

## How and when does grit influence leaders' behavior?

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### **Abstract:**

**Purpose:** The purpose of this paper is to examine the influence of grit, which is the tendency to pursue long-term goals with perseverance and continuing passion, on leaders' self-reported behavior in terms of role modeling and innovating, as well as inspiring, empowering and supporting followers. **Design/methodology/approach:** Data were collected from an international sample of 3,702 leaders in work and non-work contexts. They reported their level of grit and how frequently they engaged in five leadership practices. Moderation analysis was used to test the influence of grit on leadership behaviors across contexts. **Findings:** High grit leaders reported more frequent role modeling and innovating behaviors, but less inspiring behavior. Grit's effect on empowering behaviors depended on the context; grit caused leaders to empower followers more in non-work contexts, but not in work-related ones. **Research limitations/implications:** That grit is an important predictor of leadership behavior yields both practical and theoretical implications. For practice, the results suggest that grit is a desirable trait in managers, corresponding with their greater use of various leadership behaviors. For theory, the results suggest that part of the effect of traits in leadership arises from influencing the frequency with which leaders engage in particular behaviors. **Originality/value:** This is the first study to examine grit's role in leadership, and it has practical and theoretical implications. For practice, the results suggest that grit is a desirable trait in leaders, but one which requires unique supports from the leader's environment. For theory, the results begin to fill an important gap. It is well-established that personality influences leadership outcomes, but it remains uncertain how and when. The current study suggests how, since traits influence the frequency with which leaders engage in particular behaviors, and begins to define when, highlighting differences between work and non-work contexts.

**Keywords:** Leadership | Leadership development | Grit | Leadership Practices Inventory | Leader personality

### **Article:**

### **Introduction**

Leadership theory began with trait-based approaches (Northouse, 2012; Yukl, 2012), and recent studies are once again examining the effects of leader traits (Deuling *et al.*, 2011; Judge *et al.*, 2002). For example, evidence has accumulated connecting the Five Factor Model of personality to leader behavior (Bergner *et al.*, 2016; Bernerth *et al.*, 2007; Washington *et al.*, 2006), and increasingly studies are linking other traits to leadership outcomes (e.g. Carnevale *et al.*, 2011; Siegling *et al.*, 2014). Consistent with this growing attention, meta-analysis has shown that leader traits can explain more than 20 percent of variance in ratings of leadership effectiveness (DeRue *et al.*, 2011).

However, the details of how and when traits influence leadership remain uncertain. Much of the existing work has been exploratory, and primarily focused on the correlations between broad traits and outcomes (e.g. Khoo and Burch, 2008; Westerlaken and Woods, 2013). Reviews of this literature have highlighted the need to explore a greater variety of personality traits and the need to focus on traits with clear behavioral manifestations (Bono and Judge, 2004). The study reported here addresses this need and extends prior work by examining how leaders' grit (i.e. trait-level passion and perseverance) influences a variety of leadership behaviors.

Studying the influence of grit on leadership behavior makes three contributions. First, it responds directly to the need for knowledge about the effects of new, behavior-focused traits. Second, studying grit offers actionable knowledge. Most of the current leadership personality studies focus on the "dark side," emphasizing undesirable traits such as narcissism and egotism (e.g. Chatterjee and Hambrick, 2011; Mathieu and Babiak, 2015; Westerlaken and Woods, 2013; Wisse *et al.*, 2015). Focusing on leader pathology has meant less attention paid to leaders' desirable traits. However, knowing what to avoid does not tell one what to prefer (Caza and Carroll, 2012). Finally, this study recognizes that the nature of leadership varies by context (e.g. Hackman and Wageman, 2004; Sander and Caza, 2015), so that one should not assume a trait's effect on leadership is the same in all situations.

## **Grit**

Grit, which is defined as one's passion and perseverance in pursuit of long-term goals (Duckworth *et al.*, 2007), is an important individual difference. Previous study has shown that grit is more than just work ethic (Meriac *et al.*, 2015) or the hardiness to endure setbacks (Maddi *et al.*, 2012). Grit is an individuals' ability to maintain passion despite a lack of positive feedback, which is important for success in many domains, including leadership. Experience shows that talent and intelligence do not assure success; sustained effort is also essential (Duckworth *et al.*, 2011; Ericsson *et al.*, 1993). Consistent with this reasoning, grit has been linked with better outcomes in many contexts, including personal relationships, education, military training and work performance (Eskreis-Winkler *et al.*, 2014). Nonetheless, grit is not universally valuable, and appears to offer more benefit in some contexts than in others (cf. Ivcevic and Brackett, 2014; Tedeschi and Young, 2018).

To date, grit's role in leadership has not been studied, but there is good reason to suspect its importance. A gritty person's enduring focus on long-term outcomes reflects the forward-looking orientation that distinguishes effective leaders (Ilies *et al.*, 2006; Kouzes and Posner, 2017). Since grit is not correlated with intelligence, and it accounts for more variance in

outcomes than does conscientiousness in some contexts (e.g. Duckworth *et al.*, 2007; Tedeschi and Young, 2018), grit may be an additional important predictor of leadership outcomes. However, theory concerning grit is still in a relatively nascent stage (e.g. Crede *et al.*, 2017; Datu *et al.*, 2017; Midkiff *et al.*, 2017) and this is the first reported study of grit in leadership. As a result, an exploratory approach was adopted, with the goal of examining how leaders' grit was related to a wide range of leadership behavior.

## **Leadership behavior**

Leadership may be the most studied topic in social science research, which is reflected in the vast and complex array of behaviors associated with it (Northouse, 2012). Nonetheless, reviews of this literature consistently find that leadership behavior can usefully be summarized with a few broad categories (DeRue *et al.*, 2011; Yukl, 2012; Yukl *et al.*, 2002), and this inclusive approach is the one adopted in this study. In particular, this research defined and measured leadership behavior using The Five Practices of Exemplary Leadership framework (Kouzes and Posner, 2017).

The research leading to The Five Practices model began with case studies and systematic interviews with managers and their constituents, across a wide variety of public and private sector organizations around the world, about “personal best” experiences as leaders. These behaviors and actions were systematically analyzed and categorized into common themes or practices, and refined through empirical analyses (Posner, 2015). The framework has been in use for over 35 years, both in applied leadership development settings and in hundreds of research projects (Posner, 2015, 2016). More than 5m participants, representing over 180 countries, have completed surveys associated with The Five Practices framework, making it a well-established and parsimonious means of conceptualizing leadership that is applicable across settings and cultures (e.g. Caza and Posner, 2017; Posner, 2013, 2018; Zagorsek *et al.*, 2004).

For each of the five leadership practices, there are two essential actions, which are implemented through a series of behaviors. The focus of this framework is on the behavior of leaders, not their intentions nor their attributes. Below, each leadership practice is briefly summarized.

### Model the Way

Effective leaders demonstrate the behaviors they want from followers by engaging in them personally. Leaders act in accordance with their stated goals and values. They serve as role models.

### Inspire a Shared Vision

Effective leaders are future oriented, articulating a clear vision, which emotionally engages followers in that vision's achievement. To the extent that leaders link their visionary goal to followers' motivations and interests, the aspiration becomes a shared one. Achieving buy-in from all parties builds follower commitment, and is thus more likely to be attained.

### Challenge the Process

Leading always involves disruptions, so leaders are more successful when they are able to embrace and promote change. Effective leaders do not fear the uncertainty of new ways and support a climate of experimentation and discovery, contributing to learning and subsequent higher levels of performance.

### Enable Others to Act

Since leading involves helping followers to achieve outcomes, followers' results ultimately determine the leader's success. As such, an important part of an effective leader's responsibility is to build followers' competence and confidence and to foster collaborative relationships.

### Encourage the Heart

Effective leaders are cognizant of the socioemotional needs of their followers. They actively provide support and reinforce both progress and achievement. They link rewards to shared values and standards and in doing so align their followers' needs and collective goals.

## **Method**

### Participants

A private company that sells personality assessments collected the data. Participants had a voluntary option to complete our measures while completing the company's proprietary assessment. Using this online format provided access to a large, international sample composed of sincerely interested and committed participants who were engaging in natural behavior, rather than performing in the context of a research study. Over a two-month period, 3,702 people completed the survey.

The sample was predominantly American (82.3 percent) and Caucasian (75.8 percent), but had respondents from over 50 nations. Surveys were completed in English. The respondents were split evenly by gender (49.3 percent female) and most (68.3 percent) respondents had a university education. The sample had a fairly normal distribution of respondent ages, with about 10 percent between 18 and 25 years of age, and 10 percent over 55 years of age; 28 percent were between 26 and 35 years of age, 28 percent were between 36 and 45 years of age, and 24 percent were between 46 and 55 years of age. Their occupations and industries covered a wide range of fields. Further demographic information is given below.

### Measures

Respondents completed two instruments, in addition to providing demographic data. They completed the Leadership Practices Inventory (LPI; Posner and Kouzes, 1988), a survey instrument measuring The Five Practices framework. The LPI includes six behavioral statements to measure each of the five leadership practices (Model, Inspire, Challenge, Enable and Encourage). Ten-point Likert scales are used with "1" indicating that the respondent "almost never" engages in this particular behavior and "10" indicating that the person "almost always"

engages in the behavior. The 30 statements are descriptive, about the frequency with which the individual acts in this manner. For example: “I set a personal example of what I expect from others” (Model), “I encourage others to share an exciting dream of the future” (Inspire), “I encourage experiments and risk-taking, even when there is a chance of failure” (Challenge), “I give people a great deal of freedom and choice in deciding how to do their work” (Enable), and “I give the members of my team lots of appreciation and support for their contributions” (Encourage).

The second instrument was Duckworth *et al.*'s (2007) grit measure. It is a 12-item self-report scale assessing trait-level passion and perseverance in pursuit of long-term goals (e.g. “I have achieved a goal that took me years of work”; “New ideas and projects sometimes distract me from previous ones” (reverse scored)). Respondents indicated how well each statement described them (1 = not at all like me; 5 = very much like me). Although the scale has two component factors, it has been shown to have better predictive power when used as a single, combined score (Duckworth *et al.*, 2007).

In terms of potential control variables, the data included gender, age, education, ethnicity, country of origin and an open-ended description of the respondent's work. Most of these variables were subsequently omitted from the analysis, however, below for two reasons. Theoretically, because previous research suggests that demographic differences are not important moderators of LPI responses (Posner, 1992, 2013), there was no compelling reason that they be included (Bernierth and Aguinis, 2016). Empirically, moreover, because their inclusion did not change the substantive results.

However, there were two important exceptions. The first was work-related leadership. Although everyone is called upon to be a leader in some context of their lives (Northouse, 2012), assuming a formal leadership role, especially in consequential, work-based situations is a unique experience. It changes how individuals think about leading (Epitropaki and Martin, 2004). Therefore, respondents' open-ended descriptions of their work were coded to create a dichotomous variable for work-related leadership roles. Respondents' whose work description clearly indicated supervisory, management or other leadership roles (e.g. business owner, regional manager) were given a score of 1; others (e.g. customer service rep, salesperson) were given a score of 0. Almost two-fifths (37.5 percent;  $n=1,389$ ) of the sample had leadership as a formal part of their current work. This leadership experience variable was used as a control in all models, and in interaction terms with grit to test for differences across context.

In addition, both theory (Kouzes and Posner, 2017) and evidence (Herold and Feilds, 2004) suggest that the correlations among the five leadership practices reflect their mutual influence. That is, leaders engaging in some practices are more likely to also engage in others. Therefore, all models included the appropriate leadership practices as control variables.

## Results

Table I shows the descriptive statistics and correlations for all measures. Preliminary analysis suggested that these data were appropriate and useful. First, all Cronbach's  $\alpha$  reliability scores exceeded the 0.65 threshold (DeVellis, 2003). As well, based on Hu and Bentler's (1999) fit

criteria, a confirmatory factor analysis of all measures had an acceptable fit with the data ( $\chi^2=13,223.56$ ,  $df=804$ ,  $SRMR=0.08$ ,  $RMSEA=0.06$ ). Second, the expected six-factor model had a significantly better fit than a two-factor model in which the five leadership scores were combined into a single factor ( $\Delta\chi^2=3,904.04$ ,  $df=14$ ,  $p<0.01$ ). These results suggest that, despite sizable correlations, the leadership factors were distinct from each other. Third, power analysis revealed that in a multiple regression with six independent variables and  $\alpha$  level of 0.05, a sample of 1,360 would provide 0.80 power for an effect size of 0.01. Even the smallest subset in the data, those leading at work, exceeded that number indicating sufficient power for reliable analysis. Finally, the multi-factor structure of the data means that Harmon's single factor test suggests that common method variance was not a significant concern (Podsakoff *et al.*, 2003).

**Table I.** Descriptive statistics and correlations for all variables<sup>a</sup>

Variable	Mean	SD	$\alpha$	1	2	3	4	5	6	7
1. Age <sup>b</sup>	2.95	1.15								
2. Education <sup>c</sup>	4.73	1.23		0.05						
3. Model <sup>d</sup>	7.93	1.21	0.75	0.05	0.03					
4. Inspire <sup>d</sup>	7.26	1.64	0.88	0.03	0.05	0.76				
5. Challenge <sup>d</sup>	7.36	1.43	0.82	0.01	0.12	0.71	0.81			
6. Enable <sup>d</sup>	8.38	0.88	0.68	0.05	0.09	0.61	0.56	0.60		
7. Encourage <sup>d</sup>	7.93	1.41	0.87	0.07	0.03	0.71	0.67	0.63	0.65	
8. Grit <sup>e</sup>	3.80	0.51	0.79	0.07	0.01	0.45	0.34	0.35	0.33	0.34

**Notes:** <sup>a</sup> $n=3,702$ ; all correlations of 0.03 or greater are significant ( $p<0.05$ ); <sup>b</sup> Categorical variable: 1=18–25 years (10.1 percent of sample), 2 = 26–35 years (28.4 percent), 3=36–45 years (27.8 percent), 4=46–55 years (23.6 percent), 5=over 55 years (10.2 percent); <sup>c</sup> Categorical variable: 1=some high school (0.8 percent of sample), 2=high school diploma (8.2 percent), 3=technical degree (5.9 percent), 4=some university (16.8 percent), 5=university degree (38.5 percent), 6=graduate or professional degree (29.9 percent); <sup>d</sup> Ten-point scale of frequency; <sup>e</sup> Five-point scale of agreement

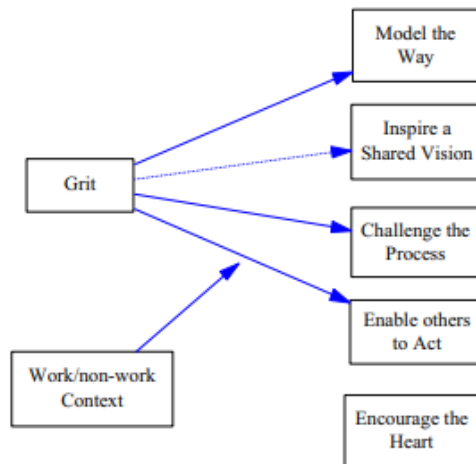
Ordinary least squares regression was used to assess the relationships between grit and each of the five leadership practices. Each model in Table II has one of the leadership practices as the dependent variable. The first five models also have five control variables: the other four leadership practices and the work leadership dummy variable. Grit is the independent variable, and Models 1 to 5 include an interaction term between grit and work leadership. Because of significant correlations among some the leadership practice variables, variance inflation factors were calculated. The largest value was only 3.75, suggesting that multi-collinearity was not a concern in these results (Neter *et al.*, 1996).

The findings suggest that grit influenced the frequency with which leaders reported engaging in four of the five leadership practices (see Figure 1). Grit was unrelated to only the frequency of encouraging behaviors (Model 5;  $p=0.54$ ). Grit was negatively related to the frequency of inspiring behaviors (Model 2;  $\beta=-0.10$ ,  $p<0.01$ ). In contrast, grit was associated with greater frequency of two leadership practices: leaders with more grit reported more frequent engagement in modeling behaviors (Model 1;  $\beta=0.39$ ,  $p<0.01$ ) and challenging behaviors (Model 3;  $\beta=0.08$ ,  $p=0.02$ ).

**Table II.** Regression models

	<b>Model 1 Model</b>	<b>Model 2 Inspire</b>	<b>Model 3 Challenge</b>	<b>Model 4 Enable</b>	<b>Model 5 Encourage</b>	<b>Model 6 Enable among work leaders</b>	<b>Model 7 Enable among non- work leaders</b>
Intercept	0.72* (0.47, 98)	-1.04* (-1.36, -0.71)	-0.37* (-0.68, -0.07)	4.06* (3.86, 4.27)	-0.78* (-1.12, -0.43)	4.23* (3.94, 4.52)	4.13* (3.92, 4.35)
Model		0.42* (0.38, 0.46)	0.17* (0.13, 0.21)	0.12* (0.09, 0.15)	0.42* (0.38, 0.46)	0.19* (0.14, 0.24)	0.08* (0.04, 0.12)
Inspire	0.25* (0.23, 0.28)		0.52* (0.49, 0.54)	-0.03* (-0.05, -0.00)	0.18* (0.15, 0.22)	-0.05* (-0.09, -0.01)	-0.02 (-0.05, 0.01)
Challenge	0.12* (0.09, 0.15)	0.60* (0.57, 0.63)		0.17* (0.14, 0.19)	0.02 (-0.02, 0.06)	0.18* (0.14, 0.22)	0.16*(0.13, 0.19)
Enable	0.13* (0.10, 0.16)	-0.05* (-0.09, -0.01)	0.26* (0.23, 0.30)		0.48* (0.44, 0.53)		
Encourage	0.23* (0.21, 0.26)	0.17* (0.14, 0.20)	0.02 (-0.01, 0.04)	0.24* (0.22, 0.26)		0.22* (0.18, 0.25)	0.25* (0.22, 0.28)
Work leadership <sup>a</sup>	0.24 (-0.10, 0.57)	-0.01 (-0.44, 0.42)	0.05 (-0.35, 0.45)	0.38* (0.07, 0.70)	-0.37 (-0.82, 0.08)		
Grit	0.39* (0.33, 0.44)	-0.10* (-0.17, -0.03)	0.08* (0.01, 0.15)	0.12* (0.07, 0.18)	-0.02 (-0.10, 0.05)	-0.02 (-0.09, 0.05)	0.15* (0.09, 0.20)
Grit X work leadership interaction	-0.03 (-0.12, 0.06)	0.03 (-0.09, 0.14)	-0.02 (-0.12, 0.08)	-0.10* (-0.18, -0.02)	0.08 (-0.04, 0.20)		
Adjusted R <sup>2</sup>	0.70	0.73	0.70	0.50	0.60	0.48	0.50
F	1,230*	1,456*	1,224*	524*	806*	253*	469*
	(df 7, 3,694)	(df 7, 3,694)	(df 7, 3,694)	(df 7, 3,694)	(df 7, 3,694)	(df 5, 1,383)	(df 5, 2,307)

**Notes:** n=3,702 in Models 1–5, n=1,389 in Model 6, n=2,313 in Model 7; <sup>a</sup>Dummy variable: 1= yes (leader at work); 2= no (leader in non-work context); 95% confidence interval in brackets. \*p<0.05



**Figure 1.** Summary of Findings<sup>a</sup>

**Notes:** <sup>a</sup> Solid lines indicate positive relationships, the broken line indicates a negative relationship, absent lines indicate no consistent relationship, and the intersecting lines indicate moderation

Grit was also positively associated with enabling behaviors (Model 4), but this finding must be considered in relation to the significant interaction between grit and work leadership. To understand the interaction, two additional regressions were used, splitting the sample based on work leadership roles. Among those leading at work, there was no consistent association between grit and the frequency of enabling behavior (Model 6;  $p=0.55$ ); whereas, among those who were leading in non-work contexts, grit was associated with more frequent enabling behavior (Model 7;  $\beta=0.15$ ,  $p<0.01$ ).

## Discussion

This study responded to three needs in research on leader personality: a focus on new, behavior-focused traits; an examination of desirable, rather than negative, traits; and investigation of how context matters. Using a large, international sample of work and non-work leaders, the current research examined how the personality trait of grit influenced self-reported leadership behavior using The Five Practices of Exemplary Leadership framework. The results have both theoretical and practical implications.

Analysis found that individuals with more grit reported greater frequency of modeling and challenging behaviors. It appears that grit makes individuals more likely to lead by example and to support others in challenging the *status quo*. These relationships make intuitive sense, as grit's dogged perseverance and passionate pursuit of long-term goals should make individuals more willing to stick with, stand up for and live by their principles, as well as making them more accepting of taking risks and learning from experience.

By comparison, the influence of grit on enabling behaviors was more complex, as it was defined by an interaction with leadership context. Individuals who were not leaders at work (i.e. they were leaders in non-hierarchical work contexts) had a positive relationship between grit and self-reported enabling behavior. That is, grit increased the frequency of enabling behaviors among non-work leaders. In contrast, there was no consistent relationship between grit and enabling behaviors among those who were leaders at work (i.e. they held a management position). One possible explanation for this pattern of results is that in personal and social settings, gritty individuals' commitment to their goals motivates them to enlist the aid of others and thus more likely to empower those others and enable them to act. In contrast, work leaders may be more cautious; their passionate commitment to their goals may be sufficient and substitute for directly empowering others. This difference could also reflect the more tangible resources and greater stakes associated with empowerment at work and/or the experience gained from prior experiments in such consequential empowerment.

In contrast to the above, there was no consistent relationship between grit and encouraging behaviors. Gritty individuals appear to be no more or less likely to celebrate and recognize the accomplishments of others, which may indicate that grit is more salient in personal goal pursuit than it is in relationships with others. That is, grit may shape behavior that is directly relevant to the accomplishment of an individual's goals, but have less effect on other sorts of interactions.

Finally, the data showed that grit appears to make leaders less likely to engage in behaviors associated with inspiring a shared vision among followers. Specifically, the more grit individuals



had, the less frequently they reported engaging in behaviors such as compellingly describing future possibilities and helping others to see the value of future goals. This study cannot confirm why, but it may be that because of their own unwavering pursuit of long-term goals, gritty individuals forget that others are not equally tenacious (Ross *et al.*, 1977). Those with grit may not take sufficient consideration of the fact that less gritty individuals need ongoing and positive support and rationale to stay focused on long-term goals.

Overall, these results suggest that grit is generally beneficial among leaders. Grit may prompt them to engage more frequently in a range of leadership behaviors that bring about exceptional outcomes. At the same time, grit may also make leaders less likely to remind followers of the importance and value of long-term goals. It may therefore be useful for supervisors, coworkers or other organizational members to put systems in place to remind gritty leaders to engage in inspiring behaviors along with those that come more naturally for them.

While this study had the virtue of using a large, diverse sample and measuring naturalistic behavior, it also had some limitations that suggest promising directions for future research. The three most prominent are discussed here. First, future work should investigate the generalizability of these results. Although the sample was diverse in many ways, it was predominantly composed of Caucasian Americans, most respondents were well educated, and the sample was entirely composed of individuals who were willing and able to pay for an online personality assessment. It remains to be seen whether any of these characteristics influence the relationship between grit and leader behavior.

Second, the study used a relatively crude measure of the respondents' leadership roles. It is unclear how much leadership experience each respondent had. Given that inexperienced leaders tend to have simplistic and unrealistic views about leading (Bettin and Kennedy, 1990; Caza and Rosch, 2014), the extent of their experience could be important. Therefore, it would be useful to replicate this analysis in a sample where a measure of leadership experience was available as that experience may be an influential factor (Avery *et al.*, 2003), e.g., it may be that leadership experience moderates the negative relationship between grit and inspiring behavior, such that leaders with more experience better realize what followers need to help them stay the course.

Finally, another promising direction for building on these findings involves linking leader grit to follower outcomes. Part of the motivation for this study was the fact that leader traits have been associated with follower outcomes, but the reasons for those links remain uncertain. The two likeliest mechanisms are that certain traits make leaders more likely to behave in particular ways or that those traits make leaders more effective when they do engage in certain behaviors (Judge *et al.*, 2002). The current study addressed the first possibility, showing that grit makes a person more likely to engage in some leadership practices (and less likely to engage in others). Since followers' outcomes have previously been linked to those leadership practices, the frequency of leader behavior should explain some of the observed effects associated with leader traits. However, it may also be the case that grit influences qualitative aspects of how leaders behave, thereby making their use of some practices more or less effective. It would be informative to explore this possibility.

In sum, it appears that grit, or one's continuing passion and perseverance in pursuit of long-term goals, is an important part of the leadership personality. This presented the first evidence linking grit to leadership, and found that grittier individuals report different frequencies of leadership behavior. The results suggest that leadership research and leadership development should include grit among the other personality traits that they consider.

## References

- Avery, D.R., Tonidandel, S., Griffith, K.H. and Quiñones, M.A. (2003), "*The impact of multiple measures of leader experience on leader effectiveness: new insights for leader selection*", *Journal of Business Research*, Vol. 56 No. 8, pp. 673-679.
- Bergner, S., Davda, A., Culpin, V. and Rybnicek, R. (2016), "*Who overrates, who underrates? Personality and its link to self-other agreement of leadership effectiveness*", *Journal of Leadership & Organizational Studies*, Vol. 23 No. 3, pp. 335-354.
- Bernerth, J.B. and Aguinis, H. (2016), "*A critical review and best-practice recommendations for control variable usage*", *Personnel Psychology*, Vol. 69 No. 1, pp. 229-283.
- Bernerth, J.B., Armenakis, A.A., Feild, H.S., Giles, W.F. and Walker, H.J. (2007), "*Is personality associated with perceptions of LMX? An empirical study*", *Leadership & Organization Development Journal*, Vol. 28 No. 7, pp. 613-631.
- Bettin, P.J. and Kennedy, J.K. (1990), "*Leadership experience and leader performance: some empirical support at last*", *Leadership Quarterly*, Vol. 1 No. 4, pp. 219-228.
- Bono, J.E. and Judge, T.A. (2004), "*Personality and transformational and transactional leadership: a meta-analysis*", *Journal of Applied Psychology*, Vol. 89 No. 5, pp. 901-910.
- Carnevale, J.J., Inbar, Y. and Lerner, J.S. (2011), "*Individual differences in need for cognition and decision-making competence among leaders*", *Personality and Individual Differences*, Vol. 51 No. 3, pp. 274-278.
- Caza, A. and Carroll, B. (2012), "*Critical theory and positive organizational scholarship*", in Cameron, K.S. and Spreitzer, G.M. (Eds), *Handbook of Positive Organizational Scholarship*, Oxford University Press, New York, NY, pp. 965-978.
- Caza, A. and Posner, B.Z. (2017), "*The influence of nationality on followers' satisfaction with their leaders*", *Journal of Leadership, Accountability and Ethics*, Vol. 14 No. 3, pp. 53-63.
- Caza, A. and Rosch, D.M. (2014), "*An exploratory examination of students' pre-existing beliefs about leadership*", *Studies in Higher Education*, Vol. 39 No. 9, pp. 1586-1598.
- Chatterjee, A. and Hambrick, D.C. (2011), "*Executive personality, capability cues, and risk taking how narcissistic CEOs react to their successes and stumbles*", *Administrative Science Quarterly*, Vol. 56 No. 2, pp. 202-237.

- Crede, M., Tynan, M.C. and Harms, P.D. (2017), "*Much ado about grit: a meta-analytic synthesis of the grit literature*", *Journal of Personality and Social Psychology*, Vol. 113 No. 3, pp. 492-511.
- Datu, J.A.D., Yuen, M. and Chen, G. (2017), "*Development and validation of the Triarchic Model of Grit Scale (TMGS): evidence from Filipino undergraduate students*", *Personality and Individual Differences*, Vol. 114, pp. 198-205.
- DeRue, D.S., Nahrgang, J.D., Wellman, N. and Humphrey, S.E. (2011), "*Trait and behavioral theories of leadership: an integration and meta-analytic test of their relative validity*", *Personnel Psychology*, Vol. 64 No. 1, pp. 7-52.
- Deuling, J.K., Denissen, J.J.A., van Zalk, M., Meeus, W. and Aken, M. van (2011), "*Perceived influence in groups over time: how associations with personality and cognitive ability can change over time*", *Journal of Research in Personality*, Vol. 45 No. 6, pp. 576-585.
- DeVellis, R.F. (2003), *Scale Development: Theory and Applications*, Sage, Thousand Oaks, CA.
- Duckworth, A.L., Peterson, C., Matthews, M.D. and Kelly, D.R. (2007), "*Grit: perseverance and passion for long-term goals*", *Journal of Personality and Social Psychology*, Vol. 92 No. 6, pp. 1087-1101.
- Duckworth, A.L., Kirby, T.A., Tsukayama, E., Berstein, H. and Ericsson, K.A. (2011), "*Deliberate practice spells success why grittier competitors triumph at the national spelling bee*", *Social Psychological and Personality Science*, Vol. 2 No. 2, pp. 174-181.
- Epitropaki, O. and Martin, R. (2004), "*Implicit leadership theories in applied settings: factor structure, generalizability, and stability over time*", *Journal of Applied Psychology*, Vol. 89 No. 2, pp. 293-310.
- Ericsson, K.A., Krampe, R.T. and Tesch-Romer, C. (1993), "*The role of deliberate practice in the acquisition of expert performance*", *Psychological Review*, Vol. 100 No. 3, pp. 363-406.
- Eskreis-Winkler, L., Shulman, E.P., Beal, S.A. and Duckworth, A.L. (2014), "*The grit effect: predicting retention in the military, the workplace, school and marriage*", *Frontiers in Psychology*, Vol. 5, pp. 1-12.
- Hackman, J.R. and Wageman, R. (2004), "*When and how team leaders matter*", *Research in Organizational Behavior*, Vol. 26, pp. 37-74.
- Herold, D.M. and Feilds, D.L. (2004), "*Making sense of subordinate feedback for leadership development confounding effects of job role and organizational rewards*", *Group & Organization Management*, Vol. 29 No. 6, pp. 686-703.
- Hu, L. and Bentler, P.M. (1999), "*Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives*", *Structural Equation Modeling*, Vol. 6 No. 1, pp. 1-55.
- Ilies, R., Judge, T. and Wagner, D. (2006), "*Making sense of motivational leadership: the trail from transformational leaders to motivated followers*", *Journal of Leadership & Organizational Studies*, Vol. 13 No. 1, pp. 1-22.

- Ivcevic, Z. and Brackett, M. (2014), "*Predicting school success: comparing conscientiousness, grit, and emotion regulation ability*", *Journal of Research in Personality*, Vol. 52, pp. 29-36.
- Judge, T.A., Bono, J.E., Ilies, R. and Gerhardt, M.W. (2002), "*Personality and leadership: a qualitative and quantitative review*", *Journal of Applied Psychology*, Vol. 87 No. 4, pp. 765-780.
- Khoo, H.S. and Burch, G.S.J. (2008), "*The 'dark side' of leadership personality and transformational leadership: an exploratory study*", *Personality and Individual Differences*, Vol. 44 No. 1, pp. 86-97.
- Kouzes, J.M. and Posner, B.Z. (2017), *The Leadership Challenge: How to Make Extraordinary Things Happen in Organizations*, 6th ed., The Leadership Challenge – A Wiley Brand, Hoboken, NJ.
- Maddi, S.R., Matthews, M.D., Kelly, D.R., Villarreal, B. and White, M. (2012), "*The role of hardiness and grit in predicting performance and retention of USMA cadets*", *Military Psychology*, Vol. 24 No. 1, pp. 19-28.
- Mathieu, C. and Babiak, P. (2015), "*Tell me who you are, I'll tell you how you lead: beyond the full-range leadership model, the role of corporate psychopathy on employee attitudes*", *Personality and Individual Differences*, Vol. 87, pp. 8-12.
- Meriac, J.P., Slifka, J.S. and LaBat, L.R. (2015), "*Work ethic and grit: an examination of empirical redundancy*", *Personality and Individual Differences*, Vol. 86, pp. 401-405.
- Midkiff, B., Langer, M., Demetriou, C. and Panter, A.T. (2017), "Measuring grit among first-generation college students: a psychometric analysis", in van der Ark, L.A., Wiberg, M., Culpepper, S.A., Douglas, J.A. and Wang, W.C. (Eds), *Quantitative Psychology*, Springer International Publishing, New York, NY, pp. 407-420.
- Neter, J., Kutner, M.H., Nachtsheim, C.J. and Wasserman, W. (1996), *Applied Linear Statistical Models*, 4th ed., McGraw-Hill, Boston, MA.
- Northouse, P.G. (2012), *Introduction to Leadership: Concepts and Practice*, 2nd ed., SAGE, Thousand Oaks, CA.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J. and Podsakoff, N.P. (2003), "*Common method biases in behavioral research: a critical review of the literature and recommended remedies*", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.
- Posner, B.Z. (1992), "*Person-organization values congruence: no support for individual differences as a moderating influence*", *Human Relations*, Vol. 45 No. 4, pp. 351-361.
- Posner, B.Z. (2013), "*It's how leaders behave that matters, not where they are from*", *Leadership & Organizational Development Journal*, Vol. 34 No. 6, pp. 573-587.
- Posner, B.Z. (2015), "*Bringing rigor to the art and science of leadership: evidence behind the five practices of exemplary leadership and the leadership practices inventory*", available at: <http://leadershipchallenge.com/research> (accessed August 10, 2018).

- Posner, B.Z. (2016), "*Investigating the reliability and validity of the Leadership Practices Inventory*", *Administrative Sciences*, Vol. 6 No. 4, available at: <https://doi.org/10.3390/admsci6040017>
- Posner, B.Z. (2018), "*The influence of demographic factors on what people want from their leaders*", *Journal of Leadership Studies*, Vol. 12 No. 2, pp. 7-16.
- Posner, B.Z. and Kouzes, J.M. (1988), "*Development and validation of the leadership practices inventory*", *Educational and Psychological Measurement*, Vol. 48 No. 2, pp. 483-496.
- Ross, L., Greene, D. and House, P. (1977), "*The 'false consensus effect': an egocentric bias in social perception and attribution processes*", *Journal of Experimental Social Psychology*, Vol. 13 No. 3, pp. 279-301.
- Sander, E.J. and Caza, A. (2015), "The role of leadership in developing the innovative manager", in Wilkinson, A., Townsend, K. and Suder, G. (Eds), *Handbook of Research on Managing Managers*, Edward Elgar, Cheltenham, pp. 87-103.
- Siegling, A.B., Nielsen, C. and Petrides, K.V. (2014), "*Trait emotional intelligence and leadership in a European multinational company*", *Personality and Individual Differences*, Vol. 65, pp. 65-68.
- Tedesqui, R.A. and Young, B.W. (2018), "*Comparing the contribution of conscientiousness, self-control, and grit to key criteria of sport expertise development*", *Psychology of Sport and Exercise*, Vol. 34, pp. 110-118.
- Washington, R.R., Sutton, C.D. and Field, H.S. (2006), "*Individual differences in servant leadership: the roles of values and personality*", *Leadership & Organization Development Journal*, Vol. 27 No. 8, pp. 700-716.
- Westerlaken, K.M. and Woods, P.R. (2013), "*The relationship between psychopathy and the full range leadership model*", *Personality and Individual Differences*, Vol. 54 No. 1, pp. 41-46.
- Wisse, B., Barelds, D.P.H. and Rietzschel, E.F. (2015), "*How innovative is your employee? The role of employee and supervisor dark triad personality traits in supervisor perceptions of employee innovative behavior*", *Personality and Individual Differences*, Vol. 82, pp. 158-162.
- Yukl, G. (2012), "*Effective leadership behavior: what we know and what questions need more attention*", *Academy of Management Perspectives*, Vol. 26 No. 4, pp. 66-85.
- Yukl, G., Gordon, A. and Taber, T. (2002), "*A hierarchical taxonomy of leadership behavior: integrating a half century of behavior research*", *Journal of Leadership & Organizational Studies*, Vol. 9 No. 1, pp. 15-33.
- Zagorsek, H., Jaklic, M. and Stough, S.J. (2004), "Comparing leadership practices between the United States, Nigeria, and Slovenia: does culture matter?", *Cross Cultural Management: An International Journal*, Vol. 11 No. 2, pp. 16-34.