# Cross-cultural development of an abridged job insecurity measure

**CYNTHIA LEE**[1]*, **PHILIP BOBKO**[2], **SUSAN ASHFORD**[3], **ZHEN XIONG CHEN**[4] **AND XIAOPENG REN**[5]

[1]*College of Business Administration, Northeastern University, Boston, Massachusetts, U.S.A.*
[2]*Department of Management, Gettysburg College, Gettysburg, Pennsylvania, U.S.A.*
[3]*Ross School of Business, University of Michigan, Ann Arbor, Michigan, U.S.A.*
[4]*School of Management, Marketing, and International Business, The Australian National University, Australia*
[5]*Institute of Psychology, Chinese Academy of Sciences, Beijing, P.R. China*

**Summary**     Using four samples from the United States and China, we developed two theoretically based abridged job insecurity (JI) scales to address researcher concerns with the length of the original 57-item scale. These two scales contained all the components of the scale originally developed and validated by Ashford et al., 1989. Our abridged scale has 37 items (18 items for job features, 16 items for total job, and 3 items for powerlessness). We further developed a bare-bones scale with only 25 items (10 items for job features, 12 items for total job, and 3 items for powerlessness). Results show that the content and construct validities of both the abridged and the bare-bones scales are highly similar to the original JI scale. Our results provide support for the use of either the abridged or the bare-bones JI scales. Copyright © 2007 John Wiley & Sons, Ltd.

## Introduction

With the continuing practice of downsizing and restructuring in organizations worldwide, studies on job insecurity (JI) have received growing recognition (Sverke, Hellgren, & Näswall, 2002). JI reflects the degree to which employees perceive their jobs to be threatened and feel powerless to do anything about it (Ashford, Lee, & Bobko, 1989; Greenhalgh & Rosenblatt, 1984). Despite its practical relevance, research on this important variable is hampered by the lack of consensus regarding the measurement of JI. As reviewed by Sverke and Hellgren (2002), JI is often assessed by global measures concerning threats of imminent job loss focusing on either the perceived probability of job loss (e.g., Mohr, 2000), fear of job loss (e.g., Johnson, Messe, & Crano, 1984), or importance of job loss (Mauno, Leskinen, & Kinnunen, 2001). This confusion persists even though Ashford et al. (1989) introduced a theory-based, multi-faceted measure of JI and empirically established its superior validity with antecedents and consequences when compared to the additive components alone or to previous global measures.

*Correspondence to: Cynthia Lee, College of Business Administration, Northeastern University, Boston, MA 02115, U.S.A.
E-mail: c.lee@neu.edu

Ashford et al. (1989) base their measure on Greenhalgh and Rosenblatt's (1984) theoretical model of JI. They developed and construct validated a 57-item multi-faceted measure of JI. This multifaceted JI scale has several components. First, it assesses both the importance of job features and the likelihood of losing a given job feature, and combines them multiplicatively (such that an unimportant feature that is likely to be lost will not contributive much to JI). This aspect of JI is based on Greenhalgh and Rosenblatt's (1984) contention that people feel insecure both about losing their jobs, but also about losing features of their job (e.g., income level) that are important to them.

Ashford et al. (1989) were very inclusive in developing a measure of JI, including job features pertaining to job characteristics and factors related to job satisfaction (importance of job features × likelihood of losing a given element of the job features). Their theory-based JI measure also incorporates an analogous measure for the total job (importance of job loss × likelihood of losing a given element of the total job). These items reflect the possible occurrence of various events that would negatively affect an individual's total job such as being fired or laid off for a short while (Ashford et al., 1989). Finally, the measure incorporates a notion of powerlessness (perceived powerlessness to resist threat) based on Greenhalgh and Rosenblatt's claim that threats which the job incumbent is sufficiently powerful to counteract will not be experienced as insecurity. This component combines multiplicatively with the job features and total job components.

Lee, Bobko, and Chen (2006) further validated the Ashford et al. (1989) scale in a United States (USA) and a Chinese sample. They added one total job item making the JI a 59-item scale. They found that the fully composite JI measure correlated similarly in direction and magnitude with antecedents and outcomes in both contexts. They also tested the efficacy of using the component scales of the Ashford et al. (1989) JI measure. Of the many combinations of the JI components, they reported that only the multiplicative term of powerlessness and job features (likelihood × importance) provided similarly stable and consistent results as the Ashford et al. fully composite measure. Their study further suggests that using the additive components of the composite JI alone may yield lower validities than the multiplicative measure.

Although Ashford et al.'s measure is conceptually thorough, its length has been an issue. Practical concerns have prompted recent researchers (e.g., Hellgren, Sverke, and Isaksson (1999); Isaksson, Hellgren, and Pettersson (1998)) to revert to the simpler global measures such as Caplan et al.'s (Caplan, Cobb, French, Harrison, & Pinneau, 1975) which was shown to be inferior by Ashford et al. (1989). In particular, global measures tend to focus on threats of imminent job loss only and do not conform to the theoretical definition of JI proposed by Greenhalgh and Rosenblatt (1984). As already noted, the unidimensional measures typically focus on either the perceived probability (e.g., Mohr, 2000; van Vuuren, 1990), fear of job loss (e.g., Johnson et al., 1984), or they tap job and career uncertainty (Caplan et al., 1975)—thus they are theoretically deficient measures.

As further evidence of measure length being a concern, other researchers employ JI measures based upon subsets of Ashford et al.'s (1989) constructs and items. With the exception of Adkins, Werbel, and Farh (2001) and Rosenblatt and Ruvio (1996), who modified the content of the measure by deleting or adding items to reflect their specific research contexts, others have tended to use only some components in the Ashford et al. measure and they simply deleted other key components of the measure—again leading to theoretically deficient measures. For example, Kinnunen, Mauno, Nätti, and Happonen (2000) and Mauno et al., 2001 excluded the multiplicative job features scales and used only the components of the total job (importance and probability) and the perceived powerlessness to counteract the threat to job continuity. Further, Mauno and Kinnunen (2002) assessed JI by using only the probability of losing a given element of the total job.

Still other researchers, such as Rosenblatt and Ruvio (1996) and Westman, Etzion, and Danon (2001) excluded the powerlessness component of the Ashford et al. measure, arguing that the notion of powerlessness is incorporated in the likelihood component of the composite JI scale (Jacobson, 1991).

If this logic is accurate, though, then powerlessness would correlate highly with the other JI components. However, powerlessness correlated only $r = .09$ with the composite JI scale in Rosenblatt and Ruvio (1996) and it did not correlate highly with two of the four JI components (i.e., job features importance $\times$ job features likelihood and total job importance). Similarly, Lee et al. (2006) reported only moderate correlations between powerlessness and the other components (average $r = .16$ in the China sample and average $r = .20$ in the USA sample). As argued by Ashford et al. (1989) and Lee et al. (2006), powerlessness is an essential component of the JI definition. To be true to the underlying theory (Greenhalgh & Rosenblatt, 1984, p. 438), this component, as well as the other components in the definition of JI, should be included.

While the preceding two paragraphs are focused on entire components being removed from the Ashford et al. measure, there is further variability at the item level. For example, Mauno and Kinnunen (2002) only included 8 of the 10 items assessing likelihood of the total job components. King (2000), on the other hand, used only 3 of those original 10 items. This type of variability across researchers in abridging the JI measures (as well as the variability in which components are removed wholesale) suggests that many researchers find the Ashford et al. (1989) scale too long and too cumbersome for their research purposes. The resultant measure variability makes study-to-study comparisons suspect.

In order to improve the above identified issues and in response to Stanton, Sinar, Balzer, and Smith's (2002) call for researchers to develop shorter, psychometrically sound scales, we set out to create a theoretically sound, but shorter, job in security measure. Our strategy was to consider the potential for removing *items* from component measures rather than completely removing any components of the JI measure suggested by theory (Greenhalgh & Rosenblatt, 1984). This strategy helps maintain theoretical underpinnings yet increases the scale's practical utility. Addressing length concerns also makes sense given Stanton et al.'s (2002) observation that, in empirical research, constructs are measured along with numerous other constructs making a lengthy survey instrument. Respondents consequently feel "over-surveyed" and thus increase the likelihood of nonresponse or "survey fatigue" of respondents is increased. The need for shorter, psychometrically sound scales in organizational research appears high (Stanton et al., 2002, p. 168).

An additional advantage of having a shorter scale is that when used cross-culturally, it leaves room for the potential to include cultural-specific or emic items. Such items may help researchers respond to recent calls for cross-cultural studies to uncover what works and what does not work in different cultural settings (Triandis, 1993). For example, the Farh, Earley, and Lin (1997) study reveals that organizational citizenship behavior (OCB) has both emic (cultural specific) and etic (universal) components. In contrast, the Lam, Hui, and Law (1999) study, using samples from Australia, Hong Kong, Japan, and the United States, found that the OCB measure developed by Podsakoff, MacKenzie, Moorman, and Fetter (1990) has conceptual equivalence across the four samples.

Given these observations, the objective of our study is to begin with the revised Ashford et al. (1989) 59-item measure (i.e., the Ashford et al. measure added to by Lee et al.), and to develop a valid, but abridged, measure that can serve as a foundation for future research—a foundation that allows the full construct, as defined by theory, to be assessed. We base our analyses on four samples of data from the US and China. We argue that reducing the length of the JI measure by reducing items rather than removing components is theoretically appropriate, and hypothesize that the abridged scale will maintain the content/construct validity of the original scale (as assessed in a nomological net).

Our study differs from previous research and Lee et al. (2006) in several ways. First, while Lee et al. focused on examining the utility of measures of the various JI components when compared to Ashford et al.'s multiplicative JI measure, our study focuses on shortening the multiplicative JI scale by eliminating items from the job features and the total job components. Second, development of the abridged measure is based on four samples from the United States and China and, as noted, reduces length at the item, not component, level. Use of four samples in two cultural contexts enhances the

generalizability of our findings. Third, as in Ashford et al., we used Caplan et al.'s (1975) job and career insecurity scale to evaluate the convergent validity of our abridged measure. Fourth, we used a job mobility measure to assess discriminant validity. According to Hui, Law, and Chen (1999), perceived job mobility taps an individual's perceived ease of movement or job alternatives in the marketplace. While potentially related, JI is measured using events that might happen to the respondent's current job. The focus is internal and on the job held whereas in the mobility measure the focus is external and on possible jobs that might be available. Therefore, job mobility and JI should not be substantially correlated, allowing an assessment of discriminant validity.

To establish the validity of our shorter measure, we examined the relative validity of the longer Ashford et al. (1989) and the abridged measure in a nomological net similar to that advocated by Ashford et al. This practice is consistent with Stanton et al.'s (2002, p. 172) argument that the overarching goal of any scale reduction project should be to closely replicate the pattern of relations established within the construct's nomological network (as was accomplished for the full-length scale). Ashford et al. (1989) suggested that several variables be included in a nomological net for the JI construct. First, people's feelings that they can reasonably control events in their personal worlds should be related to JI. Threats to an employee's sense of control include significant organizational changes such as mergers, downsizings, re-organizations, new technologies, and new physical dangers (Greenhalgh & Rosenblatt, 1984), as well as layoffs (Brockner, 1988). Organizational changes were significantly related to the multi-faceted JI measure in Ashford et al.'s (1989) and Lee et al.'s (2006) studies. Therefore, we expect that anticipated organizational changes will relate positively to perceived JI (as assessed by the abridged measure).

Second, in the stress and strain framework, stress is defined as ''a relationship between the person and the environment that is appraised by the person as relevant to his or her well being and in which the person's resources are taxed or exceeded'' (Folkman & Lazarus, 1985, p. 152). The antecedents of JI (such as organizational changes) can be considered as stressors or environmental demands, and JI itself is a stress experienced by employees. The consequences of these cognitive appraisals might be manifested in various types of strain such as psychosomatic complaints, intent to quit, job dissatisfaction, or lower job and contextual performance. Each of these variables were, therefore, included in the nomological net.

As discussed in Sverke et al.'s (2002) meta-analysis, JI is consistently related to job dissatisfaction, lower levels of organizational commitment, and trust in the organization, as well as lower levels of the well-being variables of physical and mental health. However, JI's relationship with performance is inconsistent. According to Sverke et al. (2002), contextual issues may contribute to this inconsistency, and they suggest the need to investigate other consequences such as extra-role (e.g., organizational citizenship) behavior. Thus, in our study, we also hypothesize that the abridged JI scale will relate negatively to task or extra-role performance, job satisfaction, intent to stay, and organizational commitment. We hypothesized that JI would relate positively to somatic complaints.

## Cultural Context

JI has been studied across several cultures. As noted by Lee et al., JI appears to occur in nearly all cultures. Downsizing and employment uncertainty occur in the United States, Asia, as well as in other parts of the world (Sverke & Hellgren, 2002). The concern for JI is evidenced by the studies conducted in various cultural contexts. In recent years, research based on the theoretical model of JI developed in the USA (Ashford et al., 1989; Greenhalgh & Rosenblatt, 1984) has employed samples from Australia

(Dekker & Schaufeli, 1995), China (Lee et al., 2006), Finland (Kinnunen et al., 2000; Mauno et al., 2001), Israel (Rosenblatt & Ruvio, 1996; Westman et al., 2001), and Sweden (Sverke, Gallagher, & Hellgren, 2000; Sverke & Hellgren, 2001) as well as the USA (Sverke et al., 2002). However, with the exception of Lee et al., none of these studies used the complete theoretically based JI composite scale developed and validated by Ashford et al. in the USA context.

People's Republic of China (PRC) has transitioned from a centrally planned to a quasi-market economy, and it reflects a context in transition (Zhang, Song, Hackett, & Bycio, 2006) with a great deal of JI. The Chinese government serves as the main change agent that empowers enterprises to become autonomous. State-owned enterprises (SOE) are currently being given more autonomy to implement reward systems, award bonuses based on performance, and to select and place workers based on skills (Branine, 1997). They are also going through major restructuring where some jobs are eliminated (Cheng, 2000). The Chinese government's effort in restructuring the SOEs keeps continuity and stability on the one hand, while at the same time introduces changes to the system and supports the process of adaptation to change. More and more workers in China are now temporary or contract workers with fewer benefits. More are being laid off than ever before. These changes make China an interesting setting for studies of JI.

# Method

## Sample and procedure

In developing the abridged JI measures from the 59-item revised Ashford et al. (1989) measure, we used four samples. Samples 1 and 2 (one from the USA and one from PRC) were from Lee et al. (2006), and those original data were retrieved.

### Sample 1
Respondents were part-time students from either the MBA program or the evening part-time undergraduate program of a large university in the northeastern United States. The instructors of these classes explained the purposes of the study and stated that participation was voluntary. Students were assured of confidentiality and were given self-addressed, stamped envelopes in which to return their completed responses to the senior author. Respondents were asked to also forward the supervisor questionnaire with a cover letter, and a self-addressed stamped envelope for returning the completed response to the senior author. Separate questionnaires were developed for subordinates and supervisors. As in Sample 2, the subordinate respondents were part-time students in the MBA program. The same procedure was also used in Sample 2. Supervisors were asked, as in the Ashford et al. (1989) study, to rate the general performance of the specific employee. However, only 33 completed supervisor questionnaires were received from the 115 employee returns. Of the 115 respondents, the average age was 35.8 and 42 per cent were male. Their average organizational tenure was 5.6 years.

### Sample 2
Respondents were employees/managers from various business organizations in the city of Guangzhou in PRC. Two hundred seventeen subordinate questionnaires and 192 supervisory questionnaires were returned, representing response rates of 72.3 and 64.0 per cent, respectively. After deleting records with unmatched supervisor–subordinate pairs, 190 supervisor–subordinate dyads remained and constituted

the second sample for this study. Of the 190 respondents, 39 per cent were male and their average age was 29. Their average organizational tenure was 5 years.

## Sample 3

This sample consisted of female nurses from four state-owned military hospitals in China. An invitation letter was sent to all nurses describing the general purpose of the survey, voluntary nature of their participation and assuring confidentiality of the results. The questionnaires were completed during working hours and were collected by the research assistant of the last author. The nurses worked in various wards in the hospitals. The majority of them were either permanent (27 per cent) or fixed contract nurses (23 per cent), although some other nurses were considered temporary. We conducted a one-way ANOVA of employment status on the three JI scales. Results showed no significant differences by employment status. At the time of data collection, the hospitals had a nursing over-staffing issue. There was an intent to downsize but no action had been taken at the time of data collection. Employees had heard rumors that downsizing might occur. One year later, about 10 nurses per hospital were laid off.

Hospital 1 had 105 nurses and we obtained completed responses from 83 nurses, resulting in a 79 per cent response rate. Hospital 2 data included 254 respondents out of 330 nurses, resulting in a 77 per cent response rate. Hospital 3 data included 124 respondents from 136 nurses, resulting in a 91 per cent response rate. Hospital 4 data included 116 respondents out of 145 nurses, resulting in an 80 per cent response rate. Lastly, of these 595 respondents, we excluded 18 respondents due to missing data. The mean age of the entire sample was 29 with over 6 years of tenure in their respective hospitals. We were unable to collect supervisor data at these sites since performance evaluation of nurses is not commonly practiced at these hospitals.

## Sample 4

Respondents from this sample were the employees and their immediate supervisors at a locally owned Chinese bank located in a major city in the Southern Chinese province of Guangdong. Subordinates were randomly selected from a list of non-managerial employees obtained from the bank's Personnel Department and were asked to complete a survey. They were also requested to provide the names of their immediate supervisors. We then sent questionnaires to these supervisors to obtain data on subordinates' contextual performance. Identity numbers were assigned to each supervisor–subordinate dyad to facilitate the matching of responses. Attached to each questionnaire was a cover letter that explained the objective of the survey, provided assurances of confidentiality, informed respondents that participation in the survey was voluntary, and explained procedures for completing and returning the questionnaires. Enclosed in each questionnaire package was a self-addressed stamped envelope for returning completed questionnaires to a research assistant at a local university.

Two hundred eighty nine subordinate questionnaires were administered and 246 completed questionnaires were returned for an 85 per cent response rate. Twenty-seven supervisors did not complete the supervisor questionnaire, so their immediate subordinates were excluded from the analysis. The final sample therefore consisted of 219 supervisor–subordinate dyads representing an overall response rate of 76 per cent. They reported an average age of 31.45 years, an average of 13.56 years of education, and an average organizational tenure of 9.61 years.

At the time of data collection, this state-owned bank was planning to become a listed bank to be traded in the stock market in the near future. After that, the ownership of the bank would change, the organizational structure of the bank would likely change and substantial downsizing might follow to reduce operating costs and increase the bank's competitive edge. It was believed that these potential changes had become a major source of JI for the employees/managers.

## Measures

Unless noted, we used the same measures in all four samples. The Cronbach alphas are reported in Tables 2 and 3. The survey instrument for the second, third, and fourth samples was in Chinese but was initially constructed in English and translated into Chinese. To assure equivalence of the measures in the Chinese and the English versions, as in Lee et al., all the scales used in this study were translated into Chinese and then back-translated independently into English (Brislin, 1980) by three bilingual experienced researchers who are native Chinese. The back translation procedure helped ensure an accurate prose translation (Werner & Campbell, 1970).

*JI* was measured, in all samples, using Ashford et al.'s (1989) original operationalization of Greenhalgh and Rosenblatt's (1984) multidimensional conception. This scale has been demonstrated to be generalizable to several cultural settings (e.g., Kinnunen et al., 2000; Rosenblatt & Ruvio, 1996). Further, Lee et al., in validating the JI construct in Chinese settings, conducted confirmatory factor analyses (CFA) on their Chinese and USA samples. The resulting factor structures for both samples showed a reasonable five-factor structure and all the items loaded onto their underlying dimensions (*cf.* Lee et al., 2006). Their study provided evidence that both Chinese and USA employees could clearly distinguish the five dimensions of JI.

As in Ashford et al. (1989), we used the same 17 items to assess the importance and likelihood of losing each job feature, the same 10 items to assess the importance and likelihood of possible negative changes in one's overall job, and the same 3 items to measure powerlessness. We added one additional item to the total job scales: ''you will be pressured to work fewer hours.'' The additional item was constructed as a result of a focus group study conducted in both the US and China prior to the Lee et al. (2006) study and was used by Lee et al.

Ashford et al. (1989) constructed a multiplicative JI measure, or fully composite JI measure, as follows:

Fully Composite JI = [sum (importance of job feature × likelihood of losing job feature) + sum (importance of negative changes in total job × likelihood of negative changes in total job)] × [perceived powerlessness to resist threat].

We assessed perceived (or anticipated) *organizational changes* using the items developed by Ashford et al. (1989). We assessed *organizational changes* by asking respondents to rate, on a five-point scale (very unlikely = 1 to very likely = 5), the likelihood of eight potential changes, whereby the organization will (1) ''go into decline''; (2) ''undertake a major restructuring''; (3) ''accept new technologies that may eliminate jobs''; (4) ''ask you to undertake dangerous work''; (5) ''have financial difficulties''; (6) ''cut back the size of its workforce''; (7) ''merge with another company''; and (8) ''change your employment contract.''

*Intent to stay* was measured by a five-item scale developed by Walsh, Ashford, and Hill (1985) and was also used by Ashford et al. (1989). Intent to stay was measured using a five-point, strongly agree (=5) to strongly disagree (=1) scale format. Sample items include ''I often think of quitting my present job (reverse-coded)'' and ''I plan to remain in this company for a long time so as to develop my career.''

*Organizational commitment*, as in Ashford et al., was measured using a seven-point, strongly agree (=7) to strongly disagree (=1) scale format, with the Mowday, Steers, and Porter's (1979) nine-item scale. Mowday and his colleagues discussed the psychometric properties of this nine-item scale.

*Job satisfaction* was assessed with the five-item general satisfaction scale of the Job Diagnostic Survey (Hackman & Oldham, 1975). We used a seven-point, strongly agree (=7) to strongly disagree (=1) scale format.

*Somatic complaints* were measured to assess symptoms of strain. As in Ashford et al., we used a 10-item scale developed and validated by Caplan et al., 1975. The scale items asked how frequently in the past month (never $= 1$, once or twice $= 2$, three times or more $= 3$) that respondents had symptoms such as ''heart beating hard,'' ''dizzy spells,'' ''trouble sleeping,'' and so forth.

To assess *performance*, we asked respondents to give a short questionnaire to their immediate supervisors. As in Ashford et al., supervisors were asked to rate, on a seven-point scale, the general performance level of the employees. Sample items of this four-item scale included, ''How effective is this employee in his or her job?'' ($1 =$ not at all effective and $7 =$ extremely effective); or ''How would you characterize the performance level of this employee?'' ($1 =$ not at all satisfactory and $7 =$ extremely satisfactory). This measure was used in Samples 1 and 2.

*Contextual performance* was measured in Sample 4 using Motowidlo and Van Scotter's (1994) 15-item scale capturing interpersonal facilitation and job dedication dimensions of contextual performance. Following the stem ''While performing his or her job, how likely is it that this employee would...,'' supervisors rated the likelihood that an immediate subordinate would ''...praise coworkers when they are successful?'' (interpersonal facilitation) or ''...persist in overcoming obstacles to complete a task?'' (job dedication), and so forth. Response options ranged from (1) ''not at all likely'' to (5) ''extremely likely.''

Two other measures were used to evaluate the convergent and discriminant validity and utility of our JI measures. The first was a four-item scale, developed by Caplan et al. (1975) and used by Ashford et al. to assess the convergent validity of their fully composite JI measure. This scale assesses the amount of certainty a person has about his/her future job and career security. Greenhalgh and Rosenblatt (1984) stated that the Caplan et al. scale was the best attempt to measure the insecurity construct at the time of their theorizing.

To demonstrate construct validity, one criterion suggested by Nunnally (1978) is to demonstrate that the JI measures correlate with alternative measures of the same construct. Therefore, for the abridged JI scale to have convergent validity, it should correlate highly with the original JI scale since they are based on the same definition. Recently Stanton et al. (2002, p. 187) ''encouraged scale developers to offer reduced-length versions of their measures and to do so by conducting research that identifies the best subset of items and then cross validate these choices with additional data.'' Among their suggestions was to closely replicate the pattern of relations established within the construct's nomological network and also to seek moderate correlations with related scales. In our case, that means both our abridged and bare-bone scales should be positively, though moderately correlated with the Caplan et al. scale.

To assess discriminant validity, we used a four-item measure of perceived job mobility (Rusbalt & Farell, 1983). This scale taps the employee's assessment of the favorability of the external job environment. Tested in a Sino-Hong Kong joint venture, this scale represents the individual's perceived ease of movement between organizations (Hui et al., 1999). As discussed above, job mobility should be distinct from our conceptualization of JI because it relates to perceptions of job alternatives and market opportunities.

## Confirmatory factor analysis (CFA)

To demonstrate that our respondents could differentiate among the five JI components, we conducted CFA using LISREL 8.50 (Jöreskog & Sörbom, 2001). We had small sample sizes relative to the number of items being measured in Samples 1 (USA MBA), 2 (China MBA), and 4 (bank in China). Given this, we followed procedures used by previous researchers (Bagozzi & Heatherton, 1994; Brooke, Russell, & Price, 1988; Hui et al., 1999; Lee et al., 2006) in all four samples and reduced the number of items by

creating indicators for four of the five dimensions of JI (we did not do so for the three-item perceived powerlessness measure). On the basis of factor analysis results, the items with the highest and lowest loadings for each dimension were combined first, followed by items with the next highest and lowest loadings until all the items for each dimension had been assigned to one of the indicators. Scores for each indicator were then computed as the mean of the scores on the items that constituted each indicator. Using this method, we created four aggregate items for importance of job features, four for likelihood of losing job features, four for importance of change in total job, and four for likelihood of negative change in total job.

We then subjected the aggregated items and the three powerlessness items to CFAs. We used the incremental fit index (IFI; Bollen, 1989) and the comparative fit index (CFI; Bentler, 1990) as key indicators of overall model fit. As shown in Table 1, the CFAs yielded acceptable fit indices for all of our four samples. The resulting factor structures for all four samples showed a five-factor structure with all items loading significantly onto their underlying dimensions. This provides evidence that the employees in our four samples were able to distinguish among the five dimensions of JI.

# Results

We first describe the development of two abridged JI scales in a theory-based nomological net. We then compare the validity of the abridged scales against Ashford et al.'s fully composite JI.

## Scale development

The revised Ashford et al. JI measure has 59 items, representing job features importance (17 items) and likelihood (17 items), total job importance (11 items) and total job likelihood (11 items), and three powerlessness items. The CFA described above demonstrated that respondents in each of the samples could distinguish between the five JI components. In the following, we used factor analysis results to create the abridged scales. In order to produce stable factor structures, Schwab (1980) recommended that the sample-to-variable ratio should be at least 10:1. Since three of our samples were relatively small ($n$s ranging from 115 to 246), we combined data across samples for the factor analysis. We first standardized all the data for the Ashford et al. JI measures within each sample. Our process of item reduction began by conducting an exploratory factor analysis on the combined data on the five JI components of features-importance, features-likelihood, total job-importance, total job-likelihood, and powerlessness.

We used oblique rotation with an extraction criterion of eigenvalues greater than one. The initial factor analysis resulted in 15 factors. The large number of factors obtained was not unexpected since

Table 1. The results of confirmatory factor analysis of the five dimensions of JI measure

| Model | $\chi^2$ | df | IFI | CFI |
|---|---|---|---|---|
| Sample 1 (US MBA: same as Lee et al., 2006) | 220.20 | 142 | .90 | .89 |
| Sample 2 (China MBA: same as Lee et al., 2006) | 254.36 | 142 | .92 | .92 |
| Sample 3 (China hospital) | 306.96 | 142 | .97 | .97 |
| Sample 4 (China bank) | 379.77 | 142 | .94 | .94 |

*Note*: IFI, incremental fit index; CFI, comparative fit index.

these 15 factors represented content dispersion on the various dimensions measured. For example, the job features dimension items consisted of opportunities for promotion, freedom to schedule work and job characteristics, etc. (*cf.* Ashford et al., 1989). These items loaded on separate factors. However, the items assessing the likelihood of a feature (or the whole job) being lost did not load with the items assessing the importance of a feature (or the whole job). Further, the job features items did not load with the total job items. Thus, there was initial evidence of convergent and discriminant validity. The results of this factor analysis can be obtained from the senior author upon request. We then selected items that had loadings of .59 or greater, on any factor, in both the likelihood and importance scales (see Table 2). Based on this process and decision rule, 9 of the 17 job features items were kept (items: 3, 4, 6, 7, 9, 11, 15–17) and 8 of the 11 total job items were kept (items: 1, 2, 4, 5, 7, 8, 10, 11) in addition to an *a priori* decision to retain the 3 powerlessness items.

In order to further reduce the number of items, we also applied a more stringent criterion of requiring a factor loading of .70 or greater in either the likelihood or importance components. This resulted in keeping five items from the job features scales (items: 3, 4, 6, 7, and 13) and keeping six items from the total job scales (items: 2, 4, 5, 7, 10, 11). As shown in Table 2, we label the first of the shorter version of the JI scale as the "ABRIDGED JI," and the shortest version is labeled "BARE-BONES JI." Below, we compare their validities against the original Ashford et al. measure.

Table 3 presents the means, standard deviations, and coefficient alphas for all the scales in this study. With the exception of alphas of .63 for our measures of job satisfaction and the Caplan et al. JI measure in Sample 3, all scales used in this research demonstrate adequate internal consistency reliability, with alphas ranging from .69 to .93.

For each sample, Table 4 presents the correlations among the four JI scales (the original Ashford et al. JI, the abridged JI, the bare-bones JI, and Caplan's JI), and their correlations with antecedent and consequence variables. As can be seen, the correlations between the three JI scales based on the Ashford et al. items were, not surprisingly, significantly correlated across samples, ranging from $r = .95$ to .99, demonstrating convergent validity. Further, these three scales were also positively correlated with the Caplan JI scale (although the positive correlations in Sample 3 were weaker). Table 3 also shows that job mobility was unrelated to any of the Ashford et al. item-based scales, demonstrating discriminant validity. Further, the correlations of the two abridged scales with other variables were similar to the original Ashford et al. JI scale, demonstrating that these two abridged JI scales were similarly construct valid—in regard to their pattern of correlations with both antecedents and consequences. Further, results of a test for dependent correlations (Cohen & Cohen, 1975) revealed that the correlations of the three JI scales with antecedent and consequences were not significantly different from one another.

Our results showed all three JI scales were positively correlated with organizational changes and somatic complaints. All three JI scales were negatively correlated with organizational communication, organizational commitment, job satisfaction, intent to stay, job and contextual performance. The smaller sample size in Sample 1 was probably responsible for the correlations of JI scales with job performance not being statistically significant, but they were in the predicted direction.

Table 5 presents the results of the hierarchical regressions where we first regressed each JI scale on the antecedent (first panel of Table 5); then we regressed the outcome/dependent variables separately on each of the JI scales (second panel of Table 5). Unless noted (see Table 5), we controlled for age, gender, educational level, and organizational tenure in the first step of the regressions. In the second step, we entered the antecedent (when predicting each of the JI measures) or JI (when predicting each of the consequences). In Table 5, column "1" refers to the Ashford et al. scale; column "2" refers to the abridged JI scale; column "3" refers to the bare-bones JI scale; and column "4" refers to the Caplan JI scale.

Both Tables 4 and 5 indicate that the antecedent (organizational changes) had the strongest positive association with the original scale, followed by the abridged, the bare-bones, and then the Caplan JI

Table 2. Results of exploratory factor analysis: combined datasets included three China samples and one USA sample ($n = 1100$)

| Job features | Factor loadings importance | Factor loadings likelihood |
|---|---|---|
| 1. Geographic location? | 64 | 56 |
| 2. Having promotion opportunities? | 48 | 70 |
| 3. Maintaining your current pay? | 79 | 77 |
| 4. Maintaining opportunities to receive periodic pay increases? | 75 | 76 |
| 5. The status that comes with your position in your organization? | 42 | 61 |
| 6. The freedom to schedule your work? | 70 | 72 |
| 7. The freedom to perform your work in the manner you see fit? | 75 | 75 |
| 8. Access to resources (people, materials, information) in your organization | 56 | 67 |
| 9. A sense of community in working with good coworkers? | 63 | 71 |
| 10. The feedback you receive from your supervisor about your performance? | 52 | 63 |
| 11. The quality of supervision you receive? | 59 | 69 |
| 12. The physical demands your job (e.g., standing) places on you? | 33 | 67 |
| 13. The opportunity to interact with the public? | 58 | 54 |
| 14. A job where you do a variety of tasks? | 65 | 46 |
| 15. A job where you do an entire piece of work from start to finish? | 75 | 69 |
| 16. A job that has significant/important impact on others? | 74 | 76 |
| 17. A job in which you can tell how well you are doing as you do it? | 59 | 65 |
| Alphas: the abridged scale: 3, 4, 6, 7, 9, 11, 15–17 | .80 | .81 |
| Alphas: the bare-bones scale: 3, 4, 6, 7, 16 | .72 | .76 |

| Total job | Factor loadings importance | Factor loadings likelihood |
|---|---|---|
| 1. You will be moved to a lower level within the organization | 62 | 61 |
| 2. You will be moved to another job at the same level within the organization | 68 | 79 |
| 3. The number of work hours this organization can offer you will fluctuate from day to day | 51 | 37 |
| 4. You will be moved to a different job at a higher position in your current location | 80 | 87 |
| 5. You will be moved to a different job at a higher position in another geographic location | 68 | 88 |
| 6. You will be laid off for a short while | 56 | 67 |
| 7. Your future pay will be reduced | 68 | 69 |
| 8. Your department or division's future will be uncertain | 65 | 64 |
| 9. You will receive undesirable changes in work schedule/assignment | 58 | 59 |
| 10. You will be pressured to accept early retirement | 83 | 74 |
| 11. You will be pressured to work fewer hours | 80 | 71 |
| Alphas: ABRIDGED scale: 1, 2, 4, 5, 7, 8, 10, 11 | .82 | .69 |
| Alpha: BARE-BONES scale: 2, 4, 5, 7, 10, 11 | .77 | .60 |

Decision rule for the abridged scale (highlighted): factor loadings of over .59 in both the likelihood and the importance component; decision rule for the bare-bones scale: factor loadings of over .70 in both the likelihood and the importance component.

scales. In all cases, the change in $R^2$ when predicting JI from organizational changes was weakest when using the Caplan JI scale. The second panel of Table 5 shows the relationships of each JI measure with each of the outcome variables. We entered the JI measure in step 2 after controlling for demographics in step 1, repeating the same procedure for each JI measure. The similar pattern of relationships applies to

Table 3. Psychometric properties of scales across samples

| | Sample 1: USA MBA (*n* = 31–115) | | | Sample 2: China MBA (*n* = 166–191) | | | Sample 3: China hospitals (*n* = 506–594) | | | Sample 4: China bank (*n* = 160–218) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | SD | Alpha | Mean | SD | Alpha | Mean | SD | Alpha | Mean | SD | Alpha |
| 1. Ashford et al. JI | 906.19 | 388.77 | — | 967.14 | 323.74 | — | 1130.79 | 345.56 | — | 1149.13 | 374.27 | — |
| 2. Abridged JI | 569.84 | 251.07 | — | 604.26 | 214.67 | — | 706.95 | 217.30 | — | 701.18 | 220.70 | — |
| 3. Bare-bones JI | 370.41 | 163.12 | — | 386.25 | 137.59 | — | 429.65 | 143.06 | — | 241.40 | 145.02 | — |
| 4. Caplan's JI | 2.72 | .91 | .79 | 2.73 | .62 | .68 | 3.04 | .71 | .65 | 2.95 | .74 | .73 |
| 5. Job mobility[a] | 3.98 | 1.13 | .69 | 4.51 | .95 | .82 | | | | 2.80 | .73 | .86 |
| 6. Organizational changes | 2.75 | .76 | .81 | 2.98 | .62 | .77 | 3.14 | .58 | .73 | 3.34 | .60 | .81 |
| 7. Organizational commitment[b] | 4.07 | 1.25 | .86 | 4.20 | 1.07 | .87 | 4.83 | 1.10 | .86 | 4.56 | 1.17 | .93 |
| 8. Job satisfaction[b] | 4.68 | 1.28 | .81 | 4.66 | .99 | .77 | 4.21 | 1.08 | .63 | 4.42 | 1.28 | .81 |
| 9. Intent to stay | 3.32 | 1.01 | .85 | 3.57 | .80 | .83 | NA | | | 3.65 | .74 | .88 |
| 10. Somatic complaints[c] | 1.30 | .29 | .76 | 1.37 | .38 | .85 | 1.40 | .41 | .87 | 1.34 | .36 | .83 |
| 11. Job performance[b] | 6.13 | 1.03 | .90 | 5.19 | .94 | .89 | NA | | | | | |
| 12. Contextual performance | | | | | | | | | | | | |
|    Interpersonal facilitation | | | | | | | | | | 3.78 | .59 | .90 |
|    Job dedication | | | | | | | | | | 3.89 | .66 | .94 |

All other scales were based on a five-point scale format; NA, did not obtain this measure.
[a]Samples 1 and 2 used a seven-point and Sample 4 used a five-point strongly agree to strongly disagree format.
[b]Based on a seven-point scale format.
[c]Based on a three-point scale format.

the outcome variables. That is, with a few exceptions the abridged and bare-bones JI scales showed similar validities as the Ashford et al. scale.

# Discussion

Due to the length (originally 57 items; revised to 59 items) and complexity of the Ashford et al. measure, researchers have either not used it, modified it or used just some of its components to meet constraints on survey length and to avoid respondent fatigue. By so doing, the construct's operationalization no longer corresponds with the definition of the construct.

   This study set out to validate a shorter JI scale created by judiciously removing items within the various theoretical dimensions in the original scale. Two reduced scales (abridges and bare-bones) were assessed in four samples across two cultures. To summarize the results, the content and construct validities of both the abridged and the bare-bones scales were similar to the original, fully composite JI scale developed and validated by Ashford et al. (1989). Each of these scales also retained all of the components of the original scales, and, therefore, remained true to the multi-dimensional and theoretical nature of JI. The results suggest that the abridged and bare-bones JI scale had similar nomological net validity as compared to the original fully composite JI scale.

   As in the original development of the JI scales, our abridged scales satisfied the construct validity steps suggested by Nunnally (1978) that researchers must specify the domain of the construct— assuring that the new measure relates predictably to other measures purporting to measure the same construct and to other constructs (Caplan et al.'s). Since we did not eliminate any components of the original JI measure as defined by Greenhalgh and Rosenblatt (1984), we conform to the first step

Table 4. Correlations of job insecurity scales with antecedent and outcomes

| | Sample 1: USA MBA (n = 31–115) | | | | Sample 2: China MBA (n = 166–191) | | | | Sample 3: China hospitals (n = 506–594) | | | | Sample 4: China bank (n = 160–218) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 1. Ashford et al. JI | — | | | | — | | | | — | | | | — | | | |
| 2. Abridged JI | .99** | — | | | .98** | — | | | .98** | — | | | .99** | — | | |
| 3. Bare-bones JI | .97** | .98** | — | | .97** | .98** | — | | .95** | .97** | — | | .96** | .98** | — | |
| 4. Caplan's JI | .38** | .41** | .37** | — | .35** | .36** | .36** | — | .06 | .08 | .10* | — | .40** | .36** | .33** | — |
| 5. Job mobility | .06 | .05 | .04 | .05 | −.07 | −.06 | −.06 | −.21** | NA | NA | NA | NA | −.10 | −.10 | −.09 | .02 |
| 6. Organizational changes | .40** | .43** | .42** | .27** | .38** | .40** | .37** | .28** | .17** | .18** | .17** | .08 | .49** | .46** | .45** | .30** |
| 7. Organizational commitment | −.40** | −.39** | −.38** | −.33** | −.33** | −.25** | −.23** | −.25** | −.12** | −.11* | −.12** | −.17** | −.28** | −.26** | −.24** | −.27** |
| 8. Job satisfaction | −.28** | −.28** | −.28** | −.38** | −.35** | −.32** | −.28** | −.22** | −.12** | −.12** | −.16** | −.15** | −.40** | −.36** | −.34** | −.28** |
| 9. Intent to stay | −.35** | −.33** | −.31** | −.36** | −.30** | −.28** | −.25** | −.21** | NA | NA | NA | NA | −.13 | −.11 | −.10 | −.19** |
| 10. Somatic complaints | .27** | .24** | .22* | .16 | .19* | .17* | .16* | .02 | .18** | .17** | .17** | .12** | .24** | .21** | .18* | .25** |
| 11. Job performance | −.23 | −.25 | −.19 | .13 | −.30** | −.33** | −.32** | −.32** | NA | NA | NA | NA | NA | NA | NA | NA |
| 12. Contextual performance: | | | | | | | | | | | | | | | | |
| Interpersonal facilitation | | NA | | | NA | | | | NA | NA | | | −.20** | −.19* | −.13 | −.16* |
| Job dedication | | | | | | | | | NA | NA | | | −.11 | −.11 | −.04 | −.17* |

*p < .05; **p < .01; for significance difference in correlations at p > .05, in Sample 1, a difference in r ≥ .28 is required; in Sample 2, a difference in r ≥ .20 is required; in Sample 3, a difference in r ≥ .06 is required; and in Sample 4, a difference in r ≥ .08 is required. NA, did not obtain this measure.

Table 5. Results of regression analyses

| | Sample 1: USA MBA (n = 31–115) | | | | Sample 2: China MBA (n = 166–191) | | | | Sample 3: China hospitals (n = 506–594) | | | | Sample 4: China bank (n = 160–218) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| *Antecedent of JI* | | | | | | | | | | | | | | | | |
| Organizational changes | | | | | | | | | | | | | | | | |
| $\beta$ | .38** | .38** | .36** | .22* | .37** | .34** | .34** | .22** | .15** | .18** | .17** | .11** | .45** | .40** | .38** | .29** |
| $\Delta R^2$ | .14 | .14 | .13 | .05 | .12 | .11 | .11 | .04 | .02 | .03 | .03 | .01 | .18 | .15 | .13 | .07 |
| $\Delta F$ | 16.37 | 15.92 | 14.53 | 5.06 | 22.90 | 20.48 | 21.21 | 8.15 | 10.59 | 15.63 | 13.45 | 6.86 | 26.92 | 23.19 | 20.60 | 11.86 |
| *Dependent variables: JI as antecedent* | | | | | | | | | | | | | | | | |
| Organizational commitment | | | | | | | | | | | | | | | | |
| $\beta$ | −.52** | −.49** | −.51** | −.41* | −.32** | −.31** | −.23** | −.22** | −.07 | −.07** | −.09** | −.14** | −.21** | −.20** | −.16*** | −.20** |
| $\Delta R^2$ | .25 | .22 | .24 | .17 | .09 | .09 | .05 | .05 | .01 | .01 | .01 | .02 | .04 | .04 | .02 | .04 |
| $\Delta F$ | 9.91 | 8.31 | 9.48 | 6.33 | 16.31 | 16.22 | 8.83 | 8.77 | 2.54 | 2.79 | 4.63 | 12.27 | 5.09 | 4.81 | 2.91 | 5.90 |
| Job satisfaction | | | | | | | | | | | | | | | | |
| $\beta$ | −.37* | −.35* | −.37* | −.40* | −.33** | −.33** | −.28** | −.17** | −.09*** | −.09** | −.12** | −.16** | −.32** | −.28** | −.25** | −.21** |
| $\Delta R^2$ | .13 | .11 | .13 | .16 | .10 | .10 | .07 | .03 | .01 | .01 | .02 | .02 | .10 | .08 | .06 | .04 |
| $\Delta F$ | 4.18 | 3.48 | 4.11 | 5.54 | 17.51 | 17.90 | 13.04 | 5.17 | 3.65 | 4.10 | 7.43 | 13.88 | 13.09 | 10.32 | 7.64 | 6.69 |
| Intent to stay | | | | | | | | | | | | | | | | |
| $\beta$ | −.36*** | −.32** | −.34*** | −.51** | −.25** | −.25** | −.23** | −.18* | NA | NA | NA | MA | −.11 | −.10 | −.08 | −.17* |
| $\Delta R^2$ | .12 | .10 | .10 | .26 | .06 | .06 | .05 | .03 | | | | | .01 | .01 | .01 | .03 |
| $\Delta F$ | 3.93 | 3.11 | 3.44 | 10.61 | 9.77 | 9.70 | 8.96 | 5.60 | | | | | 1.35 | 1.22 | .65 | 4.21 |
| Somatic complaints | | | | | | | | | | | | | | | | |
| $\beta$ | .15 | .13 | .14 | .25 | .17* | .16* | .11 | −.04 | .18** | .17** | .17** | .13** | .28** | .24** | .19* | .29** |
| $\Delta R^2$ | .02 | .02 | .02 | .06 | .03 | .02 | .01 | .00 | .03 | .03 | .03 | .02 | .07 | .05 | .03 | .08 |
| $\Delta F$ | .56 | .40 | .50 | 1.81 | 4.30 | 4.01 | 1.85 | .23 | 14.98 | 14.35 | 13.39 | 9.36 | 9.27 | 6.72 | 4.52 | 13.33 |
| Job performance | | | | | | | | | | | | | | | | |
| $\beta$ | −.33*** | −.36*** | −.29 | .08 | −.32** | −.29** | −.35** | −.31** | NA | NA | NA | NA | NA | NA | NA | NA |
| $\Delta R^2$ | .10 | .12 | .08 | .01 | .10 | .08 | .11 | .09 | | | | | | | | |
| $\Delta F$ | 3.22 | 3.87 | 2.31 | .19 | 15.81 | 13.58 | 21.08 | 17.76 | | | | | | | | |
| Contextual performance: | | | | | | | | | | | | | | | | |
| Interpersonal facilitation | | | | | | | | | | | | | | | | |
| $\beta$ | | | | | | | | | | | | | −.26** | −.25** | −.20** | −.19* |
| $\Delta R^2$ | | | | | | | | | | | | | .06 | .06 | .04 | .03 |
| $\Delta F$ | | | | | | | | | | | | | 8.05 | 8.08 | 4.93 | 5.44 |
| Job dedication | | | | | | | | | | | | | | | | |
| $\beta$ | | | | | | | | | | | | | −.14 | −.13 | −.09 | −.11 |
| $\Delta R^2$ | | | | | | | | | | | | | .02 | .01 | .01 | .01 |
| $\Delta F$ | | | | | | | | | | | | | 2.19 | 2.07 | .94 | 1.76 |

Controls: we controlled for age, gender, and organizational tenure in Samples 1 and 2 (we did not control for education since these are all part-time MBA students); we dummy coded organizations and controlled for organizations, age, education, and organizational tenure in Sample 3 (since they are all female nurses working in three different hospitals); and in Sample 4, we controlled for age, gender, education, and company tenure. These controls were entered in the first step of the hierarchical regressions.

1, Ashford et al.'s job insecurity scale; 2, abridge job insecurity scale; 3, bare-bones job insecurity scale; 4, Caplan's job insecurity scale. NA, did not obtain this measure.

$^*p < .05$; $^{**}p < .01$; $^{***}p < .10$.

recommended by Nunnally required for construct validation. Further, our abridged JI measures correlated with the alternative measure (i.e., Caplan et al.'s JI scale) and the full, original scale. Our abridged measures also demonstrate discriminant validity since they were unrelated to perceived job mobility. Lastly, we tested our abridged measures in a nomological network of theoretically related constructs, seeking to show that the abridged measures correlated with theoretically related constructs (Nunnally, 1978, p. 103). Results demonstrated that the original and abridged measures correlate as predicted with the antecedent of anticipated organizational changes and outcomes of job satisfaction, organizational commitment, intent to stay, somatic complaints, job and contextual performance.

Our findings suggest that either of the reduced scales might have utility in future research. Given the high correlation of .98 and .99 between the original scale scores and the abridged scale scores across all samples, as well as the results presented in Tables 4 and 5, we recommend that the field first consider adopting the abridged scale of JI. However, we note that researchers, in order to maximize response rates and lower respondents' fatigue, might want to adopt the bare-bones scale. This trade off of validity versus length could be a useful one because the correlations between the bare-bones scale and the original scale are still quite high (ranging from .95 to .97), and the bare-bones scale also demonstrated a good set of relationships within the nomological net. In other words, based on the empirical results, it is possible that the bare-bones scale might be more efficient than the abridged version. In any event, by removing items within each component, but keeping each component, we managed to provide more manageable measures of JI for both researchers and practitioners, but ones that are theoretically sound.

As with any research, ours has limitations. First, although we used diverse samples from two countries, the samples might be somewhat limited in scope. Future studies should replicate our findings in other cultures with larger sample sizes. However, the use of two working student samples (Samples 1 and 2) as well as a hospital sample (Sample 3) and bank sample (Sample 4) covers many types of jobs and job levels. A second limitation is that our study is correlational and cannot demonstrate causal relationships. However, our primary goal was to develop a shorter JI scale and, as such, our research question did not require a longitudinal design. For our purposes, showing a strong, theoretically/ empirically supported pattern of associations with antecedent and outcomes was the focus. A third issue is that the data for most of the measures used in our study came from one source, that is, the employees. However, we incorporated measures of job performance (Samples 1 and 2) and extra-role performance (Sample 4) collected from supervisors in three of the four samples, thereby reducing the possibility of common method variance.

In sum, the results of this study suggest that researchers interested in the further study of JI can, with confidence, use one of the abridged JI scales that were developed and tested in the current effort across cultural settings. Of course, construct validation is an on-going process. As suggested by Stanton et al. (2002), researchers should continue to develop and validate reduced-length versions of their measures. Additionally, researchers should also conduct research that identifies the best subset of items (as in our abridged and bare-bones scales) and to cross-validate these choices with additional data. By using these abridged scales, future studies on JI may then have sufficient ''room'' to incorporate relevant local contextual issues or culture-specific values in their questionnaires and theorizing. We look forward to the increased knowledge that frequent use of these more manageable scales might bring to our understanding of JI.

# Acknowledgements

# Author biographies

**Cynthia Lee** is Professor of International Management and Organizational Behavior and is currently the Walsh Professor at Northeastern University's College of Business Administration. Her current research focuses on cross-cultural management, understanding the changing nature of psychological contracts, and job insecurity perceptions especially in Chinese contexts. She is the Associate Editor of *Applied Psychology: An International Review*. She is serving on the editorial boards of *Journal of Applied Psychology* and *Journal of Organizational Behavior*. She received her Ph.D. from the University of Maryland.

**Philip Bobko** is Professor of Management and Psychology at Gettysburg College. He has published over 80 articles and book chapters and two books in the fields of human resource management, research methods, and organizational behavior. He has served as an Editor of *Journal of Applied Psychology* and Guest Co- Editor and Consulting Editor of the *Academy of Management Journal*. He has a Ph.D. in Economic and Social Statistics from Cornell University.

**Susan Ashford** is the Michael and Susan Jandernoa Professor of Organizational Behavior and Human Resource Management at the University of Michigan Business School. She taught previously at the Amos Tuck School of Business, Dartmouth College (1983–1991). Dr Ashford teaches in the areas of organizational behavior, negotiation, and leadership. Dr Ashford is a Fellow of the Academy of Management. Her research interests include managerial effectiveness, issue selling, self-management, feedback seeking, and nonstandard work. Her research has been published in a variety of outlets, including the: *Administrative Science Quarterly*, *Academy of Management Review*, *Academy of Management Journal*, *Strategic Management Journal*, *Journal of Applied Psychology*, and *Organizational Behavior and Human Decision Processes*. Dr Ashford has served as a consulting editor for the *Academy of Management Journal* and as a board member and consulting editor for the *Academy of Management Journal*. She is currently a member of the editorial board for *Organizational Behavior and Human Decision Processes*.

**Zhen Xiong (George) Chen** is Reader in Management in the School of Management, Marketing and International Business, The Australian National University. He received his Ph.D. in Management of Organizations from the Hong Kong University of Science and Technology. His research interests include leadership, organizational commitment, and job insecurity, especially in the Chinese context.

**Xiaopeng Ren** has a Ph.D. in psychology and is an Assistant Professor in the Institute of Psychology, Chinese Academy of Sciences, China. His main research interests are job insecurity and leader-member exchange.

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