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Abstract
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Keywords
research, organization, work, job, stress, challenge related stress, hindrance related stress, search, turnover, outcome

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"Challenge" and "Hindrance" Related Stress Among U.S. Managers

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This paper has not undergone formal review or approval of the faculty of the ILR School. It is intended to make results of Center research available to others interested in preliminary form to encourage discussion and suggestions.

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“CHALLENGE” AND “HINDRANCE” RELATED STRESS AMONG U.S. MANAGERS

This study proposes that stress associated with two kinds of job demands or work circumstances, “challenges” and “hindrances,” are distinct phenomena that are differentially related to work outcomes. Specific hypotheses were derived from this general proposition and tested using a sample of 1,886 U.S. managers and longitudinal data. Regression results indicate that challenge related stress is positively related to job satisfaction and negatively related to job search. In contrast, hindrance related stress is negatively related to job satisfaction and positively related to job search and turnover.

Job-related stress among managers has been described as reaching epidemic proportions (Marino, 1997). Survey results would seem to support this claim. For example, in recent surveys of managers, 88% reported "elevated levels of stress" (Tillson, 1997) and most reported feeling more pressure than they could ever remember (Cohen, 1997). While there is converging evidence that most managers report feeling job-related stress, there is less agreement regarding the nature of the relationship between reported stress and job satisfaction, turnover, and other work outcomes. In the past, the relationship between job-related stress and negative outcomes has been emphasized. The findings from these studies suggest a relationship between job-related stress and a variety of negative outcomes including job dissatisfaction, violence, burnout, and organizational withdrawal (Bhagat, McQuaid, Lindholm, & Segovis, 1985; Braverman & Braverman, 1994; Cordes, Dougherty, & Blum, 1997; Gupta & Beehr, 1979; Ivancevich, Matteson, & Preston, 1982; Kuzmits, 1992; O'Driscoll & Beehr, 1996; Scheck, Kinicki, & Davy, 1997; Zohar, 1997).

More recently, there has been increasing recognition of the potential positive outcomes associated with job-related stress. Surveys indicate that at least some managers perceive stress as leading to positive outcomes. These managers note that not all stress is bad; stress can result in a competitive edge and force positive changes (Marino, 1997; Merelman, 1997). Moreover, researchers examining the association between job-related stress and positive outcomes have found relationships between job-related stress and job satisfaction, organizational commitment, and subjective well-being (Bhagat et al., 1985; Ivancevich, 1986; Scheck, Kinicki, & Davy, 1995; Scheck et al., 1997).

As the previous discussion suggests, it appears that job-related stress may be associated with both negative and positive work outcomes. Although recognition of this observation is reflected in the literature (e.g., Beehr, 1985; Kahn & Byosiere, 1992; Matteson & Ivancevich, 1987; Selye, 1982;), empirical investigation of the factors that influence whether stress is associated with negative or positive outcomes has received little attention. The present study begins to address this limitation. It is proposed that the stress associated with two kinds of stress producing job demands or work circumstances, described as "challenges" and "hindrances," are distinct phenomena that are differentially related to attitudinal and behavioral work outcomes. More specifically, it is predicted that challenge related stress (as measured by managers' reports regarding the level of stress they were experiencing associated with specific challenges) will be positively related to managers' job satisfaction and negatively related to job search and turnover behaviors. Further, it is predicted that hindrance

related stress (as measured by managers' reports regarding the level of stress they were experiencing associated with specific hindrances) will be negatively related to managers' job satisfaction and positively related to job search and turnover behaviors. Hypotheses regarding these predictions are tested using a sample of 1,886 U.S. managers and longitudinal data.

We begin by defining and discussing challenges. Support is provided for the proposition that challenge related stress is associated with positive outcomes, and specific hypotheses regarding the associations are offered. Next, we define and discuss hindrances, provide support for the proposition that hindrance related stress is associated with negative outcomes, and offer specific hypotheses regarding the associations. We then discuss the development of the challenge related stress and hindrance related stress measures used in this study, and provide evidence of their validity. This evidence will include the results of: 1) a content validation procedure using four independent judges, 2) a confirmatory factor analysis and reliability analysis, and 3) an examination of the pattern of correlations between the respective stress measures and external criteria. Finally, we report and discuss the results of ordinary least squares (OLS) and logistic regression analyses conducted to test the hypotheses.

CHALLENGES AND CHALLENGE RELATED STRESS

It has been argued that certain job demands or work circumstances, although stressful, produce positive feelings that may lead to job satisfaction or other positive outcomes (Bhagat et al. 1985; Scheck et al., 1995, 1997; Selye, 1982). Bhagat et al. (1995, p. 203) labeled these demands "positive stressors" and described them as events which "produce a state of challenge coupled with disruptive pleasure." The belief that certain job demands or work circumstances produce positive feelings, even though they may be stressful, is consistent with the distinction that has been made in the general stress literature between eustress and distress. Briefly, eustress has been defined as stress that creates challenge and feelings of fulfillment or achievement (Selye, 1982). Although the physiological effects of eustress and distress are similar, eustress has been found to be a positive motivating force (Selye, 1982).

The foregoing suggests that to the extent that stress producing job demands or work circumstances involve challenge or feelings of achievement or fulfillment, positive outcomes may result. While we would agree that good feelings or eustress generated by challenging job demands or work circumstances may lead to positive outcomes, in our view, the eustress explanation, alone, does not adequately address the full range of circumstances involving stressful experiences that are associated with positive outcomes (i.e., it is a deficient

explanation). We would argue, more generally, that whether stress producing job demands or work circumstances lead to increased job satisfaction and other positive outcomes, or decreased job satisfaction and other negative outcomes, depends primarily on the individual's perception of the extent to which the stressful circumstances involve a net gain or loss of the individual's resources. We use the term resources to refer to "those objects, personal characteristics, conditions, or energies that are valued by the individual or that serve as a means for attainment of these objects, personal characteristics, conditions, or energies" (Hobfall & Freedy, 1993, p. 516).

This "net resource" view is derived from the Conservation of Resources (COR) theory (Hobfall, 1989; Hobfall & Freedy, 1993). According to the theory, resources (defined above) are the single most important factor for understanding stress (Hobfall, 1989). Although the focus of COR theory is resource loss, it has been suggested that a stressful event may also result in a net gain or an anticipated net gain of resources (Lee & Ashforth, 1996; Leiter, 1993), and to the extent that job demands or work circumstances involve actual or perceived net gains, positive outcomes will result.

The eustress and net resource perspectives offer alternative explanations that are clearly not mutually exclusive. Positive, eustress feelings are expected to constitute valued resources that are taken into account in the net resource calculation. However, the net resource perspective is more encompassing; it is not necessary that individuals experience eustress for a stressful event to lead to increased job satisfaction if, as a result of other resources associated with the stressful circumstances (e.g., learning, development, increased promotional opportunities), there is a net gain in resources. For example, the managerial development literature is replete with examples of managers and executives commenting on job demands that, although pressure-laden, were viewed as rewarding work experiences that were well worth the discomfort that was involved (e.g., McCall, Lombardo, & Morrison, 1988).

In the present study, the job demands or work circumstances that are expected to result in stress that is associated with positive outcomes are termed "challenges," and are defined as follows:

> *Challenges are work related demands or circumstances that, although potentially stressful, have associated potential gains for individuals. Potential gains include intrinsic rewards (e.g., satisfaction) and gains that promote work achievement (e.g., achievement related learning, skill development, or*

demonstration of competence). Work achievement refers to both current job and career success.

Although we recognize that the definition is not without limitations, based on our review, it is consistent with discussions of challenge in the literature and is more explicit than existing definitions. Examples of job demands or work circumstances that have been characterized as challenges include unfamiliar responsibilities, job overload, time pressures, and high levels of responsibility (McCauley, Ruderman, Ohlott, & Morrow, 1994).

As the preceding discussion indicates, we expect that challenge related stress will generally be associated with positive work outcomes. Three related but distinct outcomes are included: job satisfaction, job search, and turnover. Consistent with Locke (1976), job satisfaction is defined as a pleasurable or positive emotional state resulting from an appraisal of one's job or job experience. Job search includes behavioral search activities such as revising a resume and going to a job interview. Some research reveals that job search is not simply a precursor to turnover, and at times the processes may be inversely related (Bretz, Boudreau, & Judge, 1994; Hom, & Griffith, 1991). Turnover is treated as actual separation from the organization.

We expect the relationships between challenge related stress and the outcomes to exist as a result of eustress feelings or because of other net resource gains (e.g., perceived skill development or increased promotional opportunities) that, it is believed, tend to be associated with challenges. However, we expect that at the highest levels, the stress associated with challenges becomes overwhelming, and that the resource losses associated with the stress are not likely to be offset by additional resource gains. These expectations are captured in the following hypotheses:

H1a: There will be a positive relationship and negative curvilinear relationship between challenge related stress and job satisfaction. Generally, the relationship between challenge related stress and job satisfaction will be positive; however, at the highest levels the relationship will become negative.

H1b: There will be a negative relationship and positive curvilinear relationship between challenge related stress and job search. Generally, the relationship between challenge related stress and job search will be negative; however, at the highest levels the relationship will become positive.

H1c: There will be a negative relationship and positive curvilinear relationship between challenge related stress and turnover. Generally, the relationship

between challenge related stress and turnover will be negative; however, at the highest levels the relationship will become positive.

We note that while we have offered two explanations for the hypothesized relationships between challenge related stress and the work outcomes, the study is not intended to test which of the alternatives best explains the predicted relationships.

HINDRANCES AND HINDRANCE RELATED STRESS

In contrast to challenges, some job demands or work circumstances produce stress without accompanying eustress feelings or other net resource gains (or anticipated resource gains). While challenges tend to be associated with work achievement, this second category of demands involves excessive or undesirable constraints which interfere with or hinder an individual's ability to achieve valued goals, creating "negative stress" (cf. Bhagat et al., 1985). Examples of this category of stress producing job demands or work circumstances include organizational politics and red tape, concern about job security, and lack of career progression (Ivancevich et al., 1982; Ivancevich, 1986). A variety of terms have been used to describe this category of stress producing job demands or work circumstances In the present study, we used the term "hindrances," and the following definition was adopted:

> *Hindrances are work related demands or circumstances that tend to constrain or interfere with an individual's work achievement, and which do not tend to be associated with potential gains for the individual. Hindrances are an unmitigated source of stress in that they tend to produce the negative consequences of stress without offsetting gains.*

Hindrances result in negative stress or distress (e.g., excessive worry, anguish, frustration, strain); they are not expected to produce eustress. Moreover, because they do not tend to involve gains in resources the negative stress is not offset by anticipated gains. These considerations lead us to expect that hindrance related stress will generally be associated with negative work outcomes (i.e., decreased job satisfaction, increased job search and turnover behaviors). Although we cannot think of a reason why hindrance related stress, at any level, would be related to positive work outcomes, in the abstract one might expect the relationship between hindrance related stress and negative work outcomes to level off (i.e., experienced stress cannot get any worse). However, given the mobility of this sample of managers, we believe that they are likely to leave the organization if this point is reached, if not before.

Therefore, we expect the relationship between hindrance related stress and the work outcomes to be linear. These expectations are reflected in the following hypotheses:

H2a: Hindrance related stress will be negatively and linearly related to job satisfaction.

H2b: Hindrance related stress will be positively and linearly related to job search.

H2c: Hindrance related stress will be positively and linearly related to turnover.

In general, negative consequences tend to be more salient and are given greater weight than positive consequences (Hobfall & Freedy, 1993; Tversky & Kahneman, 1981). Thus, hindrance related stress will have a stronger influence (in terms of absolute value) than challenge related stress on attitudinal and behavioral work outcomes. Therefore we hypothesize:

H3a: The relationship between hindrance related stress and job satisfaction will be stronger than the relationship between challenge related stress and job satisfaction.

H3b: The relationship between hindrance related stress and job search will be stronger than the relationship between challenge related stress and job search.

H3c: The relationship between hindrance related stress and turnover will be stronger than the relationship between challenge related stress and turnover.

METHOD

Subjects and Procedure

Surveys were sent to 10,000 high level managers listed in the database of a large executive search firm as part of a larger project investigating mobility. Respondents were mostly male (91%), white (96%), and married (91%). The average age was 47. The managers worked an average of 56 hours per week, spent 3.4 years in their current position, and had received 7.9 promotions in their career. The average respondent was 2 levels below the CEO and their total compensation (including bonuses) was $164,618 per year. The respondents came from companies averaging $1.5 billion in sales per year and 10,140 total employees. The first survey was sent to the subjects in June 1995 by the search firm. Subjects were instructed to return the survey business reply envelope included) directly to the researchers. Of the 10,000 survey sent out, 1,886 surveys were returned (19% response rate).

In July 1996, a follow-up survey was sent to each manager who had responded to the original questionnaire. Forty-five percent of the original survey respondents returned the follow-up survey (841 of 1,885).

Challenge and Hindrance Related Stress Measures

Overview of measure development. After defining challenges and hindrances, the following steps were taken to develop and assess the construct validity of the challenge and hindrance related stress measures (Schwab, 1980): 1) the content validity was assessed through the use of four independent judges; 2) the two-factor structure of the stress items was tested using LISREL (Joreskog & Sorbom, 1993) confirmatory factor analysis; 3) internal consistency was assessed using Cronbach's alpha; and 4) the pattern of correlational relations between the challenge and hindrance related stress scales and external criteria was examined. Steps one through three are discussed below; step four is discussed in the Results section.

Evidence of content validity. Challenge and hindrance related stress were assessed using scales that were adapted from a direct measure of job stress[1] that was developed from existing measures by Judge, Boudreau, and Bretz (1995). The original scale included 16 items that were selected specifically because of their appropriateness for managers (Bretz et al., 1994; Judge et al., 1995). Subjects were asked to respond to how much stress each of the 16 job related items was causing them using a 1-5 Likert scale (1=produces no stress, 5=produces a great deal of stress).

Based on the theoretical considerations discussed above, we viewed the measure used in Bretz et al. (1994) as including items that assess two distinct phenomenon, stress related to challenges and stress related to hindrances (i.e., challenge and hindrance related stress). Items from the original scale were selected for use in constructing separate challenge and hindrance related stress measures using the following procedure. As a preliminary step, three of the four present authors evaluated the content of each of the original 16 items and made a judgment as to whether the item stem described a challenge, a hindrance, or neither. Six items were categorized as challenges, five were categorized as hindrances, and five as not falling clearly within either category.

To obtain independent evidence of the content validity of the respective scales, four individuals unrelated to the research project were provided the definitions of challenge and hindrance (stated above) and the 11 remaining stress item stems. The four evaluators were asked to read the definitions and then categorize each item stem as describing a challenge, a

[1] Direct measures of stress ask respondents to report the level of stress they are experiencing (e.g., "How much stress are you feeling?" or "To what extent are you experiencing stress…?"). In contrast, non-direct measures ask respondents to report levels of different demands, or stressors, that are assumed to produce stress (e.g., "To what extent does your job require you to work very fast?" or "To what extent does your job involve conflicting demands?").

hindrance, or neither. The evaluators were allowed to refer to the definitions during the sorting task. The evaluators' categorization of the items agreed with the a priori categorization in 93% of the cases (each assignment of an item to a category by one evaluator representing one case). At least three of the four evaluators agreed with the a priori categorization of each item. The 11 items and their categorization are shown in Table 1.

TABLE 1

Stress Items and Categorization as Challenge or Hindrance Related Stress

Item	Challenge or Hindrance
1. The number of projects and or assignments I have.	Challenge
2. The amount of time I spend at work.	Challenge
3. The volume of work that must be accomplished in the allotted time.	Challenge
4. Time pressures I experience.	Challenge
5. The amount of responsibility I have.	Challenge
6. The scope of responsibility my position entails.	Challenge
7. The degree to which politics rather than performance affects organizational decisions	Hindrance
8. The inability to clearly understand what is expected of me on the job.	Hindrance
9. The amount of red tape I need to go through to get my job done.	Hindrance
10. The lack of job security I have.	Hindrance
11. The degree to which my career seems "stalled."	Hindrance

Testing the two-factor structure and evidence of internal consistency. To investigate the hypothesized factor structure, a confirmatory factor analysis (CFA) was conducted. CFA confirmed the two-factor model ($\chi 2$[43, N=1,769]=540.71, p<.00[CFI=.90, NNFI=.87]) (Bentler & Bonett, 1980). A one-factor model was also tested, however, the fit of this alternative model was inferior ($\chi 2$[44, N=1,769]=991.59, p<.00[CFI=.81, NNFI=.77]). Internal consistency of the challenge and hindrance scales was also demonstrated (coefficient

alpha [α] =.87 & .75, respectively). Given these findings, mean composite measures were created for challenge and hindrance related stress. Further empirical evidence supporting the scales construct validity will be presented below, in the Results section. Specifically, evidence of discriminate validity will be assessed by examining the scales' respective patterns of correlations with third variables (e.g., personality variables), and by testing the scales' predicted differential relationships to the focal outcome variables (job satisfaction, job search, and turnover).

Other Measures

Job satisfaction. Overall job satisfaction was measured with the three items used by Judge et al. (1995)—Gallup Poll measure of job satisfaction, the non-graphic version of the G. M. Faces Scale (Scarpello & Campbell, 1983), and an adapted version of the Fordyce Percent Time Satisfied Item (Diener, 1984). Because the three items used different response formats, they were standardized before computation of the composite measure (α =.83).

Job search behavior. Job search behavior was measured with 10 items from the Job Search Behavioral Index (JSBI; Kopelman et al., 1992). Respondents were asked whether they had engaged in different search activities over the past year (1=yes, 0=no). Examples of items include: revised resume, gone a job interview, and initiated contact with an executive search firm. The 10 items demonstrated high internal consistency (α= .84). Consistent with previous research using this measure (e.g., Bretz et al., 1994), items were summed to create one job search index. A high number on this index indicates more search activity.

Voluntary turnover. Voluntary turnover was measured on the follow-up survey (approximately one year after the initial survey) with a question that asked whether the respondent was in the same position that they occupied at the time of the initial survey. Circumstances surrounding the separation were also assessed. Voluntary turnover occurred if the respondent was in a new position with a different company and left on their own accord. One hundred and forty-five (20%) of the respondents indicated they had left the organization voluntarily (1=turnover, 0=did not turnover).

Control variables. Previous research has shown that certain personality variables relate to the appraisal, reported frequency, and effects of stressful events. Gallagher (1990) found that individuals high in extraversion reported experiencing higher challenge related stress and those high in neuroticism reported higher threat related and lower challenge related stress. This was further supported by Hemenover and Dienstbier (1996) who found that neuroticism was positively and extraversion negatively related to appraisal of stress as

threatening. Previous research has also considered the role of conscientiousness in job stress and outcomes (e.g., Huebner & Mills, 1994; Jelinek & Morf, 1995; O'Brien & DeLongis, 1996). Specifically, Huebner and Mills (1994) found that low levels of conscientiousness as well as low levels of extraversion were associated with high levels of burnout for school psychologists. Previous research, therefore, suggests that extraversion, neuroticism, and conscientiousness may influence the relationships between job stress, attitudes, and behaviors and should, therefore, be considered in studies of stress. Thus these personality variables are controlled for in the present study. Neuroticism, extraversion, and conscientiousness were each measured with 12 items from the NEO Personality Inventory (Costa & McCrae, 1992; α=.82, .77, .80, respectively). Examples of items are: "I often feel tense and jittery" (neuroticism), "I really enjoy talking to people" (extraversion), and "I work hard to accomplish my goals" (conscientiousness).

Research has also shown that men and women vary in reported severity and frequency of stress (Spielberger & Reheiser, 1994; Xie & Johns, 1995), are influenced by different stress factors which have different effects on variables such as career commitment (Wolfgang, 1995), vary in their perceptions of job demands (Hochwarter, Perrewe, & Dawkins, 1995), and may differ in their appraisal of job stressors and symptoms of stress (Geller & Hobfoll, 1994; Murphy, Beaton, Cain, & Pike, 1994). Therefore, consistent with previous research (Xie, 1996; Xie & Johns, 1995), gender (1=male, 0=female) was also used as a control in the analyses.

RESULTS

Additional Evidence of Construct Validity of Stress Scales

Descriptive statistics and correlations are shown in Table 2. To assess evidence of discriminate validity, the two scales respective patterns of correlations with external criteria were examined. As shown in the table, both challenge related stress and hindrance related stress were positively related to neuroticism and negatively related to extraversion. This is consistent with findings that hardy individuals (those individuals low on neuroticism and high on extraversion) tend to experience less stress. However, challenge related stress was negatively related to gender (females reporting higher levels) and conscientiousness while hindrance-related stress was not significantly related to these variables. These divergent relationships along with the CFA provide evidence of the discriminate validity of the stress constructs.

TABLE 2

Descriptive Statistics and Correlations Between Variables

	N	M	SD	1	2	3	5	6	7	8	9	10
1 Hindrance-related stress	1886	2.80	.81	----								
2 Challenge-related stress	1886	2.71	.76	28	----							
3 Job satisfaction	1884	0.00	2.60	-52	-03	----						
5 Job search	1879	5.36	2.97	35	03	-39	----					
6 Turnover	713	.20	.40	21	01	-27	26	----				
7 Gender (male)	1883	.90	.30	00	-09	-01	-04	00	----			
8 Neuroticism	1886	25.27	6.16	31	29	-22	12	01	-06	----		
9 Extraversion	1886	45.90	5.21	-11	-08	15	00	06	-.05	-42	----	
10 Conscientiousness	1886	49.48	4.98	-02	-11	01	-03	02	-02	-35	29	----

Note: Decimals omitted. Correlations greater than | 07| are significant at $p<.01$; those greater than | 05| are significant at $p<.05$. Listwise deletion yielded $N=1,875$ for correlational analysis except for those with Separation ($N=663$; correlation with search, job satisfaction, and hindrance-related stress significant at $p<.01$).

Test of Hypotheses

Stepwise ordinary least squares (OLS) regression was used to test Hypotheses 1a,b and 2a,b. In each analysis the control variables were entered into the model first, hindrance and challenge related stress were entered second, and the squared terms employed to test curvilinearity (Cohen & Cohen, 1983) were entered last. Results are reported here for the model without the squared terms, however, results for each step are shown in the tables. Incremental R^2 for each step in the regression are also shown in the tables. Table 3 shows the results for job satisfaction. Controlling for gender and the personality variables, hindrance related stress negatively and challenge related stress positively predicted job satisfaction ($\beta=-.52$, $p<.01$; $\beta=.14$, $p<.01$, respectively). The squared challenge related stress term was also significant and negative as hypothesized ($\beta=-.46$, $p<.01$), and the squared hindrance related stress term was not significant ($\beta=.02$, n.s.). Hypotheses 1a and 2a were supported.

TABLE 3
Results of Regression Analysis for Job Satisfaction

Variable	Step 1	Step 2	Step 3
Gender (male)	-.02	.00	.00
Neuroticism	-.21**	-.07**	-.07**
Extraversion	.08**	.08**	.08**
Conscientiousness	-.09**	-.04	-.03
Hindrance-related stress		-.52**	-.55**
Challenge-related stress		.14**	.59**
Hindrance stress squared			.02
Challenge stress squared			-.46**
Change in R^2		.23**	.01**
R^2	.06	.29	.30
Adjusted R^2	.06	.29	.30
F	28.29**	128.31**	99.36**

Note. Standardized coefficients are shown; *p<.05; **p<.01

Table 4 shows the results for job search. As hypothesized, challenge related stress negatively and hindrance related stress positively predicted job search behaviors (β=-.09, p<.01; β=.36, p<.01, respectively). The squared challenge related term was not significant (β=-.02, n.s.). Therefore, Hypothesis 1b was partially supported and Hypothesis 2b was supported.

TABLE 4
Results of Regression Analysis for Job Search

Variable	Step 1	Step 2	Step 3
Gender (male)	-.03	-.04*	-.04*
Neuroticism	.14**	.04	.04
Extraversion	.05*	.05*	.06*
Conscientiousness	.00	-.04	-.04
Hindrance-related stress		.36**	.59**
Challenge-related stress		-.09**	-.06
Hindrance stress squared			-.23
Challenge stress squared			-.02
Change in R^2		.11**	.00
R^2	.02	.13	.13
Adjusted R^2	.02	.13	.13
F	8.15**	46.97**	35.69**

Note. Standardized coefficients are shown; *p<.05; **p<.01

To examine the relation between the different types of stress and turnover, Hypotheses 1c and 2c, we specified a logistic regression model with turnover as the dichotomous dependent variable (see Table 5). Hindrance related stress positively predicted turnover as hypothesized (β=.74, p<.01), and challenge related stress was in the hypothesized negative direction but was not significant (β=-.11, n.s.). Both square terms were nonsignificant. Hypothesis 2c was supported and Hypothesis 1c was not.

TABLE 5
Logistic Regression Results of Turnover

Variable	Step 1	Step 2	Step 3
Gender (male)	.11	.02	.04
Neuroticism	.02	-.01	-.01
Extraversion	.04	.04*	.04*
Conscientiousness	.01	-.01	-.01
Hindrance-related stress		.74**	1.49*
Challenge-related stress		-.11	-.86
Hindrance stress squared			-.13
Challenge stress squared			.13
Constant	-4.03*	-4.65**	-4.70*
Chi-square (8 df, n=671)	4.11	37.80**	39.79**
Change in X^2		33.69**	2.00
-2 log likelihood	715.62	681.93	679.93

Note. Maximum likelihood estimates are shown; N=671; *p<.05; **p<.01

To test the predictions that hindrance related stress would have a stronger relationship to the work outcomes than challenge related stress, Hypotheses 3a-c, we conducted F-tests (Hypotheses 3a,b) or a χ^2 test (Hypothesis 3c) comparing absolute values of the β and MLE estimates, respectively. The data support Hypotheses 3a-c. Hindrance related stress is more strongly related to the outcome variables than challenge related stress. Specifically, hindrance related stress is a stronger predictor of job satisfaction ($F=191.21$, $p<.01$), job search ($F=81.83$, $p<.01$), and turnover ($\chi^2=13.51$, $p<.01$).

DISCUSSION

In this study, we proposed that stress associated with two kinds of stress producing job demands or work circumstances, challenges and hindrances, are distinct phenomena that are differentially related to attitudinal and behavioral work outcomes. Based on that proposition, specific hypotheses regarding the relationship between challenge and hindrance related stress, respectively, and job satisfaction, job search, and turnover were derived and tested. In this section we review the substantive issues addressed in the study and briefly discuss relevant measurement and design issues in job stress research.

Challenge and Hindrance Related Stress

On balance, the results provide evidence that challenge and hindrance related stress are distinct phenomena.[2] The evidence includes the results of a content validation procedure. Four independent judges, provided with only the definitions and instructions indicated above (p. 12), sorted the items with 93% agreement with the a priori categorization. Their judgments were confirmed by data provided by 1,886 U.S. managers. The confirmatory factor analysis, reliability analysis, and correlational analyses with external criteria all supported the proposition that challenge and hindrance related stress are two distinct phenomena.

Perhaps most compelling, however, are the findings that challenge and hindrance related stress were both related to the work outcomes in question, <u>but in opposite directions</u>. Generally, challenge related stress was significantly positively related to job satisfaction and significantly negatively related to job search. However, with respect to the highest levels of challenge related stress, the addition of the polynomial terms indicated a negative curvilinear relationship between challenge related stress and job satisfaction. This indicates that at most

[2] Whether challenge and hindrance related stress are more usefully viewed as separate constructs or distinct dimensions of a more general job stress construct is an issue that we need not resolve. For the purpose of the present discussion, we will refer to them as the latter.

levels, as challenge related stress increases job satisfaction and job search decreases; at the highest levels of challenge related stress, job satisfaction decreases.

In contrast, hindrance related stress was significantly negatively related to job satisfaction and significantly positively related to job search and turnover in a linear fashion. Further, consistent with predictions based on the demonstrated tendency of people to give negative consequences greater weight, the relationships between hindrance related stress and the work outcomes were significantly stronger than the relationships between challenge related stress and the outcomes. These findings, and particularly the finding that challenge and hindrance related stress are both related to the work outcomes but in opposite directions, are not easily attributed to methodological artifacts.

The present findings strongly suggest that there is need for further consideration of the dimensionality of job related stress. Researchers investigating similar stress producing job demands or work circumstances have treated the items as measuring a single, unidimensional stress construct (e.g., Bretz et al., 1994). However, aggregating items measuring challenge related stress with items measuring hindrance related stress may obscure underlying relationships and provide misleading findings. For example, in their study examining the job search behavior of employed managers, Bretz et al. (1994) examined the relationships between job stress, several other motivational variables (e.g., perceived organizational success, current job level, total compensation) and job search. As described earlier (at p. 11), the measure of job stress they used included the 11 items used to measure challenge and hindrance related stress in the present study, and an additional 5 items. Consistent with previous use of the items, responses to the 16 items were summed and treated as a single score for level of job stress that was expected to have a positive relationship with job search. Using this measure, they failed to find a significant relationship between job stress and job search.

With permission from the authors, we obtained the data (a sample of 1,388 managers collected in 1992) and re-analyzed it using the challenge and hindrance related stress categorization that was supported by the findings of the present study. In contrast to the non-significant findings yielded when challenge and hindrance related stress items were aggregated in a single measure (along with the other five items), the findings of the re-analysis indicate a significant positive relationship between hindrance related stress and job search (β=.13 , p < .01); and a significant negative relationship between challenge related stress and job search (β=-.06, p <.05).

While the present findings indicate that job stress is not a unidimensional construct, we do not rule out the possibility that there are other meaningful dimensions of job stress. The focus on the challenge-hindrance distinction grew out of the authors' interest in the challenge and development literature (Berlew & Hall, 1966; Davies & Easterby-Smith, 1984; McCall et al., 1988; McCauley, Cavanaugh, & Noe; 1996; McCauley et al., 1994). The dimensionality of the job stress construct is in need of further theorizing and empirical investigation.

Measurement and Design Issues in Job Stress Research

A number of measurement and design issues were raised or highlighted by the present study. Three will be identified and briefly discussed.

Direct measures of stress. This study employed a direct measure of stress, assessing relationships between reported stress levels and work outcomes. A potential limitation of asking respondents to directly report the level of stress they are experiencing is that if individuals experiencing eustress do not report feeling stressed (i.e., they don't feel "stressed out" because they are experiencing positive feelings), the measure may be deficient. This is an issue that does not appear to have been addressed in the stress literature. If the most extreme scenario is assumed, that direct measures are totally deficient in terms of capturing eustress, how would the interpretation of our findings be affected? That assumption would eliminate eustress feelings as an explanation for the significant relationships found between scores on the challenge related stress measure and the three outcome variables, giving greater credence to the net resource explanation for the relationships.

Based on our review, previous empirical research that has distinguished between dimensions of job stress that are thought to relate differentially to work outcomes has not used direct measures of stress. Instead, these studies have focused on the relationships between job demands, that are evaluated as positive or negative and assumed to involve stress, and work outcomes. For example, in investigating the effect of "positive stress" and "negative stress" on job satisfaction, organizational commitment, turnover intentions, and other organizational outcomes, Bhagat et al. (1985) had subjects appraise the impact of job demands [from the Life Experiences Survey (LES); Johnson & Sarason, 1979] as positive or negative. The relationships between the positively and negatively appraised job demands and the outcomes were assessed (e.g., Bhagat et al., 1985). Scheck et al. (1995, 1997) followed a similar procedure.

A potential limitation of this approach is that it does not provide any empirical basis for assessing the extent to which individuals appraising the demands as positive or negative are

actually experiencing stress associated with the demand. A second potential limitation is that the relationship between the positively and negatively appraised demands (which they equated with positive and negative stress) and work outcomes may be inflated due to percept-percept bias. That is, in appraising a particular demand or circumstance (e.g., a promotion) as positive and then evaluating a positive outcome (e.g., job satisfaction) a finding of an association may be inflated as a result of the semantically synonymous items (Crampton & Wagner, 1994).

Future research should investigate the extent to which individuals who positively evaluate demands also report experiencing stress, and the extent to which individuals who negatively evaluate demands also report experiencing stress. A general approach to investigate this issue would be to have respondents assess both the stress associated with job demands and evaluate the positive or a negative impact the job demands are viewed as having on the respondents' jobs, careers, or other relevant outcomes.

Assessing curvilinearity. The present study supports arguments regarding the importance of assessing the curvilinearity of relationships between stress and work outcomes where theoretical support for such a relationship exists (Xie & Johns, 1995). The failure to examine such relationships may lead to incomplete, if not misleading, pictures of job stress and its nomological network. The finding that the relationship between challenge related stress and job satisfaction includes curvilinear aspects but the relationship between hindrance related stress and the outcomes do not, provides additional evidence that challenge and hindrance related stress are distinct phenomena.

Controlling the effect of personality. Personality may strongly influence reports of stress, as well as reports of attitudinal variables (McCrae, 1990). As indicated by the patterns of correlations, the personality variables (neuroticism, extraversion, and conscientiousness) were generally significantly related to both challenge and hindrance related stress and the attitudinal outcome variable (job satisfaction). These findings provide further evidence that the failure to control for relevant personality variables in studies investigating job stress may result in spurious relationships and would constitute a unreasonable threat to the validity of such studies.

Practical Implications

The findings suggest that organizations interested in addressing job related stress to improve job satisfaction and reduce employee turnover need to be discriminating in their measurement and interpretation of reported levels of stress, and should focus on eliminating hindrance related stress. Unfortunately, it appears that it may not be possible to address

hindrance related stress with readily implemented stress reduction programs. Reducing the stress associated with job insecurity, or the political nature of the workplace, may require more systemic changes in the organization's culture and/or state of employee relations.

Less clear are the practical implications of the challenge related stress findings. The results generally indicated a positive relationship between challenge related stress and job satisfaction and a negative relationship with job search. This is consistent with claims being made about the relationship between challenging job demands and positive work outcomes (McCauley et al., 1996; McCauley et al., 1994). However, in the present study the highest levels of challenge related stress resulted in a decrease of job satisfaction, suggesting that the relationship is not simply linear. Moreover, we do not know the physical effects of challenge related stress at any level. Individuals who are experiencing stress associated with challenges for lengthy time periods may be at a greater risk for heart attacks, high blood pressure, or other physical ailments. Additional research is needed to examine these effects before recommendations are provided.

Other Limitations

In addition to the limitations that have already been suggested, two others warrant comment. Although two explanations for the predicted relationship between challenge related stress and positive outcomes were offered (i.e., feelings of eustress and/or a net gain in resources), this study was not intended to test which of the alternatives best explains the predicted relationships. As a result, the data did not allow us to rule out either explanation. For example, we do not know whether the positive relationship between challenge related stress and job satisfaction is a result of managers experiencing "good feelings" or their perception of a net gain in resources, or some combination of the two. Future research is needed to determine the mechanism by which the relationships exist.

The extent to which the study's findings generalize to other samples drawn from other occupations is unclear, but there at least two reasons to expect that the generalizability may be limited. The first involves the personality profiles of managers who have been described as "hardy" (Niehouse, 1984) and as achievement oriented (Scott, Moore, & Miceli, 1997). If these personality profiles are accurate, personality may systematically effect the findings.

The second reason to expect that the generalizability of the findings may be limited involves the nature of managerial jobs and managers' relatively high degree of job control. Karasek's (1979) job demands-decision latitude model explicates the importance of job control when examining the relationship between job demands and mental strain. Essentially, the

model posits that the level of job demand and the amount of job control interact to form a two-by-two matrix of potential outcomes. According to the model, the least desired situation is high demand-low decision latitude (high strain situation) and the most desired situation is high demand-high decision latitude (active situation).

While issues of job control limit the generalizability of the study's findings, it is not, we believe, a substantial threat to the internal validity of the findings. According to Karasek, managerial positions can be categorized as a high demand-high decision latitude occupation (Karasek, 1979, 1989). In using a sample that is limited to managers, relevant differences in job control are held constant (i.e., job control is "controlled for" because the sample includes subjects who are all expected to fall in the high demand-high decision latitude category). Future research should extend the examination of challenge and hindrance related stress to workers beyond managers.

Conclusion

This study proposed a distinction between challenge and hindrance related stress and examined the relationships among these two types of stress and work outcomes that are important to individuals and organizations. The results suggest that challenge and hindrance related stress are distinct phenomena, and that distinguishing between them will increase our understanding of job-related stress.

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