

Personality and Leader Effectiveness: A Moderated Mediation Model of Leadership Self-Efficacy, Job Demands, and Job Autonomy

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The trait theory of leadership is advanced by a joint investigation of the mediating role of (a) leadership self-efficacy (LSE = leader's perceived capabilities to perform leader roles) in linking neuroticism, extraversion, and conscientiousness with leader effectiveness and (b) the moderating role of job demands and job autonomy in influencing the mediation. Using K. J. Preacher, D. D. Rucker, and A. F. Hayes' (2007) moderated mediation framework, the authors tested the model (over a 2-year period) with matched data from 394 military leaders and their supervisors. Results showed that LSE mediated the relationships for neuroticism, extraversion, and conscientiousness with leader effectiveness. Moderated mediation analyses further revealed that LSE mediated the relationships for (a) all 3 personality variables for only those leaders with low job demands; (b) neuroticism and conscientiousness for only those leaders with high job autonomy; and (c) extraversion, regardless of a leader's level of job autonomy. Results underscore the importance of accounting for leaders' situational contexts when examining the relationships between personality, LSE, and effectiveness.

Keywords: self-efficacy, personality, job demands, job autonomy, moderated mediation

Judge, Bono, Ilies, and Gerhardt's (2002) meta-analysis on the trait perspective of leadership found that neuroticism ($\rho = -.22$) was negatively correlated and that extraversion ($\rho = .24$), openness ($\rho = .24$), and conscientiousness ($\rho = .16$) were positively correlated with leader effectiveness. Agreeableness, which Judge et al. argued to be an ambivalent trait for leadership, was also positively associated with leader effectiveness ($\rho = .21$). Overall, the Big Five had a multiple correlation of .39 with leader effectiveness, which prompted Judge et al. (2002) to conclude that the "Big Five typology is a fruitful basis for examining the dispositional predictors of leadership" (p. 773).

Notwithstanding these promising results of the trait theory of leadership, Judge et al. (2002) raised two major concerns that require further research. First, they identified that the process through which personality affects leader outcomes remains underexplored and that this situation results in a poor understanding of how distal traits translate into leader effectiveness. Despite Judge et al.'s (2002) call for future research to "explain the linkages between the Big Five traits and leadership" (p. 774), very few studies to date have examined the theoretical mechanisms that link personality traits and leader effectiveness.

Research on personality (Barrick & Mount, 2005; McCrae & Costa, 1996) and motivation (Kanfer, 1990) has asserted that the

effects of distal traits, such as those of personality on work behaviors, are mediated through more proximal motivational states. For example, Barrick and Mount (2005) advanced the idea that "the primary means through which personality affects work behavior is expected to be *through motivation* [italics added]" (p. 365). Of the various motivational concepts, social-cognitive theory (Bandura, 1997) has identified self-efficacy as the most powerful self-regulatory mechanism in affecting behaviors. Stajkovic and Luthans' (1998) large-scale meta-analysis demonstrated that efficacy beliefs specific to a particular task are critical for the prediction of performance in a given situation. Locke (2003) likewise commented that self-efficacy "has proven to be extraordinarily useful as a motivation concept in numerous domains of human functioning" (p. 441). Given that personality research has highlighted the importance of motivational processes and that self-efficacy is a central motivational construct for prediction of behaviors, we posit leadership self-efficacy (LSE), a specific form of efficacy beliefs related to leadership behaviors, as a key motivational mechanism that links leaders' broad personality traits to leader effectiveness.

The second concern of the trait theory of leadership pertains to the role of situations (Judge et al., 2002). Although situations have long been recognized as abetting or constraining human agency (Johns, 2006; Mischel, 1968), the trait theory of leadership is largely silent on the influence of the situational context surrounding the leader, which could moderate the predictive validity of the theory (Judge et al., 2002; McAdams, 1992). A recent review on personality and leadership by Spangler, House, and Palrecha (2004) concluded that "perhaps the major limitation of the [Big Five] model, with respect to leadership research, is that it does not specify the conditions under which specific traits operate" (p. 257).

Recently, Hambrick, Finkelstein, and Mooney (2005) directed leadership research toward addressing the missing role of job contexts, in particular, the unique task and performance challenges

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associated with leaders' jobs. On the basis of Karasek's (1979) classic work on job strain, Hambrick et al. identified job demands and lack of job autonomy as key challenging elements in the leaders' job context that could induce deleterious performance consequences but that have been understudied in leadership research. Building on Hambrick et al.'s recommendations, we examined the extent to which the job demands and job autonomy experienced by leaders moderate the relationships between personality, LSE, and effectiveness.

Hence, we developed a moderated mediation model (e.g., Baron & Kenny, 1986; Edwards & Lambert, 2007; Muller, Judd, & Yzerbyt, 2005; Preacher, Rucker, & Hayes, 2007), which jointly examines LSE as the mediating mechanism and job demands and job autonomy as the moderators, to enhance the theoretical validity and precision of the trait theory of leadership. In the next section, we draw on Kanfer's (1990) distal-proximal framework of motivational theories and Tett and Burnett's (2003) trait activation theory to substantiate our moderated mediated model of trait theory of leadership and the hypotheses associated with the model. Using Preacher et al.'s (2007) analytical procedures, we report a moderated mediation test of our model that used field data collected from matched pairs of leaders and their supervisors in the military.

Theoretical Background and Hypotheses

LSE

LSE refers to the perceived capabilities of the individual to perform functions necessary to accomplish specific leadership roles effectively (Chemers, Watson, & May, 2000; Kane, Zaccaro, Tremble, & Masuda, 2002). Consistent with the theoretical and empirical distinction made between task-specific versus general self-efficacy (Chen, Gully, & Eden, 2001; Chen, Gully, Whiteman, & Kilcullen, 2000), LSE is a specific form of efficacy beliefs targeted at leadership behaviors. It is distinct from general self-efficacy, which involves belief in one's overall competence in a wide range of achievement situations (Eden, 2001; Eden & Kinnar, 1991). Similarly, the task specificity of LSE differentiates it conceptually from the Big Five personality traits, which are broad dispositions that exert a generalized influence on behaviors across settings (Mischel, 1968).

On the basis of the theory of self-efficacy (Bandura, 1977, 1997), we expected leaders with greater LSE to be more effective leaders, because they are inclined to expend greater efforts to fulfill their leadership roles and to persevere longer when faced with difficulties. Despite the relevance of LSE for leadership, only three studies to date have examined the relationship between LSE and leader effectiveness. Chemers et al. (2000) found that ROTC cadets who reported higher LSE were given more positive leadership ratings by their instructors, peers, and trained observers in a 6-week leadership training camp. Paglis and Green (2002) similarly found that managers who had greater confidence in setting directions and gaining commitment were rated by their subordinates as having made more attempts at leading change. Finally, a laboratory experiment by Kane et al. (2002) demonstrated that leaders with greater LSE set higher goals and had better task strategies, which in turn led to better group performance.

The Mediating Role of LSE

Of greater interest in our model is the mediating role of LSE in explaining the distal relationships between the Big Five traits and leader effectiveness. Consistent with personality research that calls for a more specific matching of personality traits with the criteria and context of research (Barrick & Mount, 2005; J. Hogan & Holland, 2003), we focused on personality traits that are most relevant to our study of leadership effectiveness in the military context. The meta-analysis by Judge et al. (2002) found that only neuroticism, extraversion, and conscientiousness were significant predictors of leadership for studies conducted in a government and military setting. This finding supports previous research that has found mixed and conflicting results for the relationship between agreeableness and leader effectiveness. Results are mixed because the prosocial aspect of agreeable leaders should enhance their effectiveness in managing interpersonal relationships, but the desire to please others and to avoid conflict may make it difficult for them to make hard decisions (Graziano & Eisenberg, 1997). Openness to experience, which involves being imaginative, sensitive to aesthetics, and open to new ideas, has been found to be important for jobs that require creativity (George & Zhou, 2001) and adaptability to change (LePine, Colquitt, & Erez, 2000). However, it is less directly relevant to leadership in the military context, where adherence to rules and hierarchy is important.

Consistent with these established findings, we focused on the traits of neuroticism, extraversion, and conscientiousness. Given that no study has examined leaders' Big Five personality traits in relation to LSE, the mediating role of LSE in explaining Big Five traits and leader effectiveness has not been demonstrated. A meta-analysis conducted on the Big Five and task-specific self-efficacy by Judge and Ilies (2002) could, however, provide important insights on how leaders' personality traits are associated with LSE. Specifically, meta-analytic regression results in Judge and Ilies' (2002) study demonstrated that neuroticism was negatively related ($\beta = -.25$) and that extraversion and conscientiousness were positively related (β s = .27 and .16, respectively) to task-specific self-efficacy beliefs.

Drawing from existing findings on the relationships between the Big Five and task-specific self-efficacy (Judge & Ilies, 2002), as well as on LSE and leader effectiveness (Chemers et al., 2000; Kane et al., 2002; Paglis & Green, 2002), we proposed that LSE, as a specific set of efficacy beliefs related to leadership effectiveness, is a proximal motivational mechanism that can account for the distal relationships between the broad personality of leaders and their leadership effectiveness. This concept is consistent with Kanfer's (1990) distal-proximal framework of motivation, which asserts that broad and distal individual differences exert indirect effects on performance through more specific and proximal individual differences (Chen et al., 2000; Martocchio & Judge, 1997; Tay, Ang, & Van Dyne, 2006).

Specifically, we argued that the negative relationship between neuroticism and leader effectiveness (Judge et al., 2002) is associated with the lower LSE that neurotic leaders are likely to possess. Leaders with greater neuroticism tend to have lower self-efficacy in accomplishing their leadership functions (cf. Judge & Ilies, 2002) because of their general tendency to be anxious and less confident of themselves. Consistent with self-efficacy theory

(Bandura, 1977, 1997), lower LSE should be related to lower leader effectiveness.

Likewise, we proposed that the positive relationship between extraversion and leader effectiveness (Judge et al., 2002) is associated with the higher levels of LSE that extraverted leaders tend to possess. The outgoing, sociable, and assertive characteristics of extraverts are congruent with leadership roles that require interactions with and persuasion and motivation of others to achieve goals (House, 1977). Hence, leaders who are more extraverted are likely to be more confident of their leadership capabilities, a characteristic that is associated with better leader effectiveness.

Finally, we expected the positive relationship between conscientiousness and leader effectiveness (Judge et al., 2002) to be associated with the higher LSE that conscientious leaders are likely to have. In general, individuals who are responsible, organized, and willing to work hard should be more confident of the tasks assigned to them because of their will to accomplish the tasks (Judge & Ilies, 2002). Likewise, more conscientious leaders are likely to be more efficacious in their leadership roles because of their greater tenacity and persistence in completing their tasks; therefore, they are likely to be more effective. Taking these expectations together, we proposed the following:

Hypothesis 1: LSE mediates the relationships between neuroticism (Hypothesis 1a), extraversion (Hypothesis 1b), and conscientiousness (Hypothesis 1c) with leader effectiveness.

The Moderating Role of Job Demands and Job Autonomy

Although we have argued that the distal relationships between leaders' personality traits and effectiveness are mediated by LSE, we expected the strength of these relationships to differ across leaders who are situated in different job contexts (Mischel, 1968; Tett & Burnett, 2003). This section examines how job demands and job autonomy, two important characteristics of leaders' jobs (Hambrick et al., 2005; Karasek, 1979), moderate the influence of personality on leader effectiveness via LSE on the basis of trait activation theory (Tett & Burnett, 2003).

Trait activation theory asserts that personality traits require trait-relevant situations for their expressions (Tett & Burnett, 2003) and is anchored on Murray's (1938) early notion of "situational press." From this perspective, personality traits are viewed as latent potentials residing in a person that can be triggered into actions by situational cues that are relevant to characteristics of the traits. An example offered by Tett and Burnett (2003) is that of an employee who is assigned a messy office. The cues that emanate from the situation (e.g., messy desks, disorganized files) are relevant to the trait of orderliness: A response to clean up the mess indicates high orderliness, whereas a failure to respond to the situation reflects low orderliness. Conversely, a situation can suppress trait-relevant responses by restricting cues for the expression, in what Tett and Burnett (2003) refer to as a constraint. An example is that of an extraverted supervisor who is constrained in displaying his sociability when his subordinates are dispersed over a large geographic area.

Empirical studies have found support for the core tenets of the trait activation theory. For instance, Tett and Guterman (2000) empirically showed that the relationships between trait measures and trait-relevant behavioral intentions were stronger in situations

that provided cues that were relevant for those traits than in situations with fewer relevant cues. Lievens, Chasteen, Day, and Christiansen (2006) found, in the context of assessment centers, that convergence of ratings was better between exercises that provided opportunities to observe behaviors arising from the same underlying trait, whereas discrimination among ratings within exercises was better when exercises provided opportunities to observe different behaviors expected to arise from different underlying traits. Below, we apply trait activation theory (Tett & Burnett, 2003) as we propose moderated mediation hypotheses for job demands and job autonomy.

Job Demands

Job demands are aspects of the job that require sustained cognitive or emotional efforts by the job incumbent. They consist of both quantitative demands, such as workload, and qualitative demands, such as task difficulty (Hambrick et al., 2005; Janssen, 2001; Karasek, 1979).

A meta-analysis by Chen, Casper, and Cortina (2001) on the relationships between conscientiousness, self-efficacy beliefs, and task performance offers some insights on our hypothesis. Using path meta-analytic procedures, Chen et al. found that self-efficacy mediates the relationship between conscientiousness and performance under simple tasks but not under complex tasks. One reason is that the diverse and complex stimuli stemming from challenging and difficult tasks make it more difficult for individuals to accurately assess their self-efficacy in the task (Stajkovic & Luthans, 1998) and thus attenuate the links between personality, self-efficacy, and performance.

Likewise, on the basis of trait activation theory (Tett & Burnett, 2003), we argued that demanding jobs should weaken the role of LSE in mediating the effects of personality and leader effectiveness, because they restrict cues for trait-relevant expression. Challenging and complex problems contain a greater and richer range of stimuli that can overwhelm the leader (Hambrick et al., 2005). As job demands increase, leaders face increasingly high performance pressures that are likely to cause them to focus their attention narrowly on the stimuli that are most relevant to their deadlines and tasks. Hence, we expected that, under high job demands, trait-relevant cues for activating LSE would be constrained by the leaders' dominant focus on the task. As such, LSE perceptions of leaders are less affected by the leaders' personality characteristics of neuroticism, extraversion, and conscientiousness and are more affected by the challenges and external resources available to them to cope with the task (Brown, Jones, & Leigh, 2005). On the basis of the above theoretical and empirical research, we proposed the following:

Hypothesis 2: Job demands will moderate the strength of the mediated relationships between leaders' neuroticism (Hypothesis 2a), extraversion (Hypothesis 2b), and conscientiousness (Hypothesis 2c) with leader effectiveness via LSE, such that the mediated relationship will be weaker under high job demands than under low job demands.

Job Autonomy

Job autonomy refers to the degree of latitude employees possess in making job-related decisions, such as what tasks to perform,

how the work is to be done, and how work exceptions are to be handled (Hackman & Oldham, 1975). Mischel's (1977) situational strength argument suggests that jobs characterized by greater autonomy create fewer constraints on employees' behaviors and, hence, a weaker situation that allows individual personality to drive individual behaviors and performance. In support of this argument, Barrick and Mount (1993) found that conscientiousness and extraversion had stronger relationships with supervisor-rated task performance for individuals who reported having greater job autonomy than for individuals who reported having less job autonomy. Similarly, Gellatly and Irving (2001) found that managers' extraversion and agreeableness had positive relationships with supervisor-rated contextual performance for those with high job autonomy but not for those with low job autonomy.

Likewise, we expected that job autonomy moderates the relationships between leaders' personality traits and leader effectiveness. However, our model extends beyond those of Barrick and Mount (1993) and Gellatly and Irving (2001), in that we examined job autonomy as a moderator to the mediated relationships between personality, LSE, and effectiveness rather than as a moderator to the direct relationship between personality and effectiveness.

Consistent with trait activation theory, we expected that the freedom and latitude available to leaders to make decisions in their jobs create opportunities for them to act in ways that are consistent with their personality and, thus, strengthen the dispositional basis of LSE formation and accentuate the motivational processes underlying the personality-effectiveness link. For instance, we argued that the greater problem-solving and decision-making opportunities available in jobs with greater autonomy are likely to arouse the tendencies of neurotic individuals to worry and feel even more insecure of their leadership capabilities, which should strengthen the role of LSE in explaining the neuroticism-effectiveness link. Using the same logic, we expected that the greater decision latitude in high-autonomy jobs offers more opportunities for leaders to take charge, communicate, and influence others on their ideas (Parker, Williams, & Turner, 2006) and thus provides cues consistent with the energetic and assertive tendencies of extraverted leaders. Also, by giving leaders the freedom to plan and decide how work is to be done, high-autonomy jobs provide cues that are directly relevant to the organized and playful tendencies of conscientious individuals; thus, they accentuate the role of LSE in explaining the conscientiousness-effectiveness relationship. Accordingly, we proposed the following:

Hypothesis 3: Job autonomy will moderate the strength of the mediated relationships between leaders' neuroticism (Hypothesis 3a), extraversion (Hypothesis 3b), and conscientiousness (Hypothesis 3c) with leader effectiveness via LSE, such that the mediated relationship will be stronger under high job autonomy than under low job autonomy.

Method

Participants and Procedure

We conducted the study with military recruits from the Singapore Ministry of Defence. The sample consisted of 394 participants with matched supervisors' ratings of leader effectiveness. All

participants were Singapore male citizens who had enlisted for compulsory military service. All possessed at least a high school diploma. The age of participants ranged from 20 to 26 years ($M = 22.46$, $SD = 1.12$). The fact that a majority (89%) of participants were Chinese reflected Singapore's ethnic composition.

We collected data in two surveys administered 2 years apart. The first data collection was conducted during the first 2 weeks of enlistment into military service, before participants began any major military training. Two years later, we administered a second survey to these participants, who by then were nearing the end of their military service period. We assessed Big Five variables and the control variable of cognitive ability in the first administration and all other variables (LSE, job demands, job autonomy, and leadership experience) in the second administration. In the second data collection, we also administered a survey to the direct superiors of the participants, which asked them to assess participants' leader effectiveness. Upon completing the survey, direct superiors returned it to the researcher in a sealed envelope. In total, 303 superiors responded. Of those who responded, 83% (252) provided ratings on 1 subordinate, and the remaining 17% (51) provided ratings for more than 1 subordinate ($M = 3$, $SD = 1.3$).

In both survey administrations, we assured participants that the study was conducted purely for research purpose and that participation was voluntary. All surveys were in English, given that it is the official language in Singapore.

Measures

Big Five. The Big Five traits were measured with the public domain International Personality Item Pool (IPIP) developed by Goldberg (1998). The IPIP is a 50-item instrument that measures the five-factor model, with 10 items for each personality factor. Each item was assessed using a 5-point scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alphas were .82 for neuroticism, .78 for extraversion, and .74 for conscientiousness.

LSE. This scale was adapted from Chemers et al. (2000) and consisted of 11 items that asked participants for their beliefs about their ability in specific areas of leadership, which covered task, conceptual, and interpersonal skills. Examples of items include planning ability, setting direction, delegating/assigning/coordinating tasks, ability to communicate, and ability to motivate others. Participants responded on a 7-point Likert scale ranging from 1 (*Very Poor*) to 7 (*Very good*). Cronbach's alpha was .96.

Job demands. This scale consisted of five items that reflected both quantitative job demands, such as workload, and qualitative job demands, such as task difficulty and problem-solving demands (Karasek, 1979; Wall, Jackson, & Mullarkey, 1995). The following items were included: (a) "How heavy was your workload during the last 3 months?" anchored at 1 (*often not enough to keep me busy*) and 5 (*entirely too much for me to handle*); (b) "In the last 3 months, how often did difficult problems arise in your work for which there were no immediate solutions?" anchored at 1 (*one a week or less*) and 5 (*five times or more a day*); (c) "How much time did you spend solving difficult work problems?" anchored at 1 (*1 hr per week*) and 5 (*4 hr or more per day*); (d) "During a normal workweek, how frequently do exceptions arise in your work?" anchored at 1 (*very rare*) and 5 (*constantly*); and (e) "How hard is it to maintain the level of performance that is expected of

you?" anchored at 1 (*extremely easy*) and 5 (*extremely difficult*). Cronbach's alpha was .65.

Job autonomy. This scale consisted of four items adapted from Hackman and Oldham (1980) and Breugh (1985). Participants were asked how much authority they had in (a) determining how work exceptions are to be handled, (b) establishing rules and procedures about how their work is to be done, (c) determining how work exceptions are to be handled, and (d) setting quotas on how much work they have to complete. Items were rated on a 5-point scale, ranging from 1 (*none*) to 5 (*very much*). Cronbach's alpha was .90.

Leader effectiveness. Superiors rated subordinates' leader effectiveness using nine items that reflected the task, conceptual, and interpersonal aspects of leadership (e.g., planning and setting direction, delegating/assigning/coordinating tasks, and leading by example). Supervisors rated subordinates on a 7-point Likert scale ranging from 1 (*very poor relative to his peers*) to 7 (*very good relative to his peers*). Cronbach's alpha was .94.

Control variables. We controlled for participants' cognitive ability, as it has been found to influence self-efficacy assessments (e.g., Chen et al., 2000; Phillips & Gully, 1997) and leader effectiveness (e.g., Atwater, Dionne, Avolio, Camobreco, & Lau, 1999). We assessed cognitive ability in the first survey by asking for participants' academic scores at the end of primary and secondary school education (Chan & Drasgow, 2001). These scores were based on performance in standardized nationwide examinations in Singapore and were used by schools as admission criteria to the next higher level of education. We aggregated the standardized *z* scores of these two academic scores to form the cognitive ability score for our analyses.

We also controlled for participant leadership experience (assessed in the second survey), because direct experiences in leadership could influence participants' LSE assessments (Bandura, 1997) and leader effectiveness (Fiedler & Garcia, 1987). We operationalized leadership experience as the number of soldiers the participants were responsible for in their formal appointment over the last 6 months ($M = 10$, $SD = 16$). We did not ask for number of years of leadership experience, as participants belonged to the same cohort of military recruits and, hence, would have little variance in this variable.

Prior to forming the various scales for regression analyses, we conducted a confirmatory factor analysis using covariance matrix and maximum likelihood estimation to assess the discriminant

validity of the substantive constructs measured in this study. We used randomly chosen parcels of items as indicators (e.g., Landis, Beal, & Tesluk, 2000; Williams & Anderson, 1994) for constructs that were measured with more than five items. Hence, with the exception of job demands and job autonomy, all other constructs were assessed with three parcels of items each.

Results of the proposed seven-factor structure (neuroticism, extraversion, conscientiousness, LSE, job demands, job autonomy, and leader effectiveness) demonstrated good fit with the data, $\chi^2(231, N = 394) = 333.25$, $p = .00$, root-mean-square error of approximation = .034, standardized root-mean-square residual = .044, nonnormed fit index = .98, comparative fit index = .98. To test for the discriminant validity of the constructs, we compared the seven-factor model with a six-factor model that combined job demands and job autonomy and with a five-factor model that combined job demands, job autonomy, and LSE. Nested model comparisons demonstrated that the seven-factor model was superior to the alternative models; results showed a significantly worse fit for the six-factor model, $\Delta\chi^2(232 - 231 = 1, N = 394) = 117.53$, $p < .00$, and for the five-factor model, $\Delta\chi^2(234 - 231 = 3, N = 394) = 143.34$, $p < .00$. Taken together, the fit indices of the nested models showed that job demands, job autonomy, and LSE were distinct constructs. We computed the various constructs by taking the average of their respective items.

We also computed the intraclass correlation to assess whether nonindependence of superior ratings of leader effectiveness was a concern in our study. Nonindependence has little impact on statistical results when the intraclass correlation is small and when there are few individuals who are rated by a common rater (Bliese, 2000; Kenny, Kashy, & Bolger, 1998). The average number of subordinates per superior in our sample was 1.3 (394/303), and the intraclass correlation was .04. Hence, the issue of nonindependence was not consequential in our study.

Results

Descriptive statistics, bivariate correlations, and Cronbach's alphas for all the variables are presented in Table 1. We used hierarchical multiple regressions to test Hypothesis 1 and hierarchical moderated regressions to test Hypotheses 2 and 3. In all analyses, we entered the control variables of cognitive ability and leadership experience. We also centered the personality and job variables to avoid multicollinearity with their product terms

Table 1
Descriptive Statistics and Bivariate Correlations

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1. Leader effectiveness	4.82	0.79	(.94)								
2. LSE	4.83	1.13	.27**	(.96)							
3. Neuroticism	2.79	0.78	-.21**	-.25**	(.82)						
4. Extraversion	3.05	0.68	.19*	.35**	-.27**	(.78)					
5. Conscientiousness	3.48	0.60	.20**	.25**	-.36**	.20**	(.74)				
6. Job demands	2.66	0.62	.03	-.00	.06	.02	.06	(.65)			
7. Job autonomy	3.25	0.92	.10*	.38**	-.09†	.21**	.18**	.10*	(.90)		
8. Leadership experience	9.88	0.16	.23**	.26**	-.09	.16**	.11*	.12*	.09	—	
9. Cognitive ability	0.00	1.00	.10*	.11*	-.03	.12*	-.02	-.01	-.11*	.02	—

Note. Figures in parentheses are Cronbach's alphas. LSE = leadership self-efficacy.
* $p < .05$. ** $p < .01$. † $p < .10$.

(Aiken & West, 1991). All variance-inflation factors in our regressions were below 2; this result suggests that multicollinearity was not an issue in our analyses.

Hypothesis 1 proposed that LSE mediates the relationship for neuroticism (Hypothesis 1a), extraversion (Hypothesis 1b), and conscientiousness (Hypothesis 1c) with leader effectiveness. According to Baron and Kenny (1986), four conditions are necessary to establish mediation: (a) the independent and mediating variables must be significantly related; (b) the independent and dependent variables must be significantly related; (c) the mediator and dependent variable must be significantly related; and (d) the relationship between the independent variable and dependent variable should be nonsignificant or weaker when the mediator is added. The regression results for testing mediation are reported in Table 2.

Results in the second column of Table 2 show that, after controlling for leadership experience and cognitive ability, neuroticism was negatively related ($\beta = -.12, p < .05$) and extraversion ($\beta = .26, p < .01$) and conscientiousness ($\beta = .13, p < .01$) were positively related to LSE. Thus, Condition 1 was supported for all three personality traits. Results in the third column show that neuroticism ($\beta = -.13, p < .05$), extraversion ($\beta = .10, p < .05$), and conscientiousness ($\beta = .11, p < .05$) were significantly related to leader effectiveness and, thus, support Condition 2 for mediation. Results in the fourth column demonstrate that LSE was positively related to leader effectiveness ($\beta = .15, p < .01$) and, thus, support Condition 3. Further, results show that, after LSE was taken into account, the effects of extraversion ($\beta = .06, ns$) and conscientiousness ($\beta = .09, ns$) became nonsignificant, which suggests complete mediation; the effect of neuroticism ($\beta = -.10, p < .05$) became weaker, albeit still significant, which suggests partial mediation.

To further assess the significance of the mediation, we applied Sobel's (1982) test for indirect effects (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Results show that the intervening effect of LSE for neuroticism ($p < .05$), extraversion ($p < .00$), and conscientiousness ($p < .05$) was significant. Taken together, Hypotheses 1a, 1b, and 1c were supported.

Hypotheses 2 and 3 predicted that the indirect effect of LSE for the personality-leader effectiveness relationships would be weakened by high job demands and strengthened by high job autonomy,

respectively. To assess moderated mediation (Muller et al., 2005; Preacher et al., 2007), we examined four conditions: (a) significant effects of personality on leader effectiveness; (b) significant interactions between personality and the two job factors (e.g., job demands and job autonomy in predicting LSE significant interactions between LSE and the two job factors in predicting leader effectiveness); (c) significant effect of LSE on leader effectiveness; and (d) different conditional indirect effect of personality on leader effectiveness, via LSE, across low and high levels of each of the job factors. The last condition, which is the essence of moderated mediation, establishes whether the strength of the mediation via LSE differs across the two levels of the moderator (Preacher et al., 2007). Moderated mediation is demonstrated when the conditional indirect effect of personality on leader effectiveness, via LSE, differs in strength across low and high levels of job demands and job autonomy.

Our results for Hypothesis 1, which demonstrated that neuroticism, extraversion, and conscientiousness were significantly related to leader effectiveness, supported Condition 1 for moderated mediation. To test for Condition 2, we first examined whether the interactions of personality with job demands and job autonomy were significant in predicting LSE. Results of the moderated regressions of job demands and job autonomy on LSE and leader effectiveness, organized by the personality traits, are presented in Table 3.

Table 3 shows that the interaction terms for neuroticism with both job demands ($\beta = .10, p < .05$) and job autonomy ($\beta = -.12, p < .01$) were significant in predicting LSE. In contrast, interaction terms for extraversion with both job demands ($\beta = -.02, ns$) and job autonomy ($\beta = .01, ns$) were not significant. For conscientiousness, interaction with job autonomy was significant ($\beta = .10, p < .05$) but interaction with job demands was not ($\beta = .03, ns$).

We next examined whether the interactions for LSE with job demands and job autonomy were significant in predicting leader effectiveness. Results presented in the last column of Table 3 show that job demands ($\beta = -.12, p < .05$) but not job autonomy ($\beta = .05, ns$) interacted with LSE in predicting leader effectiveness.

Taken together, Condition 2 was satisfied for neuroticism and conscientiousness with both job demands and job autonomy. For extraversion, however, Condition 2 was satisfied for job demands but not for job autonomy, because job autonomy did not interact with extraversion to affect LSE, nor with LSE to predict leader effectiveness.

Condition 3 was supported by our results for Hypothesis 1, in which LSE was positively related to leader effectiveness. Hence, results based on the first three conditions indicate that job demands could moderate the mediation for neuroticism, extraversion, and conscientiousness, whereas job autonomy could moderate the mediation for neuroticism and conscientiousness but not for extraversion.

To further validate findings of moderated mediation relationships, we examined Condition 4, which requires the magnitude of the conditional indirect effect of the personality trait via LSE to be different for leaders across high and low levels of job demands and job autonomy. We used Preacher et al.'s (2007) statistical significance test, which applied Aroian's (1947) exact standard error for indirect effects, to compute a z statistic for the conditional indirect effect. We tested moderated mediation separately for each person-

Table 2
Regression Results for Testing Mediation in Hypothesis 1

Factor and statistic	LSE	Leader effectiveness	
		Step 1	Step 2
Leadership experience	.19**	.19**	.16**
Cognitive ability	.07	.09	.08
Neuroticism	-.12*	-.13*	-.10*
Extraversion	.26**	.10*	.06
Conscientiousness	.13**	.11*	.09
LSE			.15**
<i>F</i>	20.77**	10.47**	10.11**
<i>R</i> ²	.21	.12	.14
Adjusted <i>R</i> ²	.20	.11	.12

Note. LSE = leadership self-efficacy.
* $p < .05$. ** $p < .01$.

Table 3
Regression Results for Testing Moderation for LSE and Leader Effectiveness (Hypotheses 2 and 3)

Factor and statistic	LSE			Leader effectiveness
	Neuroticism	Extraversion	Conscientiousness	
Leadership experience	.16**	.17**	.17**	.14**
Cognitive ability	.07	.07	.08	.08
Neuroticism	-.12*	-.12*	-.12**	-.08
Extraversion	.19**	.21**	.21**	.06
Conscientiousness	.11*	.09*	.10*	.11*
Job demands	-.03	-.04	-.04	.04
Job autonomy	.29**	.30**	.31**	-.02
Neuroticism × Demands	.10*			
Neuroticism × Autonomy	-.12**			
Extraversion × Demands		-.02		
Extraversion × Autonomy		.01		
Conscientiousness × Demands			.03	
Conscientiousness × Autonomy			.10*	
LSE				.17**
LSE × Demands				-.12*
LSE × Autonomy				.05
F	19.16**	17.69**	18.72**	6.80**
R ²	.31	.29	.31	.15
Adjusted R ²	.29	.28	.29	.13

Note. LSE = leadership self-efficacy; Demands = job demands; Autonomy = job autonomy.
* $p < .05$. ** $p < .01$.

ality trait and moderator. Following Preacher et al.'s (2007) recommendation, we operationalized high and low levels of job demands and job autonomy as one standard deviation above and below the mean score of the respective job variables. Table 4 presents the estimates, standard errors, z statistics, and significance value of the conditional indirect effects for neuroticism, extraversion, and conscientiousness across low and high levels of job demands and autonomy.

Results show that, for job demands, the conditional indirect effects of neuroticism, extraversion, and conscientiousness were stronger and significant in the low job demands condition (neuroticism = $-.102, p < .01$; extraversion = $.118, p < .01$; conscientiousness = $.093, p < .05$) but were weaker and not significant in the high job demands condition (neuroticism = $-.010, ns$; extraversion = $.015, ns$; conscientiousness = $.010, ns$). Thus, Hypotheses 2a, 2b, and 2c were supported.

For job autonomy, results demonstrate that the conditional indirect effects for neuroticism and conscientiousness were significant in the high job autonomy condition (neuroticism = $-.072, p < .01$; conscientiousness = $.092, p < .01$) but were not signif-

icant under low job autonomy (neuroticism = $-.019, ns$; conscientiousness = $.019, ns$). Hypotheses 3a and 3c were thus supported. Results also verify our observation that there was no moderated mediation for extraversion with job autonomy, because the conditional indirect effects at both high and low job autonomy were significant and were not different from each other ($.042, p = .05$, and $.071, p < .05$, respectively). Thus, Hypothesis 3b was not supported.

Discussion

In this study, we examined an integrated moderated mediation model to address two major gaps identified in the literature of the trait theory of leadership. Findings of our study, which was based on field data from multiple informants (military leaders and their supervisors) and at multiple times (over a 2-year period), contribute to existing knowledge in two ways. First, we found support for our hypothesis that LSE mediates personality and leader effectiveness across the three personality traits of neuroticism, extraversion, and conscientiousness. This finding addresses Judge et al.'s (2002)

Table 4
Moderated Mediated Results for Neuroticism, Extraversion, and Conscientiousness Across Levels of Job Demands and Job Autonomy

Moderator	Level	Neuroticism				Extraversion				Conscientiousness			
		Conditional indirect effect	SE	z	p	Conditional indirect effect	SE	z	p	Conditional indirect effect	SE	z	p
Job demands	Low	-.102	.032	-3.17	.00	.118	.038	3.08	.00	.093	.036	2.55	.01
	High	-.010	.011	-0.88	.38	.015	.024	1.18	.24	.010	.023	0.41	.68
Job autonomy	Low	-.019	.013	-1.47	.14	.042	.022	1.90	.05	.019	.015	1.28	.20
	High	-.072	.028	-2.61	.01	.071	.029	2.42	.02	.092	.035	2.65	.01

concern about the lack of understanding of the mediating process underlying the trait theory of leadership and confirms prior theoretical assertion that distal personality traits affect work behavior through proximal motivational mediators (Barrick & Mount, 2005; Kanfer, 1990). In particular, we have demonstrated that LSE, a specific motivational construct targeted at leadership, accounted for the generalized effects of the broad personality of leaders on their leadership effectiveness. In addition, our finding extends the existing three leadership studies on LSE and leader effectiveness (Chemers et al., 2000; Kane et al., 2002; Paglis & Green, 2002) by identifying leaders' personality traits as important antecedents of LSE (Judge & Ilies, 2002).

Second, our integrated moderated mediation analyses demonstrate general support for our Hypotheses 2 and 3 and thus address the missing role of context in the trait theory of leadership. Consistent with trait activation theory, we found that LSE mediates the effects for all three personality traits of neuroticism (Hypothesis 2a), extraversion (Hypothesis 2b), and conscientiousness (Hypothesis 2c) on leader effectiveness only for leaders who experienced low job demands. Further, our results showed that high job demands attenuated the relationship between personality, LSE, and effectiveness through the link between LSE and leader effectiveness. This study therefore extends the existing finding that demanding jobs have a debilitating effect on the motivational impact of self-efficacy on performance (e.g., Brown et al., 2005; Chen, Casper, & Cortina, 2001; Stajkovic & Luthans, 1998) to the context of leadership.

Results for job autonomy as a moderator were slightly more mixed. Our results show moderated mediation for neuroticism and conscientiousness, such that LSE mediates the effects for neuroticism and conscientiousness on leader effectiveness when leaders have high job autonomy but not when they have low job autonomy. Further analyses show that these moderated mediation relationships occur because high job autonomy strengthened the relationship between the two personality traits with LSE and thus strengthened the overall motivational process underlying the two traits and leader effectiveness.

By contrast, our results do not support moderated mediation of job autonomy on the link between extraversion, LSE, and effectiveness. Instead, results show that LSE mediated the effects of extraversion under both high and low levels of job autonomy. This finding does suggest that extraversion, which is strongly associated with leadership (Judge et al., 2002) and is described as a "leader-like" quality by R. Hogan, Curphy, and Hogan (1994), could be the trait that is least susceptible to differences in job autonomy when leader effectiveness is being predicted.

Theoretical Implications

We believe our development of the moderated mediation model of trait leadership and our empirical findings lay a broad framework and solid foundation for future inquiry that could advance our understanding of the trait theory of leadership. As a start, our study demonstrates that LSE is a central motivational mechanism that links personality to leader effectiveness and therefore suggests that motivational mechanisms are fruitful mediators. Future research should examine other motivational mechanisms that can further our understanding of the process through which personality affects leader effectiveness. For instance, Judge and Ilies (2002)

suggested that the leader's goal-setting motivation is a possible intervening psychological mechanism underlying the relationships between leaders' traits and effectiveness. Although the theory of goal setting has been applied to the leadership context, it has primarily been studied as an intervention technique by which the leader enhances followers' performance (e.g., Locke & Latham, 1990; Sagie, 1996). Thus, future studies could examine whether the personality traits of leaders affect the level and type of leadership developmental goals they set for themselves and whether these goals explain the relationships between their personality and subsequent leader effectiveness. To better understand unique relationships between personality traits and the different mechanisms in predicting leader effectiveness, research could build upon findings from this study and examine multiple mediators, such as LSE and goal setting, simultaneously.

In addition, future research on the link between personality and leader effectiveness could adopt a behavioral focus. For instance, research has shown that leaders' transformational and transactional styles mediate leader personality and leader effectiveness (Judge & Bono, 2000) and team performance (Lim & Ployhart, 2004). A behavioral mediational approach could also examine more specific leadership behaviors relevant to the various personality traits. For instance, as one reviewer pointed out, neurotic leaders could be less effective because they are unable to control their emotions publicly, and extraverted leaders could be more effective because they possess greater resources and build larger networks of relationships. Conscientious leaders could be more effective because their striving and organized nature predispose them to plan, set goals, and persist in their efforts to achieve a goal.

In fact, given that motivation predisposes behaviors, future research should consider integrating motivational and behavioral approaches. For example, to better understand the relationships between personality traits and the different mechanisms in predicting leader effectiveness, one could develop a more sophisticated mediational model that begins with a leader's personality traits and progresses through intermediate links of motivational mediators (LSE, goal setting) to leadership styles (transformational, transactional) and then to leadership effectiveness.

Results of our moderated mediation have underscored the importance of incorporating the leader's job context when one examines the link between personality, LSE, and leader effectiveness. Our focus on job context is in line with Hambrick et al.'s (2005) plea for future leadership research to take into account the degree of challenge in the leader's job. To further our understanding of the moderating effects of job context on the trait theory of leadership, future research could expand on the types of job challenges that are relevant to leadership in the specific context. Here, Johns' (2006) dimensions of contexts, broadly classified into task (uncertainty, accountability, resources), social (social density, social structure, social influence), and physical (temperature, light, built environment), offer ripe grounds for future theory development and merit further attention.

Limitations

Our mediation model implies causal relationships between leaders' personality traits, LSE, and leader effectiveness. However, our current research design does not allow us to conclude definitively that leader personality leads to higher LSE. The causal direction in

the LSE–effectiveness link cannot be proven in our field study. According to Gist and Mitchell (1992), feedback on performance can affect self-efficacy beliefs. This finding suggests the plausibility of an effectiveness–LSE relationship, although we note that no direct feedback was provided to our participants regarding their leadership effectiveness at the time of our data collection. To ascertain causality, future studies could seek the power of experiments that would better establish the direction of relationships posited in our model. For example, the study by Kane et al. (2002) manipulated LSE in an experimental context and showed that leaders with greater LSE set higher goals and adopted higher quality task strategies, which in turn led to better team performance. Similarly, we propose that, by manipulating mediating processes such as LSE in experimental settings, we can provide more compelling inferences and stronger evidence for identifying key psychological and behavioral processes through which that causation occurs.

Our moderated mediation model could be expanded to examine other important leadership outcomes from multiple perspectives. In the current study, leader effectiveness was assessed with superiors' ratings on multiple leadership tasks, including setting direction, delegating tasks, leading by example, motivating others, and creating team spirit. Future research could assess leader effectiveness in influencing peers or followers in achieving the team's objectives from the peers' or followers' perspectives. Future research could also examine nonperceptual measures of leader effectiveness, such as job level, promotion, career success, or objective team performance (e.g., Judge et al., 2002).

Finally, given that our study was conducted in a military context with male participants from a relatively narrow age range, we caution against generalizing our findings to other settings. To ascertain the generalizability of results obtained in our current study, future research should attempt to replicate our design in different vocational settings and different cultures (Ang et al., 2007; Gelfand, Erez, & Aycan, 2007).

Practical Implications

Our findings have several practical implications for the selection and development of leaders. First, the significant relationships for neuroticism, extraversion, and conscientiousness with LSE and leader effectiveness, despite a 2-year gap in the assessment, add to the growing evidence and support for the relationships between Big Five and leadership effectiveness and thus reinforce the utility of personality traits as selection tools for identification of leadership potential. Our finding that LSE plays a central role in explaining the effects of personality on leadership also suggests that future research could examine more closely the nature of LSE and its potential as a leadership selection criterion.

Our study highlights the importance of developing leaders' self-efficacy in leading. Building on Bandura's (1997) research, encouraging leaders to (a) observe and emulate a role model (vicarious learning); (b) take on new leadership roles to practice and hone their leadership capabilities (direct experience), and (c) seek advice and encouragement from a mentor (verbal persuasion) can help build their LSE.

Designing and assigning jobs that create challenging and developmental experiences is another important way of helping leaders develop their confidence to lead (Day, 2001; Moxley & O'Connor,

1998). Our study shows that leaders who perceive that they have a manageable workload and autonomy to make decisions are more likely to experience the motivational benefits of enhanced LSE. Thus, the scope of work and degree of autonomy are some important considerations for those designing or assigning jobs for leadership developmental purposes. Failure to consider the job design of developmental assignments may potentially negate the benefits of leader selection procedures aimed at identifying people who are efficacious in leading. This finding is consistent with Fiedler's (1996) recommendation that, in addition to recruiting individuals who have the requisite attributes to be effective in their leadership roles, organizations should enable individuals to work under conditions that will help them maximize the potential for which they were hired.

Conclusion

As Barrick and Mount (2005) observed, "Systematically and carefully studying mediating and moderating effects are precisely where we need to go in personality research" (p. 369). Our study responds to Barrick and Mount's call for a more systematic and careful study of mediating and moderating effects of personality research. Specifically, we developed and tested a model that simultaneously examines LSE as a mediating mechanism and job demands and job autonomy as moderating factors to the link between personality, LSE, and leadership. In doing so, we provided a rare examination of an integrated moderated mediation model of the trait theory of leadership that advances current understanding of personality effects on leader effectiveness. Our study empirically validated LSE as a proximal and specific motivational mechanism that accounts for the relationships between the broad traits of neuroticism, extraversion, and conscientiousness with leadership effectiveness.

We also found that job demands weakened the role of personality on leader effectiveness by attenuating the impact of LSE on leader effectiveness, whereas job autonomy strengthened the personality effects by accentuating the effects of neuroticism and conscientiousness on LSE. These insights could not be gained with studies that focused on piecemeal approaches that examine mediation or moderation independently. We encourage future research toward a more integrative approach of theorizing mediating and moderating effects, so as to offer a more sophisticated trait theory of leadership.

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