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RESEARCH ARTICLE

Job security matters: A systematic review and meta-analysis of the relationship between job security and work attitudes

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Abstract

This article synthesizes public and private sector accumulated research regarding the relationship between job security and employee work attitudes (i.e., job satisfaction and organizational commitment). The present meta-analysis of 37 studies (including 45 independent samples) shows that the medium-sized associations between job security and each work attitude variables (i.e., job satisfaction and organizational commitment) were found, with true score correlations (ρ) of .327 for job satisfaction, and .253 for organizational commitment. These results highlight the significance of job security at the workplace, in shaping and enhancing attitudes of employee and job security is worth retaining in some form in the public sector, contrary to the logic of at-will employment. This meta-analysis findings also call attention to several important considerations for developing effective public job security policy.

Keywords: job security; job insecurity; work attitudes; job satisfaction; organizational commitment; meta-analysis

Job security has been a central tenant of civil service since the Pendleton Act of 1883 (Perry, Hondeghem, & Wise, 2010: 687) in the USA. As Van Riper (1958) noted, the job security rules introduced in the USA were not novel. They were rooted in the British civil service, from which US civil service reformers borrowed liberally. For most of the 20th century, public employers granted their employees high levels of job security in the USA, both within the federal government and across levels of government as well as in governments across the European Union (EU) states. However, the job security that public institutions such as governments and educational enterprises grants to employees has been a source of continuing controversy, as prominent in education reform of 2010 as civil service reform of the 1970s (Savas & Ginsburg, 1973; Campbell, 1978). The attack on the job security of government employees continues unabated today, with states, such as Georgia and Florida, and federal agencies, such as the Department of Veteran Affairs, promoting at-will employment as an alternative to traditional job tenure systems (Kellough & Nigro, 2006; Perry, Hondeghem, & Wise, 2010: 687; Kettl, 2015; Hijal-Moghrabi, Sabharwal, & Berman, 2017; Davidson, 2018) in the USA. In addition, governments across the EU have been a significant policy shift toward a more liberal model of weaker job security and increased labor market flexibility by weakening and removing employee protections in postcrisis Europe (Heyes & Hastings, 2016; Schaufeli, 2016; De Cuyper, Piccoli, Fontinha, & De Witte, 2018; Hastings & Heyes, 2018).

However, this recent policy choice about job security has been based largely on normative and ideological considerations rather than behavioral science evidence. In the absence of better evidence, we are faced with making decisions largely on ideological grounds (viz., federal reforms

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in the US Department of Homeland Security and Department of Defense during the George W. Bush Administration; state reforms in Georgia and Florida). Given the fact that politicians will not only continue to voice their views but also shape public law, we do not expect that ideology-based policies will disappear. Thus, recent developments indicate that we should emphasize the balance between normative considerations and behavioral science evidence related to the design of job security rules. We believe research accumulated during the last three decades about job security will give us an opportunity to support more debate and administratively-rationale alternatives to current job security system and guide future public and organizational policy making.

The objective of this article is to synthesize public and private sector research regarding the relationship between job security and employee work attitudes (i.e., job satisfaction and organizational commitment) to provide a more evidence-based footing for future public job security policy. Job security is viewed as an important determinant of individual and organizational performance if for no other reason than its influence on an organization's ability to discipline or remove poor performers (Campbell, 1978). However, the strength and form of the relationship remain unclear: studies have found positive (e.g., Davy, Kinicki, & Scheck, 1997; Preuss & Lautsch, 2002), negative (e.g., Andaleeb, 1996; Cavanaugh & Noe, 1999; Jeon, 2009), and curvilinear (e.g., Brockner, Grover, Reed, & Dewitt, 1992) relationships between job security and work attitudes. Quantitative meta-analysis method allows general conclusions and principles to be drawn from a previously accumulated job security research. By means of meta-analysis, we will be able to provide more conclusive answers to current job security rule change issues and phenomena, which, in turn, make research findings more understandable to policy maker and practitioners (Le, Oh, Shaffer, & Schmidt, 2007: 7–9).

Apart from the study of the variable relationship between job security and employee work attitudes, the present study will also conduct subgroup analysis. Five significant subgroup analysis will be conducted: named organizational type; employee's nationality; tenure; age; proportion of females. By this, the variability of the findings from the research literature will be explained. They will also be helpful for clarifying the variability noticed among these studies and in this way it will be clarified as to when job security may increase or outcome of work attitude may decrease. Finally, they are relevant as to what extent different (levels of) or job securities help or obstruct the outcome of work attitudes or whether they hamper at all. In this way, we believe current meta-analysis findings offer practical guideposts for future policy that contrast with recent, prominent reforms.

The paper begins with a review of the literature on theoretical formulations of the role of job security and workplace outcomes, and empirical research about job security and employee attitudinal outcomes. Next we present the data and methods used in the study. We then summarize the key results. We conclude with a discussion of the results and suggestions for further research.

Review of Literature

Theoretical understanding of job security

Generally, job security is defined as a legal employment contract between employee and agency that lead to assurances for continued employment (Greenhalgh & Rosenbtatt, 1984: 439; Romzek, 1985: 283). Greenhalgh and Rosenbtatt (1984) developed a theoretical model to understand the nature, causes, and consequences of job insecurity. They defined job *insecurity* as powerlessness to maintain desired continuity in a threatened job situation. The general assumption underlying this definition is that job insecurity can be understood by an individual's perceptions of the immediate work environment. Regarding the theoretical model for job *insecurity*, Greenhalgh and Rosenblatt argued that individual's *subjective* threat represented by job *insecurity* is derived from *objective* threat by means of the individual's perceptual processes. They argue that job

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insecurity, in turn, is projected to affect a variety of individual organizational behaviors such as productivity, turnover, and resistance to change. Thus, Greenhalgh and Rosenblatt's research can be interpreted that subjective job security (they call it 'job insecurity') is influenced by objective job security and it is projected to affect a variety of employee work attitudes and behaviors.

Greenhalgh and Rosenblatt's model of job insecurity is a reasonable approach to a very complex job security issue. Based on their theory, researchers assume that workers in permanent jobs (high level of objective job security) will exhibit lesser perceptions of job insecurity (high level of perceived job security) than workers on temporary contracts (low level of objective job security) and this leads to increased positive employee work attitudes by giving them a surer expectation of employment continuity (Ashford, Lee, & Bobko, 1989; Pearce, 1998; De Witte, 1999; Klandermans, Hesselink, & Vuuren, 2010).

Empirical study on the relationship of job security with work attitudes and behavior

The general premise behind job attitudes is that some employees enjoy their jobs and experience an emotional connection to their work and organization, whereas others do not (Michel & Bowling, 2013: 96). Job attitudes refer to these work-related evaluations, which include job satisfaction and organizational commitment (Sverke, Hellgren, & Naswall, 2002; Michel & Bowling, 2013: 96). According to attitudinal theory, these work attitudes precede general work behaviors, which include job performance and turnover (Jaramillo, Mulki, & Boles, 2011: 343).

While the concept of job security as a contract for continued employment is accepted as leading to desirable consequences, recent research on relationships of job security with employee attitudes and behavior yields mixed and contradictory findings (Wetzel, Soloshy, & Gallagher, 1990; Connelly & Gallagher, 2004). Some studies that compare permanent and temporary workers report that permanent contracts were associated with higher levels of organizational commitment (Morrow, McElroy, & Elliot, 1994; Martin & Hafer, 1995; Van Dyne & Ang, 1998) and higher job satisfaction (Hall & Gordon, 1973; Miller & Terborg, 1979; Krausez, Brandwoin, & Fox, 1995).

Other studies find the opposite pattern. Some studies show that employees under short-term contracts show positive job attitudes and work behaviors than permanent counterparts (Roberts, Glick, & Rothchford, 1982; Eberhardt & Shani, 1984; Jackofsky & Peters, 1987; Fields & Thacker, 1991; Fenton-O'Creevy, 1995; Sinclair, Martin, & Michel, 1999). In a survey of 2966 unionized retail employees of a large Midwestern 'supercenter' retailer (i.e., grocery and general merchandiser) with 109 locations across five states in the USA, Sinclair, Martin, and Michel (1999) found that low levels of job security, as represented by a short-term contract, was associated with higher job satisfaction, organizational commitment than permanent workers. Similarly, lower levels of job security in the form of temporary contracts of employment present they had a higher, rather than lower levels of job satisfaction and commitment to the organization (McDonald and Makin, 2000).

Still others show job security is not associated with work attitudes and behaviors. As cited by Van Dyne and Ang (1998) and Tansky, Gallagher, and Wetzel (1995) found that no differences in self-reports of organizational commitment or affective commitment between temporary workers and regular permanent workers in nursing departments. Their findings show that the mental health and work commitment of temporary employees was not different from permanent employees. A large body of empirical research looks at how job security is related to employee work attitudes and behavior. The studies yield mixed and conflicting findings.

Hypothesized relationships between job security and work attitudes

This research uses social exchange theory as a framework for studying the relationships between job security and employee job satisfaction and organizational commitment. In general, organizational researchers have used the social exchange concept to explain how the organization's

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investments in human resource (HR) practices and the organizational environment will elicit positive work attitudes and behavior (Gould-Williams & Davies, 2005; Gould-Williams, 2007; Nishii & Mayer, 2009; McClean & Collins, 2011; Van de Voorde, Paauwe, & Van Veldhoven, 2012).

According to Blau (1964), social exchange can be defined as 'voluntary actions of individuals that are motivated by the returns they are expected to bring and typically do in fact bring from others' (Blau, 1964: 93). On this basis, employees who positively value HR practices will reciprocate through showing attitudes and behaviors that are valued by the organization (Eisenberger, Fasolo, & Davis-LaMastro, 1990; Gould-Williams, 2007; Van de Voorde, Paauwe, & Van Veldhoven, 2012).

These employee reactions to HR practices depend on employees' perceptions of how committed the employing organization is to them (Eisenberger, Fasolo, & Davis-LaMastro, 1990; Romzek, 1990; Wayne, Shore, & Liden, 1997; Gould-Williams & Davies, 2005; Ashikali & Groeneveld, 2015). For instance, Eisenberger, Fasolo, and Davis-LaMastro (1990) describe that 'positive discretionary actions by the organization that benefited the employee would be taken as evidence that the organization cared about one's well-being' (1990: 51). It can thus be argued that when employees perceive that organizations value and deal equitably with them, they will reciprocate these 'good deeds with positive work attitudes and behaviors' (Hass & Deseran, 1981; Aryee, Budhwar, & Chen, 2002: 268; Gould-Williams & Davies, 2005: 4).

As we discussed, job security refers to an employee's expectations about the stability and longevity of his or her job in an organization (Greenhalgh & Rosenbtatt, 1984; Davy, Kinicki, & Scheck, 1997; Kraimer, Wayne, Liden, & Sparrowe, 2005). Specifically, when employers fulfill their employees' expectations and make employees feel that their jobs are secure, the equal exchange relationships between employers and employees are established (Conway & Coyle-Shapiro, 2012; Colquitt, Baer, Long, & Halvorsen-Ganepola, 2014; Lu, Du, Xu, & Zhang, 2017).

Additionally, Greenhalgh and Rosenbtatt (1984)'s job insecurity model offers another theoretical framework for understanding the relationship of job security and work attitudes. As we discussed, job security is termed as the legal employment done between the agency and the employee so that continued employment will be assured (Greenhalgh & Rosenbtatt, 1984: 439; Romzek, 1985: 283). Keeping in view the theoretical model for job insecurity, Greenhalgh and Rosenblatt claimed that job insecurity, which is a form of the individual's subjective threat, results from objective threat interpreted through the intuitive procedure of the individual. According to their argument, job insecurity is expected to have an impact on different individual employee behaviors like productivity, turnover or resistance to change. Based on their theoretical ground, it is believed by the researchers that the workers who are in permanent jobs (high level of objective job security) will have little impression of job insecurity (high level of apparent job security) than those workers who are employed on short-term contract (low level of objective job security). This increases the positivity of the employees' work attitude as they are assured of having continued employment (Ashford, Lee, & Bobko, 1989; Pearce, 1998; De Witte, 1999; Klandermans, Hesselink, & Vuuren, 2010). Studies that compare permanent and temporary workers report that permanent contracts were associated with higher levels of organizational commitment (Lee & Johson, 1991; Morrow, McElroy, & Elliot, 1994; Martin & Hafer, 1995; Van Dyne & Ang, 1998) and higher job satisfaction (Hall & Gordon, 1973; Miller & Terborg, 1979; Krausez, Brandwoin, & Fox, 1995). So the following hypothesis can be suggested:

Thus, employing social exchange theory and job insecurity theory, we expect that employees perceive that organizations and employers treat and make employees feel that their jobs are secure, they will respond with positive attitudes toward the job and organization. So the following hypothesis can be suggested:

Hypothesis 1: *There is a positive relationship between job security and job satisfaction and organizational commitment.*

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Subgroup analysis for the job security and work attitudes

Apart from the study of the association of job security with respect to work-related attitudes (job satisfaction and organizational commitment), another objective of this study is to identify the subgroup analysis of these entire relationships. The variability of the findings in the research literature will be clarified by concentrating on five significant subgroups which have been left uninvestigated.

Type of organization

Organizational type is considered to be the first subgroup variable. Since public and private organizations differ institutionally, relationships with job security must be different. So the generalizable design between job security and work attitudes and behaviors could be affected depending upon the fact whether the type of organization is public or private. There are some studies which show that public employees do not give much importance to job security (Crewson, 1997). Others have the opinion that there is no difference among the employees belonging to the two sectors, regarding the needs of job security (Rainey, 1982; Wittmer, 1991; Gabris & Simo, 1995). Moreover, the findings of some other studies show that public employees give higher importance to job security (Baldwin, 1987; Jurkiewicz, Torn, & Roger, 1998; Houston, 2000). In the author's view, the employees of public organizations give much more value to job security than that of the private organization employees. So, the hypothesis will be:

Hypothesis 2a: *Job security will have a larger impact on job satisfaction in public organizations than it does in private organization.*

Hypothesis 2b: *Job security will have a larger impact on organizational commitment in public organizations than it does in private organization.*

Country of origin

Differences in country of origin may be in systematic association with the relationship between job security and work-related attitude. Most (more than 60%) of studies are based on the current data from the USA, Canada, and Europe, while the remainder of the studies is from Africa, Middle East, South America, and Asian countries on this study. One of the reliable findings is that cultural values are helpful in studying the differences in variables that are related to work (Schwartz, 1999). For example, people are inspired by Confucianism in the pursuit of long-term benefits and to withstand short-term loss (King & Bond, 1985). The role of country of origin is studied herein to better understand the relationship of job security and work-related attitudes. Here the hypothesis will be:

Hypothesis 3a: *Job security will have a larger impact on job satisfaction in Asian, Africa, Middle East, and South America samples than it does in North America and Europe.*

Hypothesis 3b: *Job security will have a larger impact on organizational commitment in Asian, Africa, Middle East, and South America samples than it does in North America and Europe.*

Age of employee

Age is related to aspects of career trajectory as well as the role of psychology in a person's life events. So, age has a connection to one's position in the organization as well as with those aspects

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which are beyond the area of work such as social life or family. According to the researchers' opinion, older employees with the responsibility of family may be more thoughtful about their job security than younger employees (Kuhnert & Vance, 1992; Finegold, Mohrman, & Spreitzer, 2002). Moreover, the older employees are more distressed by the fear of losing their jobs than younger employees, since the younger ones have more mobility than the older ones in terms of occupation (Kuhnert & Vance, 1992). Therefore, the hypothesis will be:

Hypothesis 4a: *Job security will have a larger impact on job satisfaction in older employees than it does in younger employees.*

Hypothesis 4b: *Job security will have a larger impact on organizational commitment in older employees than it does in younger employees.*

Tenure of employee

An aspect of the moderating impacts of tenure on the organizational commitment is that employees with limited term are not certain whether they will be able to perform up to the mark in a new job and so their level of commitment and motivation toward the organization increases (Wright & Bonett, 2002: 1184). Still, many studies have shown that there is positive relationship between the tenure of the employee and organizational commitment (Mathieu & Zajac, 1990; Abdullah & Ramay, 2012). The employees who have long terms with the organization are more committed than those employees having short terms (Greenhalgh & Rosenbtatt, 1984; Abdullah & Ramay, 2012). So, the hypothesis will be:

Hypothesis 5a: *Job security will have a larger impact on job satisfaction in long tenured employees than it does in short tenured employees.*

Hypothesis 5b: *Job security will have a larger impact on organizational commitment in long tenured employees than it does in short tenured employees.*

Gender

Difference of gender in job security has been found by several studies (De Witte, 1999; Rosenblatt, Talmud, & Ruvio, 1999). Some research findings have claimed that with respect to job security, male employees are more cautious than their female counterparts as the female employees remain more concerned with economic insecurity. However, in the opinion of Rosenblatt, Talmud, and Ruvio (1999), as compared with women, men are less distressed by the fear of losing the job than women as generally speaking, men have greater mobility regarding their occupation than women. Specifically, their contention is that female employees are more concerned with their job security than male employees. So, in regards to these data, the hypothesis will be:

Hypothesis 6a: *The relationship between job security and job satisfaction is dependent on the extent to which the employees are female and the relationship becomes more positive when more of the study sample is female.*

Hypothesis 6b: *The relationship between job security and organizational commitment is dependent on the extent to which the employees are female and the relationship becomes more positive when more of the study sample is female.*

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Methods

Summary of literature searches

A wide literature search has been conducted, which is based on computer-based findings and manual so that studies published (and unpublished studies) from 1980 to January 2014 can be identified. Investigating the literature on job security and employee work attitudes (i.e., job satisfaction and organizational commitment) more thoroughly and in order to avoid any preferences in the inclusion of the studies, a series of search strategies have been undertaken. At first, the Psych Info, Social Sciences Citation Index, and ABI/Inform databases were searched for the identification of studies on the relationship between job security (and job insecurity) and work attitudes (job satisfaction and organizational commitment). For the computer-oriented literature search, many keywords were used (for instance, we searched for the keywords 'Job Security' or 'Job Insecurity' in combination with the keywords 'Job Satisfaction' or 'Organizational Commitment').

Second, a manual article-by-article search was conducted throughout several management, organizational behavior, and HR journals. In that search, 32 journals from 1980 to 2014 were examined.

Third, attempts were made with respect to identification as well as for gaining access to those studies conducted in countries where English is not spoken but published in journals using English.

Regarding the three search approaches, a preliminary database consisting of 298 articles was set up for further examination. In the present meta-analysis of job security, studies should be in English and the subjective experiences of job security of the employees should be measured. Additionally, they have to submit reports of zero-order correlations between the job security (insecurity) of individual employees and criteria variables of interest (meaning job satisfaction and organizational commitment). After the application of these decision rules, the final database consisting of 37 articles reported effect sizes for 45 independent studies or samples totaling N of 27,871. A list of all the studies which have been used in the meta-analysis is marked by an asterisk in the **Reference** section.

Coding of studies

After selection of the studies, each individual study based on the outcome variable has been examined and the size of sample and the effect size coded. The effect size on the basis of zero-order correlations from each sample was also coded. If there was any effect size having an opposite orientation, it was recorded to reflect the proper direction of the effect (Pearson correlation between job *insecurity* and work attitudes).

Other variables were coded in order to examine the potential subgroups associated with the interest. First, in order to assess the type of organization, all of the studies were categorized according to organization type. Organization types were coded into one of the three sectors (i.e., public-nonprofit, private, and mixed-hybrid). The public-nonprofit organization consisted of central government, state/regional/local governmental bodies, and nonprofit agencies. The private organization consisted of manufacturing and service businesses. The mixed-hybrid organization consisted of education, health organization, or samples from multiple types of organization including both public (government sector) and private ones (industrial or service sector).

Second, studies were coded for the sample of origin. A great portion (more than 60%) of the studies is based on USA, Canada, and Europe, while the remainder of the studies is from Africa, Middle East, South America, and Asian countries. In each of the studies, the sample of origin was coded through their classification into one of three extensive samples of origin categories. So, the North America, Europe, and Asia, Africa, South American, and Middle East are included in the sample of origin category.

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Third, Ng and Feldman (2008) were followed when the chronological age of each sample was classified into one of the three groups. This was done on the basis of the distribution of mean ages for all study samples included in the meta-analysis. The distribution of mean ages spans: mean age less than 35 years; mean age between 35 and 40 years; and mean age over 40 years.

Fourth, to study the impact of tenure, each study was coded regarding the tenure of mean ranging from: mean tenure of less than 11 years; mean tenure between 11 and 14 years; and for over 14 years.

Lastly, each study was coded regarding the percentage of females in the study sample, and after that, the percentage of the study sample of females was classified into three groups. This was done on the basis of the percentage distribution of the female workers for all the study samples included in the meta-analysis. The distribution was: percentage of female workers less than 25%; percentage of female workers between 25 and 50%; and percentage over 50%.

Two coders independently coded all the relevant articles. To verify coding accuracy, the effect sizes (zero-order correlations of job security with job satisfaction, and commitment), sample sizes, reliability estimates of the outcomes, type of organization, sample of origin, age, tenure, and percentage of females were compared. The interrater agreement rate was high at 94%. We resolved all of the remaining discrepancies (mostly typographical errors, failing to reverse the sign of a correlation coefficient between job security and job satisfaction, and organizational commitment) by thoroughly double-checking the primary studies in question.

Analysis

The meta-analysis was conducted with Hunter and Schmidt (1990 and 2004)'s formula (see Appendix 1). Following Hunter and Schmidt (1990 and 2004), we corrected correlations and their variances for sampling error and for measurement errors in predictors (see Appendix 1) (detailed calculation procedure described on Appendix 1 & 2 section). The correlation coefficients between job security and work-related attitudes (job satisfaction and organizational commitment) are the two effect sizes of interest.

The following procedures were employed: (1) information on three distributions (observed correlations, consistency [reliability] of the independent variable and dependent variable) have been assembled by the studies; (2) correlations of work attitudes (job satisfaction and organizational commitment) derived from one study that referred to the same category were aggregated since average correlations do not violate the assumption of independence (Hunter & Schmidt, 2004; Matthijs Bal, De Lange, Jansen, & Van Der Velde, 2008); (3) each correlation was corrected for the statistical artifact of sampling error (Kooij, Jansen, Dikkers, & Lange, 2010: 1119; Taft, Watkins, Stafford, Street, & Monson, 2011: 25); (4) this corrected distribution is further corrected for the other available artifacts (e.g., measurement error). Thus the variance due to sampling error and other artifacts is subtracted out, and what is left is an estimate of the population variance (see Taft et al., 2011: 25). (5) For the interpretation of the validity generalization results, confidence interval (see Cohen, 1993) was used, meaning the confidence interval of a significant mean correlation does not include zero; (6) regarding the guidelines proposed by Cohen (1992, 1998), the magnitude of the mean correlation was interpreted; with .1 interpreted as having small effect; .3 as medium effect; and .5 as large effect (Kooij et al., 2010: 208).

For assessing the different effect sizes, various approaches were used. First, the percentage of variance in the effect sizes explained by the statistical artifacts (sampling error and criterion unreliability) is reported. The 75% rule is offered as a rule of thumb by Hunter and Schmidt (2004) for identifying the potential of moderated relationships. That is, if 75% or more of the variance across studies is explained by sampling error and measurement unreliability between samples, it is likely the remaining 25% stems from uncontrolled artifacts. If we account for 75% of the variance or less, or the corrected variance is still large, then the next step is to test for the influence of moderator variables (Hunter & Schmidt, 2004: 145–146). It is obvious that current review corrected

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only the sampling error and predictor/criterion unreliability. Second, for assessing the accuracy and distribution of effect sizes estimates (Whitener, 1990), confidence interval as well as credibility intervals were calculated. Third, for testing homogeneity of corrected correlations, *Q*-statistics were calculated. Finally, the subset method proposed by Hunter and Schmidt (p. 293) was followed to assess whether coded variables actually moderated job security–work attitudes (job satisfaction and organizational commitment) relationships. This method entails assigning studies to different subsets and performing a separate meta-analysis within each subset.

Description of the selected studies

Twelve of the selected studies were conducted among the employees of public organizations, whereas employees in private organizations were examined by 19. A sample of North American origin was examined by 14 studies, and 19 studies examined samples having European origin. Nine samples having Middle East, South American, Asian, and African origin were also examined. From the various studies, the mean ages ranged from 27.5 to 48 years. The average tenure of the various studies had a range between 1.72 and 21 years. In Table 1, sample characteristics, sample size, average age, mean tenure, proportion of female employee, reliability of job security, and the relationships between job security and work attitudes (job satisfaction and organizational commitment) and their reliabilities are listed. The correlations between job security and job satisfaction are shown to range from −.08 to .54 and correlation with organizational commitment from −.09 to .97. So, it is expected that specific characteristics of the studies moderate the relationships (Hunter & Schmidt, 2004). The measurement of reliabilities of job security ranged between .68 and .97 and the reliability of job satisfaction ranged between .64 and .96 and organizational commitment is between .6 and .91.

Results

Table 2 includes the number of outcomes (*k*) and participants in each analysis (*N*), weighted (uncorrected and corrected) mean random-effect sizes (mean *r* and ρ), the 95% confidence interval (CI), three homogeneity statistics; the percentage of variance accounted for by sampling and measurement error, the 95% credibility interval, and Q-statistic. First, we considered Hypothesis 1, which predicted a positive relationship between job security and work attitudes, by examining the results of overall analysis (Table 2). The results of overall analysis suggest there is a positive relationship between job security and job satisfaction (true score correlation $\rho = .32$; 95% CI .260–.285) and organizational commitment[1] (true score correlation $\rho = .25$; 95% CI .193–.220). Using Cohen's (1998) framework, the two effect sizes are in the medium range of magnitude.

Further, three procedures tested whether unknown moderators exist. We followed Griffeth, Hom, and Gaertner's procedure (Griffeth, Hom, & Gaertner, 2000). First, we estimated the degree to which two prime statistical artifacts (sampling error and scale unreliability) can account for between-study variance in observed correlations. In accord with Hunter and Schmidt's rule (Hunter & Schmidt, 1990 & 2004), we concluded that moderators exist if these artifacts explain less than 75% of the observed variance in correlations. Second, to test whether moderators exist, we computed the *Q* homogeneity statistic (Hunter & Schmidt, 1990: 168). Third, we calculated the 95% credibility interval (Whitener, 1990). Meta-analysts typically infer moderators when the credibility interval is either large or includes zero. Yet a credibility interval may include

[1]Before performing the subgroup analyses, we should notify that these subgroups (i.e., organization type, country origin, age, tenure, and percentage of women workers) are not possible moderators in the job security and work attitudes (i.e., job satisfaction and organizational commitment) relationships in the current study. Since most 95% confidence intervals (CI) of each subgroup category of Tables 3 and 4 considerably overlapped, we may not say that these five subgroups are moderators in the job security and work attitudes (i.e., job satisfaction and organizational commitment) relationships.

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Table 1. Sample characteristics, organizational type, average age and tenure, percentage of female employee, sample size, reliability of job security, and Pearson correlations of job security with outcomes (job satisfaction and organizational commitment), and reliabilities of the outcomes

ID	Authors	Sample	Organizational type	Age	Tenure	Female	*N*	Rxx Job Security	Satisfaction		Commitment	
									Rxy	Ryy	Rxy	Ryy
1	Abdullah and Ramay (2012)	Pakistan employees of the banking sector (private, public, and multinational banks)	Mixed	–	–	21	215	.71	–	–	.42	.73
2	Adebayo (2006)	Nigerian public workers	Public	36.3	12.69	41.4	186	.84	–	–	.87	.83
3	Alarco, De Cuyper, and De Witte (2012)	Peru employee	Mixed	35	5.3	23	651	.81	.25	.75	–	–
4	Amarantidou, Mantis, and Koustelios (2009)	Greek physical education teachers	Public	40.7	–	36	117	.88	.06	.79	–	–
5	Andaleeb (1996)	Bangladesh nongovernmental and governmental organization employees	Mixed	–	–	52	217	–	–	–	−.06	.6
7	Banerjee, Tolbert, and DiCiccio (2012)	Britain private sector employee	Private	–	–	–	3313		.5	.8	–	–
8	Bernhard-Oettel, De Cuyper, Schreurs, and De Witte (2011)	Belgian employees	Private	34	–	34.7	498	.85	.19	.83	.23	.75
9	Buitendach and De Witte (2005)	South Africa's a maintenance workers in a parasternal in the Gauteng Province	Mixed	36.5	–	5	178	.84	.16	.88	.25	.65
10	Burke (1998)	Canadian University business school graduates		–	–	42.4	217	.78	.17	.85	–	–
11	Cassar (2001)	Malta public service employee	Public	42	21	39.4	132	–	.02	.87	.02	.81
12	Cavanaugh and Noe (1999)	US individuals who had previously attended one or more informal breakfast seminars conducted by the Employer Education Service of the University of Minnesota	Private	–	–	66	136	–	−.08	.74	−.09	–

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13	Chirumbolo and Hellgren (2003)	Belgium private sector companies employee	Private	37	14	35	1120	.89	.32	.85	.2	.86
		Italy two large companies	Private	39	13	32	476	.76	.25	.87	.16	.88
		The Netherlands members of the largest trade unions affiliated with the National Christian Trade Union Federation	Private	48	–	25	799	.91	.23	.96	.17	.97
		Sweden's blue-collar workers from the Swedish Municipal Workers' Union	Private	45	14	78	1923	.89	.11	.82	−.05	.86
14	De Cuyper and De Witte (2006)	Belgium employees from the industrial sector, service industries and the government sector	Mixed	37	–	60	544	.89	.14	.84	.07	.78
15	De Cuyper and De Witte (2007)	Belgium employees from various occupational sectors	Mixed	34	10	63.4	447	.86	−.05	.85	.12	.77
16	Davy, Kinicki, and Scheck (1997)-Study 1	US employees working for a high-tech firm	Private	42.2	9.54	32	137	.882	.54	.86	.48	.87
	Davy, Kinicki, and Scheck (1997)-Study 2	US employees working for a high-tech firm	Private	43	12.88	22	188	.892	.48	.79	.47	.871
17	Feather and Rauter (2004)	Australia school teachers	Public	41.8	11.4		154	.86	.02	.76	−.01	.85
18	Iverson (1996)	Australia employee of public hospital in the state of Victoria	Public	33.7	6.14	26	761	.74	.2	.86	.27	.88
19	Jeon (2009)	South Korea private employee	Private	–		33	337	.74	–	–	.1	.9
20	Vinokur-Kaplan, Jayaratne, and Chess (1994)	USA a subset of married social workers who participated in a study of Work and Family Life Among Professional Social Workers	Public	–	–	–	263	–	.2	–	–	–
			Nonprofit	–	–	–	285	–	.34	–	–	–
			Private	–	–	–	67	–	.33	–	–	–

(*Continued*)

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Table 1. (*Continued.*)

ID	Authors	Sample	Organizational type	Age	Tenure	Female	*N*	Rxx Job Security	Satisfaction		Commitment	
									Rxy	Ryy	Rxy	Ryy
21	Keil, Armstrong-Stassen, Sheila, and Horsburgh (2000)	Canada nurses	Hybrid (Hospital)	38.3	10.92	100	204	.87	.23	.86		
			Hybrid (Hospital)	38.53	11.24	100	251	.87	.35	.86		
22	König, Probst, Staffen, and Grasco (2011)	Switzerland's working students enrolled in a Master of Advanced Studies course of a well-established university	Mixed	–	–	37	315	.81	.36	.77	.28	.73
		US working students in the Pacific Northwest	Mixed	–	–	65	488	.75	.49	.76	.41	.72
23	Koustelios, Kouli, and Theodorakis (2003)	Greek fitness instructors	Private	27.5	–	70	97	.88	.41	.89	–	–
24	Liou (1998)	US detention workers in two metropolitan detention centers in a southeastern state	Public	–	–	–	70	–	.38	–	–	–
25	Lord and Hartley (1998)	UK national and public service organization employee	Public	–	–	23	167	–	–	–	.48	–
26	Major, Morganson, and Bolen (2013)	US IT employers	Hybrid	42.1	10.4	–	1229	.89	–	–	.48	.91
27	Noble (2008)	US filed sales managers of a national car rental chain	Private	26.4	1.72	34.8	138		.45	–	–	–
28	Preuss and Lautsch (2002)	US employees in fifteen hospitals in US metropolitan region	Hybrid	–	12.1	–	1616		.06	.69	.06	.66
29	Probst (2000)	US Five State Public employees	Public	–	–	63.6	283	.97	.12	.9	.23	.82
30	Reinardy (2012)	US Journalists	Private	44	13	–	2159	.68	.29	.88	–	.81

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31	Reisel, Probst, Chia, Maloles, and König (2010)	US managers	Private	35.7	4.28	34	320	.8	.24	.92		
32	Silla, Gracia, Mañas, and Peiró (2010)	Spain public organization employees	Public	39.9	11.67	50.4	697	.88	.08	.64	.24	.69
33	Sora, Caballer, and Peiró (2010)	Spain employees	Private	34.4	–	50.5	942	.84	.28	.81	.32	.74
34	Sora, Caballer, Peiró, and De Witte (2009)	Spain employees	Private	32.96	–	48	550	.84	.31	.8	.37	.71
		Belgian organization employees	Private	35.66	–	63	550	.88	.16	.84	.21	.72
35	Van Eetveldt, Van de Ven, Van den Tooren, and Versteeg (2013)	Netherlands military employees	Public	34	–	7	3580	–	–	–	.18	.88
36	Yousef (1998)	United Arab Emirates (UAE) employees (government sector, private sector, and joint sector)	Mixed	–	–	–	447	.85	–	–	.53	.85
37	Zeytinoglu, Yılmaz, Keser, Inelmen, Uygur, and Özsoy (2013)	Turkish service sector employees	Private	–	–	58	407	.86	.53	.94	–	–

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Table 2. Meta-analytic results of relationship between job security and job satisfaction and organizational commitment

							Homogeneity statistics		
Outcome	k	N	$\bar{r}$	ρ	SD_ρ	95% Confidence Interval	Var. expl.	95% Credibility Interval	Q-Statistic
Job Satisfaction	37	20670	0.273	0.3275	0.1856	0.260 to 0.285	6.89	−0.036 to 0.069	536.6*
Organizational Commitment	30	19312	0.207	0.2537	0.2012	0.193 to 0.220	5.7	−0.14 to 0.648	525.4*

Note. k = the number of studies; samples; N = the number of individuals in the k samples; $\bar{r}$ = sample-size-weighted uncorrected correlation; ρ = mean true score correlation; SD_ρ = standard deviation of true score correlation; 95% confidence Interval = 95% confidence interval for ρ; Var.expl. = percentage of variance in corrected correlations attributable to all the artifacts considered; Credibility Interval = 95% credibility.
*$p < .05$.

zero if the actual effect size is nearly zero (i.e., when there is hardly any effect to moderate), while the precise meaning of a 'large' credibility interval is unclear (Sage & Koslowsky, 1993). Due to the ambiguity of these interpretations, we interpreted the credibility interval only if the other two tests disagree about a moderator's presence. As such, we followed Sagie and Koslowsky's prescription (Sage & Koslowsky, 1993) to emphasize the 75% rule and the *Q*-statistic when probing for moderators (Griffeth, Hom, & Gaertner, 2000: 477).

Subgroup analyses

On the whole, percentages of variance accounted for by artifacts (e.g., sampling error) were extremely low, ranging between 6.89 and 5.73% (Table 2); and in accord with Hunter and Schmidt's rule (Hunter & Schmidt, 1990 & 2004), we concluded that moderators exist if these artifacts explain less than 75% of the observed variance in correlations. In addition, we also computed the *Q* homogeneity statistic, which yields a significant χ^2 when moderators exist (Hunter & Schmidt, 1990: 168). The value obtained by the χ^2 test ($Q = 536.6$ and $Q = 525.4$, respectively) are larger than the value required for statistical significance (Table 2). Thus, current test suggests that the unexplained variance is significantly greater than zero, suggesting that the remaining variance is due to additional moderators or statistical artifacts[2] (Arthur, Bennett, & Huffcutt, 2001: 92). Hence, it was necessary to investigate if the type of organization, sample origin, age, tenure, proportion of women in moderation of relationships between job security and work attitudes (organizational commitment and job satisfaction) were significant[3].

[2]Organizational commitment has been widely used as a significant indicator for employee work morale. It refers to the strength of an employee's identification with a particular organization as well his level of involvement in that organization's activities (Meyer & Allen, 1991: 67; Mowday, Steers, & Porter, 1979). The early conceptualizations of the construct were unidimensional, as an emotional attachment to the organization (Mowday, Steers, & Porter, 1979; Cook & Wall, 1980; Mowday, Porter, & Steers, 1982). As work in this area progressed, these views converged and multidimensional framework was adopted based on three distinct but related forms of commitment: affective, normative, and continuance (O'Reilly & Chatman, 1986; Allen & Meyer, 1990; Meyer & Allen, 1991). To date, the three-component conceptualization of organizational commitment can be regarded as the dominant model in organizational commitment research (e.g., Cohen, 2003; Greenberg & Baron, 2003; Bentein, Vandenberghe, & Stinglhamber, 2005; Solinger, van Olffen, & Roe, 2008).

Meanwhile, primary studies on job security and organizational commitment that are included in current meta-analysis used different measurement. For instance, some studies used Allen and Meyer (1990)'s multidimensional scale, other studies used Mowday, Steers, and Porter (1979), Cook and Wall (1980), O'Reilly and Chatman (1986), and Blau and Boal (1997)'s different unidimensional measurement. Thus, in current meta-analysis of relationship with job security and organizational commitment, we coded these different measurements (multidimensional and unidimensional measurement) into one organizational commitment.

However, these different types of commitment (unidimensional or multidimensional) may demonstrate different reactions to managerial interventions such as job security (Meyer & Allen, 1991; Gong, Law, Chang, & Xin, 2009). Thus, one of the most apparent differences among studies examining the relation between job security and organizational commitment may be in the questionnaires that have been used to assess employee organizational commitment.

There were differences in their operationalization of organizational commitment in the studies included in this analysis. Thus, we believe that choosing different organizational commitment questionnaire can be responsible for dissimilar correlations between job security and organizational commitment. Thus, we additionally analyzed organizational commitment questionnaire (measurement) type subgroup analysis of the meta-analysis between job security and organizational commitment. Results are presented in Table A.

Results show that all of the correlations between job security and organizational commitment by different organizational commitment measurement (questionnaire) type were positive and significantly different from zero. In addition, only Mowday, Porter, and Steers (1982)'s organizational commitment questionnaire type obtained a significantly higher correlation (with true score correlations [ρ] of .535) with organizational commitment than did the other organizational commitment questionnaire types. Specifically, when we use Cohen's (1998) framework, all these effect sizes are in the medium range of magnitude and most of scale would yield very similar correlations with organizational commitment except Mowday, Porter, & Steers (1982) scale. Thus, future researchers should consider the construct validity of the available questionnaires in order to gain a precise measure of organizational commitment using additional meta-analysis.

[3]We additionally performed a robustness check by meta-regression to further examine their moderator hypotheses. Thus, in order to assess whether or not there is true heterogeneity among the studies in a meta-analysis of job security and work

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In the next section, whether certain conditions have an influence on the effect size of job security and work attitudes (i.e., job satisfaction and organizational commitment) was examined through subgroup analyses.

Subgroup analyses for the relationship between job security and job satisfaction

Table 3 shows the results regarding the subgroup analyses for the relationship between job security and job satisfaction. Subgroup analyses showed a significant association between the effect size of job security and job satisfaction and different subgroups (i.e., organizational type, country of origin, labor age, tenure, and female employee percentage).

For the organizational type subgroup analyses, it was predicted in Hypothesis 2a that job security would be a larger impact on job satisfaction in public organizations than it does in private organization. However, there was failure in finding support for Hypothesis 2a. Rather, job security was more positively related to job satisfaction among employees of private sectors ($\rho = .372$; 95% CI .299–.329) in relation to those of public organizations ($\rho = .188$; 95% CI .119–.192).

Hypothesis 3a explained that when the origin country is in Asia and Africa, the relation between job security and satisfaction is significantly positive. There is not supportive evidence of Hypothesis 3a as a positive relation between job satisfaction and job security among Europe ($\rho = .335$; 95% CI .268–.299) larger than North America ($\rho = .286$; 95% CI .214–.259) and Asian, Middle East, South America, African nationalities ($\rho = .209$; 95% CI .126–.209).

Subgroup analyses based on the age group of labor also showed significant relationships between the effect size and age group of labor. The results were highly positive especially among the employees within the age group of 35 years less ($\rho = .272$; 95% CI .197–.255), as compared with older aged employees that showed a lower positivity ($\rho = .251$; 95% CI .188–.239). Here the relationship between job security and job satisfaction was higher among younger workers ($\rho = .272$; 95% CI 197–.255) in comparison to samples of workers from the middle age group ($\rho = .256$; 95% CI .187–.244) versus older workers ($\rho = .251$; 95% CI .188–.239). Hence, there was no support for Hypothesis 4a.

Tenure-based subgroup analyses also proved that tenure constituted a significant relationship between the effect size and tenure. This proves that effects would be stronger in cases where the tenure ranges 11 years less and between 11 and 14 years. Job security effects were the strongest in short tenure levels (11 years less) ($\rho = .371$; 95% CI .221–.299). Longer tenure showed weaker effects ($\rho = .208$; 95% CI .147–.214) and when the tenure was medium level (11–14 years), it was moderate effect ($\rho = .218$; 95% CI .151–.201). In sum, there was no support for Hypothesis 5a.

When subgroup analyses are based on percentage of women workers, the samples show that female employees also showed significant relationships between the effect size and percentage of women workers. According to Hypothesis 6a, the relation is better if there are more numbers of female workers. It was not found in support of Hypothesis 6a that the percentage of female workers is 25% less, there are more positive relations ($\rho = .306$; 95% CI .213–.299) as compared with more than 50% of female workers ($\rho = .225$; 95% CI .168–.213).

Subgroup analyses for relationship between job security and organizational commitment

Table 4 shows the results regarding the subgroup analyses for the relationship between job security and organizational commitment. Subgroup analyses results (Table 4) showed a significant association

attitudes (job satisfaction and organizational commitment), we used a Stata command, 'METAAN' (Kontopantelis & Reeves, 2010). Heterogeneity is tested with Cochran's Q, I^2, H_M^2, and τ^2, and these four heterogeneity measures confirmed that there is largest heterogeneity across studies in the meta-analysis (Kontopantelis & Reeves, 2010; Huedo-Medina, Sanchez-Meca, Marin-Martinez, & Botella, 2006) (see Table B). These heterogeneity tests and measures support the argument that it may be that there are omitted systematic moderators of the effect of interest.

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Table 3. Meta-analytic results of subgroup analyses for the relationship between job security and job satisfaction

							Homogeneity statistics		
Subgroups	k	N	$\bar{r}$	ρ	SD_ρ	95% Confidence Interval	Var. expl.	95% Credibility Interval	Q-Statistic
Organizational Type									
Public-Nonprofit	9	2762	0.155	0.1878	0.094	0.119 to 0.192	34.39	0.002 to 0.373	26.165*
Private	18	13820	0.314	0.3724	0.163	0.299 to 0.329	6.4	0.051 to 0.693	278.84*
Mixed-Hybrid	9	4694	0.177	0.2159	0.185	0.149 to 0.204	7.6	−0.145 to 0.577	117.82*
Country of Origin									
North America	16	6685	0.2369	0.2864	0.160	0.214 to 0.259	11.39	−0.027 to 0.600	131.68*
Europe	18	13064	0.2838	0.3348	0.946	0.268 to 0.299	4.6	0.268 to 0.299	389.93*
Asia, Middle East, Africa	5	2081	0.168	0.2089	0.094	0.126 to 0.209	28.66	0.023 to 0.395	17.44*
Labor Age									
Age <35	8	4084	0.226	0.272	0.126	0.197 to 0.255	14.20	0.024 to 0.521	59.96*
Age 35–40	9	4340	0.216	0.256	0.093	0.187 to 0.244	24.51	0.072 to 0.439	36.71*
Age 40>	8	5609	0.214	0.251	0.128	0.188 to 0.239	10.79	−0.0003 to 0.50	74.13*
Tenure									
Tenure <11	6	2211	0.259	0.371	0.087	0.221 to 0.299	56.07	0.200 to 0.543	16.05*
Tenure 11–14	8	5988	0.176	0.218	0.161	0.151 to 0.201	7.6	0.151 to 0.201	105.13*
Tenure >14	3	3175	0.180	0.208	0.116	0.147 to 0.214	8.13	−0.019 to 0.434	36.89*
Female Employee Percentage									
<25%	4	1816	0.256	0.306	0.077	0.213 to 0.299	34.35	0.154 to 0.458	11.64*
25–50%	12	4781	0.265	0.319	0.099	0.238 to 0.291	25.11	0.125 to 0.515	47.77*
>50%	13	6969	0.190	0.225	0.022	0.168 to 0.213	7.5	−0.122 to 0.571	171.92*

Note. k = the number of studies; samples; N = the number of individuals in the k samples; $\bar{r}$ = sample-size-weighted uncorrected correlation; ρ=mean true score correlation; SD_ρ = standard deviation of true score correlation; 95% confidence Interval = 95% confidence interval for ρ; Var.expl.= percentage of variance in corrected correlations attributable to all the artifacts considered; Credibility Interval = 95% credibility interval for ρ; Q-statistic = Chi-square test for moderators.
*$p < .05$.

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Table 4. Meta-analytic results of subgroup analyses for the relationship between job security and organizational commitment

							Homogeneity statistics		
Subgroups	k	N	$\bar{r}$	ρ	SD_ρ	95%Confidence Interval	Var. expl.	95% Credibility Interval	Q-Statistic
Organizational Type									
Public-Nonprofit	8	5960	0.222	0.264	0.156	0.198 to 0.247	7.2	−0.042 to 0.571	109.61*
Private	12	7656	0.163	0.196	0.178	0.142 to 0.185	6.73	−0.153 to 0.545	178.21*
Mixed-Hybrid	10	5696	0.250	0.319	0.247	0.226 to 0.275	4.68	0.226 to 0.275	213.34*
Country of Origin									
North America	7	4077	0.268	0.327	0.241	0.240 to 0.297	4.08	−0.145 to 0.798	154.85*
Europe	15	12740	0.169	0.204	0.135	0.152 to 0.186	8.79	−0.060 to 0.468	170.61*
Asia, Middle East, Africa	7	2495	0.304	0.385	0.296	0.268 to 0.340	5.51	−0.197 to 0.965	144.93*
Labor Age									
Age <35	6	6778	0.225	0.277	0.079	0.202 to 0.247	18.58	0.123 to 0.431	32.29*
Age 35–40	7	3751	0.221	0.273	0.188	0.190 to 0.251	7.46	−0.095 to 0.641	93.80*
Age 40>	7	4652	0.172	0.199	0.267	0.144 to 0.200	2.78	−0.324 to 0.722	251.00*
Tenure									
Tenure <11	4	2574	0.355	0.420	0.161	0.322 to 0.390	7.14	0.104 to 0.736	56.02*
Tenure 11–14	4	2655	0.132	0.165	0.147	0.095 to 0.170	10.03	−0.123 to 0.452	39.87*
Tenure >14	5	3837	0.096	0.111	0.243	0.064 to 0.127	2.9	−0.363 to 0.590	168.65*
Female Employee Percentage									
<25%	6	5127	0.211	0.256	0.096	0.185 to 0.238	18.05	0.068 to 0.444	33.23*
25–50%	10	4512	0.261	0.318	0.101	0.233 to 0.288	8.8	−0.036 to 0.672	113.62*
>50%	10	6227	0.132	0.163	0.197	0.107 to 0.156	6.03	−0.222 to 0.550	165.62*

Note. k = the number of studies; samples; N = the number of individuals in the k samples; $\bar{r}$ = sample-size-weighted uncorrected correlation; ρ = mean true score correlation; SD_ρ = standard deviation of true score correlation; 95% confidence Interval = 95% confidence interval for ρ; Var.expl. = percentage of variance in corrected correlations attributable to all the artifacts considered; Credibility Interval = 95% credibility interval for ρ; Q-statistic = Chi-square test for moderators.
*$p < .05$.

between the effect size of job security and organizational commitment and different subgroups (i.e., organizational type, country of origin, labor age, tenure, and female employee percentage).

For the organizational type subgroup analyses, according to Hypothesis 2b, the relationship between job security and organizational commitment would be higher in public organization as compared with private organization. As a support of Hypothesis 2b, it was found that job security was more positively related to organizational commitment among employees of public-nonprofit sector (ρ = .264; 95% CI .198–.247) in comparison to private organization employees (ρ = .196; 95% CI .142–.185). Apart from this, those working in mixed organizations (hybrid) were more related to job security and showed the strongest effects (ρ = .319; 95% CI .226–.275).

For the employee's country origin, Hypothesis 3b proved that when the employees' country of origin is Asia or Africa, the relationship job security is more positively related to organizational commitment. Hence there is supportive evidence of Hypothesis 3b as a more positive relation between job security and organizational commitment among Asia, Middle East, and African sample (ρ = .385; 95% CI .268–.340) as compared with Europe (ρ = .204; 95% CI .152–.186) and the USA (ρ = .327; 95% CI .240–.297).

Age group of labor-based subgroup analyses also showed significant relationships between the effect size and age group of labor. The results were highly positive especially among the employees within the age group of 35 years less (ρ = .277; 95% CI .202–.247), as compared with older aged employees that showed a lower positivity (ρ = .199; 95% CI .144–.200). Here the relationship between job security and organizational commitment was higher among younger workers (ρ = .277; 95% CI .202–.247) in comparison to samples of workers from the middle age group (ρ = .273; 95% CI .190–.251) versus older workers (ρ = .199; 95% CI .144–.200). Hence, there was no support for Hypothesis 4a.

Subgroup analyses that are based on tenure also proved that tenure constituted a significant relationship between the effect size and tenure. But there was no support for Hypothesis 5b. The positive results of organizational commitment and job security were the highest for 11 years less (ρ = .420; 95% CI .322–.390) but was much lower in tenures between 11 and 14 years (ρ = .165; 95% CI .095–.170). The weakest effects were observed in tenures above more than 14 years (ρ = .111; 95% CI .064–.127). In sum, there was no support for Hypothesis 5b.

When subgroup analyses are based on percentage of women workers, the samples show that female employees also showed significant relationships between the effect size and percentage of women workers. Hypothesis 6b proved that if women workers were larger, there is a more positive effect. But support for Hypothesis 6b was not available. In sum, the relationship between job security and organizational commitment becomes weaker when less than 25% of all employees consist of female workers (ρ = .256; 95% CI .185–.238) and when it is more than 50% of women comprising the employee group (ρ = .163; 95% CI .107–.156). When female workers comprise 25–50% of the workforce, the strongest effects are visible on organizational commitment (ρ = .318; 95% CI .233–.288).

Discussion

Taking an overall approach, it was found that the medium-sized associations between job security and each work attitude variables (i.e., job satisfaction and organizational commitment) were found, with true score correlations (ρ) of .327 for job satisfaction, and .253 for organizational commitment. These results highlight the significance of job security at the workplace, in shaping and enhancing attitudes of employee. Job security is perhaps the sole reason why work environment and employee benefits are given so much importance. However, job security issues have different patterns in different situations, which future studies will show.

The present study aims at detecting stabilizing factors (subgroups) of these overall relationships, by focusing on five important subgroups – organizational type, employee nationality, age, tenure, and gender.

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We have analyzed the relationship between job security and work attitudes in both organizational types. Interestingly, there were different patterns for the organizational type for both work behavior relationships, i.e., job satisfaction and organizational commitment. Specifically, there were higher associations in private organization for the job satisfaction (relative to public organization sample). It appears as if employees who work in the private organization tend to have stronger reactions to job security. That is, they were more likely to job satisfaction (compared with public organization workers). While the finding that higher associations were obtained from public organization for the organizational commitment (relative to private organization sample), this implies that workers in public organization may be more sensitive to job security than employees in private organization, they were more likely to organizational commitment. The meta-analysis actually shows that both private and public employees might crave lesser amount of job insecurity (high job security) even when jobs are, by rule, highly secure at public sector.

The findings of subgroup analyses that are based on country of origin are interesting. Differential findings were obtained for the country of origin type subgroup analyses. First, Non-Asia-, Africa-, and South America-based employees have a greater dependence on the job security variable for the relationship with job satisfaction. It means that Europe and North America employees show higher associations to work attitudes concerning job security with satisfaction factored in as compared with the Asia, Africa, and South America instances. Second, it appears as if it appears as if employees not based in the USA tend to have stronger reactions to job security for the relationship with organizational commitment. As predicted, for the relationship job security and organizational commitment, higher associations were found for Asia and Africa samples (relative to North America and Europe samples). This could be the result of cultural differences in the whole conception and response toward the phenomenon of job security. It stems from here albeit more thorough and extensive research is required to understand cultural and ethnic connotations from a differential point of view. It would appear that further work is needed to understand cultural factors in this association.

Interestingly, differential patterns were also found in terms of age, tenure, and proportion of female workers subgroup analyses. The meta-analysis results show that age is highly related to the job security and employee work behavior, i.e., job satisfaction and organizational commitment. We had assumed that with older age, more cravings for job security would emerge. But this showed a divergent pattern in terms of employee age for the relationship between job security and job satisfaction and organizational commitment. This correlation was more directly proportional for younger employees, putting forth the fact that older workers go by the responsibility of maintaining a relationship with organization, i.e., organizational commitment, in terms of a relatively inadequate job holding for short period (short tenure), hence they are less affected by job security (Allen & Meyer, 1990; Löckenhoff & Carstensen, 2004).

Contrary to our hypothesis, the meta-analysis results also show that differential patterns were found in terms of employee tenure subgroup analyses. It is expected that with long tenured employee has a more positive pattern with respect to job security and work attitudes (i.e., job satisfaction and organizational commitment), but this was not always so. It was moderately large for new employees (short tenure) and rapidly diminished with passage of time. We found that correlation between job security and organizational commitment was more positive for new employees and rapidly declines and level off with increasing time. This implies that this correlation was more positive for short-level tenured employee group than for long tenured employee group. This positive moderation of tenure in the job security, job satisfaction, and organizational commitment relations corroborates the expectation that employees with higher levels of tenure who oftentimes feel certain about their job security will decrease their level of job satisfaction and commitment to the organization.

With respect to proportion of female workers, the effect size between the subgroups of proportion of female workers was significant different. However, contrary to our hypothesis, we found

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that the relationship between job security and work attitude variables (job satisfaction and organizational commitment) is more positive when female works comprise 25–50% of the workforce compared with less than at low (less than 25%) or high levels (more than 50%) of proportion of female workers. It shows that female workers occupy a median position in terms of the relationship between job security and job satisfaction and organizational commitment. Hence, these results show that an inverted U-shaped curve reflects that job satisfaction and organizational commitment slows down at low or high proportions of female workers. In the next section, theoretical and practical implications of these findings for policy and for research will be discussed.

Theoretical and practical implications

The results of current meta-analysis will be helpful for resolving the current theoretical debate concerning job security and work attitudes relationship (Byron, Khazanchi, & Nazarian, 2010). In sum, it has been found that there is a linearly positive relationship between job security and work attitudes (job satisfaction and organizational commitment). Hence, job security does increase employee job satisfaction and organizational commitment, but this is a simplistic approach. Employee age and employee tenure are more compelling decisive factors. In these cases, subgroup analyses for the relationship between job security, job satisfaction, and organizational commitment by employee age and tenure group revealed a diminishing pattern of linear relationship. Job satisfaction increases with youth (and short tenure) and the opposite is true for older workers (long tenure). The same is that what we found for organizational commitment. Our findings also have other broader theoretical implications. We found that job security increased organizational commitment for Asia, Middle East, South American, and Africa samples (relative to North American and Europe samples). This finding here suggests that cultural differences occupy a huge position to analyze these relationship patterns. Job security response and reaction varies widely from nation to nation. Interpretations are quite multifarious. In addition, we found that organizational type (private sector vs. public sector) of the employees included in the sample acted as significant subgroup factors. This finding shows that models of job security and work attitudes also incorporate different type of organization (sectoral difference) that account for how each type of organization (different sector) differentially interpret and react to their job security.

The current meta-analysis findings call attention to several important considerations important for developing effective public job security policy.

Practically, the current meta-analysis shows that the relationship of job security to employee work attitudes is positive and increasing rather than curvilinear. Thus, job security is worth retaining in some form, contrary to the logic of at-will employment. Many organizations aim to increase employee work attitudes, and our findings indicate that possible organizational interventions such as at-will employment policy may decrease employee work attitudes and individual performance. This research results suggest that policy makers seeking to increase employee work attitudes and behavior should ensure that their employees feel a sense of job security in their current job. Policy makers may increase job satisfaction and organizational commitment by enriching the emotive content of a job. Further, in the job security policy case, organizational decision makers may presume that a fully guaranteed tenure would maximize outcomes in terms of employee work attitude. However, the results point out that at-will employment policy might lead to decreased instead of increased employee work attitudes. Instead, job satisfaction and organizational commitment were more positive for new and medium-term employees, but rapidly decline and level off over time. This suggests that granting high job security for the short- and medium-term (but not long-term) may be a mean to maximize employee job satisfaction and organizational commitment. Lesser yet meaningful job tenure rules could be attained via such steps as short- to medium-term employment (e.g., 5–15 years) contracts. Thus, through this study, practitioners in public organization limit the application of fully-guaranteed tenure

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policy based on understanding of the tenure subgroup analysis, they may avoid such unexpected negative outcomes. Lastly, the results suggest that policy may consider selectively adding some subgroup factors to the organizational environments, such as those moderate level of proportion of female workers, in order to improve their employee work attitudes.

Limitations and future research

Despite the strengths of this meta-analysis, some limitations call for attention. First, future research should focus on the large number of different job security questionnaire type studies in the field. One of the most apparent differences among studies examining the relation between job security and work attitudes (i.e., job satisfaction and organizational commitment) may be in the questionnaires that have been used to assess employee perception of their job security (Schwinger, Wirthwein, Lemmer, & Steinmayr, 2014: 746). There were differences in their operationalization of job security (or insecurity) in the studies included in this analysis. Thus, future researchers can hypothesize that choosing different job security (or insecurity) questionnaire can be responsible for dissimilar correlations between job security and work attitudes. In addition, future research should consider the construct validity of the available questionnaires in order to gain a precise measure of job security (or insecurity) effects on work attitudes using additional meta-analysis. Thus, we advise future researchers to conduct meta-analytic investigations and to examine relevance of potential moderator variables on the relation between job security and employee work attitudes and behavior. Since subgroup analyses are observational, another issue in interpreting the results is the difficulty to detect confounders, which can have a moderated effect, such as the type of job security measurement scale and construct validity of the available job security questionnaire. Thus, future research could perform either between-group *Q*-statistics or meta-regression to further examine their moderator variables and hypotheses. Second, as with other meta-analysis, there is a mismatching of different methods applied in the different studies undertaken (e.g. there exists considerable heterogeneity in how job security can be enhanced in terms of variables, factors, and conditions). We advise control conditions and a detailed explanation as to how these are manipulated or applied in the future research. Third, industry effects (e.g., health care and education) were not tested in this meta-analysis. Health care and education may produce far different results than general government, if we could assess effects in these industry sectors. This also points to important demands for future research. Future research will bring in more mediators and moderators to determine under what conditions and situations these variables can be applied.

Conclusion

The objective of this article is to synthesize public and private sector accumulated research regarding the relationship between job security and employee work attitudes (i.e., job satisfaction and organizational commitment) to provide a more evidence-based footing for future public job security policy by conducting a quantitative meta-analysis method. A current meta-analysis highlights the significance of job security in enhancing employee attitudes and job performance and the relationship of job security to employee work attitudes is positive. Thus, job security is worth retaining in some form, contrary to the logic of at-will employment. We believe current meta-analysis research findings will give us an opportunity to support more debate and administratively-rationale alternatives to current job security system and guide future public and organizational policy making.

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Appendix 1

Following Hunter and Schmidt's (1990 and 2004) procedure, we corrected correlations (and their variances) for sampling and measurement errors, the largest sources of spurious between-study variation (Hom, Griffeth, & Carson, 1995: 532 Hunter & Schmidt, 2004: 81). To correct sampling error, we first averaged correlations between job security and job satisfaction, and organizational commitment, weighting by sample size. If the population correlation is assumed to be constant over studies, then the best estimate of that correlation is not the simple mean across studies but a weighted average in which each correlation is weighted by the number of persons in that study (Hunter & Schmidt, 2004: 81). Thus, sample-size-weighted mean uncorrected correlation is

$$\bar{r} = \frac{\sum [N_i{}^* r_i]}{\sum_i^N}$$

where r_i is the correlation in study i and N_i is the number of persons in study i.

Next, we adjusted this correlation for unreliability by inserting the job security, job satisfaction, and organizational commitment reliability coefficients (averaged across different samples) in to the classic attenuation correction formula (Hunter & Schmidt, 1990: 119; Hunter & Schmidt, 2004: 96).

$$\rho_{TU} = \frac{\rho_{xy}}{\sqrt{r_{xx}}\sqrt{r_{yy}}}$$

Thus, the estimation of adjusting correlation for unreliability in a Hunter and Schmidt meta-analysis involves two steps. To correct for the artifacts, we first compute the mean compound artifact attenuation factor:

$$\bar{A} = \text{Ave}(a)\text{Ave}(b) = \bar{a}\bar{b}$$

where

$$a = \sqrt{R_{xx}}\,, \quad b = \sqrt{R_{yy}}$$

Second, from this we compute the mean actual study correlation (formulas for these procedures are provided in Hunter & Schmidt, 1990: 175–176; Hunter & Schmidt, 2004: 151–152)

$$\rho = \text{Ave}(\rho_i) = \frac{\text{Ave}(r)}{\bar{A}}$$

Next, the confidence interval using the standard error for the mean effect size for homogeneous studies would be generated around the sample-size-weighted mean effect size to estimate accuracy of the estimate of the mean effect size (Whitener, 1990: 317). The confidence interval generated using the standard error reflects the effects of sampling error and is therefore applied to sample-size-weighted mean effect sizes (=$\bar{r}$) that have not been corrected for research artifact (Whitener, 1990: 316). Thus, the confidence interval is generated using the standard error for the mean correlation and is applied to the mean sample-weighted r before the correction of attenuating artifacts (Arthur, Bennett, & Huffcutt, 2001). The estimation of confidence intervals in a Hunter and Schmidt meta-analysis involves two steps. First, the sample-size-weighted mean effect size that has not been corrected for research artifact and standard error of the mean effect size are calculated. Second, confidence intervals are generated around the uncorrected, sample-size-weighted mean effect size using the standard error of the mean effect size (Whitener, 1990: 316). Schmidt, Hunter, Outerbridge, and Goff (1988: 668) provided, and Hunter and Schmidt (1990 and 2004) derived, the formula for the standard error of the mean correlation for homogeneous studies (Whitener, 1990: 316)

$$\text{SE} = (1 - \bar{r}^2)/(N - K)^{1/2}$$

where $\bar{r}$ is the sample-size-weighted mean uncorrected correlation, N is the total sample size, and K is the number of studies. Thus, the 95% CI generated using the standard error reflects the effects of sampling error is

$$\bar{r} \pm 1.96^*\text{SE}$$

Arthur, Bennett, and Huffcutt (2001) noted that a relatively small confidence interval band that does not include zero is considered a favorable outcome. It indicated that relatively little sampling error remains in the sample-size-weighted mean correlation (Arthur, Bennett, and Huffcutt, 2001: 73).

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Table A. Meta-Analytic Results of Organizational Commitment (OC) Questionnaire Type Subgroups Analysis between job security and organizational commitment

							Homogeneity statistics		
Subsamples	k	N	$\bar{r}$	ρ	SD_ρ	95% Confidence Interval	Var. expl.	95% Credibility Interval	Q-Statistic
Different OC Measurement Types*									
Allen and Meyer (1990, 1991)'s Affective OC Questionnaire	10	9868	0.1483	0.1799	0.1336	0.131 to 0.165	8.75	−0.082 to 0.441	1272.36
Cook and Wall (1980)'s OC Questionnaire	6	3730	0.2357	0.2957	0.117	0.211 to 0.260	14.2	0.066 to 0.525	979.45
Mowday, Porter, and Steers (1982) OC Questionnaire	8	2602	0.4652	0.5354	0.1883	0.444 to 0.485	6.4	0.166 to 0.904	1758.4

Note. k = the number of studies; samples; N = the number of individuals in the k samples; $\bar{r}$ = sample-size-weighted uncorrected correlation; ρ = mean true score correlation; 95% confidence Interval = 95% confidence interval for ρ.

*When the number of studies (k) is more than three, we included studies in our subsample meta-analysis. Some studies which used other organizational commitment measurement (i.e., Blau and Boal (1997)'s organizational commitment questionnaire / O'Reilly and Chatman (1986)'s commitment scale /Not specified organizational commitment questionnaire) are not included in current subgroup analysis, since the number of studies (k) of those studies is less than three.

In addition, three procedures tested the 'true' generality of each job security, job satisfaction, and organizational commitment correlation. These tests estimated *nonartifactual* variation of this correlation, detecting whether or not (unknown) moderators condition these correlation (job security–job satisfaction, job security–organizational commitment). First moderator test assessed the degree to which statistical artifacts explain variance in observed correlations (Hunter & Schmidt, 1990 and 2004). Because current meta-analysis only corrected for sampling error and unreliability, we defined 75% (or more) artifactual contribution as signifying no moderators. However, if we account for 75% of the variance or less, or the corrected variance is still large, then the next step is to test for the influence of moderator variables (Hom, Griffeth, & Carson, 1995: 533; Arthur, Bennett, & Huffcutt, 2001: 59–67; Hunter & Schmidt, 2004: 145–146). Thus, formula for the calculation for determining the total percent of the observed variance accounted for by sampling error and attenuating artifacts is (Hunter & Schmidt, 1990: 176; Arthur, Bennett, & Huffcutt, 2001: 83; Hunter & Schmidt, 2004: 152)

$$100 \times \left[\frac{(\mathrm{VAR}(e) + \mathrm{Var}(\mathrm{AV})}{\mathrm{Var}(r)}\right]$$

where

(1) Var (e) = sampling error variance = $\sigma_e^2 = (1 - \bar{r}^2)^2/\bar{N} - 1$, where $\bar{N} = T/K$ and K is the number of studies and $T = \sum_i^N$ is the total sample size
(2) Var(AV) = Variance due to the attenuating artifacts = $\bar{\rho}^2\bar{A}^2V$, where V (sum of the squared coefficients of variation) = $V1 + V2 = \dfrac{\mathrm{Var}(a)}{[\mathrm{Ave}(a)]^2} + \dfrac{\mathrm{Var}(b)}{[\mathrm{Ave}(b)]^2}$
(3) Var(r) = Variance of study coefficients = $\sigma_r^2 = \sum(Ni * (r_{i-\bar{r}}^2))/\sum_i^N$

Second, we computed 95% credibility intervals (using variances fully corrected for attenuating artifacts) around 'true' population correlations (Whitener, 1990; Hom, Griffeth, & Carson, 1995: 533; Arthur, Bennett, & Huffcutt, 2001: 87–89). If credibility intervals including zero signal moderators and suggest moderators are probably operating and the corrected mean correlation size is really the mean effect of several population (Arthur, Bennett, & Huffcutt, 2001: 89), there may be more than one population involved and possible subpopulations (moderator analyses) should be investigated (Arthur, Bennett, & Huffcutt, 2001: 87 and 89). In addition, unlike confidence intervals, which are generated using the standard error of the mean correlation before statistical artifacts are corrected for, credibility intervals are generated after the mean correlation has been corrected for attenuating artifacts (Arthur, Bennett, & Huffcutt, 2001: 87). The estimation of credibility intervals in a current meta-analysis involves two steps. First, the mean actual study correlation that has been corrected for research artifact and corrected standard deviation around the mean of the distribution of true correlation are calculated. Second, credibility intervals are generated around the corrected actual study correlation using the corrected standard deviation around the mean of the distribution of true correlation (Arthur, Bennett, & Huffcutt, 2001: 87). Hunter and Schmidt (1990 and 2004) derived the formula for the standard deviation around the mean of the distribution of true correlation (Arthur, Bennett, & Huffcutt, 2001: 87; Hunter & Schmidt, 2004: 151–152)

$$\text{Variance of actual attenuated correlations} = \mathrm{Var}(\rho) = [\mathrm{Var}(\rho_0) - \bar{\rho}^2\bar{A}^2V]/\bar{A}^2$$

where

Variance of attenuated study population correlation = $\mathrm{Var}(\rho_0) = \mathrm{Var}(r) - \mathrm{Var}(e)$.
Variance of study coefficients = $\mathrm{Var}(r) = \sigma_r^2 = \sum(Ni * (r_{i-\bar{r}}^2))/\sum_i^N$
Sampling error variance = $\mathrm{VAR}(e) = \sigma_e^2 = (1 - \bar{r}^2)^2/\bar{N} - 1$
$\bar{\rho}^2\bar{A}^2V$ = variance due to artifact variation.

Thus, the 95% credibility interval generated by using the corrected standard deviation around the mean of the distribution of true correlation is

$$\rho \pm 1.96^*\sqrt{Var(\rho)}$$

Finally, the χ^2 tests the null hypothesis that there is no real variance in unattenuated correlations; that all of the observed variance is due to variation in artifacts and to sampling error (Hunter & Schmidt, 1990: 168). If the value obtained by the χ^2 test is larger than the value required for statistical significance, the test suggests that the unexplained variance is significantly greater than zero, suggesting that the remaining variance is due to additional moderators or statistical artifacts (Arthur, Bennett, & Huffcutt, 2001: 92). Hunter and Schmidt (1990: 168) derived the formula test statistic Q is $\hat{S}^2$

$$Q = \left[\frac{K^*\mathrm{Var}(r)}{\hat{S}^2}\right]$$

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Table B. Heterogeneity test results of relationship between job security and job satisfaction and organizational commitment

Outcome	*k*	Cochran's Q	I^2(%)	H_M^2	τ^2 (95% confidence interval)
Job satisfaction	37	641.58*	95.28	20.16	.021 (.000–.037)
Organizational commitment	30	830.41*	96.6	28.42	.041 (.000–.073)

Note: Heterogeneity is tested with Cochran's *Q* which provides a *p*-value for the test of homogeneity, when compared with a χ^2 $k-1$ distribution (Brockwell & Gordon, 2001) (where *k* is the number of studies).
However, the test is known to be poor at detecting heterogeneity since its power is low when the number of studies is small (Hardy & Thompson, 1998). An alternative measure is I^2, which is thought to be more informative in assessing inconsistency between studies, with values of 25, 50, and 75% corresponding to low, moderate, and high heterogeneity, respectively (Higgins, Thompson, Deeks, & Altman, 2003). Another measure is H_M^2, the measure least affected by the value of *k*, taking values in the [0,+∞) range with 0 indicating perfect homogeneity (Mittlbock & Heinzl, 2006). Obviously, the between-study variance estimate τ^2 can also be informative about the presence or not of heterogeneity (Kontopantelis & Reeves, 2010: 6). Above tests and measures suggest that largest heterogeneity is absent.
*$p<.000$.

$$Q = \left[\frac{K^*\mathrm{Var}(r)}{(\rho^{2*}\mathrm{AA}^{2*}V) + \mathrm{Var}(e)}\right]$$

where k = number of studies (correlations); Var(r) = variance of the sample-weighted *rs*; ρ = rho, AA = compound attenuation factor, V = compound variance factor; Var(e) = sampling error variance. So under the null hypothesis, Q will approximate a χ^2 distribution with $k-1$ degrees of freedom.

Appendix 2

Hunter and Schmidt method (also called psychometric meta-analysis method) is particularly useful when researcher assume that there are some methodological flaws in the underlying studies (i.e., finite sample size and variations in measurement errors). Some job security research lacked large enough sample sizes to yield reliable results. In addition, since the measuring instruments in job security research are subject to measurement error (imperfect reliability), they produce effect size estimates that are made smaller (attenuated) by this measurement error (Borenstein, Hedges, Higgins, & Rothestein, 2009: 341). Using Hunter and Schmidt's psychometric meta-analysis method, researcher can test that the variation in job security predictions across situations for the same job situations could be largely accounted for by study imperfections such as sampling error, and variations in measurement errors (Le et al., 2007: 8). Thus, we can estimate what the effect would be if there were no methodological limitations. In addition, this psychometric meta-analysis method corrects for sample limitations, results tend to be larger than using Fisher's *Z*. This is not a form of bias, *per se*, unless, researcher should be aware of this limitation.

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