Job Satisfaction as a Reflection of Disposition: A Multiple Source Causal Analysis

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Dispositional sources of job satisfaction have been the subject of recent research in the organizational sciences. Problems in much of this research, which limit the conclusions one can draw from the results, are discussed. This study makes a distinction between affective disposition, defined as the tendency to respond generally to the environment in an affect-based manner, and subjective well-being, the level of overall happiness and satisfaction an individual has with his or her life. Affective disposition was hypothesized to lead to subjective well-being, and subjective well-being and job satisfaction were hypothesized to be mutually causal. A causal model was tested employing two different sources of data: self-reports and "significant other" evaluations. This biangulation of sources of data and estimation of nonrecursive relationships removes some problems often assumed to plague results based on single-source data. Results indicated support for the overall hypothesized causal model and supported a dispositional influence on job attitudes. The influences are more complex than past research has suggested. © 1993 Academic Press, Inc.

Empirical results of investigations linking personality variables to organizationally relevant attitudes and behavior have been, for the most part, disappointing (Bernardin, 1977; Guion & Gottier, 1965; Salancik & Pfeffer, 1978; Schmitt, Gooding, Noe, & Kirsch, 1984; Weiss & Adler, 1984; White, 1978). This accumulation of modest results in the organiza-

tional literature has paralleled research in the personality literature as a whole. Criticisms of the trait approach began with Mischel (1968) and led to a decline in theories of the structure and effect of personality (Epstein, 1977; Rorer & Widiger, 1983). What has ensued have been many empirical studies linking traits to outcomes, with often only tangential relations to a well-developed theoretical framework. The disarray in personality research (Rorer & Widiger, 1983) is reflected in organizational personality research, in which specific personality attributes often seem to be included as an afterthought (Weiss & Adler, 1984) with little regard for theory.

Recently, a dispositional emphasis, suggesting that general affective states influence job satisfaction, has rekindled interest in the effects of personality in organizations and has offered a unifying theoretical framework for this specific area. Most existing theories of job affect generally view job satisfaction as a phenomenon with exogenous sources (Staw & Ross, 1985; Staw, Bell, & Clausen, 1986) or a person/work role interaction (Locke, 1976; Smith, Kendall, & Hulin, 1969).

Numerous studies have correlated job satisfaction with scores on personality scales (Locke, 1976). However, these studies have added little to fundamental theoretical development in job satisfaction (Weiss & Adler, 1984). The dispositional approach adds a potentially important element to theoretical developments regarding job attitudes by including relevant personality constructs as the focus of the research. However, the approach has also found its critics (Davis-Blake & Pfeffer, 1989; Gerhart, 1987, 1990). These critics have expressed serious doubts about the empirical and practical significance of dispositional effects based on what they see as shortcomings in past dispositional research.

The purpose of this study is to address issues related to the definition and measurement of disposition and to assess causal relationships between affective disposition and other important constructs based on specific theoretical hypotheses. Affective disposition and subjective well-being are argued to be separate constructs and are linked in a causal framework that includes job satisfaction. These constructs are assessed by multiple measures to generate more reliable estimates. Two sources of data, self and significant others, are used to reduce problems caused by common source and method variance. This test of the usefulness of affective disposition as an antecedent of subjective well-being, and subjective well-being and job affect as reciprocally related, should add to our understanding of the role of affective disposition in the formulation of job satisfaction, as well as clarify what is meant by the terms and other, closely related, constructs.

Past Dispositional Research

Previous studies of disposition and job affect (Arvey, Bouchard, Segal,

& Abraham, 1989; Gerhart, 1987; Levin & Stokes, 1989; Pulakos & Schmitt, 1983; Staw & Ross, 1985; Staw et al., 1986; Weitz, 1952) have found sources of variation in job satisfaction that have been interpreted as dispositional effects. Individuals appear predisposed to respond to the job and other environmental characteristics in an affect-based manner; these dispositions to respond may be reflected in their job satisfaction. The evidence also indicates that these predispositions may be relatively stable over time (Staw et al., 1986). The potential contributions of these studies to job attitude models and theories should not be minimized.

Davis-Blake and Pfeffer (1989) and Gerhart (1987) have criticized dispositional research on several grounds. Perhaps their most serious charge is the lack of controls in past research that are necessary to rule out alternative explanations of the results. For example, Staw and Ross (1985), in investigating past job satisfaction versus situational variables for predicting present job satisfaction, made the assumption that pay, status, occupation, and complexity represent the entirety of situational influences on job satisfaction. Weitz (1952), in correlating affective reactions to a list of items common to everyday life with job satisfaction, confounded socioeconomic status with affective disposition by including items relating to socioeconomic status in his survey (e.g., housing, area of city, etc.). Socioeconomic status is related to job quality and, hence, job affect. Pulakos and Schmitt (1983) failed to control for job quality in investigating the relationship between expectation of being satisfied and actual job satisfaction. This leaves open the possibility that highly qualified individuals expected, and subsequently received, better jobs, thus leading to higher satisfaction—regardless of their dispositional tendencies (Gerhart, 1987). Staw et al. (1986), in their study of the degree to which affective disposition in early life predicted job satisfaction later in life, inappropriately factor analyzed Q-sort data (Judge, 1990). As Gerhart (1987) has noted, limited control for situational variables, the small sample size, and moderate correlations also may limit the generalizability of Staw et al.'s (1986) results. Levin and Stokes (1989) failed to separate the multiple causal paths between perceptions of task characteristics, task satisfaction, and negative affectivity, making any causal interpretation questionable. Arvey et al. (1989), using monozygotic twins reared apart, found what they identified as a genetic source of job satisfaction. Cropanzano and James (1990), however, criticized numerous aspects of the methodology employed by Arvey et al. (1989).

The methodological problems in past dispositional research, reviewed above, constrain conclusions one can draw from these studies (Judge, 1990). Most of the flaws arose from the use of preexisting data sets. Researchers using these data sets are required to use variables often originally designed for other uses. Only Weitz (1952) and Levin and Stokes (1989) collected data specifically designed to investigate the effect

of disposition on job satisfaction. Any weaknesses in operationalizing dispositional constructs threaten the validity of conclusions that can be drawn about dispositional influences.

Most dispositional research also has lacked a coherent statement of theory about *what* these dispositions are. Staw and Ross (1985) seemed comfortable with this ambiguity when they used the terms dispositions, traits, and personality synonymously. None of the dispositional studies have offered a formal definition of disposition, delineated a theory, or provided evidence about the causal nature of disposition. We do not know if affective disposition directly influences job satisfaction or if there are mediating variables. Research on dispositional effects on job satisfaction has often been limited to indirect evidence of a trait by showing affective consistency across jobs and time (Gerhart, 1987; Staw & Ross, 1985). Affective consistency across time may be due to a number of factors other than dispositions.

Finally, disposition is not the only influence on job attitudes. In order to estimate the effect of disposition when other influences on job satisfaction are controlled, Davis-Blake and Pfeffer (1989) suggest that "Dispositional research should be based on a model of job attitudes and behavior that includes both dispositional and nondispositional sources" (p. 26). This strategy would tell us if the dispositional approach should be integrated into other theories of job satisfaction or if it is a unique, competing model.

The Concepts of Disposition and Subjective Well-Being

The operational definition of affective disposition used in this research is the tendency to respond to classes of environmental stimuli in a predetermined, affect-based manner. This definition is less restrictive than a personological definition that views disposition strictly as a trait. It also makes a distinction between the disposition toward affective responses and affect actually experienced. It further suggests that affective disposition can be directly measured in order to remove the confound between the measurement of affective disposition and the interpretation of causal relations between disposition and job satisfaction. It is important to note that dispositional tendency as defined here is affective. There may be personological dispositions (e.g., honest, choleric, loquacious) that are unrelated to job affect. The disposition to be *satisfied,* in life or on the job, is an *affective* disposition.

Dispositional researchers have often used general affect or negative affectivity (Watson & Clark, 1984) as the measure of disposition (Brief, Burke, George, Robinson, & Webster, 1988; George, 1989; Levin & Stokes, 1989). This emphasis on realized or experienced affect rather than a disposition toward affect may cause interpretational problems. The ten-

dency to respond to the environment in an affect-based manner (affective disposition) is not the same as how happy an individual is or is not (as measured by positive/negative affect or subjective well-being). Dispositional tendencies may be thwarted or enhanced by numerous factors in the environment.

There is some controversy regarding negative affectivity in the personality literature. The independence between positive and negative affect has been found to depend on several study and measurement issues (Chamberlain, 1988; Diener, 1990). Diener (1990) has concluded that "There is not replicable evidence across samples and methods that positive and negative affect are completely unrelated" (p. 14). A related construct from the personality literature, subjective well-being, is more general in that it allows the experience of positive and negative emotions and satisfaction levels (Diener, 1984). Subjective well-being was used in the present research to reflect general life satisfaction and affect levels that may be related to both disposition and job satisfaction. Although there are important conceptual differences between positive/negative affectivity and subjective well-being (Diener, 1984), past empirical research has shown them to be closely related (Diener, 1990).

Subjective well-being is defined as an ongoing state of psychological wellness (Diener, 1984). Most research indicates that subjective well-being is a bidimensional construct consisting of life satisfaction and hedonic level (Andrews & Withey, 1976; Chamberlain, 1988; Diener, 1984). Although the differences between the two are subtle, much research suggests that life satisfaction is a result of cognitive acts—weighing the components of one's life (e.g., wealth, health, family, and leisure activities) to arrive at an overall judgment of satisfaction. Hedonic level, on the other hand, focuses more on an issue of overall happiness and a feeling of emotional well-being (Andrews & Withey, 1976; Diener, 1984; Diener, Emmons, Larsen, & Griffin, 1985; Pavot, Diener, Colvin, & Sandvik, 1991). Positive and negative affectivity are closely related to hedonic level, although unlike positive and negative affectivity, hedonic level does not rest on the assumption that positive and negative affect are unrelated (Diener, 1984). Diener (1990) cites considerable empirical evidence regarding the distinction between hedonic level and life satisfaction. Second-order factor analyses, however, have found that hedonic level and life satisfaction appear to represent a general construct common to both group factors (Liang, 1985; McNeil, Stones, & Kozma, 1986). It is not difficult to understand how one who is happy also feels satisfied with the conditions of their life. Further, no theory has hypothesized differences between the two in predicting outcomes. Therefore, it may be useful to collapse measures of life satisfaction and hedonic level to form an overall measure of subjective well-being.

It is important to note, however, that subjective well-being and affective disposition are distinct constructs. How one typically affectively evaluates characteristics of one's environment (affective disposition) will not always determine the feelings one experiences or the judgment one makes about one's life (subjective well-being). The disposition toward an affect level is different from experienced affect. A person with a positive disposition may be relatively unhappy in a difficult environment but this same difficult environment may generate terminal depression in one with a negative disposition. Conversely, even a person with a nasty disposition can find some degree of happiness, albeit grudgingly, in a benign environment. It is also important to distinguish the predisposition to respond to the environment in a specific affective direction (affective disposition) from affect intensity, or the *degree* of affect experienced by individuals (Larsen & Diener, 1987). Affective disposition refers to the direction of affect the individual is prone to experience while affect intensity refers to the intensity under which it is felt.

CAUSAL MODEL

A causal model was hypothesized with interest in three constructs, affective disposition, subjective well-being, and job satisfaction, and three structural paths, affective disposition to subjective-well being, subjective well-being to job satisfaction, and job satisfaction to subjective well-being. These relations are embedded in a network of other constructs, many of which have been extensively studied, to avoid omitted variable problems and biased parameter estimates (James, Mulaik, & Brett, 1982). The hypothesized structural model is displayed in Fig. 1. Rectangles in the figure represent manifest or directly observed variables. Circles represent latent variables whose meaning is inferred from the covariations of its indicators. The core hypothesized links are discussed below.

Affective Disposition to Subjective Well-Being

Arvey *et al.* (1989) have provided indirect evidence of a genetic influence on affective disposition. Staw *et al.* (1986) have provided evidence of early childhood influences on affective dispositions. These studies are not incompatible; they suggest that affective disposition should be treated as an exogenous variable in this study. It is equally important to investigate the influences of affective disposition on other variables. We hypothesize that the immediate outcome of affective disposition is not job satisfaction, but rather individuals' feelings of subjective well-being (see Fig. 1). Those predisposed to view their environment in a positive manner are more likely to have a sense of contentment and happiness in their lives. Also, those predisposed to be critical of life's events and stimuli are expected to
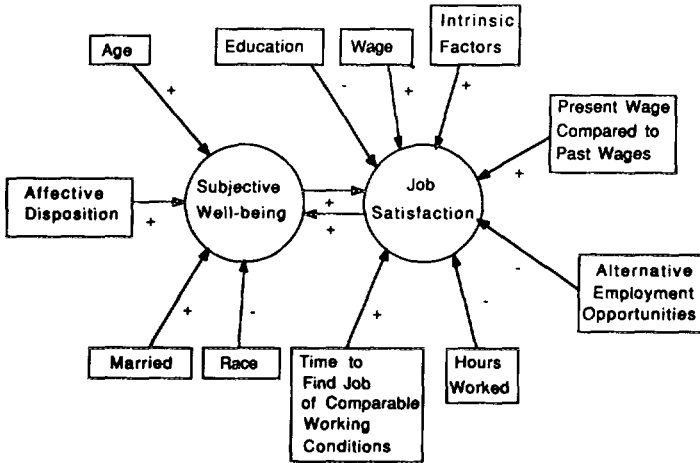
FIG. 1. Hypothesized structural model (self-report).

be unhappy and troubled. Affective disposition is hypothesized to influence the general affective state of the individual, that is, individual's subjective well-being.

Subjective Well-Being to Job Satisfaction

A hypothesized causal link from subjective well-being to job satisfaction is included in Fig. 1. The dispositional research reviewed earlier provides initial evidence supporting the influence of general affective states on job satisfaction (Arvey *et al.,* 1989; Gerhart, 1987; Levin & Stokes, 1989; Pulakos & Schmitt, 1983; Staw & Ross, 1985; Staw *et al.,* 1986; Weitz, 1952). Further, there is a positive relationship between life satisfaction, one of the hypothesized components of subjective well-being, and job satisfaction (see Tait, Padgett, & Baldwin, 1989).

Job Satisfaction to Subjective Well-Being

As indicated above, a significant correlation between job and life satisfaction has been consistently found. In a recent meta-analytic review, Tait *et al.* (1989) found the average correlation between job and life satisfaction, corrected for measurement error, to be .44. Some researchers have interpreted this as evidence for a dispositional effect on job affect (see Staw & Ross, 1985). It is equally possible, however, that the causal direction is from job satisfaction to life satisfaction. Estimating a nonrecursive relationship between subjective well-being and job satisfaction may allow us to make inferences regarding the causality between the two constructs.

Other Causal Links

Three of the more important demographic influences on subjective well-being identified in a recent review were age, race, and marital status (Diener, 1984). The majority of recent evidence suggests that subjective well-being (particularly the component due to life satisfaction) tends to increase with age (Diener, 1984), although the effects may be modest. Accordingly, it is expected that age will be positively related to subjective well-being. Perhaps because of urbanicity and lower socioeconomic status, minorities have generally been found to have lower subjective well-being than whites (Andrews & Withey, 1976; Diener, 1984). This leads to the expectation that minorities will report lower levels of subjective well-being than whites. Finally, Diener (1984) suggested that ". . . virtually all relationships (between marital status and subjective well-being) are positive" (p. 556). Accordingly, it is expected that married individuals will have higher levels of subjective well-being than unmarried. Gender has been found to have little effect on subjective well-being (Diener, 1984), and therefore no effect is hypothesized. These hypothesized links are represented in Fig. 1.

It is unclear what the inclusion of other relevant causes of job satisfaction will have on dispositional effects. It may be, as Davis-Blake and Pfeffer (1989) have argued, that in the presence of situational influences, any dispositional effect would be overwhelmed by the situation. For this reason, with the stipulation that variable inclusion could be based on theoretical models (James, Mulaik, and Brett, 1982), Hulin, Roznowski, and Hachiya's (1985) model of job satisfaction and employee responses was used to select other influences on job satisfaction.

Hulin's *et al.*'s (1985) heuristic model integrates several theories of job attitudes. The model proposes that job satisfaction is a function of the balance between work-role inputs, what the individual puts into the work role (e.g., training, experience, time, effort) compared to role outcomes, and what is received (e.g., pay, status, working conditions, intrinsic factors). All other factors being equal, as outcomes received relative to inputs invested increases, work-role satisfaction is hypothesized to increase.

In the present study, education level and hours worked were selected as representations of work-role inputs. Therefore, as shown in Fig. 1, controlling for work-role outcomes, the more education the respondent has achieved, and the more hours worked, the lower job satisfaction is predicted to be. Wage rate and intrinsic factors were chosen as manifestations of work-role outcomes and were expected to influence job satisfaction positively.

Hulin *et al.* (1985) further proposed that individual's direct and oppor-

tunity costs exert an effect on job satisfaction. In periods of labor over-supply (i.e., high unemployment), individuals will perceive their inputs as less valuable because there are others in the labor market willing to con-tribute their inputs, and the opportunity cost of their work role declines (i.e., current work role membership is less costly relative to other oppor-tunities). Therefore, as unemployment rises, the subjective utility of in-puts falls, reducing the perceived value of inputs relative to outcomes, thus increasing job satisfaction. The converse is also hypothesized, in which low unemployment (and many alternatives) reduces job satisfac-tion. In Fig. 1, perceived time to find a job of comparable working con-ditions is expected to be positively related to job satisfaction; those who believe it would take a long time to find a comparable job are more likely to be happy with what they have. For the same reason, number of per-ceived alternatives was expected to be negatively related to job satisfac-tion.

Finally, Smith *et al.* (1969) have argued that an individual's frame of reference, which they define as past experience with relevant outcomes, influences how the individual perceives current outcomes received. The fewer, or less valued, the outcomes received in the past, the greater the current job satisfaction. Figure 1 shows that, as a frame of reference variable, present wage compared to past is expected to relate positively to job satisfaction.

In sum, Hulin *et al.*'s (1985) model predicts that an individual's inputs relative to outcomes, as well as the individual's cost and frames of ref-erence, influence job satisfaction. The model integrates two important statements of job satisfaction formation (March & Simon, 1958; Smith *et al.*, 1969).

METHOD

Setting and Subjects

The setting for this research was a large Midwestern clinic and health maintenance organization. Subjects were sampled from 23 departments within the main clinic (e.g., pediatrics, oncology, family practice), as well as 9 branch clinics dispersed throughout the state. Sixty-five percent of the respondents came from the main clinic.

Subjects were registered nurses without a Bachelor of Science in Nurs-ing (45%), registered nurses with a Bachelor of Science in Nursing (14%), licensed practical nurses (14%), medical office assistants (16%), and lab-oratory technicians or clinical specialists (11%). Education of the respon-dents ranged from a high school diploma (11%) to a Master's degree (11%). The average hourly wage rate was $9.60, with a range of $4.15 to $17.43. Seventy percent of the respondents were married; 58% had one or

more children. Age ranged from 21 to 70 years, with an average age of 37. Average hours worked per week was 37. Professional experience ranged from newly employed to 50 years. The narrow range of race (98% white) and sex (99% female) may limit the generalizability of the results to more demographically diverse samples.

Measures

A measurement model hypothesized to account for the latent constructs is presented in Fig. 2. Several aspects of the model deserve attention. Multiple measurements of each construct are used to generate more reliable estimates. In addition to self-report evaluations, individuals had a spouse or family member complete an evaluation of their affective disposition and subjective well-being (see Fig. 4). These, in conjunction with self-reports, should yield a more complete estimate of respondent disposition and subjective well-being.

Subjective well-being was measured with the following instruments: (1) a modified version of the Affects Balance Scale (see Diener, 1984), a list of 22 adjectives describing hedonic states (e.g., nervous, sad, elated, delighted); (2) the "percentage time happy" item (Fordyce, 1977), which Diener (1984) concluded to have high predictive validity for a single-item measure of hedonic level; (3) a modified version of Underwood and Froming's (1980) measure of hedonic level (items reported by Underwood and Froming (1980) containing poor factor loadings on a hedonic level construct were excluded); (4) the Satisfaction with Life Scale (Diener *et al.*, 1985), a five-item measure of life satisfaction; (5) the G. M. Faces Scale (Kunin, 1955), which Andrews and Withey (1976) found to be a valid
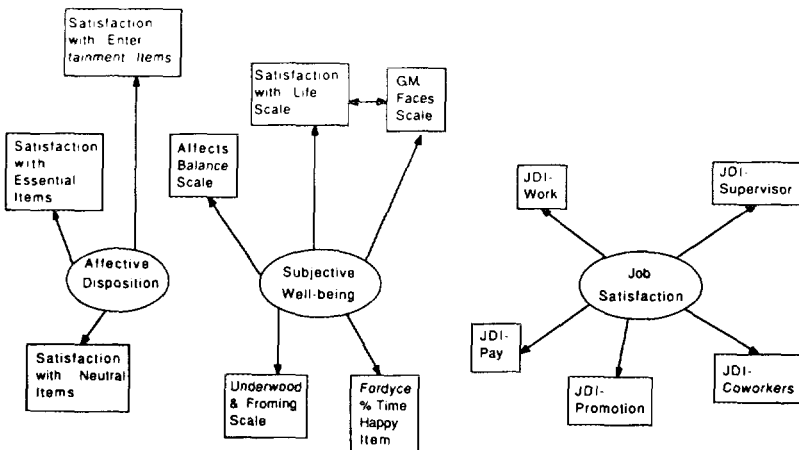

FIG. 2. Hypothesized measurement model (self-report).

measure of life satisfaction. Using all five measures of both facets of subjective well-being should yield a well-rounded measure of the construct.

Affective disposition was measured by what is termed the Neutral Objects Satisfaction Questionnaire, based on Weitz's (1952) survey (Appendix C). The survey measures affective disposition by assessing how satisfied the respondent is with a list of objects common to everyday life (e.g., one's telephone number, one's first name, $8\frac{1}{2}'' \times 11''$ paper). Individuals highly satisfied with the objects as a whole may have a tendency to see most things (including themselves and their lives) in a favorable light. The obverse is obviously true as well. Weitz's (1952) scale was modified in several ways described by Judge (1990). Due to differences in the content of questions in the Neutral Objects Satisfaction Questionnaire, items were grouped into three subscales or "parcels" on content grounds: (1) satisfaction with neutral objects, essential items (today's cars, food you buy); (2) satisfaction with neutral objects, entertainment items (movies you see, local newspapers); (3) satisfaction with truly neutral objects common to everyday life (your telephone number, $8\frac{1}{2}'' \times 11''$ paper). These subscales were hypothesized to load on an underlying construct representing affective disposition, as shown in Fig. 2. Weitz (1952) is the only researcher known to have used the Neutral Objects Satisfaction Questionnaire. Therefore, little is known about the validity of the instrument. If the results of the present study show a distinction between measures of affective disposition and subjective well-being, as well as predictive validity of the construct, supporting evidence will be provided for the validity and present measurement of affective disposition.

Job satisfaction was measured by the Job Descriptive Index (JDI; Smith et al., 1969), as modified by Roznowski (1989). Overall job satisfaction is hypothesized in the measurement model in Fig. 2 to be represented by five facets: pay, promotion, supervision, co-workers, and the work itself. The intercorrelations of those facets reveal a communality among the dimensions, suggesting a second-order general factor (Parsons & Hulin, 1982).

Work-role inputs (education, hours worked), outcomes (pay and intrinsic factors), utility of costs (perceived market alternatives, time to find a comparable job), and frames of reference (present wage compared to past wages) from the Hulin et al. (1985) model were assessed with specific questions in the focal employee survey. The information on intrinsic job characteristics was obtained by a five-item version of the Job Diagnostic Survey (Hackman & Oldham, 1980). Although the possibility exists that assessments of intrinsic job characteristics are influenced by workers' level of job satisfaction (Hulin & Roznowski, 1985; Roberts & Glick, 1981), this may be the best information on intrinsic factors available.

Procedure

Surveys were administered to employees on a voluntary basis during their work hours. Scheduling was coordinated by department supervisors, but was completely voluntary. Approximately 320 employees worked in the departments covered by the study. Two hundred and fifty-five signed up and completed usable surveys, representing a response rate of approximately 80% (n = 255). Follow-up conversations with department supervisors suggested that those not participating were either on leave or unavailable for other reasons beyond their control. Confidentiality of individuals' responses was assured.

A "significant other" (e.g., spouse or family member) was asked to complete an evaluation of focal employee disposition and well-being. The significant-other survey mirrored the self-report survey of affective disposition and subjective well-being; all disposition and subjective well-being scales in the focal employee survey were included in the significant other survey. Upon return of a significant-other survey, subjects became eligible to win 1 of 30 prizes of $25 each. An inducement was considered necessary because the significant other completed the survey on his or her own time. Significant others were chosen because, other than the focal employee him- or herself, it is assumed they know the focal employee better than anyone else. These dual sources of information about disposition and subjective well-being should minimize social desirability, halo, and response set tendencies (Pavot *et al.*, 1991) and increase the relevant heterogeneity of the measures (Roznowski & Hanisch, 1990). The subjective well-being of significant others has not been shown to significantly affect their evaluations of respondents (Pavot *et al.*, 1991). One hundred and sixty-five usable significant-other surveys were returned, representing a response rate of approximately 66%. Therefore, both self-report and significant-other data were available on 165 employees. No significant differences in respondent characteristics (e.g., age, race, wages) were found between those that had a significant-other survey returned and those that had not.

Covariance Structure Model

Covariance structure models, estimated in the present study with LISREL VI (Joreskog & Sorbom, 1986), allow the joint specification and estimation of the measurement model and structural model hypothesized to account for the observed data (Long, 1983). It is essential, with both measurement and structural models, to examine first the overall fit of the models. If a model does not fit the data acceptably, the overall hypothesis that the model is an accurate representation of the data is rejected.

There are two overall models tested in this study. The first model, represented in Figs. 1 and 2, is based solely on self-report data. The

second model (see measurement model in Fig. 4) is based on full information (self-report and significant-other evaluations). The advantage of the self-report-only model is the sample size available for these data ($n = 253$). This is an important consideration, as the number of estimated parameters relative to sample size is an important determinant of convergence, standard errors, and model fit in covariance structure models (Hayduk, 1987; Idaszak, Bottom, & Drasgow, 1988).

In contrast, the sample size for the full data model is 165, 30% less than the self-report-only model. However, the advantages of multiple sources of data offset the smaller sample size. The full data model allows inferences about causal relations without complete reliance on self-report data. Comparisons of the models permit inferences about the degree to which relations are based on "true" covariance or self-report method variance. If there is substantial convergence between the models, the findings in the structurally more complex self-report model can be assumed to represent true content relations and not method-determined relations. Both models possess advantages; each was estimated independently.

The measurement and structural components of each model were estimated separately. This strategy reduces the number of parameters to be estimated simultaneously, an important consideration in estimating complex models such as those estimated in the present study (Anderson & Gerbing, 1988; Schmitt & Bedeian, 1982). Burt (1976) has also argued that simultaneous estimation results in interpretational confounding, which he defines as "the assignment of empirical meaning to an unobserved variable which is other than the meaning assigned to it by an individual a priori to estimating unknown parameters" (p. 4). Anderson and Gerbing (1988) noted that interpretational confounding can be minimized by the two-step process of first estimating the measurement model, then estimating the structural model; no constraints are placed on structural concepts when estimating the measurement model.

The most widely used measure of fit is the χ^2 statistic. Perhaps the most popular use of the χ^2 statistic is to examine the ratio of χ^2 relative to the degrees of freedom since levels of χ^2 depend on the sample size (Hoetler, 1983; La Du & Tanaka, 1989; Marsh, Balla, & McDonald, 1988). Marsh and Hocevar (1985), Carmines and McIver (1981), and Hertig have (1985) suggested that a χ^2/df of 2 or less suggests a good fit. This standard has subsequently been employed by recent authors (Ashforth, 1989; Brooke, Russell, & Price, 1988; Thacker, Fields, & Tetrick, 1989). Other popular fit statistics include the goodness-of-fit index, adjusted goodness-of-fit index, root-mean-square-residual, and coefficient of determination (R^2). These will be reported in this study. Values for the goodness-of-fit and root-mean-square-residual statistics represent rules of thumb for judging

the adequacy of the fit of a theoretical model to empirical data. Values judged acceptable are social conventions unbuttressed by statistical distributions; the distributions of the statistics are unknown under the assumptions of the null hypothesis. Values of at least .70 to .80 for the adjusted goodness-of-fit index and at most .10 for the root-mean-square-residual, however, represent the limits normally used to claim acceptable levels of fit with complex models (Mumford, Weeks, Harding, & Fleishman, 1988; Thacker *et al.*, 1989; Rock, Bennett, & Jirele, 1988; Vance, MacCallum, Coovert, & Hedge, 1988).

RESULTS

Correlations served as input for the LISREL model. Using sample covariances as input yielded equivalent results. Appendix A provides the correlations used to estimate the measurement models. LISREL estimates of the correlations between the structural concepts (available as part of the standardized solution) are provided in Appendix B.

Self-Report Measurement Model

When the overall measurement model, shown in Fig. 2, for affective disposition, subjective well-being, and job satisfaction was estimated, inspection of the modification indices and normalized residuals revealed that a substantial improvement in fit could be obtained by allowing estimation of the covariance between the error terms of the Faces Scale and the Satisfaction with Life Scale. This suggested that there is variation common to these two measures not explained by the underlying content or trait construct. It is an acceptable modification to the model given that the adjustment is substantively minor (Anderson & Gerbing, 1988; Lomax, 1982; Long, 1983; Young, 1977). The specific cause of the covariance is assumed to reflect life satisfaction variance shared by the Faces and Satisfaction with Life Scale but not shared with the measures of hedonic level.

The first column in Table 1 specifies the fit statistics for the self-report measurement model. All statistics indicate that the hypothesized measurement model fits the data well. Thus, the hypothesis that the measurement model, as displayed in Fig. 2, provides an adequate fit to the data is supported. Table 2 provides the parameter estimates (factor loadings) of each measure on their respective constructs for the overall measurement model. All factor loadings for affective disposition, subjective well-being, and job satisfaction are significant and consistent with the model. The neutral objects subscale (e.g., 8½" × 11" paper, telephone number) had the highest loading on the disposition construct, perhaps confirming that this scale best reflects what is common to the three scales in the question-

TABLE 1
FIT STATISTICS OF MEASUREMENT AND STRUCTURAL MODELS

Statistic	Self-report measurement	Self-report structural	Full data measurement	Full data structural
χ^2	95	349	212	641
Degrees of freedom (df)	61	204	142	452
χ^2/df	1.56	1.71	1.49	1.42
Goodness-of-fit index	.95	.90	.89	.81
Goodness-of-fit index, adjusted	.92	.86	.85	.79
Root-mean-square-residual	.06	.06	.06	.10
Coefficient of determination	.98	.60	.99	.34
Sample size	253	253	165	165

naire. Similarly, the work satisfaction scale loads highest on the job satisfaction factor.

Self-Report Structural Model

Examination of the fit statistics provided in the second column of Table 1 reveals that the overall structural model fits the data well. The χ^2/df, goodness-of-fit and adjusted goodness-of-fit indices, and root-mean-

TABLE 2
SELF-REPORT MODEL: MEASUREMENT ESTIMATES

Construct and measure	Loading on construct	Standard error
Affective disposition		
Satisfaction with essential items	.50	.07
Satisfaction with entertainment items	.57	.07
Satisfaction with neutral items	.81	.07
Subjective well-being		
Affects Balance Scale	.87	.05
Underwood and Froming Scale	.87	.05
Fordyce percentage time happy item	.74	.06
Satisfaction with Life Scale	.62	.06
G. M. Faces Scale	.75	.06
Job satisfaction		
JDI-supervision scale	.55	.07
JDI-work scale	.75	.07
JDI-co-worker scale	.40	.07
JDI-pay scale	.36	.07
JDI-promotion scale	.38	.07
Error covariance		
Faces Scale–Satisfaction with Life Scale	.25	.04

Note. All estimates are significant at the .01 level.

square-residual are all within the range normally considered as indicating acceptable fits. However, because one model fits the data does not necessarily mean it is the correct model. Other models may fit the data equally well. Hayduk (1987) encourages testing of plausible alternative model(s). In many cases, that entails adding (or removing) causal links. This was done on different parts of the model. It is possible, for example, that the tendency to evaluate the environment based on affective disposition influences both subjective well-being and job satisfaction. Therefore, a direct link from affective disposition to job satisfaction was added to the causal model. The decrease in χ^2 (0.09 with 1 df) was not significant. This suggests that, as hypothesized, affective predispositions influence job satisfaction only indirectly, mediated through subjective well-being.

One key assumption made in nonrecursive model estimation is that the effects occur "relatively quickly" (Fisher, 1970). If the joint effects are not roughly simultaneous, the system is judged unstable. In the present case, it seems reasonable to assume that the effects of job satisfaction on subjective well-being and subjective well-being on job satisfaction occur relatively quickly. Furthermore, LISREL provides a stability index that indicates the stability of the model. In all estimations, the stability index was less than 1.0, allowing interpretation of reciprocal effects (Hayduk, 1987).

Another alternative model is one in which subjective well-being causes affective disposition that in turn causes job satisfaction. Such a model might be expected if affective predispositions resulted from current happiness rather than judgments of happiness deriving from affective disposition. For example, Bower (1981) found that individuals recall memories consistent with their current affective state, suggesting that affect (subjective well-being) leads to differing predispositions to respond to the environment.

The fit of this alternative model was tested. The obtained χ^2 was 363 with 204 degrees of freedom. Although the difference in χ^2 between two models cannot be tested, one can ask if the increase in χ^2 of the alternative model is of practical significance. In this case, a χ^2 increase of 14 with no increase in degrees of freedom probably implies a meaningfully worse fit. Therefore, the hypothesis that this rival model is a superior or even equivalent representation of the data is rejected. Table 1 also indicates that overall a majority of the variance in the endogenous variables is being explained in the causal model. Forty-five percent of the variance in subjective well-being was explained by the hypothesized causal influences. Fifty-six percent of the variance in job satisfaction was explained by its hypothesized causal influences.

Test of Causal Links

Figure 3 shows the parameter estimates and standard errors of the structural model alongside relevant paths. The hypothesis that affective disposition has a significant effect on subjective well-being is supported. Those predisposed to view common, neutral characteristics of the environment in a favorable light are more likely to find happiness in their lives.

The hypothesis that subjective well-being significantly influences job satisfaction is also supported by the data. The relatively large coefficient (.41) indicates that those happy with their lives are much more likely to be satisfied with their jobs, controlling for other factors influencing job satisfaction. The reciprocal coefficient from job satisfaction to subjective well-being (.34) is also found to be significant. Reestimating the model constraining those coefficients to be equal allows one to test if these coefficients are significantly different. The difference in χ^2 between two nested models is itself distributed as a χ^2. Therefore, if the increase in χ^2 between the model constraining the parameters to be equal and the estimated model is significantly greater than zero, the hypothesis that the two parameters are equal would be rejected. Reestimation of the model constraining the paths to be equal yielded a χ^2 of 348.74 with 205 degrees of freedom. The difference in χ^2 ($348.74 - 348.52 = 0.22$) with 1 degree of freedom is not significant. Thus, the coefficients are not significantly different. Subjective well-being is not a significantly better predictor of job satisfaction than job satisfaction is of subjective well-being; subjective

$^+$ p<.10
* p<.05
** p<.01 (one-tailed)
^{a} significant, but not in predicted direction
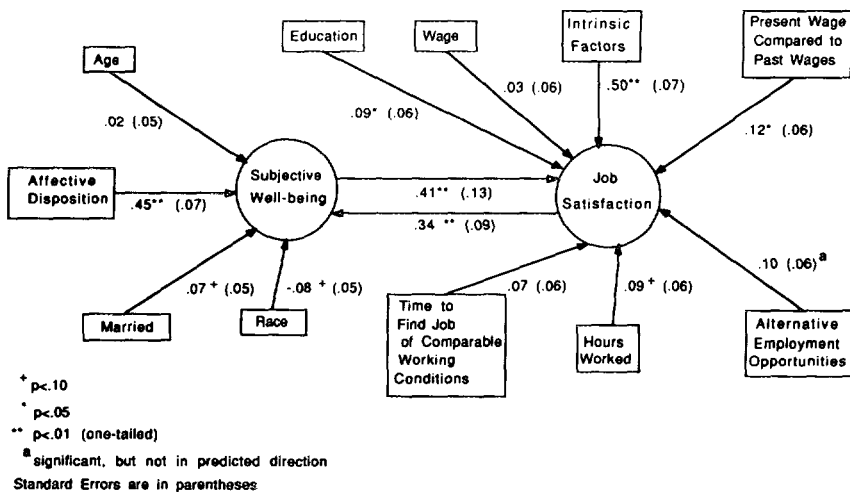Standard Errors are in parentheses

FIG. 3. Self-report structural estimates.

well-being is both a significant antecedent *and* a consequence of job satisfaction.

In order to ascertain if the effect of subjective well-being on job satisfaction was due to the present mood of the respondent (and therefore perhaps an ephemeral phenomenon), a single-item question assessing the mood of the respondent at the time of completing the survey was analyzed. When this mood variable was entered into the structural equation, the multicollinearity between subjective well-being and the mood item (their correlation was .72) prevented estimation of the structural parameters. Ordinary least squares was used as an alternative estimation strategy since maximum likelihood is very sensitive to multicollinearity (Hayduk, 1987). Although the high correlation between mood and subjective well-being may suggest that the present mood of the respondent was not precisely measured, it was not a central construct in the model. Further, even in the presence of multicollinearity, ordinary least squares provides unbiased parameter estimates. Introduction of the mood variable did not change the estimated subjective well-being to job satisfaction coefficient nor its significance level. Therefore, although mood and subjective well-being are highly related, it does not appear that the influence of subjective well-being on job satisfaction is due to current mood. Subjective well-being had a significant influence of job satisfaction even controlling for the current mood of the respondent.

Figure 3 also presents results from the remaining links in the causal model. Individuals who are married, and those who are white, report significantly higher levels of subjective well-being ($p < .10$). The path from age to subjective well-being was not significant. Paths from wage rate and time to find job of comparable working conditions to job satisfaction were not significant. The paths from education and perceived alternatives to job satisfaction were statistically significant, but not in the predicted direction. Because these paths were instituted as controls as part of a theoretical model, that the paths are not in the predicted direction should not endanger the validity of the core hypothesized links. They do suggest, however, revision of Hulin *et al.*'s (1985) model of job satisfaction in several important ways (see Judge, 1990). Finally, those who perceived many alternatives in the labor market, and worked fewer hours, were more satisfied with their jobs.

It is somewhat surprising that some of the above variables were not significant in the equation. One explanation might be that there was little variation in the nonsignificant variables. If there is little variance on the nondispositional variables in the sample relative to the variance in the dispositional variables, then the relative strength of the situation might be construed as weak because there are few differences between the respon-

dents (Cropanzano & James, 1990). The coefficients of variation for the nonsignificant variables were not smaller than those for the significant variables (e.g., $C(v) = .28$ for wage, $C(v) = .26$ for hours worked, $C(v) = .16$ for intrinsic factors, and $C(v) = .22$ for subjective well-being). This contradicts Davis-Blake and Pfeffer's (1989) contention that disposition has an effect only in weak situations. Nonetheless, a multiprofession/occupation sample is needed to examine the replicability of the present findings.

Present wage compared to past wage had a significant influence on job satisfaction. Individuals who report their present wage to be higher than wages they were accustomed to receiving in the past are more satisfied with their jobs. Intrinsic factors strongly influenced job satisfaction, consistent with the arguments of Hackman and Oldham (1980). Affective disposition, although exerting no direct effect on job satisfaction, does influence job satisfaction indirectly as mediated through subjective well-being. The indirect effect, .20, is statistically significant ($p < .01$).

Full Data Measurement Model

As explained earlier, the full data model incorporates information from significant others' evaluations. Figure 4 illustrates the hypothesized measurement model. It was thought that covariation among the self-reports
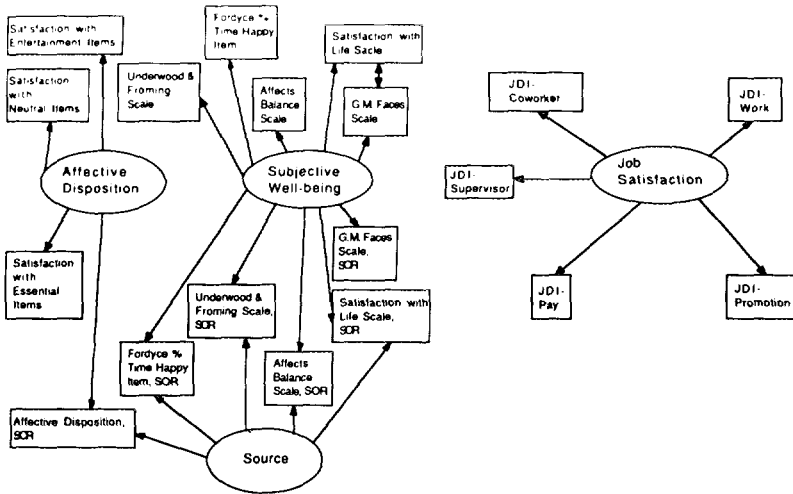
NOTE: SOR=Significant Other Report; JDI=Job Descriptive Index

FIG. 4. Full data hypothesized measurement model.

and among the significant-other reports of subjective well-being was likely to be greater than covariation between the self- and significant-other reports. For example, although no means were significantly different between the self-report and significant-other scales, it seemed likely that when significant others evaluate respondents' subjective well-being using one scale, beliefs regarding respondent subjective well-being are likely to be reflected in their responses to other scales. In recognition of differences between self and significant-other reports, a source factor was hypothesized in which evaluations of the significant other loaded both on the source factor and on the subjective well-being construct. Examination of the intercorrelations between the self and significant-other reports supported this belief, as the correlations among significant-other scales and among self-report scales were higher (e.g., the correlation between significant others' reports of the Affects Balance Scale and the Underwood & Froming Scale was .80) than those between significant-other and self-report scales (e.g., the correlation between significant-other and self report of the Affects Balance Scale was .47). Column 3 of Table 1 shows the fit statistics of the full data measurement model. As before, the statistics indicate that the measurement model fits the data within normally acceptable limits.

Table 3 presents the parameter estimates for the full data measurement model. The factor loadings from self-report data are very similar to the loadings estimated in the self-report-only model. The loadings of the significant-other scales are lower than the self-report-scale loadings. However, all loadings are statistically significant. The Faces Scale–Satisfaction with Life Scale error covariance was also estimated, for the same reasoning provided for the self-report-only model. That is, measures of life satisfaction will covary more among each other than between measures of hedonic level.

Full Data Structural Model

The full data structural model shown in Fig. 5 differs from the self-report-only structural model in Fig. 1 in three respects. First, the reciprocal causal link between subjective well-being and job satisfaction was not estimated. It was necessary to divide the reciprocal causation into two separate estimates; otherwise, too many parameters relative to the 33% smaller sample size would be estimated. Standard errors of estimates often reach unacceptable magnitudes, and iterations fail to converge on a solution in such cases (Hayduk, 1987).

For the same reason, not all covariances among the exogenous concepts were estimated. This also reduces the demands on the model, as the

TABLE 3
FULL DATA MEASUREMENT MODEL PARAMETER ESTIMATES

Construct and measure	Factor loading	Source factor
Affective disposition		
Satisfaction with essential items	.50 (.09)	
Satisfaction with entertainment items	.54 (.08)	
Satisfaction with neutral objects	.82 (.09)	
Significant other rating of focal		
employee affective disposition	.14 (.08)*	.48 (.08)
Subjective well-being		
Affects Balance Scale (ABS)	.89 (.06)	
Underwood and Froming Scale (UF)	.88 (.06)	
Fordyce percentage time happy item (FOR)	.76 (.07)	
Satisfaction with Life Scale (SWLS)	.63 (.07)	
G. M. Faces Scale (FACES)	.77 (.07)	
ABS, significant-other rating	.17 (.08)	.80 (.07)
UF, significant-other rating	.19 (.08)	.81 (.06)
FOR, significant-other rating	.24 (.08)	.67 (.07)
SWLS, significant-other rating	.24 (.08)	.58 (.08)
FACES, significant-other rating	.19 (.08)	.72 (.07)
Job satisfaction		
JDI-supervision scale	.33 (.09)	
JDI-work scale	.90 (.12)	
JDI-co-workers scale	.34 (.09)	
JDI-pay scale	.20 (.09)	
JDI-promotion scale	.24 (.09)	
Error covariance		
FACES–SWLS	.26 (.05)	

Note. Standard errors are in parentheses.
* $p < .05$. All other estimates are significant at $p < .01$.

number of parameters to be estimated was reduced by 56. Only those parameters assumed to correlate on conceptual grounds were freed. Other exogenous concepts were assumed not to be correlated with each other. For example, education and wage rate, perceived alternatives in the labor market, and time to find a job of comparable working conditions, task identity, and autonomy, were allowed to covary. However, because no relationship between, say, race and age, or alternatives and autonomy was expected, their covariances were not freed. Inspection of the modification indices suggested that this procedure was reasonable; no modification index in the ϕ matrix was greater than 7.

The final difference between the self-report and full data models concerns the measurement of intrinsic factors. When the full data model was estimated using the intrinsic factors scale, the standard errors of the struc-
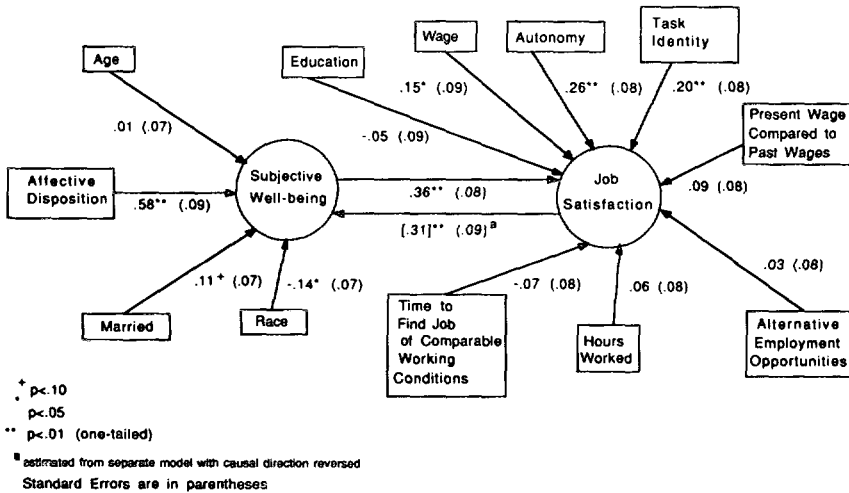
FIG. 5. Full data structural estimates.

tural coefficients were unacceptably high. The cause may very well have been that, in addition to the smaller sample size-to-parameter ratio in the full data model, the intrinsic factors variable was relatively highly correlated with several other variables in the model. This combination is likely to lead to high standard errors (Hayduk, 1987). Upon further analysis, it was found that several components of the intrinsic factors scale (particularly feedback) were more highly related to independent variables in the job satisfaction equation than other components of the intrinsic factors scale. Therefore, task identity and autonomy were used in the equation in place of the full intrinsic factors scale. This addition left the standard errors within the acceptable region and did not damage the total explanatory power of the intrinsic facets.

Column 4 of Table 1 reveals the fit statistics of the full data model. Although some indices are better (χ^2/df) and some are worse (goodness-of-fit index, root-mean-square-residual) than the self-report model, they are similar and within rule-of-thumb levels, again indicating acceptable fit. The lower goodness-of-fit and adjusted goodness-of-fit indices in the full data model are probably a function of the smaller sample size. La Du and Tanaka (1989) have shown that both goodness-of-fit and adjusted goodness-of-fit indices become smaller as the sample size decreases.

The results in Fig. 5 indicate that little is changed from the self-report model. The job satisfaction to subjective well-being causal link, estimated from an identical model with the exception that the subjective well-being

to job satisfaction link is reversed, is shown in brackets. The job satis-
faction to subjective well-being model yielded almost identical fit statis-
tics and parameter estimates to those reported in Table 3 and Fig. 5, and
therefore the full set of results are not reported. Although there are some
differences in the estimated structural parameters from the self-report
model (e.g., education, wage rate, and hours worked in particular), the
differences are not dramatic (the largest difference was .14), and in gen-
eral the effects and interpretations are similar. Any differences are prob-
ably due to the introduction of new data based on a slightly different
sample and the separate estimation of the job satisfaction and subjective
well-being links. As with the self-report model, the key hypothesized
links were supported. Affective disposition significantly influenced indi-
viduals' levels of subjective well-being. Those with high (low) levels of
subjective well-being were significantly more (less) satisfied with their
job. The job satisfaction to subjective well-being coefficient was also
significant. The high degree of similarity of the estimates between the
self-report and full data models suggests that self-report does not artifac-
tually inflate the results found in the self-report-only model.

The magnitudes of the factor loadings of the significant others' scales
on the affective disposition and subjective well-being factors, factors de-
fined empirically and conceptually by responses of focal individuals, does
not influence the results obtained. Constraining the loadings of the sig-
nificant-other scales at values equal to those of the self-report scales has
only trivial effect on the subjective well-being to job satisfaction link (.36
in both cases) or on the job satisfaction to subjective well-being link (.29
if the significant-other loadings are constrained to equal the self-report
loadings versus .31 if the significant-other loadings are freed, as was done
in the model presented in Fig. 5). The fit statistics are similarly and
trivially affected.

The relatively strong relations observed between the constructs were
argued to represent structural relationships between distinct constructs.
The plausibility of this argument, however, depends on the assumption
that these are valid constructs—that affective disposition, subjective well-
being, and job satisfaction are not simply alternative measures of an over-
all affective construct. James and James (1989), for example, found a
general affective construct (labeled psychological climate) underlying
more specific climate perceptions. Naturally, these specific perceptions
(in a sense, alternative measures of the general construct) were signifi-
cantly related. Thus, it would have been erroneous to interpret these
relations as structural relations. The same possibility exists for the results
in the present study.

To examine this alternative explanation of the results, the construct

validity of affective disposition, subjective well-being, and job satisfaction was investigated. Construct validity has typically been established through a combination of convergent and discriminant validity (Campbell & Fiske, 1959; Schwab, 1980). Convergent validities of the constructs were established earlier, by the overall fit and measurement loadings of the hypothesized measurement model (see Tables 2 and 3). Discriminant validity between the measures was investigated in a manner similar to Brooke et al. (1988) and Mathieu and Farr (1991). First, the fit of the hypothesized measurement model was compared to the fit of a model with one general affective construct. If the measures do not have adequate discriminant validity, the fit of a single-factor model will not be significantly worse than the hypothesized three-factor model. In such a case, a single-factor model would do an acceptable job of describing the data, and measurement relations between the variables may have been misinterpreted as structural relations.

With the self-report data, the single-factor model provided a poor fit to the data ($\chi^2 = 232$ with 64 degrees of freedom). This fit was significantly worse than that of the hypothesized model reported in Table 1 (difference in $\chi^2 = 127$ with 3 degrees of freedom, $p < .01$). Considering also the significant-other data, a single-factor model fit acceptably ($\chi^2 = 134$ with 69 degrees of freedom). However, it fit significantly worse than the hypothesized model reported in Table 1 (difference in $\chi^2 = 43$ with 1 degree of freedom, $p < .01$). A second-order factor explained 22% of the variance in the first-order factors for the self-report data and only 19% of the variance when including the significant-other date. This is substantially less than the 67% explained by James and James' (1989) second-order factor. Overall, this evidence suggests that the factors, as assessed, are empirically distinct.

The second step in establishing discriminant validity was to examine if measures of purportedly different constructs display different patterns of correlations with external variables. In the present study, the relative fits of two models was compared: one in which the relationships between the latent constructs and the exogenous variables in the model were freely estimated and one in which the relationships between each exogenous variable and the three latent constructs were constrained to be equal. The model constraining the correlations to be equal yielded a significantly poorer fit than the model in which the relationships were freely estimated (difference in $\chi^2 = 58$ with 20 degrees of freedom, $p < .01$). This suggests that the three constructs display significantly different patterns of correlations with external variables. In sum, while the above analyses do not represent proof of construct validity (Gerhart & Judge, 1991), they do suggest that we have given the data repeated opportunities to raise ques-

tions about our interpretations and the results do not reject our interpretations.

DISCUSSION

Affective disposition, as assessed in this study, is a significant antecedent of subjective well-being. Those having a tendency to respond to neutral characteristics in the environment negatively (or positively) are more likely to have low (or high) levels of subjective well-being. The influence of dispositional tendencies on subjective well-being is important; it provides one explanation of why individuals in common environments find varying levels of happiness in their lives. Overall happiness and satisfaction are influenced by individuals' affective disposition. Those who react positively to neutral characteristics in their lives will also react positively to other, presumably not neutral, characteristics in their lives. Those inclined to dwell on the negative will be more likely to find gloom in all aspects of their lives. These general tendencies also transfer to individuals' reactions to their jobs. Subjective well-being is also influenced by other factors. Race and marital status are two such influences found in the present study.

Dispositional tendencies do not always lead to certain levels of well-being, just as situational influences do not perfectly predict subjective well-being. One contribution of the present study is that a conceptual explanation has been offered about the critical distinction between affective disposition and subjective well-being. Staw *et al.* (1986) and Levin and Stokes (1989) may have actually measured subjective well-being, as affect experienced in general, but called it disposition. Predispositions to respond to the neutral characteristics in the environment in a particular manner are not the same as experienced happiness or satisfaction. It is important that our theories of disposition and subjective well-being make this difference explicit.

The intercorrelations, recursive and nonrecursive paths, and even reciprocal causal links among the measures are complex. This study was as much a subjective well-being approach to job satisfaction as a dispositional approach to job satisfaction. Subjective well-being, not affective disposition, was found to have a direct effect on job satisfaction. Affective disposition, however, is a vital construct in the model, partly because it can be distinguished from subjective well-being and partly because it may begin the entire causal process. Further, affective disposition also had a significant indirect effect on job satisfaction.

Subjective well-being has a significant influence on job satisfaction; individuals happy and satisfied with their lives are significantly more

likely to report being satisfied with their job. Contrary to the contentions of Davis-Blake and Pfeffer (1989), individuals' job satisfaction is not merely a function of external events. Job satisfaction is determined to a significant extent by the individual's general level of happiness and his or her way of looking at the world. This does not suggest that job conditions are unimportant determinants of job satisfaction. In fact, the present study has identified several job conditions that influence job satisfaction. Nothing in the dispositional approach denies the existence of environmental effects or even minimizes the importance of such factors as technology or function in understanding attitudes (e.g., Hulin & Roznowski, 1985). This research found that both are important influences on job satisfaction.

The Importance of Job Affect to Subjective Well-Being

There was a strong nonrecursive link between subjective well-being and job satisfaction. This suggests that the positive relationship between job and life satisfaction that has been found (Tait et al., 1989) should be interpreted as a bidirectional path. To argue that a unidirectional path exists (Near, Rice, & Hunt, 1980; Staw et al., 1986), absent more sophisticated evidence, was premature. In light of the present study, both paths, from life satisfaction to job satisfaction and from job satisfaction to life satisfaction, are supported.

Writers have argued for many years that work exerts an important effect on individuals' lives. Kornhauser (1965), in a study of Detroit auto workers, observed a correlation of .58 between job satisfaction and life satisfaction. Further, he found that workers at lower skill levels reported lower levels of job satisfaction and mental health. This was interpreted as indicating that jobs and job satisfaction are significant influences on mental health. Suicide rates following layoffs and plant closings point to a similar link (Hamilton, 1990). The results of this study have identified causal influences in each direction. The causal process may be more complex than past researchers have assumed.

Work in America may be, for many individuals, one of the important mechanisms through which one gains an identity. It may be an important influence on the meaning one attributes to one's life. If a random sample of Americans were asked what they are, many would likely define themselves in terms of what they did: "I am a psychologist," "I am a computer programmer," or "I am a nurse." Without these jobs or professional affiliations, many individuals might feel themselves to have little identity. To do nothing may be to be nothing for many Americans. Within this framework, which may have its roots in Calvinism and the Protestant

work ethic, it is not surprising that job satisfaction had a causal influence on subjective well-being as strong as the reciprocal influence. To spend the majority of one's waking hours at a dissatisfying job appears to have a significant influence on the overall experienced well-being in one's life. Conversely, spending an equal amount of time at a satisfying and perhaps challenging and motivating job has a strong positive influence on one's subjective well-being. The role of work and work satisfaction in one's life should not be underestimated.

Limitations and Methodological Contributions

The limitations in drawing causal inferences regarding the antecedents and effects of job satisfaction based on correlational data has been noted by Locke (1976). The interpretations offered in this study were not based on proof of causality, but rather that the causal relations are "more or less reasonable relative to alternative specifications" (Joreskog & Sorbom, 1989, p. 1). Covariance structure models do not permit *proof* of causality; they do permit *inferences* of causality (Hayduk, 1987; James *et al.*, 1982; Joreskog & Sorbom, 1989). Such analyses increase the plausibility of the causal model tested while simultaneously decreasing the plausibility of alternative causal models. Longitudinal data based on careful construct measurement would be particularly useful in pinning down issues of causality. In the present study, the inference that subjective well-being and job satisfaction are mutually causative, while supported by theory and data, does not rule out the possibility of an omitted influence. For example, Locke (1976) speculated that individuals' thought processes may influence happiness or satisfaction derived from all domains of life. This speculation, in the abstract, is undoubtedly true. But testing it empirically may be much like testing the Sapir–Worf hypothesis that our words and language determine our perceptions. If the test of the hypothesis requires reliance on words and verbalizations that represent cognitive processes, and if the cognitive processes themselves are assumed causal agents in a model, a valid empirical test of this hypothesis may be difficult.

The exogenous variables chosen to predict job satisfaction and subjective well-being, although based on relevant theory and research, were not particularly strong predictors of the constructs. It is also true that these variables play a supporting role in the study—they were not the variables of direct interest. We have interpreted the effects of these variables with some caution. While we have offered some speculation regarding the causes of some of the weaker influences, it is important for future research to include a more occupationally and demographically heterogeneous sample and broader inclusion of situational factors. Finally, the

relatively minor changes made in the model are changes, nonetheless, also making cross-validation of these results important.

In this paper, we have made a number of conceptually fine distinctions between related constructs. These distinctions received support when subjected to various forms of covariance structure analysis. However, caution must be exercised in interpreting these results as proof of the discriminant validity of the constructs. As Gerhart and Judge (1991) have pointed out, LISREL is not a program designed to provide construct validity "solutions." In fact, it may often lead one to believe constructs are distinct when other evidence is less convincing.

For example, examination of the correlations in Appendix A reveals that the same construct–different source correlations are not much greater in magnitude than the different construct–same source correlations. While correlations are merely raw input into the LISREL program (and thus substituting interpretation of correlations for interpretation of covariance structure results is akin to substituting interpretation of raw survey data for interpretation of correlations), one cannot be so confident of covariance structure analysis that apparent discrepancies between the correlations and the LISREL output are dismissed. Although we have exploited the most advanced technology available to investigate the validity of the constructs, the technology is imperfect. It is possible that the constructs are not as distinct as our results indicate.

By employing different sources of information for the constructs in this study, more confidence can be placed in the findings. Questions of method (or source) variance, response sets, and other methodological conundrums may have been avoided. The results do not depend on data from a single source with confounded method and source factors plaguing the interpretations of the results. We can place confidence in the finding that subjective well-being, even taking into account the reports of the significant other, significantly influences job satisfaction and job satisfaction reciprocally influences subjective well-being.

Conclusion

Past dispositional research, although provocative, has been plagued with definitional and measurement problems. Methodological problems in past dispositional research have limited the confidence that can be placed in the results. The emphasis in this study on definition and measurement of the constructs, as well as using causal analysis with two sources of data, has been on investigating the influence of disposition on job satisfaction using methods that may have alleviated many of these problems. The influence of job satisfaction on individual's subjective well-being has also been documented. The findings supply strong support for a dispositional basis of both subjective well-being and job satisfaction.

APPENDIX A

Correlations between Measures

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. NOSQ-1	—																		
2. NOSQ-2	.22	—																	
3. NOSQ-3	.39	.46	—																
4. SWB-1	.29	.25	.44	—															
5. SWB-2	.28	.20	.42	.78	—														
6. SWB-3	.31	.20	.33	.64	.68	—													
7. SWB-4	.34	.13	.35	.56	.55	.45	—												
8. SWB-5	.32	.25	.37	.69	.65	.58	.74	—											
9. JDI-supervisor	−.01	−.08	.08	.06	.10	.17	−.05	.01	—										
10. JDI-work	.17	.22	.25	.32	.41	.36	.20	.28	.28	—									
11. JDI-co-worker	−.02	.13	.06	.10	.08	.13	.05	.04	.28	.29	—								
12. JDI-pay	−.10	−.03	−.06	−.04	−.08	.02	−.07	−.12	.09	.19	.12	—							
13. JDI-promotion	.13	−.03	.08	.07	.00	.05	.03	.01	.17	.21	.13	.05	—						
14. NOSQ (other)	.31	.06	.14	.19	.13	.17	.20	.24	−.01	.05	.03	−.01	.02	—					
15. SWB-1 (other)	.09	.03	.18	.47	.37	.43	.31	.39	.12	.19	.01	−.03	.05	.38	—				
16. SWB-2 (other)	.15	−.00	.16	.47	.44	.40	.33	.38	.06	.17	−.04	−.03	−.01	.44	.80	—			
17. SWB-3 (other)	.09	.09	.17	.48	.43	.41	.21	.36	.08	.18	.01	−.03	.06	.42	.72	.71	—		
18. SWB-4 (other)	.20	−.01	.14	.42	.35	.42	.43	.47	.14	.08	−.02	−.03	.00	.41	.57	.60	.52	—	
19. SWB-5 (other)	.13	.07	.17	.44	.35	.35	.35	.45	.13	.17	−.02	−.00	.03	.40	.70	.71	.58	.71	—

Note. NOSQ-1, Neutral Objects Satisfaction Questionnaire, essential items; NOSQ-2, Neutral Objects Satisfaction Questionnaire, entertainment items; NOSQ-3, Neutral Objects Satisfaction Questionnaire, neutral items; SWB-1, Affects Balance Scale; SWB-2, Underwood & Froming Scale; SWB-3, Fordyce percentage time happy item; SWB-4, Satisfaction with Life Scale; SWB-5, G. M. Faces Scale; JDI, Job Descriptive Index; Other = significant-other evaluation.

APPENDIX B

LISREL Estimates of Correlations of Affective Measures with Structural Concepts

	1	2	3	4	5
1. Affective disposition (AD)	—				
2. Subjective well-being (SWB)	.611	—			
3. Job satisfaction	.392	.470	—		
4. AD—other report	.342	.287	.090	—	
5. SWB—other report	.237	.613	.238	.615	—
6. Married	.040	.136	.086	−.182	.027
7. Race	.040	−.130	−.091	−.115	−.165
8. Age	−.164	−.056	.017	−.071	−.017
9. Hours worked	−.122	−.211	−.005	−.307	−.190
10. Education	−.062	.032	−.041	−.010	.062
11. Time to find comparable job	−.145	−.151	−.139	−.064	−.150
12. Alternative job opportunities	.136	.009	.050	.001	.004
13. Present wage vs past	.108	.013	.116	.145	.038
14. Wage	.129	.058	.154	.221	.018
15. Task identity	.245	.055	.234	−.063	−.015
16. Autonomy	.176	.291	.383	.166	.246

Note. Column numbers refer to the respective concepts represented in the rows.

APPENDIX C

Neutral Objects Satisfaction Questionnaire

DIRECTIONS: The following questions ask about your degree of satisfaction with several items. Consider each item carefully. Circle the numbered response that best represents your feeling about the corresponding item.

	Dissatisfied	Neutral	Satisfied
1. The city in which you live	1	2	3
2. The residence where you live	1	2	3
3. The neighbors you have	1	2	3
4. The high school you attended	1	2	3
5. The climate where you live	1	2	3
6. The movies being produced today	1	2	3
7. The quality of food you buy	1	2	3
8. Today's cars	1	2	3
9. Local newspapers	1	2	3
10. Your relaxation time	1	2	3
11. Your first name	1	2	3
12. The people you know	1	2	3
13. Television programs	1	2	3
14. Local speed limits	1	2	3
15. The way people drive	1	2	3

16. Advertising	1	2	3
17. The way you were raised	1	2	3
18. Telephone service	1	2	3
19. Public transportation	1	2	3
20. Restaurant food	1	2	3
21. Yourself	1	2	3
22. Modern art	1	2	3
23. Popular music	1	2	3
24. 8½" × 11" paper	1	2	3
25. Your telephone number	1	2	3

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