JOB SATISFACTION STABILITY INCREASES OVER TIME: META-ANALYSIS AND FIFTEEN-YEAR LONGITUDINAL STUDY

BY

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DISSERTATION

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Abstract

I investigate the stability of job satisfaction under the hypothesis that stability increases with employee age and work experience. This idea is tested via both meta-analytic evidence and a 15-year longitudinal data set with four waves of observation. The target phenomenon—i.e., the increase in job satisfaction stability across time—is specified as a moderator effect of age or tenure on the relationship between job satisfaction at time t and job satisfaction at time $t + 1$. Results indicate that job satisfaction stability increases with age and tenure at both the between-persons and within-persons levels of analysis. At the between-persons level of analysis, rank-order correlations for job satisfaction increase with age and job tenure in linear and nonlinear patterns, based on meta-analysis (Study 1). At the within-persons level of analysis, results suggest that the intra-individual lagged effect of early job satisfaction on later job satisfaction also increases with age and tenure (Study 2). I further show additional moderators of job satisfaction stability, including time lag, job change, and organization change.

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CHAPTER 1: INTRODUCTION

Job Satisfaction Definition and Importance

Job satisfaction is one of the most extensively studied topics in the field of industrial and organizational (I/O) psychology. Job satisfaction has been classically defined as an affective reaction to aspects of one's job [e.g., job satisfaction is, "an affective response which is a result of experience on the job," (Locke, Smith, Kendall, Hulin, & Miller, 1964, p. 314), as "feelings a worker has about his job," (Smith, Kendall, & Hulin, 1969, p. 12), and as, "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (Locke, 1976, p. 1304)]. In addition to the affective component of satisfaction, the more contemporary viewpoint defines job attitudes as, "multidimensional psychological responses to one's job," which involve "cognitive (evaluative), affective (emotional), and behavioral components," that are inherently dynamic in nature (Hulin & Judge, 2003, p.255; Judge, Hulin, & Dalal, 2012; Weiss, 2002). The latter definition highlights the complex nature of job satisfaction based on the tripartite model of social attitudes, which defines attitudes in terms of the three classic components: affect, cognition, and behavior (Campbell, 1963; Katz & Stotland, 1959; Smith, 1947).

My own view is that job satisfaction, as typically studied by I/O psychologists, can be treated as a *cognitive* evaluation of one's work role. This viewpoint is consistent with Eagly and Chaiken's (1993) definition of an *attitude* as, "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor," (p. 1). In the case of job satisfaction, the *attitude object* that is being evaluated either favorably of disfavorably is the individual's entire *work role*. A work *role*, in turn, is defined as, "standardized patterns of behavior required of all persons playing a part in a given functional relationship," (Katz & Kahn, 1978, p. 43), and the term *work role* can be used synonymously with the term *job*. In short, job satisfaction conveys the degree to which an individual likes her/his job.

With this definition of job satisfaction, I turn to the question of job satisfaction's importance. First, from the perspective of the employees themselves, the importance of job satisfaction is self-evident. Second, from the perspective of managers, the importance of job satisfaction inheres in its relevance to employee behavior in organizations. In this regard, job satisfaction has been implicated as a precursor to organizational citizenship behavior (Bateman & Organ, 1983; LePine, Erez, & Johnson, 2002; Roznowski, Miller, & Rosse, 1992), attendance and absenteeism (Smith, 1977; Hackett, 1989; Hackett & Guion, 1985; Scott & Taylor, 1985), turnover and turnover intentions (Hom, Katerberg, & Hulin, 1979; Tett & Meyer, 1993), withdrawal behavior (Hulin, 1991; Roznowski et al., 1992), counterproductive work behavior (Berry, Carpenter, & Barratt, 2012; Dalal, 2005), job performance (Judge, Thoresen, Bono, & Patton, 2001), decision to retire (Hanisch & Hulin, 1990, 1991), prounion representation votes (Getman, Goldberg, & Herman, 1976), prevote unionization activity (Hamner & Smith, 1978), burnout (Alarcon, 2011; Lee & Ashforth, 1996), and organizational aggression (Hershcovis et al., 2007).

Despite the large number of instances where evidence supports a job satisfaction-work behavior association, there was early debate over whether job satisfaction was a meaningful predictor of work outcomes, on average (Brayfield & Crockett, 1955; Herzberg, Mausner, Peterson, & Capwell, 1957; Iaffaldono & Muchinsky, 1985). At the extremes, Landy (1989) referred to the relationship between job satisfaction and job performance as the 'Holy Grail' of I/O psychology (because no one could find evidence for it), whereas Hulin (1991) asserted that job satisfaction was one of the two most useful pieces of information an organization could have about its employees (i.e., in addition to general mental ability). Fortunately, this debate over the utility of job attitudes was largely resolved when Harrison, Newman, and Roth (2006) demonstrated that—by aggregating work behaviors into a broad composite of job performance, citizenship behavior, and withdrawal behavior (following recommendations from decades earlier about the need for a multiple-act behavioral criterion in attitude and job attitude research; see Fishbein & Ajzen, 1974; Fisher, 1980)— the latent correlation between job attitudes and work behavior exceeded .5 (also see Kraus, 1995). This finding reaffirmed Hulin's viewpoint, concluding that, "a sound measurement of overall job attitude [e.g., job satisfaction] is one of the most useful pieces of information an organization can have about its employees" (Harrison et al., 2006, pp. 320-321). In sum, broad attitudes (like job satisfaction) will strongly predict a behavioral criterion that is equally broad (Ajzen & Fishbein, 1977).

Theoretical implications of job satisfaction stability

The reason that a study of job satisfaction stability is important is because it has implications for dominant and longstanding theories of the origins of job satisfaction, which to date have been primarily static theories. For example, the job characteristics model (Hackman & Oldham, 1976; 1980) would become less plausible as a comprehensive model of job satisfaction if the stability of job satisfaction were higher than the stability of the job features that allegedly drive satisfaction. The same is true for the dispositional approach to job satisfaction (Judge & Larsen, 2001; see Judge, Heller, & Mount, 2002; Staw & Ross, 1985)—if job satisfaction is more stable than its supposed underlying dispositions, this would imply some additional, non-dispositional basis for job satisfaction. A similar line of argument could be advanced for age differences in job satisfaction stability. For example, if the stability of job satisfaction changes with age in a way that mimics the change in self-esteem stability across the lifespan, then this could lend credence to the view that job satisfaction is partly an outcome of self-esteem. Finally, I note that job satisfaction stability is a key component in causal models of attitude-behavior relationships. In particular, panel models of the origins of job satisfaction explicitly assess the predictive utility of a theorized antecedent (i.e., performance) on job satisfaction while controlling for earlier job satisfaction (e.g., see Riketta, 2008). The more stable job satisfaction is, the less likely one will find support for a cross-lagged panel effect demonstrating its antecedents.

The current paper seeks to make three contributions to the study of job satisfaction. First, I conduct meta-analysis to estimate the magnitude of job satisfaction stability (i.e., retest correlation) over varying time spans. Second, I hypothesize that job satisfaction stability increases with age and job tenure, and test this hypothesis both meta-analytically and with a longitudinal data set including four waves of data collected over a 15-year period. The longitudinal data enable a within-persons test of my increasing job satisfaction stability hypothesis, which naturally rules out the possibility of all between-person confounds (e.g., cohort effects masquerading as tenure effects on job satisfaction stability). Third, I meta-analytically evaluated additional moderators of job satisfaction stability, including time lag, whether an individual has changed jobs (replicating Dormann & Zapf, 2001), and job hire cohort (i.e., hire date).

Origins of Job Satisfaction

Job attitudes are formed via various routes, and the origins of job satisfaction can be explained by at least three overarching perspectives: dispositional, environmental, and interactional influences. These three perspectives are described below.

Dispositional Perspective on Job Satisfaction

Advocates of dispositional influences on job satisfaction have argued that job attitudes are stable characteristics that predispose individuals to respond either positively or negatively to job contexts and are consistent over time and across situations (Staw & Ross, 1985; Staw, Bell, & Clausen, 1986; Steel & Rentsch, 1997). One rationale for the dispositional mechanism is that job satisfaction reflects a biologically-based trait that predisposes individuals to perceive environments in particular ways (Arvey, Bouchard, Segal, & Abraham, 1989; Arvey, Carter, Buerkley, 1991; Buss, Plomin, & Willerman, 1975). Over the years, Arvey and colleagues have investigated genetic components of intrinsic and overall job satisfaction via twin studies, and replicated their findings that nearly 30% of the observed variance in job satisfaction is due to genetic factors (Arvey, McCall, Bouchard, Taubman, & Cavanaugh, 1994; Arvey et al., 1989; cf. Ilies & Judge, 2003). However, one should note that past research on heritability often misattributed variance to genetic factors ignoring the interaction between environmental and genetic influences. For example, more recent findings show environmental influences on heritability of intelligence (e.g., population dependence of heritability across time and social class; Haworth et al., 2010; Plomin, DeFries, & McClearn, 1990; also see Nisbett et al., 2012).

Another stream of research emerging from the dispositional approach involves linking trait-like individual differences to job satisfaction. For example, researchers have considered positive and negative affectivity (PA/NA) as core dispositional antecedents to job satisfaction (Watson & Slack, 1993). Meta-analytic evidence suggested that overall job satisfaction is correlated .34 with PA and -.34 with NA (Thoreson, Kaplan, Barsky, Warren, & de Chermont, 2003). Likewise, facet-level job satisfactions are also related to PA and NA, respectively (Bowling, Hendricks, Wagner, 2008). Based on the framework of Big Five model, the personality traits extraversion, agreeableness, conscientiousness, and neuroticism are related to job satisfaction (Bruk-Lee, Khoury, Nixon, Goh, & Spector, 2009; Judge et al., 2002). These specific antecedents of job satisfaction, however, are multicollinear, and only neuroticism, extraversion, and conscientiousness explain unique variance in job satisfaction after controlling for the other Big Five traits. In addition to the Big Five and PA/NA, researchers have also attempted to directly measure individual differences in the general tendency to be satisfied or dissatisfied with neutral objects, as a precursor to job satisfaction (Judge & Hulin, 1993; Weitz, 1952).

Further, a core self-evaluations (CSE) model of job attitudes proposed by Judge and colleagues provides an integrative theory of the dispositional perspective on job satisfaction. Core self-evaluations are defined as an individual's fundamental beliefs about the self and one's functioning in the world, comprising four factors which are self-esteem, generalized self-efficacy, locus of control, and neuroticism/emotional stability (Judge, Erez, Bono, & Thoreson, 2002; Judge, Locke, & Durham, 1997). The CSE model highlights the genetic or biological characteristics of individuals and life expectations that simultaneously lead to one's core evaluations of the self, reality, and others. Job satisfaction, in turn, is formed by using these evaluations and affective dispositions (Judge et al., 1997). Based on meta-analytic results, CSE is correlated .37 with job satisfaction and is at least as strong an antecedent of job satisfaction as PA/NA and Big Five personality (Judge & Bono, 2001; Judge & Heller, 2002).

Job Environment Perspective on Job Satisfaction

An alternative perspective on the origin of job satisfaction has focused on the role of the work environment. The job characteristics model (JCM) of work motivation, for example, posits that core dimensions of job characteristics, including skill variety, task identity, task significance, autonomy, and task feedback eventually determine job satisfaction through the mechanism of psychological states (Hackman & Oldham, 1976). The relationships between job characteristics and job satisfaction are strong and positive, as evidenced by five meta-analyses (Fried, 1991; Fried & Ferris, 1987; Frye, 1996; Humphrey, Nahrgang, & Morgeson, 2007; Loher, Noe, Moeller, & Fitzgerald, 1985). Humphrey et al. (2007) tested the job characteristics theory and found a true correlation of .34 between job characteristics and job satisfaction based on meta-analytic evidence. Some researchers have argued that the five core dimensions constitute an overall index of job complexity (Chung-Yan, 2010; Dunham, 1976), while others have conducted separate analyses for JCM characteristics and job complexity (Humphrey et al., 2007). Yet another group of researchers noted the discrepancy between subjective verses objective job characteristics and their relationships to job complexity (Gerhart, 1988; James & Jones, 1980; Judge, Bono, & Locke, 2000; Spector & Jex, 1991).

Job complexity also predicts job satisfaction. Job complexity generally refers to challenging jobs that demand various complex skills, or the extent to which a job is difficult to perform (Campbell, 1988). High job complexity is generally associated with higher job satisfaction, with a meta-analytic corrected correlation of .37 (Humphrey et al., 2007; although individuals may vary somewhat in their responses to complex, enriched jobs; Hulin, 1971). As with job complexity, pay level is another aspect of job context that is expected to positively influence job satisfaction. In support of the notion that pay would positively influence job satisfaction, pay level is modestly positively related to both overall job satisfaction and to pay satisfaction ($r_{corrected}$ = .15 and .23, respectively) based on meta-analytic findings (Judge, Piccolo, Podsakoff, Shaw, & Rich, 2010).

Another, integrative theory of the origins of job satisfaction is the Cornell model (Smith et al., 1969), which highlights the interplay among job inputs, job outcomes, and situational factors such as social and economic contexts, to arrive at one's job or work role evaluations (Hulin, 1991; Smith et al., 1969). In particular, the Cornell model posits that *frames of reference*, or the relative standards that workers use in evaluating their job/work outcomes, play an important role in determining job satisfaction (Hulin, 1966, 1969; Judge et al., 2012). That is, individuals' perceptions of the prosperity of others in their surroundings influence the ways they evaluate their own work outcomes (i.e., occupying the same job while in a community with low prosperity will improve one's job satisfaction, due to a frame-of-reference effect).

Person x Job Environment Interaction (i.e., PJ Fit) Perspective on Job Satisfaction

Finally, proponents of the interactional approach have advocated for simultaneously considering person/dispositional factors, and job/environment factors, and the interaction between the two, as influences on job satisfaction. For example, the original job characteristics model (JCM) posited that job environment effects on job satisfaction would be moderated by an individual difference factor called growth need strength (GNS), which refers to individual differences in need for personal growth and development (Hackman & Lawler, 1971). More broadly, the theory of work adjustment (Dawis, England, & Lofquist, 1964; Rounds, Dawis, & Lofquist, 1987) posits that job satisfaction is a function of the fit between individual needs and the work environment. Holland's theory of careers also highlights the congruence between vocational personalities and work environments (Holland, 1985). In support of these views, meta-analytic evidence suggests that the congruence between interest and work environment is correlated .24 with job satisfaction (Morris, 2003). Furthermore, *person-job* (PJ) fit, or the match between a worker's characteristics and the characteristics of the job/tasks, is related .56 with job satisfaction based on meta-analytic results (corrected correlation; Kristof-Brown, Zimmerman, & Johnson, 2005). Similarly, meta-analysis on *person-organization* (PO) fit indicated that PO fit has the strongest effects for job satisfaction (.36) among all other criteria included in the study[1] (Arthur, Bell, Villado, & Doverspike, 2006). At the within-individual level of analysis, daily work-related events might serve as salient situational factors. Affective events theory posits that work events and dispositions interact to predict affective reactions, which in turn lead to work attitudes/job satisfaction and affect-driven behaviors (Weiss & Cropanzano, 1996).

Before moving to the next section, I note that the dispositional, job environment, and interactional (PJ fit) perspectives on the origins of job satisfaction are not mutually exclusive. Indeed, it is possible for all three models to be supported simultaneously. That is, it is possible to observe two main effects and an interaction effect simultaneously.

Effects of Age and Job Tenure on Job Satisfaction

Past research on the effects of job tenure and chronological age in predicting job satisfaction has been mixed. For example, older workers can be happier at work not only because they get more from work (higher perceived control, salary, occupational level), but also because older workers tend to have longer tenure (i.e., tenure could mediate the effects of age on job satisfaction; see Bedeian, Ferris, & Kacmar, 1992; White & Spector, 1987). Other scholars have believed that older workers are happier with their jobs compared to younger counterparts because older workers are more likely to be working in jobs that they like as they become more skillful through experience at maximizing their social/emotional gains while minimizing their losses (Socioemotional selectivity theory; Carstensen, 1991). Also, a monotonic increase in job satisfaction with tenure is implied by Schneider's (1987) attraction-selection-attrition (ASA) model, which suggests that individuals with poor PJ fit (i.e., those who would have experienced lower job satisfaction) tend to quit or lose the job, leaving behind their more-satisfied peers.

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[1] Other criteria included job performance (task, contextual, unspecified), turnover, turnover intention, and organizational commitment (Arthur et al., 2006).

Those who remain in the job the longest would then be the best-fitting, and therefore most-satisfied, employees. In support of these contentions, recent meta-analysis indicated that older workers tend to have modestly higher job satisfaction than younger workers (sample-size weighted corrected correlation = .18; Ng & Feldman, 2010).

Perhaps one of the most influential and controversial works on the effects of age and tenure on job satisfaction would be Herzberg and colleagues' (1957) model. In their qualitative review of past findings, Herzberg and colleagues proposed a U-shaped function for both age and tenure predicting job satisfaction. With respect to age, they argued that young workers start with high morale that starts to decrease due to difficulty in adjustment to a new job, and higher workload and task complexity. Then the workers reach a low point in their mid-twenties to early thirties, because these age groups may represent those who are highly dissatisfied but have not yet acted on such dissatisfaction (e.g., by leaving the job). Eventually, these workers become more satisfied steadily with age either because (a) they may change to a job that they can be happy in, (b) they become better at adjusting to the job, or (c) their range of interests broadens (e.g., job security becomes more important). With respect to tenure, Herzberg and colleagues make a similar proposition: "Workers begin with high morale which drops during the first year of service and remains low for a number of years. As service increases, morale tends to go up," (Herzberg et al., 1957, p.13). These arguments were inspired by past findings that job satisfaction tends to decline with increasing job tenure for the first few years, after which it steadily increases (Benge & Copell, 1947; Hull & Kolstad, 1942). Although Herzberg's U-shaped relationship has received great attention, the model was also frequently criticized (e.g., Hulin & Smith, 1965), and empirical results were inconsistent (see review by Clark, Oswald, & Warr, 1996).

Alternatively, many researchers argued for a linear function of tenure on job satisfaction. For example, some researchers asserted that tenure will be positively related to job satisfaction (Katz, 1980; Quinn, Staines, & McCullough, 1974). On the other hand, others have empirically demonstrated that tenure and job satisfaction are linearly and negatively related, especially after controlling for age effects (Hulin & Smith, 1965; Gibson & Klein, 1970; Borjas, 1979). Gibson and Klein (1970) argued that Herzberg's U-shaped findings reflect a combination of two monotonic relationships (positive age effect and negative tenure effect) that are attenuated by cultural factors; specifically, highly satisfied older workers tend to reside at the longer-tenured end of the continuum while short-tenured workers are at the younger age end of the continuum. They explained that the negative, linear relationship between tenure and job satisfaction can be explained by (a) disconfirmed expectations of newcomers (b) an acculturation process into an existing value system, and finally, (c) perceptions of favoritism as others are promoted (Gibson & Klein, 1970). These explanations are comparable to honeymoon-hangover effect (Boswell, Boudreau, & Tichy, 2005; Boswell, Shipp, Payne, & Culbertson, 2009), which describes a decreasing pattern of job satisfaction with tenure, among organizational newcomers.

At this point, a caveat is in order. In particular, it is important to note that the literature on job satisfaction *mean trends* (e.g., U-shaped curves, cited above) can be distinguished from research on job satisfaction rank-order *stability* (i.e., retest correlations). It is job satisfaction *stability* that constitutes the focus of the current paper.

Job Satisfaction Stability

Stability can be conceptualized in terms of between-individual changes (e.g., stability in rank-orders or mean-levels) or within-individual changes (e.g., within-individual stability over time, or ipsative consistency of job satisfaction facets; Caspi & Roberts, 1999). In the present study, job satisfaction stability is defined in two ways: (a) between-persons, as consistency in the rank ordering of individuals on job satisfaction over time, and operationalized in terms of test-retest correlations; and (b) within-persons, as intraindividual consistency.

In job satisfaction research, the findings of rank-order *stability* have been interpreted as indirect evidence in support of the dispositional approach (Newton & Keenan, 1991; Staw & Ross, 1985; cf. Judge & Larson, 2001). Highlighting the importance of dispositional influences, Bowling, Beehr, Wagner and Libkuman (2005) proposed an integrated approach to the stability of job satisfaction that combines the classic dispositional approach, opponent process theory, and adaptation-level theory. Opponent process theory states that individuals have a tendency to return to their own *attitudinal equilibria* or normal levels of job satisfaction as environmental effects dissipate across time (Landy, 1978; Solomon & Corbit, 1973, 1974). In other words, a worker's satisfaction level fluctuates in the earlier stage in her/his job as s/he experiences various situational changes (e.g., training, promotions, or pay increase), but becomes increasingly stable and converges to one's general satisfaction tendencies as those situational changes become less frequent. Similarly, Helson (1948) introduced the theory of adaption-level to examine, "the way we react to a perceptual field" (p. 297). The theory posits that an object is evaluated based on an individual's frame of reference, which is equivalent to one's unique adaptation level formed by contexts and experiences (Herman & Hulin, 1972). Bowling and colleagues' (2005) integrated approach stresses dispositional influences on employees' equilibrium or adaptation level of job satisfaction, as well as sensitivity to workplace events, and how fast job satisfaction returns to equilibrium after a workplace event.

Changing Task vs. Changing Person Model

Job satisfaction stability can be conceptualized in terms of the *changing task* vs. *changing person* model (Alvares & Hulin, 1972; Henry & Hulin, 1987; Hulin, Henry, & Noon, 1990). For example, the *changing task* model (originally suggested by Woodrow, 1938) states that the structure of the task, defined as the set of abilities required for a task, changes systematically over time; on the other hand, the *changing person* model describes that the ability levels of individuals systematically change with practice (see Alvares & Hulin, 1972; who originally referred to the 'changing person' model as the 'changing subject' model). While the authors demonstrated that an individual's attributes (skills and abilities) change with practice, others have found support for changing task that contributes to academic performance in college (Humphreys, 1968). Job satisfaction stability can also be conceptualized in terms of changing task model and changing person model. For example, individuals may become more stable over time in general under the *changing person* model; based on changing task model, it is also likely that work task may become more stable over time, and this could contribute to higher stability in job satisfaction later in life.

In the section that follows, I will describe research on several dispositional antecedents of job satisfaction, which shows that these antecedents all tend to become more stable across the lifespan. Under the *changing person* model, I will then use this evidence to support my own novel hypothesis that job satisfaction itself will become more stable across the life course.

Stability of Job Satisfaction Antecedents Increases over Time

I here argue that both dispositional and job environment antecedents of job satisfaction become more stable over time. The seminal work by Roberts and DelVecchio (2000) was among the first to demonstrate that dispositional traits become increasingly stable over the life course.

The authors meta-analyzed 3,217 test-retest correlations of dispositional constructs[2] and showed the increasing pattern in rank-order stability across life stages. According to the authors, trait stability linearly increased from infancy, peaked when participants were in their fifties, and reached a plateau afterwards. The stability increased in a steplike pattern, where it increased markedly at three periods in the life course: preschool years, young adulthood, and middle age. They explained that traits become more stable because individuals develop and acquire emotional, cognitive, and behavioral skills as they age (Roberts & DelVecchio, 2000). For example, personality becomes more stable in middle age as individuals attain higher self-awareness and better control over the environment and life events (e.g., executive personality; Neugarten, 1968).

To explain patterns of continuity, Roberts and DelVecchio (2000) originally reviewed five mechanisms that could potentially give rise to trait consistency, including environmental, genetic, psychological factors, person-environment transactions, and identity structure; although they were largely unable to tease apart these various potential theoretical explanations. To empirically examine the different developmental processes, Fraley and Roberts (2005) tested a structural model that incorporates (1) stochastic-contextual processes, (2) person-environment transactions, and (3) developmental constancies, using the same meta-analytic data collected by Roberts and DelVecchio (2000). According to Fraley and Roberts (2005), the stochastic mechanism represents the role of context stability in explaining change in trait stability. Person-environment transactional processes reflect the role of person-situation interaction. Finally, developmental consistency factors imply genetic or other constant factors in stability change. The authors

[2] Trait categories used in Roberts and DelVecchio (2000) include: extraversion, agreeableness, conscientiousness, neuroticism, openness to experience, femininity/masculinity, activity level, negative affect, task persistence, adaptability, approach/withdrawal, rhythmicity, and threshold.

concluded that the full model that accounted for all three processes described their data on neuroticism best, which may indicate that each of the three mechanisms functions under an overall integrated process rather than on its own (Fraley & Roberts, 2005). By using the assumptions of the Fraley-Roberts dynamic model to job satisfaction, we can begin to tease apart the relative magnitudes of the dispositional and contextual mechanisms of job satisfaction stability.

In addition to the trait constructs reviewed by Roberts and DelVecchio (2000; e.g., the Big Five, affect, etc.), the retest stability of *vocational interests* has also been assessed. Similar to other traits, vocational interest stability also increases with age (Low, Yoon, Roberts, & Rounds, 2005). Dispositional interests, which refer to an individual's relatively stable preferences for behaviors, situations, and contexts where activities occur, might explain such stability (Round, 1995). Unlike personality traits however, interest stability remained relatively unchanged during adolescence (12 to 17.9 years) and increased drastically in the college years (18 to 21.9 years), after which it remained relatively stable[3]. The authors speculated that stability spikes in the college years because children and adolescents lack opportunities to observe and learn about various vocational interest options until they reach the college years, when they are forced to think about occupational options (choosing the first job after high school or deciding on a major in college). Specifically, they conjectured that, "the process of simply being forced to confront one's interests… may be the stimulus for growth in stability" (Low et al., 2005, p.729). In general, these dispositional vocational interests were more stable than the dispositional constructs studied by Roberts and DelVecchio (2000). Low and colleagues also found that

3 Although interest stability appears to peak at age 25-29.9 years, Low et al. (2005) suggested interpreting the result with caution due to lack of studies in the age category (k = 2, N = 144).

realistic interests (based on Holland's classification) and artistic interests (based on Kuder's classification) were more stable than the other interests.

Beyond personality traits and interests, self-esteem stability also has been studied over the life course. Self-esteem stability shows an essentially monotonic increase in self-esteem stability through adulthood, which then drops in retirement age (60-82 years) yielding an overall inverted U-shape across the lifespan (Trzesniewski, Donnellan, & Robins, 2003). Stability increases from childhood (6-11 years) into young adulthood (22 to 29 years), plateaus in middle age (30-39 years), and then declines at older age (60-82; Trzesniewski et al., 2003). This curvilinear trend was replicated using samples from four large-scale national studies. With the exception of the older age group (60 years and older), self-esteem showed similar stability estimates to Roberts and DelVecchio's trait stability. Trzesniewski and colleagues (2003) interpreted that self-esteem stability first increases due to a slowing rate of developmental/maturational change, coupled with increased control of environmental changes and a more developed sense of self. However, self-esteem stability eventually decreases because of an increase in critical self-appraisals or other normative life events that might change one's identity; such as losing a loved one, retirement, and children leaving home.

Another intriguing possibility is that the general increasing trend in *stability* of dispositional constructs (traits, interests, and self-esteem) over time could be potentially explained by genetic influences. More recently, Plomin and colleagues suggested that the genetic component of IQ increases with age: "The heritability of general cognitive ability increases significantly and linearly from 41% in childhood (9 years) to 55% in adolescence (12 years) and to 66% in young adulthood (17 years) in a sample of 11,000 pairs of twins from four countries," (Haworth et al., 2010, p.1112). These researchers argued that genotype-environment correlation may explain why genetic influences increasingly account for future intelligence; that is, "as children grow up, they increasingly select, modify and even create their own experiences in part on the basis of their genetic propensities" (Haworth et al., 2010, p.1118). In addition, previous longitudinal research showed that genetic components are mostly responsible for age-to-age stability in general cognitive ability from infancy to school years; for example, biological siblings are more similar across measurement times than adoptive siblings (Fulker, Cherny, & Cardon, 1993; Petrill et al., 2004). By analogy, genetic components of dispositional traits, interests, and attitudes may also increase with age, which could explain the general increasing trend in stability of dispositional and attitudinal constructs over time.

The above sections described how several dispositional antecedents of job satisfaction (personality, vocational interests, and self-esteem) tend to increase in rank-order stability across the lifespan. Along with these dispositional factors, I also acknowledge that job contexts (e.g., job characteristics, occupational status, and pay) might become more stable over time. As Gerhart (1987) noted, test-retest correlations of pay and occupational status were both as high as .84 in the elderly sample used by Staw and Ross (1985). Gerhart stated that, "Relative to younger workers, this older cohort is less likely to experience significant change in the work situation" (Gerhart, 1987, p.367). Similarly, Roberts (1997) found that over 16 years (ages 27 to 43), occupational status was similarly as stable as the personality trait of agency.

Does Stability of Job Satisfaction Increase over Time?

In the preceding section, I reviewed research on the stability of both person-level antecedents of job satisfaction (i.e., the *changing person* model) and job environment-level antecedents of job satisfaction (i.e., the *changing task* model; Alvares & Hulin, 1972). I presented evidence that several well-known person-level antecedents of job satisfaction—

extraversion, neuroticism, conscientiousness, vocational interests, and self-esteem—notably increase in stability across the lifespan. I additionally assert that job environment conditions become more stable with tenure, as the job becomes fully learned (e.g., transition vs. maintenance stages, Murphy, 1989). As such, I hypothesize that job satisfaction stability will increase with job tenure.

Hypothesis 1: Job satisfaction stability will increase with (1) *age and* (2) *tenure.*

One important meta-analysis has already been published that examined trends in job satisfaction stability. Dorman and Zapf (2001) reviewed 42 longitudinal studies (60 samples) of job satisfaction and found a sample-weighted corrected retest correlation of .50. Dorman and Zapf (2001) further showed that the job satisfaction retest correlation was larger for job stayers (those who stayed in the same job) than for job changers, and they also found that the retest correlation decreases as the time lag between measures increases. However, these past authors did not examine change in stability across tenure or age.

In longitudinal studies that involve repeated measurements of a construct, one should consider the possibility of serial dependence (a.k.a., residual autocorrelations), and job satisfaction is not an exception (Illies & Judge, 2002). Due to serial dependence, predictive validities tend to decline as the temporal distance between predictor and outcome increases (Henry & Hulin, 1987; Hulin, Henry, & Noon, 1990). In fact, all of the previous meta-analyses on stability reviewed above consistently showed a negative relationship between time lag and retest stability for the constructs of interest (Dorman & Zapf, 2001; Low et al., 2005; Roberts & DelVecchio, 2000; Trzesniewski et al., 2003).

Controlling for time lag, I hypothesize that job satisfaction stability will be larger for job stayers than for job changers. Transitioning to a new job likely involves changes in work contexts (Dorman & Zapf, 2001; Elfering, Semmer, & Kalin, 2000), and so comparing retest correlations among job changers to those among job stayers should give some indication of the magnitude job satisfaction stability that can be attributed to the job environment.

Age versus Tenure

As a final note, although past theories have attempted to distinguish age effects from tenure effects, age and tenure are very strongly correlated in practice, and may affect both job satisfaction and the *stability* of job satisfaction in a very similar fashion. Some scholars have suggested that job tenure (also referred to as experiences, seniority, length of service, or job longevity) deserves more attention than age does (Gordon & Johnson, 1982), and others have proposed that tenure might mediate the effects of age on job satisfaction (White & Spector, 1987). I also note that some scholars consider the effect of tenure on job satisfaction to be more important than the effect of chronological age (e.g., career stage effect). According to Katz's (1980) job experience model, workers experience three transitional stages which include socialization, innovation, and adaptation stages; these experiences and work contexts simultaneously influence job satisfaction. Bedeian and colleagues (1992) empirically compared the [tenure-based] job experience model against the [age-based] career stage model, and demonstrated that tenure was a more consistent predictor of job satisfaction than was age. To explore the potential differences and similarities between age and tenure effects on job satisfaction stability, the current paper analyzes both age and tenure as research questions.

CHAPTER 2

STUDY 1: META-ANALYSIS

The current Study 1 updates and attempts to replicate Dormann and Zapf's (2001) meta-analysis on the retest stability of job satisfaction over time, and also extends previous analyses to: (a) test the novel hypothesis that job satisfaction retest stability increases with age and tenure, (b) examine linear and nonlinear effects of time lag, age, and tenure, and (c) rule out the possibility of cohort effects in retest stability. Since the original meta-analysis by Dormann and Zapf (2001; 60 samples in 42 studies conducted up to September 1997), there has been an ample number of two-wave and longitudinal studies that measured job satisfaction at multiple time points. The current study updated the previous meta-analysis. For example, whereas Dormann and Zapf (2001) focused on one moderator to compare job stayers and job changers, I examined additional moderators such as age, tenure, and birth/hire cohorts to examine how these factors contribute to job satisfaction stability.

Method

Literature search

To examine the temporal stability of job satisfaction, I conducted a literature search in PsycInfo (ProQuest) and ERIC databases, using the following search terms: *job*/*work*/*task satisfaction*, *satisfaction with work*, and *stability*/*retest*/*panel*/*longitudinal*/*follow up* (temporal terms used in Dormann & Zapf, 2001).

Inclusion criteria

Studies that met the following criteria were included in the meta-analysis. First of all, a study had to measure job satisfaction at two or more time points and report the relationship between job satisfaction measures across time (i.e., test-retest correlation). Second, a study needed to provide information on sample size. Third, the sample had to involve normal working adults; studies using clinical or younger samples were not included. In addition, studies of unit/group level job satisfaction (e.g., Hausknecht, Hiller, & Vance, 2008), expected job satisfaction (e.g., Gottfredson & Holland, 1990), and retrospective job satisfaction reported by unemployed individuals (e.g., Vuori, Silvonen, Vinokur, & Price, 2002; Wanberg, 1995) were excluded from the current meta-analysis. Finally, studies using experience sampling methodology, which involves frequent assessment of job satisfaction (i.e., weekly, daily, or multiple times a day) are not included, because these studies report summary indices of job satisfaction (e.g., means, *SD*'s) rather than retest correlations across all measurement waves (e.g., Illies & Judge, 2002; Gabriel et al., 2014).

Coding study variables

Job satisfaction stability. I examined rank-order stability of job satisfaction using test-retest correlations. If the study reported other types of effect sizes that could be converted to *r*'s (e.g., *F*-ratio and sample size from one-way analysis of variance, *t*-value for testing *r*'s statistical significance), these effect sizes and the relevant information were recorded. In addition, if a study involved more than two waves of job satisfaction measurements, I recorded all available stability coefficients in each sample. For a three-wave study for example, the correlations between (1) T1 and T2, (2) T2 and T3, and (3) T2 and T3 were recorded, along with the corresponding lags between time points. In addition to overall job satisfaction, job satisfaction facet or dimension correlations were also recorded.

Tenure (years). Imitating Roberts and DelsVecchio (2000), the mean or median tenure for each measurement period were recorded for both job tenure and organizational tenure. If only a tenure range was provided, the midpoint was used as a central tendency estimate of sample tenure. If a sample consisted of new hires or newcomers, organizational tenure was coded as zero unless reported otherwise.

Age (years). As with tenure, the mean, median or the midpoint of the reported age range was recorded.

Time lag (years). The lag between measurements was coded for each test-retest correlation estimate.[4]

Gender. Percent female was coded for gender proportion of each sample.

Job satisfaction scale. Job satisfaction measures used in each study were coded, including the instrument and number of items used. I also recorded Cronbach's alpha reliabilities of job satisfaction measures in each wave of observation.

Survey year. I coded for initial year of assessment in each dataset. A total of 47 samples reported this information. For these studies, the median lag between initial data collection and publication year was 8 years (ranging from 3 to 35 years). Therefore, if the year of data collection was not available, I subtracted 8 years from the publication date to determine survey year, echoing the procedures of Trzesniewski and colleagues (2003; cf. these authors estimated a median lag of 9 years).

Hire cohort. I coded for hire cohort by subtracting the average job tenure at the initial assessment from the survey year (see previous section) in each longitudinal sample. Based on the estimated year started working, five cohorts were coded as follows: the hire cohort of the 1970s consisted of 6 samples, and 1980s and 1990s cohorts included 13 samples each. There were four samples with hire cohort pre-1970, and four samples post-2000.

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[4] Both Roberts and DelVecchio (2000) and Low et al. (2005) excluded stability coefficients with < 1 year lag, to reduce potential carry-over effects (e.g., continued effects of administration/treatment) and to emphasize longitudinal stability. However, the current study involves job satisfaction, which could realistically change over a relatively shorter time period than 1 year. Thus, the current study included all test-retest correlations, even if the lag is less than 1 year.

Birth cohort. As with hire cohort, I coded for birth cohort by subtracting the age at the initial assessment from the survey year of each longitudinal study. Next, samples were categorized into four birth-cohort categories; pre-1950 (k = 22), 1950's (k = 35), 1960's (k = 32), and 1970's and on (k = 14). There were only two samples with birth cohort in the 1980s, so this category was merged with the 1970s.

Job complexity. I coded for both job title and job complexity based on the Job Zone categories described in the O*Net website. The five Job Zone categories refer to occupations that need: 1 = *little or no preparation*; 2 = *some preparation*; 3 = *medium preparation*; 4 = *considerable preparation*; and 5 = *extensive preparation* (Dierdorff & Rubin, 2007; Grotto & Lyness, 2010; Morgeson & Humphrey, 2006).

Job and employer change. I coded for job and employer change in terms of percentage. For example, if everyone in a sample stayed in the same job/organization, job change was recorded as 0%. If large-scale, national longitudinal studies that follow up with the same group of participants over time (representing numerous organizations and job titles) reported the number or percentage of the participants who held the same job on different occasions, this information was recorded (e.g., the SI project of Dutch young adults, Taris & Feij, 2001).

Sample size was coded for each test-retest coefficient. For studies with more than two waves of data, different sample sizes that were relevant to each retest coefficient were recorded unless the final dataset had been reduced based on listwise deletion (in which case only a single sample size was recorded). However, most studies (91%) reported using listwise deletion after the last data collection. If a range of sample sizes was provided (e.g., for a correlation matrix), minimum N was conservatively used. In addition, 24 intervention studies were found in the search process. These studies assessed job satisfaction of participants at both pre and post organizational events, such as merger and acquisition (Amiot, Terry, & Callan, 2007; Newman & Krzystofiak, 1993), downsizing (Armstrong-Stassen & Schlosser, 2008; Heaney et al., 1994), consolidation (Begley & Czajka, 1993), restructuring (Burke, 2003), and other intervention programs (Biggs, Brough, & Barbour, 2014; Nielsen & Randall, 2009). These studies were also included in the current study and intervention was dummy coded as a potential moderator (1 = intervention, 0 = no intervention).

Analysis

Computation of meta-analytic coefficients

First of all, effect sizes other than test-retest correlations were converted to *r* using the formulae provided by Lipsey and Wilson (2000). Next, three meta-analytic datasets were created: (1) a within-samples dataset which included all of the correlation coefficients collected in the coding process (multiple coefficients per sample for more than two-waves and corresponding lag and reliability information), (2) a between-samples dataset which consisted of a single effect size per sample, and (3) a multilevel dataset which was created by merging the first two datasets. The between-samples dataset was created by computing the average of retest correlation coefficients, lags, and reliabilities for *each sample*. All moderator variables except for time lag (e.g., age and tenure at the initial data collection, % female, job change, birth and hire date cohort) were at the between-sample level of analysis (see Table 1 for detailed descriptions of the variables in Study 1).

Using the between-samples dataset, I followed the meta-analytic procedures described by Borenstein, Hedges, Higgins, and Rothstein (2009). Specifically, I performed random effects meta-analysis, which models true variance of effects across subpopulations (Borenstein et al., 2009). Test-retest correlation coefficients were transformed to Fisher's z- values, and each effect size was weighted by the inverse of its sampling variance (i.e., weighted by sample size *n*).

As described in the Appendix, I also computed the overall stability estimate with each effect size was additionally corrected for unreliability attenuation (using Cronbach's alpha; see Hunter & Schmidt, 2004). Of the 138 samples, 64% (*N* = 89) provided Cronbach's alpha reliability information of the job satisfaction measures used at one or more of the time points (22% of the samples that did not report reliability information had used a single-item measure of job satisfaction). The average Cronbach's alpha reliabilities across the 89 samples were .82 at Time 1 and .84 at Time 2. If a sample provided the name of a job satisfaction scale and the number of items used, but without reliability information, the average Cronbach's alpha for the scale was imputed for using the mean reliability for the corresponding measure, adjusted for the number of items used (Spearman-Brown). If no information regarding the measure was available, the overall average Cronbach's alpha reliabilities were imputed, with the exception of composite correlations (e.g., correlations combined across multiple dimensions of job satisfaction; Hunter & Schmidt, 1990). For single-item measures, the average reliabilities were adjusted to .42 at Time 1 and .45 at Time 2 (using the Spearman-Brown prophecy formula).

One issue that arises when correcting retest correlations for internal consistency unreliability is that the corrected correlations occasionally exceed 1.0 (which is theoretically impossible). In the current meta-analytic database, 12 out of 138 samples provided retest correlations that exceeded 1.0 after correction for attenuation. I assert that disattenuated retest correlations can realistically attain values near 1.0 in the current scenario, because I am assessing the correlation of a construct with itself.

However, because Borenstein et al.'s (2009) meta-analytic procedures involve performing a Fisher *r*-to-*z* transformation on each primary study effect size, the use of corrected correlations near 1.0 can have a sizeable influence on the meta-analytic results (because Fisher's z becomes very large as *r* approaches 1.0). As such, I have decided to truncate all attenuation-corrected correlations that exceeded .95 to an upper-limit value of .95, in order to prevent undue influence from the small number of corrected correlations that were near-unity (and to place the disattenuated correlation estimates that exceeded 1.0 into a theoretically possible range).[5]

Next, to detect moderators of job satisfaction stability, I used weighted least squares (WLS) regression methods suggested by Steel and Kammeyer-Mueller (2002). Specifically, I used a sample size-weighted regression technique to regress the test-retest correlations onto time lag, average age, average tenure, job complexity, % job change, % employer change, birth cohort, and hire cohort.

In order to compare the magnitude of job satisfaction stability estimates across age and job tenure groups, I followed the example of Roberts and DelVecchio (2000), who used an r_t estimate. The r_t parameter provides an estimate of stability while controlling for between-group differences in average time lag studied. To calculate r_t for age groups, for example, I performed a sample-size weighted regression of the Fisher *z* values for the observed effect sizes onto both time lag and age group, and then recorded the least squares mean estimates for each age category, which were then transformed back into Pearson correlations (*r*).[6]

Results

Study Characteristics

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[5] Meta-analytic results based on disattenuated correlations are presented in appendix tables.
[6] Note that Roberts and DelVecchio (2000) described the technique as an ANCOVA, which it technically is.

A total of 138 samples were included in the final meta-analytic dataset (*N* = 43,618 individuals). If a study included more than one sample (non-overlapping participants), independent effect sizes were recorded. If there was more than one study that used the same sample, the study with the largest sample size was included in the meta-analysis. If multiple studies used the same sample with the same sample size, then the study that reported more information (moderators) was included (e.g., Amiot, Terry, & Callan, 2007, was included, as opposed to Amiot, Terry, Jimmieson, & Callan, 2006; and Cramer, 1996, instead of Cramer, 1995). Only ten studies reported facet-level job satisfaction results longitudinally. These facet-level results include dimensions such as: Job Descriptive Index (JDI) facets of satisfaction with pay, supervisor, coworker, work itself, and promotion opportunity (Smith et al., 1969; e.g., Glomb, Munson, Hulin, Bergman, & Drasgow, 1999; Johnson & Johnson, 2000; Schaubroeck, Ganster, & Kemmerer, 1996; Schneider & Dachler, 1978); or intrinsic and extrinsic job satisfaction facets (e.g., Pulakos & Schmitt, 1983; Schmitt & Mellon, 1980). Some used only one or two facets of the JDI. In general, these facets were combined by calculating composite correlations (Hunter & Schmidt, 2004).

The mean age of the participants in the current meta-analytic database was 35.65 years (*SD* = 9.20; *k* = 103). The samples had average job tenure of 8.38 years (*SD* = 5.93; *k* = 40) and organizational tenure of 8.87 years (*SD* = 5.37; *k* = 18). Given that most job satisfaction studies involve working adults, the small percentage of studies that reported mean or median tenure of the sample was rather striking (only 29% directly reported job tenure, and less than 12% reported organizational tenure). Whereas most studies did not report any information regarding tenure, some studies provided sufficient information to enable estimation of the mean or median tenure. For example, Pomaki, Karoly, and Maes (2009) reported that nearly half of the participants

(46.5%) had been employed at their current position for over 6 years. In this case, job tenure was recorded as 6 years because this approximates the median tenure of that sample. Regardless, it was still not possible to determine the mean or median tenure for most studies.

Of the 138 samples, 111 samples (80%) were based on two waves of data that included job satisfaction, 19 samples were based on three waves, and 6 samples were based on four waves. In addition, one sample was based on five waves, and another sample was based on ten waves.

Average Job Satisfaction Stability

Meta-analytic estimates for retest stability of job satisfaction are presented in Table 2. The average sample-weighted job satisfaction stability coefficient based on the overall dataset was .51 (k = 138, N = 43,618, 95% CI = .48, .54). This coefficient is slightly greater than the stability coefficient found by Dorman and Zapf (2001; .42, k = 60, N = 14,944), although the current estimate is based upon nearly three times as much data.

Effects of Time Lag on Job Satisfaction Stability (Between-Samples)

Prior to examining other moderators of job satisfaction stability, I first regressed the stability correlations onto time lag, to assess whether satisfaction stability relates to time lag across studies (see similar analysis for job performance by Sturman, Cheramie, & Cashen, 2005). As shown in Table 3 (Model 1), as time lag increases, job satisfaction stability decreases (β = -.39; p < .05). This result (linear relationship between job satisfaction stability and time lag) is consistent with the estimate reported by Dormann and Zapf (2001; r = -.41), although the current estimate is based upon more than twice as many primary studies.

I also assessed the possibility of a nonlinear relationship between time lag and job satisfaction stability. Model 2 of Table 3 shows a statistically significant quadratic (lag^2) relationship between time lag and satisfaction stability (β = .43, p < .05), whereas Model 3 shows a statistically significant cubic (lag^3) relationship between time lag and satisfaction stability (β = -1.38, $p < .05$). Lastly, Model 4 shows a statistically significant log of lag effect on job satisfaction stability (β = .40, $p < .05$). The cubic relationship between time lag and satisfaction stability best described the data. The cubic relationship between time lag and job satisfaction stability is depicted in Figure 1a. It essentially shows that job satisfaction stability declines monotonically with time lag, but with diminishing returns with time. This result also shows that the asymptote of job satisfaction stability remains greater than zero as time lag increases (see Fraley & Roberts, 2005), which would imply a dispositional basis of the construct (Fraley, 2002; Fraley, Vicary, Brumbaugh, & Roisman, 2011) of job satisfaction. Figure 1b presents a bubble plot of all the studies in the meta-analytic database, and shows that there exist a few studies that used especially large lag lengths (in excess of 60 months). If I were to focus on analyzing the datasets with lag lengths up to 60 months only (i.e., with the longest 5% of samples that used extremely long lag length [over 60 months] excluded), I would find that the job satisfaction test-retest correlation appears to approach .3 as time lag increases (see Figure 1c; k = 129, lag up to 60 months).

Effects of Age and Tenure on Job Satisfaction Stability (Between-Samples)

After establishing a negative relationship between time lag and job satisfaction stability, I next estimated the relationship between age and job satisfaction stability. This association was positive (β = .24; $p < .05$; see Table 4, Model 1; Figure 2). The age effect on satisfaction stability, as assessed across samples, also appears to be quadratic (β = -3.15; $p < .05$; see Table 4, Model 2). Further, the linear and quadratic age effects on satisfaction stability were maintained even once time lag effects on stability were controlled (see Table 4).

Similar to age, job tenure was found to increase the stability of job satisfaction nonlinearly while controlling for time lag (quadratic effect; see Table 4, Model 5). This suggests that job satisfaction stability increases with job tenure, but with diminishing returns to tenure. For both age and tenure, cubic effects were not apparent (see Table 4, Models 3 and 6). In addition, in supplemental analyses (not reported here), age and job tenure did not show any incremental effect over each other, because they are highly collinear at the between-samples level of analysis (r = .63).

In order to give more insight into age and tenure effects on job satisfaction stability, I have plotted the meta-analytic job satisfaction stability means for different age categories (Figure 3), and for different job tenure categories (Figure 4; controlling for time lag by using r_t, see Roberts & DelVecchio, 2000). As shown in Figure 3, job satisfaction stability appears to increase with age, at least up to age 50. Unfortunately, the amount of available data is slim after age 50 (i.e., k = 4 studies), leaving it uncertain whether the apparent dip in job satisfaction stability after age 50 is real. For job tenure effects, Figure 4 depicts an increase in job satisfaction stability that occurs as individuals have been in their jobs for longer amounts of time. In Figure 4, the increase in satisfaction stability appears to be similar to a step function, with stability suddenly increasing after 5 years on the job, and then remaining relatively constant. Meta-analytic correlations of job satisfaction stability across age and tenure categories are presented in Table 2.

Effects of Birth Cohort and Hire Date Cohort on Job Satisfaction Stability (Between-Samples)

Although not the focus of the current study, I also estimated generational effects on job satisfaction stability. These included birth cohort effects and hire date cohort effects. Meta-analytic correlations of job satisfaction stability across birth and hire date cohort categories are presented in Table 2. Birth and hire date cohort did not uniquely predict job satisfaction stability (β = -.10, *n.s.*, and β = -.01, *n.s.*, respectively). More importantly however, the age effects remained statistically significant even after controlling for cubic lag and birth cohort (β = .29, $p < .05$ for the linear age effect; β = -2.35, $p < .05$ for the quadratic age effect; see Table 5, Model 2 and 3). The quadratic job tenure effect also remained statistically significant after controlling for cubic lag and hire date cohort (β = -1.43; Table 5 Model 6).

Between-Sample Moderators of Job Satisfaction Stability

For the sake of completeness, I also investigated several potential between-sample level moderators of job satisfaction stability. Job satisfaction was slightly more stable in studies that did not involve any intervention (i.e., in studies that did not involve pretest-posttest stability in the presence of an organizational event, such as mergers/acquisitions, downsizing, or leadership training). As shown in Table 7, without interventions/events, the stability of job satisfaction was r = .52 (k = 114, N = 37,896), but interventions appear to make job satisfaction a bit less stable (r = .45, k = 24, N = 5,722). Nonetheless, the confidence intervals overlapped for these two conditions, so the effect of interventions on job satisfaction stability should not be overstated.

Also, as the percentage of job changers in a sample increased, the stability of job satisfaction tended to decrease (β = -.36; $p < .05$; see Table 7 and 8). Dormann and Zapf (2001) had drawn a similar conclusion, based upon their descriptive comparison of the average stability estimates from two categories of primary studies that they labeled job changers and job stayers. Further, I found that as the percent of organization changers increased in a sample, job satisfaction stability tended to decrease (β = -.56; $p < .05$). Additionally, as the sample included more women, job satisfaction stability increased slightly (β = .23; $p < .05$). There were no moderator effects for the job complexity of the samples.

In Table 7, I also compared job satisfaction stability estimates across different job satisfaction inventories. Job satisfaction stability does not seem to depend greatly upon which job satisfaction instrument was used (r_t values range narrowly from r_t = .43 to .64), with the exception of single-item measures, which naturally have smaller observed stability correlations (r_t = .43) due to reliability attenuation (i.e., Spearman-Brown formula).

Multilevel Analysis of Time Lag Effects on Job Satisfaction Stability (Within- and Between-Samples)

As is common in meta-analysis, the above analyses were all implemented at the between-sample level of analysis. Each moderator (e.g., lag, age, tenure, birth cohort, hire cohort) was coded at the sample-level of analysis (i.e., one moderator score for each sample). For most moderators assessed in the current meta-analysis, sample-level moderator analysis was a technical necessity, because only one value of each moderator was reported for each sample (e.g., each sample only reported one score for average job tenure).

However, for one moderator in particular—time lag—it was possible for me to assess both within-sample effects and between-sample effects. This is an important distinction between the current study and the previous work by Dormann and Zapf (2001), who deleted all the effect sizes from each sample except for the one effect size corresponding to the longest lag (i.e., Dormann and Zapf only recorded one effect size for each study, even when the study reported more than two waves of data collection). For the current effort, the estimation of two levels of time lag effects on job satisfaction stability was achieved via multilevel modeling (Aguinis, Gottfredson, & Culpepper, 2013; Bryk & Raudenbush, 1992; Raudenbush & Bryk, 2002; Erez, Bloom, & Wells, 1996; Hofmann, 1997). The multilevel model I estimated was as follows:

Level 1 Equation (Within-Sample):

$$r_{ls} = \beta_{0s} + \beta_{1s}(\text{Lag}_{ls}) + e_{ls} \quad (1)$$

Level 2 Equation (Between-Sample):

$$\beta_{0s} = \gamma_{00} + \gamma_{01}(\text{Lag}_{between}) + u_{0s} \quad (2)$$

$$\beta_{1s} = \gamma_{10} + \gamma_{11}(\text{Lag}_{between}) + u_{1s} \quad (3)$$

where r_{ls} is job satisfaction stability correlation at each lag (l) within each sample (s), e_{ls} is within-sample error, γ_{00} and γ_{10} are level 2 intercept, γ_{01} is linear effect of $\text{Lag}_{between}$ on intercept, γ_{11} represents the cross-level interaction effect, u_{0s} and u_{1s} each representing between-sample random error in intercepts and slopes. The same model can be presented in the form of a linear mixed model (by substitution):

$$r_{ls} = \gamma_{00} + \gamma_{01}(\text{Lag}_{between}) + \gamma_{10}\text{Lag}_{ls} + \gamma_{11}(\text{Lag}_{ls})(\text{Lag}_{between}) + u_{0s} + u_{1s}\text{Lag}_{ls} + e_{ls} \quad (4)$$

For estimating the multilevel model shown above, I was able to use multiple effect sizes from any study that reported more than two waves of measurement. This resulted in a total of 258 effect sizes (i.e., retest correlations) for estimating the multilevel model. Results of the multilevel model (with sample-size weighted estimation) are given in Table 9. In Table 9, it can be seen that between-sample differences in time lag length still have effects on job satisfaction stability (e.g., $\gamma_{01} = -.03$, $p < .05$ for linear effect in Models 1, 2, and 3). More importantly, I can now establish that time lag has a robust negative *within-sample* effect on job satisfaction stability (e.g., $\gamma_{10} = -.03$, $p < .05$ for linear effect in Model 1). The within-sample effect of time lag on job satisfaction stability also appears to be nonlinear.

Although slope variance appears to be approximately zero, I observed a statistically significant cross-level interaction between time lag and sample-level mean lag (e.g., $\gamma_{11} = .01$, p

< .05; see Model 10). In other words, the time lag-stability slope seems to vary across contexts. This means that the negative time lag effect on job satisfaction stability is stronger in samples with longer average time lag. In the subsequent section, I examine age and tenure effects using a large-scale longitudinal study.

CHAPTER 3

STUDY 2: LONGITUDINAL STUDY

Study 2 tests the hypothesis that job satisfaction stability increases over time at the within-persons level of analysis. I define *within-person* job satisfaction stability as the following: on occasions when an individual has high job satisfaction, s/he will tend to experience high job satisfaction on a subsequent occasion (i.e., intraindividual consistency).

Method

Participants

Data were obtained from a state-wide longitudinal survey to examine opinions of public school teachers on their job attitudes and union association experiences. Because nearly all participants held the same job, job characteristics are mostly controlled in the current data, by design. Data were collected at four different time points, approximately five years apart (1995, 1999, 2005, and 2010). Sample size varied across waves of data collection (N = 1,366 at Time 1, N = 2,627 at Time 2, N = 3,589 at Time 3, and N = 3,855 at Time 4). Removing responses from those who report their satisfaction at fewer than two time points resulted in the final longitudinal N of 2,802.

Measures

Job satisfaction. Job satisfaction was assessed using a facet-composite measure designed by the sponsoring organization. At all four time points, participants reported their satisfaction with the job using six items rated on a scale from 1 (*very dissatisfied*) to 5 (*very satisfied*). The items included, “To what extent are you satisfied with: (1) Student behavior in your class(es)? (2) The personal fulfillment you get from teaching? (3) Your pay? (4) Your benefits? (5) Your opportunity for career advancement?” and finally, (6) “All in all, how satisfied are you with your job?” These items are similar to the items in classic job satisfaction measures. For example, the

Minnesota Satisfaction Questionnaire (MSQ; Weiss, Dawis, England, & Lofquist, 1967) assesses job satisfaction with items such as, "My pay and the amount of work I do" (cf. item 3), "The chances for advancement on this job" (cf. item 5), and "The feeling of accomplishment I get from the job" (cf. item 2). In addition, the content of the last item in the present study (i.e., item 6) mirrors the Job in General scale (JIG; Ironson, Smith, Brannick, Gibson, & Paul, 1989), which asks, "Think of your job in general. All in all, what is it like most of the time?" Likewise, items 3 and 5 in the present study are also comparable to the contents of the Job Descriptive Index (JDI; Smith, Kendall, & Hulin, 1969), which measures an individual's satisfaction with pay and opportunity for promotion, as well as supervision, coworkers, and the work itself.

Age. At times 2, 3, and 4, respondents reported their exact age in years. At time 1, respondents were asked to mark one of the six options for age, which were: 1= *less than 25*; 2 = *26-35*; 3= *36-45*; 4 = *46-55*; 5 = *56-65*; and 6 = *66 or over*. For the purpose of analysis, the time 1 age codes were entered as: *less than 25* = 20; *26-35* = 30; *36-45* = 40; *46-55* = 50; *56-65* = 60; and *66 or over* = 70.

Tenure. At all four time points, employees' tenure was asked with a question, "How many total years have you been employed as an educator?" Respondents reported their tenure information in years.

Control variables

Pay. Current personal salary was measured using the following pay ranges: 1 = *less than $19,999/year*; 2 = *$20,000–29,999/year*; 3 = *$30,000–39,999/year*; 4 = *$40,000–49,999/year*; 5 = *$50,000–59,999/year*; and 6 = *more than $60,000/year* (time 1). Additional ranges were included in the subsequent surveys: 7 = *more than $70,000/ year* (time 2); 8 = *$80,000–89,999/year*; 9 = *$90,000–99,999/year*; and 10 = *$100,000 or more/year* (time 3 and 4).

Family income. Respondents marked one of the ten options to indicate their current family income on the following scale: 1 = *less than $19,999/year*; 2 = *$20,000–29,999/year*; 3 = *$30,000–39,999/year*; 4 = *$40,000–49,999/year*; 5 = *$50,000–59,999/year*; 6 = *$60,000–69,999/year*; 7 = *$70,000–79,999/year*; 8 = *$80,000–89,999/year*; 9 = *$90,000–99,999/year*; and 10 = *$100,000 or more/year*.

Other demographics. Individuals reported their gender information with one of the two options: 1 = *female* or 2 = *male*. Also, one of the questions asked spouse's employment status, which included an option of "I am not married." Responses to this option were dummy coded to indicate participants' marital status (0 = *married*; 1 = *single*).

Analysis

The current Study attempted to assess age and tenure effects on job satisfaction stability (H1) at the within-persons level of analysis (e.g., age and tenure varies within persons; see Enders & Tofighi, 2007). Testing this at the within-persons level has the advantage of removing the possible confounding influence of cohort effects (i.e., all cohort effects are between-persons). In the current model, the within-individual errors were assumed independent and normally distributed. However, alternative error structures were also examined (e.g., autocorrelation). In addition to the baseline model for age and tenure, I also examined covariates such as gender, marital status, income, and family income.

Level 1 (repeated observation within-person):

$$Jobsat_{ti} = \pi_{0i} + \pi_{1i} Jobsat_{(t-1)i} + \pi_{2i} Tenure_{(t-1)i} + \pi_{3i} (Jobsat_{(t-1)i})(Tenure_{(t-1)i}) + e_{ti} \quad (5)$$

where $Jobsat_{ti}$ is the job satisfaction for person *i* at time *t*, for $i = 1, \ldots, n$ and $t = 1, \ldots, Ti$; *Ti* is the survey period ranging from 1 to 4; $Jobsat_{(t\text{-}1)i}$ is the job satisfaction of for person *i* at time *t* –

1; $Tenure_{(t-1)i}$ is the tenure of person i at time t – 1; ($Jobsat_{(t-1)i}$)($Tenure_{(t-1)i}$) is the interaction between the two Level 1 covariates; π_{0i} is the Level 1 intercept; π_{1i} and π_{2i} are the main effects of $Jobsat_{(t-1)i}$ and $Tenure_{(t-1)i}$, respectively, for person i; π_{3i} is the interaction between $Jobsat_{(t-1)i}$ and $Tenure_{(t-1)i}$, which indicates the effect of tenure on job satisfaction *stability* for person i (which provides the within-person test of H1); and *eij* is the random within-person error for person i. In the current model, the within-individual errors were assumed independent and normally distributed . However, alternative error structures were also examined (e.g., autocorrelation). In addition to the baseline model for age and tenure, I also examined covariates such as gender, income, marital status, and family income.

The within-person job satisfaction stabilities may vary across individuals. The Level 2 model describes the between-persons job satisfaction stability pattern:

Level 2 (between-person):

$$\pi_{0i} = \beta_{00} + u_{0i} \tag{6}$$

$$\pi_{1i} = \beta_{10} + u_{1i} \tag{7}$$

$$\pi_{2i} = \beta_{20} \tag{8}$$

$$\pi_{3i} = \beta_{30} \tag{9}$$

where β_{00} – β_{30} are the Level 2 fixed intercepts; u_{0i} is the between-person residuals in intercepts; and u_{1i} is the between-person residuals in slopes for job satisfaction stability. The same model can be presented in the form of a linear mixed model:

$$\begin{aligned} Jobsat_{ti} = {} & \beta_{00} + \beta_{10} Jobsat_{(t-1)i} + \beta_{20} Tenure_{(t-1)i} + \beta_{30}(Jobsat_{(t-1)i})(Tenure_{(t-1)i}) \\ & + u_{0i} + u_{1i} Jobsat_{(t-1)i} + e_{ti} \end{aligned} \tag{10}$$

Data from each wave were first sorted by the union member identification number and merged into one data file (N = 7,458 total person-waves, with considerable missing data across various waves). Next, I reshaped the wide-form longitudinal data to long form (e.g., a stacked dataset). As described earlier, the final sample consisted of those who report their satisfaction at two or more time points (N = 2,802) to examine within-individual change of job satisfaction over time[7].

Results

Within-Person Effects of Age and Tenure on Job Satisfaction Stability

As a first step, I examined different error covariance structures of the job satisfaction stability model. Within-persons job satisfaction stability was specified in terms of the relationship between job satisfaction at time t and job satisfaction at time t + 1, with random slopes and intercepts across individuals. This baseline stability model was fitted with different covariance structures such as unstructured, first-order autoregression, Toeplitz, and compound symmetry. As presented in Table 10, goodness of fit statistics suggested that the unstructured error variances and covariances best described the data. Therefore, subsequent models will be tested using the unstructured error specification (Singer, 1998). Table 11a and 11b show results of the models estimated in Study 2 (see Table 11a for linear job satisfaction stability models and Table 11b for quadratic stability models).

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[7] As a supplementary analysis, I implemented a modern missing data routine (i.e., multiple imputation, MI, Rubin, 1976, 1987; Schafer & Graham, 2002). MI has a number of advantages over other approaches, such as listwise deletion, pairwise deletion, and single imputation (Enders, 2010; Newman, 2003; 2009). It has been demonstrated that MI techniques yield notably less biased parameter estimates than will listwise or pairwise deletion approaches, in the context of longitudinal modeling (Newman, 2003; 2014). To implement the MI technique I used SAS PROC MI to generate forty imputed datasets (prior to reshaping the data), computed multiple parameter estimates using each dataset, and then combined the coefficients to obtain a less biased final set of parameter estimates. Because job satisfaction stability intercept and slope did not vary across individuals using the imputations, multiple regression was performed (PROC REG instead of PROC MIXED) to test whether age or tenure moderate the relationship between job satisfaction at time t and job satisfaction at time t + 1. The combined regression coefficients are presented in Appendix (Table A7).

As shown in Model 2 of Table 11a, job satisfaction stability is indeed positive at the within-person level of analysis (β_{10}= .537; p < .05). Model 3 reveals that within-person job satisfaction stability is moderated by within-person age (β_{30a} = .009; p < .05), meaning that as an individual grows older, her/his within-person job satisfaction stability will increase. In Table 11a, Model 4, we see a similar within-person moderator effect for job tenure (β_{30b} = .009; p < .05). As job tenure increases, within-person job satisfaction stability increases. These results lend support to the idea that age and/or tenure are associated with increases in job satisfaction stability, at the *within-person* level of analysis. Table 11a, Model 5 simultaneously examines age and tenure effects. As shown in this model, age has an incremental effect over tenure (β_{30a} =.007; p < .05 for age effect; cf. for tenure effect, β_{30b} =.003; *n.s.*). Among the covariates, only personal income was a statistically significant within-person predictor of job satisfaction stability (Table 11a; Models 6, 7, and 8; β =.003; p < .05).

Furthermore, Table 11b presents within-persons quadratic effects of age and tenure on job satisfaction stability. As shown in Models 1 and 2, statistically significant quadratic effects on job satisfaction stability were found for age and tenure, respectively. Similar to linear effects, when quadratic age and tenure effects were included simultaneously in the model, the quadratic age effect remained significant while the tenure effect did not (see Table 11b, Model 3).

CHAPTER 4

DISCUSSION

The present study aimed to investigate the stability of job satisfaction over time, with a focus on age and tenure effects. The overall test-retest correlation of job satisfaction was .51 (.70 when corrected for attenuation). The main hypothesis of the current study posited that job satisfaction stability increases with age and work experience. This idea was supported in multiple ways. First, at the between-persons level of analysis (Study 1 meta-analysis), job satisfaction stability increased nonlinearly with age and tenure, even after controlling for time lag. At the within-persons level of analysis (Study 2 longitudinal primary study), the hypothesis of increasing job satisfaction stability was again supported, such that job satisfaction stability increased nonlinearly with age and tenure across four waves of observation.

Theoretical implications

The increase in job satisfaction stability with age and tenure might simply reflect a *changing person* explanation—job satisfaction stability increases because the stability of job satisfaction's dispositional antecedents increases with age. In particular, the age effects on job satisfaction stability in the current study are consistent with previous research showing that stability increases in traits that predict job satisfaction, such as self-esteem, Big Five personality, and dispositional vocational interests (Low et al., 2005; Roberts & DelVecchio, 2000; Trzesniewski et al., 2003). That is, just as these trait antecedents become more stable with age, job satisfaction also becomes more stable with age. In addition, the observed increase in job satisfaction stability might imply a *changing task* explanation—the job itself or the job environment becomes more stable with age and tenure (JCM, Hackman & Oldham, 1976; 1980; Gerhart, 1987). Consistent with the latter viewpoint, the current findings suggest that job change and organizational change are each associated with reduced job satisfaction stability.

Furthermore, I found quadratic effects of age and tenure on job satisfaction stability, both between-samples (Study 1) and within-individuals over time (Study 2). These findings may indicate that the stability of dispositions and the stability of job task/environment features may also change nonlinearly over time.

Yet a third explanation for the current findings—beyond *changing person* and *changing task* models—is the idea that the *fit* between person and task might be improving over time (Ostroff & Judge, 2007). At around five years into the job, employees seem to settle into a stable motivational profile, at least in terms of their job satisfaction (see Figure 4 for the step-like pattern). In this early stage of work experience, individuals might have a higher likelihood to change jobs either due to poor adjustment/P-J fit, or due to dispositional tendencies to switch jobs (e.g., the hobo syndrome, Ghiselli, 1974; the honeymoon-hangover effect, Boswell et al., 2005). However, after the first five years, individuals may enter another career stage that is characterized by successful adjustment and better management of work environments. Based on the Cornell model (Smith et al., 1969), another possible explanation for the increasing stability of job satisfaction could be that frames of reference may become stable due to more stable work environments, or employees might become better at shifting and managing their frames of reference to maintain their job satisfaction. Alternatively, increasing stability in work environments may, in part, reflect individuals' dispositional propensities, because workers might select their environments to suit their individual preferences (a gravitational hypothesis).

Shared understanding of the work roles among workers may contribute to more stable job satisfaction over time. Based on social information processing theory (Salancik & Pfeffer, 1978), individuals' attitudes are heavily influenced by information they obtain from social interactions, and the nature of social interactions changes over time. For example, employees gain interpersonal familiarity with the coworkers, supervisor, and other individuals at work over time (Balkundi & Harrison, 2006; Harrison, Mohammed, McGrath, Florey, & Vanderstoep, 2003), which would increase stability of the interpersonal environment at work.

The current findings might also have implications for how individuals react to organizational events as well. According to affective events theory (AET; Weiss & Cropanzano, 1996), work environments, work events, and affective dispositions trigger affective reactions, and these reactions eventually influence work attitudes and behaviors. Based on the meta-analytic findings, job satisfaction stability appears to be reduced for samples that experienced various organizational change interventions—some changes were negative (e.g., downsizing) whereas other events were positive (e.g., implementation of a program for leadership development). This might indicate that various events at work could elicit affective reactions that could reduce the stability of job satisfaction, regardless of the direction of mean-level change in satisfaction. A second point that pertains to AET is the within-person stability findings of Study 2. The increase in within-person job satisfaction stability over age and tenure might suggest that employees, over time, become more resilient to (or perhaps less sensitive to, or more avoidant of) affective events in the workplace.

One final noteworthy finding was the effect of time lag length on job satisfaction stability. The current findings suggest that, not surprisingly, job satisfaction stability decreases with longer time lags. Specifically, both quadratic and cubic nonlinear effects of lag were found. It thus appears that the job satisfaction stability coefficients seem to approach an asymptote at around .20 (see the cubic plot at the bottom of Figure 1a). Such nonlinear trends are consistent with the findings by Fraley and colleagues (Fraley & Roberts, 2005), who demonstrated that patterns of trait stability systematically vary across different time lags. Although the stability information over longer time lags (e.g., 10 years) is rather sparse, one might argue that job satisfaction stability eventually approaches a point that might reflect normative attitudinal equilibria or adaptation levels, consistent with previous job satisfaction theories (see Bowling et al., 2005).

Implications for practice

The finding that job satisfaction becomes more stable with tenure may partly explain the negative-sloping hazard rate function for turnover after the first couple of years of work experience (event history models; Dickter, Roznowski, & Harrison, 1996). As socioemotional selectivity theory (Carstensen, 1991) suggests, as workers become more experienced they may become better at balancing between gains and losses at work, and thus become less influenced by external factors that may cause one to leave the organization.

Limitations

The meta-analyses (Study 1) answered several questions about the stability of job satisfaction. At the between-samples level of analysis, I showed that job satisfaction stability increases as time lag decreases, as age increases, and as job tenure increases (nonlinearly). I also showed that job satisfaction stability is lower for job changers and for organization changers (also at the between-sample level of analysis). Then, at the within-sample level of analysis, I established a separate, robust negative effect of time lag on job satisfaction stability. Despite all of these findings, however, the meta-analytic results (Study 1) remain unsatisfactory, in particular ways. Perhaps most importantly, the key variables in the current dissertation—time lag, age, and job tenure—are most naturally conceptualized as *within-person* variables (i.e., they vary within-persons), yet none of the above meta-analyses addressed lag, age, or tenure effects at the appropriate, within-persons level of analysis.

In order to address this, major limitation, I decided to use a large primary dataset (i.e., Study 2) to supplement the Study 1 meta-analyses, in order to provide a more comprehensive test of the hypothesis that job satisfaction stability increases over time. By using a large longitudinal dataset with 4 waves of data collected across 15 years to evaluate within-person effects, I can also remove the confounding effects of between-person variables: most notably cohort effects (which are between-person effects) can be eliminated as alternative explanations for the target phenomenon.

Additionally, my attempts to pursue lifespan stability analyses similar to Fraley and Roberts (2005) were ultimately unsuccessful, due to lack of data. As shown in Appendix Tables A8 and A9, age by age (and tenure by tenure) matrices of meta-analytic correlations were constructed using data obtained in Study 1. As in the original study by Fraley and Roberts, a sample could contribute more than one test-rest correlation coefficient, across different cells (but only one correlation per cell). Regardless, the amount of data in the matrices was insufficient to conduct the planned stability analyses modeled after Fraley and Roberts (2005). The lack of useful data can be explained in part by the absence of job satisfaction stability data from individuals under 18 years of age (where much personality trait change takes place), as well as a preponderance of studies with shorter time lags. For example, many studies had to be combined for cells along the diagonals of Appendix Tables A8 and A9, because a majority of the job satisfaction longitudinal primary studies used a lag of one year.

Future research

The present study can be extended in various ways. First of all, the mean-level change/stability in job satisfaction can be examined beyond the rank-order stability. Based on Herzberg and colleagues' (1957) model, one might find the inverted U-shaped pattern of job satisfaction similarly for both age and tenure. On the other hand, different results could be found for age and tenure, such that the mean level of satisfaction increases with age and decreases linearly with job tenure after controlling for age (Borjas, 1979; Gibson & Klein, 1970; Hulin & Smith, 1965; Smith, Roberts, & Hulin, 1976).

Furthermore, the underlying processes of job satisfaction stability are still in question; as mentioned earlier. Examining the stability pattern and different processes (such as dispositions, environment, and stochastic mechanisms) can be achieved by estimating Fraley and colleagues' dynamic models of retest correlations (Fraley et al., 2011) based on Trait-state models (Kenny & Zautra, 2001). Furthermore, future research could investigate stability of other work-related constructs including a broader work-related attitude (i.e., the job attitude *A*-factor; Newman, Joseph, & Hulin, 2010) to further examine employee well-being over time. Finally, Age-Period-Cohort analysis (Yang, 2007; Yang & Land, 2008) can be conducted to simultaneously estimate and further distinguish between the different time-related effects on job satisfaction.

TABLES

Table 1. Description of Moderator Variables in Study 1 Meta-Analysis

Moderator	Description	Level of Analysis
Lag_{within}	For each retest correlation, Lag_{within} is the corresponding time lag (e.g., for a sample with three waves of data, Lag_{within} included $Lag_{T1,T2}$, $Lag_{T1,T3}$, and $Lag_{T2,T3}$). For the multilevel models, Lag_{within} was centered around the sample-level mean lag.	Within samples
$Lag_{between}$	Average of Lag_{within} per sample	Between samples
Age	Sample mean age at Time 1	Between samples
Tenure	Sample mean job tenure at Time 1	Between samples
Birth cohort	Birth year was first estimated by subtracting sample mean age at Time 1 from the survey year of initial data collection. Next, samples were categorized into four cohorts based on birth year (1 = pre-1950, 2 = 1950s, 3 = 1960s, and 4 = 1970s and later).	Between samples
Hire date cohort	Year started working was first estimated by subtracting sample mean tenure at Time 1 from the survey year of initial data collection. Next, samples were categorized into five cohorts based on year started working (1 = pre-1970, 2 = 1970s, 3 = 1980s, 4 = 1990s, and 5 = 2000s and later).	Between samples

Table 2. Meta-Analytic Results for Job Satisfaction Stability

	k	***N***	***r***	**95% CI** ***LLr, ULr***	***Q***	r_t
All samples	138	43,618	.51	[.48, .54]	2279.71*	.61
Age (years)						
18 – 21.9	8	5385	.34	[.46, .61]	83.69*	.36
22 – 29.9	22	5262	.46	[.25, .43]	306.48*	.46
30 – 39.9	32	10599	.53	[.37, .54]	469.35*	.54
40 – 49.9	37	10583	.53	[.48, .57]	343.46*	.53
50 or above	4	4146	.32	[.23, .41]	27.63*	.48
Job tenure (years)						
0 – .9	4	700	.52	[.18, .75]	80.27*	.44
1 – 4.9	9	2411	.44	[.32, .54]	81.10*	.40
5 – 9.9	13	2900	.61	[.53, .68]	106.39*	.60
10 – 14.9	8	1739	.57	[.48, .66]	53.90*	.60
15 or above	6	2352	.49	[.27, .66]	149.13*	.53
Birth cohort						
Before 1950s	22	7895	.51	[.44, 58]	303.53*	.52
1950s	35	11363	.54	[.48, 59]	450.65*	.52
1960s	32	12302	.47	[.41, 52]	402.99*	.49
1970s and after	14	4478	.43	[.41, 54]	288.43*	.39
Hire date cohort						
Before 1970s	4	1104	.64	[.41, 79]	48.95*	.56
1970s	6	2244	.56	[.35, 72]	143.03*	.63
1980s	13	3099	.57	[.47, 65]	166.44*	.57
1990s	13	2540	.46	[.34, 57]	195.60*	.46
2000s and after	4	668	.58	[.48, 66]	8.77*	.51

Note. *k* = number of samples; *N* = number of participants; *r* = sample-weighted average correlation; *LLr, ULr* = 95% lower and upper confidence limits for *r*; *Q* = heterogeneity statistic; r_t = estimated correlation with time lag of longitudinal study controlled. $^{*}p < .05$.

Table 3. Between-samples Lag Effects on Job Satisfaction Stability

	DV: Job satisfaction stability (***r***)							
	Model 1		Model 2		Model 3		Model 4	
	b (SE)	β	*b* (SE)	β	*b* (SE)	β	*b* (SE)	β
Intercept	.52 (.02)		.56 (.02)		.61 (.03)		.49 (.02)	
$Lag_{between}$	-.028	**-.39**	-.06 (.01)	**-.77**	-.12 (.02)	**-1.58**	.00 (.01)	-.05
$Lag_{between}^2$			.00 (.00)	**.43**	.02 (.01)	**2.45**		
$Lag_{between}^3$					.00 (.00)	**-1.38**		
$LogLag_{between}$							.07 (.02)	**.40**
R^2		.152		.194		.237		.202
Adjusted R^2		.145		.182		.220		.190

Note. Weighted least squares regression. $p < .05$ coefficients underlined. $Lag_{between}$ = mean lag for sample (i.e., for samples with more than two waves of data, the average lag across retest correlations was used).

Table 4. Regression Results of Age and Tenure Effects

	Job satisfaction retest correlation (***r***)											
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b (SE)	β	*b* (SE)	β	*b* (SE)	β	*b* (SE)	β	*b* (SE)	β	*b* (SE)	β
Intercept	.31 (.05)		-.43 (.15)		.26 (.63)		.44 (.05)		.34 (.08)		.37 (.10)	
Age	.00 (.00)	**.24**	.05 (.01)	**3.36**	-.01 (.06)	-.96						
Age^2			-.00 (.00)	**-3.15**	.00 (.00)	5.76						
Age^3					-.00 (.00)	-4.68						
Tenure							.01 (.01)	.17	.04 (.02)	**1.19**	.02 (.04)	.65
$Tenure^2$									-.00 (.00)	-1.06	.00 (.01)	.31
$Tenure^3$											-.00 (.00)	-.86
R^2		.058		.254		.264		.030		.111		.116
Adjusted R^2		.049		.239		.241		.005		.063		.042
Intercept	.47 (.05)		-.05 (.15)		.20 (.55)		.64 (.08)		.53 (.08)		.58 (.11)	
$Lag_{between}$	-.14 (.02)	**-2.02**	-.11 (.02)	**-1.62**	-.11 (.03)	**-1.58**	-.29 (.10)	**-4.39**	-.31 (.09)	**-4.77**	-.32 (.09)	**-4.84**
$Lag_{between}^2$	.02 (.00)	**3.44**	.02 (.00)	**2.64**	.02 (.01)	**2.55**	.07 (.03)	**10.11**	.08 (.03)	**10.66**	.08 (.03)	**11.14**
$Lag_{between}^3$	.00 (.00)	**-1.98**	.00 (.00)	**-1.52**	-.00 (.00)	**-1.46**	-.01 (.00)	**-6.06**	-.01 (.00)	**-6.22**	-.01 (.002)	**-6.68**
Age	.00 (.00)	**.31**	.04 (.01)	**2.39**	.01 (.05)	.73						
Age^2			.00 (.00)	**-2.11**	.00 (.00)	1.34						
Age^3					-.00 (.00)	-1.82						
Tenure							.01 (.01)	.23	.05 (.02)	**1.50**	.02 (.04)	.70
$Tenure^2$									.00 (.00)	**-1.34**	.00 (.01)	.73
$Tenure^3$											-.00 (.00)	-1.29
R^2		.373		.449		.450		.266		.391		.399
Adjusted R^2		.346		.420		.415		.182		.302		.290

Note. Weighted least squares regression. $p < .05$ coefficients underlined. $Lag_{between}$ = mean lag for sample (i.e., for samples with more than two waves of data, the average lag across retest correlations was used).

Table 5. Regression Results of Age, Tenure, and Cohort Effects

	Job satisfaction retest correlation (***r***)											
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b (SE)	β	*b* (SE)	β	*b* (SE)	B	*b* (SE)	β	*b* (SE)	β	*b* (SE)	β
Intercept	.25 (.11)		.49 (.10)		.00 (.15)		.42 (.11)		.76 (.15)		.69 (.14)	
$Lag_{between}$			-.14 (.02)	**-2.04**	-.12 (.02)	**-1.65**			-.27 (.10)	**-4.14**	-.29 (.09)	**-4.45**
$Lag_{between}^2$			.02 (.00)	**3.47**	.02 (.00)	**2.69**			.06 (.03)	8.48	.06 (.03)	8.49
$Lag_{between}^3$			.00 (.00)	**-2.00**	.00 (.00)	**-1.56**			.00 (.00)	-4.76	.00 (.00)	-4.46
Age	.00 (.00)	**.30**	.00 (.00)	**.29**	.04 (.01)	**2.53**						
Age^2					.00 (.00)	**-2.35**						
Birth cohort	.01 (.02)	.09	-.01 (.02)	-.03	-.02 (.02)	-.15						
Tenure							.01 (.01)	.18	.01 (.01)	.19	.05 (.02)	**1.53**
$Tenure^2$											.00 (.00)	**-1.43**
Hire cohort							.01 (.03)	.04	-.03 (.03)	-.20	-.04 (.03)	-.27
R^2		.062		.373		.460		.031		.284		.424
Adjusted R^2		.044		.340		.426		.000		.179		.320

Note. Weighted least squares regression. $p < .05$ coefficients underlined. $Lag_{between}$ = mean lag for sample (i.e., for samples with more than two waves of data, the average lag across retest correlations was used).

Table 6. Meta-Analytic Correlation Matrix of Study Variables

	M	*SD*	1	2	3	4	5	6	*k*
1. Job satisfaction stability	0.48	0.19	—						138
2. $\text{Lag}_{\text{between}}$ (yrs.)	1.86	2.47	-.34	—					136
3. Age (yrs.)	35.65	9.20	.21	-.00	—				103
4. Tenure (yrs.)	8.38	5.93	-.00	.21	.63	—			40
5. Birth cohort	2.37	0.97	-.16	-.21	-.60	-.28	—		103
6. Hire date cohort	3.18	1.13	-.14	-.43	-.40	-.27	.77	—	40

Note. For correlations $|r| > .21$, $p < .05$.

Table 7. Summary Correlations of Job Satisfaction Stability across Moderators

Moderator	***k***	***N***	***r***	**95% CI** ***LLr, ULr***	***Q***	r_t
Intervention	24	5,722	.45	[.38, .52]	260.73*	.51
No Intervention	114	37,896	.52	[.49, .55]	2009.80*	.51
0 < % Female < 25	27	9,106	.51	[.45, .58]	446.92*	.51
25 ≤ % Female < 50	34	11554	.45	[.39, .51]	431.87*	.47
50 ≤ % Female < 75	22	11497	.48	[.41, .55]	435.16*	.50
75 ≤ % Female < 100	25	5995	.57	[.50, .63]	324.73*	.57
% Job change ≤ 50	23	8,588	.45	[.38, .51]	308.74*	.43
% Job change > 50	9	3,016	.28	[.14, .41]	117.80*	.36
% Org. change ≤ 50	24	7,077	.51	[.45, .56]	217.56*	.50
% Org. change > 50	3	2,306	.28	[.25, .31]	1.52	.37
Satisfaction Measures						
Single item (uncategorized)	25	11615	.40	[.34, .46]	359.99*	.43
Hackman & Oldham (1975; JDS)	16	3942	.52	[.44, .59]	161.49*	.56
Cammann et al. (1979; MOAQ)	9	1820	.57	[.47, .66]	68.58*	.52
Smith, Kendall, & Hulin, (1969, JDI)	8	1835	.64	[.58, .68]	20.77*	.64
Brayfield & Rothe (1951; JSI)	6	1525	.51	[.12, .76]	348.60*	.46
Weiss et al. (1967; MSQ)	5	1500	.52	[.40, .61]	26.28*	.52
Hoppock (1935; JSB)	4	659	.55	[.29, .73]	44.14*	.50
Warr, Cook, & Wall (1979)	4	767	.57	[.36, .72]	38.44*	.57
Caplan et al. (1975, 1980)	3	515	.65	[.43, .80]	24.25*	.62
Kristensen (2001; COPSOQ)	3	966	.50	[.43, .57]	3.56	.52
Neuberger & Allerbeck (1978; JDF)	3	423	.57	[.38, .72]	23.05*	.52
Others (combined)	27	4943	.52	[.44, .59]	313.51*	.48
Developed	25	13109	.48	[.42, .54]	443.20*	.51

Note. *k* = number of samples; *N* = number of participants; *r* = sample-weighted average correlation;; *LLr*, *ULr* = 95% lower and upper confidence limits for *r*; *Q* = heterogeneity statistic; r_t = estimated correlation with time lag (lag^3) of longitudinal study controlled. $^*p < .05$

Table 8. Regression Results of Job Satisfaction Stability on Job and Employer Change, Gender, and Job Complexity

	Job satisfaction retest correlation							
	Model 1		Model 2		Model 3		Model 4	
	b (SE)	β	*b* (SE)	β	*b* (SE)	β	*b* (SE)	β
Intercept	.42 (.03)		.47 (.03)		.38 (.03)		.51 (.04)	
% Job change	-.15 (.07)	**-.36**						
% Employer Change			-.19 (.06)	**-.56**				
% female					.00 (.00)	**.23**		
Job complexity							.00 (.02)	-.01
R^2		.131		.319		.052		.000
Adjusted R^2		.102		.292		.043		.000

Note. Weighted least squares regression. $p < .05$ coefficients underlined.

Table 9. Multilevel Meta-Analytic Models of Lag Effects on Job Satisfaction Stability

	DV: Job satisfaction stability (***r***) [a]									
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Fixed effects										
Intercept	**.48**	**.48**	**.48**	**.46**	**.46**	**.46**	**.43**	**.43**	**.43**	**.48**
Lag_{within}, γ_{10}	**-.03**	**-.04**	**-.03**	**-.04**	**-.04**	**-.04**	**-.04**	**-.04**	**-.04**	**-.05**
Lag_{within}^2		**.00**	**.01**		**.00**	**.01**		**.00**	**.01**	
Lag_{within}^3			**-.00**			**-.00**			**-.00**	
$Lag_{between}$, γ_{01}	**-.03**	**-.03**	**-.03**	**-.06**	**-.06**	**-.06**	**-.09**	**-.09**	**-.09**	**-.03**
$Lag_{between}^2$				**.00**	**.00**	**.00**	.01	.01	.01	
$Lag_{between}^3$							-.00	-.00	-.00	
$Lag_{within} \times Lag_{between}$, γ_{11}										**.01**
Random effects										
Level 1: Within-sample, σ^2	**2.45**	**1.85**	**1.77**	**2.45**	**1.85**	**1.77**	**2.45**	**1.85**	**1.77**	**2.41**
Level 2: Intercept variance, τ_{11}	**.02**	**.02**	**.02**	**.02**	**.02**	**.02**	**.02**	**.02**	**.02**	**.02**
Slope variance (lag), τ_{22}	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Goodness of fit										
LL	-364.3	-384.1	-372.9	-357.6	-378.0	-367.2	-344.3	-364.3	-353.2	-360.6
AIC (smaller is better)	-356.3	-376.1	-364.9	-349.6	-370.0	-359.2	-336.3	-356.3	-345.2	-352.6
BIC (smaller is better)	-344.7	-364.4	-353.2	-337.9	-358.3	-347.5	-324.6	-344.7	-333.5	-340.9

Notes. Sample-size weighted estimation. $p < .05$ coefficients underlined. [a] Level 1 test-retest correlations (multiple correlations per sample). LL = -2 Log Likelihood estimates. AIC = Akaike information criterion. BIC = Bayesian information criterion. Lag_{within} = Level 1 lag for samples with multiple coefficients from more than two waves data (sample-mean centered). $Lag_{between}$ = Level 2 mean lag for samples with multiple coefficients from more than two waves data (grand-mean centered). Models 1 through 9: Random intercept and random slope models (RIRSM; see Aguinis et al., 2013). Model 10: Cross-level interaction model.

Table 10. Error Covariance Structures of Job Satisfaction Stability Model [STUDY 2: LONGITUDINAL STUDY]

Goodness of fit	Unstructured*	First order Autoregressive	Toeplitz	Compound Symmetry
-2 Log Likelihood	5355.6	5424.0	5411.0	5408.8
AIC (smaller is better)	5367.6	5432.0	5419.0	5416.8
AICC (smaller is better)	5367.7	5432.0	5419.0	5416.8
BIC (smaller is better)	5403.3	5455.8	5442.8	5440.5

Note. * Best-fitting error covariance structure. AIC = Akaike information criterion. AICC = corrected Akaike's information criterion. BIC = Bayesian information criterion.

Table 11a. Coefficient Estimates of Linear Job Satisfaction Stability Models [STUDY 2: LONGITUDINAL STUDY]

	Job satisfaction *t* + 1							
	1	2	3	4	5	6	7	8
Fixed effects								
Intercept, β_{00}	**3.780**	**1.743**	**3.170**	**2.185**	**2.999**	**3.159**	**2.102**	**2.989**
Job satisfaction *t*, β_{10}		**.537**	**.152**	**.414**	**.206**	.131	**.397**	**.174**
Age, β_{20a}			**-.034**		**-.027**	**-.037**		**-.030**
Tenure, β_{20b}				**-.031**	-.010		**-.034**	-.011
Job satisfaction × age, β_{30a}			**.009**		**.007**	**.009**		**.007**
Job satisfaction × tenure, β_{30b}				**.009**	.003		**.008**	.003
Personal factors								
Sex						.034	.029	.032
Income						**.003**	**.003**	**.003**
Work-family factors								
Marital status						-.013	-.015	-.013
Family income						.000	.000	.000
Random effects								
Level 1: Within-individual, σ^2	**.161**	**.260**	**.258**	**.266**	**.261**	**.250**	**.254**	**.252**
Level 2: Intercept variance, τ_{11}	**3.122**	**.903**	**.784**	**.699**	**.705**	**.760**	**.707**	**.682**
Slope variance, τ_{22}	**.195**	**.058**	**.049**	**.043**	**.043**	**.047**	**.042**	**.041**
Goodness of fit								
AIC (smaller is better)	6042.5	5367.6	5251.6	5305.2	5185.8	4924.6	4970.3	4890.7
BIC (smaller is better)	6072.1	5403.3	5275.3	5352.7	5245.1	4995.3	5041.1	4973.2

Notes. $p < .05$ coefficients underlined. AIC = Akaike information criterion. BIC = Bayesian information criterion.

Table 11b. Coefficient Estimates of Quadratic Job Satisfaction Stability Models [STUDY 2: LONGITUDINAL STUDY]

	Job satisfaction t + 1					
	1	2	3	4	5	6
Fixed effects						
Intercept, β_{00}	**5.827**	**2.43**	**5.650**	**5.669**	**2.313**	**5.494**
Job satisfaction t, β_{10}	-.474	**.353**	-.396	-.442	**.345**	-.400
Age, β_{20a}	**-.172**		**-.163**	**-.168**		**-.159**
Age^2, β_{30a}	**.002**		**.002**	**.002**		**.002**
Tenure, β_{20b}		**-.078**	-.011		**-.076**	-.011
Tenure^2, β_{30b}		**.001**	.000		.001	.000
Job satisfaction × age, β_{40a}	**.042**		**.038**	**.039**		**.037**
Job satisfaction × age^2, β_{50a}	**-.000**		**-.000**	**-.000**		**-.000**
Job satisfaction × tenure, β_{40b}		**.021**	.005		**.018**	.003
Job satisfaction × tenure^2, β_{50b}		**-.000**	-.000		-.000	-.000
Personal factors						
Sex				.033	.030	.030
Income				**.003**	**.003**	**.003**
Work-family factors						
Marital status				-.016	-.016	-.016
Family income				.001	.001	.001
Random effects						
Level 1: Within-individual, σ^2	**.260**	**.269**	**.264**	**.251**	**.257**	**.253**
Level 2: Intercept variance, τ_{11}	**.773**	**.674**	**.699**	**.764**	**.688**	**.685**
Slope variance, τ_{22}	**.049**	**.041**	**.043**	**.047**	**.042**	**.041**
Goodness of fit						
AIC (smaller is better)	5216.2	5305.0	5182.4	4918.9	4970.3	4889.6
BIC (smaller is better)	5275.5	5364.3	5265.3	5001.4	5053.0	4995.6

Notes. $p < .05$ coefficients underlined. AIC = Akaike information criterion. BIC = Bayesian information criterion.

FIGURES

Figure 1a. Linear, Quadratic, and Cubic Effects of Lag on Job Satisfaction Stability (Observed/Uncorrected Stability Correlations)

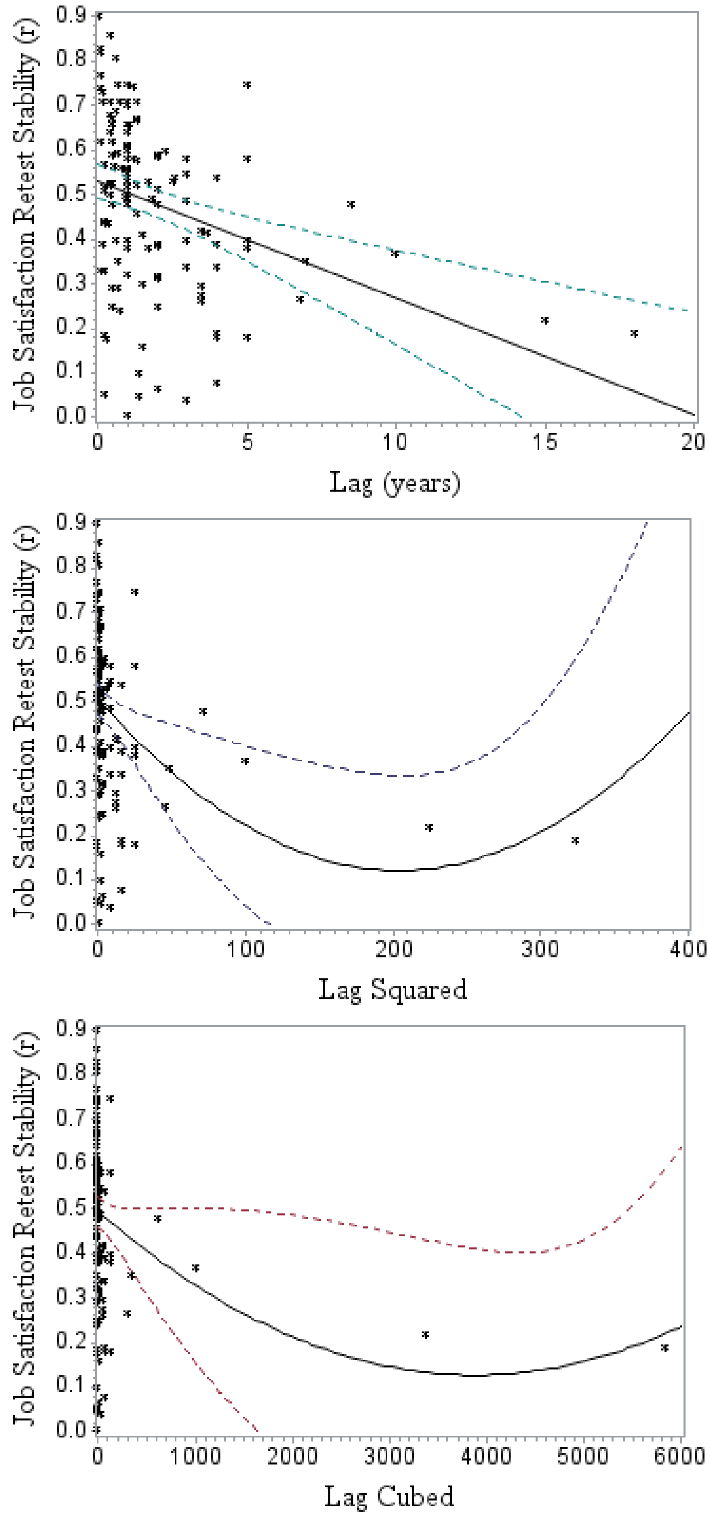


Figure 1b. Bubble Plot of Lag Effect of Job Satisfaction Stability (k = 136; Observed and Corrected)

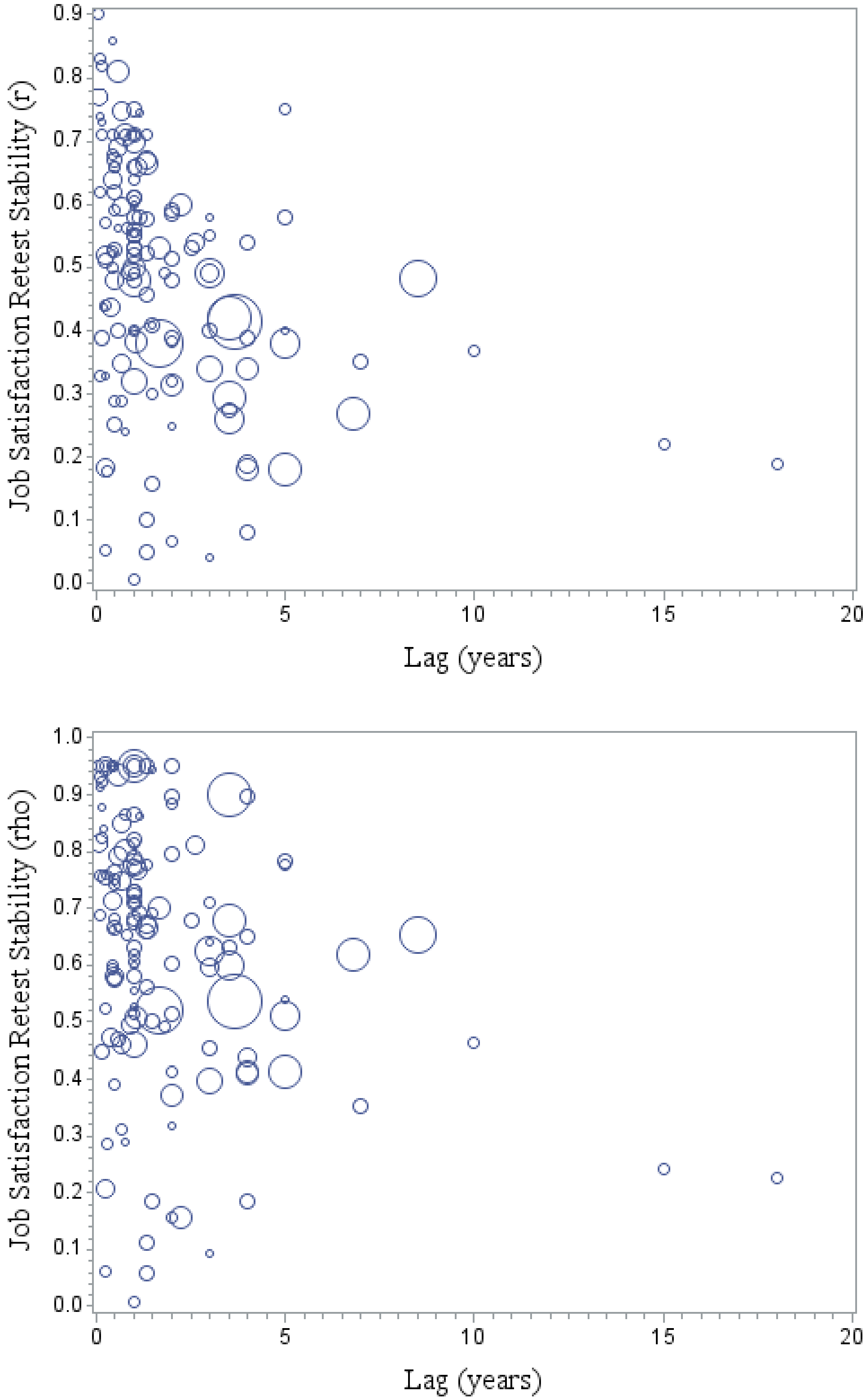


Figure 1c. Cubic Relationship between Time Lag and Job Satisfaction Stability, using Samples with Lag Length up to 5 years (k = 129; the 5% of samples with extreme lag length were excluded)

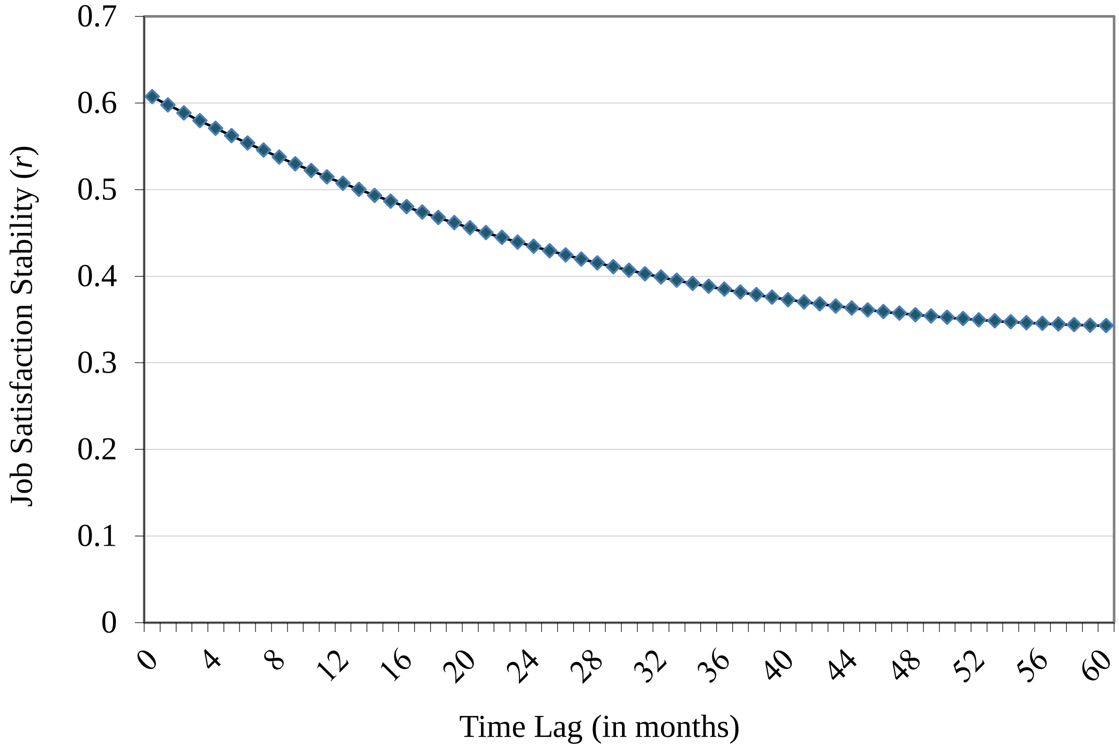
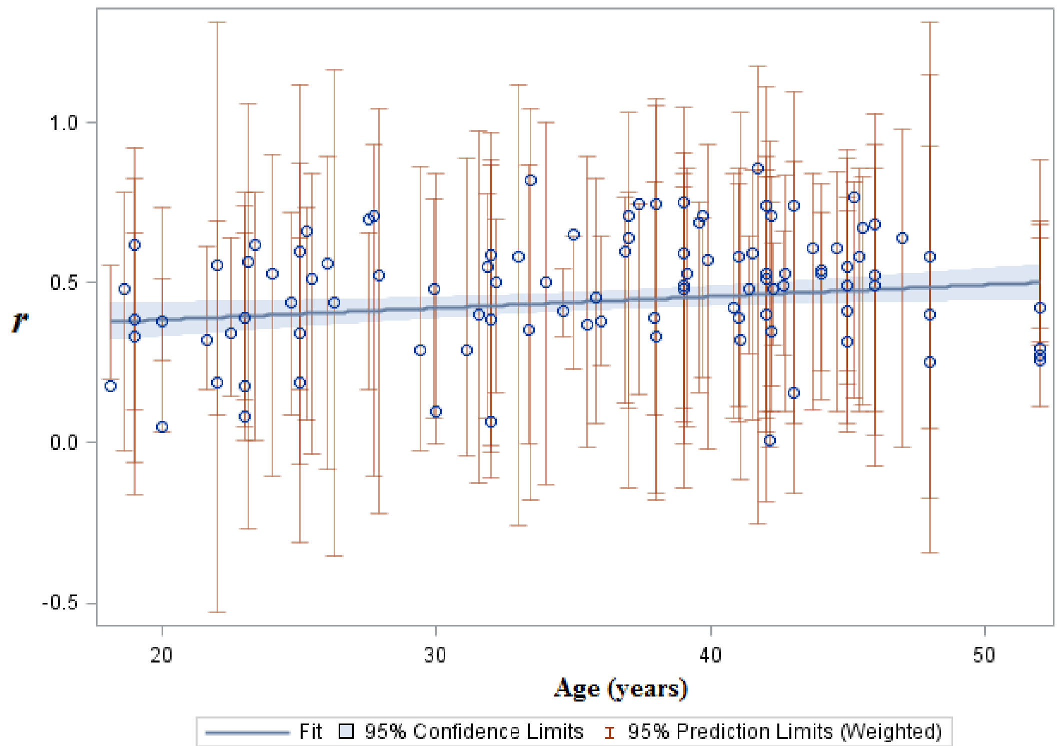


Figure 2. Linear Age Effect for Job Satisfaction Stability (Observed and Corrected)



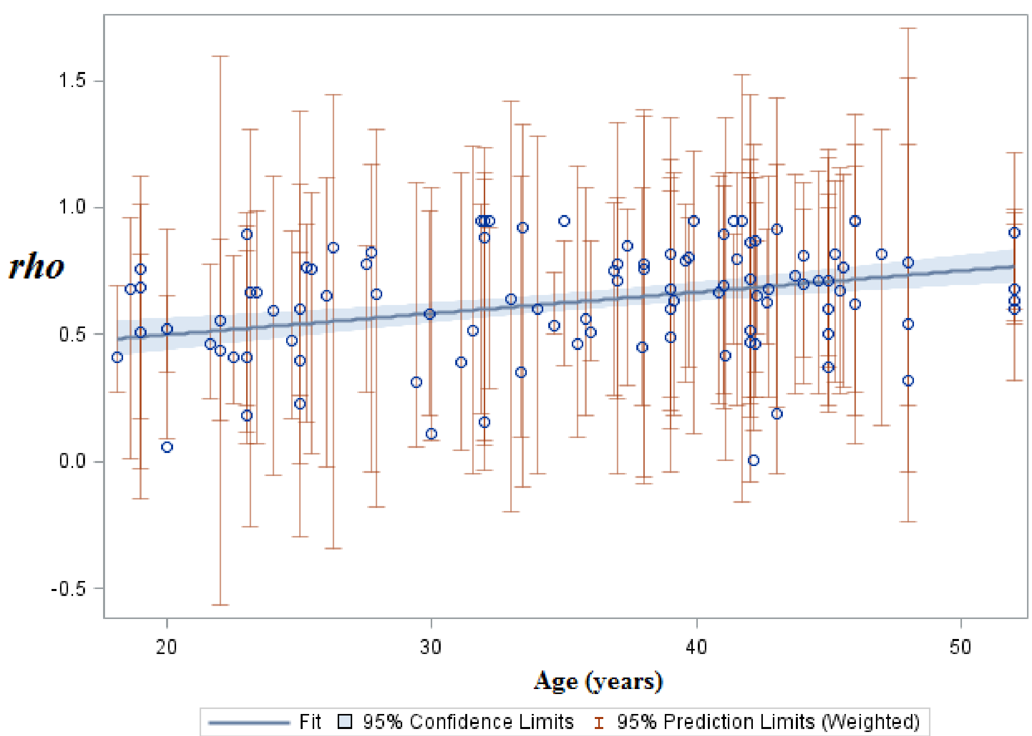


Figure 3. Estimated Mean Job Satisfaction Stability across Age Categories with Time Lag of Longitudinal Study Controlled.

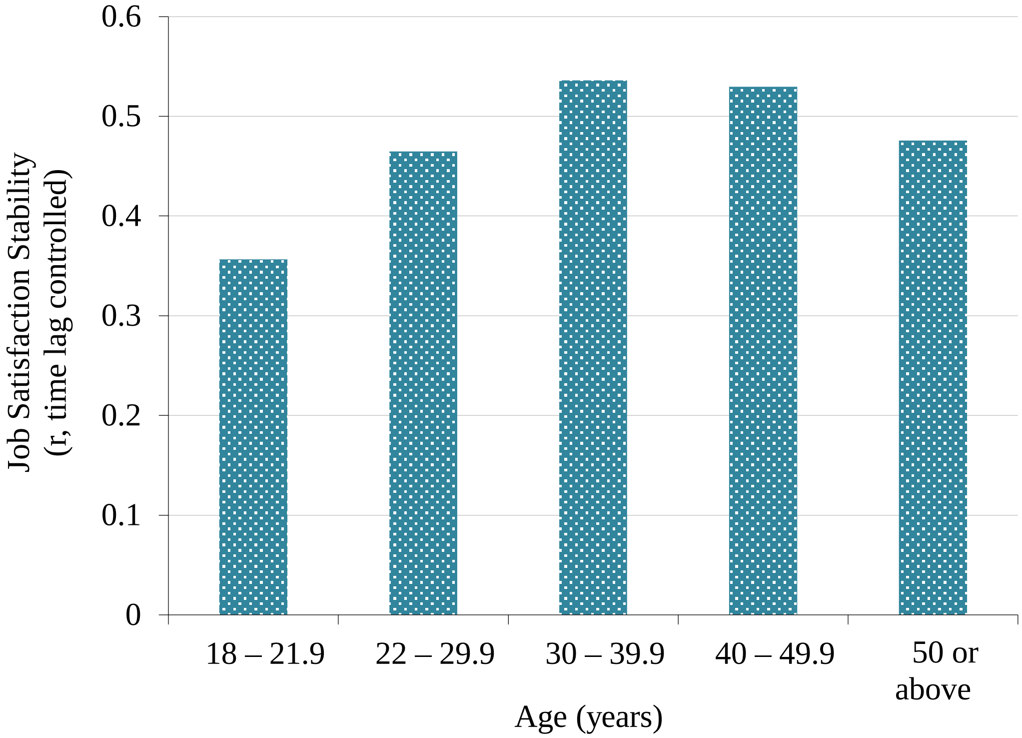
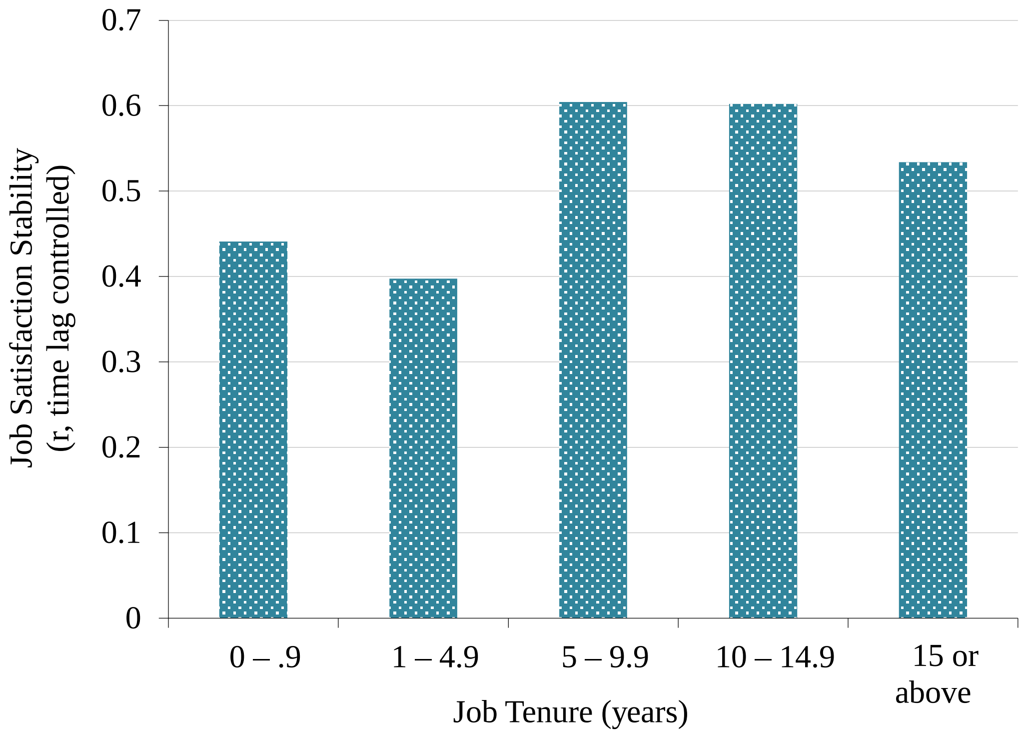


Figure 4. Estimated Mean Job Satisfaction Stability across Job Tenure Categories with Time Lag of Longitudinal Study Controlled.



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APPENDIX: ADDITIONAL TABLES

Table A1. Meta-Analytic Results for Job Satisfaction Stability (Corrected Stability Correlations)

						95% CI	**80% CV**
	k	***N***	***r***	***ρ***	***SDρ***	***LLr, ULr***	***LLρ, ULρ***
All samples	138	43,618	.51	.70	.16	[.48, .54]	[.49, .90]
Age (years)							
18 – 21.9	8	5385	.34	.53	.18	[.46, .61]	[.30, .76]
22 – 29.9	22	5262	.46	.61	.30	[.25, .43]	[.22, 1.00]
30 – 39.9	32	10599	.53	.74	.19	[.37, .54]	[.49, .99]
40 – 49.9	37	10583	.53	.73	.26	[.48, .57]	[.40, 1.00]
50 or above	4	4146	.32	.73	.00	[.23, .41]	[.73, .73]
Job tenure (years)							
0 – .9	4	700	.52	.64	.20	[.18, .75]	[.38, .90]
1 – 4.9	9	2411	.44	.60	.36	[.32, .54]	[.13, 1.00]
5 – 9.9	13	2900	.61	.81	.10	[.53, .68]	[.68, .94]
10 – 14.9	8	1739	.57	.79	.14	[.48, .66]	[.60, .98]
15 or above	6	2352	.49	.69	.17	[.27, .66]	[.48, .90]
Birth cohort							
Before 1950s	22	7895	.51	.72	.29	[.44, 58]	[.35, .1.00]
1950s	35	11363	.54	.70	.23	[.48, 59]	[.41, .99]
1960s	32	12302	.47	.70	.25	[.41, 52]	[.38, 1.00]
1970s and after	14	4478	.43	.66	.21	[.41, 54]	[.39, .93]
Hire date cohort							
Before 1970s	4	1104	.64	.77	.07	[.41, 79]	[.68, .86]
1970s	6	2244	.56	.72	.14	[.35, 72]	[.54, .90]
1980s	13	3099	.57	.76	.22	[.47, 65]	[.47, 1.00]
1990s	13	2540	.46	.69	.29	[.34, 57]	[.32, 1.00]
2000s and after	4	668	.58	.74	.10	[.48, 66]	[.61, .87]

Note. k = number of samples; N = number of participants; r = sample-weighted average correlation; ρ = Correlation corrected for attenuation; $SD\rho$ = standard deviation of corrected correlation; LLr, ULr = 95% lower and upper confidence limits for r; $LL\rho$, $UL\rho$ =80% lower and upper credibility interval for ρ.

Table A2. Between-samples Lag Effects on Job Satisfaction Stability (Corrected Stability Correlations)

	DV: Job satisfaction stability (***ρ***)							
	Model 1		Model 2		Model 3		Model 4	
	b (SE)	β	*b* (SE)	β	*b* (SE)	β	*b* (SE)	β
Intercept	.67 (.03)		.68 (.03)		.72 (.04)		.66 (.03)	
$Lag_{between}$	-.02 (.01)	**-.22**	-.02 (.02)	-.26	-.07 (.03)	**-.82**	-.01 (.01)	-.08
$Lag_{between}^2$			.00 (.00)	.04	.01 (.01)	1.43		
$Lag_{between}^3$					-.00 (.00)	-.95		
$LogLag_{between}$[1]							-.04 (.03)	**-.18**
R^2		.049		.050		.070		.059
Adjusted R^2		.042		.036		.049		.045

Note. Weighted least squares regression. $p < .05$ coefficients underlined. $Lag_{between}$ = mean lag for sample (i.e., for samples with more than two waves of data, the average lag across retest correlations was used). [1]Log of lag was controlled for the subsequent analyses of corrected stability correlations.

Table A3. Regression Results of Age and Tenure Effects (Corrected Stability Correlations)

	Job satisfaction retest correlation (*ρ*)											
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b (SE)	β	*b* (SE)	β	*b* (SE)	β	*b* (SE)	β	*b* (SE)	β	*b* (SE)	β
Intercept	.33 (.06)		-.18 (.20)		-.18 (.83)		.57 (.07)		.38 (.09)		.39 (.12)	
Age	.01 (.00)	**.44**	.02 (.01)	.94	.05 (.08)	2.81						
Age^2			-.00 (.00)	-.51	-.00 (.00)	-4.37						
Age^3					.00 (.00)	2.03						
Tenure							.01 (.01)	.22	.07 (.02)	**1.67**	.06 (.05)	1.45
$Tenure^2$									-.00 (.00)	**-1.51**	-.00 (.01)	-.95
$Tenure^3$											-.00 (.00)	-.35
R^2		.193		.198		.200		.047		.210		.211
Adjusted R^2		.185		.182		.175		.022		.167		.145
Intercept	.34 (.06)		.39 (.19)		-.05 (.77)		.55 (.07)		.31 (.10)		.32 (.14)	
$Lag_{between}$	-.00 (.01)	-.03	-.00 (.01)	-.03	-.00 (.01)	-.02	.01 (.03)	.16	.03 (.03)	**.34**	.03 (.03)	.32
$LogLag_{between}$	-.06 (.03)	-.28	-.06 (.03)	-30	-.06 (.03)	-.30	-.08 (.06)	-.40	-.12 (.06)	**-.60**	-.11 (.06)	-.59
Age	.01 (.00)	**.49**	.01 (.01)	.32	.05 (.07)	2.54						
Age^2			.00 (.00)	.17	-.00 (.00)	4.42						
Age^3					.00 (.00)	2.41						
Tenure							.01 (.01)	.24	.07 (.02)	**1.88**	.07 (.05)	1.70
$Tenure^2$									-.00 (.00)	**-1.73**	-.00 (.01)	-1.28
$Tenure^3$											-.00 (.00)	-.28
R^2		.304		.304		.307		.123		.329		.330
Adjusted R^2		.282		.275		.270		.045		.253		.231

Note. Weighted least squares regression. $p < .05$ coefficients underlined. $Lag_{between}$ = mean lag for sample (i.e., for samples with more than two waves of data, the average lag across retest correlations was used).

Table A4. Regression Results of Age, Tenure, and Cohort Effects (Corrected Stability Correlations)

	Job satisfaction retest correlation (***ρ***)											
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b (SE)	β	*b* (SE)	β	*b* (SE)	B	*b* (SE)	β	*b* (SE)	β	*b* (SE)	β
Intercept	.22 (.12)		.27 (.12)		.35 (.20)		.48 (.13)		.56 (.16)		.34 (.16)	
$Lag_{between}$			-.00 (.01)	-.03	-.00 (.01)	-.02			.01 (.03)	.15	.03 (.03)	.32
$LogLag_{between}$			-.06 (.03)	-.28	-.06 (.03)	-.29			-.08 (.06)	-.40	-.12 (.06)	**<u>-.61</u>**
Age	.01 (.00)	**<u>.52</u>**	.01 (.00)	**<u>.54</u>**	.00 (.01)	.23						
Age^2					.00 (.00)	.32						
Birth cohort	.03 (.02)	.12	.02 (.02)	.08	.02 (.02)	.09						
Tenure							.01 (.01)	.24	.01 (.01)	.24	.07 (.02)	**<u>1.89</u>**
$Tenure^2$											-.00 (.00)	**<u>-1.74</u>**
Hire cohort							.02 (.03)	.12	-.00 (.04)	-.02	-.01 (.04)	-.05
R^2		.202		.307		.309		.060		.123		.331
Adjusted R^2		.186		.278		.273		.009		.023		.233

Note. Weighted least squares regression. $p < .05$ coefficients underlined. $Lag_{between}$ = mean lag for sample (i.e., for samples with more than two waves of data, the average lag across retest correlations was used).

Table A5. Summary Correlations of Job Satisfaction Stability across Moderators (Corrected Stability Correlations)

Moderator	*k*	*N*	*r*	*ρ*	*SDρ*	**95% CI** *LLr, ULr*	**80% CV** *LLρ, ULρ*
Intervention	24	5,722	.45	.58	.24	[.38, .52]	[.27, .89]
No Intervention	114	37,896	.52	.72	.24	[.49, .55]	[.41, 1.00]
0 < % Female < 25	27	9,106	.51	.71	.16	[.45, .58]	[.51, .91]
25 ≤ % Female < 50	34	11554	.45	.72	.15	[.39, .51]	[.53, .91]
50 ≤ % Female < 75	22	11497	.48	.60	.14	[.41, .55]	[.42, .78]
75 ≤ % Female < 100	25	5995	.57	.75	.14	[.50, .63]	[.57, .93]
% Job change ≤ 50	23	8,588	.45	.67	.16	[.38, .51]	[.47, .87]
% Job change > 50	9	3,016	.28	.55	.14	[.14, .41]	[.37, .73]
% Org. change ≤ 50	24	7,077	.51	.74	.12	[.45, .56]	[.59, .89]
% Org. change > 50	3	2,306	.28	.63	.00	[.25, .31]	[.63, .63]
Satisfaction Measures							
Single item (uncategorized)	25	11615	.40	.83	.28	[.34, .46]	[.47, 1.00]
Hackman & Oldham (1975; JDS)	16	3942	.52	.66	.18	[.44, .59]	[.43, .89]
Cammann et al. (1979; MOAQ)	9	1820	.57	.65	.30	[.47, .66]	[.26, 1.00]
Smith, Kendall, & Hulin, (1969, JDI)	8	1835	.64	.76	.21	[.58, .68]	[.49, 1.00]
Brayfield & Rothe (1951; JSI)	6	1525	.51	.63	.17	[.12, .76]	[.41, .85]
Weiss et al. (1967; MSQ)	5	1500	.52	.47	.11	[.40, .61]	[.32, .62]
Hoppock (1935; JSB)	4	659	.55	.72	.19	[.29, .73]	[.48, .96]
Warr, Cook, & Wall (1979)	4	767	.57	.65	.27	[.36, .72]	[.30, 1.00]
Caplan et al. (1975, 1980)	3	515	.65	.81	.29	[.43, .80]	[.44, 1.00]
Kristensen (2001; COPSOQ)	3	966	.50	.53	.11	[.43, .57]	[.39, .67]
Neuberger & Allerbeck (1978; JDF)	3	423	.57	.48	.09	[.38, .72]	[.36, .60]
Others (combined)	27	4943	.52	.58	.18	[.44, .59]	[.35, .81]
Developed	25	13109	.48	.56	.19	[.42, .54]	[.32, .80]

Note. *k* = number of samples; *N* = number of participants; *r* = sample-weighted average correlation; *ρ* = Correlation corrected for attenuation; *SDρ* = standard deviation of corrected correlation; *LLr*, *ULr* = 95% lower and upper confidence limits for *r*; *LLρ, ULρ* =80% lower and upper credibility interval for *ρ*.

Table A6. Regression Results of Job Satisfaction Stability on Job and Employer Change, Gender, and Job Complexity (Corrected Stability Correlations)

	Job satisfaction retest correlation (***ρ***)							
	Model 1		Model 2		Model 3		Model 4	
	b (SE)	β	*b* (SE)	β	*b* (SE)	β	*b* (SE)	β
Intercept	.71 (.05)		.77 (.04)		.65 (.04)		.64 (.06)	
% Job change	-.33 (.11)	**-.48**						
% Employer Change			-.13 (.09)	-.28				
% female					-.00 (.00)	-.07		
Job complexity							-.00 (.02)	-.01
R^2		.234		.081		.004		.000
Adjusted R^2		.209		.044		.000		.000

Note. Weighted least squares regression. $p < .05$ coefficients underlined.

Table A7. Regression Estimates of Job Satisfaction Stability Models [STUDY 2: LONGITUDINAL STUDY]

	DV: Job satisfaction t + 1														
	Model 1			Model 2			Model 3			Model 4			Model 5		
	b	SE	β	*b*	SE	β	*b*	SE	β	*b*	SE	β	*b*	SE	β
Intercept	1.81	.05		2.59	.17		2.57	.17		2.06	.07		1.98	.08	
Job satisfaction *t*	.51	.01	**.53**	.30	.04	**.31**	.30	.04	**.31**	.45	.02	**.46**	.44	.02	**.46**
Age				-.02	.00	**-.35**	-.02	.00	**-.39**						
Tenure										-.02	.00	**-.33**	-.02	.00	**-.37**
Jobsat × age				.01	.00	**.41**	.00	.00	**.39**						
Jobsat × tenure										.00	.00	**.35**	.00	.00	**.32**
Personal factors															
Sex							.04	.02	**.03**				.04	.02	**.03**
Income							.00	.00	**.07**				.00	.00	**.08**
Work-family factors															
Marital status							-.04	.03	-.03				-.04	.03	-.03
Family income							.00	.00	.01				.00	.00	.00
Minimum R^2			.265			.268			.276			.268			.276
Maximum R^2			.303			.310			.313			.309			.313
Combined R^2			.285			.288			.293			.288			.293

Notes. Combined regression coefficients based on 40 imputations. $p < .05$ coefficients underlined. Jobsat = Job satisfaction.

Table A8. Meta-analytic retest correlations for job satisfaction for job tenure 0 through 23

	Tenure																							
Tenure	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
0	—																							
1	.62	—																						
2		.28	—																					
3			.49	—																				
4			.10	.34	—																			
5					.48	—																		
6						.40	—																	
7							.57	—																
8								.73	—															
9										—														
10						.38				.50	—													
11											.67	—												
12										.49	.54	.60	—											
13												.39	.49	—										
14										.75					—									
15														.32		—								
16																	—							
17																		—						
18																		.53	—					
19																		.59	.77	—				
20																				.01	—			
21																						—		
22																							—	
23																						.16	.68	—

Table A9. Meta-analytic retest correlations for job satisfaction for age 18 through 54

	Age																																			
Age	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
18	—																																				
19		—																																			
20		.39	—																																		
21			.39	—																																	
22				.44	—																																
23	.18				.44	—																															
24						.61	—																														
25								—																													
26					.19			.61	—																												
27						.25			.60	—																											
28								.34		.56	—																										
29											.70	—																									
30												.29	—																								
31													.10	—																							
32														.29	—																						
33															.50	—																					
34															.40	.82	—																				
35																		—																			
36																.58		.58	—																		
37																			.52	—																	
38																				.54	—																
39																					.55	—															
40																						.55	—														
41																			.38			.48	.54	—													
42																								.51	—												
43								.19													.75			.37	.54	—											
44																									.59	.54	—										
45																										.38	.62	—									
46																			.37						.57	.49	.53	.47	—								
47																											.54	.41	.53	—							
48																												.51		.42	—						
49																															.41	—					
50																															.25		—				
51																																		—			
52																																			—		
53																															.54				.50	—	
54																																			.41		—