

Relationship of Core Self-Evaluations Traits—Self-Esteem, Generalized Self-Efficacy, Locus of Control, and Emotional Stability—With Job Satisfaction and Job Performance: A Meta-Analysis

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This article presents meta-analytic results of the relationship of 4 traits—self-esteem, generalized self-efficacy, locus of control, and emotional stability (low neuroticism)—with job satisfaction and job performance. With respect to job satisfaction, the estimated true score correlations were .26 for self-esteem, .45 for generalized self-efficacy, .32 for internal locus of control, and .24 for emotional stability. With respect to job performance, the correlations were .26 for self-esteem, .23 for generalized self-efficacy, .22 for internal locus of control, and .19 for emotional stability. In total, the results based on 274 correlations suggest that these traits are among the best dispositional predictors of job satisfaction and job performance. T. A. Judge, E. A. Locke, and C. C. Durham's (1997) theory of core self-evaluations is used as a framework for discussing similarities between the 4 traits and their relationships to satisfaction and performance.

Recently, Judge, Locke, and Durham (1997) proposed a higher order construct they termed *core self-evaluations* or, more simply, *positive self-concept*. According to Judge et al. (1997), this construct is a broad dispositional trait that is indicated by four more specific traits—self-esteem, generalized self-efficacy, locus of control, and emotional stability (low neuroticism). The core self-evaluations construct was originally proposed as a potential explanatory variable in the dispositional source of job satisfaction. Subsequently, Judge and colleagues also have argued that the construct should be related to work motivation and, ultimately, to job performance (Judge, Erez, & Bono, 1998). Investigations of a link between core self-evaluations and job performance, however, are lacking.

Despite a lack of studies linking the core self-evaluations factor to job satisfaction and, especially, to job performance, three of the core traits (self-esteem, locus of control, and emotional stability) appear to be the most widely studied personality traits in personality and applied psychology.¹ Yet, with the exception of emotional stability and job performance, we have found no meta-analyses of the relationship between any of these traits with either job satisfaction or job performance.² Thus, the purpose of the present study is to provide a quantitative review of the literature that examines the relationship of the four core self-evaluation traits with job satisfaction and job performance. This study determines whether general relationships exist and, if so, what the magnitudes of these relationships are. In the next section, we provide a brief review of the four traits and discuss the possible relationship of these traits with both job satisfaction and job performance.

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Core Self-Evaluation Traits

Judge et al. (1997) defined core self-evaluations as basic conclusions or bottom-line evaluations that individuals hold about themselves. They argued that core self-evaluations were assessed by traits that met three criteria: (a) *evaluation-focus* (the degree to which a trait involves evaluation, as opposed to description); (b) *fundamentality* (in Cattellian [1965] personality theory, fundamental or source traits underlie surface traits); and (c) *breadth or scope* (according to Allport [1961], cardinal traits are broader in scope than secondary traits). Judge et al.'s (1997) review identified four traits that met the criteria. First, they considered self-esteem to be the most fundamental manifestation of core self-evaluations as it represents the overall value that one places on oneself as a person. Second, generalized self-efficacy—one's estimate of one's fundamental ability to cope, perform, and be successful—was viewed as an indicator of positive core evaluations. Third, internal locus of control was considered a manifestation of core evaluations because internals believe they can control a broad array of factors in their lives. Fourth and finally, emotional stability (low neuroticism), reflecting the tendency to be confident, secure, and steady, was argued to be indicative of core self-evaluations because it is a broad trait (one of the dimensions of the five-factor model of

¹ In a search of the PsycINFO database, 1967–1999, we found that 10,371 articles cited neuroticism (or emotional stability or emotional adjustment), 10,084 articles cited self-esteem, and 9,339 articles cited locus of control. By comparison, 4,957 articles cited achievement motivation, 2,492 articles cited extraversion/introversion, and only 572 articles contained a citation to the five-factor model (or Big Five). A search for other individual traits revealed no others with more than 2,500 citations.

² Hough (1992) reported an average correlation of .19 between locus of control and job performance, a report based on 11 studies. However, it did not appear that this was truly a meta-analytic estimate (i.e., the correlation was not corrected for measurement error, variability estimates were not reported).

personality) that manifests one's view of one's emotional stability.³

Although research by Judge and associates has provided evidence that these four traits are sufficiently related to be grouped together as a higher order construct, it is beyond the scope of this article to test the validity of the core self-evaluations construct. Specifically, we used Judge et al.'s (1997) theory as justification to study the validity of self-esteem, generalized self-efficacy, locus of control, and emotional stability, but we do not test Judge et al.'s (1997) hypothesis that these traits indicate a higher order construct. Rather, in this meta-analytic review we consider the specific relationships of each of the four traits to job satisfaction and job performance. In the sections that follow, we hypothesize relationships between the individual traits and job satisfaction and job performance.

Relation of Self-Esteem, Locus of Control, Neuroticism, and Generalized Self-Efficacy to Job Satisfaction

Judge et al. (1997) hypothesized that core self-evaluations would be related to job satisfaction through both direct and indirect means. Testing these predictions, Judge, Locke, Durham, and Kluger (1998) found that the four traits, treated as a single latent construct, were significantly related to job satisfaction in three independent samples. This study tends to support the hypothesis that self-esteem, generalized self-efficacy, locus of control, and neuroticism are each independently significantly correlated with job satisfaction. Somewhat curiously, given the volume of research on dispositions and job satisfaction, we are aware of no meta-analysis of the relationship between any of the four traits and job satisfaction. Although the relationships of these traits to job satisfaction has been discussed in reviews of the literature with respect to self-esteem (Tharenou, 1979), locus of control (Spector, 1982), and emotional stability (Furnham & Zacherl, 1986), the exact magnitude of these relationships, and the variability in these relationships across studies, has not been established. Clearly, a quantitative review is needed.

Beyond the qualitative reviews of the empirical evidence, there are theoretical reasons to expect a positive relationship between these traits and job satisfaction. Locke, McClellan, and Knight (1996) noted, "A person with a high self-esteem will view a challenging job as a deserved opportunity which he can master and benefit from, whereas a person with low self-esteem is more likely to view it as an undeserved opportunity or a chance to fail" (p. 21). In fact, research suggests that individuals with high self-esteem maintain optimism in the face of failure, which makes future success (and thus future satisfaction) more likely (Dodgson & Wood, 1998). Another theoretical mechanism linking these traits to job satisfaction is suggested by Korman's (1970) self-consistency theory. Korman's theory predicts that individuals with high self-esteem choose occupations consistent with their interests, which would lead to greater levels of job satisfaction. As Tharenou (1979) noted, Korman's hypothesis has been generally supported with respect to occupational choice. More generally, Korman's theory predicts that high self-esteem individuals will engage in a broad array of behaviors and cognitions that reinforce their self-concept. Similarly, Spector (1982) suggested that individuals with an internal locus of control should be more job satisfied because they are less likely to stay in a dissatisfying job and are more likely

to be successful in organizations. With respect to neuroticism, McCrae and Costa (1991) noted that neuroticism is related to lower well-being because individuals who score high on neuroticism are predisposed to experience negative affects. Negative affect, in turn, is negatively related to job satisfaction (Brief, 1998; Spector, 1997). Finally, Judge et al. (1997) argued that generalized self-efficacy should affect job satisfaction through its association with practical success on the job. Because individuals with high self-efficacy deal more effectively with difficulties and persist in the face of failure (Gist & Mitchell, 1992), they are more likely to attain valued outcomes and thus derive satisfaction from their jobs. As a result of the foregoing review,

H-1a: Self-esteem is positively related to job satisfaction.

H-1b: Generalized self-efficacy is positively related to job satisfaction.

H-1c: Internal locus of control is positively related to job satisfaction.

H-1d: Emotional stability is positively related to job satisfaction.

Relation of Self-Esteem, Locus of Control, Neuroticism, and Generalized Self-Efficacy to Job Performance

Even more obscure than the relationship between the four traits and job satisfaction are these traits' relationship to job performance. In fact, this relationship was not even considered by Judge et al. (1997). Empirical data regarding the relationship between several of the traits with job performance are inconsistent. With the exception of the literature on emotional stability, where three meta-analyses have been published (Barrick & Mount, 1991; Salgado, 1997; Tett, Jackson, & Rothstein, 1991), reviews of the effect of the traits on job performance have been qualitative. In such reviews, results typically were reported in two gross categories (nonsignificant and positive significant). With respect to self-esteem, Tharenou's (1979) qualitative review suggested inconsistent results in studies relating self-esteem to job performance, with more findings suggesting a nonsignificant relationship than a positive, significant relationship. Brockner's (1979) review suggested more optimism regarding the correlation between self-esteem and job performance, though the relationship appeared to hold only in certain situations. In terms of locus of control, Spector's (1982) narrative review seemed to support the conclusion that internals perform better than externals. Because of the small number of primary studies measuring generalized self-efficacy, there have been no published reviews of the relationship between generalized self-efficacy and job performance. Although task-specific and generalized self-efficacy are distinct constructs (Stajkovic & Luthans, 1998), evidence does suggest that state or task-specific self-efficacy is related to job performance (Hysong & Quiñones, 1997; Stajkovic & Luthans, 1998) which, in turn, suggests that generalized self-efficacy may also correlate with job performance.

Finally, though the subject of three meta-analytic reviews, the literature on the relationship between emotional stability and job performance is no less inconsistent. Barrick and Mount (1991) found that the relationship between emotional stability and job

³ Because emotional stability and neuroticism are simply labels for the positive and negative poles of the same construct (Mount & Barrick, 1995), we use these labels interchangeably.

performance was indistinguishable from zero, whereas Tett et al. (1991), confining their analysis to confirmatory studies (studies where authors hypothesized a relationship between the trait and job performance), found that emotional stability displayed a nonzero correlation with job performance ($\rho = .22$). Explanations for the differences in these studies can be found in two more recent articles by the authors (Ones, Mount, Barrick, & Hunter, 1994; Tett, Jackson, Rothstein, & Reddon, 1994). In a meta-analysis of all available studies of personality and job performance in the European Economic Community (EEC), Salgado (1997) found a positive, nonzero relationship ($\rho = .19$) between emotional stability and job performance.

Though the conclusions of qualitative reviews regarding the relationship of the four traits to performance are inconsistent, there is considerable theoretical support for such relationships. Several theories of work motivation support a link between the core traits and job performance. First, self-consistency theory (Korman, 1970) hypothesizes that individuals are motivated to behave in a manner consistent with their self-image. Thus, the theory predicts, individuals with high self-esteem will perform effectively in order to maintain their positive self-image. Second, theories of learned helplessness support a link between positive self-evaluations and job performance. According to the model of learned helplessness, when faced with unfavorable circumstances, individuals with a positive, optimistic explanatory style will be less likely to display motivational deficits (i.e., lower their effort, withdraw from task-oriented behaviors), whereas those with a pessimistic explanatory style will display symptoms of helplessness (Peterson & Seligman, 1984). Finally, control theory (Lord & Hanges, 1987) predicts that when individuals perform below their expectations, they exert additional effort to obtain the performance goal, reduce their standard level (lower their aspirations), or withdraw from the task entirely. Research has shown that when individuals with an internal locus of control are faced with discrepancies between acceptable standards of performance and actual performance, they tend to increase their efforts to match their actual performance to the standards (Weiss & Sherman, 1973). Conversely, people who have low self-esteem tend to either lower their standards or completely withdraw from the task when given negative feedback (Brockner, 1988). In light of some (albeit inconsistent) evidence suggesting a relationship of the four traits to job performance and much conceptual support for such relationships, we hypothesize,

H-2a: Self-esteem is positively related to job performance.

H-2b: Generalized self-efficacy is positively related to job performance.

H-2c: Internal locus of control is positively related to job performance.

H-2d: Emotional stability is positively related to job performance.

Method

Literature Search

In an attempt to locate the population of studies containing relationships between self-esteem, locus of control, neuroticism, and generalized self-efficacy and job satisfaction and between the four traits and job performance, searches for studies that examined the relationship between each of the traits and each of the criteria (job satisfaction and job performance)

were conducted. First, a search was made of the PsychInfo database for the years 1967 to 1997. Studies that reported a relationship between any of the four traits and either job satisfaction or job performance were included. In addition to the electronic search, manual searches were conducted for the past 40 years (1957–1997) of the two journals containing the most correlations as revealed by the electronic search (*Journal of Applied Psychology* and *Personnel Psychology*). Finally, using the results of our electronic and manual searches, we identified authors of studies that reported on the relationships of interest during the past 10 years (1987–1997). Letters requesting data from in press or unpublished manuscripts were sent to each of these authors. These combined efforts resulted in the identification of 536 published studies and 224 unpublished doctoral dissertations.

In accordance with our a priori definition of the population and relationships of interest, several rules for study inclusion were established. First, the analysis was limited to those studies in which participants were employed adults. Thus, those studies that used student, unemployed, or student athlete subjects were excluded, as were studies with special populations (e.g., psychiatric patients or vocational rehabilitation clients). Second, only studies that measured generalized self-efficacy (as opposed to task-specific or state self-efficacy) were included. Following this same reasoning, we excluded studies in which locus of control was narrowly defined (e.g., the degree to which a teacher felt he or she could make decisions in the classroom). However, studies in which core self-evaluation measures were specific to the workplace but not narrow in scope (e.g., organizational-based self-esteem) were included. We also only included those studies that directly measured emotional stability (also known as emotional adjustment or neuroticism), which excluded closely related traits such as negative affectivity.

Third, we included only those studies in which the criterion was either job performance or overall job satisfaction. Thus, studies that reported on the relationship between the traits and performance on a task in the laboratory, or in a simulated organization, were not included. We also excluded studies that included only a single facet of satisfaction (e.g., satisfaction with pay). However, if a study reported correlations between one of the traits and two or more facets of job satisfaction, we calculated a composite correlation. Finally, we excluded those studies that did not report either a correlation between one of the traits and either job satisfaction or job performance or the data necessary to calculate such a correlation. Application of these inclusion rules to these studies resulted in 135 studies (169 correlations) that reported a relationship between one of the traits and job satisfaction and 81 studies (105 correlations) that reported a relationship between one of the traits and job performance.

Meta-Analysis Procedures

In conducting the meta-analysis, we followed the procedures of Hunter and Schmidt (1990). First, we calculated a sample-sized weighted mean correlation for each of the four traits with the relevant criterion (job satisfaction or job performance). Second, correlations were individually corrected for measurement error in both the predictor and the criterion. Finally, a disattenuated correlation was estimated for each of the traits with both criteria.

In the case of the personality traits, we corrected for measurement error using reliabilities reported in each study. For those studies that did not report reliabilities, we used an average of the reliabilities reported in other studies for that particular measure (e.g., Rotter, 1966, for locus of control and Rosenberg, 1965, for self-esteem). We used similar procedures for measures of job satisfaction. In the case of job performance, however, the appropriate correction for measurement error in supervisory ratings of performance is that based on interrater reliability (Viswesvaran, Ones, & Schmidt, 1996). Therefore, we used meta-analytic estimates (Viswesvaran et al., 1996) to correct for unreliability in the measurement of supervisory ratings of job performance. In the case of self-reports and objective measures of job performance, the literature is less clear about the appro-

appropriate method of correcting for measurement error. Therefore, for this study, we assumed perfect reliability in self-reports. However, consistent with the findings of Hunter, Schmidt, and Judiesch (1990), we estimated the reliability of objective measures of job performance on the basis of the time period over which the objective measures were aggregated. (This procedure resulted in near perfect reliabilities for most objective measures of performance.)

In addition to reporting estimates of the mean corrected correlations, it is also important in meta-analysis to describe the variability in the correlations. Accordingly, we report 95% confidence intervals and 80% credibility intervals around the corrected correlations (ρ). Confidence intervals provide an estimate of the variability of the estimated mean correlation; a 95% confidence interval excluding zero indicates that we can be 95% confident that the average disattenuated correlation is nonzero. Credibility intervals provide an estimate of the variability of individual correlations across studies; an 80% credibility interval excluding zero indicates that 10% of the individual correlations are equal to or less than zero (10% of correlations would also lie in the high end of the distribution). Thus, confidence intervals estimate variability in the mean correlation, whereas credibility intervals estimate variability in the individual correlations across the studies. Because these variability estimates tell us different things about the nature of the correlations, both are reported.

Results

Meta-Analytic Findings With Respect to Job Satisfaction

Table 1 presents the results of the meta-analyses examining the relationship between each of the traits and job satisfaction. As hypothesized (H-1a–H-1d), all four traits had a positive, nonzero relationship with job satisfaction. Uncorrected mean correlations for the four traits ranged from average $r = .20$ for emotional stability to average $r = .38$ for generalized self-efficacy. Corrected correlations were, from lowest to highest, as follows: emotional stability, $\rho = .24$; self-esteem, $\rho = .24$; internal locus of control, $\rho = .32$; generalized self-efficacy, $\rho = .45$. Ninety-five percent confidence intervals around the corrected correlations were relatively narrow and excluded zero in all cases. Further, 80% credibility intervals excluded zero for each of the four traits. However, only a small percentage of the variance (ranging from 9% for generalized self-efficacy to 31% for emotional stability) in study correlations was accounted for by study artifacts. Overall, these results support H-1a–H-1b—there is a positive relationship between each of the four traits and job satisfaction. Figure 1 provides a graphic illustration of the mean disattenuated correlation, as well as the widths of 95% confidence intervals and 80% credibility intervals.

Meta-Analytic Findings With Respect to Job Performance

Results of the job performance meta-analyses (testing H-2a–H-2d) are presented in Table 2. As with job satisfaction, we conducted a separate analysis for each of the four traits. Although the job performance results were somewhat weaker than those for job satisfaction, our findings support H-2a–H-2d. For each of the traits, we found positive, nonzero average relationships with job performance. In a slightly different pattern than was found with job satisfaction, uncorrected mean correlations between the traits and job performance range from average $r = .14$ for internal locus of control to average $r = .19$ for generalized self-efficacy. Corrected correlations, from lowest to highest, were as follows: emotional stability, $\rho = .19$; internal locus of control, $\rho = .22$; generalized self-efficacy, $\rho = .23$; self-esteem, $\rho = .26$. Ninety-five percent confidence intervals were relatively narrow and excluded zero for all traits. However, in the case of self-esteem, the 80% credibility interval was wide and included zero ($-.05$ to $.57$), indicating that there was substantial variability in the individual correlations across studies. For locus of control, generalized self-efficacy, and emotional stability, the 80% credibility intervals excluded zero. Except in the case of self-esteem, a large portion of the variability in study correlations between the specific traits and job performance was explained by sampling error and unreliability in measurement. In general, these findings lend support to our hypotheses regarding the relationship between each of the traits and job performance (H-2a–H-2d). Figure 2 provides a graphic display and comparison of the average disattenuated correlation, and the 95% confidence interval and 80% credibility interval limits for each of the four traits.

Discussion

Given their prevalence in the personality and industrial/organizational psychology literatures, it is surprising that there are no prior meta-analytic reviews of the relationship of self-esteem or locus of control with the two central criteria in applied psychology—job satisfaction and job performance. Furthermore, the other two traits included in Judge, Locke, and colleagues' model of core self-evaluations—generalized self-efficacy and emotional stability—have either not been subject to prior meta-analytic reviews or the evidence is inconsistent. Results indicated that all four of these traits displayed positive, nonzero mean correlations of similar magnitude with both job satisfaction and job performance. This, of course, is a primary benefit of meta-analysis—to help make sense

Table 1
Meta-Analysis of the Relationship Between the Core Traits and Job Satisfaction

Core trait	k	N	Mean r	SD_r	Mean ρ	SD_ρ	$SE_{M\rho}$	95% CI	80% CV	Variance explained (%)
Self-esteem	56	20,819	.20	.10	.26	.11	.02	.23, .29	.11, .40	23
Generalized self-efficacy	12	12,903	.38	.09	.45	.10	.03	.39, .51	.32, .58	9
Internal locus of control	80	18,491	.24	.12	.32	.16	.02	.28, .36	.12, .52	20
Emotional stability	21	7,658	.20	.08	.24	.09	.03	.19, .29	.12, .36	31

Note. k = number of correlations; N = total sample size for all studies combined; Mean r = average uncorrected correlation; SD_r = standard deviation of average uncorrected correlation; Mean ρ = average corrected correlation; SD_ρ = standard deviation of corrected correlation; $SE_{M\rho}$ = standard error of corrected correlation; 95% CI = lower and upper limits of 95% confidence interval; 80% CV = lower and upper limits of 80% credibility interval.

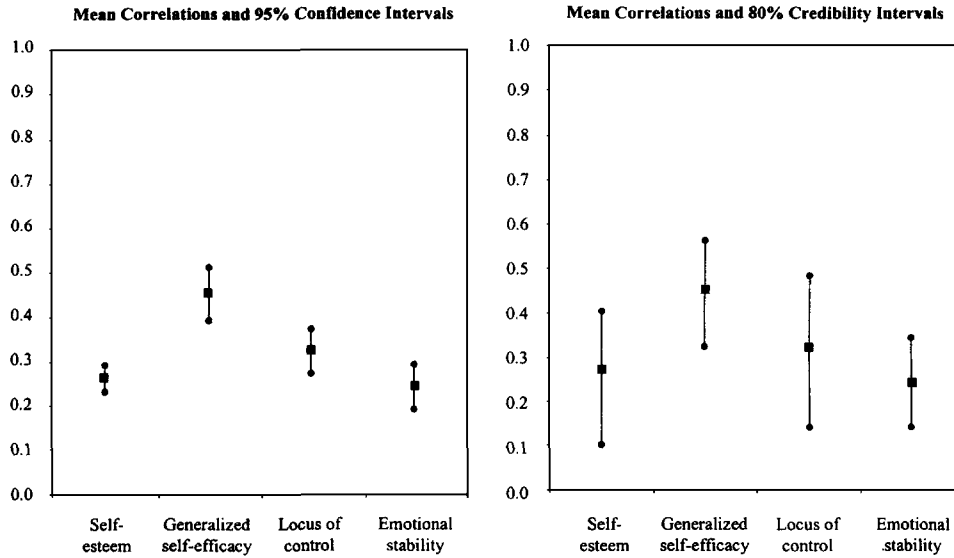


Figure 1. Mean and variability estimates of the four traits with job satisfaction. Solid boxes bisecting lines denote mean corrected correlations. Solid circles depict endpoints of 95% confidence intervals and 80% credibility intervals.

of the often inconsistent conclusions of qualitative reviews. In this analysis, all correlations between the four traits and job satisfaction were positive. However, in the case of the traits and job performance, the results for self-esteem were less clear. The 95% confidence interval for the relationship between self-esteem and job performance was narrow and excluded zero, indicating that we can be confident that the mean correlation is nonzero. However, the 80% credibility interval was wide and included zero, indicating that more than slightly 10% of the individual studies reported a negative relationship between self-esteem and job performance. Future research is needed to determine the conditions that moderate the relationship between self-esteem and job performance across studies. With this summary in mind, in the remainder of the discussion we turn our attention to the implications of the validity of the four traits for job satisfaction, job performance, and future research.

Implications for Job Satisfaction

Since the publication of two influential studies by Staw and colleagues (Staw & Ross, 1985; Shaw, Bell, & Clausen, 1986), the

dispositional source of job satisfaction has become an important research topic. One of the criticisms of this literature is that it has not provided much clarity in terms of which traits would prove most fruitful (Brief, 1998). Results of this study, by showing moderately strong correlations of the four traits with job satisfaction, suggest that these traits may be the principle dispositional correlates of job satisfaction. Furthermore, in addition to a nonzero mean true-score correlation between each of the four traits and job satisfaction, the 80% credibility intervals excluded zero, indicating that all four traits display positive relations with job satisfaction. Although qualitative reviews have reached generally optimistic conclusions regarding the relationship between these traits and job satisfaction (e.g., Judge et al., 1997; Spector, 1982, 1997; Tharenou, 1979), the results of this meta-analysis validate these reviews.

From this base of support, one logical extension of these results is to test process models that explain how the four traits are related to job satisfaction. For example, research indicates that neuroticism is related to diminished subjective well-being because neurotic individuals are more likely to choose situations in which they experience negative affect (Diener, Larsen, & Emmons, 1984;

Table 2
Meta-Analysis of the Relationship Between the Core Traits and Job Performance

Core trait	<i>k</i>	<i>N</i>	Mean <i>r</i>	<i>SD_r</i>	Mean ρ	<i>SD_{\rho}</i>	<i>SE_{M\rho}</i>	95% CI	80% CV	Variance explained (%)
Self-esteem	40	5,145	.18	.17	.26	.24	.04	.18, .34	-.05, .57	20
Generalized self-efficacy	10	1,122	.19	.10	.23	.10	.05	.13, .33	.10, .36	66
Internal locus of control	35	4,310	.14	.07	.22	.11	.03	.16, .28	.08, .36	62
Emotional stability	20	4,106	.16	.06	.19	.06	.03	.14, .24	.11, .27	69

Note. *k* = number of correlations; *N* = total sample size for all studies combined; Mean *r* = average uncorrected correlation; *SD_r* = standard deviation of average uncorrected correlation; Mean ρ = average corrected correlation; *SD_{\rho}* = standard deviation of corrected correlation; *SE_{M\rho}* = standard error of corrected correlation; 95% CI = lower and upper limits of 95% confidence interval; 80% CV = lower and upper limits of 80% credibility interval.

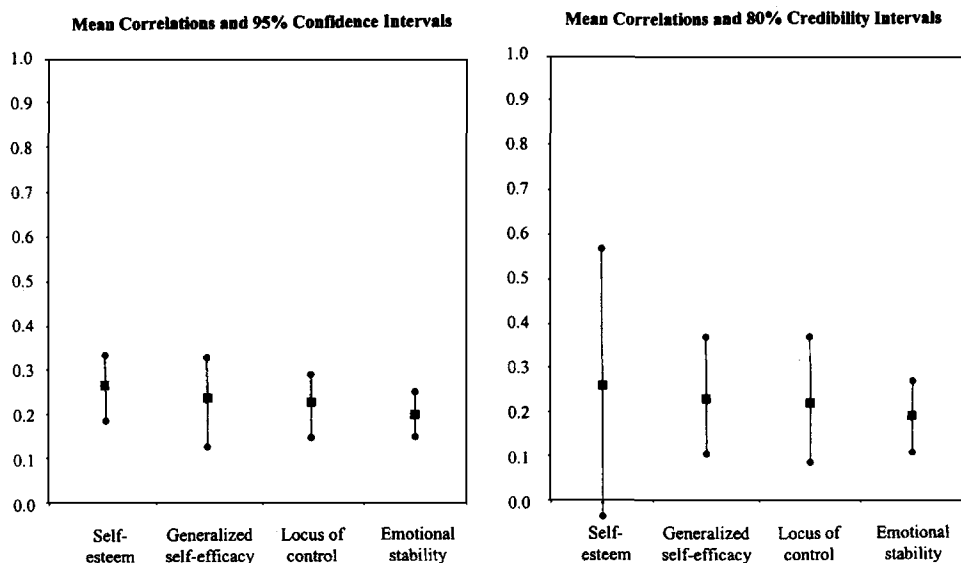


Figure 2. Mean and variability estimates of the four traits with job performance. Solid boxes bisecting lines denote mean corrected correlations. Solid circles depict endpoints of 95% confidence intervals and 80% credibility intervals.

Magnus, Diener, Fujita, & Pavot, 1993). Research also shows that individuals prone to the experience of positive emotions respond favorably to situations designed to induce positive affect, whereas individuals predisposed to experience negative emotions and negative self-appraisals are less likely to respond positively to such situations (Larsen & Ketelaar, 1991). Finally, self-concordance theory indicates that individuals who pursue goals for autonomous reasons, such as for the intrinsic pleasure produced by pursuit of the goal, exhibit better adjustment than those who pursue goals for controlled (e.g., extrinsic) reasons (Sheldon & Elliot, 1999). The fact that neuroticism is related to the pursuit of controlled goals (Elliot & Sheldon, 1998) suggests that individuals who are emotionally stable should be happier because they are more likely to pursue goals for self-concordant reasons. The generalization of these processes to the other three, related traits, and in turn to the job, would seem fairly direct. These are only some of many process models that can and should be tested.

Implications for Job Performance

Conscientiousness has been suggested as the primary dispositional predictor of job performance (Mount & Barrick, 1995). Our results suggest that the four traits display correlations very close in magnitude to the correlations between conscientiousness and job performance. Specifically, Barrick and Mount's (1991) results suggested that conscientiousness displayed a true score correlation of .23 with job performance. As can be seen in Table 2, our results show that three of the traits (self-esteem and generalized self-efficacy) display corrected correlations with job performance equal to (generalized self-efficacy, $\rho = .23$; internal locus of control, $\rho = .22$) or higher than (self-esteem, $\rho = .26$) that that of conscientiousness in Barrick and Mount's (1991) meta-analysis. This evidence suggests that at least one of the traits should be considered in selection decisions, as well as in future models of job

performance. It is noteworthy that brief, nonproprietary measures of each of these traits exist, which further contributes to the potential utility of the traits in selection decisions.

Although self-esteem displayed the highest average correlation with job performance, the correlation also was the one of the four that varied most from study to study. Specifically, even though we can be quite confident that the average self-esteem–job–performance correlation is positive and distinguishable from zero, the 80% credibility interval was wide and included zero, indicating substantial variability in the correlations across studies. It seems likely that there are factors across studies that moderate the degree to which self-esteem is relevant to job performance. This is an important area for future research. For the other traits (generalized self-efficacy, locus of control, and emotional stability), both the confidence and credibility intervals excluded zero.

Finally, we comment on the validity of neuroticism. Barrick and Mount (1991) hypothesized that emotional stability would be predictive of job performance. However, their results suggested a very weak relationship ($\rho = .08$). Results of this study, with $\rho = .19$, may have been stronger than Barrick and Mount's (1991) because in this study, only those studies that used measures specifically designed and validated to assess emotional stability were included. In contrast, Barrick and Mount (1991) post hoc classified measures of emotional stability, even if such measures were not designed or validated to measure emotional stability. Thus, the measures of emotional stability included in this study should be more construct-valid (and thus representative of the true construct). We also note that our estimate is identical to Salgado's (1997) more recent estimate of the validity of emotional stability, although his samples were collected from Europe. It is also important to note that of the four traits, emotional stability displayed the lowest correlation with both satisfaction and performance. Thus, relative to the other three traits included in this study,

measures of emotional stability do not appear to be the most valid traits in predicting job satisfaction or job performance.

Future Research

The reason we conducted a meta-analysis of the four traits included in this study—self-esteem, generalized self-efficacy, locus of control, and emotional stability—is because they were included in Judge, Locke, and colleagues' theory of core self-evaluations. Whereas the results of this study provide important support for the predictive validity of the traits in their model, this meta-analysis cannot address the validity of the core self-evaluations construct in predicting job satisfaction and job performance. Accordingly, the generalization of the results presented here is confined to the validity of the four specific traits.

However, several pieces of evidence suggest that future investigations of the validity of the core self-evaluations construct would prove profitable. First, the traits appear to be highly related. In the Appendix, we present a meta-analysis of the relationships between the four traits from 18 studies. Indeed, these traits correlate at least as strongly with each other as do multiple measures of a single construct (e.g., Ones, 1993). Second, as can be seen in Figures 1 and 2, the four traits displayed similar correlations with job satisfaction and job performance. As the figures show, there is considerable overlap in the correlations, especially for job performance. To test for statistically significant differences between the four traits, we conducted pairwise comparisons using the z test provided by Quiñones, Ford, and Teachout (1995). Of the 12 possible correlations that could be significantly different, only three were. These all involved the correlation between generalized self-efficacy and job satisfaction, which was significantly higher than the correlations of job satisfaction with the three other traits. (This appeared to be largely due to an influential [$N = 9,987$] study with a strong correlation between generalized self-efficacy and job satisfaction.) Thus, in general, the four traits exhibit similar correlations with satisfaction and performance, as would be expected if the traits are simply indicators of a broad, latent construct. We wish to emphasize, however, that our results are only suggestive—we did not directly test the validity of the core self-evaluations construct.

On the basis of these results, when one is interested in predicting job satisfaction or job performance, it is not clear whether researchers should use one or more of these traits. On the one hand, the traits are highly related and thus there would appear to be limited "bang for the buck" (incremental validity) in assessing more than the most valid trait. On the other hand, if the traits are simply indicators of a broad core self-evaluations construct, it does not make sense to consider each individual trait independently. One thing does seem clear, on the basis of our results—at least one of these traits should be considered in future models of job satisfaction and job performance.

Conclusion

In summary, results of the present study indicate that self-esteem, locus of control, neuroticism, and generalized self-efficacy are significant predictors of both job satisfaction and job performance. However, there is much to be known about the exact nature

of the traits (whether or not they are indicators of the broader core self-evaluations construct) and the processes by which they affect these outcomes. In light of the similar correlations of the traits with satisfaction and performance observed here, and the high correlations among the traits, future research considering these traits together appears warranted.

References

References marked with an asterisk indicate studies included in the meta-analyses.

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Appendix

Meta-Analysis of Relationships Among Self-Esteem, Generalized Self-Efficacy, Locus of Control, and Emotional Stability

Core trait	Self-esteem	Generalized self-efficacy	Internal locus of control
Generalized self-efficacy			
ρ	.85		
k	14		
N	1,894		
Internal locus of control			
ρ	.59	.63	
k	16	14	
N	2,175	1,888	
Emotional stability			
ρ	.66	.59	.51
k	18	14	16
N	2,297	1,888	2,175

Note. The 80% credibility intervals and 95% confidence intervals of all correlations exclude zero. ρ = correlation corrected for measurement error; k = number of correlations; N = total sample size.

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