

VU Research Portal

Promoting multifoci citizenship behavior: Time-lagged effects of procedural justice, trust, and commitment.

Lehmann-Willenbrock, N.K.; Grohmann, A.; Kauffeld, S.

published in

Applied Psychology
2013

DOI (link to publisher)

[10.1111/j.1464-0597.2012.00488.x](https://doi.org/10.1111/j.1464-0597.2012.00488.x)

document version

Publisher's PDF, also known as Version of record

[Link to publication in VU Research Portal](#)

citation for published version (APA)

Lehmann-Willenbrock, N. K., Grohmann, A., & Kauffeld, S. (2013). Promoting multifoci citizenship behavior: Time-lagged effects of procedural justice, trust, and commitment. *Applied Psychology*, 62(3), 454-485. <https://doi.org/10.1111/j.1464-0597.2012.00488.x>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

E-mail address:

vuresearchportal.ub@vu.nl

Promoting Multifoci Citizenship Behavior: Time-Lagged Effects of Procedural Justice, Trust, and Commitment

Nale Lehmann-Willenbrock,* Anna Grohmann and
Simone Kauffeld

Institut für Psychologie, Braunschweig, Germany

To explain why procedural justice leads to organisational citizenship behavior (OCB), both commitment and trust have been studied—but never concurrently. Moreover, as employees aim their behaviors toward distinct targets in the workplace, citizenship behaviors as well as commitment and trust should be considered as multifoci constructs. To address this, 204 industrial workers were surveyed over a period of three years. Data were analysed with Mplus using structural equation modeling. Our time-lagged findings show that procedural justice was linked to OCB, and that this link was mediated successively by trust and commitment. Moreover, we found target-specific effects: Procedural justice effects on organisational citizenship behavior were mediated by organisational trust and organisational commitment, whereas procedural justice effects on co-worker citizenship behavior were mediated by co-worker trust and co-worker commitment. These results underscore the importance of including multifoci trust for understanding the procedural justice–OCB link. We discuss theoretical implications for studying target-specific citizenship behaviors and their antecedents, and deduce practical implications for fostering multifoci citizenship behaviors.

INTRODUCTION

Imagine Tom, a 35-year-old employee in a medium-sized organisation. Tom has been working in his current team for five years. He is well trained for the job. What needs to happen if we want Tom not only to get the job done, but also to show initiative and help out his co-workers? In other words, how can Tom be motivated to show organisational citizenship behavior?

* Address for correspondence: Nale Lehmann-Willenbrock, TU Braunschweig, Department of Industrial/Organizational and Social Psychology, Spielmannstr. 19, 38106 Braunschweig, Germany. Email: n.lehmann-willenbrock@tu-bs.de

This research was funded by the German Research Foundation (DFG, Grant No. KA 2256/2-2), which is gratefully acknowledged. An earlier version of this paper was presented at the 2011 EAWOP Conference in Maastricht, The Netherlands. We appreciate the research assistance of Angela Henschel and Alexandra Neininger. Finally, we would like to thank Dr Vivien Lim and our three anonymous reviewers for their helpful feedback and constructive comments.

Organisational citizenship behavior (OCB) is discretionary and voluntary, neither part of employees' role requirements nor formally rewarded by the organisation (Organ, 1988). Examples of OCB include helping co-workers, volunteering, or conveying a positive image of the organisation to outsiders (Lee & Allen, 2002; Williams & Anderson, 1991; see also Bowling, Wang, & Li, 2012). Meta-analytic findings show that OCB impacts both individual and organisational outcomes (Podsakoff, Whiting, Podsakoff, & Blume, 2009).

Procedural justice can promote OCB (e.g. Cohen-Charash & Spector, 2001; LePine, Erez, & Johnson, 2002). Procedural justice concerns the perceived fairness of procedures used to make decisions (Lind & Tyler, 1988; Thibaut & Walker, 1975), which relates to the exchange norms described by Leventhal (1980; see also Scott & Colquitt, 2007). Employees who experience procedurally fair treatment feel equally valued as members of their organisation (see Posthuma, Maertz, & Dworkin, 2007; Siers, 2007).

However, procedural justice is not always sufficient for promoting OCB. Trust can be a necessary intermediate step, as previous research has found that organisational trust mediates the link between procedural justice and OCB (Aryee, Budhwar, & Chen, 2002). Thus, employees who experience procedural justice *and* trust are more likely to show OCB. If Tom experiences procedurally fair treatment, he finds it easier to trust the organisation—and his team as part of this organisation. As a consequence, he is more likely to sign up for extra activities or help out his co-workers when needed.

Moreover, commitment has been identified as a mediator of procedural justice effects on OCB (Lavelle, Brockner, Konovsky, Price, Henley, Taneja, & Vinekar, 2009a). Presumably, when employees trust, they become more committed and finally show more OCB (Lavelle, Rupp, & Brockner, 2007). If this were the case, Tom, who perceives his organisation as procedurally fair, would develop trust and subsequent commitment—and only then would he show OCB. However, to date no empirical study has tested this line of reasoning.

Furthermore, a multifoci approach should be considered. Previous research suggests that specific foci of trust and commitment should lead to an increase in specific foci of citizenship behavior (e.g. Marinova, Moon, & Van Dyne, 2010; Lavelle et al., 2009a). This differentiation into specific foci or targets is important because specific OCBs may only be promoted by target-specific antecedents. Citizenship behaviors targeted at the organisation (OCBO) and citizenship behaviors directed toward individuals (OCBI) will likely have specific antecedents. For example, given procedural justice, Tom may only help out his co-workers if he has first developed trust in his co-workers and commitment toward his co-workers. On the other hand, given procedural justice, he may only show initiative (targeted at the organisation) if he has first developed organisational trust and subsequent organisational commitment.

In sum, both trust and commitment have separately been identified as mediators in the procedural justice–OCB link, but have not been studied concurrently. This raises the question: Which comes first? How do procedural justice, trust, and commitment interplay to finally yield OCB? And finally, what role do target-specific effects play in this sequence?

The present study contributes to the existing OCB literature in several ways. First, we include trust in addition to commitment as a mediator in the procedural justice–OCB link. To date, no study has examined trust and commitment simultaneously as mediators in this context. We use a research design with three points of measurement to test the assumption that procedural justice effects on OCB are mediated in series by trust and commitment. We show that trust needs to be included for a more comprehensive understanding of the link between procedural justice, commitment, and OCB. Second, we take a multifoci approach and show that the effects of trust and commitment within the procedural justice–OCB link are target-specific. Because employees direct citizenship behaviors at specific targets (such as co-workers or the organisation as a whole), it is important to consider target-specific trust and commitment in this context. Finally, real work groups are studied in their natural work settings over time.

PROMOTING OCB: SOCIAL EXCHANGE AS A THEORETICAL LENS

In our initial example, we asked what needs to happen in order to promote OCB. Organ (1988, 1990) was the first to suggest an interpretation of OCB via social exchange theory. Social exchange theory posits that social exchange between individuals involves a series of interactions that are interdependent and contingent on the actions of others (Blau, 1964). Under certain circumstances, these interdependent transactions can result in high-quality relationships. In the organisational context, social exchange theory refers to social exchange between employees and the organisation (e.g. Wayne, Shore, & Liden, 1997; Cropanzano & Rupp, 2008). Although social exchange can refer to transaction (Cropanzano & Mitchell, 2005), it has typically been understood in terms of a relationship (e.g. Organ, 1988). From the relationship point of view, organisational functioning depends on mutually desirable relationships between employees and their organisation. Indeed, OCB has been described as a facet of job performance (for an overview, see Fay & Sonnentag, 2010). Seen through the social exchange lens, employees show OCB as reciprocation for having received benefits from the organisation—as is the case for other aspects of job performance (see Moorman & Byrne, 2005). Considering procedural justice as a benefit received from the organisation, employees who perceive procedurally fair treatment will be more likely to engage in OCB. Moreover, social exchange

theory suggests that any mediating variables in the procedural justice–OCB link should indicate received benefits deserving reciprocation (Moorman & Byrne, 2005). We first introduce procedural justice effects on OCB and move on to examine two mediators through the lens of social exchange theory: trust and commitment. Finally, we highlight target-specific effects within the procedural justice–OCB link in order to predict target-specific organisational citizenship behaviors.

Procedural Justice Promotes OCB

Procedural justice concerns the perceived fairness of methods and rules on which decisions in the organisation are based (Colquitt, 2001). Research linking procedural justice to performance outcomes has often relied on social exchange theory. Along these lines, justice can be viewed as an organisational input for the exchange relationship provided by the organisation as a whole (e.g. Masterson, Lewis-McClearn, Goldman, & Taylor, 2000). Meta-analytic findings show that employees who are treated procedurally fairly show more extra-role behaviors, such as OCB, that promote team and organisational performance (e.g. Cohen-Charash & Spector, 2001; Colquitt, Conlon, Wesson, Porter, & Ng, 2001; LePine et al., 2002).

Trust within the Procedural Justice–OCB Link

Some previous research indicates that trust may be an important antecedent of OCB as well (Aryee et al., 2002). While there is still some debate concerning a definition of trust, there is increasing consensus concerning the conditions of trust, namely (1) vulnerability, in terms of a willingness to accept uncertainty, (2) previous mutual interactions between the parties, and (3) expectations over time concerning reliable conduct (for an overview, see Mach, Dolan, & Tzafrir, 2010). Concerning our theoretical lens of social exchange, Cropanzano and Mitchell (2005) suggest that trust is a promising relational construct for understanding social exchange. In general, trust has been viewed as a characteristic outcome of favorable social exchange (Blau, 1964; Holmes, 1981). In the workplace context, Konovsky and Pugh (1994) found that supervisor trust mediated effects of procedural justice on OCB. Aryee et al. (2002) identified organisational trust as a mediator of distributive, procedural, and interactional justice effects on job satisfaction, turnover intentions, and organisational commitment. Supervisor trust, on the other hand, only mediated interactional justice effects. Presumably, organisational trust in particular promotes extra-role behavior because organisational trust facilitates employees' identification with organisational goals and thus fosters commitment (e.g. Lehmann-Willenbrock & Kauffeld, 2010a).

Procedural justice can be viewed as a source of trust. Perceived fairness and respectful treatment, which are inherent in procedural justice, convey appre-

ciation (see Dirks & Ferrin, 2002). Procedural justice can lead to perceptions of reliability and a sense of equity (for an overview, see Cropanzano & Rupp, 2008; Cropanzano, Stein, & Nadisic, 2011). Zucker (1986) contends that clear rules diminish fear of being challenged by others. Along these lines, Pearce, Bigley, and Branyiczki (1998) have argued that employees' trust in co-workers depends on their perceptions of procedural justice because fair procedures affect trust in a top-down manner, creating both trust in the organisation and trust in co-workers (as subunits of an organisation). Their findings support this idea across different political economies and cultural backgrounds (Pearce et al., 1998). Moreover, previous theorising suggests a link between procedural justice and co-worker trust. According to the group value model of authority (Tyler & Lind, 1992), we seek information on our appraisal within our group (e.g. department, team) to infer our status within the group. Trust in the group or in our organisation will result if we experience significance and appraisal. Thus, it can be assumed that procedural justice as an important antecedent of perceived appraisal will lead to trust. When referring to the application of teamwork as an organisational procedure, there should be a link between procedural justice and both organisational and co-worker trust.

Studies investigating trust in the supervisor and trust in the organisation simultaneously have shown that procedural and distributive justice are linked only to trust in the organisation, whereas interpersonal and informational justice primarily relate to trust in the supervisor (see Aryee et al., 2002). As we are interested in the organisational and co-worker foci in the present study, we examine procedural rather than interpersonal or informational justice (see also Lavelle et al., 2009a).

A recent meta-analysis links trust to increased task performance, citizenship behaviors, and a decrease in counterproductive behaviors (Colquitt, Scott, & LePine, 2007). Moreover, previous research has identified organisational trust as a possible mediator in the context of positive effects of perceived justice on work outcomes (Aryee et al., 2002). Similarly, Van Dijke, De Cremer, and Mayer (2010) found that procedural justice effects on OCB were mediated by trust. These results suggest that trust is an important variable for explaining the link between procedural justice and OCB.

Commitment within the Procedural Justice–OCB Link

Researchers have argued that people like to be treated procedurally fairly because fair procedures symbolise respect and appreciation (see relational models of organisational justice, e.g. Tyler & Lind, 1992). From the social exchange perspective, commitment can be understood as a means to reciprocate fair treatment. In an organisational setting, employees who receive procedurally fair treatment reciprocate by showing more commitment (e.g.

Cropanzano & Rupp, 2008). Moreover, relational models of organisational justice suggest that employees who experience procedural justice from their organisation are motivated to include the organisation in their social identity, which heightens their organisational commitment (Lavelle et al., 2009a). Indeed, empirical studies support effects of employee commitment on OCB (e.g. Konovsky & Pugh, 1994; Organ & Ryan, 1995). Because procedural justice can be expected to increase employee commitment, and commitment will promote OCB, commitment should function as a mediator of the link between procedural justice and OCB. This notion has recently found empirical support (Lavelle et al., 2009a).

Target Similarity Effects: Promoting Multifoci OCB

Social exchange relationships take place within specific foci (e.g. Cropanzano & Rupp, 2008). These findings suggest that organisationally focused antecedents will be linked to organisational outcomes, while co-worker focused antecedents will be linked to co-worker outcomes. Along these lines, some researchers have distinguished between citizenship behaviors targeted at the organisation (OCBO; e.g. attending voluntary events) and citizenship behaviors directed toward individuals (OCBI; e.g. LePine et al., 2002; Williams & Anderson, 1991). The “I” in OCBI can differ: for example, it could refer to one’s supervisor or co-workers. In the present study, we refer to co-workers when talking about OCBI and to the organisation when talking about OCBO.

Trust in the workplace can also be understood as a multifoci construct. Research shows that employees distinguish between referents of trust such as co-workers, immediate supervisors, and the organisation as a whole (Aryee et al., 2002; Ferres, Connell, & Travaglione, 2004; Lehmann-Willenbrock & Kauffeld, 2010a; Masterson et al., 2000). Moreover, these different foci of trust are linked to different outcomes. For example, research shows that trust in co-workers enhances group cohesion, whereas trust in the organisation increases affective organisational commitment (Lehmann-Willenbrock & Kauffeld, 2010a). Understanding trust as a multifoci construct bears the possibility of discovering target-specific effects. The target similarity model (e.g. Lavelle et al., 2007) refers to the idea that the relationship between variables is stronger when these variables refer to the same target rather than different targets. In the context of multifoci trust, this model suggests that specific foci of trust will likely be linked to outcomes with a similar focus. As previous research suggests a mediating function of trust in the procedural justice–OCB link (Aryee et al., 2002), we presume:

H1a: Organisational trust is a mediator in the link between perceived procedural justice and OCBO.

H1b: Co-worker trust is a mediator in the link between perceived procedural justice and OCBI.

Previous research further shows target-specific effects of commitment on OCB (e.g. Becker & Kernan, 2003), and of procedural justice on OCB (Rupp & Cropanzano, 2002). In the context of explaining the procedural justice–OCB link, Lavelle et al. (2009a) indeed found that OCBO was more strongly predicted by organisational commitment, and OCBI was more strongly predicted by work group commitment. Organisational commitment mediated the effect of procedural justice on OCBO, whereas work group commitment mediated the effect on OCBI. Moreover, Lavelle, McMahan, and Harris (2009b) found that OCBO was affected by organisational fairness and organisational support, while OCBI was affected by work group fairness and perceived work group support. In line with previous research, we thus presume:

H2a: Organisational commitment is a mediator in the link between perceived procedural justice and OCBO.

H2b: Co-worker commitment is a mediator in the link between perceived procedural justice and OCBI.

Two-Step Mediation

If trust and commitment can both function as mediators in the procedural justice–OCB link, which comes first? Social exchange theory (Blau, 1964) can be interpreted such that social exchange relationships are built in a two-phase process (see Lavelle et al., 2007). When an employee experiences procedural justice from the organisation, he or she will learn that the organisation is supportive and can be trusted, and will start developing a social exchange relationship. Thus, procedural justice will engender trust (phase 1). As this process evolves, employees will begin to reciprocate in terms of increased organisational commitment (phase 2). Finally, commitment will promote OCB. These theoretical assumptions suggest that effects of procedural justice are mediated in series by employees' trust and subsequent commitment. There is empirical support for the second phase, i.e. procedural justice leading to OCB via commitment (e.g. Lavelle et al., 2009a). Moreover, there is empirical support for the connection between the two phases and the outcome, i.e. trust leading to commitment, which fosters OCB (Aryee et al., 2002). However, to date there is no empirical test of the relationship between procedural justice, subsequent trust, commitment, and OCB. To close this gap, we include trust as a mediator before commitment and thereby examine both phases within the procedural justice–OCB link as proposed by Lavelle et al. (2007). We assume that target-specific effects of procedural justice on

OCBO and OCBI will be mediated in series by employees' trust and subsequent commitment. We thus hypothesise:

H3: The effect of perceived procedural justice on OCBO is mediated *successively* by organisational trust and organisational commitment.

H4: The effect of perceived procedural justice on OCBI is mediated *successively* by co-worker trust and co-worker commitment.

METHOD

Sample and Design

We implemented a three-year field study design with three points of measurement (t1, t2, and t3). There was approximately one year between measurements. A total of $N = 204$ industrial workers of a medium-sized company were surveyed over this time period. All participants worked in semi-autonomous teams. Team composition did not change notably over time because teams generally were highly specialised in their respective tasks. Only seven out of the 204 participants changed teams during the study period. The average age at t1 was 36.0 years, ranging from 17 to 59 years ($SD = 11.11$, 4.9% not specified). The gender distribution was typical of this industry with a majority of male participants (97.1% male; 2.9% female). Team size varied between four and 25 employees ($M = 12.44$, $SD = 5.71$). The average organisational tenure was 12.68 years ($SD = 9.41$, 2.9% not specified).

Measures

All data were gathered at the individual level. Prior to data gathering, all measures were approved by the work council in the participating organisation.

Procedural Justice. Procedural justice was measured at t1 with the procedural justice subscale from Colquitt's (2001) organisational justice questionnaire (German version by Streicher, Jonas, Maier, Frey, Woschée, & Waßmer, 2008). As a procedural context, we chose teamwork (for a similar approach, see Dayan & Di Benedetto, 2008). Teamwork as a new work procedure had recently been implemented throughout the organisation participating in our study, as part of a new lean production system and accompanying continuous improvement process (CIP; e.g. Liker, 2006). In CIP, teamwork is regularly applied organisation-wide as a means to tap innovative potential and as a strategic principle underpinning total quality management (Murray & Chapman, 2003). For example, teams are asked to report errors

and contribute ideas for improvement as part of the CIP (e.g. Liker, 2006; Murray & Chapman, 2003). In the organisation involved in the present study, the implementation of teamwork was associated with new team tasks (e.g. holding regular team meetings to discuss problems and ideas for improvement) as well as a new salary system. Team productivity was evaluated monthly and employees received a salary bonus based on team productivity (rather than individual productivity). These contextual factors led us to study procedural justice in the context of teamwork implementation. Each of the seven procedural justice items (Colquitt, 2001) was adapted to represent the teamwork context by means of inserting “teamwork” instead of “procedures”. In addition, because teamwork had only recently been implemented as a new production and organisational procedure, we changed Colquitt’s (2001) wording from past to present tense. The seven items were, (1) “To what extent is teamwork applied consistently throughout X [name of the organisation]?”; (2) “To what extent can you as a team member contribute your ideas and opinions during teamwork at X?”; (3) “To what extent do you as a team member have influence over the results arrived at by teamwork (e.g. productivity, team meetings, health and safety, solutions, vacation planning, etc.)?”; (4) “To what extent is teamwork at X free of bias?”; (5) “To what extent is teamwork based on accurate information (e.g. to what extent are you as a team member informed accurately about teamwork procedures)?”; (6) “To what extent are you able to appeal the results arrived at by teamwork (e.g. vacation planning, health and safety, etc.)?”; and (7) “To what extent does teamwork at X uphold ethical and moral standards (e.g. in terms of respectful treatment as a team)?” The answering format ranged from 1 (not at all) to 5 (completely).

Organisational Trust. Organisational trust was measured at t2 with eight items from the organisational trust subscale from the German Workplace Trust Survey, which has recently been psychometrically validated (Lehmann-Willenbrock & Kauffeld, 2010a). Each subscale comprises nine items with a 6-point answering format ranging from 1 (completely disagree) to 6 (completely agree). Sample items for organisational trust were: “Information can be shared openly within X [name of organisation]”; “X follows plans with action”.

Co-worker Trust. Co-worker trust was measured at t2 with eight items from the co-worker trust subscale from the German Workplace Trust Survey (Lehmann-Willenbrock & Kauffeld, 2010a). Sample items for co-worker trust are “My co-workers are truthful in their dealings with me”; “My co-workers will not disclose personal information”.

Organisational Commitment. Organisational commitment was assessed at t3 with seven items from the Organisational Commitment Questionnaire

(OCQ; Mowday, Steers, & Porter, 1979; German version by Maier & Woschée, 2002), using a 6-point answering format ranging from 1 (completely disagree) to 6 (completely agree). Sample items for organisational commitment were “I would accept almost any type of job assignment in order to keep working for X [name of organisation]”; “I think that my values and those of X are very similar”.

Co-worker Commitment. To represent the team focus, we adapted eight original OCQ items. Sample items for co-worker commitment were “I am proud to tell others that I am part of this team”; “I think my team is the best team I could ever work in”.

Organisational Citizenship Behavior (OCBO). The two foci of citizenship behavior were measured at t3 with five items each, on a 6-point answering format. OCBO was measured with five items from the civic virtue subscale of a German OCB measure (Staufenbiel & Hartz, 2000). According to Organ (1988), civic virtue means participating responsibly in the “civil life” of the organisation. This includes staying informed about the organisation, keeping one’s skills up to date, volunteering for extra-role tasks, making suggestions for improvement, and promoting a positive image of the organisation. Sample items of OCBO were “I contribute innovative ideas for quality improvement”; “I actively participate in meetings”.

Co-worker Citizenship Behavior (OCBI). In accordance with previous research on multifoci OCB (Lavelle et al., 2009a), we assessed OCBI at t3 with the altruism subscale of OCB (Podsakoff, MacKenzie, Moorman, & Fetter, 1990). We used five items from a German version by Staufenbiel and Hartz (2000). Sample items for OCBI were “I actively try to prevent difficulties among team members”; “I help others when their workload is high”.

Analysis Strategy

LePine et al. (2002) suggest that OCB should be examined as a latent construct. They argue that measurable separate dimensions of OCB are manifestations of positive cooperativeness at work. Therefore, an interpretation of empirical results concerning OCB should be based on a latent conceptualisation of the construct, such that unidimensionality is ensured before linking OCB to other variables. The present study heeds this call by testing unidimensionality prior to examining relationships between antecedent variables and multifoci OCB as latent constructs. Moreover, this study is aimed at studying target-specific effects focused on the organisation on the one hand and employees’ co-workers in their team on the other hand simultaneously,

TABLE 1
Valid Responses, Percentage of Missing Data per Scale at the Respective
Measuring Point, Means, and Standard Deviations for Each Parcel

<i>Scale</i>	<i>Valid responses (frequency)</i>	<i>Percentage of missing data</i>	<i>Parcel</i>	<i>M</i>	<i>SD</i>
Procedural justice, t1	204	0%	1	3.74	.58
			2	3.70	.62
Organisational trust, t2	148	27.5%	1	4.57	.72
			2	4.40	.72
Co-worker trust, t2	149	27.0%	1	4.54	.74
			2	4.32	.76
Organisational commitment, t3	114	44.1%	1	4.37	.80
			2	4.34	.85
Co-worker commitment, t3	114	44.1%	1	3.90	.87
			2	4.13	.86
OCBO, t3	113	44.6%	1	5.45	.87
			2	5.19	1.07
OCBI, t3	113	44.6%	1	5.40	.88
			2	5.35	.93

Note: Over the three measurement points, a total of $N = 91$ completed all scales at the respective measuring points.

as employees are likely to show both OCBO and OCBI in their daily work lives. Because we expect target-specific effects, we assume separate latent constructs for the different targets.

All analyses were performed at the individual level with Mplus version 5.1 (Muthén & Muthén, 1998–2007), using the maximum likelihood estimator. Mplus enables analysis of all paths simultaneously using structural equation modeling and testing the significance of indirect effects immediately rather than via several steps. To account for different amounts of missing data on specific scales (see Table 1), we used full-information maximum likelihood (FIML). A missing value analysis of the item parcels indicated that all missing items in our data set were missing completely at random, thus deeming FIML appropriate (see Enders & Bandalos, 2001; Graham, 2009). Little's MCAR test implemented in SPSS with age, organisational tenure, and gender as categorical variables was not significant, $\chi^2(36) = 50.06, p = .06$.

Within each scale, items can be parceled to achieve a better ratio between the number of parameters to be estimated and sample size and to enable more efficient parameter estimation (Little, Cunningham, Shahar, & Widaman, 2002). Prior to item parceling, unidimensionality should be demonstrated (Little et al., 2002). Thus, we examined the unidimensionality of all scales using confirmatory factor analysis (for examples of similar approaches, see

Bordia, Restubog, & Tang, 2008; Dewettinck & van Ameijde, 2011; Yang, Nay, & Hoyle, 2010). For each scale a model assuming one underlying latent factor was specified. For model evaluation, we used the ratio of χ^2 to degrees of freedom df , RMSEA, CFI, and SRMR (see Schweizer, 2010; Schermelleh-Engel, Moosbrugger, & Müller, 2003). The following cut-off values indicate good model fit: $\chi^2/df \leq 2$, $RMSEA \leq .05$, $CFI \geq .97$, and $SRMR \leq .05$; whereas acceptable model fit is indicated by $2 < \chi^2/df \leq 3$, $.05 < RMSEA \leq .08$, $.95 \leq CFI < .97$, and $.05 < SRMR \leq .10$ (for an overview see Schermelleh-Engel et al., 2003).

RESULTS

Initially, we found that the variables examined were not related to age, organisational tenure, or gender. Means, standard deviations, intercorrelations, and Cronbach's alpha coefficients are depicted in Table 2.

Unidimensionality

All model fit indices are presented in Table 3. Cronbach's alpha values were $\alpha = .81$ for procedural justice, $\alpha = .89$ for organisational trust, $\alpha = .90$ for co-worker trust, $\alpha = .90$ for organisational commitment, $\alpha = .92$ for co-worker commitment, $\alpha = .86$ for OCBO, and $\alpha = .85$ for OCBI.

Given unidimensionality, the randomised assignment of items to parcels is the easiest parceling method because no preliminary analysis has to be performed, and because randomised assignment is equal or superior to other parceling strategies (Landis, Beal, & Tesluk, 2000). We thus parceled items randomly into two groups. When a latent construct is represented by only two indicators, both factor loadings should be equal for a more accurate representation of the underlying factor (see Little, Lindenberger, & Nesselrode, 1999). Therefore, factor loadings of each parcel were fixed at 1.

In order to consider measurement errors, several structural equation models were specified (see Preacher & Hayes, 2008a). For testing Hypotheses 1 and 2, respectively, a three-path mediational model with two mediators in series was specified (Taylor, MacKinnon, & Tein, 2008). Finally, a comprehensive model containing all study variables was specified. To improve parsimony and to obtain more efficient parameter estimation, the comprehensive model contained only those paths that were supported in the previous two models for the separate foci.

When examining indirect effects, bootstrapping is strongly recommended (e.g. Shrout & Bolger, 2002). Unlike the product of coefficients approach, bootstrapping does not assume a normal distribution of the indirect effect, and it has several advantages compared to the very popular causal steps approach which is less powerful in detecting effects (Hayes, Preacher, &

TABLE 2
Means, Standard Deviations, Intercorrelations, and Internal Consistency Values for all Manifest Scales as well as Age, Organisational Tenure, and Gender

Scale	N	M	SD	PJ	OT	CT	OC	CC	OCBO	OCBI
Procedural justice (PJ), t1	204	3.72	.55	(.81)						
Organisational trust (OT), t2	148	4.48	.69	.34**	(.89)					
Co-worker trust (CT), t2	149	4.43	.72	.54**	.54**	(.90)				
Organisational commitment (OC), t3	114	4.35	.80	.06	.40**	.17	(.90)			
Co-worker commitment (CC), t3	114	4.01	.83	.42**	.34**	.55**	.34**	(.92)		
OCBO, t3	113	5.34	.89	.34**	.31**	.28**	.39**	.46**	(.86)	
OCBI, t3	113	5.38	.85	.45**	.42**	.38**	.31**	.52**	.71**	(.85)
Age	194	36.0	11.1	-.04	.05	-.04	.08	-.02	.01	.12
Organisational tenure	198	12.7	9.4	-.08	-.11	-.09	-.12	-.07	-.06	-.08
Gender	204	1.03	.17	.03	.11	.10	.04	-.02	-.11	.08

Note: * $p < .05$; ** $p < .01$. Internal consistency values (Cronbach's alpha) are depicted in parentheses. Results were based on manifest variables.

TABLE 3
Fit Statistics for All Confirmatory Factor Analyses Assuming One Latent Factor per Scale and for All Mediation Models

<i>Scale</i>	<i>No. of items</i>	<i>N</i>	χ^2	<i>df</i>	χ^2/df	<i>p</i>	<i>RMSEA</i>	<i>CFI</i>	<i>SRMR</i>
Procedural justice, t1	7	204	24.57	14	1.75	.04	.061	.97	.041
Organisational trust, t2	8	148	31.98	20	1.60	.04	.064	.98	.036
Co-worker trust, t2	8	149	32.14	20	1.61	.04	.064	.98	.029
Organisational commitment, t3	7	114	16.54	14	1.18	.28	.040	1.00	.026
Co-worker commitment, t3	8	114	30.99	20	1.55	.06	.069	.98	.030
OCBO, t3	5	113	6.43	5	1.29	.27	.050	.99	.023
OCBI, t3	5	113	6.02	5	1.20	.30	.042	1.00	.025
Mediation model: organisational focus	8	204	19.51	18	1.08	.36	.020	1.00	.051
Mediation model: co-worker focus	8	204	28.62	18	1.59	.05	.054	.99	.054
Mediation model: final comprehensive model	14	204	93.33	69	1.35	.03	.042	.98	.052

Myers, 2011). In three-path mediational models, the bias-corrected bootstrap (BC bootstrap) and the percentile bootstrap are recommended when examining the significance of direct and indirect effects (Taylor et al., 2008). Thus, we applied BC bootstrap to investigate our hypotheses.

Although we were interested in investigating specific indirect effects, total indirect effects are included for the sake of completeness in Table 4 and Table 5. The examination of specific indirect effects does not necessarily require a significant total indirect effect (Preacher & Hayes, 2008b).

Mediation Analysis

Organisational Focus. A three-path mediational model with the following two mediators in series was specified: Organisational trust as mediator 1 and organisational commitment as mediator 2. The fit indices indicated a good model fit except for an acceptable SRMR-value (see Table 3).

The total effect of procedural justice on OCBO was significant, as indicated by the BC bootstrap results (see Table 4). The specific indirect effect of procedural justice on OCBO via organisational trust and organisational commitment was statistically significant. However, the specific indirect effects of procedural justice on OCBO via solely one mediator (organisational trust or organisational commitment) were not significant. Procedural justice was directly related to OCBO. Thus, the significant total relationship between procedural justice and OCBO was accounted for in part by the two mediators organisational trust and organisational commitment in series (see Figure 1). Organisational trust and organisational commitment only showed a significant mediating effect in series, but not as single mediators in the procedural justice–OCBO link. Thus, these findings only lend partial support to H1a and H2a.

Co-worker Focus. A three-path mediational model with the following two mediators in series was specified: Co-worker trust as mediator 1 and co-worker commitment as mediator 2. SRMR and RMSEA values of the three-path mediational model indicated acceptable model fit, the ratio χ^2/df and the CFI value indicated good model fit (see Table 3).

As indicated by the BC bootstrap results, the total effect of procedural justice on OCBI was significant (see Table 4). The specific indirect effect of procedural justice on OCBI through co-worker trust and co-worker commitment was statistically significant. However, the specific indirect effects of procedural justice on OCBI via solely one mediator (co-worker trust or co-worker commitment) were not significant. Procedural justice was directly related to OCBI. Thus, the significant total relationship between procedural justice and OCBI was accounted for in part by the two mediators co-worker trust and co-worker commitment in series (see Figure 2). Similar to organi-

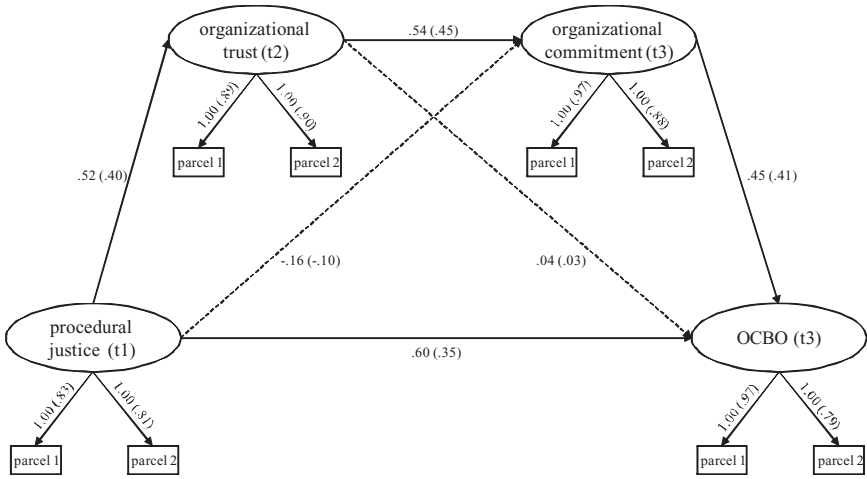


FIGURE 1. Effects targeted at the organisation ($N = 204$). Unstandardised regression coefficients are depicted. Error terms are omitted. Standardised estimates in parentheses. Dashed lines indicate non-significant values and an empirical 95% confidence interval which does overlap with zero, respectively. Continuous lines indicate significant values and an empirical 95% confidence interval which does not overlap with zero, respectively.

sational trust and commitment, co-worker trust and co-worker commitment only showed significant mediational effects in series, but did not function as single mediators in the procedural justice–OCBI link. These findings only partially support H1b and H2b.

Comprehensive Model. To examine whether the specific indirect effects remained stable when considering the organisational and co-worker focus simultaneously, a model containing all organisational and co-worker variables was specified. Two mediators in series were included for the two foci. The organisational focus comprised organisational trust as mediator 1 and organisational commitment as mediator 2. The co-worker focus contained co-worker trust as mediator 1 and co-worker commitment as mediator 2. In multiple mediator models, residuals between the mediators should be allowed to covary (Preacher & Hayes, 2008b). Thus, correlations between residuals of both first mediators (organisational trust and co-worker trust) and both second mediators (organisational commitment and co-worker commitment) were included. If significant residual covariances between latent dependent variables do exist and are not included in the model, biased parameter estimates may result. Therefore, we included correlations between the two dependent variables OCBO and OCBI in the comprehensive model. Our

TABLE 4
Decomposition of Effects for Procedural Justice Predicting OCBO and OCBI (N = 204)

<i>Effect</i>	<i>Unstandardised estimate</i>	<i>Unstandardised 95% CI</i>	<i>Standardised estimate</i>	<i>Standardised 95% CI</i>
<i>Organisational focus</i>				
Procedural justice, t1 → OCBO, t3 (total effect)	.68 ^a	.31 to 1.05	.40 ^a	.20 to .59
Procedural justice, t1 → OCBO, t3 (total indirect effect)	.07	-.19 to .34	.04	-.11 to .19
Specific indirect effect via Organisational trust, t2	.02	-.14 to .28	.01	-.11 to .13
Organisational commitment, t3	-.07	-.29 to .08	-.04	-.15 to .06
Organisational trust, t2 → Organisational commitment, t3	.13 ^a	.04 to .31	.07 ^a	.01 to .14
Procedural justice, t1 → OCBO, t3 (direct effect)	.60 ^a	.19 to 1.02	.35 ^a	.11 to .59
<i>Co-worker focus</i>				
Procedural justice, t1 → OCBI, t3 (total effect)	.91 ^a	.57 to 1.29	.56 ^a	.40 to .73
Procedural justice, t1 → OCBI, t3 (total indirect effect)	.35 ^a	.07 to .71	.21 ^a	.03 to .40
Specific indirect effect via Co-worker trust, t2	-.02	-.39 to .36	-.01	-.24 to .22
Co-worker commitment, t3	.12	-.02 to .38	.08	-.04 to .19
Co-worker trust, t2 → Co-worker commitment, t3	.24 ^a	.08 to .53	.15 ^a	.02 to .28
Procedural justice, t1 → OCBI, t3 (direct effect)	.57 ^a	.06 to 1.05	.35 ^a	.06 to .64

Note: The two separate models (organisational focus and co-worker focus) are depicted. Total, total indirect, specific indirect, and direct effect estimates and bias-corrected confidence intervals were computed with bootstrapping using Mplus. CI = confidence interval. A 95% CI was specified using the values constituting the lower and upper 2.5% of the bootstrap distribution. A bootstrap sample of 10,000 was determined.

^a The empirical 95% confidence interval does not overlap with zero.

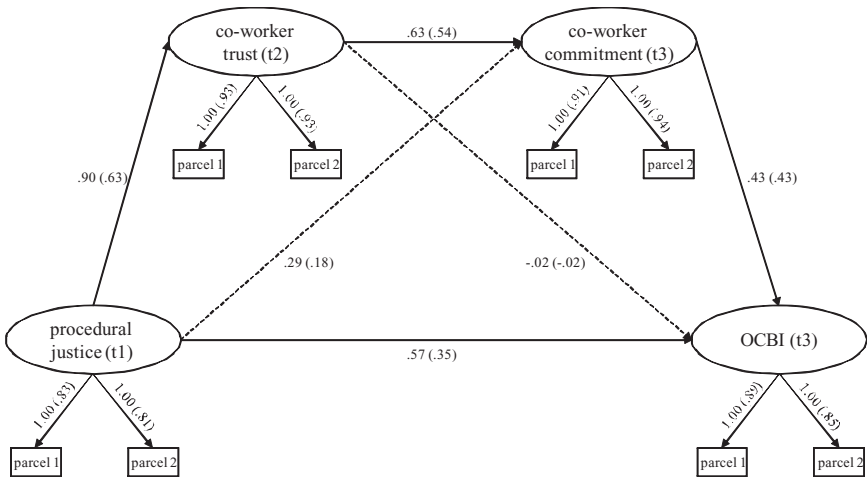


FIGURE 2. Effects targeted at co-workers ($N = 204$). Unstandardised regression coefficients are depicted. Error terms are omitted. The values in parentheses are standardised estimates. Dashed lines indicate non-significant values and an empirical 95% confidence interval which does overlap with zero, respectively. Continuous lines indicate significant values and an empirical 95% confidence interval which does not overlap with zero, respectively.

analyses concerning the two different foci did not indicate any direct links between organisational trust and OCBO or OCBI. Likewise, they did not indicate any direct links between co-worker trust and OCBO or OCBI. Similarly, the analyses showed no direct link between procedural justice and the two commitment foci. To improve parsimony of the model, these paths were fixed to zero. The specified model obtained a good fit except for an acceptable SRMR-value (see Figure 3 and Table 3).

BC bootstrap results were different for the unstandardised and standardised cases for some effects (see Table 5). Usually, unstandardised regression coefficients are used in mediation analysis (Preacher & Hayes, 2008b). Therefore, we based our conclusions on unstandardised BC bootstrap estimates. There was a significant total effect of procedural justice on OCBO. Two specific indirect effects were significant. The remaining indirect effects were not significant. The specific indirect effect of procedural justice on OCBO via organisational trust and organisational commitment was significant. Furthermore, the specific indirect effect of procedural justice on OCBO via co-worker trust and co-worker commitment was significant. On the other hand, the direct effect of procedural justice on OCBO was not significant. Thus, the significant total relationship between procedural justice and OCBO was accounted for completely by the specific indirect effect via organisational

TABLE 5
Decomposition of Effects in the Comprehensive Model (N = 204)

<i>Effect</i>	<i>Unstandardised estimate</i>	<i>Unstandardised 95% CI</i>	<i>Standardised estimate</i>	<i>Standardised 95% CI</i>
<i>Organisational focus</i>				
Procedural justice, t1 → OCBO, t3 (total effect)	.67 ^a	.29 to 1.03	.40 ^a	.19 to .60
Procedural justice, t1 → OCBO, t3 (total indirect effect)	.25 ^a	.05 to .48	.15 ^a	.03 to .26
Specific indirect effect via Organisational trust, t2 → Organisational commitment, t3	.12 ^a	.04 to .27	.07 ^a	.01 to .13
Co-worker trust, t2 → Organisational commitment, t3	-.06	-.19 to .04	-.04	-.10 to .03
Organisational trust, t2 → Co-worker commitment, t3	-.01	-.11 to .06	-.00	-.05 to .04
Co-worker trust, t2 → Co-worker commitment, t3	.20 ^a	.03 to .46	.12	-.00 to .24
Procedural justice, t1 → OCBO, t3 (direct effect)	.42	-.00 to .80	.25 ^a	.02 to .48
<i>Co-worker focus</i>				
Procedural justice, t1 → OCBI, t3 (total effect)	.87 ^a	.52 to 1.22	.54 ^a	.37 to .72
Procedural justice, t1 → OCBI, t3 (total indirect effect)	.26 ^a	.10 to .46	.16 ^a	.07 to .26
Specific indirect effect via Organisational trust, t2 → Organisational commitment, t3	.07 ^a	.01 to .19	.05	-.01 to .10
Co-worker trust, t2 → Organisational commitment, t3	-.04	-.15 to .02	-.02	-.08 to .03
Organisational trust, t2 → Co-worker commitment, t3	-.01	-.10 to .08	-.01	-.06 to .05
Co-worker trust, t2 → Co-worker commitment, t3	.23 ^a	.08 to .47	.15 ^a	.04 to .25
Procedural justice, t1 → OCBI, t3 (direct effect)	.61 ^a	.25 to .95	.38 ^a	.18 to .58

Note: Total, total indirect, specific indirect, and direct effect estimates and bias-corrected confidence intervals were computed with bootstrapping using Mplus. CI = confidence interval. A 95% CI was specified using the values constituting the lower and upper 2.5% of the bootstrap distribution. A bootstrap sample of 10,000 was determined.

^a The empirical 95% confidence interval does not overlap with zero.

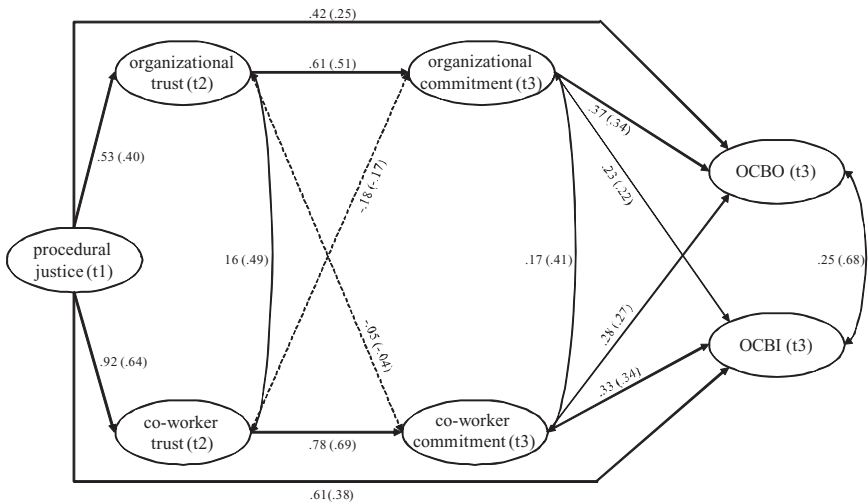


FIGURE 3. Comprehensive model ($N = 204$). Unstandardised regression coefficients are depicted. Parcels, error terms, and factor loadings are omitted. The values in parentheses are standardised estimates. Dashed lines indicate non-significant values and an empirical 95% confidence interval which does overlap with zero, respectively. Continuous lines indicate significant values and an empirical 95% confidence interval which does not overlap with zero, respectively. Paths corresponding to Hypotheses 3 and 4 are printed in bold.

trust and organisational commitment in series and the specific indirect effect via co-worker trust and co-worker commitment in series.[†]

There was a significant total effect of procedural justice on OCBI. Two specific indirect effects were significant; the remaining indirect effects were not significant. The specific indirect effect of procedural justice on OCBI via organisational trust and organisational commitment was significant. Furthermore, the specific indirect effect of procedural justice on OCBI via co-worker trust and co-worker commitment was significant. The direct effect of procedural justice on OCBI was significant. Thus, the significant total relationship between procedural justice and OCBI was accounted for in part by the indirect effect via organisational trust and organisational commitment in series and the indirect effect via co-worker trust and co-worker commitment in series. In sum, these findings fully supported H3 and H4.

[†] Note: Correction added on 28 December 2012 after first publication online on 29 February 2012. The acronym 'OCBI' has been changed to 'OCBO' in relation to the analysis in the text. The error has been corrected in this version of the article.

DISCUSSION

This study set out to examine how effects of procedural justice on OCB are mediated in series by trust and commitment. From the theoretical angle of social exchange theory, we included both multifoci trust and commitment in a time-lagged design with three points of measurement and showed that the effect of procedural justice on OCB was indeed mediated successively by trust and commitment. As expected, this series was found to be target-specific. Concerning the organisational focus, organisational trust and organisational commitment mediated the effect of procedural justice on OCBO. Concerning the co-worker focus, co-worker trust and co-worker commitment mediated the effect of procedural justice on OCBI. Because a time-lagged research design was implemented in this study, our results suggest that indeed, both trust and commitment (in series) need to be included for a more comprehensive understanding of the procedural justice–OCB link.

Despite significant findings concerning the target-specific mediation via trust and commitment, substantial direct effects of procedural justice on OCBO and on OCBI remained. These remaining direct effects imply that the mediation we found did not explain the effect of procedural justice on citizenship behaviors completely. Rather, procedural justice still had an influence on both OCBO and OCBI that was not mediated by the trust–commitment link. This finding corresponds to previous research on procedural justice and OCB (e.g. Cohen-Charash & Spector, 2001). Nevertheless, our findings show that both multifoci trust and multifoci commitment need to be considered for a more complete understanding of procedural justice effects on target-specific OCB.

Furthermore, for both foci, there was not only the hypothesised specific indirect effect, but also a specific indirect effect that was somewhat contrary to our expectations. For example, concerning the organisational focus, the effect of procedural justice was mediated not only by organisational trust and organisational commitment, but also by the co-worker focus route. However, these findings are in line with theoretical assumptions concerning target-specific effects. For example, Lavelle et al. (2007) do not preclude effects between foci.

Theoretical Implications

Our theoretical rationale followed the social exchange perspective (e.g. Blau, 1964; for applications to the organisational context, see Wayne et al., 1997; Cropanzano & Rupp, 2008, among others). In particular, the present results imply that employees' trust perceptions need to be considered for a more thorough understanding of the link between procedural justice and OCB. This finding empirically supports previous theorising about target-specific effects on OCB (Lavelle et al., 2007) and goes beyond previous target-specific

research (Lavelle et al., 2009a). Indeed, our findings support the idea, stemming from social exchange theory, that employees who perceive procedurally fair treatment in their organisation reciprocate in terms of trust and, over time, commitment.

In our time-lagged study, we found that OCB resulted when employees who experienced procedural justice showed higher trust, which in turn enhanced commitment. The serial mediation effect of procedural justice on OCB via (1) trust and (2) commitment was pronounced and target-specific. Similar to findings by Lavelle et al. (2009a) concerning commitment and OCB, we found that employees distinguish between different targets of trust, which are distinctly linked to target-specific citizenship behaviors. When trust was focused on co-workers, it was associated with subsequent co-worker commitment and, over time, promoted OCBI directed at other team members. On the other hand, when trust was focused on the organisation, employees' subsequent organisational commitment was higher and, over time, promoted OCBO.

Our results lend support to the idea that the social exchange relationships inherent in the process between procedural justice and OCB can be distinguished into two phases. First, procedural justice was associated with higher trust and thereby activated the social exchange relationship (in our study, either between employees and the organisation or between employees and their co-workers). Second, employees who trusted more "reciprocated" by means of increased commitment (organisational commitment or co-worker commitment). Higher commitment was linked to increased OCB (OCBO or OCBI).

Because we implemented a time-lagged research design, our results provide hints that the direction of the effects complies with the theoretical assumptions of Lavelle et al. (2007). We further addressed methodological issues concerning the longitudinal study of psychological phenomena by including the required minimum number of three points of measurement for studying development over time (see Ployhart & Vandenberg, 2010). Moreover, while previous research on real teams has mostly used short-term project teams and/or cross-sectional approaches (see Barrick, Bradley, & Colbert, 2007), we studied real teams in the field over a period of three years.

In line with previous research (e.g. Becker & Kernan, 2003; Lavelle et al., 2009a; Rupp & Cropanzano, 2002), our findings further support the importance of studying target-specific effects. Beyond previous research by Lavelle et al. (2009a), we studied employees' OCBO and OCBI simultaneously. If employees distinguish between different targets of trust and commitment, it is likely that they simultaneously develop OCBO and OCBI as well. Indeed, we found that variables focused on co-workers predicted OCBI, whereas variables focused on the organisation predicted OCBO. These results are in

line with research by Lavelle et al. (2009a). However, they go beyond this previous research by showing that trust needs to be included for a more comprehensive understanding of target-specific effects within the procedural justice–OCB link.

Moreover, we examined OCB and its antecedents as latent constructs, following a call by LePine et al. (2002) to measure OCB as a latent variable. We ensured unidimensionality of all constructs prior to modeling relationships between antecedent variables and multifoci OCB as latent constructs. Effects of procedural justice on multifoci trust, multifoci commitment, and subsequent multifoci OCB were modeled between latent constructs. Furthermore, we examined the indirect effects in a comprehensive model and applied bootstrapping, which shows several advantages compared to the well-known causal steps approach (Hayes et al., 2011). These findings are in line with the argument of LePine et al. (2002) and suggest that models predicting OCB should indeed take a latent approach.

Practical Implications

Our results suggest that employees who trust are more likely to feel committed and subsequently show OCB. Because these results were target-specific, they carry important implications for organisational practice. Employees distinguish between specific targets of OCB, such as their immediate co-workers or the organisation as a whole. Thus, interventions aimed at promoting OCB need to consider specific OCBs and their specific antecedents.

While procedural justice was found to be generally helpful for promoting OCB, the mediating mechanism via trust and commitment was target-specific. Thus, HR representatives and managers should take measures to enhance employees' multifoci trust perceptions as a starting point for promoting multifoci OCB. Identifying relevant trust relationships within an organisation lays the ground for possible measures for enhancing employees' multifoci trust.

Low trust could be met by trust-enhancing interventions. Although research on trust-enhancing interventions is sparse (see Ashleigh & Prichard, 2011), there are some possibilities. For example, trust between co-workers can be developed by informing employees about the importance of trust and trustworthy persons and by teaching them behavioral strategies beneficial for establishing trust (e.g. avoiding ambiguous statements, behavioral consistency, avoiding manipulation, or refraining from sanctions; see Grunwald, 1995). Moreover, general team-skills training can enhance intra-team trust (e.g. Walter, 2000; Buzaglo & Wheelan, 1999). Presumably, the safety of the training context facilitates open knowledge sharing in a team, promotes intra-team interpersonal relationships, and thus leads to increased trust (Ashleigh & Prichard, 2011).

When trust is established, commitment can be developed. For example, management training addressing the issue of work–family balance has proven successful for enhancing employees' organisational commitment (O'Neill, Harrison, Cleveland, Almeida, Stawski, & Crouter, 2009). Commitment toward one's co-workers can be fostered through team reflexivity interventions (e.g. West, 2002) or team coaching (e.g. Lehmann-Willenbrock & Kauffeld, 2010b).

On the one hand, these examples illustrate that HRM can aim to promote OCB from several angles; on the other hand, they show that interventions need to consider not only procedurally fair treatment, but also trust and commitment development in order to secure effects. In other words, Tom, from our initial example, may only show OCB (toward his co-workers and the organisation) if he perceives procedurally just treatment, if as a result he finds reason to trust his co-workers and the organisation, and if he continues to make positive experiences with both of these social exchange partners such that he feels more committed.

Limitations

Like any empirical investigation, this study has several limitations. Both co-workers and organisations are unit-level constructs (see Kozlowski & Klein, 2000). However, theoretical perspectives suggest a clear distinction between co-workers and the organisation as targets for trust, commitment, and OCB (e.g. Lavelle et al., 2007). Moreover, empirical studies show that employees distinguish between specific foci of trust (e.g. Lehmann-Willenbrock & Kauffeld, 2010a), specific foci of commitment (e.g. Riketta & van Dick, 2005), and specific targets of OCB (e.g. LePine et al., 2002). In any case, albeit the multifoci-driven complexity of our model deemed an additional multilevel approach rather unpropitious, future research could examine team- as well as individual-level effects on OCB.

Some methodological limitations should be considered as well. First, when studying several constructs via surveys, common method bias might result in high correlations between constructs. We followed advice for reducing common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) by including a time lag of approximately one year between t1-t2 and t2-t3, respectively, to separate the measurement of our variables. However, we observed a strong relationship of $r = .71$ between our OCBO and OCBI scales, which hints at the influence of common method bias and is in good agreement with the meta-analytic estimate of this relationship ($r_c = .75$; Podsakoff et al., 2009). As pointed out by Podsakoff et al. (2009), this strong relationship does not necessarily imply that OCB should be examined irrespective of the target. Moreover, previous theorising and some findings support target-specific citizenship behaviors (e.g. Lavelle et al., 2007; Lavelle

et al., 2009a), thereby underscoring this distinction both conceptually and empirically. In any case, future research is warranted to clarify the extent to which employees really distinguish between different targets of OCB, for example by means of more comprehensive measures or by separating affiliative from challenging characteristics of citizenship behaviors (Podsakoff et al., 2009; Van Dyne, Cummings, & Parks, 1995).

Second, causal interpretations of the present results are limited, as the most favorable approach for examining mediational relationships and drawing causal conclusions would require a randomised experimental study (Cole & Maxwell, 2003). However, an experimental manipulation of procedural justice, trust, or commitment in a longitudinal study with real teams would not be ethically appropriate for the participating employees.

Third, both commitment and citizenship behaviors were assessed at t3. To examine directions of the effects between these four variables, four measurement points would have been preferable. However, our results obtained from structural equation modeling generally support the series as posited in the target similarity model (Lavelle et al., 2007). Our findings suggest that a complex design with four points of measurement would be worthwhile.

Fourth, there was attrition in our sample size over time. Although missing data are to be expected in a three-year study, this limitation should be considered. However, we addressed the issue of missing data by using the FIML procedure. FIML estimates show less bias compared, for example, to listwise deletion (e.g. Enders, 2001). Nevertheless, our sample size was rather small for structural equation modeling. However, considering that the ML estimator performs well for sample sizes of 200 cases or above, even with severe non-normal data (Boomsma & Hoogland, 2001), our sample size was appropriate. Furthermore, measures with high reliability and validity, as used in our study, may reduce improper solutions which might occur with small sample sizes (Boomsma & Hoogland, 2001).

Finally, conclusions are limited to a German-speaking cultural background and predominantly male sample. While the gender distribution was representative of the industries examined, our findings do not necessarily generalise to a more diverse team context.

Future Research

Our results underscore the importance of including trust when modeling the relationship between procedural justice and citizenship behaviors. Future research might expand on the present findings by investigating other foci of trust in the workplace. For example, Lavelle et al. (2007) suggest that supervisors may inspire specific citizenship behaviors that are preceded by supervisory justice, trust in the supervisor, and commitment to the supervisor. A recent multifoci study shows that employees who perceive their supervisors

as fair, experience more supervisor support and show more OCB directed at their supervisor (Lavelle et al., 2009b). Building on the present findings concerning the importance of trust as a mediator of the procedural justice–OCB relationship, future research might investigate the role of the supervisor in terms of procedural justice perceptions and how these perceptions will affect trust in the supervisor, subsequent commitment to the supervisor, and OCB directed at the supervisor.

As Roe (2008) points out, phenomena in applied psychology are dynamic. Arguably, variables such as multifoci trust are subject to fluctuations, possibly even to significant changes on a daily basis. Future research could explore this idea further.

Finally, future research should investigate whether the serial mediation of procedural justice effects on target-specific OCB via trust and commitment holds true for different cultural contexts. For example, Rego and Pina e Cunha (2010) showed that employees from a Portuguese cultural background placed particular emphasis on interactional rather than procedural justice. Fischer and Smith (2006) found a stronger effect of procedural justice on OCB among British than among German employees. Likewise, our results concerning target-specific effects on co-worker and organisationally directed citizenship behaviors might look rather different in another cultural setting. Future research should yield more insight into possible intercultural differences concerning target-specific citizenship behaviors and their antecedents.

REFERENCES

- Aryee, S., Budhwar, P.S., & Chen, Z.X. (2002). Trust as a mediator of the relationship between organizational justice and work outcomes: Test of a social exchange model. *Journal of Organizational Behavior*, *23*, 267–285. doi: 10.1002/job.138
- Ashleigh, M., & Prichard, J. (2011). Enhancing trust through training. In R.H. Searle & D. Skinner (Eds.), *Trust and human resource management* (pp. 125–138). Northampton, MA: Edward Elgar Publishing.
- Barrick, M.R., Bradley, B.H., & Colbert, A.E. (2007). The moderating role of top management team interdependence: Implications for real teams and working groups. *Academy of Management Journal*, *50*, 544–557.
- Becker, T.E., & Kernan, M.C. (2003). Matching commitment to supervisors and organizations to in-role and extra-role performance. *Human Performance*, *16*, 327–348. doi: 10.1207/S15327043HUP1604_1
- Blau, P.M. (1964). *Exchange and power in social life*. New York: John Wiley.
- Boomsma, A., & Hoogland, J.J. (2001). The robustness of LISREL modeling revisited. In R. Cudeck, S. du Toit, & D. Sörbom (Eds.), *Structural equation models: Present and future. A Festschrift in honor of Karl Jöreskog* (pp. 139–168). Chicago, IL: Scientific Software International.
- Bordia, P., Restubog, S.L.D., & Tang, R.L. (2008). When employees strike back: Investigating mediating mechanisms between psychological contract breach and

- workplace deviance. *Journal of Applied Psychology*, 93, 1104–1117. doi: 10.1037/0021-9010.93.5.1104
- Bowling, N.A., Wang, Q., & Li, H.Y. (2012). The moderating effect of core self-evaluations on the relationships between job attitudes and organizational citizenship behavior. *Applied Psychology: An International Review*, 61, 97–113. doi: 10.1111/j.1464-0597.2011.00458.x
- Buzaglo, G., & Wheelan, S.A. (1999). Facilitating work team effectiveness: Case studies from Central America. *Small Group Research*, 30, 108–129. doi: 10.1177/104649649903000106
- Cohen-Charash, Y., & Spector, P.E. (2001). The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes*, 86, 425–445. doi: 10.1006/obhd.2001.2958
- Cole, D.A., & Maxwell, S.E. (2003). Testing mediational models with longitudinal data: Questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology*, 112, 558–577. doi: 10.1037/0021-843X.112.4.558
- Colquitt, J.A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, 86, 386–400. doi: 10.1037//0021-9010.86.3.386
- 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, 386–400. doi: 10.1037/0021-9010.86.3.425
- Colquitt, J.A., Scott, B.A., & LePine, J.A. (2007). Trust, trustworthiness, and trust propensity: A meta-analytic test of their unique relationships with risk taking and job performance. *Journal of Applied Psychology*, 92, 909–927. doi: 10.1037/0021-9010.92.4.909
- Cropanzano, R., & Mitchell, M.S. (2005). Social exchange theory: An interdisciplinary review. *Journal of Management*, 31, 874–900. doi: 10.1177/0149206305279602
- Cropanzano, R., & Rupp, D.E. (2008). Social exchange theory and organizational justice: Job performance, citizenship behaviors, multiple foci, and a historical integration of two literatures. In S.W. Gilliland, D.P. Skarlicki, & D.D. Steiner (Eds.), *Research in social issues in management: Justice, morality, and social responsibility* (pp. 63–99). Greenwich, CT: Information Age Publishing.
- Cropanzano, R., Stein, J.H., & Nadisic, T. (2011). *Social justice and the experience of emotion*. New York: Routledge.
- Dayan, M., & Di Benedetto, A. (2008). Procedural and interactional justice perceptions and teamwork quality. *Journal of Business & Industrial Marketing*, 23, 566–576. doi: 10.1108/08858620810913371
- Dewettinck, K., & van Amejide, M. (2011). Linking leadership empowerment behavior to employee attitudes and behavioral intentions: Testing the mediating role of psychological empowerment. *Personnel Review*, 40, 284–305. doi: 10.1108/004834811111118621
- Dirks, K.T., & Ferrin, D.L. (2002). Trust in leadership: Meta-analytic findings and implications for organizational research. *Journal of Applied Psychology*, 87, 611–628. doi: 10.1037/0021-9010.87.4.611

- Enders, C.K. (2001). The impact of nonnormality on full information maximum-likelihood estimation for structural equation models with missing data. *Psychological Methods*, 6, 352–370. doi: 10.1037/1082-989X.6.4.352
- Enders, C.K., & Bandalos, D.L. (2001). The relative performance of full information maximum likelihood estimation for missing data in structural equation models. *Structural Equation Modeling*, 8, 430–457. doi: 10.1207/S15328007SEM0803_5
- Fay, D., & Sonnentag, S. (2010). A look back to move ahead: New directions for research on proactive performance and other discretionary work behaviours. *Applied Psychology: An International Review*, 59, 1–20. doi: 10.1111/j.1464-0597.2009.00413.x
- Ferres, N., Connell, J., & Travaglione, A. (2004). Co-worker trust: A catalyst for constructive employee attitudes. *Journal of Managerial Psychology*, 19, 608–622. doi: 10.1108/02683940410551516
- Fischer, R., & Smith, P.B. (2006). Who cares about justice? The moderating effect of values on the link between organisational justice and work behaviour. *Applied Psychology: An International Review*, 55, 541–562. doi: 10.1111/j.1464-0597.2006.00243.x
- Graham, J.W. (2009). Missing data analysis: Making it work in the real world. *Annual Review of Psychology*, 60, 549–576. doi: 10.1146/annurev.psych.58.110405.085530
- Grunwald, W. (1995). Nach der Schlankheitskur: Vertrauen aufbauen [After the slimming diet: Building trust]. *Angewandte Arbeitswissenschaft*, 143, 1–14.
- Hayes, A.F., Preacher, K.J., & Myers, T.A. (2011). Mediation and the estimation of indirect effects in political communication research. In E.P. Bucy & R.L. Holbert (Eds.), *Sourcebook for political communication research: Methods, measures, and analytical techniques* (pp. 434–465). New York: Routledge.
- Holmes, J.G. (1981). The exchange process in close relationships: Microbehavior and macromotives. In M.J. Lerner & S.C. Lerner (Eds.), *The justice motive in social behavior* (pp. 261–284). New York: Plenum.
- Konovsky, M.A., & Pugh, S.D. (1994). Citizenship behavior and social exchange. *Academy of Management Journal*, 37, 656–669.
- Kozlowski, S.W.J., & Klein, K.J. (2000). A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes. In K.J. Klein & S.W.J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 3–90). San Francisco, CA: Jossey-Bass.
- Landis, R.S., Beal, D.J., & Tesluk, P.E. (2000). A comparison of approaches to forming composite measures in structural equation models. *Organizational Research Methods*, 3, 186–207. doi: 10.1177/109442810032003
- Lavelle, J.J., Brockner, J., Konovsky, M.A., Price, K.H., Henley, A.B., Taneja, A., & Vinekar, V. (2009a). Commitment, procedural fairness, and organizational citizenship behavior: A multifoci analysis. *Journal of Organizational Behavior*, 30, 337–357. doi: 10.1002/job.518
- Lavelle, J.J., McMahan, G.C., & Harris, C.M. (2009b). Fairness in human resource management, social exchange relationships, and citizenship behavior: Testing linkages of the target similarity model among nurses in the United States. *Inter-*

- national Journal of Human Resource Management*, 20, 2419–2434. doi: 10.1080/0958.5190903363748
- Lavelle, J.J., Rupp, D.E., & Brockner, J. (2007). Taking a multifoci approach to the study of justice, social exchange, and citizenship behavior: The target similarity model. *Journal of Management*, 33, 841–866. doi: 10.1177/0149206307635
- Lee, K., & Allen, N.J. (2002). Organizational citizenship behavior and workplace deviance: The role of affect and cognitions. *Journal of Applied Psychology*, 87, 131–142. doi: 10.1037//0021-9010.87.1.131
- Lehmann-Willenbrock, N., & Kauffeld, S. (2010a). Development and construct validation of the German Workplace Trust Survey (G-WTS). *European Journal of Psychological Assessment*, 26, 3–10. doi: 10.1027/1015-5759/a000002
- Lehmann-Willenbrock, N., & Kauffeld, S. (2010b). The downside of communication: Complaining cycles in group discussion. In S. Schuman (Ed.), *The handbook for working with difficult groups: How they are difficult, why they are difficult and what you can do about it* (pp. 33–54). San Francisco, CA: Jossey-Bass.
- LePine, J.A., Erez, A., & Johnson, D.E. (2002). The nature and dimensionality of organizational citizenship behavior: A critical review and meta-analysis. *Journal of Applied Psychology*, 87, 52–65. doi: 10.1037//0021-9010.87.1.52
- Leventhal, G.S. (1980). What should be done with equity theory? New approaches to the study of fairness in social relationships. In K. Gergen, M. Greenberg, & R. Willis (Eds.), *Social exchange: Advances in theory and research* (pp. 27–55). New York: Plenum.
- Liker, J. (2006). *The Toyota way fieldbook*. New York: McGraw-Hill.
- Lind, E.A., & Tyler, T.R. (1988). *The social psychology of procedural justice*. New York: Plenum.
- Little, T.D., Cunningham, W.A., Shahar, G., & Widaman, K.F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling*, 9, 151–173. doi: 10.1207/S15328007SEM0902_1
- Little, T.D., Lindenberger, U., & Nesselroade, J.R. (1999). On selecting indicators for multivariate measurement and modeling with latent variables. *Psychological Methods*, 4, 192–211. doi: 10.1037/1082-989X.4.2.192
- Mach, M., Dolan, S., & Tzafirir, S. (2010). The differential effect of team members' trust on team performance: The mediation role of team cohesion. *Journal of Occupational and Organizational Psychology*, 83, 771–794. doi: 10.1348/096317909X473903
- Maier, G.W., & Woschée, R.-M. (2002). Die affektive Bindung an das Unternehmen. Psychometrische Überprüfung des Organizational Commitment Questionnaire (OCQ) von Porter und Smith (1970) [Affective organizational commitment. Psychometric validation of the OCQ by Porter and Smith]. *Zeitschrift für Arbeits- und Organisationspsychologie*, 46, 126–136. doi: 10.1026//0932-4089.46.3.126
- Marinova, S.V., Moon, H., & Van Dyne, L. (2010). Are all good soldier behaviors the same? Supporting multidimensionality of organizational citizenship behaviors based on rewards and roles. *Human Relations*, 63, 1463–1485. doi: 10.1177/0018726709359432
- Masterson, S.S., Lewis-McClellan, K., Goldman, B.M., & Taylor, S.M. (2000). Integrating justice and social exchange: The differing effects of fair procedures

- and treatment on work relationships. *Academy of Management Journal*, *43*, 738–748.
- Moorman, R.H., & Byrne, Z.S. (2005). How does organizational justice affect organizational citizenship behavior? In J. Greenberg & J. Colquitt (Eds.), *Handbook of organizational justice* (pp. 357–380). Mahwah, NJ: Lawrence Erlbaum Associates.
- Mowday, R.T., Steers, R.M., & Porter, L.W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior*, *14*, 223–247. doi: 10.1016/0001-8791(79)90072-1
- Murray, P., & Chapman, R. (2003). From continuous improvement to organisational learning: Developmental theory. *Learning Organization*, *10*, 272–282. doi: 10.1108/09696470310486629
- Muthén, L.K., & Muthén, B.O. (1998–2007). *Mplus user's guide* (5th edn.). Los Angeles, CA: Muthén & Muthén.
- O'Neill, J.W., Harrison, M.M., Cleveland, J., Almeida, D., Stawski, R., & Crouter, A.C. (2009). Work–family climate, organizational commitment, and turnover: Multilevel contagion effects of leaders. *Journal of Vocational Behavior*, *74*, 18–29. doi: 10.1016/j.jvb.2008.10.004
- Organ, D.W. (1988). *Organizational citizenship behavior: The good soldier syndrome*. Lexington, MA: Lexington Books.
- Organ, D.W. (1990). The motivational basis of organizational citizenship behavior. In B.M. Staw & L.L. Cummings (Eds.), *Research in organizational behavior* (Vol. 12, pp. 43–72). Greenwich, CT: JAI Press.
- Organ, D.W., & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. *Personnel Psychology*, *48*, 775–802. doi: 10.1111/j.1744-6570.1995.tb01781.x
- Pearce, J.L., Bigley, G.A., & Branyiczki, I. (1998). Procedural justice as modernism: Placing industrial/organisational psychology in context. *Applied Psychology: An International Review*, *47*, 371–396. doi: 10.1111/j.1464-0597.1998.tb00034.x
- Ployhart, R.E., & Vandenberg, R.J. (2010). Longitudinal research: The theory, design, and analysis of change. *Journal of Management*, *36*, 94–120. doi: 10.1177/0149206309352110
- Podsakoff, N.P., Whiting, S.W., Podsakoff, P.M., & Blume, D.B. (2009). Individual- and organizational-level consequences of organizational citizenship behaviors: A meta-analysis. *Journal of Applied Psychology*, *94*, 122–141. doi: 10.1037/a0013079
- 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. doi: 10.1037/0021-9010.88.5.879
- Podsakoff, P.M., MacKenzie, S.B., Moorman, R.H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *Leadership Quarterly*, *1*, 107–142. doi: 10.1016/1048-9843(90)90009-7
- Posthuma, R.A., Maertz, C.P. Jr., & Dworkin, J.B. (2007). Procedural justice's relationship with turnover: Explaining past inconsistent findings. *Journal of Organizational Behavior*, *28*, 381–398. doi: 10.1002/job.427

- Preacher, K.J., & Hayes, A.F. (2008a). Contemporary approaches to assessing mediation in communication research. In A.F. Hayes, M.D. Slater, & L.B. Snyder (Eds.), *The Sage sourcebook of advanced data analysis methods for communication research* (pp. 13–54). Thousand Oaks, CA: Sage.
- Preacher, K.J., & Hayes, A.F. (2008b). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*, 879–891. doi: 10.3758/BRM.40.3.879
- Rego, A., & Pina e Cunha, M. (2010). Organisational justice and citizenship behaviors: A study in the Portuguese cultural context. *Applied Psychology: An International Review*, *59*, 404–430. doi: 10.1111/j.1464-0597.2009.00405.x3
- Riketta, M., & Van Dick, R. (2005). Foci of attachment in organizations: A meta-analytic comparison of the strength and correlates of workgroup versus organizational identification and commitment. *Journal of Vocational Behavior*, *67*, 490–510. doi: 10.1016/j.jvb.2004.06.001
- Roe, R.A. (2008). Time in applied psychology: The study of “what happens” rather than “what is”. *European Psychologist*, *13*, 37–52. doi: 10.1027/1016-9040.13.1.37
- 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. doi: 10.1016/S0749-5978(02)00036-5
- Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online*, *8*, 23–74.
- Schweizer, K. (2010). Some guidelines concerning the modeling of traits and abilities in test construction. *European Journal of Psychological Assessment*, *26*, 1–2. doi: 10.1027/1015-5759/a000001
- Scott, B.A., & Colquitt, J.A. (2007). Are organizational justice effects bounded by individual differences? An examination of equity sensitivity, exchange ideology, and the Big Five. *Group & Organization Management*, *32*, 290–325. doi: 10.1177/1059601106286877
- Shrout, P.E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods*, *7*, 422–445. doi: 10.1037//1082-989X.7.4.422
- Siers, B. (2007). Relationships among organisational justice perceptions, adjustment, and turnover of United States-based expatriates. *Applied Psychology: An International Review*, *56*, 437–459. doi: 10.1111/j.1464-0597.2007.00269.x
- Staufenbiel, S., & Hartz, C. (2000). Organizational Citizenship Behavior: Entwicklung und erste Validierung eines Messinstruments [Organizational citizenship behavior: Development and initial validation of a measure]. *Diagnostica*, *46*, 73–83. doi: 10.1026/0012-1924.46.2.73
- Streicher, B., Jonas, E., Maier, G.W., Frey, D., Woschéc, R., & Waßmer, B. (2008). Test of the construct and criteria validity of a German measure of organizational justice. *European Journal of Psychological Assessment*, *24*, 131–139. doi: 10.1027/1015-5759.24.2.131

- Taylor, A.B., MacKinnon, D.P., & Tein, J.-Y. (2008). Tests of the three-path mediated effect. *Organizational Research Methods, 11*, 241–269. doi: 10.1177/1094428107300344
- Thibaut, J., & Walker, L. (1975). *Procedural justice: A psychological analysis*. New York: Erlbaum.
- Tyler, T.R., & Lind, E.A. (1992). A relational model of authority in groups. In M.P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 115–191). San Diego, CA: Academic Press.
- Van Dijke, M., De Cremer, D., & Mayer, D.M. (2010). The role of authority power in explaining procedural fairness effects. *Journal of Applied Psychology, 95*, 488–502. doi: 10.1037/a0018921
- Van Dyne, L., Cummings, L.L., & Parks, J.M. (1995). Extra-role behaviors: In pursuit of construct and definitional clarity. *Research in Organizational Behavior, 17*, 215–285.
- Walter, D. (2000). Competency-based on-the-job training for aviation maintenance and inspection: A human factors approach. *International Journal of Industrial Ergonomics, 26*, 249–259. doi: 10.1016/S0169-8141(99)00069-4
- Wayne, S.J., Shore, L.M., & Liden, R.C. (1997). Perceived organizational support and leader–member exchange: A social exchange perspective. *Academy of Management Journal, 40*, 82–111.
- West, M.A. (2002). Sparkling fountains or stagnant ponds: An integrative model of creativity and innovation implementation in work groups. *Applied Psychology: An International Review, 51*, 355–387. doi: 10.1111/1464-0597.00951
- Williams, L.J., & Anderson, S.E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of Management, 17*, 601–617. doi: 10.1177/014920639101700305
- Yang, C., Nay, S., & Hoyle, R.S. (2010). Three approaches to using lengthy ordinal scales in structural equation models: Parceling, latent scoring, and shortening scales. *Applied Psychological Measurement, 34*, 122–142. doi: 10.1177/0146621609338592
- Zucker, L.G. (1986). Production of trust: Institutional sources of economic structure, 1840–1920. *Research in Organizational Behavior, 8*, 53–112.