 1995). These relationships are formed by social exchange processes between supervisor and employee. A high-quality relationship is characterized by a reciprocal exchange in which one member of the dyad gets something favourable from the other member and comes up with something equally favourable in turn (Blau, 1964; Kelley & Thibaut, 1978). Ingroup members are distinguished from outgroup members, with the former receiving more attention and resources from the supervisor. Being an ingroup member is associated with better performance, more commitment, and a higher degree of mutual liking (Engle & Lord, 1997; Liden, Wayne, & Stilwell, 1993). Organizational fairness has been shown to facilitate the formation of social exchange relationships (e.g., Cohen-Charash & Spector, 2001; Rupp & Cropanzano, 2002; Scandura, 1999). In our study, we focused on one specific aspect of fairness, namely employees' fairness perceptions of feedback from the supervisor, and examined its relationship with LMX. Fair feedback from the supervisor is a valuable resource for the employee, which signals him or her that the supervisor is interested in the employee's performance and cares for his or her development.

If an employee is treated fairly by his or her supervisor with respect to distributive, procedural, interpersonal, and informational aspects, the employee will perceive the feedback as a benefit (Reis, 2002). According to social exchange theory (Blau, 1964; Kelley & Thibaut, 1978), this benefit received from the supervisor requires reciprocation from the employee. Therefore, the employee is likely to cooperate and reinvest into the

relationship to the supervisor. If the employee did not reciprocate, this would set the exchange relationship at risk (Blader & Tyler, 2005). Thus, perceptions of feedback fairness enhance the quality of the leader–member relationship because they motivate the employee to reciprocate and reinvest into the relationship.

Support for the assumption that fairness enhances LMX comes from a study by Masterson, Lewis, Goldman, and Taylor (2000). These authors found in a large sample of university employees that interactional justice perceptions were positively related to LMX, which in turn was a mediating variable in the relationship between interactional justice and supervisor-directed organizational citizenship behaviour, as well as job satisfaction. Also, Rupp and Cropanzano (2002) found interactional justice to be positively related to the exchange between supervisor and employee, indicating the importance of interactional justice for LMX quality. In our study, we examined the relationship of an overall fairness perception of feedback, including fairness of the feedback message and fairness of feedback delivery by the supervisor. We state the following hypothesis:

Hypothesis 1: Fairness perceptions of feedback are positively related to LMX.

LMX, WELL BEING, AND CONTROL AT WORK

Well-being is a heterogeneous construct (for an overview see Danna & Griffin, 1999). Diener, Suh, Lucas, and Smith (1999) categorized well-being into pleasant and unpleasant affect, life satisfaction, and domain satisfactions. In our study we concentrated on the relationship between fairness perceptions of feedback and LMX with a specific domain of well-being, namely well-being at work. Warr (1999, p. 393) defined "job-specific" well-being as "people's feelings about themselves in relation to their job". Warr conceptualized job-related well-being around three axes: displeasure–pleasure, anxiety–comfort, and depression–enthusiasm. We chose job satisfaction (the positive pole of displeasure–pleasure), job anxiety, and job depression to represent one pole of each dimension. Furthermore, we assessed turnover intentions as a behavioural indicator for well-being, as turnover intentions have been shown to be related to well-being at work (Warr, 1999). Additionally, we examined perceived control at work as an outcome variable of fairness perceptions of feedback and LMX. Personal control has been found to be an important environmental correlate of well-being (Daniels & Guppy, 1994; Warr, 1999).

LMX is positively related to employee job satisfaction (Gerstner & Day, 1997; Graen, Novak, & Sommerkamp, 1982), low turnover intentions

(Ferris, 1985; Gerstner & Day, 1997; Graen, Liden, & Hoel, 1982), and other indicators of well-being at work (van Dierendonck et al., 2004). Lagace, Castleberry, and Ridnour (1993) found that employees with higher quality LMX relationships (ingroup members) were more motivated and experienced less role-related stress. These findings highlight the importance of a good supervisor–employee relationship for well-being. Why is it so important for employees to have a high quality exchange with their supervisor? LMX theory states that employees with high LMX quality belong to the "ingroup" (e.g., Graen & Uhl-Bien, 1995). The affiliation with the ingroup is related to employees' feelings of being accepted and valued, employees' motivation (Lagace et al., 1993), and employees' occupational self-efficacy (Schyns, Paul, Mohr, & Blank, 2005). In higher LMX quality relationships, leaders provide their subordinates with helpful resources for their work (Liden, Sparrowe, & Wayne, 1997). We propose that these beneficial consequences of high LMX quality enhance employees' well-being at work:

Hypothesis 2: LMX is positively related to employee well-being at work.

Beside well-being at work as a desirable work-related outcome we were interested in the relationship between LMX quality and perceived control at work. Feelings of control are vital for physical and mental well-being (cf. Parker & Price, 1994; Skinner, 1996). Cropanzano et al. (2001, p. 176) described control as manifested in "a desire to predict and manage important interactions, including (perhaps especially) those that involve the exchange and/or receipt of desired outcomes". These authors further argue that fairness makes rewards and punishments more predictable to employees. Accordingly, fairness perceptions of feedback make implications and expectations based on the feedback more foreseeable, which strengthens the perceived control of the employee.

Employees with a high quality LMX relationship receive a high level of trust, support, and rewards from their supervisors (Graen & Scandura, 1987). Their high-quality relationship with their supervisors might also imply that ingroup members are more involved in supervisors' decision processes than are outgroup members (cf. Scandura, Graen, & Novak, 1986). Therefore, we predict a positive relationship between LMX and perceived control.

Perceived control is also discussed under the concept of impact in psychological empowerment literature (e.g., Thomas & Velthouse, 1990). Impact refers to a person's feeling that his or her behaviour has intended effects on the environment. There is some additional empirical evidence for LMX to be positively related to psychological empowerment and

psychological empowerment to be a (partial) mediator in the relationship between LMX and performance and job satisfaction (e.g., Aryee, & Chen, 2006; Chen, Kirkman, Kanfer, Allen, & Rosen, 2007).

Therefore, we propose the following hypothesis:

Hypothesis 3: LMX is positively related to perceived control at work.

FAIRNESS PERCEPTIONS OF FEEDBACK, LMX, AND WELL BEING

In their meta-analysis, Cohen-Charash and Spector (2001) found distributive, procedural, and interactional fairness, among others, to be positively related to job satisfaction and commitment to the organization, and negatively related to turnover intentions and negative emotions at work. Receiving feedback at work has been shown to be relevant not only for performance (Kluger & DeNisi, 1996), but also for employees' job satisfaction (e.g., Hackman & Oldham, 1976; Renn & Prien, 1995). Feedback helps employees to reduce uncertainties regarding their goal-related behaviour (Ashford & Cummings, 1983). This uncertainty reduction might induce an increased feeling of control because the employee learns which of his or her decisions lead to success and which of them lead to failure.

Therefore, one can conclude that fairness perceptions of feedback will contribute to employee well-being and perceived control at work. We suggest that the quality of leader–member exchange is crucial for linking fairness perceptions of feedback to well-being and feelings of control at work. As argued before, the perception that one's supervisor's feedback is fair is vital for a high-quality relationship between supervisor and employee. Moreover, a good LMX quality, that is being an ingroup member, contributes to employee well-being and feelings of control at work. Thus, fairness perceptions of feedback should be related to employee well-being and feelings of control via a favourable LMX.

Concluding, we predict LMX to partially mediate the relationship between perceived fairness of feedback, well-being, and perceived control at work. We assume a partial mediation because besides LMX, there might be other mediators in the relationship between fairness perceptions of feedback, well-being and control at work. For example, feedback that is perceived as fair might be processed more thoroughly by the employee and thus might help the employee to perform well, which in turn makes him or her more satisfied with his or her work.

Recently, van Knippenberg et al. (2007) raised the discussion whether leader fairness causes high-quality LMX or high-quality LMX causes fair treatment from the leader. While most studies up to now treated fairness as

an antecedent of LMX (cf. van Knippenberg et al., 2007), Bhal (2006) tested a reversed model. However, as this study relied on cross-sectional data, only limited empirical evidence on the true causal chain exists. In this article, we argue that LMX mediates the relationship between fairness perceptions of feedback and employee outcomes—and not the other way around. There are both conceptional and empirical reasons for including LMX (and not fairness) as the mediator: First, we argue that providing feedback is one important leadership responsibility, which is valuable to employees because it helps them to keep their performance up to or above organizational standards. Graen and Scandura (1987) noted that it is necessary for establishing a high-quality leader–member exchange relationship that the exchange in this relationship is perceived as fair from both sides. Therefore, fairness perceptions of supervisory behaviours are important inputs into individuals' judgements of their relationships with their supervisor (Masterson et al., 2000). In essence, the LMX construct has three dimensions: respect, trust, and obligation (Graen & Uhl-Bien, 1995, p. 237). Feedback from the supervisor is needed to tell employees if their performance, potential, and working problems are adequately evaluated and treated by the supervisor. Fair feedback about these issues signals to the employee that the supervisor is to be respected because he or she does his or her job well, that he or she is to be trusted and feels an obligation towards the employee. Therefore, fair feedback is required for employees to appraise the relationships with their supervisors. Without feedback, that is without adequate feedback, the employees will be unsure about the quality of their relationship with the supervisor. Second, Leung et al.'s (2001) experimental study (Study 1) showed that fair interpersonal treatment in feedback delivery enhanced trust in and satisfaction with the supervisor and feedback acceptance, as well as reduced negative attribution of the employee to the supervisor. Although relying on single feedback events, these results strongly support the assumption that fairness influences the employee's relationship with the supervisor. Taken together, there is good reason to regard LMX (and not fairness perceptions of feedback) as the mediator—although we acknowledge that it is also plausible to assume the inverse relationship with fairness perceptions of feedback as the mediator.

We therefore further propose the following hypotheses:

Hypothesis 4: Fairness perceptions of feedback are positively related to well-being at work.

Hypothesis 5: Fairness perceptions of feedback are positively related to perceived control at work.

Hypothesis 6: LMX partially mediates the relationship between fairness perceptions of feedback and well-being at work.

Hypothesis 7: LMX partially mediates the relationship between fairness perceptions of feedback and perceived control at work.

METHOD

Sample and procedure

This study used a longitudinal design with two data collection times, approximately half a year apart. Participants were contacted at a popular international online business networking platform. Selection criteria were (1) being employed in Germany, Austria, or Switzerland, (2) German language proficiency, and (3) an occupation either in research and development (R&D) or public administration and service. We chose R&D and public administration/service, two very different white-collar occupational fields, in order to be able to generalize our findings to some degree. R&D and public administration jobs differ in at least two aspects. First, while R&D can be considered as a fairly creative and low-routine business, public administration is much the opposite. Second, employees in public administration jobs in Germany face high job security, which is less so for employees in R&D occupations.

We applied the three criteria when using the member search function of the online platform. Appropriate members found by this search were contacted via the message blank and invited for participation. The study was introduced as being part of the dissertation of the first author and as seeking "to learn more about experiences with feedback in everyday work context". Participants were invited to fill out the first online questionnaire. Additionally, they were asked to indicate if they were willing to work on a second questionnaire half a year later. As an incentive for participation we offered feedback about the results of the study. Those contacted could sign up via e-mail or the message board of the platform. After indicating their agreement to participate, we sent an e-mail or posted a message for the participants containing the web link to the questionnaire and information about handling the questionnaire. All participants who agreed to fill out the first questionnaire were contacted by e-mail half a year later and asked if they were willing to work on the second questionnaire (in case they had not indicated their readiness to do so before). This e-mail contained the web link to the second questionnaire. Several weeks later all participants were again reminded to fill out the second questionnaire and were thanked for their participation. Two months after the end of data collection they received the written feedback about the study results, along with practical advice for dealing with feedback in everyday work.

In total, 954 members of the online platform were invited to participate, 221 from R&D and 733 from public administration and service. At the first

time of data collection, 283 participants signed up for participation (52 from R&D and 231 from public administration and service). Taken together, 29.66% of those invited signed up for participation. At the second time of data collection, 132 men and women agreed to fill out the follow-up questionnaire (113 from public administration and service and 19 from R&D). Several people answered months later that they were willing to participate, but could not be included because too much time had passed.

Overall, 260 employees with occupations either in research and development (R&D) or public administration and service actually participated in the first round of data collection (equals a response rate of 91.87% of the persons who signed up). On average, participants were 33.53 years old ($SD = 7.63$), 69.1% were male. The majority of the sample had a university degree or a comparable education (85.50%), 6.3% had a craftsman's diploma, 7.8% completed an apprenticeship, and 0.4% had no formal professional training. On average, participants reported 9.34 years ($SD = 8.08$) of professional experience and 5.48 years ($SD = 6.33$) of job tenure. Approximately one-third of the sample had a supervisory position (29.70%).

One hundred and eleven participants completed the second questionnaire half a year later, which corresponds to a response rate of 84.09% of the persons who signed up for the second round of data collection and to 42.69% of the Time 1 participants. Questionnaires were matched with the help of a coding procedure. However, due to coding problems only 99 questionnaires could be matched successfully. Participants of the final sample on average were 34.12 years old ($SD = 8.28$), had 9.99 years of professional experience ($SD = 8.71$) and job tenure for 5.80 years ($SD = 6.17$). The majority of this final sample was male (69.70%) and had a university degree or a comparable education (83.30%). Of the final sample, 8.10% had a craftsman's diploma, 7.10% had completed an apprenticeship, and 1% indicated they had not completed any formal professional training. Approximately one-third of the sample had a supervisory position (29.30%).

Simple *t*-tests showed that those who participated only at the first time of data collection did not differ significantly from the participants who completed surveys at both times with respect to demographic variables and all other variables assessed at Time 1. These findings indicate that drop-out of participants was not selective.

Measures

We used self-report questionnaires for assessing our data. All items were in German. Table 1 displays means, standard deviations, and zero-order correlations between study variables. In all cases where no German version

TABLE 1
Means, standard deviations, re iabi ities, and intercorre ations

Variable	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*
1. Industry	1.80	0.40	–															
2. Trait negative affectivity	1.80	0.65	.06	.90														
3. Frequency negative supervisor feedback (T1)	1.36	0.76	−.06	.29**	–													
4. Frequency positive supervisor feedback (T1)	2.22	1.22	.01	−.07	.00	–												
5. Supervisory position (T1)	1.71	0.46	−.05	.10	−.16	−.14	–											
6. Fairness perceptions of feedback (T1)	3.26	0.87	−.17	−.17	−.23*	.62**	−.08	.95										
7. Distributive fairness (T1)	3.24	1.07	−.08	−.22*	−.24*	.59**	−.04	.92**	.93									
8. Procedural fairness (T1)	2.86	0.90	−.29**	−.10	−.11	.56**	−.11	.87**	.75**	.82								
9. Interpersonal fairness (T1)	3.96	0.93	−.09	−.28**	−.38**	.47**	−.11	.85**	.77**	.60**	.92							
10. Informational fairness (T1)	3.08	0.98	−.17	−.05	−.14	.55**	−.02	.91**	.77**	.74**	.75**	.86						
11. LMX (T2)	3.02	0.94	−.11	−.39**	−.10	.43**	.04	.57**	.55**	.49**	.49**	.49**	.92					
12. Job anxiety (T2)	3.01	1.26	−.15	.57**	.39**	−.11	.02	−.25*	−.30**	−.14	−.33**	−.14	−.32**	.76				
13. Job depression (T2)	2.57	1.56	.04	.56**	.27**	−.04	.07	−.35**	−.37**	−.23*	−.39**	−.31**	−.48**	.48**	.88			
14. Job satisfaction (T2)	5.06	1.43	−.13	−.52**	−.12	.02	−.10	.31**	.34**	.24*	.31**	.25*	.52**	−.42**	−.74**	–		
15. Turnover intentions (T2)	3.13	2.04	−.11	.35**	.03	.03	.06	−.24*	−.24*	−.13	−.31**	−.23*	−.35**	.27**	.65**	−.61**	.89	
16. Control at work (T2)	4.16	1.16	.09	−.28**	−.12	.17	−.22*	.29**	.27**	.22*	.29**	.26*	.46**	−.30**	−.50**	.55**	−.38**	.85

T1 = Time 1, T2 = Time 2; Industry was coded 1 = "R&D", 2 = "public administration". Supervisory position was coded 1 = "yes", 2 = "no". Cronbach's alphas appear along the diagonal. *$p < .05$, two-tailed; **$p < .01$, two-tailed.

of the scales was available we employed a translation–back-translation procedure to translate the items from English into German.

Fairness perceptions of feedback (Time 1). To assess fairness perceptions related to feedback content (distributive justice), feedback process (procedural justice), and feedback delivery (interpersonal justice and informational justice) from the supervisor source, we adapted the justice scale from Colquitt (2001) and used four items for each facet of fairness perceptions. Sample items were "How much did the feedback reflect the efforts you invested into work?" (distributive justice), "How consistently are the criteria for feedback giving applied?" (procedural justice), "To what extent did your supervisor treat you respectfully when he/she gave you feedback?" (interpersonal justice), and "How much did your supervisor explain the reasons for the feedback thoroughly?" (informational justice). All items referred to the feedback participants received in general; this scale was assessed at Time 1. Participants answered on a 5-point Likert-type scale (1 = "very little", 5 = "very much"). Cronbach's alphas for the four dimensions of fairness perceptions of feedback ranged from .82 to .93.

We performed a set of confirmatory factor analyses to examine the factor structure of our fairness measure. The four-factor solution had a significantly better fit to the data compared to a one-factor solution, $\Delta\chi^2 = 150.48$, $df = 6$, $p < .001$, a two-factor solution treating procedural, interpersonal and informational justice as one factor and distributive justice as the second factor, $\Delta\chi^2 = 104.51$, $df = 5$, $p < .001$, and a three-factor solution integrating interpersonal and interactional justice into one single factor and treating procedural and distributive justice as factors of their own, $\Delta\chi^2 = 18.63$, $df = 3$, $p < .001$. As the four dimensions were highly intercorrelated (mean $r = .69$) and thus likely to cause problems of multicollinearity, we entered one overall fairness-perceptions-of-feedback scale into regression analyses when testing our hypotheses. Cronbach's alpha of this combined scale was .95. Nevertheless, we ran additional sets of regression analyses using all four single justice dimensions separately and explored their relationships to LMX and the outcome variables.

Leader–member exchange (Time 2). We used the seven-item LMX 7 scale (Graen & Uhl-Bien, 1995) in its German version (Schyns & Paul, 2006) for measuring leader–member exchange. One sample item is "How well does your supervisor understand your work-related problems and needs?" Instructions told the participants that the questions refer to their relationship with their supervisor during the last 6 months. Cronbach's alpha was .92. Participants answered on 5-point Likert-type scales with question-specific labels (for the sample item 1 = "not at all", 5 = "very good").

As Table 1 shows, our fairness perceptions of feedback and LMX measures were rather highly correlated. Therefore, we ran confirmatory factor analyses to ensure independency of the single constructs. We tested a two-factor model including LMX as one latent factor and fairness perceptions of feedback as a second latent factor. The fairness perceptions of feedback factor was created as a higher order factor that was influenced from the four first-order latent factors of distributive, procedural, interactional, and informational fairness. This model showed good fit to the data, RMSEA = .072, $\chi^2 = 338.85$, $df = 225$, $p < .001$, CFI = .97. The model with LMX and perceived fairness of feedback as separate factors had a significantly better fit to the data than a model with LMX and perceived fairness of feedback represented as one factor, $\Delta\chi^2 = 166.72$, $df = 1$, $p < .001$.

Job depression and job anxiety (Time 2). We measured job depression and job anxiety with a three-item subscale each developed by Warr (1990). Sample items were "When you think of the last six months, how often did you feel depressed/gloomy/miserable at work?" and "When you think at the last six months, how often did you feel worried/uneasy/tense at work?" Participants answered on 5-point Likert-type scales (1 = "never", 5 = "always"). Cronbach's alpha was .88 for job depression and .76 for job anxiety.

Job satisfaction (Time 2). We measured job satisfaction with the face scale from Kunin (1955) with the answer scale ranging from (1) "I am very dissatisfied" to (7) "I am extraordinarily satisfied". We used this single-item measure to assess overall job satisfaction because meta-analytic evidence shows that single-item measures of job satisfaction are highly correlated with measures including more items and thus are a worthy alternative to less parsimonious scales (Wanous, Reichers, & Hudy, 1997).

Turnover intentions (Time 2). We used three items to assess turnover intentions. These items were "I often think of quitting", "I already looked around for another job", and "How likely is it that you will quit your job voluntarily during the next 12 months?" Participants answered the first two items on a 7-point Likert-type scale (1 = "does not apply at all" to 7 = "does apply fully") and the third item on a 7-point Likert-type scale (1 = "very unlikely" to 7 = "very likely"). Cronbach's alpha was .89.

Feelings of control at work (Time 2). To assess feelings of control at work we used the perceived control subscale from Menon's (2001) empowerment questionnaire with three items. One sample item was "I can influence decisions taken in my department." Participants answered on a

5-point Likert-type scale (1 = "very little", 5 = "very much"). Cronbach's alpha was .85.

Similar to the predictor variables, our outcome variables showed substantial intercorrelations with each other (see Table 1). Therefore, we performed a confirmatory factor analysis with job depression, job anxiety, turnover intentions, and perceived control as separate factors and tested this model against an overall one-factor model. Results show that the four-factor model fitted the data better than the one-factor model, $\Delta\chi^2 = 226.85$, $df = 6$, $p < .001$. We decided also to test the four-factor model against a three-factor model with job depression and turnover intentions being collapsed into one factor because these two variables were highly correlated ($r = .80$). This test revealed that the four-factor model had a significantly better fit to the data than the three-factor model, $\Delta\chi^2 = 85.02$, $df = 3$, $p < .001$.

Control variables (Time 1 and Time 2). As control variables we assessed industry type, the frequency of positive and negative supervisor feedback, and holding a supervisory position or not (1 = "yes" and 2 = "no") at Time 1 and trait negative affectivity at Time 2. More specifically, we created a dummy variable for the two industry types: industry type (1 = "R&D", 2 = "public administration and service").

To assess the frequency of feedback we adapted items from Ashford (1986). Before presenting these items we briefed our participants to take a moment and think about occasions in which they sought or got feedback during their everyday work. Feedback was described as information about participants' behaviour and results at work, which could be either positive (i.e., praising) or negative (i.e., criticizing). We assessed frequency of positive and negative feedback through feedback interventions from the supervisor. Specifically we asked: "During the last six months how often did you receive negative feedback about your behaviour and results at work from your supervisor without asking for it?" The same question was asked for positive feedback. Participants answered on a 7-point Likert-type scale (1 = "less than once a month", 7 = "several times per day").

Because this study is based on self-report data we wanted to rule out bias due to trait negative affectivity (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). We used the 10 negative affectivity items from the PANAS (Watson, Clark, & Tellegen, 1988) in the German version by Krohne, Egloff, Kohlmann, and Tausch (1996) (together with the question "In general, how much do you feel in the following way at work?"). Sample items were "distressed" or "nervous". Participants answered on a 5-point Likert-type scale (1 = "not at all", 5 = "extremely"). Cronbach's alpha was .90.

RESULTS

Bivariate relationships

We used hierarchical regression analyses to test our hypotheses. In a first step, we entered the control variables (industry type, trait negative affectivity, frequency of positive and negative feedback from the supervisor, and holding a supervisory position) into the regression models. In a second step, we entered fairness perceptions of feedback at Time 1, respectively LMX at Time 2, as predictors.

In our first model, we tested Hypothesis 1. Results are displayed in Table 2. We entered the control variables in a first step and fairness perceptions of feedback at Time 1 in the second step to predict LMX at Time 2. Trait negative affectivity had a highly negative relationship with LMX and frequency of positive feedback from the supervisor showed a highly positive relationship with LMX. Fairness perceptions of feedback were positively related to LMX, explaining 11.4% of variance in LMX. Thus, Hypothesis 1 was supported.

In a second set of models, we examined Hypotheses 2 and 3 which assume LMX to predict well-being and perceived control at work. Results are displayed in Table 3. In a first step, we again entered the control variables.

TABLE 2
Regression results for Hypothesis 1

	LMX (T2)	
	ß	*t*
Step 1		
Industry	.086	1.018
Trait negative affectivity	.373	4.159***
Frequency negative supervisor feedback (T1)	.029	0.321
Frequency positive supervisor feedback (T1)	.424	4.979***
Supervisory position (T1)	.138	1.582
	R^2 .339***	
Step 2		
Industry	.001	0.009
Trait negative affectivity	.351	4.265***
Frequency negative supervisor feedback (T1)	.136	1.576
Frequency positive supervisor feedback (T1)	.143	1.414
Supervisory position (T1)	.156	1.951
Fairness perceptions of feedback (T1)	.463	4.372***
	R^2 .453	
	ΔR^2 .114***	

T1 Time 1, T2 Time 2; Industry was coded 1 "R&D", 2 "public administration". Supervisory position was coded 1 "yes", 2 "no". *$p < .05$, **$p < .01$, ***$p < .001$.

TABLE 3
Regression resu ts for Hypothesis 2 and Hypothesis 3

	Job anxiety (T2)		*Job depression (T2)*		*Job satisfaction (T2)*		*Turnover intentions (T2)*		*Control at work (T2)*	
	ß	*t*	*ß*	*t*	*ß*	*t*	*ß*	*t*	*ß*	*t*
Step 1										
Industry	−.166	−2.069*	.019	0.219	−.103	−1.172	−.133	−1.385	.084	0.872
Trait negative affectivity	.508	5.989***	.517	5.695***	−.521	−5.595***	.388	3.813***	−.236	−2.305*
Frequency negative supervisor feedback (T1)	.226	2.641**	.124	1.358	.023	0.247	−.093	−0.906	−.072	−0.698
Frequency positive supervisor feedback (T1)	−.077	−0.953	.004	0.043	−.025	−0.277	.058	0.603	.131	1.351
Supervisory position (T1)	−.011	−0.135	.035	0.391	−.051	−0.566	.009	0.091	−.182	−1.831
	$R^2 = .410$***		$R^2 = .325$***		$R^2 = .289$***		$R^2 = .150$**		$R^2 = .144$*	
Step 2										
Industry	−.177	−2.199*	−.016	−0.201	−.061	−0.778	−.167	−1.817	.126	1.425
Trait negative affectivity	.461	5.010***	.367	4.021***	−.340	−3.769***	.245	2.337*	−.055	−0.543
Frequency negative supervisor feedback (T1)	.229	2.691**	.136	1.610	.009	0.109	−.082	−0.843	−.086	−0.916
Frequency positive supervisor feedback (T1)	−.024	−0.261	.175	1.951	−.231	−2.613*	.221	2.146*	−.074	−0.745
Supervisory position (T1)	.006	0.074	.090	1.091	−.119	−1.452	.062	0.652	−.249	−2.713**
LMX (T2)	−.125	−1.283	−.402	−4.161***	.486	5.091***	−.383	−3.443**	.436	4.499***
	$R^2 = .420$		$R^2 = .432$		$R^2 = .445$		$R^2 = .247$		$R^2 = .298$	
	$\Delta R^2 = .010$		$\Delta R^2 = .107$***		$\Delta R^2 = .156$***		$\Delta R^2 = .097$**		$\Delta R^2 = .154$***	

T1 = Time 1, T2 = Time 2; Industry was coded 1 = "R&D", 2 = "public administration". Supervisory position was coded 1 = "yes", 2 = "no". *$p < .05$, **$p < .01$, ***$p < .001$.

Type of industry was related to job anxiety, indicating that employees from R&D reported more job anxiety than employees from public administration and service. Trait negative affectivity was a significant predictor of all outcome variables, showing a negative relationship with job satisfaction and perceived control and a positive relationship with job anxiety, job depression, and turnover intentions. Frequency of negative feedback from the supervisor was a significant predictor of job anxiety, indicating a positive relationship. In the second step, LMX revealed to be a significant negative predictor of job depression (explaining 10.7% of variance) and turnover intentions (explaining 9.7% of variance), and a significant positive predictor of job satisfaction (explaining 15.6% of variance) and feelings of control (explaining 15.4% of variance). Therefore, Hypotheses 2 (with the exception of job anxiety) and 3 were supported.

In a third set of models we examined Hypotheses 4 and 5, namely the relationships between fairness perceptions of feedback on the one hand and well-being and perceived control on the other hand. Results are displayed in Table 4. The first step including the control variables is similar to the first steps of the models tested before (see first part of Table 3). In the second step, we entered fairness perceptions of feedback as predictor, which revealed significant negative relationships to job depression (explaining 10.0% of variance) and turnover intentions (explaining 12.1% of variance), and significant positive relationships to job satisfaction (explaining 8.9% of variance) and feelings of control (explaining 4.1% of variance). Thus, results supported Hypotheses 4 (with the exception of job anxiety) and 5.

Mediation analyses

To test our partial mediation hypotheses (Hypotheses 6 and 7) we followed the Baron and Kenny (1986) procedure. Baron and Kenny suggest a series of regression analyses to identify mediators. First of all, the independent variable should predict the mediator variable (Hypothesis 1). Second, the independent variable should predict the dependent variable (Hypotheses 4 and 5). Third, the mediator variable should predict the dependent variable, after controlling for the independent variable (Hypotheses 6 and 7). If the mediator variable fully mediates the relationship between the independent variable and the dependent variable, then the regression weight of the independent variable becomes nonsignificant in the third step. If the mediator variable partially mediates the relationship between the independent variable and the dependent variable, then the regression weight of the independent variable gets smaller than before. The Sobel Test (1982) is used to test the significance of the indirect effect of the mediator.

TABLE 4
Regression resu ts for Hypothesis 4 and Hypothesis 5 (Step 2), Hypothesis 6 and Hypothesis 7 (Step 3)

	Job anxiety (T2)		*Job depression (T2)*		*Job satisfaction (T2)*		*Turnover intentions (T2)*		*Control at work (T2)*	
	ß	*t*	*ß*	*t*	*ß*	*t*	*ß*	*t*	*ß*	*t*
Step 2										
Industry	−.199	−2.417*	−.063	−0.765	−.026	−0.306	−.223	−2.411*	.137	1.399
Trait negative affectivity	.500	5.927***	.496	5.874***	−.501	−5.711***	.365	3.844***	−.222	−2.210*
Frequency negative supervisor feedback (T1)	.186	2.101*	.024	0.272	.118	1.278	−.203	−2.040*	−.007	−0.069
Frequency positive supervisor feedback (T1)	.028	0.275	.267	2.579*	−.273	−2.534*	.349	2.985**	−.039	−0.315
Supervisory position (T1)	−.018	−0.218	.018	0.216	−.035	−0.415	−.010	−0.103	−.171	−1.754
Fairness perceptions of feedback (T1)	−.173	−1.596	−.434	−3.995***	.409	3.623***	−.477	−3.905***	.280	2.164*
	$R^2 = .426$		$R^2 = .424$		$R^2 = .377$		$R^2 = .271$		$R^2 = .185$	
	$\Delta R^2 = .016$		$\Delta R^2 = .100$***		$\Delta R^2 = .089$***		$\Delta R^2 = .121$***		$\Delta R^2 = .041$*	
Step 3										
Industry	−.199	−2.409*	−.063	−0.791	−.026	−0.333	−.223	−2.454*	.137	1.497
Trait negative affectivity	.474	5.121***	.394	4.420***	−.360	−4.022***	.278	2.722**	−.061	−0.597
Frequency negative supervisor feedback (T1)	.196	2.179*	.064	0.736	.063	0.723	−.169	−1.709	−.070	−0.700
Frequency positive supervisor feedback (T1)	.039	0.371	.309	3.058**	−.331	−3.263**	.384	3.314**	−.104	−0.898
Supervisory position (T1)	−.006	−0.076	.063	0.782	−.099	−1.214	.029	0.317	−.243	−2.615*
Fairness perceptions of feedback (T1)	−.139	−1.163	−.299	−2.598*	.222	1.924	−.362	−2.746**	.067	0.510
LMX (T2)	−.074	−0.687	−.291	−2.825**	.404	3.902***	−.249	−2.103*	.458	3.866**
	$R^2 = .429$		$R^2 = .471$		$R^2 = .467$		$R^2 = .304$		$R^2 = .300$	
	$\Delta R^2 = .003$		$\Delta R^2 = .046$**		$\Delta R^2 = .089$***		$\Delta R^2 = .034$*		$\Delta R^2 = .115$***	

Step 1 is left out because it is similar to Step 1 in Table 3. T1 = Time 1, T2 = Time 2; Industry was coded 1 = "R&D", 2 = "public administration". Supervisory position was coded 1 = "yes", 2 = "no". *$p < .05$, **$p < .01$, ***$p < .001$.

We found support for the first two steps of the Baron and Kenny (1986) procedure as fairness perceptions of feedback were positively related to LMX (see Table 2), well-being (including job depression, job satisfaction, turnover intentions, but not job anxiety), and perceived control at work (see Table 4).

To test the requirements of Baron and Kenny's (1986) Step 3, we ran a final set of regression analyses. In Model 1 we again entered the control variables, in Model 2 we entered fairness perceptions of feedback, and in Model 3 we entered LMX as predictor. Results are presented in Table 4 (Step 3). To fulfil the Baron and Kenny criteria, the mediator variable should predict the outcomes in the third step. This was the case for all our outcome variables, with the exception of job anxiety. Additionally, the regression weight for fairness perceptions of feedback must be reduced in Step 3 compared to Step 2. The regression coefficient weights of fairness perceptions of feedback in the third step were reduced in size compared to the second step, indeed, but continued to be a significant predictor for job depression and turnover intentions after entering the mediator variable. This result indicates partial mediation. Feedback perceptions of fairness were nonsignificant for control at work and only marginally significant for job satisfaction after inserting LMX into the analysis, thus indicating full mediation. Using the Sobel test (Sobel, 1982) we tested the significance of the indirect mediation paths. Results show that LMX indeed was a mediator in the relationship between fairness perceptions of feedback and job depression (Sobel's $z = 2.37$, $p < .05$), job satisfaction (Sobel's $z = 2.91$, $p < .01$), turnover intentions (Sobel's $z = 1.89$, $p < .06$), and feelings of control (Sobel's $z = 2.94$, $p < .01$). Therefore, Hypothesis 6 was supported with the constraint that LMX fully mediated the relationship between fairness perceptions of feedback and job satisfaction. Hypothesis 7 received partial support as LMX was found to fully, not partially, mediate the relationship between perceived fairness of feedback and perceived control at work.

Additionally, we ran the same sets of regression analyses with each of the single feedback fairness dimensions (distributive, procedural, interpersonal, and informational justice) as separate predictors of LMX and the well-being outcomes. Table 5 gives an overview over the results and displays the standardized beta coefficients for the respective fairness variables and for LMX. All four feedback fairness dimensions were highly significant predictors of LMX. Furthermore, neither of the dimensions predicted job anxiety, but all of them significantly predicted job depression, job satisfaction, and turnover intentions. Control at work was predicted by informational fairness, by distributive and procedural fairness only marginally, and not by interpersonal fairness. Finally, inserting LMX in the third step into the regression equation predicted

TABLE 5
Overview over the results from multiple regression analyses with single fairness dimensions

	LMX	*Job anxiety*	*Job depression*	*Job satisfaction*	*Turnover intentions*	*Control at work*
Step 2						
Distributive fairness	.383***	.171	.391***	.406***	.385**	.218^{+}
Procedural fairness	.353***	.127	.274*	.286*	.287*	.207^{+}
Interpersonal fairness	.345***	.143	.317**	.288*	.459***	.197
Informational fairness	.356***	.107	.403***	.340**	.431***	.264*
Step 3						
Distributive fairness		.141	.271*	.252*	.273*	.038
LMX		.078	.312**	.403***	.293*	.471***
Procedural fairness		.093	.148	.128	.171	.041
LMX		.096	.356**	.446***	.330**	.471***
Interpersonal fairness		.112	.199^{+}	.135	.366**	.034
LMX		.090	.340**	.444***	.269*	.473***
Informational fairness		.072	.297**	.190^{+}	.336**	.105
LMX		.100	.299**	.420***	.267*	.447***

Values in the cells are standardized beta coefficients of the respective regression analyses. $^{+}p < .10$, $*p < .05$, $**p < .01$, $***p < .001$.

job depression significantly while distributive fairness remained significant, albeit smaller than before. The same pattern emerged for informational fairness, indicating partial mediation. When predicting job depression, the regression weights of procedural fairness and interpersonal fairness became nonsignificant after inserting LMX, thus suggesting a full mediation. We again conducted Sobel tests to examine the significance of the indirect mediation paths which was supported for all four fairness dimensions (Sobel's z (DJ) = 2.37, $p < .05$, Sobel's z (PJ) = 2.43, $p < .05$, Sobel's z (IPJ) = 2.37, $p < .05$, Sobel's z (InfJ) = 2.31, $p < .05$). Introducing LMX into the regression analyses predicting job satisfaction indicated a partial mediation for distributive fairness as predictor, as the beta weight was reduced but remained significant and full mediation for the remaining three fairness dimensions. Again, Sobel tests confirmed the significance of the indirect mediation paths (Sobel's z (DJ) = 2.71, $p < .01$, Sobel's z (PJ) = 2.68, $p < .01$, Sobel's z (IPJ) = 2.66, $p < .01$, Sobel's z (InfJ) = 2.73, $p < .01$). For turnover as outcome variable after inserting LMX in the third step, all fairness dimensions remained significant with the exception of procedural fairness, while LMX significantly predicted the outcome. Therefore, we found partial mediation for distributive, interpersonal, and informational fairness and full mediation for procedural fairness (Sobel's z

(DJ) = 2.07, $p < .05$, Sobel's z (PJ) = 2.16, $p < .05$, Sobel's z (IPJ) = 1.94, $p < .06$, Sobel's z (InfJ) = 1.96, $p < .06$). Full mediation of the relationships between informational fairness and control at work through LMX was found also for the marginal relationships between distributive and procedural fairness with control at work (Sobel's z (DJ) = 2.72, $p < .01$, Sobel's z (PJ) = 2.61, $p < .01$, Sobel's z (InfJ) = 2.64, $p < .01$). In summary, these additional analyses show that the single fairness-of-feedback dimensions were very similarly related to LMX and the well-being outcomes compared to the overall fairness measure, with small variations only in strength of the relationships and mediation.

DISCUSSION

Our study showed that fairness perceptions of feedback were related to higher quality LMX, which in turn predicted higher well-being (as indicated by lower levels of job depression and turnover intentions and increased job satisfaction) and a higher level of perceived control at work. LMX was a partial mediator in the relationship between fairness perceptions of feedback on the one hand and two indicators of well-being at work (job depression and turnover intentions) on the other hand. LMX was found to fully mediate the relationship between fairness perceptions of feedback and job satisfaction as well as perceived control at work. Fairness perceptions of feedback explained 11.4% of variance in LMX quality, rated 6 months later. A similar amount of variance was accounted for by fairness perceptions of feedback (ranging between 4.1% and 12.1%) and LMX (ranging between 9.7% and 15.6%) in the outcome variables. These findings suggest that fairness perceptions of feedback are highly relevant for the relationship between supervisor and employee and for employee well-being at work. Additionally, the results indicate that LMX quality is important for employee well-being at work.

While we had expected to find only partial mediation, LMX fully mediated the relationship between overall feedback fairness perceptions and job satisfaction as well as perceived control at work. This result suggests that fairness perceptions of feedback unfold their beneficial potential for job satisfaction and perceived control via the enhancement of LMX quality, particularly highlighting the importance of LMX quality for satisfaction and control perceptions at work.

Neither fairness perceptions of feedback nor LMX were related to job anxiety. Instead, frequency of negative feedback from the supervisor and industry type, entered into the regression models as control variables, were positively related to job anxiety. The first of these results is similar to the finding of Daniels and Larson (2001), who showed negative performance feedback to be positively related to state anxiety in an experiment

where participants got bogus feedback after they held a mock counselling session. It is plausible that frequent negative feedback from the supervisor and anxiety relate to each other. People who are tense at work probably make more mistakes and get more negative feedback. It is equally likely that frequent negative feedback makes employees more anxious. One further explanation for this finding refers to the actual job market situation in Germany, which is characterized by a high degree of unemployment and threat to job security. Job insecurity has been shown to be negatively related to well-being at work (de Witte, 1999).

In our study, the four perceived fairness of feedback dimensions were highly correlated (mean $r = .67$). Generally, fairness measures tend to be correlated as the meta-analysis of Colquitt et al. (2001) shows (mean $r = .48$). Nevertheless, the correlations between our feedback fairness scales were even higher. This finding might indicate that the four different fairness aspects, particularly with respect to feedback, are not independently judged by the recipients.

Our additional analyses examining the unique relationships of the single feedback fairness dimensions with LMX and the outcomes showed that all four feedback fairness dimensions were strongly related to LMX and were also consistently related to the outcome variables, with the exception of control at work and—as before the overall fairness measure—job anxiety. Moreover, mediation of the relationships between the fairness dimensions and the outcomes through LMX were consistent, too, with variation in full versus partial mediation. These additional analyses indicate that all four facets of fairness of feedback are related to the quality of the relationship between supervisor and co-worker. This finding speaks against the model by Roch and Shanock (2006), who expect only interpersonal and informational fairness to be related to LMX, with procedural fairness being related to perceived organizational support and distributive fairness to pay satisfaction. From a feedback perspective our results are quite meaningful nonetheless. Feedback tells the recipient how his or her performance is evaluated by the feedback source, what is especially important if the supervisor is the source and his or her evaluation is likely to have consequences for the recipient (e.g., promotions, pay rise, getting more responsibility; cf. van Knippenberg et al., 2007). Concerning the consequences of feedback, it is important for the recipient to receive feedback that he or she perceives as fair with respect to the content (distributive fairness) and fair with respect to the applied standards and accuracy of the information used (procedural fairness). It is unlikely that the relationship between the receiver and the supervisor is at its best if the recipient gets unfair feedback which threatens to prevent him or her being successful at his or her job. Being treated with respect and dignity (interpersonal fairness) in feedback situations most intuitively relates to the LMX quality as well as

being informed properly (informational fairness) which is likely to convey trust into the supervisor.

Limitations

Before we discuss theoretical and practical implications of our findings, we need to consider them in the light of the study's limitations. An apparent methodological weakness of the study is that all data are based on employee self-assessment. Self-report measures are likely to be affected by biases, such as social desirability effects or employees' implicit theories. However, because we were interested in employees' perceptions and feelings, self-report data rarely can be avoided. Following the suggestions of Podsakoff et al. (2003), we used two strategies to cope with this problem. First, we separated the measurement of the predictor variable and the outcome variables by collecting data on two separate occasions. This approach allowed us to minimize the influence of temporal moods on the examined relationships and to get some insight into the nature of the relationships between the variables over the time. Second, we controlled for trait negative affectivity to attenuate the potential bias to a general affective disposition.

Even though we had two data collection times, this does not allow us to draw causal conclusions from our data. However, beside our theoretical reasons to examine LMX as a mediator in the relationships between perceived fairness of feedback and the outcomes, the way we assessed the variables might be a further affirmation for this causal order. We assessed fairness of feedback from the supervisor in general at Time 1 as a predictor of LMX quality rated for the following 6 months. Having a general measure predicting a more specific one strengthens the argument for the causal order we assumed in this study.

A short note upon the method used to recruit participants and the characteristics of our sample is indicated. We contacted participants on a well-known professional online business platform. Members of this platform are especially interested in business contacts, exchange, and career opportunities. Therefore, our participants might be a rather selective sample concerning career engagement and interest in work-related issues. Furthermore, not all members of the platform visited their accounts on a regular basis and therefore might have missed our messages. Our sample therefore is likely to overrepresent persons who were active on the platform. Infrequent activities on the platform might also be responsible for changes in sample size between Time 1 and Time 2. For these reasons we need to be careful in generalizing our results. Fortunately, persons who only responded at Time 1 did not differ significantly from the final sample in demographic and other study variables.

Implications for further research and practice

Our study is one of the first to explicitly examine fairness perceptions of informal feedback and their relationship to LMX, well-being and control at work. Based on a sample of employees from different industries, the major contribution of our study is to reveal significant relationships between perceptions of feedback, the relationship between supervisor and employee, and well-being, as well as perceived control at work.

We have several suggestions for future research about fairness of feedback, LMX, and work-related outcomes. First of all, we deem it necessary to learn more about the causality between fairness of feedback and LMX. Therefore, we recommend conducting experimental studies both in laboratory and field settings. Experiments manipulating the fairness of feedback and examining the effect on LMX could employ direct manipulations of feedback in a laboratory experiment or trainings on how to give fair feedback in field experiments. To test reverse causality, experiments manipulating the supervisor–employee relationship in the laboratory and measuring the fairness perceptions of feedback should be conducted. Together, these experiments will provide insight into the causal relationship between fairness perceptions and LMX. Additionally, longitudinal field studies are required to examine the dynamic development of fairness perceptions of feedback and LMX.

Second, in our study we focused on employees' subjective feelings and perceptions. Although examining employees' perceptions and feelings is important, our results need to be extended by using more objective measures of feedback fairness and employee well-being, respectively work-related stress.

Third, we suggest further examining the importance of fairness of feedback for work-related outcomes. It would be interesting to take into account other well-being concepts (e.g., burnout), and also job performance variables (Griffin, Neal, & Parker, 2007), including contextual performance (Motowidlo, Borman, & Schmit, 1997), personal initiative (Frese, Fay, Hilburger, Leng, & Tag, 1997), and innovation behaviour (Janssen, 2000). Focusing on fairness of feedback as a specific leadership behaviour will complement and extend existing research on leader fairness and important work-related outcomes (cf. Cohen-Charash & Spector, 2001; Colquitt et al., 2001; van Knippenberg et al., 2007). Additionally, connecting fairness of supervisor feedback to employee performance might give valuable insights into the question why feedback sometimes has beneficial effects on performance and sometimes it does not (Kluger & DeNisi, 1996).

Fourth, in our study we focused on employees' perceptions and experiences at work. It might be equally important to learn more about the supervisors' perceptions of the exchange relationship with their employees and how supervisors' feedback-giving behaviour might be

associated with these perceptions. Frequent discrepancies between fairness perceptions might set the exchange relationship at risk. Therefore, it can be assumed that a common representation of fairness is essential.

Taken together, our results support the assumption that fairness perceptions of feedback and LMX are meaningfully interrelated with well-being at work, which was shown for job depression and job satisfaction as measures of affective well-being, turnover intentions as a behavioural indicator of well-being, and perceived control as an important environmental determinant of well-being at work. An additional result we did not predict before was that the frequency of negative feedback from the supervisor was positively related to job anxiety. We suggest the most important practical implication of these findings is to strongly emphasize the importance of adequate communication between supervisors and employees, particularly regarding to feedback. Supervisors should be trained to be sensitive to fairness aspects in the content of feedback messages they give to employees (distributive fairness), in the way criteria relevant for the feedback are applied (procedural fairness), in their treatment of the employee during the feedback delivery (interactional fairness), and in the explanations regarding the feedback information (informational fairness).

In conclusion, we assume that a fair handling of feedback is likely to be positively related not only to employee well-being and feelings of control at work, but also to performance and thus to the well-being of the whole organization.

REFERENCES

Aryee, S., & Chen, Z. X. (2006). Leader member exchange in a Chinese context: Antecedents, the mediating role of psychological empowerment and outcomes. *Journal of Business Research*, *59*, 793 801.

Ashford, S. J. (1986). Feedback seeking in individual adaptation: A resource perspective. *Academy of Management Journal*, *29*, 465 487.

Ashford, S. J., & Cummings, L. L. (1983). Feedback as an individual resource: Personal strategies of creating information. *Organizational Behavior and Human Performance*, *32*, 370 398.

Baron, R. M., & Kenny, D. A. (1986). The moderator mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173 1182.

Bhal, K. T. (2006). LMX citizenship behavior relationship: Justice as a mediator. *Leadership and Organization Development Journal*, *27*, 106 117.

Blader, S. L., & Tyler, T. R. (2005). How can theories of organizational justice explain the effects of fairness? In J. Greenberg & J. A. Colquitt (Eds.), *Handbook of organizational justice* (pp. 329 354). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Blau, P. M. (1964). *Exchange and power in social life*. New York: Wiley.

Chen, G., Kirkman, B. L., Kanfer, R., Allen, D., & Rosen, B. (2007). A multilevel study of leadership, empowerment, and performance in teams. *Journal of Applied Psychology*, *92*, 331 346.

Cohen Charash, Y., & Spector, P. E. (2001). The role of justice in organizations: A meta analysis. *Organizational Behavior and Human Decision Processes*, *86*, 278 321.

Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, *86*, 386 400.

Colquitt, J. A., Conlon, D. E., Wesson, M. J., Porter, C. O. L. H., & Ng, K. Y. (2001). Justice at the millennium: A meta analytic review of 25 years of organizational justice research. *Journal of Applied Psychology*, *86*, 425 445.

Cropanzano, R., & Ambrose, M. L. (2001). Procedural and distributive justice are more similar than you think: A monistic perspective and a research agenda. In J. Greenberg & R. Cropanzano (Eds.), *Advances in organizational justice* (pp. 119 151). Lexington, MA: New Lexington Press.

Cropanzano, R., Byrne, Z. S., Bobocel, D. R., & Rupp, D. E. (2001). Moral virtues, fairness heuristics, social entities, and other denizens of organizational justice. *Journal of Vocational Behavior*, *58*, 164 209.

Daniels, J. A., & Larson, L. M. (2001). The impact of performance feedback on counseling self efficacy and counselor anxiety. *Counselor Education and Supervision*, *41*, 120 130.

Daniels, K., & Guppy, A. (1994). Occupational stress, social support, job control, and psychological well being. *Human Relations*, *47*, 1523 1544.

Danna, K., & Griffin, R. W. (1999). Health and well being in the workplace: A review and synthesis of the literature. *Journal of Management*, *25*, 357 384.

De Witte, H. (1999). Job insecurity and psychological well being: Review of the literature and exploration of some unresolved issues. *European Journal of Work and Organizational Psychology*, *8*, 155 177.

Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well being: Three decades of progress. *Psychological Bulletin*, *125*, 276 302.

Engle, E. M., & Lord, R. G. (1997). Implicit theory, self schemata, and leader member exchange. *Academy of Management Journal*, *4*, 988 1010.

Fedor, D. B. (1991). Recipient responses to performance feedback: A proposed model and its implications. *Research in Personnel and Human Resources Management*, *9*, 73 120.

Ferris, G. R. (1985). Role of leadership in the employee withdrawal process: A constructive replication. *Journal of Applied Psychology*, *70*, 777 781.

Frese, M., Fay, D., Hilburger, T., Leng, K., & Tag, A. (1997). The concept of personal initiative: Operationalization, reliability and validity in two German samples. *Journal of Organizational and Occupational Psychology*, *70*, 139 161.

Gerstner, C. R., & Day, D. V. (1997). Meta analytic review of leader member exchange theory: Correlates and construct issues. *Journal of Applied Psychology*, *82*, 827 844.

Graen, G. B., Liden, R. C., & Hoel, W. (1982). Role of leadership in the employee withdrawal process. *Journal of Applied Psychology*, *67*, 868 872.

Graen, G. B., Novak, M. A., & Sommerkamp, P. (1982). The effects of leader member exchange and job design on productivity and satisfaction: Testing a dual attachment model. *Organizational Behavior and Human Performance*, *30*, 109 131.

Graen, G. B., & Scandura, T. A. (1987). Toward a psychology of dyadic organization. *Research in Organizational Behavior*, *9*, 175 208.

Graen, G. B., & Uhl Bien, M. (1995). Relationship based approach to leadership: Development of leader member exchange (LMX) theory of leadership over 25 years: Applying a multi level multi domain perspective. *Leadership Quarterly*, *6*, 219 247.

Griffin, M. A., Neal, A., & Parker, S. K. (2007). A new model of work role performance: Positive behavior in uncertain and interdependent contexts. *Academy of Management Journal*, *50*, 327 347.

Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, *16*, 250 279.

Ilgen, D. R., Fisher, C. D., & Taylor, M. S. (1979). Consequences of individual feedback on behavior in organizations. *Journal of Applied Psychology*, *64*, 349 371.

Janssen, O. (2000). Job demands, perceptions of effort reward fairness and innovative work behavior. *Journal of Occupational and Organizational Psychology*, *73*, 287 302.

Kelley, H. H., & Thibaut, J. (1978). *The social psychology of groups*. New York: Wiley.

Kluger, A. N., & DeNisi, A. (1996). The effects of feedback interventions on performance: A historical review, a meta analysis, and a preliminary feedback intervention theory. *Psychological Bulletin*, *119*, 254 284.

Krohne, H. W., Egloff, B., Kohlmann, C. W., & Tausch, A. (1996). Untersuchungen mit einer deutschen Version der "Positive and Negative Affect Schedule" (PANAS) [Examinations with a German version of the "Positive and Negative Affect Schedule" (PANAS)]. *Diagnostica*, *42*, 139 156.

Kunin, T. (1955). The construction of a new type of attitude measure. *Personnel Psychology*, *8*, 65 78.

Lagace, R. R., Castleberry, S. B., & Ridnour, R. E. (1993). An exploratory salesforce study of the relationship between leader member exchange and motivation, role stress, and manager evaluation. *Journal of Applied Business Research*, *9*, 110 119.

Larson, J. R., Jr. (1984). The performance feedback process: A preliminary model. *Organizational Behavior and Human Performance*, *33*, 42 76.

Larson, J. R., Jr. (1986). Supervisors' performance feedback to subordinates: The impact of subordinate performance valence and outcome dependence. *Organizational Behavior and Human Decision Processes*, *37*, 391 408.

Larson, J. R., Jr. (1989). The dynamic interplay between employees' feedback seeking strategies and supervisors' delivery of performance feedback. *Academy of Management Review*, *14*, 408 422.

Leung, K., Su, S., & Morris, M. W. (2001). When is criticism *not* constructive? The roles of fairness perceptions and dispositional attributions in employee acceptance of critical supervisory feedback. *Human Relations*, *54*, 1155 1187.

Liden, R. C., Sparrowe, R. T., & Wayne, S. J. (1997). Leader member exchange theory: The past and potential for the future. *Research in Personnel and Human Resources Management*, *15*, 47 119.

Liden, R. C., Wayne, S. J., & Stilwell, D. (1993). A longitudinal study on the early development of leader member exchanges. *Journal of Applied Psychology*, *78*, 662 674.

Masterson, S. S., Lewis, K., Goldman, B. M., & Taylor, M. S. (2000). Integrating justice and social exchange: The differing effects of fair procedures and treatment on work relationships. *Academy of Management Journal*, *43*, 738 748.

McDowall, A., & Fletcher, C. (2004). Employee development: An organizational justice perspective. *Personnel Review*, *33*, 8 29.

Menon, S. T. (2001). Employee empowerment: An integrative psychological approach. *Applied Psychology: An International Review*, *50*, 153 180.

Moss, S. E., & Sanchez, J. I. (2004). Are your employees avoiding you? Managerial strategies for closing the feedback gap. *Academy of Management Executive*, *18*, 32 44.

Motowidlo, S. J., Broman, W. C., & Schmit, M. J. (1997). A theory of individual differences in task and contextual performance. *Human Performance*, *10*, 71 83.

Offermann, L. R., & Hellmann, P. S. (1996). Leadership behavior and subordinate stress: A 360° view. *Journal of Occupational Health Psychology*, *1*, 382 390.

Parker, L. E., & Price, R. H. (1994). Empowered managers and empowered workers: The effects of managerial support and managerial perceived control on workers' sense of control over decision making. *Human Relations*, *47*, 911 928.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*, 879 903.

Reis, M. J. (2002). The effects of supervisor feedback behavior on employee organizational citizenship behaviors: The role of perceived supervisor fairness in the social exchange process (Doctoral disseratation, Claremont Graduate University, 2002). *Dissertation Abstracts International*, *63*, 2635.

Renn, R. W., & Prien, K. O. (1995). Employee responses to performance feedback from the task: A field study of the moderating effects of global self-esteem. *Group and Organization Management*, *20*, 337–354.

Roch, S. G., & Shanock, L. R. (2006). Organizational justice in an exchange framework: Clarifying organizational justice distinctions. *Journal of Management*, *32*, 299–322.

Rupp, D. E., & Cropanzano, R. (2002). The mediating effects of social exchange relationships in predicting workplace outcomes from multifoci organizational justice. *Organizational Behavior and Human Decision Processes*, *89*, 925–946.

Scandura, T. (1999). Rethinking leader–member exchange: An organizational justice perspective. *Leadership Quarterly*, *10*, 25–41.

Scandura, T., Graen, G. B., & Novak, M. A. (1986). When managers decide not to decide autocratically: An investigation of leader–member exchange and decision influence. *Journal of Applied Psychology*, *71*, 579–584.

Schyns, B., & Paul, T. (2006). Skala zur Erfassung des Leader–member Exchange (LMX 7 nach Graen & Uhl-Bien, 1995) Übersetzung. In A. Glöckner-Rist (Ed.), *ZUMA-Informationssystem: Elektronisches Handbuch sozialwissenschaftlicher Erhebungsinstrumente* (ZIS Version 10.00). Mannheim, Germany: Zentrum für Umfragen, Methoden und Analysen.

Schyns, B., Paul, T., Mohr, G., & Blank, H. (2005). Comparing antecedents and consequences of leader–member exchange in a German working context to findings in the US. *European Journal of Work and Organizational Psychology*, *14*, 1–22.

Skinner, E. A. (1996). A guide to constructs of control. *Journal of Personality and Social Psychology*, *71*, 549–570.

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S. Leinhardt (Ed.), *Sociological methodology* (pp. 290–312). Washington, DC: American Sociological Association.

Thomas, K. W., & Velthouse, B. A. (1990). Cognitive elements of empowerment: An "interpretative" model of intrinsic task motivation. *Academy of Management Review*, *15*, 666–681.

Van Dierendonck, D., Haynes, C., Borrill, C., & Stride, C. (2004). Leadership behavior and subordinate well-being. *Journal of Occupational Health Psychology*, *9*, 165–175.

Van Knippenberg, D., De Cremer, D., & van Knippenberg, B. (2007). Leadership and fairness: The state of the art. *European Journal of Work and Organizational Psychology*, *16*, 113–140.

Van Knippenberg, D., van Knippenberg, B., De Cremer, D., & Hogg, M. A. (2004). Leadership, self, and identity: A review and research agenda. *Leadership Quarterly*, *15*, 825–856.

Wanous, J. P., Reichers, A. E., & Hudy, M. J. (1997). Overall job satisfaction: How good are single-item measures? *Journal of Applied Psychology*, *82*, 247–252.

Warr, P. (1990). The measurement of well-being and other aspects of mental health. *Journal of Occupational Psychology*, *63*, 193–210.

Warr, P. (1999). Well-being at the workplace. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 329–412). New York: Russell Sage Foundation.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS-scales. *Journal of Personality and Social Psychology*, *54*, 1063–1070.

Yukl, G. (2002). *Leadership in organizations*. Upper Saddle River, NJ: Prentice Hall.