

# Job Search and Employment: A Personality–Motivational Analysis and Meta-Analytic Review

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A motivational, self-regulatory conceptualization of job search was used to organize and investigate the relationships between personality, expectancies, self, social, motive, and biographical variables and individual differences in job search behavior and employment outcomes. Meta-analytic results indicated that all antecedent variables, except optimism, were significantly related to job search behavior, with estimated population correlations ranging from  $-.15$  to  $.46$ . As expected, job search behavior was significantly and positively related to finding employment. Several antecedents of job search were also significantly related to employment success, although the size of these relationships was consistently smaller than those obtained for job search. Moderator analyses showed significant differences in the size of variable relationships for type of job search measure (effort vs. intensity) and sample type (job loser vs. employed job seeker vs. new entrant).

Job search, or the pursuit of new employment, has become an integral aspect of American worklife. Each year, millions of persons engage in job search as a result of involuntary job loss, reentry into the workforce, completion of job training, or the desire to pursue new career opportunities. In the United States, workers today can be expected to engage in as many as a dozen job transitions over a worklife that often spans more than four decades (see Bureau of Labor Statistics, 2000).

Consistent with this trend, the past two decades have witnessed a substantial increase in studies investigating job search behavior and employment outcomes in a variety of contexts. Evidence on the antecedents, correlates, and consequences of job search can be found in research on initial transitions into the workplace (e.g., school-to-work, college graduates), reemployment following a period of nonwork or a layoff (e.g., new job entrants, job elimination), and job-to-job transitions. Although these streams of research have tended to progress relatively independently of one another, the proliferation of studies on this topic across a wide range of age and career levels indicates the importance of job search across the life span.

Despite the steady increase in research on job search, there has been no comprehensive attempt to synthesize and discuss the job

search literature since a qualitative review by Schwab, Rynes, and Aldag (1987). At the time of Schwab et al.'s review, only two psychological determinants of job search (financial need and self-esteem) were discussed. Although recent selective reviews, such as those by Fryer (1998) and Hanisch (1999), indicate positive evidence for additional determinants of search and employment (e.g., self-efficacy), very little is known about the pattern of relationships between diverse psychological antecedents of job search behavior or the influence of job search behavior on different employment outcomes.

The objectives of this article are fivefold. First, we propose a motivational, self-regulatory conceptualization of job search for the purpose of identifying relevant nonability, non-labor-market antecedents. Second, we develop a heuristic framework of job search antecedents and consequences based on an analysis of relationships from a personality–motivational perspective. Using the heuristic framework, we identify and organize empirical findings on antecedent–job search and antecedent–employment outcome relations and conduct a series of meta-analyses on the accumulated findings to address three fundamental questions: (a) What is the relationship (absolute and relative) of personality, motivational, and biographical factors to job search behavior? (b) What is the relationship between job search behavior and employment outcomes? and (c) What is the relationship (absolute and relative) of personality, motivational, and biographical factors to employment outcomes? On the basis of meta-analytic findings, we then conduct moderator analyses for two conceptually predicted influences—namely, type of job search measure and sample type. Finally, we compare meta-analytic findings and research trends to identify current gaps in our knowledge base, methodological problems, and directions for future research.

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### A Personality–Motivation Analysis of Job Search

Numerous nonability, individual-difference variables (e.g., self-esteem, locus of control) have been hypothesized to influence job search and employment. In many instances, however, relatively few studies have been conducted using identical variables or measures and a common criterion measure. To investigate antecedent–job search and job search–employment relations at a level that permits evaluation of potential differences among variable relations, we conceptualized job search behavior as the product of a self-regulation process. We then organized relevant individual-difference antecedent variables (for which there was at least one piece of empirical evidence) into distinct construct groups consistent with extant theories of motivation, personality, and job performance.

#### *Job Search as a Self-Regulatory Process*

Building on motivation and self-regulation theories (e.g., Bandura, 1989; R. Kanfer & Kanfer, 1991; Pintrich, Smith, Garcia, & McKeachie, 1993) as well as recent job search theorizing by Latack, Kinicki, and Prussia (1995), we began by defining job search behavior as the outcome of a dynamic, recursive self-regulated process. Our formulation depicts job search as a purposive, volitional pattern of action that begins with the identification and commitment to pursuing an employment goal. The employment goal, in turn, activates search behavior designed to bring about the goal. During job search, individuals generally undertake a variety of activities and use a variety of personal resources (e.g., time, effort, social resources) for the purpose of obtaining employment. Similar to other self-regulated behaviors, such as requisite behavior in a highly autonomous job, individual differences in job search are largely self-organized and self-managed. Over time, job search behavior may change in direction or intensity as self-reactions or feedback from the environment influence self-regulatory components, such as employment goals and search strategies. Accomplishment or abandonment of an employment goal is posited to terminate the self-regulatory sequence and associated job search activities.

The conceptualization of job search behavior as part of a self-regulatory process directed toward obtaining an employment goal indicates that job search refers to a pattern of thinking, affect, and behavior that can be evaluated along intensity–effort (frequency and effort of job search activity), content–direction (activities engaged and quality of these activities), and temporal–persistence (persistence and dynamic processes involved in search) dimensions.

Although a variety of methods have been used to measure job search behavior, most assessments have focused on the measurement of job search behaviors in terms of intensity or effort. These measures typically present individuals with an action-anchored list of search behaviors, such as “prepared a resume,” “went to a job interview,” or “read the classified ads.” Individuals indicate how many times or hours they engaged in each activity over a specific time period.

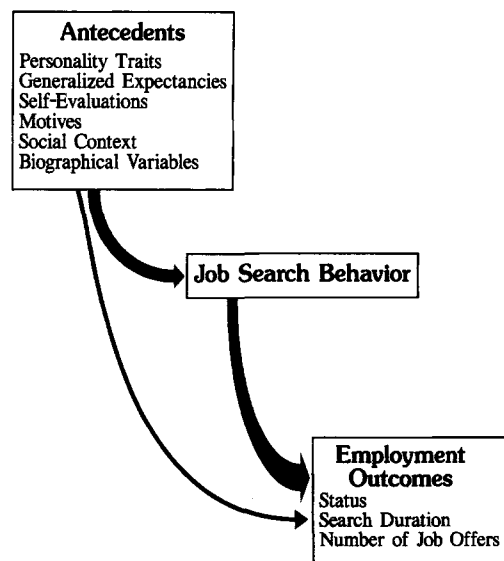
#### *Antecedents of Job Search*

Having defined job search behavior as goal-directed activities occurring in response to a discrepancy between an employment

goal and current state of affairs, we next considered the individual-difference antecedents of job search behavior. To be specific, we posited that the employment activities an individual displays are based on the complex interplay of employment motives and goals; personal, emotional, and social tendencies; and unique personal and situational conditions. As such, we focused on relevant trait and contextual variables that have been shown to affect self-regulatory mechanisms (e.g., goal-setting, self-monitoring, self-reactions) and, in turn, the direction and intensity of goal-directed (i.e., job search) behaviors. Although we recognized that individual differences in cognitive abilities, interests, and macroeconomic variables, such as regional, national, occupational, and industry unemployment rates, are also likely to bear on employment goals, job search, and employment outcomes, examination of these variables fell beyond the scope of the present study and so were not included in this initial framework.

The first issue confronting us pertained to developing a meaningful organizing scheme for the plethora of psychological antecedents that have been shown to influence goal-directed action. Although a number of studies document the influence of some subset of person–situation variables on job search behavior, the relationships among individual-difference constructs in the personality and motivation domains are seldom addressed. To resolve this problem, we created a heuristic framework based on recent advances in personality and motivation theory. On the basis of recent evidence in the personality–performance domain demonstrating the effects of dispositional tendencies on self-regulated job behaviors (e.g., Barrick, Mount, & Strauss, 1993), we included personality constructs drawn from theory and research on the five-factor model (FFM) of personality (e.g., Goldberg, 1990) as well as motivational constructs, such as self-efficacy (Bandura, 1989) and employment attitudes (e.g., Feather, 1990).

As shown in Figure 1, we identified six major complexes of



*Figure 1.* A heuristic model of job search, depicting six antecedent complexes of nonability, non-labor-market individual-difference variables likely to influence job search behavior and three major consequences of job search behavior.

nonability individual-difference variables likely to influence one or more of the constituent self-regulatory processes that in turn affect job search behavior. We then identified three major employment consequences of self-regulated job search behavior. Within each class of antecedent constructs, we further identified the variables typically used to assess salient constructs. Table 1 lists the variables contained within each antecedent class and provides examples of measures used in empirical research.

In the following sections, we discuss the major variables used to assess each antecedent class of constructs in the heuristic model and the hypothesized relationships between classes of antecedent variables, job search behavior, and employment outcomes.

*Personality.* For the personality domain, we followed the FFM framework (Goldberg, 1990) to organize variables in terms of their conceptual proximity to the five major personality constructs: Neuroticism, Extroversion, Openness to Experience, Agreeableness, and Conscientiousness. As indicated in Table 1, most studies that included measures of these constructs tended to use multidimensional, self-report personality instruments, such as Costa and McCrae's Revised NEO Personality Inventory (NEO-PI-R; 1985) and NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992).

We derived our hypotheses regarding the pattern of relationships to be obtained between each of the five personality constructs and job search behavior by extrapolating from theory and findings in the personality–performance and personality–stress and coping literatures. That is, we conceptualized job search behavior as self-directed work tasks in which the individual must identify, initiate, and follow up written and social exchanges for the purpose of obtaining employment. In the job performance domain, such tasks may be compared with those performed in a highly autonomous (and many times stressful and unfamiliar) job. Although an evaluation of job search behavior occurs in terms of the effectiveness of the activities for accomplishing an individual's goals (rather than an organization's objectives in the case of job performance), job search behavior measures of direction and intensity show considerable overlap with behaviorally oriented measures of job performance. As such, the personality factors that influence job performance for positions requiring behaviors similar to that required in job search should be highly relevant for the search domain.

Meta-analytic findings in the personality–job performance literature have shown that higher levels of conscientiousness and lower levels of neuroticism are associated with higher levels of job performance in a variety of jobs, and that extroversion is associated with higher job performance in jobs where interaction with others is important (Barrick & Mount, 1991; Salgado, 1997). Barrick, Mount, and Strauss (1993) further showed that conscientiousness and extroversion were especially predictive of self-regulated job behaviors and performance in high autonomy jobs. Although openness to experience and agreeableness have been inconsistently related to job performance, these traits have been associated with training proficiency (Barrick & Mount, 1991; Salgado, 1997) and so may show a positive relation to job search behaviors that require new learning.

Literature in the area of stress and coping further portrays the relevance of select FFM traits from a coping perspective. For example, research by Watson and Hubbard (1996) showed that individuals high in neuroticism tend to respond to stress by giving

up attempts to reach their goals, by daydreaming or engaging in irrelevant activity to distract themselves, by pretending their problems are not real, and by complaining to others. Neuroticism has similarly been linked to problem-solving deficits, a dependent decision-making style, and career indecision (see Tokar, Fischer, & Subich, 1998). In contrast, individuals high in conscientiousness are most likely to use active coping strategies, suppress competing activities, and plan appropriate responses. Individuals high in extroversion are most likely to use positive reinterpretation and growth and to seek social support from others. Personality may thus operate on job search through the engagement of different search strategies and the decision to engage in proactive job search behaviors.

Thus, for the expected relations between the FFM dimensions and job search and employment outcomes, we drew on the analogy of job search to work performance and the initiation and persistence of job search as an active coping strategy. Drawing on the job performance and coping literatures, we expected conscientiousness and extroversion to be positively related to job search behavior and neuroticism to be negatively related to job search behavior. The theoretical and empirical support for the relations between job search and the two remaining dimensions, openness to experience and agreeableness, were less substantial, although it still could be argued that higher levels of these traits may prove beneficial. To be specific, we proposed the following:

*Hypothesis 1a:* Individual differences in extroversion, conscientiousness, and neuroticism (reverse scored) would show positive estimated true score relations with job search behavior.

*Hypothesis 1b:* Individual differences in openness to experience and agreeableness would show small positive estimated true score relations to job search behavior.

*Generalized expectancies and self-evaluations.* Our review of the research on job search revealed several studies examining locus of control, optimism, self-esteem, and job search self-efficacy as antecedents to job search. Building on prior theoretical and empirical evidence that distinguished these variables from broader personality tendencies (e.g., Hough, 1992; McCrae & Costa, 1996; Scheier, Carver, & Bridges, 1994), we determined that it was useful to delineate two further variable categories: generalized expectancies (consisting of locus of control and optimism) and self-evaluations (consisting of self-esteem and job search self-efficacy).

Generalized expectancies with respect to agency and outcomes, respectively, have been suggested to relate to job search behavior and employment outcomes through their influence on both problem- and emotion-focused coping during the search process (e.g., Saks & Ashforth, 1999; Wanberg, 1997). Individuals who perceive they can have an impact on their employment success are more likely to exert time and energy in their job search (as opposed to distancing themselves from the situation) than individuals who believe their reemployment will be due to luck or other factors outside of their control. In a similar manner, a long history of theory and research on optimism shows that individuals who have an inclination to anticipate good outcomes are oriented toward making constructive moves to resolve stressful situations (Scheier & Carver, 1987). On the basis of these findings, we hypothesized the following:

Table 1  
*Antecedent Variable Category Descriptions and Measures*

Antecedent variable	Description	Examples of measures used
<b>Personality variables</b>		
Neuroticism	Tendencies and behaviors related to negative affectivity as reflected in self-reports of anxiety, subjective distress, and dissatisfaction (McCrae & Costa, 1997)	NEO-PI-R Neuroticism Scale (Costa & McCrae, 1985) State-Trait Anxiety Inventory (Spielberger et al., 1983) PANAS Negative Affect Scale (Watson & Clark, 1984) Negative Affectivity Scale (Levin & Stokes, 1989) 16PF Anxiety Scale (Cattell, 1989)
Extroversion	Tendencies and behaviors related to positive affectivity as reflected in self-reports of enthusiasm, happiness, vigor, and social responsiveness (McCrae & Costa, 1997)	NEO-PI-R Extroversion Scale (Costa & McCrae, 1985) NEO-FFI Extroversion Scale (Costa & McCrae, 1992) PANAS Positive Affect Scale (Watson & Clark, 1984) 16PF Extroversion Scale (Cattell, 1989) Rathus Assertiveness Schedule (Rathus, 1973)
Openness to experience	Tendencies and behaviors reflected in self-reports of being imaginative, sensitive, empathic, inquisitive, and tolerant (McCrae & Costa, 1997)	NEO-FFI Openness to Experience Scale (Costa & McCrae, 1992) 16PF Tough Poise Scale (Cattell, 1989)
Agreeableness	Tendencies or behaviors related to self-reports of being kind, likable, cooperative, helpful, and considerate (McCrae & Costa, 1997)	NEO-FFI Agreeableness Scale (Costa & McCrae, 1992) 16PF Independence Scale (Cattell, 1989)
Conscientiousness	Tendencies and behaviors related to dependability, conformity, and perseverance (McCrae & Costa, 1997)	NEO-PI-R Conscientiousness Scale (Costa & McCrae, 1985) NEO-FFI Conscientiousness Scale (Costa & McCrae, 1992) 16PF Super Ego/Control Scale (Cattell, 1989) Internal Work Motivation Scale (Hackman & Oldham, 1980)
<b>Generalized expectancy variables</b>		
Locus of control	Generalized attributions about the causal connection between actions and experienced outcomes; persons who hold an internal locus of control report greater control over outcomes (Rotter, 1966)	Internal-External Locus of Control Scale (Rotter, 1966) Career Exploration Survey-Internal Search Instrumentality Scale (Stumpf et al., 1983) Vocational Locus of Control Scale (Friedrich, 1984) Attributions of Employment Scale (Gurney, 1981) Locus of Control Scale (Andrisani & Nestel, 1976) Life Orientation Test (Scheier & Carver, 1985)
Optimism	Generalized expectations about the occurrence of positive outcomes, or the belief that "good as opposed to bad things will occur in one's life" (Scheier & Carver, 1985)	
<b>Self-evaluation variables</b>		
Job search self-efficacy	Self-reported confidence for successfully accomplishing specific job search activities and obtaining employment (R. Kanfer & Hulin, 1985)	Job Search Self-Efficacy Scale (Caplan et al., 1989) Self-Efficacy Expectations-Outplacement Needs Inventory (R. Kanfer & Hulin, 1985) Career Exploration Survey-Certainty in Search Scale (Stumpf et al., 1983) Self-efficacy measure (Frayne & Latham, 1987) Self-Efficacy for Job Search (van Ryn & Vinokur, 1992)
Self-esteem	Overall evaluation of self-worth, value, or importance (Blascovich & Tomaka, 1991)	Self-Esteem Scale (Rosenberg, 1965) Chronic Self-Esteem Scale (Bradburn, 1963) General Self-Efficacy (Sherer et al., 1982)
<b>Motive variables</b>		
Perceived financial need	Perceived financial stress or strain anticipated to occur during job search	Financial Hardship Scale (Vinokur & Caplan, 1987) Financial Concerns Scale (Pearlin & Radabaugh, 1976) Symptom-Focused Coping Financial Assistance subscale (Leana & Feldman, 1990)
Employment commitment	Attitude toward the importance or centrality placed on employed work	Employment Commitment Scale (Rowley & Feather, 1987) Career Exploration Survey-Importance of Obtaining Position Scale (Stumpf et al., 1983) Work Value Scale (D. B. Warr et al., 1979)
<b>Social variable</b>		
Social support	Perceptions of instrumental and emotional support from others in terms of their usefulness in coping with stressful events (Kessler et al., 1985)	Social Support Scale (Caplan et al., 1975) Social Provisions Scale (Cutrona & Russell, 1988) Social Support Scale (Lazarus & Folkman, 1984) Social Support Measure (Sarason et al., 1983) Support-Focused Coping Scale (Leana & Feldman, 1990)
<b>Job search variables</b>		
Job search effort	Perceptions of job search behaviors or effort	Effort measure (Ellis et al., 1991) General job search effort measure (Blau, 1993) Preparatory and active job search measure (Blau, 1993)
Job search intensity	Frequency and scope of specific job search behaviors	Job search measure (Vinokur & Caplan, 1987) Coping With Job Loss Survey-Proactive Search Scale (Kinicki & Latack, 1990) Problem-Focused Coping Scale (Leana & Feldman, 1990)

*Note.* NEO-PI-R = Revised NEO Personality Inventory; PANAS = Positive and Negative Affect Schedule; 16PF = Sixteen Personality Factor Questionnaire; NEO-FFI = NEO Five-Factor Inventory.

*Hypothesis 2:* Individual differences in locus of control and optimism would show positive estimated true score relations with job search behavior.

We placed self-esteem and job search self-efficacy in the self-evaluation complex. Self-esteem pertains to an evaluation of self-worth; self-efficacy is typically concerned with self-evaluation specific to a task or class of tasks, in this case job search. Prior theory and research on self-esteem and self-efficacy in a number of task domains suggest that individuals with higher levels of these variables are more likely to persist at difficult tasks they deem of value (e.g., Bandura, 1986; R. Kanfer, 1990). In accord with our self-regulatory conceptualization, we hypothesized the following:

*Hypothesis 3:* Individual differences in self-esteem and job search self-efficacy would show positive estimated true score relations with job search behavior.

*Situational antecedents: Motive and social variables.* As many researchers have suggested, the extent to which individuals engage and persist in self-directed job search behavior is likely to be influenced by their motives for obtaining employment and the extent to which their environment supports search activities (Leana & Feldman, 1995).

In the motive category, we identified two prominent motives that have been theorized to incite job search effort and intensity: financial need and employment commitment. Financial need refers to the extent to which an individual is experiencing economic hardship. Individuals with larger financial obligations or who do not have adequate financial resources have a stronger need to replace or find a new job quickly (Leana & Feldman, 1995). Recognizing this concept, the economic literature has extensively debated and studied receipt of unemployment insurance by eligible job seekers as a disincentive for fast reemployment (see, e.g., Atkinson & Micklewright, 1991; Barron & Mellow, 1981; Belzil, 1994). Economists have found that individuals who have several weeks of unemployment insurance left do not look as hard for a job, and spikes or increases in employment occur when unemployment insurance benefits are depleted (Barron & Gilley, 1979; Katz & Meyer, 1990; McCall, 1997).

Employment commitment (also called employment valence or employment value) is an attitudinal variable that refers to the importance or centrality that an individual places on employed work beyond the income or money it provides. Typical items to measure this construct include "Having a job is very important to me" and "If the unemployment benefit was really high I would still prefer to work" (see Feather, 1990). Although individuals may be committed to work for multiple reasons (e.g., opportunity for interpersonal contact, opportunity to express one's talents; P. Warr, 1987), the concept of employment commitment is not dependent on reason and instead describes general attachment to work.

In a self-regulatory perspective, individuals with stronger motives for finding employment can be expected to show greater intensity and persistence of behavior than individuals with lower levels of goal commitment. As such, we proposed the following:

*Hypothesis 4:* Individual differences in perceived financial need and employment commitment would show positive estimated true score relations with job search behavior.

During job search, particularly following job loss, individuals may feel unsure of themselves and become easily discouraged. The social context in which an individual is embedded during the search process has often been suggested as providing a means for coping with the negative aspects of job search and facilitating continued search efforts. The variable of social support represents an important coping resource for individuals in stressful situations, such as job loss (Kessler, Price, & Wortman, 1985), and has been examined frequently in studies of job search behavior (e.g., Gowan, Riordan, & Gatewood, 1999). Social support can influence an individual's belief that engaging in job search is a worthwhile activity and may have both short-term (e.g., advice and information) and long-term motivational properties (e.g., encouragement when rejections accumulate; Vinokur & Caplan, 1987). As such, we hypothesized the following:

*Hypothesis 5:* Individual differences in social support would show a positive estimated true score relation with job search behavior.

*Biographical variables.* We defined our last category of antecedents, biographical antecedents, as including both life history and demographic variables. Although a number of job search and employment studies have included basic demographic characteristics, they have often been used only to describe the sample, not to predict job search or employment outcomes. For the meta-analyses, we identified only five demographic variables that have been sufficiently reported as correlates of job search and employment: age, gender, education, race, and work–job tenure.<sup>1</sup> Other possible and theoretically relevant biographical variables, such as whether or not the job seeker has a spouse working (Dynarski & Sheffrin, 1990), prior experience with job search or unemployment (Leana & Feldman, 1990), receipt of job search assistance (Ting, 1991), employment qualifications (Marshall, 1985), reason for job search (Kidder & McCall, 1997), and job search constraints, such as illness or lack of child care (Wanberg, Kanfer, & Rotundo, 1999), appear rarely or intermittently in the literature. In general, the economic literature tends to portray a wider range of these variables than the psychological literature. However, because correlation matrices are so rare in the economic literature (instead only multivariate results are reported), we were unable to include this broader representation of results in the meta-analyses.

We hypothesized a different pattern of results for the five demographic variables compared with previous variables. To be specific, we reasoned that age, gender, education, race, and work–job tenure are typically regarded as distinct from the motivational processes underlying search behavior. In contrast to psychological and situational antecedents that exert proximal influence on self-regulatory processes, these demographic variables represent individual characteristics that may index differences in other antecedent variables (e.g., employment commitment, financial need). Though investigation of these relationships is exploratory, it can be argued that individual differences in two demographic variables,

<sup>1</sup> The operationalization of work–job tenure varied by sample type. Study samples of job losers and employed job seekers assessed organizational or job tenure; study samples using new entrants assessed prior work experience. Consistent with the common practice among college students to engage in part-time or summer employment (or both), mean work–job tenure for new entrants was greater than zero.

education and job tenure, should show associations with job search. That is, individuals with more education and less job tenure should be more likely to show higher levels of job search behavior. Although we did not make specific predictions for age, gender, and race, we proposed the following:

*Hypothesis 6:* Individual differences in education and job tenure (reverse scored) would show positive estimated true score relations with job search behavior.

In summary, our personality–motivational analysis and prior research findings in the job search and affiliated literatures suggested that individual differences in personality (particularly extroversion and conscientiousness), generalized expectancies (locus of control, optimism), self evaluation (self-esteem, job search self-efficacy), social support, and motives (financial need, employment commitment) should be positively associated with extent of job search behavior. We predicted neuroticism to be negatively associated with job search behavior, and we expected demographic variables (age, race, education, gender, job–work tenure) to have weak or null relations with job search behavior.

#### *Antecedents of Employment Outcomes*

Our conceptual model depicts job search behavior as a major antecedent of employment outcome. The most commonly measured employment outcome is employment status, that is, whether or not an individual reports having obtained employment by the end of some specified period. Although several studies indicate a positive relationship between job search intensity and employment, nonsignificant and negative relationships have also been reported (e.g., Caldwell & Burger, 1998; Leana & Feldman, 1990). Consistent with the assumption that higher exertion of effort toward a goal leads to an increased probability of attaining that goal, we predicted that cumulated research would show that job search behavior is positively related to employment.

Our perusal of the job search literature revealed the regular use of two further employment outcome measures: job search duration and number of job offers. Search duration, a variable often used in the labor economics literature, is a negative proxy of employment success and refers to the length of time that the individual looked for employment during the study period. Search duration may be brief, such as when individuals are offered and accept a job the day after they commit themselves to considering new employment, or prolonged over a period of years. Number of job offers received is most often used in empirical studies investigating job search among new college graduates.

Although we predicted a positive relationship between job search behavior and employment success, duration and offer measures reflect fundamentally different relations to the motivational process underlying job search. For example, job seekers may intentionally limit their search activities to jobs that provide high wages and take the first job offer that provides the desired wage level. Such individuals would likely take longer and receive fewer job offers compared with individuals who adopt a low wage reservation level and a search strategy that permits them to choose among several job offers. To summarize, we proposed the following:

*Hypothesis 7:* Individual differences in job search behavior would show positive estimated true score relations with employment status, number of offers, and unemployment duration (reverse scored).

Although our main focus was on the antecedents and employment outcomes of job search, the available data would also allow us to document the extent to which individual differences in person–situation variables are differentially related to job search and employment outcomes. R. Kanfer (1992), for example, suggested that personality factors exert their influence on complex outcomes (such as obtaining employment) primarily through motivational processes. As such, individual differences in psychological trait-like variables should be more strongly related to job search behavior (a motivational index) than to employment outcomes (determined only in part by motivation).

On the other hand, a sizable body of personnel selection research suggests that certain personality characteristics and biographical attributes may play a direct role in the evaluation and selection of job applicants (e.g., Bretz & Judge, 1994; Dunn, Mount, Barrick, & Ones, 1995; DeFruyt & Mervielde, 1999; Goldberg, 1994; Landy & Shankster, 1994). As such, these individual-difference variables would also be expected to show a similar positive relation with employment outcomes. We expected a comparison of antecedent variable relationships with job search and employment outcomes (when sufficient data were available) to be informative, particularly if variable categories showed differential relations. As such, we proposed that:

*Hypothesis 8:* Individual differences in personality, generalized expectancies, self-evaluations, motive, social, and demographic antecedents would show positive, but weaker, estimated true score relations with employment status, number of offers, and unemployment duration (reverse scored), compared with their relations with job search behavior.

#### *Moderator Variables: Sample Type and Job Search Measure*

A final issue to be addressed before performing the meta-analyses related to identifying potential moderators. Although moderators may pertain to any number of study characteristics, we focused in particular on two types of moderators: sample characteristics and job search measures. Similar to the problem confronted in early reviews of personality–performance relations (see, e.g., R. Kanfer, Ackerman, Murtha, & Goff, 1995; Schneider, Hough, & Dunnette, 1996), the disparate nature of studies investigating antecedents and consequences of job search has led to a heterogeneous body of empirical findings that varies widely in terms of who is studied and how job search is measured. Aggregation across diverse samples and criteria may obscure patterns of relationships for specific groups (e.g., job losers) or patterns associated with use of different criterion measures (e.g., job search intensity vs. job search effort).

With respect to study sample characteristics, for example, Rodriguez (1997) suggested that the antecedents and consequences of job search may differ dramatically as a function of the context in which search is initiated. Individuals who seek reemployment following involuntary job layoffs, for example, are likely to face different challenges than do individuals seeking new employment opportunities. To investigate this issue, we conducted moderator

analyses of sample type (job losers vs. new entrants vs. employed job seekers) when appropriate and sufficient data were available.

We also examined type of job search measure used as a potential moderator of antecedent–job search and job search–employment outcome relationships. A variety of methods have been used to measure job search. However, most assessments have focused on the measurement of job search intensity or effort. Measures of *job search intensity* typically present individuals with a list of search behaviors, such as “prepared a resume,” “went to a job interview,” or “read the classified ads.” Research participants are instructed to indicate how many times or hours they engaged in each activity in a set period of time. Researchers have typically used these scales in the aggregate to report overall intensity of search behavior and have not attended closely to the specific behaviors being reported.

In studies that used measures of *job search effort* (e.g., Barber, Daly, Giannantonio, & Phillips, 1994), individuals were asked to indicate the total amount of effort or activity that they devoted to job search over a specific time period. Such measures often use Likert-type response formats, anchored at one end by *little or no effort* and at the other end by *a great deal of effort*. The effort measures do not probe for specific job search behaviors. An advantage of the broader effort measure is that it may capture behaviors and cognitions (e.g., emotional energy, planning, and strategizing) important to the job search that may not be captured in an intensity measure. A disadvantage of the broader effort measure is that it may be more prone to exaggeration, central tendency, or negative leniency response tendencies than a measure that asks more concretely for the number of hours or times an individual has engaged in specific job search behaviors in a set time period.

Content-, direction-specific measures of job search behavior have been used less frequently. Research has distinguished, for example, the use of informal (e.g., networking) versus formal job search methods (e.g., registration with an employment agency; e.g., Bretz & Judge, 1994; Caldwell & Burger, 1998; Caska, 1998; also see Schwab et al., 1987). Blau (1994) and Kinicki and Latack (1990) suggested additional ways of delineating job search. Blau’s (1994) Job Search Behavior measure can be used to assess preparatory (e.g., prepared resume) and active (e.g., filled out an application) dimensions of job search. Kinicki and Latack’s (1990) Coping With Job Loss Scale measures competing and complementary aspects of job search behavior by assessing the intensity of emotion-focused coping items and problem-focused coping items.

For purposes of this review and meta-analyses, we found sufficient studies to distinguish between measures of job search effort and intensity. However, sufficient studies assessing direction–quality and temporal–dynamic process job search behavior were not available. Furthermore, although measurement advances suggest fruitful distinctions between content dimensions (e.g., preparatory vs. active, emotion- vs. problem-focused strategies), this variable was not used as a moderator in the meta-analyses as we found too few studies that provided data on the relationship between these job search subscales and employment outcomes.

## Method

### Data Collection

Studies were identified for inclusion in the meta-analyses by searching social science, economic, and management computerized databases using

“job search” as key words for study selection. The databases used included the American Psychological Association’s PsycINFO (1881–2000), Business Index (1988–2000), EconLit (1969–2000), ABI Inform (1971–2000), Dissertation Abstracts (1900–2000), and National Technical Information Service (1964–2000). In addition, we conducted a manual search of our files, and approximately 100 additional reports not identified in the computerized and manual searches were obtained from review bibliographies, conceptual chapters, and books. We found approximately 3,000 total reports by these methods and screened for potential relevance to this meta-analytic review. We found that the literature search results yielded numerous nonempirical reports, such as descriptive articles of the job search process and practitioner articles aimed at helping displaced individuals.

Empirical and analytical abstracts and articles identified through the literature search were examined for relevance to the relationships under review. To be included in the meta-analyses, the study had to report zero-order correlations between at least one job search variable and one employment outcome variable or between at least one antecedent variable and one job search or employment outcome variable. Studies that failed to report zero-order correlations or that did not provide empirical data on relationships of interest were excluded from use in the meta-analyses.

A total of 73 studies remained after evaluation with the inclusion criteria. These studies contained a total of 82 independent samples, 413 correlations, and 21,898 participants. A total of 28 studies (32 independent samples, 41 correlations, and 7,980 participants) were used in the job search–employment meta-analyses; 59 studies (68 independent samples, 230 correlations, and 19,957 participants) were used in the antecedents–job search meta-analyses, and 36 studies (38 independent samples, 142 correlations, and 11,010 participants) were used in the antecedents–employment meta-analyses. Studies included in the meta-analyses are denoted in the reference section by an asterisk.

### Data Coding

Characteristics of the 73 empirical studies used in the meta-analyses were coded along a number of dimensions. For each study, we coded the following information: year of publication, zero-order correlation, sample size, mean age of respondents, study length (single vs. multiple waves of data collection), measures used to assess the constructs, reliability of the measures, source of the reliability estimate (coefficient alpha, test–retest reliability), and maximum possible length of job search as defined by study design. In addition, information on two potential moderator variables was coded: sample type (new entrants vs. job losers vs. employed job seekers) and job search measure (job search effort, job search intensity).

For the meta-analyses, we used the classification scheme described previously to organize data from each study into distinct job search–employment outcome, antecedent–job search, and antecedent–employment outcome analyses. Decisions about placement of data into cells were based on study descriptions of the variable and by examination of the measure used to assess the variable. Ruth Kanfer and Tracy M. Kantowitz independently coded variables into categories. Interrater agreement was high, with fewer than 25 out of 413 discrepant codings. Those in discrepancy were discussed and resolved by referring to descriptive information of measures found in referenced articles.

Among studies that used multiple waves of data collection, antecedent variables were typically assessed at the initial wave of data collection and outcome variables were assessed in the final wave of data collection. In some studies, job search measures were administered at multiple time points. To minimize concerns related to common method variance, we used correlational data associated with job search measures taken during the second wave of data collection.

### Meta-Analytic Procedures

The method for conducting the job search–employment, antecedent–job search, and antecedent–employment meta-analyses followed the proce-

dures described by Hedges and Olkin (1985) and Hunter and Schmidt (1990). First we computed sample-sized weighted mean uncorrected correlations to assess the relative contribution of each zero-order correlation to the overall analysis. Then we calculated corrected weighted correlations for each relationship after accounting for measurement artifacts and sampling error. Reliability estimates were obtained from two sources: test-retest reliability estimates or internal consistency alphas. On the basis of Thorndike's (1947) taxonomy of sources of variance in testing, we considered test-retest reliability information desirable for the more stable constructs (e.g., extroversion) whereas we sought internal consistency reliability estimates for the less stable constructs (e.g., social support). Reliability estimates were reported for more than 75% of the constructs. When reliability estimates were not reported, we used mean substitution (Roth, 1994) separately for each variable. The reliability of biographical variables and employment outcomes was assumed to be unity.

We then equated the mean sample-weighted corrected correlation with the population  $r_c$  to assess significance through examination of the 95% confidence interval. If the population  $r_c$  was not zero, we judged the magnitude of the relationship using a conservative classification scheme (Cohen, 1969) in which small-sized effects were defined as  $r_c < .29$ , medium-sized effects were defined as  $.30 < r_c < .49$ , and large-sized effects were defined as  $r_c > .50$ . To test for the significance between estimated population correlation coefficients, a  $z$ -to- $r$  transformation was computed using a standard error of the difference formula to find the significance of the unit normal-curve deviate and interpreted by a value of 2.58 for significance at the  $p < .01$  level.

We conducted three tests to assess the presence of a moderating variable: calculation of the  $Q$  statistic for heterogeneity of correlation coefficients (Hedges & Olkin, 1985), calculation of the percentage of total variance accounted for by artifact (i.e., 75% rule; Hunter & Schmidt, 1990), and computation of a credibility interval to assess spread and presence of zero (Whitener, 1990). The possibility of moderating effects is suggested by a significant  $Q$  statistic, less than 75% variation accounted for by artifacts, and the existence of a wide credibility interval or interval that includes zero, respectively. We conducted moderator analyses if at least two of these three tests for moderators were significant. For tests of the two conceptually predicted moderator variables, a minimum of four independent samples was needed for the subgroup analyses. The significance of subgroup differences was assessed with the  $z$ -to- $r$  transformation, using a standard error of the difference formula to find the significance of the unit normal-curve deviate and interpreting by a value of 2.58 for significance at the  $p < .01$  level.

## Results

### Sample Characteristics

To identify potential gaps in the empirical literature, we compared the respondent samples in this review with 1998 national unemployment data provided by the Bureau of Labor Statistics (BLS; 2000). The findings suggested that the samples used in this review provided adequate representation for the most common reason underlying job search among recently unemployed persons in the U.S. workforce, namely, involuntary job loss (63% of review sample; 46% of unemployed persons in BLS data).

However, comparison of samples used in this review to national BLS data in other categories did indicate undersampling in several areas. Although 27% of review samples involved new entrants (vs. 8% of BLS data), all but one empirical sample (Feather & O'Brien, 1987) focused on college students engaged in job search associated with graduation. This pattern of findings suggested that study samples in this review may substantially underrepresent job search-employment experiences of high school graduates (or general equivalency diploma [GED] recipients) into the workforce.

Comparison of samples in this review to BLS data further suggested an undersampling of (or failure to sufficiently identify) two other groups of job seekers: reentrants (0% of review sample vs. 34% of national workforce) and persons over the age of 55 (0% of samples vs. 2.8% of BLS data). These results indicate important gaps in the empirical literature with respect to job search and employment and potential limitations in the generalizability of meta-analytic findings.

### Meta-Analytic Findings

Results of antecedents-job search and antecedents-employment outcome meta-analyses, including number of correlations ( $k$ ), number of individuals across samples ( $N$ ), uncorrected mean sample-weighted correlation ( $r$ ), corrected mean sample-weighted correlation ( $r_c$ ), confidence intervals (CIs), total percentage of variance accounted for by artifacts,  $Q$  statistics, and credibility intervals (CVs), are reported in Tables 2 and 3, respectively.

We start with a discussion of main meta-analytic findings for each hypothesized set of relations, followed by discussion of the results of moderator analyses.

*Antecedents of job search.* Table 2 portrays the meta-analytic relations observed between the personality, expectancy, self-evaluation, social, motive, and biographical antecedents and job search behavior. All antecedents, except optimism, were significantly related to job search. As expected, extroversion and conscientiousness as well as self-evaluative, social, and motive antecedents were positively and more strongly related to job search behavior than biographical variables. Contrary to predictions, generalized expectancy variables were only weakly related to job search behavior, and biographical variables were significantly, albeit weakly, related to search behavior.

With respect to the FFM traits, medium-sized, positive estimated true score correlations were obtained for extroversion ( $r_c = .46$ ) and conscientiousness ( $r_c = .38$ ), followed by smaller-sized relationships for openness to experience ( $r_c = .27$ ), agreeableness ( $r_c = .15$ ), and neuroticism ( $r_c = -.07$ ). We were surprised, however, to find that both locus of control and optimism showed only weak relationships to job search behavior ( $r_c = .05$  and  $r_c = -.04$ , respectively). Positive, small- to medium-sized relationships were also obtained for the two self-evaluation variables, self-esteem ( $r_c = .25$ ) and job search self-efficacy ( $r_c = .27$ ); that is, individuals higher in self-esteem or job search self-efficacy were more likely to report higher levels of job search behavior. Meta-analytic findings for contextual variables related to motives and social support showed a similar pattern of small- to medium-sized relations to job search behavior. Higher levels of financial need ( $r_c = .21$ ), employment commitment ( $r_c = .29$ ), and social support ( $r_c = .24$ ) were positively associated with job search behavior. However, biographical variables were only weakly related to job search behavior. Among these variables, age ( $r_c = -.06$ ), race ( $r_c = -.05$ ), and tenure ( $r_c = -.15$ ) were negatively related to job search behavior; older, non-White, and longer tenured individuals were likely to engage in lower levels of job search behavior than younger, White, and shorter tenured individuals. In contrast, gender ( $r_c = .05$ ) and education ( $r_c = .12$ ) were positively related to job search behavior; men and individuals with higher levels of education engaged in more job search activity than women and individuals with less education.



Table 2  
Meta-Analysis Results for Antecedents of Job Search Behavior

Variable	<i>k</i>	<i>N</i>	<i>r</i>	<i>r<sub>c</sub></i>	Lower 95% CI	Upper 95% CI	% variance due to artifact	<i>Q</i>	Lower CV	Upper CV
Personality										
Extroversion	7	1,733	.34	.46*	.43	.50	94	235.35**	-.25	.83
Neuroticism	14	2,603	-.05	-.07*	-.11	-.03	90	192.79**	-.55	.44
Openness	4	1,099	.19	.27*	.21	.32	99	16.62**	-.03	.51
Agreeableness	4	1,099	.11	.15*	.10	.21	100	10.04	-.08	.37
Conscientiousness	11	5,433	.30	.38*	.36	.40	93	134.99**	-.02	.65
Generalized expectancy antecedents										
Locus of control	13	2,283	.04	.05*	.01	.09	100	56.19**	-.37	.46
Optimism	7	1,260	-.03	-.04	-.10	.01	99	79.91**	-.55	.49
Self-evaluation antecedents										
Self-esteem	22	3,887	.19	.25*	.22	.28	100	210.26**	-.18	.59
Self-efficacy	28	10,020	.21	.27*	.26	.29	95	520.45**	-.17	.62
Motive antecedents										
Financial need	14	3,622	.17	.21*	.18	.24	89	112.85**	-.29	.59
Employment commitment	16	3,319	.23	.29*	.26	.32	100	392.83**	-.26	.69
Social antecedent										
Social support	15	4,099	.17	.24*	.21	.27	100	330.94**	-.36	.69
Biographical antecedents										
Age	18	7,816	-.05	-.06*	-.08	-.03	80	85.52**	-.36	.26
Gender <sup>a</sup>	23	8,860	.04	.05*	.03	.07	54	184.80**	-.29	.38
Education	17	7,867	.11	.12*	.10	.14	72	108.20**	-.23	.45
Race <sup>b</sup>	8	4,954	-.05	-.05*	-.08	-.03	82	67.59**	-.32	.22
Job tenure	7	2,224	-.14	-.15*	-.19	-.11	100	78.18**	-.81	.68

Note. *k* = number of correlations; *N* = number of individuals across *k* samples; *r* = mean uncorrected sample-weighted correlation; *r<sub>c</sub>* = mean corrected sample-weighted correlation; 95% CI = 95% confidence interval of the *r<sub>c</sub>*; % variance due to artifact = percentage of variance accounted for by measurement artifact and sampling error; *Q* = heterogeneity of *r<sub>c</sub>*; CV = 95% credibility interval of the *r<sub>c</sub>*.

<sup>a</sup> Gender coded: 0 = female, 1 = male. <sup>b</sup> Race coded: 0 = non-White, 1 = White.

\* *p* < .05. \*\* *p* < .01.

*Antecedents of employment outcomes.* As reported in Table 3, several antecedents were significantly related to employment outcome relations. However, the most notable aspect of these results was the substantially smaller correlations obtained for antecedent-employment outcome relations compared with antecedent-job search behavior relations. Also important was the dearth of studies in many cells, indicating the current lack of empirical research on key antecedent-employment outcome relations. As opposed to drawing major substantive conclusions, these results highlight initial findings and areas for future research.

As predicted, job search behavior was significantly related to employment outcome measures. Job search was significantly and positively related to employment status and number of offers (*r<sub>c</sub>* = .21 and *r<sub>c</sub>* = .28, respectively) and significantly and negatively related to duration of unemployment (*r<sub>c</sub>* = -.14).

Results obtained in meta-analyses of relations where a sufficient number of samples were available indicated a general pattern of small-sized relationships between personality, motivational, and biographical antecedents and employment outcomes. Consistent with meta-analytic results for antecedent-job search relations, higher levels of four of the five FFM traits (extroversion, *r<sub>c</sub>* = -.10; conscientiousness, *r<sub>c</sub>* = -.12; openness to experience, *r<sub>c</sub>* = -.08; and agreeableness, *r<sub>c</sub>* = -.09), self-evaluation variables (job search self-efficacy, *r<sub>c</sub>* = -.12; and self-esteem, *r<sub>c</sub>* = -.24), and financial need (*r<sub>c</sub>* = -.07) were significantly associated with a shorter unemployment period and in some cases a greater likelihood of obtaining employment and receiving more job offers (e.g., job search self-efficacy, self-esteem). In contrast to meta-analytic

findings for antecedent-job search relations, however, social support and employment commitment were unrelated to unemployment duration (*r<sub>c</sub>* = -.05 and *r<sub>c</sub>* = .04, respectively), and the generalized expectancy variables (locus of control and optimism) were positively related to length of unemployment (*r<sub>c</sub>* = .12 and *r<sub>c</sub>* = .10, respectively).

Age, gender, race, and education showed an overall pattern of zero-to-small relations with employment outcomes, and only 4 of the 10 relations were significant. Age and education were significantly related to employment status (*r<sub>c</sub>* = -.07 and *r<sub>c</sub>* = .07, respectively), suggesting that younger people and those with more education report greater likelihood of becoming employed. Education and race were significantly related to duration of employment (*r<sub>c</sub>* = -.07 and *r<sub>c</sub>* = .12, respectively). That is, persons with higher levels of education experienced a shorter period of unemployment than persons with less education; non-White individuals were more likely to experience a longer duration of unemployment than White individuals.

*Moderator analyses.* Examination of variance attributable to artifacts, *Q* statistics, and credibility intervals for all antecedent-job search and job search-employment outcome relationships indicated the possible existence of moderators for a substantial number of variable relations. Overall, we conducted 35 moderator analyses to assess the moderating effects of two variables: type of search measure and sample type. Tables 4 and 5 show the results of moderator analyses, with significant subgroup differences (*p* < .01).

Table 3  
*Meta-Analysis Results for Antecedents of Employment Outcomes*

Variable	<i>k</i>	<i>N</i>	<i>r</i>	<i>r<sub>c</sub></i>	Lower 95% CI	Upper 95% CI	% variance due to artifact	<i>Q</i>	Lower CV	Upper CV
Job search behavior										
Status	21	5,818	.19	.21*	.19	.24	49	114.15**	-.13	.50
Offers	11	1,485	.24	.28*	.23	.33	28	96.34**	-.11	.59
Duration	9	3,243	-.12	-.14*	-.17	-.10	100	87.56**	-.54	.32
Personality										
Extroversion										
Status	1	478	.04	—	—	—	—	—	—	—
Offers	1	134	.41	—	—	—	—	—	—	—
Duration	2	830	-.09	-.10*	-.16	-.03	100	0.08	-.35	.17
Neuroticism										
Status	9	2,681	-.08	-.09*	-.13	-.05	100	31.78**	-.43	.28
Offers	2	260	-.17	-.22*	-.33	-.10	100	0.42	-.29	-.15
Duration	6	1,600	-.01	-.01	-.06	.04	100	10.22	-.21	.20
Openness										
Status	1	478	-.01	—	—	—	—	—	—	—
Offers	1	134	.28	—	—	—	—	—	—	—
Duration	2	830	-.07	-.08*	-.15	-.01	100	12.71**	-.41	.26
Agreeableness										
Status	1	478	.01	—	—	—	—	—	—	—
Offers	1	134	.29	—	—	—	—	—	—	—
Duration	2	830	-.08	-.09*	-.16	-.02	100	7.16	-.34	.17
Conscientiousness										
Status	5	2,534	.12	.13*	.10	.17	100	65.46**	-.24	.47
Offers	2	228	.09	.10	-.03	.23	59	1.07	-.09	.32
Duration	4	2,609	-.11	-.12*	-.16	-.08	98	11.39**	-.30	.07
Generalized expectancy antecedents										
Locus of control										
Status	0									
Offers	0									
Duration	2	80	.10	.12	-.11	.34	100	0.67	-.14	.37
Optimism										
Status	3	548	.12	.13*	.05	.21	100	30.26**	-.45	.63
Offers	0									
Duration	3	866	.09	.10*	.03	.17	100	30.05**	-.18	.37
Self-evaluative antecedents										
Self-esteem										
Status	7	1,376	.14	.15*	.10	.20	100	17.07**	-.05	.34
Offers	3	438	.10	.11*	.02	.21	100	0.43	.02	.20
Duration	5	876	-.22	-.24*	-.30	-.18	100	213.55**	-.66	.29
Job search self-efficacy										
Status	11	5,251	.08	.09*	.06	.12	81	61.23**	-.36	.51
Offers	5	463	.26	.28*	.20	.37	100	0.41	.22	.33
Duration	4	2,335	-.11	-.12*	-.16	-.08	34	20.29**	-.42	.21
Motive antecedents										
Financial need										
Status	7	3,146	-.10	-.11*	-.15	-.08	100	110.91**	-.47	.28
Offers	0									
Duration	5	2,754	-.06	-.07*	-.11	-.03	95	1.76	-.43	.31
Employment commitment										
Status	2	418	.16	.19*	.09	.28	33	7.50**	-.22	.54
Offers	0									
Duration	4	966	.03	.04	-.03	.10	100	6.10	-.14	.21
Social antecedent										
Social support										
Status	3	503	.28	.30*	.22	.38	89	19.81**	-.01	.43
Offers	0									
Duration	3	1,132	-.05	-.05	-.11	.00	100	5.24**	-.26	.15
Biographical antecedents										
Age										
Status	8	3,425	-.07	-.07*	-.11	-.04	42	26.35**	-.36	.22
Offers	2	159	-.00	-.00	-.16	.15	77	1.20	-.22	.15
Duration	6	2,818	.01	.01	-.03	.04	96	24.39**	-.19	.20

Table 3 (continued)

Variable	<i>k</i>	<i>N</i>	<i>r</i>	<i>r<sub>c</sub></i>	Lower 95% CI	Upper 95% CI	% variance due to artifact	<i>Q</i>	Lower CV	Upper CV
Biographical antecedents (continued)										
Gender <sup>a</sup>										
Status	10	4,120	.01	.01	-.02	.04	88	117.29**	-.36	.39
Offers	4	348	.07	.07	-.03	.18	59	4.53	-.15	.34
Duration	8	3,933	.02	.02	-.01	.05	96	22.31**	-.20	.24
Education										
Status	9	3,721	.07	.07*	.04	.11	44	46.92**	-.29	.42
Offers	0									
Duration	5	2,774	-.07	-.07*	-.11	-.04	99	27.29**	-.32	.18
Race <sup>b</sup>										
Status	6	1,806	.04	.04	-.01	.09	69	73.50**	-.32	.27
Offers	0									
Duration	5	2,774	.12	.12*	.08	.16	100	4.59	.03	.21
Job tenure										
Status	1	56	.20	—	—	—	—	—	—	—
Offers	1	65	-.10	—	—	—	—	—	—	—
Duration	0									

Note. Dashes indicate insufficient data. *k* = number of correlations; *N* = number of individuals across *k* samples; *r* = mean uncorrected sample-weighted correlation; *r<sub>c</sub>* = mean corrected sample-weighted correlation; 95% CI = 95% confidence interval of the *r<sub>c</sub>*; % variance due to artifact = percentage of variance accounted for by measurement artifact and sampling error; *Q* = heterogeneity of *r<sub>c</sub>*; CV = 95% credibility interval of the *r<sub>c</sub>*.

<sup>a</sup> Gender coded: 0 = female, 1 = male. <sup>b</sup> Race coded: 0 = non-White, 1 = White.

\* *p* < .05. \*\* *p* < .01.

Type of job search measure. Results of moderator analyses suggesting moderating influence by type of search measure (intensity vs. effort) are presented in Table 4. Significant differences for antecedent-employment outcome relations showing stronger estimated true score relations for intensity measures (vs. effort measures) were obtained for neuroticism (*r<sub>c intensity</sub>* = -.16 vs.

*r<sub>c effort</sub>* = .09), self-esteem (*r<sub>c intensity</sub>* = .32 vs. *r<sub>c effort</sub>* = .15), financial need (*r<sub>c intensity</sub>* = .22 vs. *r<sub>c effort</sub>* = -.13), social support (*r<sub>c intensity</sub>* = .29 vs. *r<sub>c effort</sub>* = .07), gender (*r<sub>c intensity</sub>* = .08 vs. *r<sub>c effort</sub>* = -.03), and education (*r<sub>c intensity</sub>* = .17 vs. *r<sub>c effort</sub>* = .03). In addition, as shown in Table 4, a significantly stronger relationship between job search and number of offers was obtained using

Table 4  
Moderator Analyses Results by Type of Job Search Measure

Variable	Intensity				Effort			
	<i>k</i>	<i>N</i>	<i>r</i>	<i>r<sub>c</sub></i>	<i>k</i>	<i>N</i>	<i>r</i>	<i>r<sub>c</sub></i>
Antecedents-job search relations								
Neuroticism	8	1,668	-.12	-.16**	6	935	.08	.09**
Conscientiousness	9	5,164	.24	.29	2	269	.38	.38
Locus of control	5	723	.03	.04	8	1,560	.05	.06
Optimism	3	441	-.06	-.08	4	819	-.02	-.02
Self-efficacy	19	7,564	.22	.28	8	2,370	.22	.28
Self-esteem	13	2,286	.25	.32**	9	1,601	.11	.15**
Financial need	11	3,300	.18	.22**	3	322	-.10	-.13**
Social support	9	3,126	.19	.29**	6	973	.06	.07**
Age	11	5,164	-.04	-.05	7	2,652	-.07	-.08
Gender <sup>a</sup>	16	6,040	.07	.08**	7	2,820	-.03	-.03**
Education	11	5,249	.15	.17**	6	2,618	.03	.03**
Race	4	2,589	-.07	-.08	4	2,365	-.03	-.03
Job tenure	3	181	-.21	-.25	4	2,043	-.13	-.15
Job search-employment outcome relations								
Status	13	4,302	.16	.18**	8	1,516	.28	.30**
Offers	9	1,234	.27	.32**	2	251	.07	.08**
Duration	7	2,828	-.10	-.11**	2	415	-.25	-.40**

Note. *k* = number of correlations; *N* = number of individuals across *k* samples; *r* = mean uncorrected sample-weighted correlation; *r<sub>c</sub>* = mean corrected sample-weighted correlation.

<sup>a</sup> Gender coded: 0 = female, 1 = male.

\*\* Subgroup differences, *p* < .01.

Table 5  
Moderator Analyses by Sample Type

Variable	New entrants				Job losers				Job-to-job seekers			
	<i>k</i>	<i>N</i>	<i>r</i>	<i>r<sub>c</sub></i>	<i>k</i>	<i>N</i>	<i>r</i>	<i>r<sub>c</sub></i>	<i>k</i>	<i>N</i>	<i>r</i>	<i>r<sub>c</sub></i>
Antecedents–job search relations												
Extroversion	3	714	.45	.62**	4	1,019	.25	.33**				
Neuroticism	4	666	-.18	-.25**	10	1,937	-.01	-.01**				
Openness to Experience	2	331	.21	.30	2	768	.18	.25				
Agreeableness	2	331	.04	.05	2	768	.14	.20				
Conscientiousness	3	2,129	.36	.45**	8	3,304	.26	.33**				
Locus of control	4	313	.05	.05	9	1,970	.02	.04				
Self-efficacy	13	3,837	.25	.31	15	6,183	.20	.25				
Self-esteem	8	1,814	.23	.19**	14	2,073	.15	.30**				
Employment Commitment	8	1,902	.18	.22**	8	1,417	.29	.37**				
Social support	4	2,707	.13	.18**	10	1,312	.23	.31**				
Age	3	2,195	-.08	-.09	14	4,267	-.02	-.03				
Gender <sup>a</sup>	7	2,942	.04	.04**	14	4,457	.08	.09**	2	1,461	-.06	-.06**
Education	2	2,130	.20	.22**	14	4,383	.10	.11**				
Job tenure <sup>b</sup>	2	121	.15	.17**	3	602	-.14	-.17**	2	1,501	-.16	-.18**
Job search–employment outcome relations												
Status <sup>c</sup>	5	1,186	.21	.24**	14	4,059	.16	.20**	2	573	.34	.38**
Antecedent–employment status relations												
Neuroticism	2	326	-.16	-.18	7	2,355	-.07	-.08				
Self-efficacy	2	505	.17	.18	9	4,746	.07	.08				
Self-esteem	3	710	.19	.21	4	666	.08	.09				
Gender <sup>a</sup>	2	455	.27	.27**	7	3,396	-.03	-.03**				

Note. *k* = number of correlations; *N* = number of individuals across *k* samples; *r* = mean uncorrected sample-weighted correlation; *r<sub>c</sub>* = mean corrected sample-weighted correlation.

<sup>a</sup> Gender coded: 0 = female, 1 = male. <sup>b</sup>  $r_{c \text{ new entrants}} > r_{c \text{ job losers}}$ ;  $r_{c \text{ new entrants}} > r_{c \text{ job-to-job}}$ . <sup>c</sup>  $r_{c \text{ job-to-job}} > r_{c \text{ new entrants}}$ ;  $r_{c \text{ job-to-job}} > r_{c \text{ job losers}}$ .

\*\* Subgroup differences,  $p < .01$ .

intensity measures rather than effort measures ( $r_{c \text{ intensity}} = .32$  vs.  $r_{c \text{ effort}} = .08$ ).

Although the findings suggested that intensity measures yield stronger estimated true score relations for antecedent variables, it is also important to note that intensity and effort measures of job search also showed an *opposite* pattern of relationships to several of these antecedent variables, including neuroticism, financial need, and gender. These results (though very modest in magnitude) indicated that individuals higher in neuroticism and females were more likely to report greater search effort, but individuals lower in neuroticism and males were more likely to report greater job search intensity. In contrast, persons who reported greater financial need were likely to report more search behaviors but less search effort. For job search–employment outcome relations, a significantly stronger relationship was also obtained using effort measures (vs. intensity measures) for employment status ( $r_{c \text{ effort}} = .30$  vs.  $r_{c \text{ intensity}} = .18$ ) and unemployment duration ( $r_{c \text{ effort}} = -.40$  vs.  $r_{c \text{ intensity}} = -.11$ ). Taken together, this pattern of findings suggested that intensity and effort measures of job search may capture only partially overlapping aspects of search activity, and caution should be taken in interpreting aggregated results for some antecedent variables, such as neuroticism.

*Sample type.* Because of the small number of studies comprising employed job seekers (six studies), many of the moderator analyses of sample type were constrained to comparison of job losers versus new entrants (primarily college graduates). Furthermore, because studies using job losers and employed job seekers used employment status or search duration outcome measures

almost exclusively, and studies using new entrants used number of offers as the primary outcome measure, we could conduct only one moderator analysis on antecedent–outcome relations by all three sample types. Findings indicating significant moderator effects by sample type are shown in Table 5.

In the antecedent–job search domain, results of moderator analyses showed an interesting pattern of significant differences in the size of relationships obtained for job losers and new entrants (sufficient data for inclusion of employed job seekers in the moderator analyses were only available for gender and job–work tenure). For the FFM traits, extroversion, neuroticism, and conscientiousness were significantly more strongly related to job search behavior for new entrants than for job losers (extroversion,  $r_{c \text{ new entrants}} = .62$  vs.  $r_{c \text{ job losers}} = .33$ ; neuroticism,  $r_{c \text{ new entrants}} = -.25$  vs.  $r_{c \text{ job losers}} = -.01$ ; conscientiousness,  $r_{c \text{ new entrants}} = .45$ ,  $r_{c \text{ job losers}} = .33$ ; and education,  $r_{c \text{ new entrants}} = .22$  vs.  $r_{c \text{ job losers}} = .11$ ). No significant effect of sample type was found for agreeableness or openness to experience.

In contrast, significant differences in other antecedent–job search relations showed stronger relations for job losers than new entrants. Self-esteem ( $r_{c \text{ job losers}} = .30$  vs.  $r_{c \text{ new entrants}} = .19$ ), employment commitment ( $r_{c \text{ job losers}} = .37$  vs.  $r_{c \text{ new entrants}} = .22$ ), and social support ( $r_{c \text{ job losers}} = .31$  vs.  $r_{c \text{ new entrants}} = .18$ ) were more strongly related to job search behavior among job losers than new entrants. Moderator analysis of the tenure–job search relationship by all three sample types revealed a differential relationship for new entrants compared with job seekers in the workforce, such that job–work tenure was positively related to search

behavior among new entrants ( $r_{c \text{ new entrants}} = .17$ ) but negatively related to search behavior among job losers ( $r_{c \text{ job losers}} = -.17$ ) and employed job seekers ( $r_{c \text{ employed job seekers}} = -.18$ ).

For antecedent–employment relationships, only two moderator analyses were possible because of an insufficient number of samples for each type. Among new entrants, males were more likely to obtain employment than females, although gender was only weakly related to employment success among job losers ( $r_{c \text{ new entrants}} = .27$ ;  $r_{c \text{ job losers}} = -.03$ ). Perhaps more important, however, results obtained for analysis of employment status across all sample types showed that job search behavior was more strongly related to employment success among job-to-job seekers ( $r_{c \text{ job-to-job seekers}} = .38$ ) than among new entrants ( $r_{c \text{ new entrants}} = .24$ ) or job losers ( $r_{c \text{ job losers}} = .20$ ).

### Discussion

In this article, we conceptualized job search as a product of the self-regulatory, management process by which individuals identify, initiate, and pursue actions for the purpose of obtaining new employment or reemployment. Job search effort and job search intensity provide two indices of this self-managed motivational process. Consistent with extant views on the role of self-regulation in accomplishing complex performances (e.g., Bandura, 1986; F. H. Kanfer, 1996), the meta-analytic results provide empirical evidence associating job search effort and search intensity to employment success. Individuals who engaged in higher levels of job search behavior were more likely to obtain employment than persons who reported lower levels of job search behavior, although this relationship was stronger among laid-off individuals than among new entrants or individuals who were employed but looking for another job.

Another objective of this review was to illuminate the relative relationship of diverse antecedent variable clusters (e.g., personality, generalized expectancies, self-evaluations, social, motive, and biographical) to job search behavior and employment outcomes. Previous studies have reported on specific relationships but have rarely provided evidence on the relative relationship of different antecedent constructs to job search behavior or outcomes. The meta-analytic results indicate a distinct difference in the size of the relationship obtained for diverse antecedents, such that only extroversion and conscientiousness showed substantial relationships to job search, followed by more moderate-sized relationships for self-evaluation variables and motives.

In addition, psychological antecedents (e.g., conscientiousness, job search self-efficacy, employment commitment) were shown to be more strongly related to job search behavior than to employment status. This pattern of findings replicates and extends prior empirical work on personality–performance relations into a new area of work-related behavior, namely, job search. The significantly stronger relationships observed between psychological antecedent variables and job search behavior, compared with employment outcomes, is also consistent with the notion that traits and other person–situation variables may have their strongest effect on behavior patterns in weak (volitional) situations than in strong situations where motivation may play a lesser role in determining outcomes.

We also found significant relationships between several antecedent variables (e.g., conscientiousness) and employment out-

comes. These findings are consistent with the view that individual-difference variables may also affect employment success through their expression in the interview–hiring process, such as when employers hold implicit beliefs that favor applicants who appear to be high on certain personality dimensions. As such, these findings provide support for the notion of a second, nonmotivational pathway through which antecedent variables affect employment success on the basis of the perceived fit of a job seeker's nonability characteristics to employer preferences. Before discussing the details of these findings and their implications for future research, we first consider the empirical database from which these findings were obtained.

### *The Empirical Database*

Our review indicates several trends and gaps in the empirical research literature on job search behavior and employment. The most noteworthy finding pertains to the preponderance of studies investigating job search behavior among job losers and college graduates (63% and 27% of the studies used in this review, respectively). The substantial sampling of job losers makes sense in light of societal concerns about the mental health effects of prolonged unemployment following job loss and the costs of unemployment to the government and employers. However, the extensive use of college students in job search research appears to be an oversampling of one subcategory of new entrants into the workforce and suggests that more research is needed on job search behavior among noncollegiate new workforce entrants.

In a similar manner, few studies reported data from samples engaged in job-to-job search, and no studies reported data on samples specifically involving workforce reentrants or older job seekers (over the age of 55). More research using these samples is needed to evaluate the generalizability of job search–employment findings and to help elucidate the potential differences between job search behaviors and outcomes among employed and unemployed individuals at various age levels.

We also found that, despite prior theorizing about the importance of an individual's knowledge and skills in determining job search strategies and employment (e.g., Ting, 1991), few studies evaluated individual differences in these variables beyond education level. Although comprehensive assessment of knowledge and skills may be unrealistic in many contexts, the development and use of new measures, such as job history measures and skill checklists, may provide critical information related to the pattern of job search behavior demonstrated by different occupational groups.

We were further surprised to find that few studies examining job search or employment outcomes have assessed motives or attributes of employment goals beyond reservation wage (e.g., S. R. Jones, 1988). This finding is noteworthy given that Schwab et al. (1987) lamented the lack of research in this area over 10 years ago. Barber, Wesson, Roberson, and Taylor's work (1999) examining the role of desired size of employer is an excellent recent contribution in this regard. In our conceptualization of job search, the attributes associated with the broader goal of looking for employment are proposed to exert substantial influence on the direction, and possibly intensity, of job search behavior. Individuals who define their employment goal in terms of pay, for example, may engage in a different pattern of job search than individuals who

define their employment goal in terms of obtaining a particular type of employer, work, location, benefits, required hours, or a combination of these. Data on the types of goal attributes held by persons engaged in job search are particularly important for future job search–employment research.

Results obtained on the motive variables also suggest the usefulness of studying the salience of different motives underlying job search and indicate one direction in which labor economic and psychological perspectives may be integrated. In the studies we reviewed, financial need was typically assessed either by asking the individual to indicate the strength of his or her financial needs or by indirectly calculating financial need on the basis of household data. Meta-analytic findings for this variable indicate that job losers with higher reported levels of financial need also reported higher levels of job search and engaged in more job search behavior but were less likely to find employment than persons with lower levels of financial need. In an era of low unemployment rates, these findings suggest that other employment motives (such as wage reservation level or career development) may moderate the job search–employment relationship and help to explain when and why reversals may occur in the job search–reemployment relationship.

#### *Antecedent Influences on Job Search*

The relative size of estimated population correlations for the FFM personality dimensions generally conformed to predictions about the differential relevance of these traits to self-regulatory effectiveness during job search. The positive relationships between job search behavior and these dimensions is consistent with practical descriptions of effective job search that suggest job seekers must engage in assertive social behaviors, identify diverse and often unique arrays of job possibilities, and persist at the task.

Moderator analyses of antecedent–job search relations also revealed two interesting patterns. First, findings obtained for moderator analyses by sample type showed that FFM personality traits were more strongly related to job search behavior among new entrants compared with job losers, but that self-esteem and employment commitment were most strongly related to job search among job losers than new entrants. This pattern of findings provides initial evidence on the pathway by which job loss per se may exert debilitating effects on job search behavior and suggests that the experience of job loss may importantly influence the initiation or efficiency of self-regulatory job search through changes in attitudes toward work and evaluation of one's worth. However, because both job losers and employed job seekers in the samples used in this review tended to be older than new entrants (mean age<sub>job losers</sub> = 40; mean age<sub>employed job seekers</sub> = 35; mean age<sub>new entrants</sub> = 24), additional research is needed. In particular, such research will need to include both younger, noncollegiate workers who have experienced job loss as well as employed job seekers in order to examine the extent to which person influences on job search may reflect the effect of job loss in particular or developmental aspects of these constructs in general.

The moderator analysis findings for neuroticism also warrant further consideration. Neuroticism was positively related to job search effort but negatively related to job search intensity. That is, individuals higher in neuroticism tended to report greater subjective job search effort but fewer job search behaviors. Because

individuals higher in neuroticism are more likely to experience difficulty in managing anxiety and other disruptive emotions during job search, the positive relationship obtained for neuroticism and job search effort may reflect subjective judgments about affect management activities rather than job search behaviors as assessed by search intensity measures. Consistent with distress theories of job search, these results suggest one potential origin for the oft-reported negative spiral in which subjective feelings of job search effort do not correspond with search intensity. For these individuals, job search effort may entail symptom management more than proactive job search behaviors, such as making an application.

#### *Employment Outcome Measurement Issues*

In this review, we examined the relationships between antecedent variables and three commonly used employment outcome measures. The majority of studies examined in this review assessed employment status of individuals who were seeking reemployment following job loss. Most of the studies that assessed job search duration used samples of unemployed individuals. In contrast, studies that examined number of job offers typically involved college graduates and only infrequently assessed employment status at the end of the study. Meta-analytic results indicate a similar pattern with respect to employment status and search duration, such that antecedent and job search variables showed small, negative associations with search duration and small, positive relationships with finding employment (e.g., higher levels of search intensity were associated with shorter job searches and successful employment). In contrast, antecedent and job search variable relationships with number of job offers often showed divergent results with status and duration measures. Self-efficacy, for example, showed a small-sized correlation with employment status and search duration but a medium-sized correlation with number of offers.

Although many of these meta-analytic findings were based on a small number of samples that appear to differ in terms of the context for job search, the pattern of results obtained indicates that researchers will need to pay greater attention to how employment outcomes are conceptualized and assessed. For example, the divergent pattern of findings with respect to number of job offers and employment status suggests that number of job offers may be better conceptualized as a job search outcome rather than an employment outcome.

Although employment status is clearly the most critical outcome for individuals engaged in job search, a number of researchers (e.g., Leana & Feldman, 1991, 1995) have noted that quality of employment, type of employment (e.g., employee vs. self-owned business), and satisfaction with obtained employment are also important considerations. Unfortunately, we did not find enough studies investigating these variables to include in our meta-analysis. More research to determine how antecedents and patterns of job search behavior may influence the suitability and quality of employment is needed.

#### *Contributions and Limitations of Review*

This review represents the first comprehensive attempt to synthesize and discuss the job search literature since Schwab et al. (1987), and it is also the first meta-analysis on this topic. Overall,

although our findings indicate significant relationships between antecedents, job search behavior, and employment outcomes, it is clear that there is still substantial progress to be made on this research topic. Despite the increase in research on job search over the past 15 years, sufficient studies were not available to compare the effects of antecedents on search behavior and employment outcomes as a function of relevant employment rate, previous job search (unemployment) history, job skills, or job search constraints (e.g., transportation difficulties).

In addition to urging readers to take note that our meta-analysis does not account for all possible moderators of the relationships reported, we also want to suggest that caution be taken in drawing strong conclusions from cells where only a few studies have been completed. Furthermore, our analyses also did not include consideration of other statistical artifacts, such as range restriction and measurement invalidity, because the absence of unrestricted variance information for most variables made corrections for range restriction infeasible. It might be argued, however, that inclusion of multiple sample types in the main meta-analyses (e.g., job losers, new entrants) increases the generalizability of our findings to the broader population of job seekers. Finally, the validity of our results may also be limited by issues associated with measurement invalidity. Because meta-analysis inherently acts as a leveler, our conceptual framework, which combines studies using disparately measured constructs, might account for some near-zero estimated true score relations.

### *Future Research and Conclusion*

The meta-analytic finding that job seekers who engage in more job search behavior are more likely to obtain employment is important but hardly surprising. Labor economists, psychologists, and practitioners who help individuals find employment all have long assumed that the more actively an individual searches for work, the more likely he or she is to get a job. The more difficult issue facing the field pertains to elucidating the person-situation factors, processes, and pathways by which individual differences in job search behavior affect employment outcomes. Although meta-analysis does not provide information on causal relations, the pattern of results obtained does suggest that job search is more strongly related to psychological variables encompassed by the broader construct of positive affectivity (e.g., extroversion, conscientiousness, self-esteem, job search self-efficacy) than to variables encompassed by the broad construct of negative affectivity (e.g., neuroticism, agreeableness). These findings are consistent with recent work by Kinicki and Latack (e.g., Latack, 1986; Kinicki & Latack, 1990) suggesting a distinction between problem-focused and emotion-focused coping behaviors following job loss. In terms of situational variables, motives (perceived financial need, employment commitment) were shown to be more strongly related to job search behavior than to employment outcomes, but social support and biographical factors (e.g., age, education, race) were generally similarly related to both job search behavior and employment outcomes.

The results of our review also revealed limitations in current research that can be used to suggest future research directions. The use of intensity and effort measures of job search, on which this review was based, provides general, though different, indices of search motivation. However, such measures do not provide suffi-

cient information for analysis of the directional or dynamic nature of the self-regulatory process or for investigation of how antecedent variables relate to different employment goals or to types or patterns of job search behavior. Research by Kinicki, Blau, and their colleagues (e.g., Blau, 1994; Kinicki & Latack, 1990; Latack, 1986; Linnehan & Blau, 1998) differentiating problem-focused search behaviors from emotion-focused search behaviors represents an important first step in this direction. However, additional research is needed to understand the determinants of employment goals, the use of particular search strategies and coping behaviors, and the contribution of individual differences to sustained self-regulated job search in the face of early failure, apprehension, and discouragement. For example, it may well be that some personality dimensions (e.g., extroversion) exert their influence on the use of particular search strategies, whereas other personality dimensions (e.g., openness to experience) influence the character and flexibility of the employment goal. Additional attention to the measurement of employment goals, the content and direction of search activities, and longitudinal research to examine the linkages between specific individual-difference variables and specific components of the self-regulatory process, such as employment goal setting, self-monitoring, and self-reactions, is needed.

The findings also suggest that how an individual presents himself or herself during the employee selection process may be as important to employment success as job search. That is, some of the trait variables related to the effectiveness of self-regulated search behavior, such as conscientiousness and a strong internal locus of control, may well be the same characteristics that employers look for when evaluating applicants. As such, we expect that individuals who simply increase their job search activity level but fail to take into account how they "come across" in interactions with prospective employers would be less likely to obtain employment and more likely to experience discouragement as their efforts yield repeated failure to advance past the initial employment interview. Additional research is required to develop new job search measures that assess both the scope and effectiveness of the individual's behavior in the selection process.

Finally, we want to note that we found theory and research on job search and employment outcomes in both the psychology and labor economics literatures. In contrast to psychological approaches, economic research has focused on labor market demand (including national, regional, occupational, and industry unemployment rates), job training-employability skills, level of unemployment insurance, reservation wage, advance notice of layoff, and biographical or demographic variables in examinations of job search and unemployment duration. Despite calls for greater integration of the psychological and economic literatures on job search and employment (DeFrank & Ivancevich, 1986; McFadyen & Thomas, 1997; Schwab et al., 1987), our perusal of the research indicates this integration is happening only in rare instances. For example, in unemployment research psychologists recognize and measure perceived financial need but rarely ask job seekers about their reservation wage or if they are receiving unemployment insurance or severance benefits. In contrast, because economists often rely on already collected data (e.g., Dynarksi & Sheffrin, 1990, used data from the 1980 Panel Study of Income Dynamics), these studies are limited to inclusion of only a narrow realm of economic and biographical variables.

Overall, the results of this review and meta-analyses reveal both the great promise and formidable methodological and measurement difficulties associated with research on job search behavior and employment. From a psychological perspective, research into the determinants and employment consequences of job search provides a unique opportunity for study of naturally occurring adult self-regulatory processes related to the workplace. From an economic perspective, individual differences in job search provide the context for integration of psychological factors into economic models of employment. Continued research to address methodological and measurement issues is necessary to enable continued progress within and across domains.

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