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Trusting the fair supervisor: the role of supervisory support in performance appraisals

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Applying social exchange theory and organisational support theory to a performance appraisal context, we hypothesised that perceived supervisory support would mediate the relationships between both interpersonal and informational justice, and trust in the supervisor. The data were collected from 526 full-time working adults, who answered questions about the fairness of their organisation's current performance appraisal process. Using structural equation modelling, both calibration (n = 278) and cross-validation (n = 248) field samples showed that perceived supervisory support mediated the justice–supervisor trust relationships. Our findings suggest that perceived supervisory support serves as a mechanism through which perceptions of interpersonal and informational justice foster trust in supervisors. Implications for organisational practice and areas for future research are discussed.
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INTRODUCTION

Research on trust and fairness in the workplace has shown that organisational justice and trust are positively related (see Colquitt *et al*., 2001; Aryee *et al*., 2002). Although this overall link between justice and trust is valuable, theoretical and empirical evidence suggests that workplace justice is best conceptualised as a multidimensional construct of four types (*i.e.* distributive, procedural, interpersonal and informational), each of which has differential relationships with various employee and organisational outcomes (see Cohen-Charash and Spector, 2001; Colquitt *et al*., 2001). Research thus far, however, has failed to provide a complete picture of how the different types of justice relate to *supervisory* trust, even though supervisors are critical sources of employees' justice perceptions (*e.g.* via performance appraisals and feedback; Bernardin and Beatty, 1984; Judge and Ferris, 1993), and typically serve as the primary means through which the organisation interacts with its employees (Allen *et al*., 2007). Additionally, previous research focusing on trust and justice has either failed to separate supervisory from organisational trust (*e.g.* Colquitt *et al*., 2001; Farndale *et al*., 2011), or has neglected to study all four types of justice concurrently (*e.g.* Aryee *et al*., 2002; DeConinck, 2010).

Research shows that justice perceptions during the performance appraisal process contribute to high levels of trust in the supervisor (Murphy and Cleveland, 1991; Mayer and Davis, 1999), and are essential components in judging the effectiveness and usefulness of appraisals in organisations (Jacobs *et al*., 1980). However, this research does not specify how the different types of justice relate to perceptions of trust in supervisor in the performance appraisal setting. Because previous justice research has shown that procedural and distributive justice are most likely related to organisational-relevant variables (*i.e.* organisational commitment;

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Cohen-Charash and Spector, 2001), whereas interpersonal and informational justice are most likely related to supervisor-relevant constructs (*e.g.* leader–member exchange; Masterson *et al*., 2000), empirical evidence demonstrating which type of justice is most strongly related to supervisory trust could have significant implications for the types of interventions organisations implement for improving performance management.

Moreover, contradictory findings between previous studies suggest that there may be a mediating construct that explains the mechanisms through which fairness is related to trust in supervisor. A mediating mechanism is particularly important in performance appraisal contexts because the supervisor plays such a pivotal role in communicating to the employee his or her status in the organisation, as well as expected performance behaviours (Thomas and Bretz, 1994). Therefore, our purpose was to investigate perceived supervisory support (PSS) as a mediator of the relationships between the four justice types and supervisory trust within a performance appraisal context. Integrating social exchange theory (SET) (Blau, 1964) and organisational support theory (Eisenberger *et al*., 1986), we propose and test a model in which interpersonal and informational justices (the two forms of justice that focus on relationships) are related to trust in supervisor through the mediating mechanism of PSS.

BACKGROUND

Organisational justice

In organisational justice (*i.e.* fairness in the workplace), researchers have identified four different types of fairness perceptions: distributive, procedural, interpersonal and informational. *Distributive justice* refers to the fairness of outcomes in comparison with what others receive (*e.g.* Deutsch, 1975). *Procedural justice* refers to whether the decision-making processes ensure consistency across individuals and whether recipients of those decisions have the opportunity to influence the process (*e.g.* Thibaut and Walker, 1975). Both interpersonal and informational justices represent relational forms of justice and emerge from interactions with others. *Interpersonal justice* refers to whether one is treated with dignity and respect when decision processes and decisions themselves are implemented, and *informational justice* reflects the extent to which employees feel that they have been given adequate information as decisions are implemented (Greenberg, 1993; Colquitt *et al*., 2001). Although researchers previously combined interpersonal and informational justice into a single composite called interactional justice (Bies and Moag, 1986), sufficient recent work has demonstrated the efficacy of keeping them separate (*e.g.* Colquitt, 2001). For example, Colquitt (2001) provided confirmatory factor and discriminatory validity support for the four justices as related but unique constructs. Thus, although the four forms of justice are moderate to highly related, accumulated research has demonstrated that they are distinct and worthy of separate assessment (*e.g.* Jones and Skarlicki, 2003; De Cremer *et al*., 2007).

Additionally, researchers have demonstrated that the justices hold differential relationships with various outcomes. For example, using meta-analysis, Cohen-Charash and Spector (2001) found that procedural justice, but neither distributive nor interactional justice, was positively related to work performance. Further, quality of leader–member exchange was related to interactional justice, but not to distributive or procedural justice. In a separate meta-analysis, Colquitt *et al*. (2001) found that procedural and distributive justice, but neither interpersonal nor informational justice, predicted job satisfaction, whereas interpersonal justice was a significant predictor of organisational citizenship behaviours directed toward individuals. Taken together, these findings suggest that each form of justice has unique relationships with different constructs such that the relational forms of justice (*i.e.* interpersonal and informational)

show higher correlations with relational outcomes (*e.g.* leader–member exchange) than with organisational or structural outcomes (*e.g.* organisational commitment), whereas distributive and procedural justice show the opposite, demonstrating stronger correlations with organisational or structural outcomes than relational.

Research has shown that fairness matters. For example, in just environments, employees demonstrate organisational citizenship behaviours and high levels of job performance (Konovsky and Cropanzano, 1991; Moorman, 1991). Additionally, fair decision-making practices increase compliance with authority because fair decisions enhance their legitimacy (Tyler and Degoey, 1995) and convey respect and concern for others (Tyler and Lind, 1992). Specific to the current study, research has shown that appraisal systems designed consistent with organisational justice principles tend to be more legally defensible than those not consistent with such principles (Foster, 2006). This research on performance appraisals, however, has focused on procedural and distributive justice, largely ignoring interpersonal and informational justice.

Despite the evidence that all four forms of justice positively influence organisational behaviour, interpersonal and informational justices have received the least amount of attention, and in particular with regard to trust in supervisor. This is surprising because both interpersonal and informational justice are conceptualised as being under the direct control of the supervisor (Moorman, 1991; Colquitt, 2001). Moreover, interpersonal and informational justice have shown to relate to supervisory outcomes more so than procedural or distributive justice (*e.g.* Masterson *et al.*, 2000; Cropanzano *et al.*, 2001), and are, therefore, the most relevant forms of justice to study when considering the supervisor–subordinate relationship in a performance appraisal context.

Trust in supervisor

Interpersonal trust is conceptualised differently across different research agendas. For example, trust can be been viewed as an individual difference construct (*i.e.* propensity to trust; Mayer *et al.*, 1995), a feature of institutions (*i.e.* an organisation engenders trust; Bradach and Eccles, 1989) or as a feature of interactions (*i.e.* trust lies in the relationship between individuals; Lewicki and Bunker, 1996; Schoorman *et al.*, 2007). Despite these differences, most organisational science researchers have treated trust as a feature of interactions, defining trust as the willingness of one individual to be vulnerable to another (Deutsch, 1958; Mayer *et al.*, 1995). Because our study is about trust within the employee–supervisor relationship, we conceptualise trust as a feature of interactions and define *trust in supervisor* as the willingness of the employee to be vulnerable to his or her supervisor (Mayer *et al.*, 1995).

Both theory and research suggest that interpersonal trust evolves through a series of social exchanges between employees and their organisation, including its representatives (*e.g.* supervisors). For example, SET (Blau, 1964) has been used to understand the mechanisms through which fairness perceptions serve as antecedents to the development of interpersonal trust (*e.g.* Aryee *et al.*, 2002; Camerman *et al.*, 2007). SET proposes that individuals form exchange relationships wherein one individual (*i.e.* giver) obligates another (*i.e.* receiver) by supplying services or providing benefits (not necessarily financial). The giver subsequently expects that at some unspecified time in the future, the receiver will fulfil the obligation out of a norm for reciprocity (Gouldner, 1960). Thus, SET describes the process through which high-quality relationships develop. Consistent with the tenets of SET, a high-quality relationship with one's supervisor creates trust in the supervisor (Whitener *et al.*, 1998).

Applying SET, justice from the supervisor gives people a feeling of predictability and assurance that their best interests in the appraisal context are preserved (Thibaut and Walker,

1975; Bies and Moag, 1986; Tyler and Lind, 1992). Thus, supervisors grounded in fairness principles instil perceptions of trustworthiness (*e.g.* ability, benevolence and integrity; Tyler and Lind, 1992; Brockner and Siegel, 1996), which are antecedents to the development of trust (Mayer *et al*., 1995). Fairness in the appraisal from the supervisor motivates employees to reciprocate with trust, an action that preserves the valued relationship. Hence, we propose that:

> *Hypothesis 1: Interpersonal and informational justice will be positively related to trust in the supervisor*.

Research suggests that trust in supervisor, which is conceptually and empirically distinct from trust in organisation (Tan and Tan, 2000), is driven primarily by an employee's perceptions of his or her supervisor's ability (competence to carry out the duties of his or her job), benevolence (good intentions towards employees) and integrity (ethical behaviours; Mayer *et al*., 1995; Tan and Tan, 2000). In contrast, trust in organisation is driven by perceived organisational support, and procedural and distributive justice (Tan and Tan, 2000).

With many workplaces enacting fair policies because of legal requirements (*e.g.* comparative worth laws; Lorber, 1985), procedural and distributive fairness may be required and primarily controlled by the organisation rather than by the supervisor (Shore and Shore, 1995; Folger and Cropanzano, 1998; Loi *et al*., 2006), and thus are less likely to influence supervisory trust. For example, the creation of the appraisal procedure and the approval of reward distributions (*e.g.* pay raises) are often handled by HR managers, with whom employees have little contact (SHRM, 2000). Thus, although experiencing a fair appraisal procedure and rating (high procedural and distributive justice) may indirectly contribute to trust in supervisor, because supervisors have less control over the organisation's procedures and reward allocations, interpersonal and informational justice should be the primary forms of justice that drive trust in supervisor. Additionally, previously reviewed research suggests that interpersonal and informational justices are more strongly related to supervisory-related outcomes than organisationally relevant outcomes. Therefore, we propose that:

> *Hypothesis 2: Interpersonal and informational justice will be more strongly related to supervisory trust than either procedural or distributive justice*.

PSS

Inconsistent findings across studies suggest that a third construct may operate in a given context to facilitate the relationship between fairness and trust in supervisor. For example, in some studies, interpersonal but not informational justice was related to supervisory trust (Frazier *et al*., 2010), whereas other research shows that informational but not interpersonal was related to supervisory trust (Camerman *et al*., 2007; Frazier *et al*., 2010). We suggest that in the performance appraisal context, this third and mediating construct may be PSS, which reflects employees' perceptions that their supervisor cares about them and values their contributions (Kottke and Sharafinski, 1988; Eisenberger *et al*., 2002). Acts of supervisory support may include providing resources and information, or demonstrating overall concern for employee well-being (Eisenberger *et al*., 2002). In the performance appraisal context, such perceptions of support are essential, especially when receiving feedback that can potentially threaten one's self-image (Landy and Farr, 1983; Gilliland, 1994; Bauer *et al*., 1998).

Organisational support theory, the foundation of PSS, suggests that employees form a general belief (labelled perceived organisational support) about the extent to which their organisation cares about their well-being and supports them (Eisenberger *et al*., 1986, 1997; Rhoades and Eisenberger, 2002). Organisational support theory specifies that this general belief arises from the

employees' experience of favourable treatment from agents of the organisation, in particular, their direct supervisor (Eisenberger *et al*., 1986, 2002). Because of the supervisor's position of authority, acts of support, such as providing resources, training, and work schedule flexibility, indicate to employees that their supervisor trusts and values them (Shore and Shore, 1995).

Indeed, research supports that PSS is an antecedent to trust in supervisor and that the two constructs are distinct, although highly correlated (Neves and Caetano, 2006; Stinglhamber *et al*., 2006; DeConinck, 2010). PSS reduces feelings of entrapment, leading to greater feelings of safety (Shore and Shore, 1995), a critical component of trust (Mayer *et al*., 1995). These acts of support, recognition of effort, and belief in the employee convey good will to the subordinate, and ultimately foster the development of PSS (Kottke and Sharafinski, 1988). Through acts of support, supervisors create perceptions among their employees that they can be trusted (Mayer *et al*., 1995). Thus, based on extant theory and research, we propose:

Hypothesis 3: PSS will be positively related to trust in supervisor.

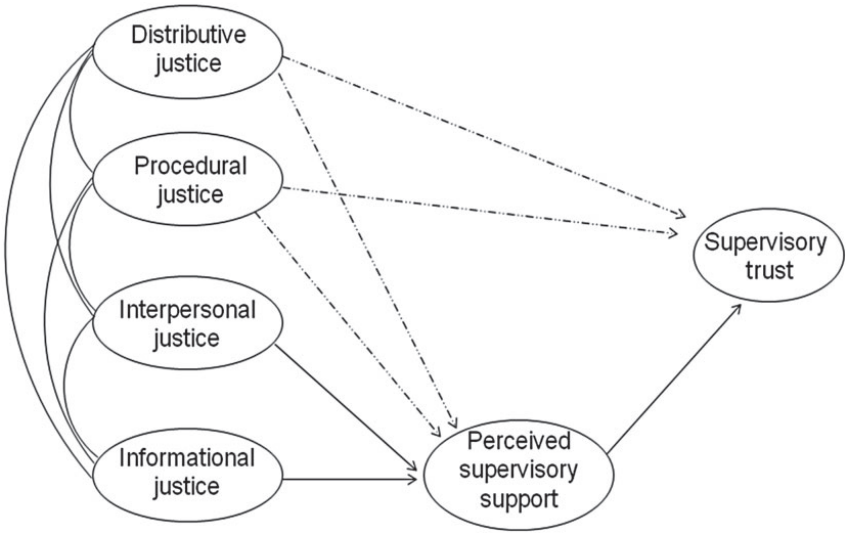
Justice and PSS Workplace fairness contributes to the perception that the organisation and its agents act voluntarily to provide for the employee, are willing to reward employee contributions, and value his or her contributions (Tyler and Lind, 1992; Moorman *et al*., 1998; Masterson *et al*., 2000; Moideenkutty *et al*., 2001). Thus, fairness conveys respect, which contributes to perceptions of support (Moideenkutty *et al*., 2001). Prior research on justice and perceived support demonstrates that they are related yet distinct constructs that make unique contributions to understanding organisational behaviour (*e.g.* Andrews and Kacmar, 2001).

Within a performance appraisal system, interpersonal and informational justice, as compared with procedural or distributive justice, should be the most relevant forms of fairness associated with PSS. First, informational and interpersonal justices are considered voluntary on the part of the supervisor (Masterson *et al*., 2005). This voluntary act supports the development of PSS (Eisenberger *et al*., 1997), in that PSS is more likely to arise when employees perceive that their supervisor is acting voluntarily to support them (*e.g.* Byrne and Hochwarter, 2008). Second, informational and interpersonal justices are likely the most relevant forms of justice in the performance appraisal context because employees interact with their supervisors during the entire appraisal process (*e.g.* obtaining updated accomplishments, reviewing and discussing the feedback), such that their interaction is ongoing. That is, the process is established once, but the implementation of the process continues throughout the year. Hence, for employees considering the fairness of their appraisals, interactions with their supervisors are most salient and frequent as compared with considerations of the process or the annual outcome. Therefore, we propose:

Hypothesis 4: Informational and interpersonal justice will be more positively related to PSS, more so than distributive or procedural justice.

PSS as mediator for relational forms of justice Past research has failed to provide clarity around the relationship between the multiple types of justice and their differential relationships with supervisory trust (Cohen-Charash and Spector, 2001; Colquitt *et al*., 2001; Aryee *et al*., 2002; Stinglhamber *et al*., 2006). Thus, 'in spite of the presumed connections between justice and trust in theory and in practice, the precise association between these constructs has not been fully elaborated' (Lewicki *et al*., 2005: 248). For example, although some research has shown that PSS partially mediates interactional justice and trust, the researchers did not separate interactional justice into its components (*i.e.* interpersonal and informational: DeConinck, 2010) nor did they

FIGURE 1 *Model 1*



Note: Dashed lines indicate paths that are expected to either disappear or demonstrate very low loadings as the full model is assessed.

all measure distributive justice (*e.g.* Aryee *et al*., 2002; Stinglhamber *et al*., 2006; Frazier *et al*., 2010). Other studies that measured all four types of justice along with trust did not examine PSS as a mediator (Camerman *et al*., 2007). Finally, some research reported inconsistent findings regarding the relationship between informational and interpersonal justice and trust (Frazier *et al*., 2010), and none to date have considered the critical context of the performance appraisal. Previous studies have, without a doubt, advanced the field; however, by measuring all four types of justice and focusing specifically on the performance appraisal context, we extend these works and attempt to resolve some of the previous inconsistencies.

In the performance appraisal context, PSS is exchanged for relational forms of fairness (*e.g.* Stinglhamber *et al*., 2006), and consistent with organisational support theory, PSS indicates a high-quality relationship with one's supervisor (*e.g.* Eisenberger *et al*., 1997). This quality relationship, consistent with SET, leads to the development of trust in the supervisor (Whitener *et al*., 1998). Hence, we propose that PSS serves as a mediator between the two relational forms of fairness (informational and interpersonal) and trust in the supervisor. Furthermore, when the relational forms of justice are included in the model *at the same time* as procedural and distributive justice, the expected influence of procedural and distributive justice on PSS and trust in supervisor should diminish (see model 1, Figure 1). Thus, we propose:

> *Hypothesis 5: PSS will fully mediate the relationship between informational and interpersonal justice and supervisory trust.*

METHOD

Participants

The field data were collected using a self-report survey of employees working at a technology-manufacturing firm (*e.g.* concept design and production of microchips) within the US. Measures

were included as part of a larger project designed to evaluate an existing performance appraisal system for the purpose of improving the system. Out of 1,074 employees, 526 volunteered for a response rate of 49 per cent. The sample was randomly divided into approximate halves, using SPSS' select random sample feature, to create a calibration and a cross-validation sample (Cudeck and Browne, 1983; Browne and Cudeck, 1989).

The calibration sample included 278 participants (70 per cent male, 26.6 per cent female and 9 unidentified). Of the participants, 20.9 per cent were between the ages of 21 and 30 years, 36.7 per cent between 31 and 40, 24.1 per cent between 41 and 50, and 14.8 per cent were 51 years and older (10 chose not to report their age). Tenure with the organisation was represented by four categories: 6.1 per cent employee less than 1 year, 56.5 per cent employed 1–5 years, 21.6 per cent employed 6–10 years and 12.2 per cent employed 11 years or more (10 unidentified).

The cross-validation sample included 248 participants (70.2 per cent male, 28.2 per cent female and 4 unidentified). Ages of participants included 22.2 per cent between 21 and 30 years of age, 32.7 per cent between 31 and 40, 29.4 per cent between 41 and 50, and 13.3 per cent were 51 and older (6 chose not to identify their age). Employees in the cross-validation sample were employed in the following year categories: 5.6 per cent less than 1 year, 55.2 per cent between 1 and 5 years, 27.4 per cent between 6 and 10 years and 9.7 per cent for 11 years or more (5 unidentified).

Measures

All variables except trust in supervisor were measured using a 1 (*strongly disagree*) to 7 (*strongly agree*) Likert-type response scale. All scale items are shown in Table 1. Alpha coefficient reliabilities are shown in Table 2.

Organisational justice All justice types were assessed using Colquitt's (2001) scales. Researchers (*e.g.* Greenberg, 1993; Colquitt, 2001) encourage the modification of items to fit the context of the study. With the assistance of the HR director, items were modified to model the language of the organisation. Items measuring *informational justice* were preceded with a stem 'During my last performance evaluation, my supervisor . . . '. Items measuring *interpersonal justice* included the same instructions as those for informational justice. In the assessment of *procedural justice*, participants were asked, 'To what extent do you agree that the last performance appraisal process . . . '. Finally, to measure *distributive justice*, instructions included, 'To what extent do you agree that your last performance appraisal evaluation . . .'.

PSS Eisenberger *et al*.'s (1997) eight-item scale of perceived organisational support was modified to refer to the supervisor instead of the organisation, consistent with Eisenberger *et al*. (2002).

Trust in supervisor Trust in supervisor was measured using Nyhan and Marlowe's (1997) seven-item scale, which assesses employee's perceptions of their supervisor's character, competence and judgment. Items were preceded with "In general, my level of confidence that my supervisor." Sample items include ". . . will follow through on assignments is . . ." and ". . . is reliable – I can rely on what he/she tells me. . . ." The participants were instructed to respond using a seven-point Likert scale with percentage anchors (1) *nearly zero* (4) *50–50*, and (7) *near 100 per cent*.

Data analyses

We used structural equation modelling (SEM) to analyse the data. Researchers have recommended the use of a cross-validation strategy with SEM to avoid problems associated with *post hoc* model fitting and to evaluate the adequacy of alternative models (Cudeck and

TABLE 1 *Scale items*

Organisational justice

To what extent do you agree that your last performance evaluation

. . . reflected the effort you put into your work.
. . . was appropriate for the work you completed.
. . . reflected what you contributed to your company.
. . . was justified, given your performance.

To what extent do you agree that the last performance appraisal process

. . . allowed you to express your views and feelings during the performance evaluation procedure.
. . . allowed you influence over the evaluation arrived at by the performance evaluation procedure.
. . . was applied consistently.
. . . was free of bias.
. . . was based on accurate information.
. . . allowed you to appeal your evaluation arrived at by the performance appraisal process.
. . . upheld ethical and moral standards.

During my last performance evaluation, my supervisor

. . . treated me in a polite manner.
. . . treated me with dignity.
. . . treated me with respect.
. . . refrained from improper remarks or comments.
. . . was candid in his/her communications with me.
. . . explained the procedures thoroughly.
. . . gave reasonable explanations regarding the procedures.
. . . communicated details in a timely manner.
. . . seemed to tailor his/her communication to my specific needs.

Trust in the supervisor

In general, my level of confidence that my supervisor

. . . is technically competent at the critical elements of his/her job is:
. . . will follow through on assignments is:
. . . has an acceptable level of understanding of his/her job is:
. . . will be able to do his/her job in an acceptable manner is:
. . . is reliable – I can rely on what he/she tells me – is:
. . . will do the job without causing other problems is
. . . will think through what he/she is doing on the job is:

Perceived supervisor support

Overall, my supervisor

. . . strongly considers my goals and values.
. . . really cares about my well-being.
. . . would be sure to notice if I did the best job possible.
. . . cares about my general satisfaction at work.
. . . would forgive an honest mistake on my part.
. . . would take advantage of me if given the opportunity.
. . . cares about my opinions.
. . . is willing to help me when I need a special favor.
. . . is available to help when I have a problem.

TABLE 2 *Descriptive statistics for calibration and cross-validation samples*

Variable		Calibration sample ($n = 278$)			1	2	3	4	5	6	Cross-validation sample ($n = 248$)		
		Mean	*SD*	α							*Mean*	*SD*	α
1	Distributive justice	4.84	1.57	0.97		0.74	0.51	0.51	0.54	0.42	5.02	1.41	0.97
2	Procedural justice	4.54	1.18	0.91	0.70		0.57	0.65	0.60	0.51	4.68	1.15	0.91
3	Interpersonal justice	6.01	0.97	0.96	0.47	0.51		0.69	0.56	0.48	6.04	1.05	0.95
4	Informational justice	5.29	1.10	0.88	0.52	0.61	0.67		0.58	0.52	5.40	1.20	0.92
5	Perceived supervisory support	5.11	1.21	0.93	0.43	0.48	0.63	0.63		0.73	5.37	1.11	0.92
6	Supervisory trust	36.96	8.14	0.95	0.31	0.41	0.51	0.56	0.77		38.13	7.32	0.96

Note. All correlations are significant at $p < 0.001$. Calibration sample correlations are on the bottom half and cross-validation sample are on the top half. α = alpha coefficient reliability estimate.
SD, standard deviation.

Browne, 1983; MacCallum *et al*., 1994). The cross-validation strategy involves randomly splitting a large sample into two parts, whereby one serves as the calibration sample for fitting the hypothesised model and obtaining a best-fitting model. The second serves for cross-validation whereupon the best-fitting model from the calibration sample is validated or confirmed. All parameters from the best-fitting model are fixed at their values obtained during calibration, such that when testing them on the cross-validation sample 'no real *fitting* is done in the latter analysis since all of the parameters have fixed values' (MacCallum *et al*., 1994: 2). Cudeck and Browne (1983) recommend using the expected cross-validation index (ECVI) to determine which model is the best. The ECVI indicates how well the model is expected to fit on a cross-validation sample. Several researchers suggest that the best cross-validated model is not necessarily the one with the smallest ECVI, as this index and cross-validation are affected by model complexity and size (Cudeck and Browne, 1983; Browne and Cudeck, 1989; Cudeck and Henly, 1991; MacCallum *et al*., 1994). Therefore, the model consistent version of Akaike's (1987) information criterion (CAIC; Bozdogan, 1987) was also used in the comparison of models for cross-validation. Like the ECVI, smaller values are better (Hu and Bentler, 1999); there is no cut-off or recommended value for the ECVI or CAIC (Byrne, 1998).

Cudeck and Browne (1983) recommend using other goodness of fit statistics, in addition to the ECVI. Therefore, all statistical criteria and considerations, including the theoretical plausibility of the model, were taken into account. The following fit indices were used to assess goodness of fit: (a) the normed fit index (NFI) where values above 0.95 are good; (b) the comparative fit index (CFI) where values above 0.95 are good; and (c) the root mean square error of approximation (RMSEA) where values below 0.06 are good (see Hu and Bentler, 1999). A significant difference between the chi-square values, $\Delta\chi^2$ for nested models (a model that is identical to another except it contains fewer paths) indicates that one model is an improvement of fit over another. If the difference is not significant, parsimony suggests that one should accept the model with fewer paths. In addition, researchers recommend evaluating path coefficients – a model is unacceptable if the fit indices are within range, but none of the expected paths is significant (Byrne, 1998).

Lastly, researchers using SEM recommend assessing alternative plausible models (see MacCallum *et al*., 1993). MacCallum and colleagues determined that most comparative models tend to fail to produce a true alternative test of the data because they do not represent equivalent models to the one hypothesised. Following MacCallum *et al*.'s specifications, alternative equivalent models were developed by fixing the measurement portion of the model and by making variations to the structural portion of the model based on the replacing rule (please refer to MacCallum *et al*., 1993).Therefore, we tested alternative models to our hypothesised model (model 1) to adequately conclude support for the hypothesised paths, before confirming the fit on the cross-validation sample. Although numerous alternative models may exist, models were developed based on previous research (model 3; Pillai *et al*., 1999; Stinglhamber *et al*., 2006; DeConinck, 2010) and on demonstrating full versus partial mediation (model 4). Analyses were conducted using LISREL 8.8 (Scientific Software International, Lincolnwood, IL).

RESULTS

Means, standard deviations and correlations are provided in Table 2. To ensure that we were assessing unique constructs, we conducted confirmatory factor analyses, judging fit of the data to the expected factor structures. That is, we sought to confirm that we were measuring four types of justice, PSS and trust in supervisor as six distinct constructs. This six factor solution fit the data best, $\chi^2 = 1{,}646.32(497)$, NFI = 0.96, CFI = 0.97, 90% confidence interval

RMSEA = 0.09–0.10, indicating that the four justices were distinctly separate from each other and also distinct from trust and PSS. In comparison, if one combines scale items from supervisor trust with those assessing PSS, or combinations of interpersonal and informational justice with trust or PSS, the fit to the data is less adequate (NFI ranged from 0.92 to 0.94, CFI ranged from 0.93 to 0.95, RMSEA intervals increased from 0.10 to 0.16, and all χ^2 ranged from 2,105.96 to 4,085.93), demonstrating that our efforts to measure four types of justice, PSS and trust in the supervisor were successful.

We also examined the fit of a factor model wherein all indicators loaded on a single factor (Podsakoff *et al*., 2003), to address potential concerns of common method bias. Common method bias is variance that can be attributed to the measurement method rather than the constructs of interest. The results of the analysis indicate that a single factor is not, comparatively, a good fit $\chi^2 = 5{,}773.00(512)$, $\Delta\chi^2(\Delta df) = 4{,}126.68(15)$ $p < 0.01$, NFI = 0.90, CFI = 0.91, 90 per cent confidence interval RMSEA = 0.19–0.20, suggesting that common method bias is not likely to be a problem. This means that results can be attributed to the actual answers of employees.

Model 1 was first assessed on the calibration sample. Fit indices indicated a good fit with non-significant paths (the dotted lines in model 1) removed (fit indices are shown in Table 3; standardised solution model 2 shown in Figure 2). Model 3 (Figure 3), where all justices and trust in supervisor were antecedents to PSS, fits the data, although most structural paths were not significant, and PSS modelled as an outcome demonstrates a contradiction to existing evidence (*e.g*. Neves and Caetano, 2006; Stinglhamber *et al*., 2006; DeConinck, 2010). Estimates for cross-validation were mixed, with the ECVI nearly equal to model 2, but the CAIC higher, indicating that model 3 was not expected to cross-validate as well as model 2. These results show that model 2, where PSS mediates between justice and trust, is more likely to replicate on another sample than is model 3, which offers an alternative explanation for the relationships between justice, trust and support. Hence, the results raise our confidence in model 2 and in our hypothesised explanations for how justice is related to trust in supervisor.

Model 4 (Figure 4), which assesses PSS as a partial mediator between the justices and supervisor trust, also fits the data (see Table 2). The results for model 4 show an improvement in fit, $\Delta\chi^2(\Delta df) = 14.76(6)$, $p < 0.01$; however, the cross-validation indices reveal a 25.01 point degradation in CAIC and only a 0.01 point increase in ECVI. This suggests that it is highly unlikely that model 4 will replicate on another sample. Furthermore, if one were to remove the non-significant paths from model 4, the result is model 2, the best-fitting model shown in Figure 2. This suggests that model 4 be eliminated from further evaluation.

After reviewing model fit, significance of paths and expected cross-validation indices (ECVI and CAIC), model 2 (the best-fitting model) and model 3 were chosen for assessment on the cross-validation sample, holding all parameters fixed for a tight cross-validation. Because no actual fitting occurs, the only output is the cross-validation index, the CVI. The results show that model 2 produced a CVI of 161.99, whereas model 3 produced a CVI of 426.30. Because the CVI for model 2 was much smaller than for model 3, model 2 (which is model 1 represented as a standardised SEM solution) demonstrated the best cross-validation. Thus, we found support for Hypothesis 1 through 5. That is, we hypothesised that PSS would fully mediate the relationship among the four justices, but most importantly interpersonal and informational justice, and trust in the supervisor. Our rigorous tests reveal that the mediation is supported.

DISCUSSION

Rigorous tests of our model, including examination using a cross-validation sample, support the hypothesised relationships. Specifically, we found that PSS fully mediated the relationships

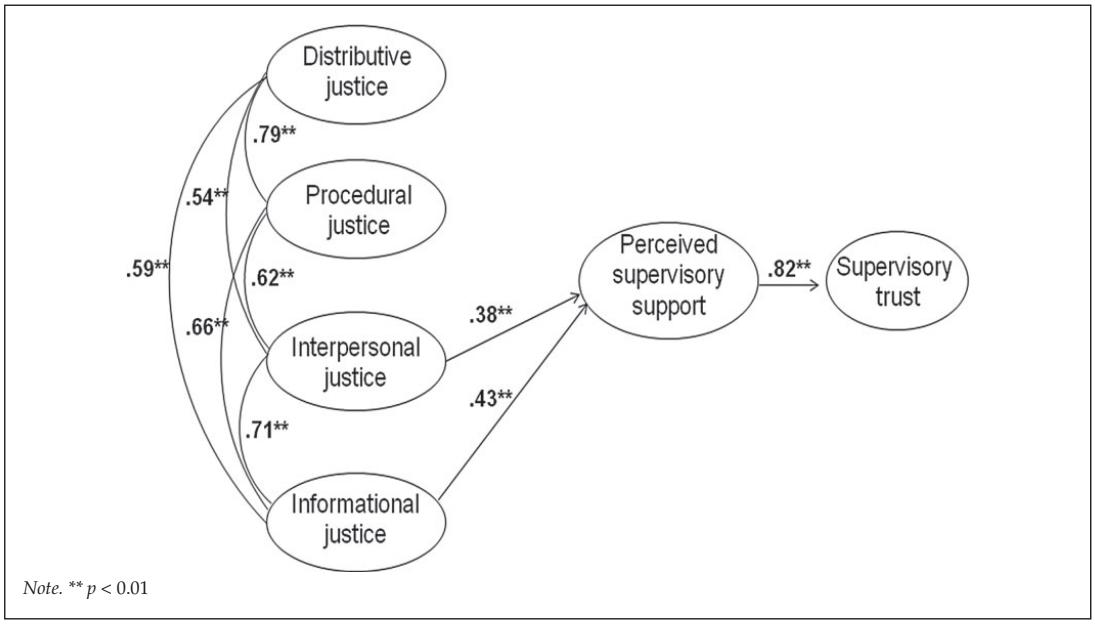
TABLE 3 *Goodness-of-fit indices for structural equation models on calibration sample (n = 278)*

Model	χ^2(df)	$\Delta\chi^2(\Delta df)$	NFI	CFI	RMSEA	90% CI RMSEA	ECVI	Model CAIC
Model 2: PSS fully mediates between fairness and trust in manager	1,489.60 (525)		0.97	0.98	0.08	0.077–0.082	6.14	2,185.50
Model 3: moves trust in manager to IV and PSS becomes DV	1,474.84 (519)	—	0.97	0.98	0.08	0.077–0.082	6.13	2,210.51
Model 4: changes PSS to partial mediator instead of full (the hypothesised model is nested within this model)	1,474.84 (519)	14.76 (6)**	0.97	0.98	0.08	0.077–0.086	6.13	2,210.51

** $p < 0.01$.

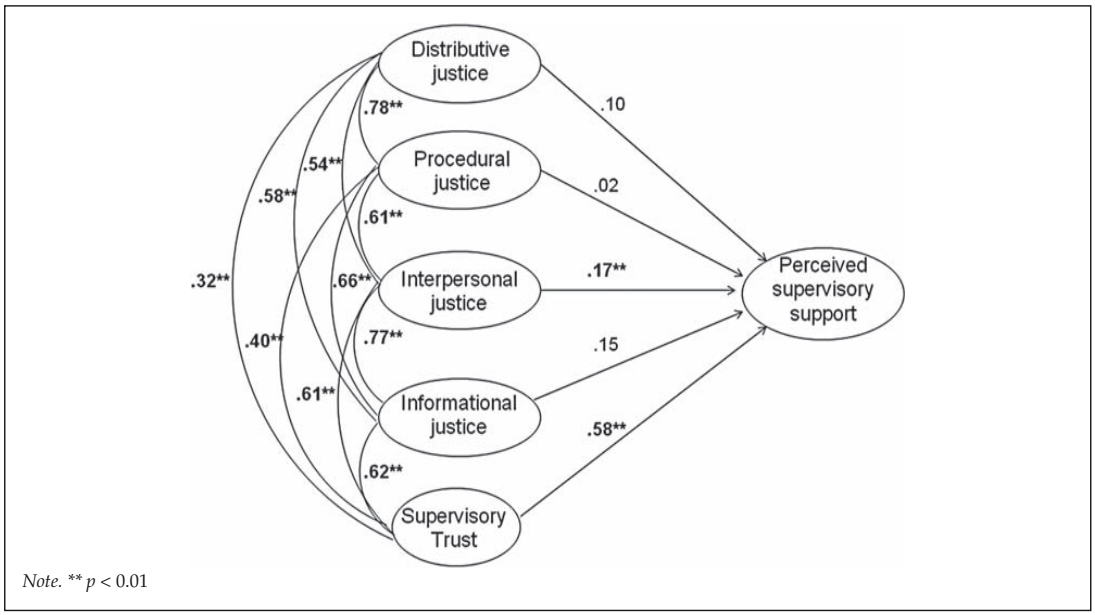
Note. Model CAIC = consistent version of Akaike's (1987) information criterion. Model 3 is not nested within Model 1, hence no $\Delta\chi^2(\Delta df)$ is reported for this model. NFI, normed fit index; CFI, comparative fit index; RMSEA, root-mean-square error of approximation; 90% CI RMSEA, 90% confidence index around the RMSEA; ECVI, expected cross-validation index; PSS, perceived supervisory support; DV, dependent variable; IV, independent variable.

FIGURE 2 *Model 2*



Note. ** $p < 0.01$

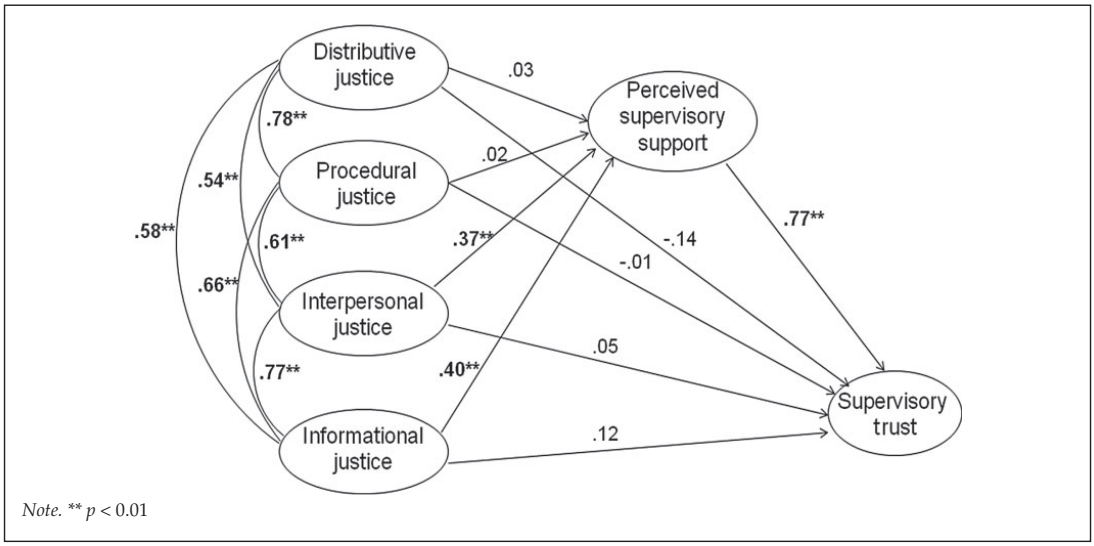
FIGURE 3 *Model 3*



Note. ** $p < 0.01$

that both informational and interpersonal justices have with trust in supervisor. Furthermore, we found that in the presence of informational and interpersonal justice, neither procedural nor distributive justice were significantly related to PSS or supervisory trust, suggesting that informational and interpersonal justices are the main drivers of PSS and subsequent trust in supervisor.

FIGURE 4 *Model 4*



Previous research has demonstrated contradictory findings as to whether both informational and interpersonal justices are related to supervisory trust (*e.g.* Camerman *et al*., 2007; Frazier *et al*., 2010). Our findings provide some clarity by demonstrating that PSS is a mechanism through which both informational and interpersonal justice foster trust in supervisor in a performance appraisal context. Furthermore, our results support previous research that shows that interpersonal treatment is under the control of the supervisor (Masterson *et al*., 2005), and, therefore, perceived interpersonal and informational justices are associated with the supervisor (*e.g.* Masterson *et al*., 2000). In contrast, procedures and allocations tend to be mandated by the organisation (Shore and Shore, 1995; Loi *et al*., 2006), leading employees to view procedural and distributive justice as driven by the organisation. Such distinctions are particularly relevant in the performance appraisal context, when employees are receiving potentially self-image threatening feedback (*e.g.* Gilliland, 1994; Bauer *et al*., 1998).

What makes our findings particularly significant beyond existing research is that we have identified an underlying mechanism through which fairness engenders supervisory trust in the performance context. Theoretical implications of our findings to the literature include (a) we provided further empirical support for the four-factor structure of organisational justice, contributing to its construct validity; (b) we demonstrated that interpersonal and informational forms of justice play critical and distinct roles from procedural and distributive justices in the performance appraisal context; and (c) that informational and interactional justice are both important drivers of PSS and supervisory trust, extending our understanding of organisational support theory and social exchange theory.

Although substantial research has demonstrated the overall value of fairness in the workplace, most work in the performance appraisal context has focused on the effects of procedural and distributive justice. Our results extend prior work by showing that in the performance appraisal context, informational and interpersonal justices may be the more essential justices. Thus, the practical implications of our findings are that when employees receive fair treatment from their supervisor, this perceived fairness fosters feelings of support,

creating a safe environment. Safety is particularly important in performance appraisal, where employee's identity and self-esteem are vulnerable. Our results support the proposition that procedural and distributive justices are not what proximally engender trust in the supervisor or PSS; it is the *relational components* of fairness that are most critical.

The results of our study have additional practical implications for HR managers. HR managers should expend greater effort to maximise fair treatment by supervisors (focusing on informational and interpersonal justice) during the appraisal process, as opposed to focusing the majority of their efforts on maximising procedural and distributive justice. Further, because supervisory support serves as a mediator between justice and trust, organisations should consider incorporating into their current performance appraisal training programmes information on how to convey support while practising fair treatment.

Organisations spend money and time managing performance and executing performance appraisals (SHRM, 2000). Hence, examining fairness in a performance appraisal context informs important organisational practices, in addition to having potential financial and performance implications for organisations. Finally, numerous surveys, including those regularly conducted and offered by the Society for HRM, show that managers and HR representatives, alike, hate performance appraisals because of the challenging interpersonal relations (SHRM, 2000). However, it is just this aspect of the appraisal that our findings suggest should receive more attention.

Strengths, limitations and future research

We tested our hypotheses using calibration and cross-validation samples, a valued yet underutilised technique (MacCallum *et al*., 1994), which is a strength of our study. Because the constructs we studied are virtually impossible to obtain via non-self-report measures, the use of SEM and cross-validation provide rigorous statistical analyses, which build confidence that results are not strictly due to common method bias or chance. Our analyses of alternative models might suggest that models other than the best-fitting (hypothesised with non-significant relations removed) model are equally good at describing the relationships between justice, trust and support. However, reviews of all fit criteria (*e.g.* fit indices and path coefficients), as well as the finding that *only* the best-fitting model adequately cross-validated, supports the best-fitting solution as superior to the others.

Because cross-sectional data were collected using self-report measures, the possibility of common method bias exists (Conway, 2002), which can be considered a study limitation. However, we applied procedural remedies (Podsakoff *et al*., 2003), which can be considered a strength of our study. Namely, to reduce response apprehension, participants were assured of confidentiality and anonymity, as well as being told that there were no right or wrong answers. Although these procedures do not guarantee reduced apprehension, they discourage socially desirable responding (Podsakoff *et al*., 2003). Additionally, the constructs assessed were not invasive or highly personal, which reduces the likelihood of socially desirable responding (Spector and Brannick, 1995). Finally, researchers have examined whether using single source measures produces larger intercorrelations than multimethod techniques (*e.g.* Spector *et al*., 1995), and found that monomethod data collection does not invalidate study findings. Hence, although we cannot conclude that our findings were not affected by common method bias (Podsakoff *et al*., 2003), based on the literature and the efforts we took to reduce its presence, we argue that our study may be only minimally affected.

Our data were collected from a single organisation, possibly limiting the generalisability of our findings to other organisations. Future research should, therefore, test our hypotheses using samples from different organisations and industries. Additionally, future research should

employ longitudinal designs consistent with our hypothesised temporal precedence. Longitudinal research may be particularly valuable in the study of trust, since theories suggest that trust develops over time and that there exists a feedback loop whereby outcomes of trust affect antecedents to trust (*i.e.* Mayer *et al*., 1995). This study, however, serves as a starting point towards advancing our knowledge of the critical relationship between supervisor and subordinate in the performance appraisal context.

CONCLUSION

The current study contributes to the growing body of literature examining trust in supervisor and the association between fairness and trust. We proposed how fairness engenders trust in the supervisor, furthering the theoretical connections between organisational justice, supervisory support and trust in supervisor. Practitioners may use our results to support their efforts to train managers in fair treatment during appraisals, as well as how to increase levels of perceived support, rather than just focusing on the existence of a fair appraisal procedure. By increasing managers' skills in interpersonal relations and support, organisations may provide an environment that is highly conducive for the development of trusting relationships between supervisors and subordinates.

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