

No Security: A Meta-Analysis and Review of Job Insecurity and Its Consequences

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Meta-analytic techniques were used to estimate how job insecurity relates to its postulated outcomes. Consistent with the conceptual framework, the results indicate that job insecurity has detrimental consequences for employees' job attitudes, organizational attitudes, health, and, to some extent, their behavioral relationship with the organization. Moderator analyses suggest that these relationships may be underestimated in studies relying on single-item measures of job insecurity and that the behavioral consequences of insecurity are more detrimental among manual, as compared with nonmanual, workers. Recommendations made for future research include utilization of multidimensional measures, consideration of a broader spectrum of outcomes and moderators, and use of longitudinal designs.

Job insecurity has received growing recognition in connection with the rapidly changing organizational environment over the past two decades. In their struggle for survival, organizations are faced with the necessity of making their operations more effective with fewer resources. The unpredictable economic situation and the tougher competitive standards have resulted in downsizing, mergers, acquisitions, and other types of structural change, all of which tend to produce increased feelings of insecurity among the workers, not only pertaining to their jobs but also about the future in general (Borg & Elizur, 1992; Burke & Nelson, 1998; Davy, Kinicki, & Scheck, 1997; Hartley, Jacobson, Klandermans, & van Vuuren, 1991; Hellgren, Sverke, & Isaksson, 1999; Kozlowski, Chao, Smith, & Hedlund, 1993).

A growing body of research suggests that employee reactions to uncertain employment conditions can be of fundamental importance from both the occupational health and the managerial perspective (Armstrong-Stassen, 1993; Ashford, Lee, & Bobko, 1989; Greenhalgh & Rosenblatt, 1984; Matteson &

Ivancevich, 1987; Noer, 1993; Pfeffer, 1998; van Vuuren & Klandermans, 1990). For the individual, perceptions of job insecurity may have detrimental effects on employee well-being and job satisfaction. From the organization's point of view, job insecurity may have negative consequences for employees' attitudes toward the organization, willingness to remain with the organization, and performance. Hartley et al. (1991) even went so far as to suggest that "job insecurity can be one of the more important stressors in employment situations" (p. 44).

However, although many studies have considered the consequences of job insecurity, the picture that has emerged from this research is not uniform. Rather, a close inspection of individual studies reveals contradictory findings. Whereas many researchers have concluded that job insecurity is strongly related to its postulated outcomes, others have found substantially weaker measures of association, and still others have reported nonsignificant relationships. Hence, there is a pressing need to synthesize the results of previous research. Although narrative reviews of job insecurity have been conducted (Burchell, 1994; De Witte, 1999; Hartley et al., 1991; Sverke & Hellgren, 2002), no study has summarized and integrated the empirical research quantitatively using meta-analytic procedures.

The objective of the present research was to respond to the need for systematization of previous studies by conducting a conceptual and meta-analytic review of research on job insecurity. Meta-analysis is a powerful method used to combine data from several studies that investigate similar variables and has the potential to disclose regularities and differences that are not as easily detected in a narrative review

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(Hunter & Schmidt, 1990). Meta-analytic techniques can also be advantageously used to identify and test moderator variables that may account for inconsistencies in previous results. We also address implications for future research on job insecurity.

Conceptualization of Job Insecurity

Job insecurity has been defined in various ways. For example, the construct has been described as an employee's "expectations about continuity in a job situation" (Davy et al., 1997, p. 323), "concern about the future permanence of the job" (van Vuuren & Klandermans, 1990, p. 133), and "perception of a potential threat to continuity in his or her current job" (Heaney, Israel, & House, 1994, p. 1431).

From these definitions, it is apparent that job insecurity must be separated from actual job loss. This distinction can be characterized as a difference in the experience itself. Job loss is immediate, whereas job insecurity is an everyday experience involving prolonged uncertainty about the future. Although the stressfulness associated with unemployment is well documented (Jahoda, 1982), job loss relieves at least one major source of stress—that of uncertainty (Jacobson, 1991).

Job insecurity is characterized as a perceptual phenomenon (Greenhalgh & Rosenblatt, 1984; Hartley et al., 1991; Jacobson, 1991). Some writers, especially outside the behavioral sciences, go so far as to define job insecurity as an objective phenomenon "without reference to a worker's perceptions, [but] rather considered as an independently determined probability that workers will have the same job in the foreseeable future" (Pearce, 1998, p. 34). The subjective experience, however, is a cornerstone in most psychological definitions of the construct (De Witte, 1999; Sverke & Hellgren, 2002; van Vuuren, 1990). A focus on the individual's subjective experience implies a difference between perceptions and the objective reality and highlights how interpretations form the subjective reality. Hence, two employees in the same situation can experience differing degrees of job insecurity because they will perceive and interpret the situation differently.

Most researchers have adopted a global view and described job insecurity as an overall concern about the continued existence of the job in the future (De Witte, 1999). Although some studies (e.g., Ashford et al., 1989; Borg & Elizur, 1992; Hellgren et al., 1999; Kinnunen, Mauno, Nätti, & Happonen, 1999; Rosenblatt & Ruvio, 1996) have been based on multidimensional definitions that, in addition, encompass

factors such as threats to various job features (e.g., employment conditions, career opportunities) and a powerlessness to counteract such threats, the bulk of research emphasizes a concern about the future existence of the job as such (e.g., Barling & MacEwen, 1992; Büssing, 1999; Hartley et al., 1991; Kuhnert & Vance, 1992; Landsbergis, 1988; Lim, 1996; Orpen, 1993; van Vuuren, 1990). This is also reflected in the content domain of the various measures of job insecurity, in which the future existence of the current employment is at the heart.

In this context, it is also important to emphasize that job insecurity refers to the subjectively perceived likelihood of involuntary job loss. By definition, job insecurity reflects perceptions of a fundamental and involuntary change concerning the future existence of the present job in the organization (Greenhalgh & Rosenblatt, 1984). Employees who willingly seek transfer to another organization, who trust their employability, or who for other reasons do not worry about losing their job will not respond with job insecurity to objective threats such as layoffs. Job insecurity reflects the discrepancy between the level of security an individual experiences and the level he or she would prefer (Hartley et al., 1991).

From this brief review, it follows that job insecurity reflects the subjectively experienced anticipation of a fundamental and involuntary event. Along this line of reasoning, job insecurity can be considered a classic work stressor (Ashford et al., 1989; Barling & Kelloway, 1996; Fox & Chancey, 1998; Mauno, Leskinen, & Kinnunen, 2001). Consistent with theories of the stress process (Karasek & Theorell, 1990; Katz & Kahn, 1978; Lazarus & Folkman, 1984; Siegrist, 2000), job insecurity would then result in various types of strain.

Consequences of Job Insecurity

Given that job insecurity reflects a worry about losing the present job, this subjective experience is likely to have a strong psychological impact. The underlying logic of reasoning can be illustrated using Jahoda's (1982) latent deprivation model. For many individuals, work is a central factor for the satisfaction of economic and social needs. Among other things, work provides a source of income, enables social contacts, influences the structuring of time, and contributes to personal development. The perceived threat of unemployment involves frustration of these needs and the potential loss of important financial and social resources (De Witte, 1999). Indeed, research suggests that job insecurity may have as det-

rimental consequences as job loss itself (Dekker & Schaufeli, 1995; Latack & Dozier, 1986). This is consistent with the central proposition of stress research that anticipation of a stressful event represents an equally important, or perhaps even greater, source of anxiety than the actual event (Lazarus & Folkman, 1984).

Just like any stressor is expected to result in strain (Lazarus & Folkman, 1984; Jex & Beehr, 1991), job insecurity is hypothesized to lead to reduced well-being and negative emotions toward the perceived source of stress. It may be that job insecurity is especially burdensome just because it involves prolonged uncertainty (Hartley et al., 1991; Joelson & Wahlquist, 1987; van Vuuren, 1990). The uncertainty inherent in job insecurity will make it more difficult for the individual to use effective and appropriate coping strategies (Ashford, 1988; Lazarus & Folkman, 1984). In dealing with job loss, the individual can use various coping strategies, such as mourning and preparation for the new situation. In contrast, when the individual is not sure about the occurrence of the loss, the usual coping strategies cannot be used, and the individual is left only with uncertainty. The expectation of, or confusion about, the occurrence of an event will, according to Lazarus and Folkman, lead to heightened anxiety and impaired well-being.

In accordance with this reasoning, several studies indicate that job insecurity is associated with a decrease in general well-being (Barling & Kelloway,

1996; Hartley et al., 1991; Hellgren et al., 1999; Jick, 1985). It is, however, reasonable to assume that a radical change in working conditions—from having been secure to being volatile and insecure—will have influence not only on employees' health status but also on their attitudes and behaviors in relation to the organization, and will in the long run also have consequences for the vitality of the organization itself. As Greenhalgh and Rosenblatt (1984) phrased it, "workers react to job insecurity, and their reactions have consequences for organizational effectiveness" (p. 438).

Figure 1 presents an overview of categories of potential consequences of job insecurity. First of all, we can distinguish between immediate and long-term reactions (see Lazarus & Folkman, 1984). Certain types of strains (e.g., attitudes) can be considered to develop closer in time to the stress experience, whereas other types of stress reactions (e.g., behavior and health manifestations) may be manifested after a longer period of time (see Zapf, Dormann, & Frese, 1996). Second, a distinction can be made between such reactions that are individually or organizationally oriented (see Beehr & Newmann, 1978), that is, that have effects primarily for either the individual (e.g., occupational health consequences) or the organization (e.g., managerial consequences). Some outcomes have their main impact on the individual and only indirectly on the organization (e.g., health), whereas other outcomes tend to be costly to the

Focus of reaction

		Individual	Organizational
Type of reaction	Immediate	Job attitudes Job satisfaction Job involvement	Organizational attitudes Organizational commitment Trust
	Long-term	Health Physical health Mental health	Work related behavior Performance Turnover intention

Figure 1. Types of consequences of job insecurity (including example variables).

organization while having an indirect effect on the individual (e.g., job performance).

This leads to four major categories of potential outcomes of job insecurity, which have also received considerable attention in previous research: immediate reactions with an individual focus (job attitudes), immediate reactions that are organizationally oriented (organizational attitudes), long-term reactions that mainly affect the individual (health), and long-term reactions that will have implications mainly for the organization (work-related behavior). These categories bear some resemblance to other categorizations in the literature, such as Jex and Beehr's (1991) distinction among psychological, physical, and behavioral strains, but, in addition, illustrate that such strains can be oriented primarily toward either the individual or the organization (Beehr & Newman, 1978; Matteson & Ivancevich, 1987).

Figure 1 also provides examples of specific variables in each of these categories. Although several variables could be listed within each category, these examples correspond to the factors that have gained most attention in previous research investigating hypothesized outcomes of job insecurity. Job satisfaction and job involvement are typical examples of job attitudes. Organizational commitment and trust characterize specific organizational attitudes. Physical and mental health, as operationalized in broad self-rate inventories, represent frequently investigated aspects of health. Two typical reflections of work-related behavior are performance and turnover, even if the latter is often substituted with turnover intention in empirical research because data on actual turnover are hard to collect. However, meta-analysis results (Steel & Ovalle, 1984) suggest that the two phenomena are closely related and, hence, that the behavioral intention serves as a reasonable proxy for actual turnover.

In our review of the relationships between job insecurity and the four categories of outcomes, we also comment on the strength of empirical associations. Following Cohen (1969), we make a distinction between weak (below .20), moderate (.20 to .40), and strong (greater than .40) correlations.

Job Attitudes

Considerable research attention has been given to how job insecurity is related to individuals' job attitudes. Several studies have shown that employees who feel their future employment to be insecure are generally more dissatisfied with their job than those who perceive their employment conditions to be

more secure (e.g., Ashford et al., 1989; Grunberg, Moore, & Greenberg, 1998; Lim, 1996; Rosenblatt & Ruvio, 1996). However, the strength of the relationship varies greatly between studies, and a few studies even report nonsignificant correlations between job insecurity and job satisfaction (e.g., Hollenbeck & Williams, 1986; Zikiye & Zikiye, 1992). Only a few studies have investigated the relation between job insecurity and job involvement, and here the correlations range from nonsignificant (Hollenbeck & Williams, 1986) to moderate (Levanoni & Sales, 1990; Liou & Bazemore, 1994) to strongly negative (Kuhnert & Palmer, 1991).

Organizational Attitudes

Job insecurity has also been investigated in relation to organizational attitudes such as commitment and trust. Organizational commitment has, in most of the studies, been found to have a moderate negative association with job insecurity (e.g., Borg & Elizur, 1992; Davy et al., 1997; Iverson & Roy, 1994), whereas some studies have reported a strong negative relationship (e.g., Armstrong-Stassen, 1993; McFarlane Shore & Tetrick, 1991; Yousef, 1998) or no significant relation at all (e.g., Andaleeb, 1996; Cavanaugh & Noe, 1999). Organizational trust has been found to have a moderate (e.g., Ashford et al., 1989; Liou, 1995) or strong (Borg & Elizur, 1992; Pearce, Branzkycki, & Bakasci, 1994) negative association with job insecurity, but a nonsignificant relationship has also been reported (Robinson, 1996).

Health

Both physical and mental health appear to decrease with the increase in experiences of job insecurity (for an overview, see Burchell, 1994; De Witte, 1999; Hartley et al., 1991). The picture that emerges from previous research, however, is one of ambiguous magnitudes of effect sizes. Although several studies have found a significant negative relationship between job insecurity and physical health (e.g., Ashford et al., 1989; Axelrod & Gavin, 1980; Isaksson, Hellgren, & Pettersson, 2000; Jick, 1985; Lim, 1996; Mattiasson, Lindgarde, Nilsson, & Theorell, 1990; Noer, 1993), the correlations have varied in strength from weak (e.g., Kinnunen & Nätti, 1994) to moderate (e.g., Büssing, 1999), whereas some studies have found no support for a significant relationship between the variables (e.g., Barling & MacEwen, 1992; Lindström, Leino, Seitsamo, & Torstila, 1997).

The correlations between job insecurity and mental

health vary in a similar manner. Several studies have found support for a moderate negative relationship (e.g., De Witte, 1999; Friesen & Sarros, 1989; Iverson & Kuruvilla, 1995), a few studies report a strong negative correlation (e.g., Kuhnert, Sims, & Lahey, 1989; Wilson, Larson, & Stone, 1993), and, again, some studies have not uncovered a significant relationship between the variables (e.g., Fox & Chancey, 1998; Landsbergis, 1988).

Work-Related Behavior

High levels of job insecurity are generally assumed to result in impaired performance and an inclination to leave the organization. There is some support for a moderate negative relation between job insecurity and performance (e.g., Abramis, 1994). Most of the studies reporting a significant association have relied on self-rate measures of performance (e.g., Armstrong-Stassen, 1993, 1994; Dubinsky, Kotabe, Lim, & Wagner, 1997; Rosenblatt, Talmud, & Ruvio, 1999), even if some have been based on other assessment methods (e.g., Colarelli, Dean, & Konstans, 1987). A large proportion of previous research, however, indicates that job insecurity is not significantly related to performance of work tasks, regardless of if self-rate measures (e.g., Robinson, 1996; Yousef, 1998) or supervisor ratings (e.g., Ashford et al., 1989; Stepina & Perrewé, 1991) have been used.

Research also points out voluntary turnover as a possible consequence of job insecurity, and that typically the most qualified employees—those most attractive on the labor market but also the most valuable to the organization—tend to leave the company first (Kozlowski et al., 1993; Pfeffer, 1998). A vast majority of the studies that empirically investigate the relationship between job insecurity and turnover intention have found a significant positive relation. However, the strength of the relation varies greatly between studies. Some report a weak correlation (Hellgren et al., 1999; Vinokur-Kaplan, Jayaratne, & Chess, 1994), others report a moderate correlation (Cavanaugh & Noe, 1999; Stedham & Mitchell, 1996), and yet others report a strong positive correlation (Ameen, Jackson, & Strawser, 1995; Ashford et al., 1989).

Moderators

Because the strengths of correlations vary across studies, it is likely that some other factors influence the relationships between job insecurity and its postulated outcomes. Indeed, a variety of potential mod-

erators have been suggested in the literature. Moderators that have been suggested include occupational status (De Witte, 1999), type of measure of job insecurity (Hartley et al., 1991), gender (Kinnunen & Mauno, 1998), mood dispositions (Roskies, Louis-Guerin, & Fournier, 1993), perceived control (Barling & Kelloway, 1996), social support (Lim, 1996), and union membership (Dekker & Schaufeli, 1995). However, a large proportion of these factors are difficult to investigate in a traditional meta-analysis because they are not meaningful in the aggregate form or because they have not been empirically addressed in a sufficient number of studies. Still other potential moderators are in practice impossible to test in a meta-analysis because studies typically fail to report information on factors such as data collection context.

The variables chosen for investigation in the present study were type of measurement of job insecurity (i.e., multiple-item scale vs. single item) and occupational status (i.e., manual vs. nonmanual work). In the following sections, we develop the rationale for these moderators and elaborate on their potential effects.

Type of Job Insecurity Measure

Meta-analysis enables the evaluation of how different assessment procedures may influence empirical findings. This is especially warranted in the case of job insecurity when there is no generally agreed-on measure reflecting the conceptual definition (Sverke & Hellgren, 2002). Different measurement procedures could contribute to the explanation of inconsistent findings between studies relating job insecurity to its hypothesized outcomes (Hartley et al., 1991). It therefore appears important to investigate the empirical significance of different assessment methods.

It was not until the mid-1980s and the pioneering work by Greenhalgh and Rosenblatt (1984) that systematic research on job insecurity began to emerge. Earlier on, partly as a reflection of a more stable labor market, to the extent it was studied at all, job insecurity typically was investigated in its opposite form—job security—and included in broad inventories of work climate (e.g., Hackman & Oldham, 1975) or measures of overall job satisfaction (e.g., Ivancevich, 1974; Rizzo, House, & Lirtzman, 1970). An exception to this is Caplan, Cobb, French, Van Harrison, and Pinneau (1975), who already in the mid-1970s included a multi-item scale of job insecurity in a comprehensive stress-strain inventory.

Along with the gradually more flexible work life, the focus shifted from job security to job insecurity, the construct took on the meaning of a stressor rather than a motivator, and the number of studies on the issue increased substantially. As a function of Greenhalgh and Rosenblatt's (1984) conceptual work, the single-item global measures of job (in)security gradually gave way to more elaborated measures based on multiple items and with broader content domains.

Still, however, both measurement traditions have continued to exist in parallel also in more recent years. For example, some studies rely on single-item measures wherein respondents are asked to rate the perceived likelihood of getting unemployed, indicate their fear of losing their job in the future, or express their satisfaction with the perceived job security (e.g., Deci, Connell, & Ryan, 1989; De Witte, 1999). Among the studies that rely on multiple-indicator scales, some use the comprehensive multidimensional Ashford et al. (1989) 57-item measure, developed in accordance with Greenhalgh and Rosenblatt's (1984) conceptualization (e.g., Rosenblatt et al., 1999). There are also studies using a modified version of Ashford et al.'s scale (e.g., Kinnunen et al., 1999; Mauno et al., 2001) or Ashford et al.'s dimension reflecting threats of job loss (e.g., Sverke, Gallagher, & Hellgren, 2000; Sverke & Hellgren, 2001). Other studies use the Job Security Survey, which is a 44-item measure comprising five subscales (e.g., Kuhnert et al., 1989). Many researchers also tend to rely on home-grown scales (e.g., Barling & Kelloway, 1996; Borg & Elizur, 1992; Hartley et al., 1991; Hellgren et al., 1999; Roskies & Louis-Guerin, 1990). Even if it could be concluded that job insecurity has been measured in an ad hoc manner (Ashford et al., 1989; Sverke & Hellgren, 2002), however, most measures of the construct reflect the general conceptual definition of job insecurity as a concern about future employment.

Multiple-indicator measurement scales are generally considered better and more robust measures of theoretical constructs (Gorsuch, 1997; Nunnally, 1978; Spector, 1992). In contrast to single items, for which the psychometric properties are not known, they typically have higher reliability—or at least the internal consistency can be estimated. In addition, the broader content domain of multiple-indicator scales increases their content validity, and variables of greater elaboration typically account for more variance in the dependent variables (Cooper & Richardson, 1986). Although it has been argued that single items can be acceptable (see Wanous, Reichers, & Hudy, 1997, for meta-analysis results of comparisons

between single-item and multi-item measures of job satisfaction), the type of measure of job insecurity can have a systematic influence on the results reported, and the conclusions drawn, in different studies relating job insecurity to its hypothesized outcomes (for a discussion, see Hartley et al., 1991). However, even if one could expect stronger correlations in studies using multiple-indicator scales, this is an issue that deserves empirical examination.

Occupational Status

Meta-analysis also allows for investigating whether the relationship between job insecurity and its postulated consequences differ between groups of employees. Research suggests that characteristics of the job holders—such as their financial dependence on work (Kinnunen et al., 1999), level of education (Frese, 1985), employability (Gallie, White, Cheng, & Tomlinson, 1998), and control over decision making (Barling & Kelloway, 1996)—may affect their vulnerability for detrimental consequences of job insecurity. Such characteristics are reflected in the skill levels associated with different occupational groups. Still, in relation to the amount of research that has been conducted on job insecurity, relatively few studies have considered the occupational status of those affected by insecurity. Also, the theorizing on the potential role played by occupational status is, to a great extent, extrapolated from unemployment research (for an overview, see Feather, 1990). The empirical results have provided no clear view of if, or how, the reactions to job insecurity differ between manual employees (blue-collar workers) and non-manual employees (white-collar workers, professionals, and managers).

One line of research suggests that employees with a manual job will react more strongly to perceived threats of unemployment than will employees with nonmanual jobs (De Witte, 1999). This has been attributed to the higher levels of uncertainty to which employees in manual jobs are exposed and to a stronger economic dependency on paid work (Frese, 1985; Kinnunen et al., 1999). According to Frese (1985), unskilled and less-paid workers are exposed to higher degrees of uncertainty and will experience more strain when faced with job insecurity. Along similar lines, it has been argued that the higher education level among nonmanual workers may serve as a buffer against the adverse effects of unemployment and also facilitate renewed unemployment (Gallie et al., 1998; Schaufeli, 1992).

In contrast to this, it has also been suggested that

because nonmanual workers typically have higher education, they would suffer more from "status inconsistency" when faced with (threats of) unemployment (Schaufeli, 1992). Such inconsistency between high education and being unemployed, in turn, would lead to intense strain. For instance, the view has been furthered that managers can react more strongly to job insecurity because they tend to believe that people get what they deserve and thus make themselves responsible for the threat of job loss (Roskies & Louis-Guerin, 1990).

The empirical support for these conflicting views is mixed, and some studies (e.g., Orpen, 1993) even report nonsignificant differences between occupational status categories. Moreover, it has been suggested that nonmanual workers, in connection with the increased flexibility of working life, face increasing threats of unemployment (Rifkin, 1995) and, therefore, now are as vulnerable as manual workers (Burke & Nelson, 1998). It is clear that this issue merits further examination (Burchell, 1994), not least because it has important practical implications for both management and those concerned.

Method

Selection of Studies

Several methods were used to identify studies relevant to the meta-analysis. Computerized searches were conducted on the following databases: ABI/Inform, ERIC, LIBRIS, Management Contents, MedLine, Mental Health Abstracts, NIOSHTIC, PsycINFO, Sociological Abstracts, Social SciSearch, and Uncover. In all cases, both *job insecurity* and *job security* were used as key words. The search was limited to the period from 1980, that is, when systematic research on job insecurity commenced (Ashford et al., 1989; Hartley et al., 1991; Sverke & Hellgren, 2002), until the time of data collection (spring/summer 1999). We also conducted issue-by-issue searches of several journals over the same period to find potentially relevant studies that did not include job (in)security in the title, abstract, or list of key words: *Academy of Management Journal*, *Human Relations*, *Journal of Applied Psychology*, *Journal of Occupational Health Psychology*, *Journal of Occupational and Organizational Psychology*, *Journal of Organizational Behavior*, *Journal of Vocational Behavior*, *Psychological Bulletin*, *Social Science & Medicine*, *Stress Medicine*, and *Work & Stress*, including, where applicable, their predecessors. In addition, reference lists of numerous reviews and theoretical articles were studied to find references not identified through the other search methods.

The search was restricted to published studies (articles, books, and chapters of books) in the English language. Studies were included in the meta-analysis if they (a) had measured the subjective experience of job insecurity, (b) included at least one of the criterion variables of interest, (c) reported correlations (or other statistics that could be trans-

formed into correlation coefficients), and (d) were based on a working population.

After a screening of abstracts, 450 published studies were photocopied. A total of 72 (mainly cross-sectional) met the criteria for inclusion in the meta-analysis (16%). These studies included 86 independent samples representing 38,531 individuals and yielded 186 correlations for inclusion in the study. Approximately 50% of the photocopied studies were excluded because they did not contain quantitative data on job insecurity, yet another 25% did not include any of the dependent variables, around 10% were excluded because they did not include data that could be transformed into correlation coefficients, and only a few did not meet the criterion of a sample based on working individuals. Because the organizations in the studies included in the meta-analysis represent a variety of countries, occupations, and industrial sectors, we believe that they make up a diverse and representative sample.

Coding of the Studies

The following information was coded for each independent sample: sample size, sample employee type (manual vs. nonmanual work), type of job insecurity measure (scale vs. single item) including its source and the number of items, reliability of the insecurity measure, outcome criteria (i.e., job satisfaction, job involvement, organizational commitment, trust, physical health, mental health, performance, and turnover intention), and effect sizes. For each outcome criterion, we coded the type of measure, its source, the number of items, and the reliability estimate. One of the authors (Katharina Näswall) and an assistant coded the studies. We resolved the few discrepancies found in discussions, and variables were not coded unless they were clear from the published studies. The key characteristics of the studies are presented in Table 1.

Meta-Analytic Procedures

The meta-analysis was based on Hunter and Schmidt's (1990) method. In a first step, sample size-weighted mean correlations (\bar{r}_w) were computed for each pairwise relationship. This procedure gives more weight to the correlations that are least susceptible to sampling error, that is, to those derived from larger samples. Next, each correlation was corrected for measurement error (\bar{r}_c) because reliability deficits have the effect of lowering observed correlations. For studies that did not report reliabilities, the weighted mean reliabilities from the meta-analysis were used as substitutes: job insecurity (.773), job satisfaction (.798), job involvement (.792), organizational commitment (.826), trust (.842), physical health (.760), mental health (.840), performance (.817), and turnover intention (.813). The attenuation-corrected correlations provide the best estimate of the population correlation between two variables. Again, we make the distinction between small (correlations less than .200), medium (.200 to .400), and large (greater than .400) effect sizes (Cohen, 1969). Our third step was to estimate population standard deviations and confidence intervals of each population effect size.

In accordance with the procedure described by Hunter and Schmidt (1990), the overall meta-analysis effects were

followed up with three tests for the presence of moderators. First, we estimated the degree to which statistical artifacts explained variance in the sample size-weighted mean correlations corrected for measurement error. To rule out other sources of variance, 75% or more of the observed variance should, according to Hunter and Schmidt (1990), be explained by artifacts (i.e., sampling error, measurement error, and range differences). Because very few studies reported means, standard deviations, and scale ranges, we were unable to correct for range restriction. Hence, rather than relying on the 75% criterion, following conventional practice for this frequent problem (Hom, Caranikas-Walker, Prussia, & Griffeth, 1992; Mathieu & Zajac, 1990), we deemed 60% or more variance attributable to artifacts to signify that the likelihood of moderated relationships can be considered negligible. Second, the results were tested for homogeneity by a chi-square test (Hunter & Schmidt, 1990; Sackett, Harris, & Orr, 1986) to test for significant between-study differences in variances. Third, the residual standard deviation in the sample was calculated; this should be less than 25% of the population effect size for the sample to be considered homogeneous (Hunter & Schmidt, 1990).

These tests can be used merely to test for homogeneity or indicate the presence of moderators but not their identity. Therefore, following the procedures recommended by Hunter and his colleagues (Hunter & Schmidt, 1990; Hunter, Schmidt, & Jackson, 1982), the total collection of studies was partitioned into subsets representing the categories of the moderator variables chosen (i.e., single item vs. scale measure of job insecurity, and manual vs. non-manual work). To examine whether the moderators explained nonartifactual variation between studies, we computed meta-analysis correlations and variances across moderator subsets. For a variable to qualify as a moderator, the average residual variance of the subsets should be smaller than the residual variance in the overall analysis; in addition, the population effect size should vary across moderator subgroups (Hunter & Schmidt, 1990). Following Brown (1996) and Mathieu and Zajac (1990), we also used a more conservative procedure and tested for differences in adjusted mean correlations across moderator subgroups using a *t* test for small samples described by Winer (1971, pp. 41–43). Given the exploratory nature of the moderator analyses, two-tailed tests for significance were used. To control for Type I error, we applied the Bonferroni method across comparisons for each set of moderator analyses using an alpha level of .05.

Results and Discussion

The primary rationale for the present study was to provide state-of-the-art evidence concerning the relationships between job insecurity and its postulated outcomes by using meta-analytic techniques. In the following sections, we present the results and discuss them, starting with the main effects followed by moderators, as well as limitations of the present study.

Main Effects

A summary of the overall meta-analysis results of the relationships between job insecurity and its hypothesized consequences (job attitudes, organizational attitudes, health, and work-related behavior) are presented in Table 2. Data in the table include the number of studies investigating each relationship (*K*), the total number of individuals from these samples (*N*), the sample size-weighted mean correlation (\bar{r}_o), the correlation corrected also for measurement error (population effect size, \bar{r}_c), the estimated population standard deviation of the correlation (*SD*), and the tests for homogeneity of correlations (i.e., percentage variance explained by artifacts, the chi-square test, and the ratio of residual standard deviation to population effect size).

Job attitudes. The corrected relationship between job insecurity and job satisfaction, based on 28,885 individuals from 50 independent samples, was strong ($\bar{r}_c = -.407$). The relationship was statistically significant as reflected in a 95% confidence interval (CI) that did not include 0. In terms of job involvement, the relationship was based only on 516 individuals from four different studies. The population effect size was medium ($\bar{r}_c = -.374$) and significant. For both job attitudes, the homogeneity tests indicated the presence of other variables moderating the relationships—the proportions of variance explained by artifacts were far below 60% (11.08% and 31.97% for satisfaction and involvement, respectively), the chi-square tests were significant, and the residual standard deviation accounted for more than 25% of the population effect size (.40 and .39, respectively). These findings could be taken to indicate that job insecurity, consistent with theoretical assumptions (e.g., Greenhalgh & Rosenblatt, 1984; Hartley et al., 1991), has substantial bivariate relationships with job attitudes.

Organizational attitudes. The population effects on organizational attitudes were based on 30 studies investigating the job insecurity–organizational commitment relationship and 8 studies that included trust. In both cases, the correlations were significant (the 95% CIs did not include 0). The disattenuated population effect size of job insecurity was medium for organizational commitment ($\bar{r}_c = -.358$) and large for trust ($\bar{r}_c = -.498$). For both outcomes, the tests for homogeneity signaled the presence of moderators. In summarizing the variation in results across these studies, the present meta-analyses showed that, on an overall level, job insecurity had a moderate negative correlation with organizational commitment and a

Table 1
Studies of the Consequences of Job Insecurity (in Alphabetical Order)

Reference	N	Type of measurement	Occupational status
Abramis (1994)	281	Scale	—
Alnajjar (1996)	173	Scale	—
Ameen, Jackson, and Strawser (1995)	72	Scale	Nonmanual
Andaleeb (1996)	217	Single item	—
Anderson and Iwanicki (1984)	375	Single item	Nonmanual
Armstrong-Stassen (1993)	74	Scale	Manual
Armstrong-Stassen (1994)	200	Scale	Manual
Arnold and Feldman (1982)	654	Single item	Nonmanual
Ashford, Lee, and Bobko (1989)	152	Scale	Nonmanual
Axelrod and Gavin (1980), Sample 1	37	Scale	Nonmanual
Axelrod and Gavin (1980), Sample 2	33	Scale	Nonmanual
Barling and Kelloway (1996)	187	Scale	Manual
Barnett and Brennan (1995)	504	Scale	—
Borg and Elizur (1992), Company A	364	Single item	Nonmanual
Borg and Elizur (1992), Company B	480	Single item	Nonmanual
Borg and Elizur (1992), Company C1	839	Single item	Nonmanual
Borg and Elizur (1992), Company D	314	Single item	Nonmanual
Borg and Elizur (1992), Company E	1,143	Single item	Nonmanual
Brockner, Grover, Reed, and DeWitt (1992)	597	Single item	—
Burke (1991)	73	Scale	Nonmanual
Burke (1998)	217	Scale	Nonmanual
Büssing (1999)	123	Single item	Manual
Cavanaugh and Noe (1999)	136	Scale	—
Champoux (1992)	247	Scale	—
Colarelli, Dean, and Konstans (1987)	280	Scale	Nonmanual
Davy, Kinicki, and Scheck (1991)	88	Single item	—
Davy, Kinicki, and Scheck (1997), Study 1	137	Single item	—
Davy, Kinicki, and Scheck (1997), Study 2	188	Single item	—
Deci, Connell, and Ryan (1989)	20	Single item	—
De Witte (1999)	336	Single item	Nonmanual
Dubinsky, Kotabe, Lim, and Wagner (1997), American sample	218	Single item	Nonmanual
Dubinsky, Kotabe, Lim, and Wagner (1997), Japanese sample	220	Single item	Nonmanual
Edwards and Rothbard (1999)	1,758	Scale	Nonmanual
Fox and Chancey (1998), women	222	Scale	—
Fox and Chancey (1998), men	144	Scale	—
Fried and Tiegs (1993)	112	Scale	Manual
Friesen and Sarros (1989), teachers	635	Scale	Nonmanual
Friesen and Sarros (1989), administrators	128	Scale	Nonmanual
Gaertner and Nollen (1989)	151	Single item	—
Grunberg, Moore, and Greenberg (1998)	972	Scale	Manual
Hellgren, Sverke, and Isaksson (1999)	375	Scale	Nonmanual
Hollenbeck and Williams (1986)	112	Scale	Nonmanual
Hossain (1992)	60	Single item	—
Israel, House, Shurman, Heaney, and Mero (1989)	630	Scale	—
Iverson (1996)	761	Scale	Nonmanual
Iverson and Roy (1994)	246	Scale	Manual
Kinnunen and Mauno (1998), women	356	Scale	—
Kinnunen and Mauno (1998), men	145	Scale	—
Kinnunen and Nätti (1994)	3,503	Scale	—
Kuhnert and Palmer (1991)	104	Scale	Nonmanual
Kuhnert, Sims, and Lahey (1989), Sample 1	98	Scale	Manual
Kuhnert, Sims, and Lahey (1989), Sample 2	104	Scale	Manual
Kuhnert and Vance (1992)	262	Scale	—
Landsbergis (1988)	289	Scale	—
Levanoni and Sales (1990)	191	Scale	Manual
Lim (1996)	240	Scale	Nonmanual

Table 1 (continued)

Reference	N	Type of measurement	Occupational status
Lim (1997)	306	Scale	Nonmanual
Lindström, Leino, Seitsamo, and Torstila (1997)	477	Single item	Nonmanual
Liou (1995)	109	Single item	Nonmanual
Liou and Bazemore (1994)	109	Single item	Nonmanual
McFarlane Shore and Tetrick (1991)	330	Scale	—
Meglino, Ravlin, and Adkins (1989)	191	Scale	—
O'Driscoll and Beehr (1994)	236	Scale	Nonmanual
Olson and Tetrick (1988)	3,246	Scale	—
Orpen (1993), White managers	54	Scale	Nonmanual
Orpen (1993), Black workers	78	Scale	Manual
Pearce, Branzkycki, and Bakasci (1994)	851	Scale	—
Piotrikowski and Crits-Christoph (1981)	99	Scale	—
Robinson (1996)	125	Single item	Nonmanual
Rosenblatt, Talmud, and Ruvio (1999)	385	Scale	Nonmanual
Roskies and Louis-Guerin (1990)	988	Scale	Nonmanual
Roskies, Louis-Guerin, and Fournier (1993)	93	Scale	Nonmanual
Schaubroeck, Ganster, and Kemmerer (1996)	177	Scale	Nonmanual
Schmitt, Colligan, and Fitzgerald (1980)	826	Single item	—
Stedham and Mitchell (1996)	492	Single item	Manual
Stepina and Perrew (1991)	175	Scale	Nonmanual
Stewart and Barling (1996)	189	Scale	—
Tiegs, Tetrick, and Fried (1992)	6,405	Scale	—
van Vuuren and Klandermans (1990)	311	Scale	Manual
Vinnicombe (1984)	189	Single item	Nonmanual
Vinokur-Kaplan, Jayaratne, and Chess (1994), nonprofit sample	310	Single item	Nonmanual
Vinokur-Kaplan, Jayaratne, and Chess (1994), private sample	155	Single item	Nonmanual
Vinokur-Kaplan, Jayaratne, and Chess (1994), public sample	281	Single item	Nonmanual
Wilson, Larson, and Stone (1993)	222	Single item	—
Yousef (1998)	447	Scale	—
Zikiye and Zikiye (1992)	98	Scale	Manual

Note. Dashes indicate not applicable.

strong negative association with trust. These results are congruent with the theoretical assumption that job insecurity leads to impaired organizational attitudes (Ashford et al., 1989; Sverke & Hellgren, 2002).

Health. The meta-analyses of overall relationships between job insecurity and well-being variables indicated significant associations. Neither of the 95% CIs included 0. The population effect size, estimated from 19 studies, was small for physical health ($\bar{r}_c = -.159$) whereas that for mental health, based on 37 samples, was medium ($\bar{r}_c = -.237$). Whereas the proportion of variance explained by artifacts approached 60% for physical health, it was low for mental health, the chi-square tests were significant, and the ratio of residual standard deviation to population effect size exceeded .25, thus indicating that the correlations obtained in different studies were not homogeneous. Our results are consistent with the

notion that job insecurity is more strongly related to mental as compared with physical health (e.g., Barling & Kelloway, 1996; Kuhnert & Vance, 1992).

Work-related behavior. On the basis of 12 studies that included performance, job insecurity was found not to be significantly associated with performance, because the 95% CI ($-.454 < r < .053$) around the estimated population effect ($\bar{r}_c = -.201$) included 0. One potential explanation for this is that job insecurity simply is not related to performance. It could also be that job insecurity leads to enhanced performance in some contexts (e.g., performance as the criterion for layoff decisions), whereas in other contexts (e.g., tenure as the criterion) performance is impaired (Parker, Axtell, & Turner, 2001; Sverke & Hellgren, 2001). It is therefore important to investigate how job insecurity relates to performance in different organizational contexts. An alternative ex-

Table 2
Overall Results

Variable	<i>K</i>	<i>N</i>	\bar{r}_o	\bar{r}_c	<i>SD</i>	% variance explained by artifacts	$\chi^2 (k - 1)$	$\frac{SD_{\text{residual}}}{\bar{r}_c}$
Job satisfaction	50	28,885	-.317	-.407	.13	11.08	638.87*	0.40
Job involvement	4	516	-.296	-.374	.14	31.97	12.16*	0.39
Organizational commitment	30	8,681	-.286	-.358	.14	18.16	189.89*	0.43
Trust	8	2,994	-.401	-.498	.12	18.41	57.65*	0.26
Physical health	19	9,704	-.121	-.159	.06	54.63	37.40*	0.34
Mental health	37	14,888	-.189	-.237	.10	24.42	167.33*	0.47
Performance	12	2,669	-.164	-.201	.12	28.08	43.51*	0.64
Turnover intention	26	11,247	.226	.284	.08	33.16	88.76*	0.31

Note. *K* denotes the number of independent samples, \bar{r}_o is the mean observed correlation, and \bar{r}_c is the mean correlation corrected for attenuation.

* $p < .01$.

planation concerns the difficulty of measuring performance by means of self-report questionnaires. Research suggests that individuals tend to overestimate their performance and that ratings made by others typically are more valid than self-rated performance scales (Ford & Noe, 1987). However, consistent with theoretical assumptions (e.g., Kozlowski et al., 1993; Pfeffer, 1998), the corrected meta-correlation between job insecurity and turnover intention, which was based on 26 studies, was medium and significant ($\bar{r}_c = .284$). For both variables, the homogeneity tests indicated moderated relationships. Although the effect sizes vary in the previous studies, our meta-analysis indicates that job insecurity, on the aggregate level, has a moderately strong positive association with employees' turnover intentions.

Summary. Consistent with the conceptual literature on the consequences of perceived threats to continued employment (e.g., Burchell, 1994; De Witte, 1999; Greenhalgh & Rosenblatt, 1984; Hartley et al., 1991; Sverke & Hellgren, 2002), the results of the meta-analysis indicate that job insecurity can have detrimental consequences for the individual as well as the organization. This applies to immediate (job and organizational attitudes) as well as long-term (health and work-related behavior) reactions. With the exception of performance, job insecurity was found to be significantly related to all outcome variables included in the meta-analysis.

These findings are in concordance with the central assumption of stress theory, in which the anticipation of a fundamental and unwanted event is proposed to lead to various forms of strain (Lazarus & Folkman, 1984). Our results also summarize the heterogeneity across studies and provide population-level estimates

of magnitudes of effect sizes. The advantage of meta-analysis, despite it being a rather coarse measurement based on average relationships, is the fact that it provides a good estimate of correlations between variables in the population (Hunter & Schmidt, 1990). However, the variation between the studies on which the analyses were based also signals that the relationships between job insecurity and the outcome variables are moderated by other factors.

Moderator Analyses

The analyses of overall effects revealed heterogeneity across studies for all eight variables, indicating a need for moderator analyses. Below, the results of these analyses are reported for type of job insecurity measure (item vs. scale) and occupational status (manual vs. nonmanual).

Type of job insecurity measure. Table 3 presents the results of moderator analyses by type of insecurity measure. Job involvement was dropped from this analysis because the minimum requirement of at least two studies per subset (Hunter & Schmidt, 1990) was not met. For all comparisons between studies measuring job insecurity with a single item and a scale, the average residual variance of the population effect sizes in the subsets was smaller than the residual variance from the overall analysis. While this indicates that type of measure qualified as moderator in the relationship between job insecurity and the seven outcomes, there were significant between-subgroups differences in population effect sizes only for three variables when the Bonferroni criterion was applied: job satisfaction, trust, and performance.

Table 3
Moderator Analysis by Type of Job Insecurity Measure

Variable	Single item				Scale				df			
	K	N	\bar{r}_o	\bar{r}_c	SD	K	N	\bar{r}_o		\bar{r}_c	SD	t
Job satisfaction	17	6,278	-.252	-.320	.12	33	22,607	-.335	-.432	.13	3.04*	35
Job involvement	—	—	—	—	—	—	—	—	—	—	—	—
Organizational commitment	13	4,362	-.253	-.318	.12	17	4,319	-.319	-.399	.15	1.64	28
Trust	5	1,917	-.342	-.419	.10	3	1,077	-.506	-.642	.05	4.19*	6
Physical health	2	949	-.135	-.165	.06	17	8,755	-.119	-.158	.06	0.16	1
Mental health	6	2,130	-.221	-.285	.11	31	12,758	-.184	-.229	.10	1.17	7
Performance	3	563	-.065	-.080	.05	9	2,106	-.190	-.233	.12	9.81*	9
Turnover intention	14	5,570	.250	.315	.06	12	5,677	.202	.253	.09	2.03	19

Note. K denotes the number of independent samples, \bar{r}_o is the mean observed correlation, \bar{r}_c is the mean correlation corrected for attenuation, and dashes indicate that there were fewer than two studies in at least one of the subsamples.

* $p < .05$ (after Bonferroni adjustment).

For the job insecurity–job satisfaction relationship, studies using a multi-item scale had a significantly stronger mean correlation ($\bar{r}_c = -.432$) than those measuring job insecurity with a single item ($\bar{r}_c = -.320$). The relationship between job insecurity and trust was also significantly stronger in the studies that measured job insecurity with multiple indicators ($\bar{r}_c = -.642$) as compared with those that relied on a single-item measure ($\bar{r}_c = -.419$). In addition, there was a significant difference for performance. Also for this variable, the effect size of job insecurity was larger for studies based on a multi-item measure ($\bar{r}_c = -.233$) in comparison with those using a single item ($\bar{r}_c = -.080$). There were no other differences.

It can be concluded that studies using multi-item scales typically report stronger associations between job insecurity and various outcomes as compared with studies using single items. This is congruent with the assumption that multiple-indicator measurement scales are more reliable and valid measures of theoretical constructs (Gorsuch, 1997; Nunnally, 1978; Spector, 1992). As a function of this, multiple-indicator measures are better equipped to unravel effect sizes and thus explain variance in the dependent variable. It is especially noteworthy that the correlation between job insecurity and performance, which was not significant in the overall analysis, was almost negligible in the single-item subgroup but was moderately strong in the scale subset. The moderating role of the type of measure has obvious implications for future research: It suggests that to the extent researchers want to arrive at more proper conclusions concerning the effects of job insecurity, they should rely on multiple-indicator scales. Although the wide reliance on home-grown scales prohibited us from comparing different multi-item scales, this would be a fruitful path for future research once more consensus on measurement scales has emerged.

It may be, however, that merely contrasting single-item versus multiple-item measures in a dichotomy is a crude test. Therefore, we conducted some additional tests. First, correlating the number of job insecurity items used with the correlations obtained between job insecurity and its postulated outcomes revealed nonsignificant associations, in part probably because of the small sample sizes. Moreover, the trend of the relationships was negative, thus suggesting that the empirical correlations decrease with the number of job insecurity items used. Obviously, the large range in the number of items could influence the direction of these associations. Second, it is also conceivable that the reliability influences the correlations between job insecurity and the outcome vari-

ables. However, the correlations between the coefficient alpha reliability and the empirical associations were also nonsignificant, but this picture was not as uniform—half of the correlations were positive and half were negative. These supplementary analyses suggest that neither the number of items nor the reliability coefficient per se are the primary reasons for the differences obtained between single items and scales but that it rather is a question of the broader conceptual domain (i.e., content validity) covered by multiple-indicator scales.

Occupational status. Results of moderator analyses by type of work are presented in Table 4. Job involvement and trust did not meet the requirement of at least two studies per subset. Occupational status did not qualify as a moderator for the job insecurity–mental health relationship because the average residual variance from the subsets was larger than the overall residual variance. According to the Bonferroni criterion, there were significant between-subgroups differences for two of the remaining variables: performance and turnover intention. In both cases, the results reveal a tendency for stronger relationships among manual workers ($\bar{r}_c = -.344$ for the relationship between job insecurity and performance; $\bar{r}_c = .448$ for the relationship between insecurity and turnover intention) as compared with studies conducted on nonmanual workers ($\bar{r}_c = -.138$ and $\bar{r}_c = .312$, respectively). We found no other differences.

These results could be taken as evidence for rejecting the “status inconsistency” hypothesis of more negative reactions among higher educated categories of employees (see Schaufeli, 1992). Rather, the meta-analysis provides support for the alternative explanation that stronger stress reactions can be expected

among less-favored occupational groups with lower education and a stronger economic dependency on paid work (Frese, 1985). Another interpretation of the stronger negative relation between job insecurity and performance among manual workers could be that the performance of nonmanual workers is more difficult to assess. The plausibility of this interpretation is diminished, however, by the fact that all but two of the studies in this meta-analysis were based on self-rate measures of performance.

Limitations

The results of our meta-analysis provide support for the theoretically suggested associations between job insecurity and its postulated consequences. However, despite meta-analysis being a powerful tool for synthesizing empirical studies, a few limitations need to be addressed.

One such limitation, which is difficult to guard against, is the drawback of correlational research, and thus of standard applications of meta-analytic techniques as well. Correlational studies can only detect measures of association, whereas the direction of causality is an open question. Although the theoretical framework underlying conceptualizations of job insecurity views insecurity as a stressor that will result in strain (Ashford et al., 1989; De Witte, 1999; Greenhalgh & Rosenblatt, 1984; Sverke & Hellgren, 2002; cf. Lazarus & Folkman, 1984), it is also plausible that employees with, for instance, poor health or bad performance records are more likely to experience job insecurity and to react more negatively to it (Hartley et al., 1991). A few longitudinal studies, however, show that job insecurity predicts subse-

Table 4
Moderator Analysis by Occupational Status

Variable	Manual work					Nonmanual work					<i>t</i>	<i>df</i>
	<i>K</i>	<i>N</i>	\bar{r}_o	\bar{r}_c	<i>SD</i>	<i>K</i>	<i>N</i>	\bar{r}_o	\bar{r}_c	<i>SD</i>		
Job satisfaction	7	2,433	-.193	-.249	.15	25	9,577	-.286	-.357	.10	1.80	8
Job involvement	—	—	—	—	—	—	—	—	—	—	—	—
Organizational commitment	6	1,510	-.215	-.279	.12	13	4,851	-.273	-.331	.07	0.99	7
Trust	—	—	—	—	—	—	—	—	—	—	—	—
Physical health	4	899	-.190	-.238	.07	6	2,428	-.135	-.182	.05	1.38	5
Mental health	9	1,185	-.293	-.351	.14	15	6,359	-.200	-.244	.10	2.01	13
Performance	2	274	-.293	-.344	.00	8	1,667	-.113	-.138	.13	4.47*	7
Turnover intention	3	925	.302	.448	.04	18	6,270	.255	.312	.08	4.57*	5

Note. *K* denotes the number of independent samples, \bar{r}_o is the mean observed correlation, \bar{r}_c is the mean correlation corrected for attenuation, and dashes indicate that there were fewer than two studies in at least one of the subsamples.

* $p < .05$ (after Bonferroni adjustment).

quent outcome variables even after controlling for baseline levels of the same outcomes (e.g., Hellgren et al., 1999; Iversen & Sabroe, 1988; Roskies et al., 1993) but, clearly, more longitudinal research would help clarify these issues.

Another potential limitation concerns the fact that we investigated only bivariate relationships between job insecurity and its postulated outcomes. A more accurate account of the relative importance of job insecurity would be provided if other factors, such as demographic characteristics, contextual variables, and personal characteristics, were also considered. For instance, research has not clarified the effects of job insecurity beyond what can be explained by mood dispositions (Hellgren et al., 1999; Roskies et al., 1993). In addition, it would be valuable to assess the unique criterion effects of job insecurity beyond those of other stressors. Given the difficulty of collecting such information from several studies, this is an issue that probably is better suited for individual studies rather than meta-analytic research.

Overall, the meta-analysis indicated that the relationships between job insecurity and all eight outcome variables considered were moderated by other factors, and the moderator analyses identified five significant moderator effects altogether. An additional potential limitation of the present study is that we investigated only two moderators. Some factors could be considered more likely to account for systematic variation across studies. For instance, it has been suggested that the degree to which an individual experiences job insecurity is influenced by demographic characteristics such as sex, age, and civil status (e.g., De Witte, 1999). These demographics are typically presented in studies as percentages of women, the average age for the whole sample, and the proportion of married individuals, respectively. Given that this information is not very useful in a meta-analysis, addressing the potential moderating effect of these variables is more effectively done in single studies. Moreover, research has suggested a range of factors that may moderate the effects of job insecurity, for example, personality dispositions and various types of support (e.g., De Witte, 1999; Lim, 1996; Sverke & Hellgren, 2002). However, even when there is a theoretical rationale for examining a potential moderator, this could be prohibited for practical reasons. For instance, although it would be valuable to investigate whether the relationships between job insecurity and its consequences differ between organizational setting (e.g., layoffs vs. no organizational change) or has become stronger as the rate of layoffs has increased (Howard, 1995), indi-

vidual studies typically do not report information on setting or year of data collection.

Previous research has concluded that it is almost impossible to rule out third-variable problems in correlational studies because the amount of conceivable explanatory variables is almost innumerable (Judd, Jessor, & Donovan, 1986). This, however, is no reason for not attempting to identify potential moderating variables. In this study we have investigated two such variables, but we strongly encourage further studies on variables that moderate the relation between job insecurity and its consequences.

To conclude our discussion of the limitations of this study, it should be mentioned that there is some criticism of the method of meta-analysis itself because, for obvious reasons (availability, quality, etc.), it is often restricted to the use of published studies. It has been alleged that a disproportionate amount of published studies have significant results and larger effect sizes, thereby making meta-analysis results biased toward significance (for a discussion of this issue, see Hunter & Schmidt, 1990). However, availability bias affects literature reviews and primary research as well, because these studies also build on published articles. A persuasive argument has also been made that published studies can be relied on to generally be of high quality, whereas the quality of unpublished studies has not yet been determined (Hunter & Schmidt, 1990). The published studies thus give us more reliable information that we are willing to trust to a greater extent than the unpublished studies. If the availability bias were true, this would undermine the reported studies, and the question would arise why we should trust any studies that are published or automatically assume that they are biased. We must assume that the published information is trustworthy, because this is what we build future research on, whether it be primary research or meta-analysis.

Implications for Future Research on Job Insecurity

So far we have reviewed the literature on job insecurity, and the meta-analysis has established aggregate relations between job insecurity and its hypothesized outcomes. At this point, we attempt to draw out implications for future research on job insecurity—where do we go from here? In this section we discuss problems in assessing job insecurity, possible alternative outcomes, moderating variables, and the need for longitudinal research designs.

Measurement of Job Insecurity

In our meta-analysis, we have observed that studies using multiple indicator measures typically find stronger associations between job insecurity and its outcomes as compared with studies using single items. This implies that future research would benefit from using elaborated scales with a broader content domain to better capture the magnitudes of relations between job insecurity and its outcomes. Currently, there is a lack of agreement on the type of multiple indicator measure to be used, and we provide the following suggestions as a guide to arriving at a more consensus-based measure.

The development of a more agreed-on measure should consider the distinction between global and multidimensional measures of job insecurity. The global measures focus on imminent job loss, whereas multidimensional instruments take a wider perspective. There are two major categories of global measures: those focusing on the perceived probability of job loss (e.g., Mohr, 2000; van Vuuren, 1990) and those focusing on the fear or worry of future job loss (e.g., Johnson, Messe, & Crano, 1984). Most definitions express the shared view of job insecurity as a subjectively perceived threat of involuntary job loss (e.g., Ashford et al., 1989; Davy et al., 1997; Hartley et al., 1991; Heaney et al., 1994; Rosenblatt & Ruvio, 1996), and it would seem reasonable that measures of the construct reflect the conceptual definition. As probability measures do not necessarily imply that the likelihood of job loss is involuntary, we claim that the scales capturing fear or worry of job loss best reflect the conceptual definition of job insecurity.

The multidimensional instruments typically consider threats to valued job features in addition to concerns about continuity of the present job. Specifically, several researchers have suggested that conceptual and operational definitions of job insecurity would benefit from reflecting not only threats of imminent job loss but also perceptions of deteriorated career opportunities and employment conditions (e.g., Ashford et al., 1989; Greenhalgh & Rosenblatt, 1984; Hartley & Klandermans, 1986; Hellgren et al., 1999; Roskies & Louis-Guerin, 1990). This distinction was made already in 1984 by Greenhalgh and Rosenblatt and was subsequently operationalized by Ashford et al. (1989).

Whereas the measure developed by Ashford and her colleagues contains five dimensions of job insecurity (threats to the job itself, importance of total job, threats to valued job features, importance of valued job features, and a feeling of powerlessness to

counteract these threats), these dimensions are most often combined into a global measure rather than used for capturing the relative effect of each dimension. The utilization of 57 items to reach a global measure does not seem particularly parsimonious, but this instrument still makes it possible to assess perceived threats both to the job itself and to job features. Other researchers have adopted the distinction between threats to the job itself and threats to valued job features (e.g., Hellgren et al., 1999). Given that the distinction between immediate job loss and loss of important job features has gained considerable attention, we strongly encourage future theoretical work on these aspects as well as empirical development and validation of measures reflecting these dimensions. This type of work would benefit from taking into account the work of Roskies and Louis-Guerin (1990), who examined various facets of threats to valued job features. Theoretical and empirical work in this direction would, it is hoped, lead to more consensus on how to assess job insecurity. Ideally, this will facilitate future comparisons between studies and thereby expand our knowledge.

Outcomes of Job Insecurity

The present meta-analysis indicates that job insecurity is associated with negative consequences for job attitudes, organizational attitudes, employee health, and work-related behavior. Some of the relations investigated in our meta-analysis are based on a large number of empirical studies (e.g., job satisfaction, organizational commitment), whereas other summarize a smaller number of samples (e.g., job involvement, trust). Obviously, this is a reflection of the research interest that has gone into understanding how job insecurity relates to various potential consequences. We also believe that this should serve to guide future research efforts. For instance, certain variables in the present analysis (e.g., trust, job involvement) deserve additional attention in future research to increase the credibility of the conclusions drawn in our analysis.

Moreover, it should also be emphasized that we make no claims on having addressed all potential outcomes of job insecurity in this meta-analysis. Despite the fact that the eight specific outcomes addressed here represent those variables that have received most attention in empirical research, we acknowledge the need to investigate other factors that may be consequences of job insecurity. In addition to studying job satisfaction and job involvement, for instance, future studies could preferably address how

job insecurity relates to job attitudes such as work intensity (Brown & Leigh, 1996). The same applies to the health variables in which there is a need to cover additional factors. Some attempts in this direction have already been made. For instance, previous research has related job insecurity to more medical aspects of physical health as well, such as neck-and-shoulder problems (Lindström et al., 1997) and ischemic heart disease occurrence (Siegrist, Peter, Junge, Cremer, & Seidel, 1990).

In terms of outcomes more relevant for the organization, we call for research addressing factors such as organizational citizenship behavior (Van Dyne, Graham, & Dienesch, 1994) and organizational effectiveness (Hartley et al., 1991) in addition to organizational commitment and trust. It would also be valuable to have a wider perspective on work-related behavior. This could be done by supplementing research on performance and turnover with studies examining how job insecurity relates to behaviors such as absenteeism, social loafing, lack of compliance with safety regulations, and other dysfunctional behaviors (De Witte, 1999; Hartley et al., 1991; Parker et al., 2001). Given our call for multidimensional measures of job insecurity, we also note that it is valuable for future research to investigate the relative importance of different dimensions of job insecurity for various outcome variables (Sverke & Hellgren, 2002).

However, future research should not only address a wider spectrum of potential outcomes. A problem in research on job insecurity, as with psychological research in general, is that of common method bias (Campbell & Fiske, 1959). To rule out common method variance as an artifactual influence on the job insecurity–outcome relations, it is of utmost importance to assess as many as possible of these outcomes using additional data sources. This applies mainly to outcomes labeled long-term consequences in our categorization (see Figure 1), and there are a few good examples of this strategy in the literature. For instance, some researchers have used supervisor ratings of performance rather than self-rated estimates (e.g., Stepina & Perrewé, 1991). Researchers have also stressed the importance of relating job insecurity to physiologically based indicators of health (see Ferrie, 2001, for a review). An especially fruitful area of future research concerns assessing the extent to which job insecurity has similar relations with self-rate measures of a certain outcome and externally measured variables reflecting the same category of outcome.

Moderators

It is vital to identify variables that could buffer against the negative effects of job insecurity. Here we discuss the potential moderating role of individual characteristics and demographics, perceptions of fairness, and various sources of social support.

Individual dispositions have attracted some attention in research dealing with job insecurity. So far, however, most of the studies have used individual dispositions to explain individual variation in the experience of job insecurity (see Hartley et al., 1991). It is also conceivable that certain personality dispositions can have buffering effects on the relationship between job insecurity and, for example, health outcomes. One of the few studies investigating this question was conducted by Roskies et al. (1993). They reported that people high in negative affectivity do not necessarily experience the consequences of job insecurity as more severe when compared with people with lower levels of negative affectivity—they report more health complaints because they already feel worse. It is also possible that other individual dispositions, such as locus of control, need for security, neuroticism, and the centrality of work (Hartley et al., 1991), play important roles in understanding consequences of job insecurity.

We also believe that it is important to look at the role of employability when investigating the relation between job insecurity and its outcomes (see Turnley & Feldman, 1999). Questions of how the organization can work to restore and vitalize the employees' sense of employability and, thereby, reduce their perceptions of job insecurity represent especially valuable areas for future research. The notion of employability could be both internal (i.e., individual skills and competences that are useful in a variety of positions in the organization) and external (i.e., skills that will make it possible to find another job outside the organization).

Another important issue concerns the potential moderating role of demographic factors, such as age and family situation. From the unemployment literature, we have seen that different age groups react differently to unemployment. Unemployment appears to be more distressing for people in the age span between 30 and 50 years, in comparison with both younger and older people (Warr & Jackson, 1984). One explanation for this is that people in the middle of their life are more dependent on a steady income because they typically have family responsibilities and bank loans and because the social role as unemployed is less legitimate (De Witte, 1999).

However, it is unclear if these results also apply to the relation between job insecurity and its outcomes.

There is empirical evidence to support the positive role of factors such as justice (Brockner, 1990; Novelli, Kirkman, & Shapiro, 1995), participation (Lind & Tyler, 1988; Parker, Chmiel, & Wall, 1997), and control (Barling & Kelloway, 1996; Davy, Kinicki, & Scheck, 1991) for employees' work attitudes, performance, and well-being. Although the buffering effect of fairness in contexts of downsizing has received attention in several studies (e.g., Brockner, 1988, 1990; Brockner, Grover, Reed, & DeWitt, 1992), more research is needed to clarify the moderating role of perceptions of fairness on the relation between job insecurity and its consequences (Hellgren & Sverke, 2001).

Yet another interesting area for future research is that of social support. There has been some promising results reported in previous research regarding the buffering effect of various sources of support (e.g., Daniels & Guppy, 1994; Lim, 1996; Marcelissen, Winnubst, Buunk, & De Wolff, 1988). However, the number of studies addressing the issue of social support in the context of organizational turmoil and job insecurity is relatively small, and it is still difficult to draw valid conclusion about the role of social support. Thus, this is a field that needs more empirical work in the future. Connected to this is the challenging issue of what kind of social support (work-based support, family support, friends) is the most effective in reducing negative outcomes of job insecurity.

Another key issue that we stress as important for future research is the role played by the union, or what can be called collective representation or collective support (Heller, Pusic, Strauss, & Wilpert, 1998; Mellor, 1992). To our knowledge, only a limited number of studies have addressed the role of the union to answer the question of whether unions can reduce the negative associations between job insecurity and its outcomes. The results obtained so far have typically been negative, that is, union variables appear to be of minor importance in buffering the negative effects that are associated with job insecurity (e.g., Dekker & Schaufeli, 1995; Shaw, Fields, Thacker, & Fisher, 1993; Sverke & Hellgren, 2001). It is difficult to draw conclusions on the basis of the few studies that so far have addressed the role of the union, and clearly more research is needed to understand the role of union membership, union support, and union attitudes in a working life plagued with organizational uncertainty.

Longitudinal Research

To more properly address how job insecurity causally relates to other factors (antecedents, moderators, and outcomes), more longitudinal research efforts are needed. We note the importance of controlling for baseline levels of the outcomes considered rather than merely predicting the outcomes from prior measures of job insecurity. A few longitudinal studies provide preliminary support for the notion that job insecurity precedes impaired attitudes and well-being. For example, it has been shown that job insecurity has significant effects on subsequent well-being after controlling for prior levels of such outcomes (Hellgren et al., 1999; Iversen & Sabroe, 1988; Roskies et al., 1993). To date, the strongest support for a causal precedence of job insecurity comes from a cross-lagged correlation analysis (Frese, 1985). Job insecurity was part of a broader stressor index that was found to have a stronger correlation with subsequent psychosomatic complaints as compared with the relation between complaints and subsequent stressors. More elaborate cross-lagged panel designs would make a valuable contribution to the literature. When the time is ripe, that is, once more longitudinal studies have been conducted, future meta-analytic reviews of job insecurity would benefit from investigating if and how effect sizes differ between longitudinal and cross-sectional studies, and preferably address the temporal precedence issue by means of cross-lagged analysis.

We also believe that researchers should consider the process in which job insecurity develops and affects individuals. One important issue concerns the antecedents of job insecurity (see Sverke & Hellgren, 2002). Reducing and preventing negative consequences of job insecurity requires an understanding of how it develops. Investigating how various environmental factors (e.g., labor market characteristics, economic fluctuations), organizational factors (e.g., organizational change, employment contract), and individual characteristics (e.g., employability, family responsibility, work climate, individual differences) interact to give rise to perceptions of job insecurity is an interesting area of future research.

The duration of job insecurity represents another interesting area. Employees experiencing job insecurity over a protracted period of time could be expected to develop stronger reactions as compared with those perceiving insecurity during a shorter time period. For example, Heaney et al. (1994) found that chronic job insecurity predicted persisting negative perceptions of job satisfaction and physical health,

even after controlling for baseline levels of these variables. Still, however, the field needs more studies in this direction. Yet another important topic concerns at what point various consequences of job insecurity are manifested. As noted by Zapf et al. (1996), certain strains are immediately experienced following the exposure to a stressor, whereas other stress reactions are seen some time after the onset of the stressor. Moreover, certain strains can be considered as enduring, whereas others diminish when the stressor is no longer present. Theoretical and empirical research dealing with such processes would make important contributions to the existing literature.

Conclusions

We based this study on a definition that characterized job insecurity as the subjectively experienced threat of involuntary job loss. Consistent with the general stress literature (e.g., Lazarus & Folkman, 1984) and conceptualizations of job insecurity (e.g., Greenhalgh & Rosenblatt, 1984; Hartley et al., 1991; Sverke & Hellgren, 2002), our meta-analysis indicates that perceptions of threats to continued employment have important empirical associations with employees' job attitudes, organizational attitudes, health, and behavioral orientations toward their organizations. We also identified two factors that contribute to explaining the variation in effect sizes across studies. Relative to single-item measures, studies that assess job insecurity using multi-item scales typically find stronger relationships between job insecurity and attitudinal as well as behavioral variables. This indicates that the relationships between job insecurity and its postulated consequences are underestimated in research that relies on single items with unknown psychometric properties. It also appears that the behavioral consequences of job insecurity can be more adverse among manual as compared with nonmanual workers, the relationship with both performance and turnover intention being stronger among manual workers. Organizational effectiveness may thus be more negatively affected by a workforce plagued by job insecurity when the proportion of less-skilled workers is high.

On the basis of the results of the meta-analysis, we attempted to identify the most important issues to address in future research. First, we highlighted the need for consensus on the measurement of job insecurity and called for a multidimensional measure reflecting both threats of imminent job loss and fear of losing important job features. Second, we sug-

gested that future research efforts consider a wider span of outcomes of job insecurity in addition to what has been examined here, as well as a greater variety of methods to assess these outcomes to avoid mono-method bias. Third, we pointed out some moderating variables that could buffer against the negative effects of job insecurity and in which areas more research is needed. Finally, we also noted that because the bulk of research is cross-sectional, there is a strong need for longitudinal research designs to address issues of the direction of the relations and long-term effects of job insecurity.

We believe that this meta-analysis represents a valuable contribution to the literature by providing the most accurate estimates of the relationships of job insecurity with employee job attitudes, organizational attitudes, health, and behavior. The accelerating rate of organizational change indicates that job insecurity is a phenomenon that will continue to characterize modern working life also in the years to come.

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