

Organizational Justice and Stress: The Mediating Role of Work–Family Conflict

Timothy A. Judge and Jason A. Colquitt
University of Florida

This study examined the relationship between organizational justice and stress and whether work–family conflict was a mediator of the relationship. Distributive, procedural, interpersonal, and informational injustice were cast as stressors to explore their relationships with the stress levels of 174 faculty members employed at 23 U.S. universities. The results revealed that procedural and interpersonal justice had the strongest relationships with stress, and that these effects were mediated by work–family conflict. The presence of justice seemed to allow participants to better manage the interface of their work and family lives, which was associated with lower stress levels. These results were observed even when controlling for job satisfaction and the presence of organizational work–family policies.

Issues of justice or fairness are a key concern to virtually all individuals. In work settings, employees often gauge whether the rewards they receive match their contributions to the organization or the rewards received by their colleagues (J. S. Adams, 1965; Leventhal, 1976). Employees also judge the fairness of the decision-making procedures used by organizational representatives, to see whether those procedures are consistent, unbiased, accurate, correctable, and representative of worker concerns and opinions (Greenberg, 1986; Leventhal, 1980; Thibaut & Walker, 1975). Finally, employees consider the interpersonal treatment they receive as procedures are implemented by authority figures (Bies & Moag, 1986; Greenberg, 1993).

Research on organizational justice has demonstrated that concerns about fairness can affect the attitudes and behaviors of employees (for reviews, see Colquitt & Greenberg, 2003; Cropanzano, Byrne, Bobocel, & Rupp, 2001; Cropanzano & Greenberg, 1997). Justice scholars have focused on *distributive justice*, the perceived fairness of decision outcomes (J. S. Adams, 1965; Leventhal, 1976), and *procedural justice*, the perceived fairness of decision-making processes (Leventhal, 1980; Thibaut & Walker, 1975). More recent work has focused on *interpersonal justice* (sincerity and respect) and *informational justice* (adequate, honest explanations), which are often combined under the interactional justice heading (Bies & Moag, 1986; Greenberg, 1993). These justice dimensions have been linked meta-analytically to a variety of outcomes, including satisfaction, commitment, citizenship, and withdrawal (Colquitt, Conlon, Wesson, Porter, & Ng, 2001).

While the effects of justice dimensions have been widely demonstrated, the theoretical mechanisms underlying those effects are less clear. Some scholars have argued that fair treatment reaffirms an employee's sense of status and self-esteem while enhancing the

perceived legitimacy of organizational authorities (Tyler & Blader, 2000). Others have suggested that justice acts as a proxy for trust by providing employees an incentive to cooperate in the face of uncertainty (Lind, 2001; Lind & Van den Bos, 2002; Van den Bos, Lind, & Wilke, 2001). However, an emerging (but still untested) explanation for justice effects casts unfairness as a *stressor*—as an aspect of the work environment that causes employees to doubt their ability to cope with work demands (Vermunt & Steensma, 2001). This perspective acknowledges that unfair treatment can have a visceral—even physiological—effect on employees, thereby disrupting work attitudes and behaviors.

The purpose of the present study was twofold. First, we examined the relationship between organizational justice and employee perceptions of stress. The *injustice as stressor* perspective is quite new, and stress has never been linked to all four justice dimensions. Second, we explored the intervening mechanisms behind potential justice–stress relationships. If employees believe that their organizations treat them fairly, why exactly should that reduce perceptions of stress? We examined one specific mediator—work–family conflict—reasoning that fair employers enhance the employee's ability to juggle the role demands of their personal and professional lives. The subsequent section of this article reviews existing research on stress and work–family conflict before linking both to organizational justice. Specific hypotheses are also presented.

Organizational Justice and Stress

In their “executive update” about stress on the job, DeFrank and Ivancevich (1998) reported some sobering statistics about the magnitude and effects of workplace stress. For example, 79% of employees surveyed reported that the year prior was one of their most stressful years ever and that work was the primary source of that stress (HR Focus, 1996). Stress-related complaints have also become a common source of Workers' Compensation claims filed by current and past employees (DeFrank & Ivancevich, 1998). The authors concluded, “The potential ramifications of stress for companies and their employees are so substantial that it is crucial that managers act to aid their employees in the development of coping skills and to reduce the excessive stress in the job itself” (p. 55).

Timothy A. Judge and Jason A. Colquitt, Department of Management, Warrington College of Business, University of Florida.

Correspondence concerning this article should be addressed to Timothy A. Judge, Department of Management, Warrington College of Business, University of Florida, 211D Stuzin Hall, P. O. Box 117165, Gainesville, FL 32611-7165. E-mail: tjudge@ufl.edu

While its definition has long been debated, *stress* can generally be defined as an aversive or unpleasant emotional and physiological state resulting from adverse work experiences, particularly experiences that are uncertain or outside the employee's control (Beehr & Bhagat, 1985; Hart & Cooper, 2001). The work experiences that give rise to stress are often referred to as *stressors*, while the effects of stress (in terms of health and employee behavior) are referred to as *strain* (Hart & Cooper, 2001; Kahn & Byosiere, 1992). Past research has examined several different kinds of stressors, including aspects of the employee's role, particular job demands and characteristics, and facets of the physical work environment (Hart & Cooper, 2001; Kahn & Byosiere, 1992).

Other stressors are of a more interpersonal nature. For example, Spector and Jex (1998) described the *interpersonal conflict at work* stressor, which captures the degree to which other people are rude to a given employee. Similarly, their *organizational constraints* stressor includes items tapping inadequate leadership or lack of necessary information. Marshall and Cooper's (1979) model of work stressors included relationships with superiors and a lack of social support, while Kohli (1985) focused on supervisory misbehavior. Each of these stressors seems to be capturing, in part, the interpersonal and informational facets of organizational justice.

Still other stressors seem to overlap with procedural justice. Marshall and Cooper's (1979) model includes lack of participation and managers' inability to delegate as stressors, while others have focused on a lack of autonomy (Chesney et al., 1981). Thibaut and Walker (1975) argued that influence was a vital component of procedural justice, and Leventhal (1980) argued that procedures should be representative of employees' views and opinions. Both assertions are violated when participation and autonomy are lacking in supervisor-subordinate interactions.

Clearly there appears to be some conceptual overlap between organizational justice and specific stressors examined in past research. There are also theoretical reasons to expect a significant relationship between justice and stress. Thibaut and Walker's (1975) instrumental model suggests that procedural justice is valued because it makes long-term outcomes more controllable and predictable. Similarly, uncertainty management theory suggests that all forms of justice are valued because they provide information needed to navigate uncertain work situations (Lind & Van den Bos, 2002; see also their earlier work on fairness heuristic theory: Lind, 2001; Van den Bos et al., 2001). Lind and Van den Bos summarized the key tenet of the theory by writing, "What appears to be happening is that people use fairness to manage their reactions to uncertainty, finding comfort in related or even unrelated fair experiences and finding additional distress in unfair experiences" (p. 216).

In all of these models, justice has the ability to reduce the uncertainty and lack of control that are at the heart of feelings of stress. In fact, the stress mechanism appears (at least implicitly) in many of the models in the justice domain. For example, equity theory posits that individuals evaluate distributive justice by comparing their ratio of inputs to outcomes with those of relevant comparison others (J. S. Adams, 1965; J. S. Adams & Freedman, 1976; Greenberg, 1982; Walster, Berscheid, & Walster, 1973). Walster et al. summarized the key prediction of the theory by stating, "When individuals find themselves participating in inequitable relationships, they become distressed. The more inequita-

ble the relationship, the more distress individuals feel" (p. 153). A more recent review by Mowday and Colwell (2003) provided a more succinct summary: "Inequitable treatment causes tension or distress, and people are motivated to do something about it" (p. 68). Thus, equity theory includes a stress mechanism, though this mechanism is rarely measured in tests of the theory and may be accompanied by other mediating variables (Greenberg, 1984).

Theoretical treatments of other justice dimensions also invoke stress constructs. For example, referent cognitions theory argues that procedural injustice creates several forms of distress, including resentment, ill will, hostility, and outrage (Folger, 1993). Uncertainty management theory also notes the linkage between unfair experiences and perceptions of distress (Lind & Van den Bos, 2002). Bies's (2001) most recent discussion of interpersonal and informational justice noted that the richness of those constructs comes more in discussing injustice than justice. Bies quoted Cahn (1949) to make this distinction, with Cahn writing that justice "brings to mind some ideal relation or static condition" (p. 13), whereas injustice involves "those affections of the viscera and abnormal secretions of the adrenals that prepare the human animal to resist attack" (p. 24).

Although the theoretical grounding for a justice-stress relationship seems sound, there are few tests of this linkage. In fact, we are not aware of any studies that have linked justice dimensions to perceptions of stress. Three studies, however, have linked various forms of justice to measures of strain. Tepper's (2000) study of a random sample of city residents linked three different justice dimensions—distributive, procedural, and interactional—to depression and emotional exhaustion. Elovainio, Kivimäki, and Helkama (2001) linked two justice dimensions—procedural and *relational*—to *occupational strain* (consisting of nervousness, depression, and difficulties concentrating). Other work has found significant relationships between health complaints and distributive as well as procedural justice (De Boer, Bakker, Syroit, & Schaufeli, 2002). On the basis of these results, and the theoretical grounding presented previously, we predicted that all four dimensions of organizational justice (distributive, procedural, interpersonal, and informational) would be negatively related to stress. Thus, our hypotheses have adopted a four-dimensional conceptualization of organizational justice, consistent with recent reviews of the literature (Colquitt et al., 2001; Colquitt & Greenberg, 2003). However, we should note that the four-dimensional structure is still new to the literature, and other taxonomies espouse a three-factor structure that combines interpersonal and informational justice into an interactional (or *quality-of-treatment*) factor (e.g., Tyler & Blader, 2000). One secondary contribution of this article is to further evaluate the merits of the four-factor view. We therefore predicted the following hypotheses:

Hypothesis 1: The four dimensions of organizational justice will be negatively related to perceptions of stress. Specifically, (a) distributive justice, (b) procedural justice, (c) interpersonal justice, and (d) informational justice will be negatively related to perceptions of stress.

The Mediating Role of Work-Family Conflict

Besides examining the magnitude of the justice-stress linkage, we were interested in exploring the causal mechanisms that might

underlie the relationship. Why might fair employers be associated with less “stressed out” employees? One possibility lies in the domain of work–family conflict. One of the most commonly examined role variables in the stressor domain is role conflict, in which the demands of one role are incompatible with the demands of another (Kahn, Wolfe, Quinn, Snock, & Rosenthal, 1964). Work–family conflict represents one specific form of role conflict that appears in virtually every listing of key stressors in reviews of the literature (DeFrank & Ivancevich, 1998; Hart & Cooper, 2001; Kahn & Byosiere, 1992).

Research on work–family conflict has increased over the past decade as the most typical American household has become one in which both the husband and the wife work outside of the home. Two forms of conflict can arise in such situations: work→family conflict, demands interfere with family responsibilities, and family→work conflict, family obligations interfere with work (Kossek & Ozeki, 1998). Both forms of conflict have been associated with strain. For example, Goff, Mount, and Jamison (1990) found that work–family conflict was related to higher absenteeism levels. Frone (2000) linked work–family conflict to psychiatric and substance abuse disorders. Additionally, both forms of work–family conflict appear to be negatively associated with turnover intentions and physical symptoms (Netemeyer, Boles, & McMurrian, 1996). It also appears that the negative effects of work–family conflict may be greater for women and for older workers, at least in terms of career satisfaction (Martins, Eddleston, & Veiga, 2002).

The antecedents of work–family conflict can be divided into several categories. One category can be defined as responsibilities and expectations. Work demands induce work→family conflict (Higgins, Duxbury, & Irving, 1992) and, by the same token, family responsibilities lead to family→work conflict (Wiersma & Van den Berg, 1991). One source of demands is time, in that time spent in one role is time that cannot be spent in another. For example, Gutek, Searle, and Klepa (1991) found that hours spent with family predicted family→work conflict and hours spent at work predicted work→family conflict (see also Major, Klein, & Ehrhart, 2002). Another category of antecedents is psychological demands. Frone, Russell, and Cooper (1992) tested a complex causal model that found, among other things, that job stressors (work pressure and role ambiguity) contributed to greater work→family conflict.

A third category of antecedents is most relevant to the present study. Organizational policies and activities is a category referring to actions that organizations can take to ease work–family conflict. For example, Thomas and Ganster (1995) found that flexible schedules and supervisor support were related to lower levels of work–family conflict, and Allen (2001) found that employees’ perceptions of whether their organizations were family supportive negatively predicted work–family conflict. Organizations differ markedly in their responsiveness to work–family issues (Milliken, Martins, & Morgan, 1998), so the experience of work–family conflict across organizations may be tied, in part, to this organizational responsiveness.

One way that organizations can be responsive to work–family concerns is by promoting justice in the workplace. Grandey (2001) recently argued that “the justice literature is particularly relevant to our understanding of how well family friendly policies work” (p. 145). Grandey argued that organizations with unfair policies and practices would probably be seen as contributing to the interfer-

ence of work with family life. We are aware of only one study in the literature that included work–family conflict and a measure of multiple justice dimensions. Tepper’s (2000) study revealed significant correlations between three justice dimensions and work→family conflict, though he did not interpret these correlations because they were not the focus of the study. Other studies have linked work–family conflict to more global evaluations of fairness (Grover, 1991; Kossek & Nichol, 1992; Parker & Allen, 2001), providing additional empirical support for a linkage between organizational justice and work–family conflict.

Leventhal’s (1980) justice judgment model can provide theoretical grounding for a relationship between organizational justice and work–family conflict. Leventhal suggested that decision making in organizations is a complex, multistaged process that includes the selection of the decision-making agents, setting of ground rules, gathering of information, structuring of appeals, and creation of change mechanisms. Organizations can promote justice by ensuring that all of these stages consider employee views and input and are unbiased, consistent, based on accurate information, correctable, and ethical (Leventhal, 1980).

Organizations that consider the views and input of employees are likely to be more responsive to work–family concerns when they arise. That responsiveness should benefit from the gathering of accurate information, possibly through attitude surveys or record keeping of benefit plan choices and feedback. Indeed, Grandey (2001) noted that an accurate needs analysis with companywide participation is a vital component of responsiveness to work–family issues. Milliken et al. (1998) provided empirical support for this assertion by showing that organizational responsiveness was correlated with the gathering of information through surveys and interviews. Moreover, organizations that prioritize ethicality in decision making should be more likely to respond to such information with good faith efforts to improve the situation.

While Leventhal’s (1980) model does not explicitly consider interpersonal or informational justice, both should be vital to fostering a family-friendly workplace. Any organizational attempts to improve work–family issues will be neutralized if employees’ supervisors are not supportive of them (Grandey, 2001). Kossek, Colquitt, & Noe (2001) showed that work–family conflict was significantly associated with the climate created by employee supervisors. If supervisors encouraged employees to share their work–family concerns (rather than sacrifice family issues for work), conflict levels tended to be lower. Such support requires supervisors to communicate work–family responses to the workforce and allows employees to utilize all of the options available to them (Grandey, 2001).

The role of distributive justice and work–family conflict is less clear. On the one hand, concerns that organizational outcomes do not match one’s contributions would seem to exacerbate any tensions resulting from the work–family interface. Moreover, an organization may become more responsive to employee concerns as a form of compensation for high-quality effort or job performance. In contrast, Grandey (2001) argued that organizations do not address work–family issues to reward meritorious performance, instead arguing “family friendly policies may contradict equity rules, and in general, may be viewed as an unfair practice” (p. 154). This suggests that distributive justice—when cast in terms of equity—may fail to reduce work–family conflict. Recall,

however, that Tepper's (2000) study did yield a significant negative relationship between the two variables.

In summary, there are reasons to expect relationships among three (and perhaps all four) organizational justice dimensions and work-family conflict. We therefore advanced the following two predictions:

Hypothesis 2: The four dimensions of organizational justice will be negatively related to perceptions of work→family conflict. Specifically, (a) distributive justice, (b) procedural justice, (c) interpersonal justice, and (d) informational justice will be negatively related to perceptions of work→family conflict.

Hypothesis 3: The negative relationships among the four dimensions of organizational justice and stress will be partially mediated by perceptions of work→family conflict.

Method

Participants and Procedure

Participants were faculty employed at 23 universities in the United States. The potential pool of participants was obtained by randomly sampling from the e-mail directories of faculty at these universities. Universities were selected for inclusion based on two criteria: (a) diversity in geography, size, and status (national vs. regional universities) and (b) availability of an online e-mail database so that e-mail addresses could be accessed. The locations of universities were Northwest/Rocky Mountain ($n = 4$), Southwest ($n = 3$), Midwest ($n = 6$), Southeast ($n = 5$), and Northeast/Atlantic Coast ($n = 5$). Because the size of the universities varied dramatically, sampling was not equal across the 23 universities. Names were randomly sampled from the entire e-mail directories, so, except for sampling error, the participants should have been randomly sampled across departments and ranks. Five hundred individuals were sent e-mail messages describing the nature of the study and soliciting their participation. Three hundred and twenty-two individuals indicated their willingness to participate in the study. These individuals were sent a cover letter, an informed consent form, and a Time 1 survey (and a significant-other survey—see next paragraph) with a postage-paid return envelope. Code numbers were written on each survey so that they could be matched on return. Participants were offered a \$10 honorarium in return for their participation and were assured that their responses were completely confidential.

Included with the focal employee survey was another survey for a *significant other* (spouse or cohabitating partner). The significant-other survey had its own postage-paid return envelope; focal employees were instructed to give the survey and attached envelope to the significant other. Significant others, in turn, were instructed to complete the survey away from the focal employee and to return it in the envelope. Significant others were not offered an inducement for completing the short survey.

Two hundred and thirty-four individuals returned useable self-report surveys at Time 1, which translated into an effective response rate of 47%. Listwise deletion reduced the sample size to 212 individuals who had complete data on all of the Time 1 variables. Including the significant other surveys reduced the sample size to 201 individuals who had complete data on all Time 1 variables. Fifty-eight percent of the sample were men, and 91% were Caucasian. The average participant was 43 years old and had one child (range: 0–6 children).

Approximately 6 months later, participants who completed the Time 1 survey were sent a second survey that assessed their job satisfaction, work-family conflict, and stress. The time period of 6 months was chosen because it allowed the possibility of change in attitudes from Time 1 to

Time 2 (and eliminated transient sources of inflation) while not prolonging the study unduly. The response rate to this survey was 76% ($n = 177$). One hundred seventy-four individuals had complete data on all Time 1 (self and significant other) and Time 2 variables.

Measures

All variables were rated on a 1–5 scale, with responses ranging from 1 (*strongly disagree* [or *never* for the stress scale]) and 5 (*strongly agree* [or *very often* for the stress scale]). All items were averaged to form overall scales. Except for job satisfaction (completed by a significant other at Time 1), all measures were completed by the focal employee at either Time 1 (justice perceptions: number and use of work-family policies) or at both Time 1 and Time 2 (stress: work→family conflict).

Organizational justice perceptions. Organizational justice perceptions were measured using the four-dimensional measure created and validated by Colquitt (2001). Items referenced work-family policies, decisions, and procedures. Distributive justice was measured with four items (e.g., “Is the availability of work-family assistance appropriate for the work you have completed?” and “Does the availability of work-family assistance reflect what you have contributed to the university?”). Procedural justice was measured with seven items (e.g., “Have the work-family policies been applied consistently?” and “Have the work-family policies been based on accurate information?”). Interpersonal justice was measured with four items, in reference to the individual who has enacted the work-family policies (e.g., “Has he or she treated you in a polite manner?” and “Has he or she refrained from improper remarks or comments?”). Informational justice was measured with five items (e.g., “Has he or she explained work-family policies and issues thoroughly?” and “Has he or she tailored his or her communications to your specific work-family needs?”). The reliabilities of the distributive, procedural, interpersonal, and interactional dimensions were $\alpha = .84$, $\alpha = .84$, $\alpha = .96$, and $\alpha = .90$, respectively.

Given that the Colquitt (2001) measure is relatively new, we conducted a confirmatory factor analysis of the measure to verify the fit of a four-dimensional conceptualization. This analysis showed an acceptable fit for a four-factor solution: $\chi^2(164, N = 214) = 318.30, p < .001$; $\chi^2/df = 1.94$; root-mean-square residual (RMSR) = .07; Comparative Fit Index (CFI) = .95; Incremental Fit Index (IFI) = .95. The average standardized item loadings onto each of the factors were as follows: distributive justice = .65, procedural justice = .77, interpersonal justice = .92, and informational justice = .81. Of importance, the four-dimensional structure provided a better fit to the data than a three-factor model collapsing interpersonal and informational justice, $\chi^2(167, N = 214) = 947.90, p < .001$; $\chi^2/df = 5.68$; RMSR = .19; CFI = .75; IFI = .75, and the difference in the fit of the two models was statistically significant: $\chi^2\Delta(3, N = 214) = 629.60, p < .001$. These results provide some support for the four-dimensional structure used in our hypotheses.

Stress. Stress was measured with the Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983), a 13-item scale that measures stress experienced in the last month. Example items include the following: “In the last month, how often have you felt nervous and ‘stressed’?” and “In the last month, how often have you found that you could not cope with all the things that you had to do?” Focal employees evaluated these items at Time 1 ($\alpha = .87$) and at Time 2 ($\alpha = .88$).

Work→family conflict. Work→family conflict was measured with the four-item scale developed and validated by Gutek et al. (1991). The scale has been used in other work-family conflict research (G. A. Adams, King, & King, 1996; Judge, Boudreau, & Bretz, 1994). The four items are as follows: “After work, I come home too tired to do some of the things I’d like to do,” “On the job I have so much work to do that it takes away from my personal interests,” “My family or friends dislike how often I am preoccupied with my work while I am at home,” and “My work takes up time that I’d like to spend with family or friends.” In the present study, the reliability of the work→family conflict scale was $\alpha = .82$ at Time 1 and $\alpha = .83$ at Time 2.

Control Variables

Overall job satisfaction. Overall job satisfaction was assessed as a control variable, given its significant correlations with organizational justice, work-family conflict, and stress. Overall job satisfaction was measured with the five-item Brayfield and Rothe (1951) measure, completed by the focal employee at Time 2 ($\alpha = .93$) and the focal employee's significant other at Time 1 ($\alpha = .84$). The five items are as follows: "Most days I am enthusiastic about my work," "I feel fairly satisfied with my present job," "Each day at work seems like it will never end" (reverse scored), "I find real enjoyment in my work," and "I consider my job rather unpleasant" (reverse scored).

Number and use of work-family policies. Given that organizational policies may alter work-family conflict levels, we also controlled for the number and use of various work-family policies in the respondents' organizations. The particular work-family policies identified on the survey were based on several sources (Grover & Crocker, 1995; Milliken et al., 1998) and were adapted to those policies thought to be most appropriate for university contexts. Twelve specific work-family policies (e.g., parental/maternity leave, elder care, part-time work, job sharing, flextime, flexible benefits, college savings programs, work at home, child-care assistance, employee assistance program, wellness/health program, and work-family seminars) were identified. Individuals were first asked to indicate whether their university had such a policy by circling "Yes," "No," or "?" (if they did not know). Scores on the measure were summed so that for each policy in which "Yes" was circled, one point was added. If a policy was not present or the individual was unsure, no points were added. Thus, scores ranged from 0 to 12. Although we treated scores on this variable at the individual level of analysis, within universities, individuals did agree in their evaluations of whether the university offered the policies. Specifically, across the 12 work-family policies, agreement ranged from 70.4% (paternal/maternal leave) to 88.8% (child-care assistance), with an average of 81.3%. In terms of the use of work-family policies, individuals were asked to list which, if any, of the 12 policies they had used. Use of work-family policies is therefore simply the number of policies that the individual listed.

Results

Descriptive statistics and intercorrelations among the study variables are provided in Table 1. We tested our hypotheses using structural equation modeling. Because different sources of data were obtained, two different structural models were tested. Specifically, one model related the exogenous variables (the four justice dimensions and work-family policies) measured at Time 1

to the endogenous variables (work-family conflict, stress, and job satisfaction) measured at Time 2. The second model utilized Time 1 measures of all constructs, but utilized significant-other reports of job satisfaction. Similar results across these two model specifications would provide evidence that the results were not due to same-source bias and were robust over time. We used LISREL 8 to test the models (Jöreskog & Sörbom, 1993), with variables treated as directly observed and measurement error being corrected by multiplying the variances of the variables by $1 - \alpha$. Although not depicted in the model, the justice dimensions were allowed to be correlated with each other and with the two work-family policy variables. A noncausal association between job satisfaction and stress was estimated.

The structural equation modeling results testing the hypothesized model with longitudinal data are provided in Figure 1. The figure shows that most, but not all, of the hypothesized links in the model were supported. Specifically, procedural justice and interpersonal justice have significant negative influences on work-family conflict, and work-family conflict, in turn, has a significant negative influence on stress (even when controlling for job satisfaction). The fit statistics for this model suggested an adequate fit to the data (see Table 2). An alternative model, estimated with Time 1 data and with significant-other reports of job satisfaction, also fit the data well (see Table 2 and Figure 2). The results are consistent with the previous model; no link that was significant in the longitudinal model became nonsignificant in this model. Of the control variables, job satisfaction had significant relationships with both work-family conflict and stress, but the work-family policy variables were not related to work-family conflict.

Hypothesis 1 predicted that the four dimensions of organizational justice would be negatively related to stress. Table 3 presents the total, direct, and indirect effects of the four justice dimensions on the endogenous variables in the model. The total effects match the standardized regression coefficients derived from regressing an endogenous variable on the four justice dimensions. As shown in Table 3, procedural and interpersonal justice were the only dimensions with significant total effects on stress ($-.21$ and $-.13$, $p < .01$, respectively). Distributive and informational justice did not have significant total effects on stress ($.05$ and $.04$, respectively). Thus, Hypothesis 1 received partial support.

Table 1
Means, Standard Deviations, and Intercorrelations of Study Variables

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Distributive justice (T ₁)	10.95	3.96	(.84)											
2. Procedural justice (T ₁)	19.03	5.78	.61	(.84)										
3. Interpersonal justice (T ₁)	17.35	3.77	.26	.21	(.96)									
4. Informational justice (T ₁)	15.09	5.56	.57	.53	.42	(.90)								
5. Work-family conflict (T ₁)	11.97	3.78	-.16	-.22	-.25	-.24	(.82)							
6. Work-family conflict (T ₂)	11.59	3.60	-.13	-.26	-.21	-.16	.69	(.83)						
7. Stress (T ₁)	34.89	7.40	-.14	-.15	-.21	-.18	.55	.42	(.87)					
8. Stress (T ₂)	34.51	7.18	-.08	-.16	-.13	-.11	.49	.53	.66	(.88)				
9. Job satisfaction (T ₂)	37.12	6.12	.16	.21	.40	.28	-.31	-.29	-.38	-.42	(.93)			
10. Job satisfaction (sig. other)	19.55	3.87	.18	.20	.29	.17	-.16	-.17	-.30	-.28	.56	(.84)		
11. Number work-family policies	3.54	3.00	.22	.25	.06	.18	-.15	-.03	-.01	-.05	-.12	-.02	—	
12. Use of work-family policies	1.15	.88	.13	.28	-.05	.11	.01	-.08	.04	-.04	-.06	-.08	.21	—

Note. Reliabilities (alpha) are on the diagonal. Correlations greater than .13 are significant at the .05 level. T₁ = Time 1; T₂ = Time 2; Sig. = significant.

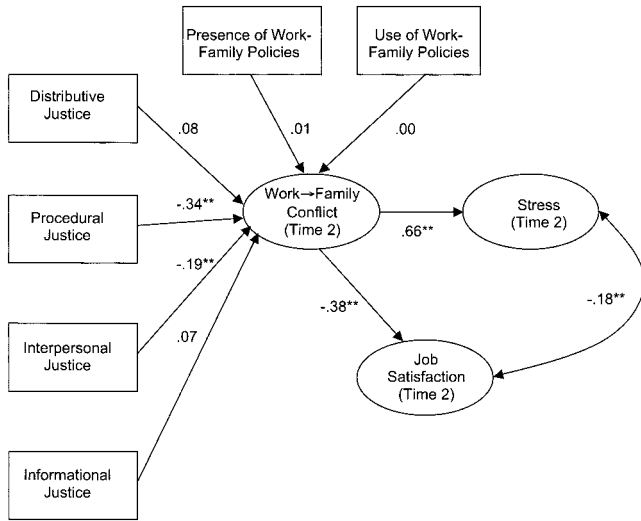


Figure 1. Results for self-report, longitudinal model. ** $p < .01$.

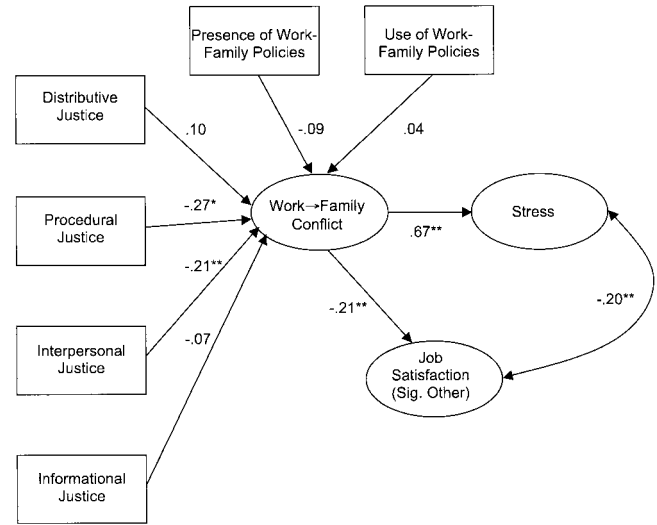


Figure 2. Results using significant-other (sig. other) reports of job satisfaction. * $p < .05$. ** $p < .01$.

Hypothesis 2 predicted that the four justice dimensions would be negatively related to work→family conflict. Table 3 illustrates that procedural and interpersonal justice were also the only dimensions with significant total effects on work→family conflict (-.34 and -.19, $p < .01$, respectively). Distributive and informational justice did not have significant total effects on work→family conflict (.08 and .07, respectively). Thus, Hypothesis 2 also received partial support.

Hypothesis 3 predicted that the relationships between the justice dimensions and stress would be mediated by work→family conflict. As shown in Table 3, the significant procedural and interpersonal total effects were completely indirect based on our model, as they were transmitted through the mechanism of work→family conflict. Our mediation prediction would be supported if the fit of the model would not be improved by the addition of direct paths from the two justice variables to stress. As expected, the addition of these paths did not improve model fit. For example, with the

self-report longitudinal model, the chi-square dropped by only 1.86 (*ns*), and the other standardized fit statistics (e.g., root mean square error of approximation, root-mean-square-residual, Adjusted Goodness-of-Fit Index, and Non-Normed Fit Index) were virtually unchanged. The same pattern of results was observed with the model utilizing significant-other reports of job satisfaction. Hypothesis 3 was therefore supported—the effects of the organizational justice dimensions on stress were mediated by work→family conflict.

Table 2
Fit Statistics for Structural Models

Statistic	Model	
	Longitudinal	Significant other
χ^2	36.02	25.01
χ^2/df	1.80	1.25
Goodness of Fit Index	.96	.97
Adjusted Goodness of Fit Index	.91	.94
Root-mean-square residual	.07	.06
Root-mean-square error of approximation	.07	.04
Normed Fit Index	.90	.94
Non-Normed Fit Index	.92	.98
Comparative Fit Index	.95	.99
Incremental Fit Index	.96	.99

Note. For longitudinal model, $n = 174$; for significant-other report model, $n = 201$. Both models have 20 degrees of freedom.

Table 3
Direct, Indirect, and Total Effects of Organizational Justice Dimensions

Justice dimension	Effect		
	Total	Direct	Indirect
Distributive			
Work→family conflict	.08	.08	—
Job satisfaction	-.03	—	-.03
Stress	.05	—	.05
Procedural			
Work→family conflict	-.34**	-.34**	—
Job satisfaction	.12**	—	.12**
Stress	-.21**	—	-.21**
Interpersonal			
Work→family conflict	-.19**	-.19**	—
Job satisfaction	.07*	—	.07*
Stress	-.13**	—	-.13**
Informational			
Work→family conflict	.07	.07	—
Job satisfaction	-.03	—	-.03
Stress	.04	—	.04

Note. Dashes indicate data are not applicable. The effects are controlling for the other effects in the models. Job satisfaction is included as a control variable given its significant relationship with justice, work→family conflict, and stress. * $p < .05$. ** $p < .01$.

Discussion

As noted at the outset, the effects of organizational justice on key business outcomes have been well documented. Less attention has been given to the theoretical mechanisms that explain justice relationships. One potential mechanism is stress, as organizational injustice could be viewed as a “stressor”—an aspect of the work environment that causes employees to doubt their ability to cope with work demands (Vermunt & Steensma, 2001). With that in mind, the present study made two primary theoretical contributions. First, by linking multiple justice dimensions to stress, we provided empirical support for the injustice as stressor perspective. This perspective provides another explanation for organizational justice effects, complementing attitudinal mediators such as social exchange perceptions, status and esteem, and trust as well as legitimacy (Cropanzano, Rupp, Mohler, & Schminke, 2001; Lind, 2001; Tyler & Blader, 2000). Second, by examining work–family conflict as a mediator of the stress effect, we began to explore exactly how and why justice acts as a stressor. Given that the justice–stress relationship remains relatively untested, explaining any significant relationships is critical.

It is important to note that procedural and interpersonal justice were the primary drivers of justice effects, as only they had unique effects on stress perceptions. The strong effects for procedural justice are consistent with theories that link the variable with uncertainty and control. For example, Thibaut and Walker (1975) argued that procedural justice would be valued because it makes long-term outcomes more controllable and predictable. Fairness heuristic theory suggests that procedural justice is particularly valuable when uncertainty is present and decisions about whether to cooperate with others are unclear (Lind, 2001; Van den Bos et al., 2001). When one acknowledges that uncertainty and lack of control are definitional components of the stress construct (Beehr & Bhagat, 1985), the reason for the strong procedural effects becomes clear.

The effects for interpersonal justice are consistent with models of stress that contain interpersonal stressors such as conflict with coworkers, inadequate leadership, supervisory misbehavior, or lack of leader support (Kohli, 1985; Marshall & Cooper, 1979; Spector & Jex, 1998). In a recent review of the construct, Bies (2001) observed that interpersonal injustice is a “hot and burning” experience associated with “intense and personal pain” (p. 90). Indeed, Spector and Jex argued that interpersonal stressors may be one of the most powerful stressors. Unfair treatment from one’s supervisor should create the same sense of uncertainty and lack of control as procedural justice, and those feelings should persist as long as that dyadic linkage remains intact.

In addition to linking justice dimensions to stress, our study was the first to examine a mediator of that relationship. We reasoned that organizations that treated their employees fairly would be more responsive to work–family issues, lowering work→family conflict. Our results demonstrate that the relationships between procedural and interpersonal justice and stress were completely mediated by work→family conflict. The procedural effect can be explained using Leventhal’s (1980) justice judgment model, as organizations that consider the views and inputs of employees gather accurate policy information (whether through surveys or record keeping) and emphasize that ethical procedures should be

more responsive to work–family issues (Grandey, 2001; Milliken et al., 1998).

The interpersonal justice effect reinforces the important role played by the supervisor with respect to work→family conflict. In most university contexts, it is the supervisor (the department chair) who is responsible for approving and implementing work–family policies such as parental leave, part-time work schedules, and so on. Even in cases in which they are not directly responsible for the development of the policy, they are often the faculty member’s first point of contact in accommodating an individual. More generally, beyond formal work–family policies, the department chair interacts with faculty when work–family issues arise (e.g., arranging to cover a class when a dependent is ill). In these circumstances, it can be argued that it is especially important that the department chair is sympathetic to and understanding of an individual’s concerns and needs.

While we did not make differential predictions for the four justice dimensions a priori, it is worthwhile to speculate about why distributive and informational justice had relatively weaker effects in our study. One potential explanation is the relative interpretability of the four justice dimensions. Lind and Van den Bos’s (2002; Van den Bos, Lind, Vermunt, & Wilke, 1997) research on both fairness heuristic theory and uncertainty management theory note that justice dimensions have stronger effects when they are more interpretable. Both theories discuss a “substitutability effect” in which the more interpretable forms of justice substitute for the less interpretable forms when creating global fairness perceptions (Lind, 2001; Lind & Van den Bos, 2002; Van den Bos et al., 2001).

One could argue that the two dimensions with the strongest effects in our study—interpersonal and procedural—are also the most interpretable. Van den Bos et al. (1997) argued that distributive justice can be difficult to judge because it requires knowing information on the outcomes of others. Moreover, distributive information is often encountered after procedural information (Van den Bos et al., 1997). Taken together, these differences can be used to explain why procedural effects are sometimes stronger than distributive effects (Lind, 2001; Lind & Van den Bos, 2002; Van den Bos et al., 2001). The relative interpretability of the interactional facets has received less attention. However, it seems clear that insincere, disrespectful, or improper treatment can easily be perceived. In contrast, employees may be uncertain whether key decisions have truly been explained honestly and comprehensively.

The interpretability of justice dimensions should affect the magnitude of their stress effects. Consider the transactional model of stress articulated by Lazarus and colleagues (e.g., Lazarus, DeLongis, Folkman, & Gruen, 1985; Lazarus & Folkman, 1984). The transactional model argues that responses to stressors are governed by a multistep appraisal process. In *primary appraisal*, the individual evaluates whether an event has implications for his or her well-being. In *secondary appraisal*, the individual evaluates what actions can be taken for those events that could harm well-being. It may be that more interpretable justice dimensions become more stressful (and generate stronger conflict perceptions) because the appraisal of those dimensions is clear and straightforward.

Practical Implications

These results offer several practical implications. Stress levels appear to be on the rise, and work is the primary source of individual stress levels (DeFrank & Ivancevich, 1998). Work→family conflict continues to become a key source of stress as most families now include two wage earners who must balance work and family roles. Organizations that can help those employees manage those roles, and experience less stress, should gain competitive advantage by reducing Workers' Compensation claims, medical expenses, and withdrawal while maintaining high levels of job performance (Hart & Cooper, 2001).

One means of responding to employees' work–family concerns is by ensuring that work–family policies are created in a just manner. Employee surveys can provide an accurate picture of where needs lie, as can record keeping of benefit plan choices and feedback. The next step is to create procedures that are representative of all groups' concerns and are consistent across persons and time. However, our results emphasize that the leader who enacts those procedures must be supportive—even the best parental leave procedure cannot overcome supervisors who forbid their employees from using it. Fortunately, past research has shown that leaders can be trained to act in a more just manner, improving the attitudes and behaviors of their subordinates (Cole & Latham, 1997; Skarlicki & Latham, 1996, 1997).

Limitations

Of course, this study possesses some limitations that should be noted. Some links in our models were vulnerable to same-source bias. However, we should point out that one of our models relied on longitudinal data separated by 6 months, removing any transient causes of same-source bias. Another model relied on cross-sectional data with significant-other reports for job satisfaction, with the results remarkably consistent across models. Still, these data do not allow us to draw causal inferences. The links in the hypothesized model follow a presumed causal order, such that justice leads to work→family conflict, which leads to job satisfaction and stress. Though longitudinal data facilitate causal inferences, the requirements for strong causal inference (James, Mulaik, & Brett, 1982) make it unwise to draw strong causal conclusions despite support for the model.

Suggestions for Future Research

Despite these limitations, our study offers several suggestions for future research. For example, we followed Kossek and Ozeki's (1998) advice to measure work–family conflict with a scale that differentiates between work→family and family→work conflict. We should note that family→work conflict was not in the model because the theoretical context of this study was at work (and, therefore, the impact of the home on work) rather than at home (the impact of work on home). Future research could develop a model predicting family→work conflict by examining justice as it is experienced in the home. For example, Grote and Clark (2001) examined the fairness of the division of household labor. Others could explore a wider variety of justice dimensions to compare the stress implications of organizational versus home-based justice.

Further research is also needed to replicate the effects of the four justice dimensions on perceived stress. Are there contexts in which distributive and informational justice become significant antecedents of stress perceptions or when procedural and interpersonal justice become less critical? Such research could also begin to compare the injustice-as-stressor perspective with other mechanisms that explain justice effects, including social exchange, status and esteem, and trust as well as legitimacy (Cropanzano, Rupp, et al., 2001; Lind, 2001; Tyler & Blader, 2000). Are stress perceptions a more powerful mediator than these mechanisms? Exploring such questions can help scholars explain exactly why justice is such an important concern in organizations.

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