

 Open access • Journal Article • DOI:10.1348/096317908X401912

A model for the effects of job insecurity on performance, turnover intention, and absenteeism — [Source link](#)

Thomas Staufenbiel, Cornelius J. König

Institutions: University of Osnabrück, University of Zurich

Published on: 01 Mar 2010 - Journal of Occupational and Organizational Psychology (British Psychological Society)

Topics: Job attitude, Organizational commitment, Job satisfaction, Job performance and Absenteeism

Related papers:

- [No security: a meta-analysis and review of job insecurity and its consequences.](#)
- [Who suffers more from job insecurity? A Meta-Analytic review](#)
- [Job Insecurity: Toward Conceptual Clarity](#)
- [Job Insecurity and Psychological Well-being: Review of the Literature and Exploration of Some Unresolved Issues](#)
- [Content, Cause, and Consequences of Job Insecurity: A Theory-Based Measure and Substantive Test](#)

Share this paper:    

View more about this paper here: <https://typeset.io/papers/a-model-for-the-effects-of-job-insecurity-on-performance-3us2ybetyt>



**University of
Zurich**^{UZH}

**Zurich Open Repository and
Archive**

University of Zurich
University Library
Strickhofstrasse 39
CH-8057 Zurich
www.zora.uzh.ch

Year: 2010

A model for the effects of job insecurity on performance, turnover intention, and absenteeism

Staufenbiel, T ; König, C J

Abstract: This study investigates the effects of job insecurity on four organizationally important outcomes: in-role behaviour, organizational citizenship behaviour, turnover intention, and absenteeism. A model is tested in which job insecurity is simultaneously a hindrance and a challenge stressor. In particular, job insecurity is proposed to have a predominantly harmful effect on performance, turnover intention, and absenteeism, and it is argued that these effects are mediated by (reduced) work attitudes. In addition, job insecurity is also assumed to affect these behaviours in the opposite way (i.e. a suppressor effect) because job insecurity might motivate employees to make themselves more valuable to the organization by working harder and being less absent. The model is tested with a sample of 136 German non-managerial employees. Data from supervisors (i.e. in-role behaviour and organizational citizenship behaviour), the company's personnel files (i.e. absenteeism), and self-reports (i.e. job insecurity, work attitudes, turnover intention, in-role behaviour, and organizational citizenship behaviour) were used. Structural equation modelling showed that a model that included both negative and positive effects fitted the data best. The negative effect was stronger than the positive effect. The results show that the effects of job insecurity are more complex than previously assumed. In addition, the results also extend previous research into hindrance and challenge stressors because they show that stressors should not be categorized as either hindrance or challenge. Instead, it might be more appropriate to conceptualize hindrance and challenge as two dimensions.

DOI: <https://doi.org/10.1348/096317908X401912>

Posted at the Zurich Open Repository and Archive, University of Zurich

ZORA URL: <https://doi.org/10.5167/uzh-34822>

Journal Article

Accepted Version

Originally published at:

Staufenbiel, T; König, C J (2010). A model for the effects of job insecurity on performance, turnover intention, and absenteeism. *Journal of Occupational and Organizational Psychology*, 83:101-117.

DOI: <https://doi.org/10.1348/096317908X401912>

Running head: EFFECTS OF JOB INSECURITY

Staufenbiel, T. & König, C. J. (2010). A model for the effects of job insecurity on performance, turnover intention, and absenteeism. *Journal of Occupational and Organizational Psychology*. 83, 101-117.

This preprint version may not exactly replicate the final, printed version. The definitive version is available at <http://www.ingentaconnect.com/content/bpsoc/joop/2010/00000083/00000001/art00006>.

A Model for the Effects of Job Insecurity on Performance, Turnover Intention, and
Absenteeism

Thomas Staufenbiel

Universität Osnabrück

Cornelius J. König

Universität Zürich

Author Note

Thomas Staufenbiel, Institut für Psychologie, Universität Osnabrück, Germany,
and Cornelius J. König, Psychologisches Institut, Universität Zürich, Switzerland.

We thank Michael Graupmann and Ute Weskott for their help with the data
collection and Tahira Probst for the feedback on an earlier version.

Correspondence concerning this article should be addressed to Thomas
Staufenbiel, Universität Osnabrück, Institut für Psychologie, Seminarstraße 20, 49069
Osnabrück, Germany. Email: thomas.staufenbiel@uos.de

Abstract

This study investigates the effects of job insecurity on four organizationally important outcomes: in-role behavior, organizational citizenship behavior, turnover intention, and absenteeism. A model is tested in which job insecurity is simultaneously a hindrance and a challenge stressor. In particular, job insecurity is proposed to have a predominantly harmful effect on performance, turnover intention and absenteeism, and it is argued that these effects are mediated by (reduced) work attitudes. In addition, job insecurity is also assumed to affect these behaviors in the opposite way (i.e., a suppressor effect) because job insecurity might motivate employees to make themselves more valuable to the organization by working harder and being less absent. The model is tested with a sample of 136 German nonmanagerial employees. Data from supervisors (i.e., in-role behavior and organizational citizenship behavior), the company's personnel files (i.e., absenteeism) and self-reports (i.e., job insecurity, work attitudes, turnover intention, in-role behavior, and organizational citizenship behavior) were used. Structural equation modeling showed that a model that included both negative and positive effects fitted the data best. The negative effect was stronger than the positive effect. The results show that the effects of job insecurity are more complex than previously assumed. In addition, the results also extend previous research into hindrance and challenge stressors because they show that stressors should not be categorized as either hindrance or challenge. Instead, it might be more appropriate to conceptualize hindrance and challenge as two dimensions.

A Model for the Effects of Job Insecurity on Performance, Turnover Intention, and Absenteeism

In order to cope with increased economic pressure, organizations in many industrialized countries have engaged in restructuring, mergers, acquisitions, and “right-sizing” programs (cf. Hirsch & De Soucey, 2006) that are accompanied by a workforce reduction and a more flexible use of labor (e.g. part-time or temporary jobs). As a consequence of these organizational transitions, an increasing number of employees feel insecure about the future existence of their jobs (Burchell, 2002). A growing body of research documents the negative relationship between job insecurity and attitudes towards the job or the organization (e.g., job satisfaction, organizational commitment or organizational trust) and between job insecurity and physical and mental health (summarized in the meta-analysis of Sverke, Hellgren, & Näswall, 2002). However, less is known about the effects of job insecurity on employee behavioral outcomes such as in-role behavior, organizational citizenship behavior (OCB) or absenteeism (Sverke et al., 2002).

The first objective of our study was to fill this gap and examine effects of job insecurity on worker in-role performance and OCB. Second, as also called by Sverke et al. (2002), we coped with the problem of common method bias inherent in almost all relevant job insecurity studies by measuring both forms of work behavior by means of self-assessments as well as supervisor judgments. Third, we also include absenteeism and turnover as potential consequences, which allows assessing the effect of job insecurity on four interrelated work behaviors simultaneously. Fourth, there is little consensus among researchers on whether there should be a positive or a negative effect of job insecurity on behavioral outcomes. At the same time, little is known about the mechanisms that underlie these relationships. Utilizing stress theory, we offer and test a

model in which job insecurity affects these outcomes simultaneously directly and mediated by work attitudes. We are thus able to integrate conflicting theoretical views into a common model.

Researchers who argue that job insecurity has a negative effect on behavioral outcomes consider job insecurity as a hindrance stressor that induces undesirable strain reactions (e.g., Armstrong-Stassen, 1993; De Witte, 1999; Heaney, Israel, & House, 1994; Jacobson, 1991; LePine, Podsakoff, & LePine, 2005). A hindrance stressor can be defined as excessive or undesirable work-related demands that interfere with an individuals' work achievement (Cavanaugh, Boswell, Roehling, & Boudreau, 2000). One way to emotionally cope with such a stressor is to behaviorally withdraw from the situation (see also Lazarus & Folkman, 1984). Behavioral withdrawal can manifest itself in reduced in-role performance or OCB as well as voluntary turnover or absenteeism (e.g., Armstrong-Stassen, 1994; Davy, Kinicki, & Scheck, 1997; King, 2000). Using meta-analysis, LePine et al. (2005) were able to confirm their prediction that hindrance stressors were negatively associated with performance and that the effect was mediated by lowered motivation. In a further meta-analysis, N. P. Podsakoff, LePine and LePine (2007) also found support for their hypotheses that hindrance stressors were directly negatively related to job satisfaction and organizational commitment and through these effects positively related with job withdrawal (turnover) and organizational withdrawal (absenteeism and tardiness). Thus, according to the view of job insecurity as a hindrance stressor, job insecurity should have a negative effect on a variety of employee behaviors.

However, other researchers (e.g., Borg & Elizur, 1992; Repenning, 2000; Van Vuuren, Klandermans, Jacobson, & Hartley, 1991b) have argued that job insecurity might have the opposite effect on performance and withdrawal behavior. They argue

that the fear of losing one's job may motivate employees to engage in individual action to actively cope with the threat. If, for example, individuals think that higher performing employees have a lower risk to be laid off it would be functional for them to increase the effort they put into their work. Van Vuuren, Klandermans, Jacobsen and Hartley (1991a) asked over 500 employees in Israel and the Netherlands about perceived safeguards against involuntary job loss. Employees in both countries believed that a high personal output protects them best. Viewing the argumentation of these authors from the perspective of stress theory, job insecurity is considered a challenge stressor that triggers an active problem-solving style of coping (Cavanaugh et al., 2000). Gilboa, Shirom, Fried and Cooper (2008) offered another reason for viewing job insecurity as challenging. They argued that job insecurity could also result in increased work effort if employees believe that higher individual work performances will improve the organization's success and thus the security of its members.

Some empirical evidence is consistent with the view of job insecurity as a challenge stressor resulting in positive behavioral outcomes. First, Fischer et al. (2005) and De Cuyper, Bernhard-Oettel, Berntson, De Witte and Alarco (2008) found that job insecurity is related to longer work hours. Second, Probst (2006) found a correlation between job insecurity and under-reporting of accidents and argued that this correlation might be due to employees' motivation to keep the job as accidents are most likely to be seen unfavorably by employers. Third, Probst and colleagues demonstrated in two laboratory experiments that participants threatened with lay-offs displayed higher levels of productivity compared to with participants who were not threatened (Probst, 2002; Probst, Stewart, Gruys, & Tierney, 2007).

How can these two theoretical positions and the contradictory empirical results be reconciled? As pointed out by Lazarus and Folkman (1984), challenge and hindrance

appraisals of stressors can occur simultaneously and are not necessarily mutually exclusive (see also Gilboa et al., 2008). We therefore propose and test a model which allows disentangling the positive and negative effects of job insecurity. Figure 1 shows our model. The lower branch captures the view of job insecurity as a hindrance stressor. Following N. P. Podsakoff, LePine and LePine (2007/2007), we assume that the negative influence of the job insecurity stressor on work performance is mediated by work attitudes. The upper path of our model represents the reaction on the challenge appraisal, which leads to improved performance.

 Insert Figure 1 about here

Even though our model assumes that job insecurity has simultaneously a negative and a positive effect on performance, meta-analytic evidence speaks in favor of a low negative effect. Sverke et al. (2002) report an uncorrected correlation of -0.16 between job insecurity and performance, which is in line with the result of the newer meta-analysis of Gilboa et al. (2008), in which the relationship was quantified as -0.14 . We argue that if we only look at the bivariate relationships between job insecurity and behavioral reactions (which is the case in the reported meta-analyses), the positive and negative effects may potentially cancel out. At least the weaker effect will diminish the stronger effect resulting in a low net bivariate correlation. The few studies that looked at extra-role performance (OCB) instead of in-role performance found similar low negative relationships with job insecurity (Feather & Rauter, 2004; King, 2000). Thus, we believe that the positive direct effect in the upper part of our model (i.e., the hindrance effect) is smaller than the negative mediated effect in the lower part (i.e., the challenge effect). This is indicated by the dashed arrow in the upper part of Figure 1.

Although Figure 1 only depicts the effects of job insecurity on performance, the model also applies to absenteeism and turnover intention. As a hindrance stressor, job insecurity should increase withdrawal behavior (i.e., result in higher absenteeism, turnover and turnover intention). This is confirmed by the meta-analysis of Sverke et al. (2002), which found a mean correlation of job insecurity with turnover intention of .23. Studies also confirm a weak positive relationship between job insecurity and absenteeism (e.g., D'Souza, Strazdins, Broom, Rodgers, & Berry, 2006; Probst, 2000). An additional challenging path can also be postulated for both consequences. Frequently absent employees might fear that they will be the first to be laid off because employers are aware of the costs produced by absent employees. In order not to jeopardize employment, employees should therefore reduce their absenteeism. This idea is also consistent with research showing that higher unemployment rates lead to reduced absenteeism (Markham, 1985). Similarly, job insecurity might make turnover less likely because employees who fear being laid off might be afraid that changing jobs would be a negative life event that exceeds their coping abilities. This is consistent with the finding that depression reduces job search behavior (Hamilton, Hoffman, Broman, & Rauma, 1993).

To sum up, we offer a model that integrates positive and negative theoretical views on job insecurity for the first time. Consistent with our literature review and our theorizing, our dependent variables are performance (in its two facets of in-role behavior and OCB), absenteeism, and turnover (intention). We tested with a sample of German nonmanagerial employees, whether a model that includes a negative hindrance effect (mediated by work attitudes) as well as a positive challenge effect adequately describes the data and whether this model fits the data better than a model that only includes the negative effect that is mediated by work attitudes (i.e., a fully mediated

model). In Figure 1, the fully mediated model corresponds to a model without the dashed paths. Stated formally, our hypotheses are thus,

Hypothesis 1: Job insecurity as a hindrance stressor is related to lower work performance, lower OCB, lower absenteeism and higher turnover intention, and these relationships are mediated by work attitudes (job satisfaction and organizational commitment).

Hypothesis 2: A model in which job insecurity as a challenge stressor additionally has a positive influence on performance, OCB, and absenteeism and a negative influence on turnover intention (partially mediated model) fits the data better than the fully mediated model with only the hindrance effect.

Method

Participants

Data were collected in a medium-sized German wholesaler for electronic products with six locations in the Eastern and Western parts of Germany during July 1997. The company was not in any kind of crisis and it was not planning any restructuring. The CEO supported the research but requested that employees did not fill out questionnaires during work hours. The researchers ensured anonymity, and it was stressed that the data would only be used for scientific purposes. Anonymous personal code numbers allowed for a matching of the supervisor ratings to the self-ratings of the employees. Questionnaires were distributed by the management among all 183 nonmanagerial employees (primarily blue-collar workers) and all 24 supervisors. Participants were told that the goal of the research project was to develop a tool for diagnosing people's work behavior.

Of the 183 employees, 152 returned completed questionnaires (response rate 83%). All 24 supervisors including the CEO rated all of their subordinates (response rate 100%). The span of control varied between one and 16 subordinates with a mean of 7.6 ($SD = 4.1$). A matching of the supervisor ratings to the self-ratings was not possible in nine cases because these employees had removed the matching codes. Reliable absenteeism data were not available for seven additional employees because they had only recently joined the company, leaving a total of 136 participants.

On average, the nonmanagerial employees were 40.7 years old ($SD = 10.4$) and had been employed by the company for 12.9 years ($SD = 9.0$). Forty participants were female (29.4%), and 11 worked part-time (8.1%). The average supervisor-subordinate dyad tenure was 10.3 years ($SD = 7.2$). The supervisors also reported that they had an average of 17.8 hours per week contact with their subordinates ($SD = 15.6$).

Measures

All subjective measures described below used a Likert response scale ranging from (1) *strongly disagree* to (7) *strongly agree*.

Job insecurity. The four items of Borg's cognitive job insecurity scale that focus exclusively on the perception of the likelihood of losing one's job (Borg, 1992, Sample 2; see also Borg & Elizur, 1992) were used to measure job insecurity. These items are: "My job is secure", "In my opinion I will keep my job in the near future", "In my opinion I will be employed for a long time in my present job", and "My workplace is secure in every respect." All items are reverse-scored.

Work attitudes. The latent construct work attitudes included job satisfaction and organizational commitment. *Job satisfaction* was measured with the following two global items of the Job Diagnostic Survey (JDS, Hackman & Oldham, 1980): "I am generally satisfied with the kind of work I do in this job" and "Generally speaking, I am

very satisfied with this job." Additionally, participants were asked about their satisfaction with the following nine facets of job satisfaction: (a) the work itself, (b) chances of advancement, (c) opportunities for personal development, (d) pay, (e) colleagues, (f) supervisor, (g) upper management, (h) information and communication within the company, and (i) the company as a whole. All nine questions had the form "Generally speaking, I am very satisfied with ...". *Commitment* was assessed with N. J. Allen and Meyer's (1990) measure of affective commitment, consistent with the view of job insecurity being a stressor that causes emotional reactions (e.g., Probst, 2005). Focusing on affective commitment is also consistent with prior research (e.g., Feather & Rauter, 2004). Cronbach's alpha of the original eight-item measure is .82 (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002). The German translation yielded an alpha of .76 (Schmidt, Hollmann, & Sodenkamp, 1998). Combining job satisfaction and commitment into the common construct work attitudes was justified because of the high correlation ($r = .74$) between the two variables (see also, e.g., Chen, Goddard, & Casper, 2004).

Self-rated performance was measured with a German questionnaire developed by Staufenbiel and Hartz (2000, self-assessment form). It consists of four subscales for OCB and one for in-role behavior, with five items for each subscale. The in-role behavior subscale is essentially a subset of the translated in-role scale developed by Williams and Anderson (1991). A sample item is "I adequately complete assigned duties." Staufenbiel and Hartz report a Cronbach's alpha of .91 for this scale. Following the distinction of Organ (1988) and P. M. Podsakoff and MacKenzie (1989), the Staufenbiel and Hartz measure assesses four OCB subscales: altruism (Cronbach's alpha = .87; sample item: "I help others who have heavy work loads"), conscientiousness (.76; "I am always punctual"), sportsmanship (.86, "I consume a lot

of time complaining about trivial matters”), and civic virtue (.87, “I make innovative suggestions to improve quality in the department”).

Supervisor-rated performance was assessed using the supervisor assessment form of the Staufenbiel and Hartz (2000) questionnaire. The items for self-assessment and supervisor assessment only differ with respect to the perspective of the rater.

Turnover intention was measured with two items (adapted from Baillod & Semmer, 1994), covering the frequency and intensity of the intention: "I frequently think of quitting this job" and "I am seriously considering leaving [name of the company] within the next months".

Absenteeism data were provided by the company for the last 24 months prior to the survey administration. It was recorded in personnel files when each employee was absent for at least one day, excluding scheduled holidays and vacation. A duration index (number of days absent) and a frequency index (number of periods of one or more days absent) were derived. For structural equation modeling, we used the computer program PRELIS (Jöreskog & Sörbom, 1996b) to censor both measures due to their nonnormal (i.e., skewed and truncated) sample distributions.

Analysis

All analyses were run by analyzing the covariance matrix using the maximum likelihood estimation method in LISREL 8.54 (Jöreskog & Sörbom, 1996a). Chi-square statistics, the nonnormed fit index (NNFI), the comparative fit index (CFI), the goodness-of-fit index (GFI), and the root mean square error of approximation (RMSEA) were used to test the fit of the models. Conventionally (e.g., Kline, 2005), any goodness-of-fit index less than .90 is an indication of unacceptable fit, as is any RMSEA larger than .08.

In order to reduce the number of parameters and thereby improve the sample-size-to-estimator ratio, we formed composite indicators (parcels) for several of the scales (Hall, Snell, & Foust, 1999). For job insecurity, the items from the job insecurity scale were parceled into two indicators. The procedure consisted of assigning items to one of the two indicators depending on the relative size of the factor loadings that resulted from a one-factor principal component analysis. This means that the item with the highest factor loading was assigned to the first indicator, the item with the second highest factor loading to the second indicator, the item with the third highest factor loading again to the first indicator and so on. We used this procedure whenever we formed parcels.

For work attitudes, four indicator variables were used: two parcels of job satisfaction and two parcels of organizational commitment. With respect to performance one could argue for taking the constructs (in-role performance and OCB) or the rating sources (self and supervisor) as latent variables. Research on multisource performance ratings (Lance, Hoffman, & Baranik, in press), however, has consistently shown that there is convergence between constructs within sources but low to moderate agreement in performance ratings of the same construct across sources, which is also true for our data. Given that differences across perspectives of raters “represent important and differentially valid performance relevant information” (Lance et al., in press, p. 8) we decided to take the rating sources as latent variables. For self-rated performance, we used three indicator variables: the mean in-role behavior score and two parcels for OCB. The same procedure was used for supervisor-rated performance. The two respective items served as indicators for the latent variable turnover intention. For absenteeism, the censored frequency and duration measures were used as indicators because they were highly correlated, $r = .74$ (cf. Bakker, Demerouti, de Boer, & Schaufeli, 2003).

Following the recommendations of Anderson and Gerbing (1988), we first tested a measurement model in which all indicator variables loaded on their respective latent variables and all latent variables were allowed to correlate with each other. We then continued with testing the structural model. More precisely, we tested whether a more restricted model worsened the fit using sequential chi-square difference tests. In our case, this is our integrated model in which job insecurity affects the dependent variable directly and indirectly via work attitudes. Next, we tested whether an even further restricted model worsened the fit. In our case, this is the fully mediated model in which job insecurity affects the dependent variable only indirectly via work attitudes.

It is important to note that our model (see Fig. 1) is technically a suppressor model. Suppressor models share important similarities with partial mediation models (MacKinnon, Krull, & Lockwood, 2000). As in a partial mediation model, the independent variable influences the dependent variable directly and indirectly via a third variable in a suppressor model. Unlike mediation, the direct and indirect effects have opposite signs. Due to opposing effects, the bivariate correlation between the independent and the dependent variable can be small or even zero. For suppressor models, therefore, the correlation between the independent and the dependent variable does not have to be statistically significant (MacKinnon et al., 2000; Shrout & Bolger, 2002).

Results

The oblique six-factor measurement model resulted in an acceptable fit (see Table 1). Moreover, all standardized factor loadings of this solution were greater than .68 and statistically significant (all $p < .01$).

 Insert Table 1 about here

The fact that a considerable portion of our data came from a single source raises the issue of common method variance. We therefore tested a common method measurement model in which the indicators of all self-reported variables (job insecurity, job satisfaction, commitment, self-reported OCB and self-reported in-role behavior, and turnover intention) loaded on one factor, all supervisor-reported variables (supervisor-rated in-role behavior and OCB) on a second factor, and archival variables (both indicators for absenteeism) on a third factor. This oblique three-factor structural equation model yielded an unacceptable fit, $\chi^2(101) = 385.05$ ($p < .01$), NNFI = .83, CFI = .86, GFI = .74, RMSEA = .14. These results speak in favor of the discriminant validity of the self-reported study variables. Descriptive statistics, correlations and reliabilities of all scales are reported in Table 2.¹

 Insert Table 2 about here

Proceeding with the nested tests of our structural model, we examined the fit of our partially mediated model from figure 1. This model fitted the data well (see Table 1), thus supporting Hypothesis 1. In addition, the model did not fit the data less well than the measurement model, $\Delta\chi^2(6) = 11.03$, *ns*. This is important because it would have been inappropriate to work with the model if it had fitted the data less well than the measurement model. More technically, this means that the structural constraints imposed by our model on the estimated construct covariances are reasonable (cf. Anderson & Gerbing, 1988).

Insert Figure 2 about here

All coefficients of the direct “job-insecurity → behavior” path had signs that are consistent with the predicted suppression effect: a positive effect on the performance variables and a negative effect on absenteeism and turnover intention (see Figure 2). The direct paths from job insecurity to supervisor-rated performance and to turnover intention became statistically significant. However, this was not the case for the paths from job insecurity to self-rated performance and to absenteeism.

Next, we tested the fit of the fully mediated model. Even though this model resulted in an acceptable fit (see Table 1), the incremental chi-square statistic indicated that the fit worsened significantly in comparison to the partially mediated model, $\Delta\chi^2(4) = 17.28, p < .01$. This shows that our proposed model is more adequate, which supports Hypothesis 2.

Furthermore, we wanted to exclude the possibility that job insecurity has only direct effects. Thus, we tested a model in which job insecurity has only direct effects on all five latent variables (excluding the work attitude variables). This model, however, resulted in an unacceptable fit (see Table 1). A sequential chi-square difference test also revealed a significant impairment of fit in comparison with the partially mediated model, $\Delta\chi^2(4) = 197.27, p < .01$.

One problem in our analysis concerns the assessment of the performance by supervisors. Because most of the supervisors rated more than one employee, these data might violate the assumption of independence. In case of dependence maximum likelihood estimates of the structural parameters are still unbiased but the standard

errors of the coefficients may be estimated inaccurately, which can lead to biased statistical tests.

To rule out that our conclusions are affected by this problem, we conducted two additional analyses. First, we omitted the supervisor-rated performance variable in our model in Figure 1. The resulting model again has a good fit: $\chi^2(58) = 94.47, p < .01$, NNFI = .97, CFI = .98, GFI = .90, RMSEA = .068 and the elimination of the direct paths, resulting in the fully mediated model, yielded in a statistically significant lesser fit, $\Delta\chi^2(3) = 11.83, p < .01$. Moreover, the parameter estimates were very close to those reported in Figure 1 and all statistically significant results remained so.

We also tested our model using only the supervisor rated performance as dependent variable using generalized least squares (GLS) rather than maximum likelihood as the estimation method in LISREL. GLS is well suited to dealing with dependence in the data (Bollen, 1989; see also Judge & Ferris, 1993). Our model fitted the data very well, $\chi^2(24) = 27.30, ns$, NNFI = 1.00, GFI = 0.96, CFI = 1.00, RMSEA = 0.032, $\beta(\text{insecurity} \rightarrow \text{attitudes}) = -0.55, p < .01$, $\beta(\text{attitude} \rightarrow \text{performance}) = 0.36, p < .01$ and $\beta(\text{insecurity} \rightarrow \text{performance}) = 0.23, p < .05$. The fully mediated model again fitted the data worse, $\Delta\chi^2(1) = 6.43, p < .01$.

It is also possible to estimate the power associated with the test of our model (i.e., what is the probability of correctly rejecting the model when it is false?). MacCallum, Browne, and Sugawara (1996) suggested an approach based on the RMSEA. The RMSEA has the advantage that a confidence interval around the RMSEA population statistic (ε) can be computed. For our model, the 90% confidence interval around ε is [0.018, 0.070] and thus includes 0.05, which is indicative of “close fit” (Browne & Cudeck, 1993). MacCallum et al. showed how to estimate the power when the null hypothesis is $\varepsilon \leq 0.05$ (i.e., “close fit”, as in our case) and the alternative

hypothesis is $\varepsilon = 0.08$ (i.e., only mediocre fit). For our model, the power turned out to be exactly .80. This indicates an acceptable chance of rejecting a false hypothesis of close fit for the partially mediated model (i.e., we had enough power to find a mediocre fit if the alternative hypothesis had been true). If the power had been smaller, the chances would be high that we might have found that the RMSEA indicated a close fit for our model even though the model fitted badly in the population (i.e., a failure of rejection). In other words, our sample size was large enough to find that our model should be rejected if it were wrong (which it was not).

Discussion

Structural equation modeling provided empirical support for our model of the effects of job insecurity (see Figure 1). The model assumes that job insecurity predominantly causes lower in-role performance, OCB and absenteeism as well as higher turnover intention (a hindrance effect mediated by work attitudes) and that these effects are partly suppressed by an opposing direct effect (a challenge effect). This model fitted the data well. It also fitted better than a likely alternative model with no direct effects of job insecurity.

Our model reconciles two theoretical positions on the putative effects of job insecurity (job insecurity as a hindrance stressor vs. job insecurity as challenge stressor) by assuming that both theoretical positions have their merit. On the one hand, job insecurity led to reduced work attitudes (consistent with the meta-analytical findings of Sverke et al., 2002) and this led to a reduction in performance and an increase in absenteeism and turnover intentions. On the other hand, our data revealed some evidence for opposing effects as all direct paths from job insecurity to performance, turnover intention, and absenteeism were in the opposite direction than the indirect

effects (i.e., suppressor effects). It should be noted, however, that only two paths became statistically significant (to supervisor-rated performance and turnover intentions), even though the nonsignificant paths were in the expected direction.

The excellent fit of our model is a theoretically important finding. This means that an “either-or” approach regarding the effects of job insecurity is not appropriate. Many stress theorists (e.g., De Witte, 1999) assume only a negative (hindrance) effect of job insecurity on employee behavior that is mediated by work attitudes. However, even though such a mediation model without suppression resulted in an acceptable fit, its fit was significantly worse than the integrated model. This means that a more complete picture of reality needs to include a positive effect as well: Job insecurity can also be a challenge. Thus, if researchers assume only a negative effect of job insecurity in their theories, they will be using theoretically underspecified models that are unable to explain the complexity of job insecurity’s effects.

Our research contributes an extension to stress theory that classifies each stressor as being either a challenge or a hindrance stressor (Boswell, Olson-Buchanan, & LePine, 2004; Cavanaugh et al., 2000; LePine et al., 2005; N. P. Podsakoff et al., 2007) in an important way. Our results suggest that a stressor might be both, a hindrance and a challenge. Thus, it might be more appropriate to conceptualize hindrance and challenge as two dimensions that can be used for describing stressors, rather than two separate categories in which one can sort stressors (see also Lazarus & Folkman, 1984, and Gilboa et al., 2008).

If a stressor like job insecurity can have hindrance and challenge aspects simultaneously, as our results suggest, this implies that other stressors may also be hindrance and challenge stressors. For example, LePine et al. (2005) categorized organizational politics as a hindrance stressor. However, organizational politics may

also have a challenge aspect because working in highly political organizational environments may also allow using politics for positive outcomes, especially if political skills are high (Ferris, Treadway, Perrewe, Brouer, Douglas, & Lux, 2007). This argument could also explain why organizational politics perceptions have a low and nonsignificant relationship with job performance, as a recent meta-analysis has found (Miller, Rutherford, & Kolodinsky, 2008). Similarly, the categorization of workload as a challenge stressor (LePine et al., 2005) may not capture the complete picture because workload has most likely also hindrance aspects. This view on workload would also be consistent with research that shows negative effects of workload, for example on positive affect (e.g., Ilies, Schwind, Wagner, Johnson, DeRue, & Ilgen, 2007).

Furthermore, as our study shows that challenge and hindrance are not mutually exclusive, this can be used to suggest a new explanation why locus of control moderates the relationship between a stressor and performance (Brockner, Spreitzer, Mishra, Hochwarter, Pepper, & Weinberg, 2004): People with an internal locus of control may rather focus on the challenge aspects of a stressor, whereas people with an external locus of control may rather perceive the hindrance aspects, and only if the challenge aspects are perceived, a motivation increase can be expected, leading to an increase in performance.

Our results also suggest that researchers should not assume that a zero correlation between job insecurity and other variables indicates no existing interdependencies. Instead, a zero correlation or a correlation close to zero might be the result of two (or more) opposing effects, as we have argued. For example, job insecurity can negatively affect performance because of reduced work attitudes, but because this effect is suppressed by a direct positive effect, the resulting correlation is not significantly different from zero.

Further research should try to replicate and extend our findings. Although we measured several behaviors that have important financial implications for organizations (Sagie, Birati, & Tziner, 2002), future studies could also use other variables like adhering to safety standards (cf. Probst & Brubaker, 2001) or counterproductive behavior (cf. Probst et al., 2007). In addition, turnover as a behavior should be measured directly instead of turnover intention used in this study.

Future research could also explore the generalizability of our results to other cultures and countries. In the context of job insecurity, a potential moderating variable is uncertainty avoidance (Hofstede, 2001). People with high uncertainty avoidance prefer their lives to be structured and secure. For these people, an insecure job poses a higher threat to their preferences than for people with low uncertainty avoidance. Thus, the relationship between job insecurity and performance might be stronger in a country with high uncertainty avoidance like, in our study, Germany (cf. Spector et al., 2001) than in a country with low uncertainty avoidance like Japan. In addition, differences in the legal system between countries might also affect job insecurity. If a company plans to downsize in a country where firing people is legally difficult (like in Germany), this might lead to prolonged periods of acute (and increased) job insecurity. Such intercultural research should also try to explain the effect that studies from English-speaking countries found relationships between job insecurity and performance that are double as high as in non-English speaking countries (Gilboa et al., 2008).

Our study is limited by the cross-sectional design. Structural equation modeling only allows it to be tested whether a model fits the data and cannot prove causal relationships, which would require longitudinal or experimental data. With respect to our model, there is some supportive evidence from longitudinal studies that job insecurity does influence job satisfaction and turnover intention (Hellgren, Sverke, &

Isaksson, 1999), commitment and turnover intention (T. D. Allen, Freeman, Russell, Reizenstein, & Rentz, 2001), and commitment and performance (Armstrong-Stassen, 2002).

A second limitation lies in the nature of the absenteeism measure. The company only allowed us access to retrospective archival data and not prospective data, which would have been preferable because it would be more consistent with the causal logic of the model. However, it is an advantage of our study that we used long-term absence data because absence is a low base-rate behavior, which often renders absenteeism data unreliable, and because of the seasonal variations in absence data (cf. Johns, 1994).

A third limitation of our study is the conceptualization of job insecurity. We assessed only the core perception of the probability of losing the current job. Although using a reliable scale is an advantage over relying on single-item measures (Sverke et al., 2002), some job insecurity measures are more differentiated and include additional facets like the probability of losing valued job features (Ashford, Lee, & Bobko, 1989) or the fear of job loss (Borg & Elizur, 1992). It would be interesting to see whether these facets have a similar correlational pattern or incremental validity with respect to the different behaviors.

This study also has important practical implications because it warns managers against intentionally increasing job insecurity among their employees. Managers might believe that job insecurity motivates employees (i.e., by perceiving job insecurity as a challenge), like Swiss Re CEO Jacques Aigrain who explicitly said in the context of a major lay-off initiative that he considered the Swiss Re employees as too complacent and hoped that the lay-offs wake them up (Raupp, 2006). Our results clearly show that the hindrance effect of job insecurity on variables that are central for organizations (performance, turnover intention, and absenteeism) is more important than the challenge

effect. Thus, managers should not increase job insecurity – they should generally try to reduce their employees’ job insecurity. However, there might be certain conditions under which the challenge effect has more weight. For example, let us assume that two companies merge and that the top management has decided that 10% of the employees of two specific subunits (which also merge into one) have to go. In such a situation, the merged company might openly say that the worst performers have to go and this explicit statement might boost the challenge situation because it gives employees the feeling that their performance can change their likelihood of being fired. However, if the situation is different –for instance, a company that is very close to bankruptcy–, hoping for job insecurity’s challenge effect would be particularly misleading because employees do not have many reasons to hope that their performance can change the likelihood of losing their job.

Conclusion

This study rests on the idea that the effects of job insecurity on performance are neither purely negative nor purely positive. Instead, job insecurity is both a hindrance and a challenge stressor. Job insecurity can be perceived as a stressful discrepancy between what employees hope for (i.e., job security) and what employers offer (i.e., job insecurity) that leads to effort withdrawal and thus to a reduction of job performance. At the same (but to a lesser degree), job insecurity can also motivate people to increase the effort because high performance might be perceived as a safeguard against being laid off. Both effects are captured by our integrated model that was supported by our data. Consequently, managers who believe that increasing job insecurity is a feasible motivation strategy should be warned not to overlook that the effects of job insecurity are predominantly negative.

References

- Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology, 63*, 1-18.
- Allen, T. D., Freeman, D. M., Russell, J. E. A., Reizenstein, R. C., & Rentz, J. O. (2001). Survivor reactions to organizational downsizing: Does time ease the pain? *Journal of Occupational and Organizational Psychology, 74*, 145-164.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*, 411-423.
- Armstrong-Stassen, M. (1993). Production workers' reactions to a plant closing: The role of transfer, stress, and support. *Anxiety, Stress and Coping: An International Journal, 6*, 201-214.
- Armstrong-Stassen, M. (1994). Coping with transition: A study of layoff survivors. *Journal of Organizational Behavior, 15*, 597-621.
- Armstrong-Stassen, M. (2002). Designated redundant but escaping lay-off: A special group of lay-off survivors. *Journal of Occupational and Organizational Psychology, 75*, 1-13.
- Ashford, S. J., Lee, C., & Bobko, P. (1989). Content, causes, and consequences of job insecurity: A theory-based measure and substantive test. *Academy of Management Journal, 32*, 803-829.
- Baillo, J., & Semmer, N. (1994). Fluktuation und Berufsverläufe bei Computerfachleuten [Turnover and career paths of computer specialists]. *Zeitschrift für Arbeits- und Organisationspsychologie, 38*, 152-163.

- Bakker, A. B., Demerouti, E., de Boer, E., & Schaufeli, W. B. (2003). Job demands and job resources as predictors of absence duration and frequency. *Journal of Vocational Behavior, 62*, 341-356.
- Bollen, K. A. (1989). *Structural equations with latent variables*. New York: Wiley.
- Borg, I. (1992). Überlegungen und Untersuchungen zur Messung der subjektiven Unsicherheit der Arbeitsstelle [Reflections and investigations in the measurement of subjective job uncertainty]. *Zeitschrift für Arbeits- und Organisationspsychologie, 36*, 107-116.
- Borg, I., & Elizur, D. (1992). Job insecurity: Correlates, moderators and measurement. *International Journal of Manpower, 13*(2), 13-26.
- Boswell, W. R., Olson-Buchanan, J. B., & LePine, M. A. (2004). Relations between stress and work outcomes: The role of felt challenge, job control, and psychological strain. *Journal of Vocational Behavior, 64*, 165-181.
- Brockner, J., Spreitzer, G., Mishra, A., Hochwarter, W., Pepper, L., & Weinberg, J. (2004). Perceived control as an antidote to the negative effects of layoffs on survivors' organizational commitment and job performance. *Administrative Science Quarterly, 49*, 76-100.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newbury Park, CA: Sage.
- Burchell, B. (2002). The prevalence and redistribution of job insecurity and work intensification. In B. Burchell, D. Ladipo, & F. Wilkinson (Eds.), *Job insecurity and work intensification* (pp. 61-76). London: Routledge.

- Cavanaugh, M. A., Boswell, W. R., Roehling, M. V., & Boudreau, J. W. (2000). An empirical examination of self-reported work stress among U.S. managers. *Journal of Applied Psychology, 85*, 65-74.
- Chen, G., Goddard, T. G., & Casper, W. J. (2004). Examination of the relationships among general and work-specific self-evaluations, work-related control beliefs, and job attitudes. *Applied Psychology: An International Review, 53*, 349-370.
- Davy, J. A., Kinicki, A. J., & Scheck, C. L. (1997). A test of job security's direct and mediated effects on withdrawal cognitions. *Journal of Organizational Behavior, 18*, 323-349.
- De Cuyper, N., Bernhard-Oettel, C., Berntson, E., Witte, H. D., & Alarco, B. (2008). Employability and employees' well-being: Mediation by job insecurity. *Applied Psychology: An International Review, 57*, 488-509.
- De Witte, H. (1999). Job insecurity and psychological well-being: Review of the literature and exploration of some unresolved issues. *European Journal of Work and Organizational Psychology, 8*, 155-177.
- D'Souza, R. M., Strazdins, L., Broom, D. H., Rodgers, B., & Berry, H. L. (2006). Work demands, job insecurity and sickness absence from work. How productive is the new, flexible labour force? *Australian & New Zealand Journal of Public Health, 30*, 205-212.
- Feather, N. T., & Rauter, K. A. (2004). Organizational citizenship behaviours in relation to job status, job insecurity, organizational commitment and identification, job satisfaction and work values. *Journal of Occupational and Organizational Psychology, 77*, 81-94.
- Ferris, G. R., Treadway, D. C., Perrewe, P. L., Brouer, R. L., Douglas, C., & Lux, S. (2007). Political skill in organizations. *Journal of Management, 33*, 290-320.

- Fischer, F. M., Oliveira, D. C., Nagai, R., Teixeira, L. R., Júnior, M. L., Latorre, M. d. R. D. O., et al. (2005). Job control, job demands, social support at work and health among adolescent workers. *Revista de Saúde Pública, 39*, 245-253.
- Gilboa, S., Shirom, A., Fried, Y., & Cooper, C. (2008). A meta-analysis of work demand stressors and job performance: Examining main and moderating effects. *Personnel Psychology, 61*, 227-271.
- Hackman, J. R., & Oldham, G. R. (1980). *Work redesign*. Reading, MA: Addison-Wesley.
- Hall, R. J., Snell, A. F., & Foust, M. S. (1999). Item parceling strategies in SEM: Investigating the subtle effects of unmodeled secondary constructs. *Organizational Research Methods, 2*, 233-256.
- Hamilton, V. L., Hoffman, W. S., Broman, C. L., & Rauma, D. (1993). Unemployment, distress, and coping: A panel study of autoworkers. *Journal of Personality and Social Psychology, 65*, 234-247.
- Heaney, C. A., Israel, B. A., & House, J. S. (1994). Chronic job insecurity among automobile workers: Effects on job satisfaction and health. *Social Science and Medicine, 38*, 1431-1437.
- Hellgren, J., Sverke, M., & Isaksson, K. (1999). A two-dimensional approach to job insecurity: Consequences for employee attitudes and well-being. *European Journal of Work and Organizational Psychology, 8*, 179-195.
- Hirsch, P. M., & De Soucey, M. (2006). Organizational restructuring and its consequences: Rhetorical and Structural. *Annual Review of Sociology, 32*, 171-189.
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations* (2nd ed.). Thousand Oaks, CA: Sage.

- Ilies, R., Schwind, K. M., Wagner, D. T., Johnson, M. D., DeRue, D. S., & Ilgen, D. R. (2007). When can employees have a family life? The effects of daily workload and affect on work-family conflict and social behaviors at home. *Journal of Applied Psychology, 92*, 1368-1379.
- Jacobson, D. (1991). Toward a theoretical distinction between the stress components of the job insecurity and job loss experiences. *Research in the Sociology of Organizations, 9*, 1-19.
- Johns, G. (1994). How often were you absent? A review of the use of self-reported absence data. *Journal of Applied Psychology, 79*, 574-591.
- Jöreskog, K., & Sörbom, D. (1996a). *LISREL 8: User's reference guide*. Lincolnwood, IL: Scientific Software.
- Jöreskog, K., & Sörbom, D. (1996b). *PRELIS 2: User's reference guide*. Lincolnwood, IL: Scientific Software.
- Judge, T. A., & Ferris, G. R. (1993). Social context of performance evaluation decisions. *Academy of Management Journal, 36*, 80-105.
- King, J. E. (2000). White-collar reactions to job insecurity and the role of the psychological contract: Implications for human resource management. *Human Resource Management, 39*, 79-91.
- Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York: Guilford Press.
- Lance, C. E., Hoffman, B. J., & Baranik, L. E. (in press). Rater source factors represent important subcomponents of the criterion construct space, not rater bias. *Human Resource Management Review*.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.

- LePine, J. A., Podsakoff, N. P., & LePine, M. A. (2005). A meta-analytic test of the challenge stressor-hindrance stressor framework: An explanation for inconsistent relationships among stressors and performance. *Academy of Management Journal*, *48*, 764-775.
- MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods*, *1*, 130-149.
- MacKinnon, D. P., Krull, J. L., & Lockwood, C. M. (2000). Equivalence of the mediation, confounding and suppression effect. *Prevention Science*, *1*, 173-181.
- Markham, S. E. (1985). An investigation of the relationship between unemployment and absenteeism: A multi-level approach. *Academy of Management Journal*, *28*, 228-234.
- Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnytsky, L. (2002). Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behavior*, *61*, 20-52.
- Miller, B. K., Rutherford, M. A., & Kolodinsky, R. W. (2008). Perceptions of organizational politics: A meta-analysis of outcomes. *Journal of Business and Psychology*, *22*, 209-222.
- Organ, D. W. (1988). *Organizational citizenship behavior: The good soldier syndrome*. Lexington, MA: Lexington Books.
- Podsakoff, N. P., LePine, J. A., & LePine, M. A. (2007). Differential challenge stressor-hindrance stressor relationships with job attitudes, turnover intentions, turnover, and withdrawal behavior: A meta-analysis. *Journal of Applied Psychology*, *92*, 438-454.

- Podsakoff, P. M., & MacKenzie, S. B. (1989). *A second generation measure of organizational citizenship behavior*. Unpublished manuscript, Indiana University, Bloomington.
- Probst, T. M. (2000). Wedded to the job: Moderating effects of job involvement on the consequences of job insecurity. *Journal of Occupational Health Psychology, 5*, 63-73.
- Probst, T. M. (2002). The impact of job insecurity on employee work attitudes, job adaptation, and organizational withdrawal behaviors. In J. M. Brett & F. Drasgow (Eds.), *The psychology of work: Theoretically based empirical research* (pp. 141-168). Mahwah, NJ: Lawrence Erlbaum Associates.
- Probst, T. M. (2006, April). *Job insecurity and accident under-reporting*. Paper presented at the 21st annual meeting of the Society for Industrial and Organizational Psychology, Dallas, TX.
- Probst, T. M., & Brubaker, T. L. (2001). The effects of job insecurity on employee safety outcomes: Cross-sectional and longitudinal explorations. *Journal of Occupational Health Psychology, 6*, 139-159.
- Probst, T. M., Stewart, S. M., Gruys, M. L., & Tierney, B. W. (2007). Productivity, counterproductivity and creativity: The ups and downs of job insecurity. *Journal of Occupational and Organizational Psychology, 80*, 479-497.
- Raupp, J. (2006, August 4). Harte Worte: Swiss-Re-Chef Aigrain will den Investoren gefallen [Harsh words: Aigrain, CEO of Swiss Re, wants to please investors]. *Süddeutsche Zeitung*, p. 24.
- Repenning, N. P. (2000). Drive out fear (unless you can drive it in): The role of agency and job security in process improvement. *Management Science, 46*, 1385-1396.

- Sagie, A., Birati, A., & Tziner, A. (2002). Assessing the costs of behavioral and psychological withdrawal: A new model and an empirical illustration. *Applied Psychology: An International Review*, 51, 67-89.
- Schmidt, K.-H., Hollmann, S., & Sodenkamp, D. (1998). Psychometrische Eigenschaften und Validität einer deutschen Fassung des "Commitment"-Fragebogens von Allen und Meyer (1990) [Psychometric properties and validity of a German version of Allen and Meyer's (1990) questionnaire for measuring organizational commitment]. *Zeitschrift für Differentielle und Diagnostische Psychologie*, 19, 93-106.
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods*, 7, 422-445.
- Spector, P. E., Cooper, C. L., Sparks, K., Büssing, A., Dewe, P., Lu, L., et al. (2001). An international study of the psychometric properties of the Hofstede Values Survey Module 1994: A comparison of individual and country/province level results. *Applied Psychology: An International Review*, 50, 269-281.
- Staufenbiel, T., & Hartz, C. (2000). Organizational Citizenship Behavior: Entwicklung und erste Validierung eines Meßinstruments [Organizational Citizenship Behavior: Development and validation of a measurement instrument]. *Diagnostica*, 46, 73-83.
- Sverke, M., Hellgren, J., & Näswall, K. (2002). No security: A meta-analysis and review of job insecurity and its consequences. *Journal of Occupational Health Psychology*, 7, 242-264.
- Van Vuuren, T., Klandermans, B., Jacobson, D., & Hartley, J. (1991a). Employees' reactions to job insecurity. In J. Hartley, D. Jacobson, B. Klandermans, & T.

Van Vuuren (Eds.), *Job insecurity: Coping with jobs at risk* (pp. 79-103).

London: Sage.

Van Vuuren, T., Klandermans, B., Jacobson, D., & Hartley, J. (1991b). Predicting employees' perceptions of job insecurity. In J. Hartley, D. Jacobson, B.

Klandermans, & T. Van Vuuren (Eds.), *Job insecurity: Coping with jobs at risk* (pp. 65-78). London: Sage.

Williams, L. J., & Anderson, S. E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors.

Journal of Management, 17, 601-617.

Footnote

¹The variance-covariance matrix of all indicator variables is available from the first author upon request.

Table 1

Summary of Goodness-of-Fit Indices

Model	χ^2	<i>df</i>	NNFI	CFI	GFI	RMSEA
Measurement model	113.10*	89	0.98	0.98	0.91	0.045
Partially mediated model	124.13*	95	0.98	0.98	0.90	0.048
Fully mediated model	141.41**	99	0.97	0.98	0.88	0.056
Nonmediated model	321.40**	99	0.88	0.90	0.77	0.129

Note. $N = 136$. NNFI = nonnormed fit index; CFI = comparative fit index; GFI =

goodness-of-fit index; RMSEA = the root mean square error of approximation

* $p < .05$, ** $p < .01$.