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A “Tower of Babel”? – interrelations and structure of leadership constructs

A “Tower
of Babel”?

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Abstract

Purpose – The purpose of this paper is to provide a comprehensive examination of different leadership constructs investigated extensively, namely transformational and transactional leadership, laissez-faire, consideration, and initiating structure, as well as leader-member-exchange. The theoretical overlap as well as the empirical correlations between these constructs is explored.

Design/methodology/approach – Overall, 735 correlations were analyzed to generate a meta-analytical correlation matrix.

Findings – The meta-analyses revealed highly interrelated leadership constructs ($0.26 < |\rho| < 0.74$). Results of confirmatory factor analyses suggest a one factor solution of leadership.

Research limitations/implications – The uniqueness and construct validity of leadership constructs is challenged, calling for a revision of the respective leadership theories. Ultimately, an integrative theory of leadership should be developed which accounts for similarities as well as differences between leadership constructs. An integrated theory of leadership would help: researchers to combine their forces and, consequently, organizations across the globe to better select and develop leaders for the future.

Practical implications – By taking a critical, cross-theoretical compare and contrast approach, the present study yielded a comprehensive picture of the interrelationship and partial redundancy of several of the currently researched leadership constructs.

Originality/value – New insights into the overlap between leadership constructs were generated and confirmed by meta-analyses.

Keywords Transactional leadership, LMX, Consideration, Transformational leadership, MASEM, Laissez-faire leadership, Initiating structure, Leadership dimensions

Paper type Research paper

Although considerable theoretical and empirical leadership research efforts have been conducted, there is still much debate as to what leadership exactly is (Mulla-Feroze and Krishnan, 2000). In a comprehensive review of leadership literature, Stogdill (1974, p. 259) concluded that there exist nearly as many concepts of leadership as there are persons who have attempted to define them. In face of this large number of definitions and leadership paradigms the distinction between leadership theories may be questionable, creating a so-called “jangle fallacy” (Kelley, 1927). Numerous theories were asserted to be conceptually and functionally distinct (Bass and Bass, 2008), but researchers have critically identified meaningful overlap and similarities between leadership theories (Antonakis and House, 2002; House and Aditya, 1997; Sashkin, 2004; Yukl, 1989, 1999b, 2002). The body of leadership literature has created a “tower of Babel” (see Block, 1995), whereby findings with respect to one leadership theory (e.g. consideration) are ignored in research investigating the same leadership phenomenon but using a different name (i.e. individualized



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consideration, as defined in the theory of transformational leadership). The present paper sets out to address this limitation in leadership science.

What is missing from leadership literature is a critical “compare and contrast” approach to the currently dominant leadership theories. Does each of the respective constructs of these theories describe meaningful, unique aspects of the leadership process (Antonakis and House, 2002; Hunt and Conger, 1999; Sashkin, 2004)? Or are they similar and show significant overlap? If the latter would be the case, it may be argued that these constructs represent the same phenomenon, or at least may be reduced to underlying dimensions (e.g. level of leader’s activity) which adequately describe leadership. A critical theoretical and empirical analysis of potential overlap between leadership constructs would potentially allow for a more condensed, and thus simpler, description of the leadership phenomenon. In fact, experts are calling for more integrative work in the field of leadership (House and Aditya, 1997; Judge *et al.*, 2004; Sashkin, 2004; Yukl, 1989, 1999b, 2002). However, even meta-analyses on leadership styles like transformational leadership (Judge and Piccolo, 2004) or consideration and initiating structure (Judge *et al.*, 2004) investigated interrelations only within one leadership paradigm. One notable exception was the recent meta-analysis conducted by DeRue *et al.* (2011) which presented a model of leadership effectiveness that included both leader’s trait characteristics and leadership behaviors. However, the DeRue *et al.* (2011) study did not include either: theoretical rationale for potential overlap between leadership constructs nor important leadership constructs such as leader-member-exchange (LMX). Also, their meta-analysis was limited by the number of primary studies. For example, in 23 percent of the meta-analyses that were performed to estimate the model parameters, the absolute number of primary studies was one or two.

Consequently, the present study was designed to contribute to the question of potential overlap and redundancies between leadership theories and their respective constructs. More specifically, given the scarcity of research across leadership theories, the first goal was to explore the nomological network of leadership constructs which are currently being researched extensively, from a theoretical perspective. These theoretical analyses help to understand why leadership constructs may potentially have overlap. The second goal was to contribute to the discriminant validity of leadership constructs, by investigating the empirical correlations among constructs with a meta-analytical approach. These analyses help to understand how closely leadership constructs are actually interrelated.

Another major issue in leadership research has been the lack of agreement about which categories of behavior are meaningful for leaders (Yukl *et al.*, 2002). Thus, there is still a lack of universally valid categories or factors of leadership, although these would be needed for a comprehensive and structured description of the leadership phenomenon. Some authors (e.g. Barrasa, 2004; Yukl, 2002) favor two meta-categories of leadership that can be described as relations behavior (e.g. consideration) and task behavior (e.g. transactional leadership). Nevertheless, as all leadership behaviors focus on effective leadership, it might be speculated that one meta-category of leadership should be sufficient. However, given the very limited research on relationships between leadership constructs across leadership theories, the question about the number of potential meta-categories of leadership cannot be answered yet.

This is an important limitation on leadership research, because it prevents a parsimonious and yet complete description of the overall picture of leadership. Thus, the third goal was to investigate possible meta-categories of leadership. It was tested

whether all investigated leadership constructs are delimitable and whether they can be classified into the classical two-factorial model of task and relations behavior, or represent one general factor of leadership. In sum, taking a fresh, critical perspective that compares currently discussed leadership theories both from a theoretical and empirical point-of-view, the present study aims to contribute to leadership science by providing insight into the potential redundancies within leadership theories.

In the following, we focussed on the most prominent leadership theories and constructs, which have been most extensively researched over the past 60 years and which have given evidence of criterion-related validity in multiple empirical studies; that is transformational and transactional leadership, laissez-faire, consideration, and initiating structure, as well as LMX. Beside the number of available empirical studies, the leadership theories have to describe a direct influence between leaders and led so that a correlative meta-analytical approach could be realized to examine the construct validity of these theories. First, these leadership theories and constructs are introduced and a theoretical discussion about differences and similarities between them is provided. Second, the empirical literature was meta-analyzed. To explore potential overlap between the different leadership constructs investigated, meta-analytic structural equation modeling (MASEM, Hunter and Schmidt, 2004; Viswesvaran and Ones, 1995) was used: A meta-analytical correlation matrix was generated and used as input for a series of confirmatory factor analyses (CFA). These CFAs, in turn, aimed at identifying meta-categories of leadership.

Leadership theories and constructs

The full range leadership theory (FRLT)

Since its beginnings in the 1980s, FRLT has developed into the most researched theory of leadership today (Antonakis *et al.*, 2003; Avolio, 2002; Avolio and Yammarino, 2002). Three categories of leadership behavior are included in the FRLT. First, transformational leaders motivate their followers with a positive, value-based vision of the future. Followers trust in their leader's vision and are motivated to perform beyond expectation (Bass, 1985b; Podsakoff *et al.*, 1996; Shin and Zhou, 2003). One facet of transformational leadership refers to individualized consideration, where the leader carefully evaluates – and acts upon – his/her followers' needs (Avolio and Bass, 1995). The second class of leadership styles of the FRLT is transactional leadership. A transactional leadership style is based on clearly defined quid-pro-quo transactions (Bass, 1985b). A third leadership style, labeled laissez-faire, refers to the complete absence of leadership behavior. Often, laissez-faire, transactional, and transformational leadership are described as forming a continuum from highly passive to highly active leadership styles (Antonakis and House, 2002; Avolio, 2002). Cumulative empirical evidence has emerged that supports the notion that transformational and transactional leadership are positively related to various indicators of subjective (Dumdum *et al.*, 2002; Judge and Piccolo, 2004; Lowe *et al.*, 1996) and objective (Barling *et al.*, 1996; Rowold and Heinitz, 2007; Rowold and Laukamp, 2008; Tosi *et al.*, 2004) performance, while laissez-faire on the contrary is negatively related to these indicators. In their meta-analysis, Judge and Piccolo (2004) also reported the corrected correlation between transformational and transactional leadership ($\rho = 0.80$), as well as transformational and laissez-faire ($\rho = -0.65$). Both relationships could be interpreted as highly convergent, although from original theory, these constructs were hypothesized to be distinct constructs (Bass, 1985b). Thus, theory of transformational leadership has been criticized for inadequate construct validity (Bycio *et al.*, 1995; House and Aditya, 1997;

Lievens *et al.*, 1997; Tejada *et al.*, 2001; Tepper and Percy, 1994; Yukl, 1999a). In addition, criticism of the FRLT (Antonakis and House, 2002; Yukl, 1999a, 2002) included the notion that these three classes of leadership behavior were not sufficient for understanding the phenomena of leadership.

Consideration and initiating structure

The leadership styles of consideration and initiating structure resulted from several studies at the Ohio State University in the 1940s and 1950s (Fleishman, 1973). First, consideration characterizes follower-centered leadership behavior. The leader cares about his/her followers' needs and abilities. In addition, the leader supports the follower on an individualized basis (e.g. coaching behavior). Second, initiating structure refers to assigning and structuring work tasks for the respective subordinates (Fleishman, 1953; Seltzer and Numeroff, 1988). A recent meta-analysis revealed positive, non-zero correlations between consideration, initiating structure, and subjective indicators of performance (Judge *et al.*, 2004). Interestingly, this meta-analysis also found that, depending on the respective instrument, the corrected correlation between consideration and initiating structure varied between $\rho = -0.04$ and $\rho = 0.46$.

Several scholars noted a close similarity between consideration and individualized consideration, a facet of transformational leadership (House and Aditya, 1997; Yukl, 2002). Both leadership styles are highly follower-oriented, proactive leadership behaviors. In line with this idea, several empirical studies revealed an overlap between the constructs of consideration and transformational leadership. For example, Seltzer and Bass (1990) reported high positive correlations between subscales of transformational leadership and consideration ($0.47 < r < 0.69$; $p < 0.01$), based on data from US managers. Also, other authors (DeRue *et al.*, 2011; Geyer and Steyrer, 1994; Keller, 2006) found a positive correlation between transformational leadership and initiating structure. In sum, these researchers identified some overlap between initiating structure and consideration and transformational leadership.

LMX

From a theoretical perspective, LMX is defined as a positive, mutually trustful relationship between leaders and led (Graen and Uhl-Bien, 1995; Liden and Graen, 1980). A review of literature revealed that with regard to criterion-oriented validity, LMX had positive relationships with several performance indicators on the individual level (e.g. job satisfaction, job performance; cp. Gerstner and Day, 1997). From a theoretical perspective, both transformational leadership and LMX elicit trust in followers. In line with this idea, empirical research found strong positive correlations between the constructs of LMX and transformational leadership. Based on a study of various industries in China, Wang *et al.* (2005) reported a correlation of $r = 0.71$ ($p < 0.01$) between LMX and transformational leadership.

Convergences of leadership constructs

These brief descriptions of the leadership constructs included in the present study underline the interrelations of these leadership constructs. A considerable amount of research exists that included correlations between transformational and transactional or consideration and initiating structure, but nearly all other possible pairs of leadership constructs have been ignored. For example, only very limited research has explored the relationships between consideration/initiating structure *and* transformational/

transactional leadership. Consequently, there is a conspicuous need for research exploring these relationships in order to gain a more holistic view on leadership and its basic relations. These interrelations can provide a more profound view on potential overlap and permit the classification of the leadership styles investigated into homogeneous meta-categories.

Nevertheless, from the respective theory of each leadership construct, it might be argued that leadership constructs are distinct: Each of the leadership constructs included in the present study has its own respective theoretical foundations. In order to find both similarities and differences between leadership constructs, the authors performed a critical review of the respective theoretical and integrative literature (Antonakis and House, 2002; House and Aditya, 1997; Hunt and Conger, 1999; Sashkin, 2004; Yukl, 1989, 1999b, 2002). This review of literature revealed seven dimensions of theoretical overlap between the leadership constructs. These dimensions of theoretical overlap are summarized in Table I and discussed in turn. It should be noted that these dimensions by no means represent an exhaustive or mutually exclusive list.

Leaders’ level of activity was included in the theoretical comparison of leadership constructs as the first dimension. This dimension is central to all leadership constructs. Each leadership construct implies a given level of activity. One exception is *laissez-faire*, where the absence of leader’s activity is important for the definition of this construct. At least from the follower’s perspective, leadership constructs can be differentiated in terms of their respective levels of activity.

Next, it is generally assumed that certain leadership behaviors elicit trust (Jung and Avolio, 2000; Pillai *et al.*, 1999; Shamir *et al.*, 1993). Work-related goals – such as high performance goals –, articulated by the leader are only accepted by followers who trust their leader. Empirical research supports this notion. For example, Pillai *et al.* (1999) found that trust mediates the relationship between transformational leadership and performance.

Transformational leadership, consideration, and LMX all have in common that behaviors displayed by the leader may be imitated by the followers. Thus, the idea that leaders act as role models for their respective followers was included in Table I.

In this decade, considerable interest in the relationship between leadership constructs and emotions has emerged (Ashkanasy and Tse, 2000; Lewis, 2000). Leaders express emotions such as excitement and try to elicit emotions in their followers such as joy (Ashkanasy and Tse, 2000; McColl-Kennedy and Anderson, 2002). Within the

Dimensions of leader’s behavior	Leadership constructs					
	TF	TA	LF	C	IS	LMX
Level of activity	+	+	+	+	+	+
Building trust in followers	+	–	–	+	–	+
Role modeling	+	–	–	+	–	+
Expression of emotions	+	–	–	+	–	–
Controlling followers	–	+	–	–	+	–
Motivating followers intrinsically	+	–	–	–	–	+
Followers’ work facilitation and feedback	–	+	–	–	+	–

Notes: TF, transformational leadership; TA, transactional leadership; LF, *laissez-faire*; C, consideration; IS, initiating structure; LMX, leader-member-exchange; +, theoretically relevant for leadership construct; –, irrelevant to leadership construct

Source: Adapted from Rowold and Borgmann (2013)

Table I.
Dimensions of theoretical overlap between leadership constructs

theory of transformational leadership and in the case of considerate leaders, emotions are important for influencing followers.

In addition, a central element in the leadership styles of transactional leadership and initiating structure is controlling followers' work. The leader defines tasks and controls whether work is done according to a priori defined standards (e.g. deadlines).

Although each leadership theory refers to motivating followers, some leadership constructs were hypothesized to do so intrinsically (Erdogan *et al.*, 2004). More specifically, in transformational leadership and LMX, leaders appeal to followers' internal values and motives. In addition, these leaders establish and maintain a highly personalized relationship with their followers. Such processes, in turn, elicit high work motivation.

Finally, the leadership styles of transactional leadership and initiating structure imply that the leader facilitates followers' work and/or gives feedback on performance.

Overall, this review underlines leadership constructs' similarities and differences. In general, meaningful similarities exist because each leadership construct was developed for the same purposes, namely, to account for leaders' behaviors at work and to explain variance in followers' criteria like motivation or commitment. These similarities between leadership constructs have been overlooked in most previous leadership research and the present study was among the first to hypothesize meaningful convergences between each of the seven leadership constructs included in the present study:

- H1.* The leadership constructs of transformational and transactional leadership, consideration, initiating structure, and LMX are positively interrelated. Except laissez-faire, which is hypothesized to have negative relationships to all other leadership constructs.

For a more precise prediction about the strengths of interrelationships between leadership constructs, the information provided in Table I was utilized. For example, transformational leadership shares only one dimension of overlap with transactional leadership (i.e. level of activity), while it shares four dimensions of overlap with consideration (i.e. level of activity, building trust in followers, role modeling, and expression of emotions). As a consequence, it might be predicted that the empirical relationship between transformational leadership and transactional leadership would be smaller than the relationship between transformational leadership and consideration. More generally, the higher the number of shared theoretical attributes between constructs (i.e. dimensions of overlap), the stronger the empirical relationship:

- H2.* Leadership constructs that share a greater number of attributes are more closely related to each other than constructs that share fewer attributes.

Meta-categories of leadership: uni- vs two-dimensional models

As can be seen in Table I, the seven different leadership constructs share basic assumptions and elements. For example, in FRLT, the leadership styles of laissez-faire, transactional, and transformational leadership form a continuum from passive to highly active leadership (Antonakis and House, 2002; Avolio, 2002). Despite shared basic elements described above, we still lack a critical review of leadership constructs and paradigms overlap. Humphreys and Einstein (2003) argue that ideas central to transformational leadership are not necessarily new and can be found in writings of earlier management theorists. Meaningful convergences of content between

leadership theories have been confirmed in theoretical works provided by Antonakis and House (2002) or Sashkin (2004), suggesting that most leadership constructs represent aspects of the same phenomenon. Thus, the most straightforward idea would be to propose one general factor of leadership that represents the different leadership styles described above sufficiently.

In contrast, other leadership researchers proposed two general, broadly defined behavior categories that are best described as relations-oriented behavior and task-oriented behavior (e.g. Yukl *et al.*, 2002). In his review on leadership, Yukl (1989) declares that categories of behaviors, although not consistently integrated, are equal to task-oriented and relations-oriented behaviors. Examples include consideration and initiating structure (Fleishman, 1953; Halpin and Winer, 1957) in early research on leader behavior, and concern for people and concern for production in the managerial grid model (Blake and Mouton, 1964). Relations-oriented behavior describes the extent to which leaders support and develop their subordinates as well as showing concern for subordinates' needs and well-being. Task-oriented behavior reflects the degree to which a leader plans and defines roles to be performed in a task, clarifies responsibilities and performance objectives and monitors operations and performance. These two categories which dominated research on leader behavior for three decades can be seen as traditional two-factor models (Yukl, 2002) on which the literature on leadership is based (Barrasa, 2004). Two of the most studied theories of leader behavior, initiating structure consideration (Halpin and Winer, 1957) and transformational transactional (Bass, 1985b; Burns, 1978), can be arranged along these broad categories.

Task-oriented behaviors

Initiating structure and transactional leadership both focus on task-oriented leader behaviors (Bass and Bass, 2008; Fleishman, 1953; Yukl *et al.*, 2002). Initiating structure and transactional leadership describe leaders as being clear about expectations and standards for performance, and using these standards to shape follower commitment, motivation, and behavior. Initiating structure and transactional leadership discuss dealing with deviations from those standards via the use of structure and routines.

Relational-oriented behaviors

Consideration leader behaviors describe more relational-oriented behaviors. In particular, leaders high on consideration care about the group members and their needs, are friendly and approachable, are open to input from others, and treat all group members as equals (Bass, 1990). Aspects of transformational leader behaviors (e.g. individualized consideration) also consist of a relational orientation. Especially LMX underlines the relationship between leaders and led, incorporating trust and loyalty (Graen and Uhl-Bien, 1995; Liden and Graen, 1980).

Overall, it might be also argued that the leadership constructs of transformational, transactional, and laissez-faire leadership, consideration, initiating structure, and LMX represent two meta-categories of leadership. However, for the purpose of the present study, a one-categorical approach of leadership constructs was favoured over a two-categorical approach, for at least three reasons. First, all leadership constructs discussed have in common that they describe leadership activity (s. Table I). Each leadership construct focusses on one way of influencing followers. Thus, applying the principle of parsimony, it would be sufficient to propose one meta-category of leadership constructs, namely, leadership activity. Second, empirical research demonstrates that constructs from two potential meta-categories correlate strongly

with each other. For example, although consideration would represent a relation-oriented leadership construct and initiating structure a task-oriented construct, Table I reveals that both have empirical overlap with transformational leadership (a relation-oriented construct). Third, the one-categorical approach is strongly supported by the results from our theoretical analysis summarized in Table I. In contrast, the two-categorical approach to leadership is more a result which stems from history of leadership research:

- H3.* The leadership constructs of transformational and transactional leadership, laissez-faire, consideration, initiating structure, and LMX constitute one general factor of leadership. Transformational and transactional leadership, consideration, initiating structure, and LMX show positive loadings on this factor, whereas laissez-faire is hypothesized to exhibit a negative relationship to the leadership factor.

Methods

Data collection

To identify all possible studies, which investigated relevant leadership styles, we searched the different databases: Academic Search Premier, Business Source Premier, EconLit, PsycARTICLES, PsycCRITIQUES, Psychology and Behavioral Sciences Collection, and PsycINFO for studies. The search terms used to identify primary studies for each bivariate correlation included the following key words: initiating structure, consideration, transformational, charismatic, management by exception, contingent reward, transactional, laissez-faire, LMX. Thereafter, we carefully read the abstracts and the measurement section of the studies. In reviewing the abstracts, we included studies that clearly included primary data, and studies that measured at least two of the relevant leadership styles described above. For the remaining studies we checked whether bivariate correlation and sample size were reported. That information was necessary to conduct the meta-analysis. Each study was reviewed, evaluating the relevance of the data contained within. In sum, the search strategy yielded a total sample of 215 studies which met the criteria for inclusion in the database. All studies used in the meta-analysis are noted in the references with an asterisk. The relevant studies reported a total of 735 correlations of leadership styles. These correlations provided the input for calculating the pooled average correlations needed for the following CFA.

Conducting a MASEM

MASEM combines techniques of meta-analysis and structural equation modeling (Hunter and Schmidt, 2004; Viswesvaran and Ones, 1995). It allows researchers to model complex relations between constructs and obtain more precise estimates by increasing the sample size. We conducted a two-stage procedure (Viswesvaran and Ones, 1995) to analyze our hypotheses. First, the correlation coefficients of two leadership constructs obtained from the primary studies were meta-analytically integrated and subsequently tested for homogeneity. For the calculation of the pooled correlations we used the meta-analytical approach of Hedges and Olkin (1985). They proposed to transform correlations from each primary study into a standard normal metric by using Fisher's *z*-transformation. These coefficients were then used to determine an initial pooled mean correlation. Each primary correlation was weighted by the inverse of its within-study variance (Hedges and Olkin, 1985). This weighting incorporates

the sampling error, which is the only error term in fixed-effects models. To test for homogeneity of each meta-analytical correlation estimate (Hedges and Olkin, 1985), the Q -test statistic was calculated. Homogeneity analysis tests clarified the assumption that all of the effect sizes are estimating the same population mean. When at least one of the heterogeneity tests is significant, the distribution of effect sizes is assumed to be heterogeneous and the initially used fixed effects model is inappropriate for calculating the pooled correlation matrix (Hunter and Schmidt, 2004). Because several estimates were found to show heterogeneity, a random-effects model was used for pooling correlations. This random effects model uses the inverse of a variance term incorporating within-study and between-study variance which is used for weighting the single primary studies to calculate the pooled correlations. Following the propositions of Hedges and Vevea (1998), variance between correlation coefficients was calculated on the basis of the results of the Q -statistic. The pooled random-effects correlation matrix is recalculated with these new weights and converted back to the r metric. One problem in generating the correlation matrix is the different number of variables in the primary studies (Viswesvaran and Ones, 1995). Thus, the calculation of meta-analytical correlation estimates in the matrix, which is used as input for the CFA, is based on different numbers of studies. To obtain an appropriate total sample size, the harmonic mean is used.

SEM analysis

A series of four different CFA was conducted. The six different leadership styles were modeled as indicators of the respective latent leadership factor(s). First, a Baseline Model was calculated where no indicator loaded on any factors. In the second model, all indicators loaded on one general leadership factor and we tested whether the model with one leadership construct, incorporating all of the primary leadership styles, fitted the data. The third model describes a model with two uncorrelated factors, namely task behavior and relations behavior. The task behavior factor consisted of transactional leadership and initiating structure. The relations behavior factor incorporated the leadership constructs transformational leadership, consideration and LMX. Laissez-faire was modeled as an indicator with negative loading expected on both factors, describing the absence of leadership. The fourth model was similar to the third model, but factors were allowed to inter-correlate.

The unweighted least squares discrepancy function was used as estimation procedure as it is robust for use with data that are not normally distributed (Byrne, 2001; Ximénez, 2006).

Several fit indices were computed to assess the model fit. In addition to the χ^2 values, the goodness-of-fit (GFI) and the adjusted GFI (AGFI) were calculated. For these indices, a value of 0.90 as minimum was postulated for appropriate fit (Hu and Bentler, 1995). The standardized root mean square residual (SRMR) was considered as well, with values below 0.08 indicating good fit (Hu and Bentler, 1999).

Results

As the results in Table II indicate, all leadership constructs investigated show positive, non-zero relationships with each of the other leadership constructs, except laissez-faire, which is negatively correlated with all other leadership constructs. All estimated mean correlations are distinguishable from zero, in that the 90 percent confidence intervals exclude zero. Thus, $H1$ is supported.

The strongest correlations were consideration and LMX ($\rho = 0.74$) and initiating structure and LMX ($\rho = 0.73$). With exception of the two correlations laissez-faire

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146	1. <i>Transformational leadership</i> 95% CI <i>k, n</i>	–	1	1	4	1	4	
	2. <i>Transactional leadership</i> 95% CI <i>k, n</i>	0.65 0.62, 0.69 152; 56,798	–	1	1	3	1	
	3. <i>Laissez-Faire</i> 95% CI <i>k, n</i>	–0.50 –0.54, –0.45 85; 38,489	–0.34 –0.43, –0.24 45; 22,830	–	–	1	1	1
	4. <i>Consideration</i> 95% CI <i>k, n</i>	0.67 0.59, 0.73 25; 7,378	0.63 0.56, 0.69 18; 5,668	–0.48 –0.55, –0.41 13; 2,975	–	–	1	3
	5. <i>Initiating Structure</i> 95% CI <i>k, n</i>	0.53 0.44, 0.61 24; 7,223	0.61 0.54, 0.67 17; 5,461	–0.48 –0.57, –0.37 13; 2,975	0.26 0.21, 0.31 241; 42,258	–	–	1
	6. <i>LMX</i> 95% CI <i>k, n</i>	0.69 0.62, 0.74 26; 6,479	0.63 0.55, 0.70 17; 5,274	–0.48 –0.55, –0.40 19; 5,732	0.74 0.70, 0.79 17; 5,067	0.73 0.69, 0.76 23; 6,260	–	–

Table II.
Meta-analytical
correlations of
leadership constructs

Notes: *K*, number of correlations; *N*, combined sample size; 95 percent CI, confidence interval. Values above the diagonal represent the absolute number of shared dimensions of theoretical overlap between two leadership constructs derived from Table I

and transactional leadership ($\rho = -0.34$), and consideration and initiating structure ($\rho = 0.26$), all correlations represent large relationships (Cohen, 1988).

Our second hypothesis was that pairs of leadership constructs which share more attributes would correlate more strongly than those that share a limited number of attributes. To test this assumption, the number of shared attributes per combination of leadership construct (s. Table II, upper half) was correlated with the empirical correlation coefficients obtained from meta-analysis (s. Table II, lower half). A significant correlation ($r = 0.51, p < 0.05$) was obtained, supporting *H2*.

The results of the different CFA are summarized in Table III. The one-factor model and the correlated two-factor model fitted the data well, which is confirmed by the absolute and fit indices of these two models.

The correlated two-factor model revealed very good fit indices, GFI = 0.99, AGFI = 0.96, SRMR = 0.07 and the respective χ^2 -difference test suggested that the

	χ^2	df	GFI	AGFI	SRMR	$\Delta\chi^2$	Δ df
Independence model	32,164.86	15	0.38	0.13	0.89	31,441.31**	8
One factor-model	798.58	9	0.98	0.96	0.08	75.03**	2
Uncorrelated two-factor model	13,507.95	8	0.74	0.31	0.32	12,784.40**	1
Correlated two-factor model	723.55	7	0.99	0.96	0.07		

Table III.
Results of
confirmatory
factor analyses

Notes: GFI, Goodness-of-Fit Index, AGFI, Adjusted Goodness-of-Fit Index, SRMR, standardized root mean square residual. $\Delta\chi^2$ was defined as the difference between the χ^2 of the respective model and the χ^2 of the target model (correlated two-factor model). ** $p < 0.01$

correlated two-factor model was superior to the other models tested. However, for three reasons, we decided to reject the two-factor model. First, within the two-factor model, the correlation of the two leadership factors was $r=0.94$. The magnitude of this correlation would make it difficult to maintain meaningful differences between the two leadership factors. Second, Table IV reveals that the factor loadings of the different leadership indicators load significantly and strongly on their respective factor, both in the correlated two-factor model as well as in the one-factor model. Also, with the exception of laissez-faire's loading on the task behavior factor, indicator loadings of the one- and the two-factor models differ only marginally. Third, the one factor model seems to be the more suitable solution due to parsimony. Overall, and in support of *H3*, one general factor is an appropriate and meaningful description of the interrelationships between the six leadership constructs.

Discussion

Summary of findings and implications for theory

Since the 1940s, a limitation of leadership research that has to be taken seriously has been the fact that each of these constructs was researched in relative isolation from others (DeRue *et al.*, 2011; House and Aditya, 1997; Yukl, 1989). This study contributes to the leadership literature by providing theoretical dimensions of overlap between leadership constructs as well as a meta-analysis on the empirical relationships between these constructs. As for the theoretical analyses, it was found that the leadership constructs predominant in today's leadership research (i.e. transformational, transactional, laissez-faire leadership, consideration, initiating structure, and LMX) have considerable overlap. The overlap that was predicted from theory was confirmed in a subsequent meta-analysis: Meaningful correlations between the six leadership constructs investigated were found. More specifically, the meta-analyses revealed that the leadership constructs were highly interrelated ($0.26 < |\rho| < 0.74$). For example, the correlations between transformational, transactional, and laissez-faire found in this research are consistent with the findings of Judge and Piccolo's (2004) meta-analysis. However, the meta-analysis presented went beyond prior research by exploring the interrelationships of six leadership constructs and by being based on a reliable number of primary studies. For example, for each of the meta-analyses that were performed for the purpose of the present study, between 13 and 215 primary studies were utilized (average = 49). In contrast, DeRue's *et al.* (2011) meta-analyses were based on between 1 and 181 primary studies (average = 12.6).

In the present study, the correlations between leadership constructs varied between 0.26 and 0.74. The present study found one possible explanation of this variation

Construct indicator	Correlated two-factor model		One-factor model
	Loading on task behavior	Loading on relation behavior	Indicator loading on general leadership factor
TF		0.83	0.82
TA	0.83		0.77
LF	-0.03	-0.56	-0.58
C		0.76	0.75
IS	0.74		0.68
LMX		0.92	0.91

Notes: TF, transformational leadership; TA, transactional leadership; LF, laissez-faire; C, consideration; IS, initiating structure; LMX, leader-member-exchange. All loadings are significant ($p < 0.01$)

Table IV.
Indicator loadings on the respective leadership factors

between correlation coefficients: As expected in *H2*, the number of dimensions of theoretical overlap that two leadership constructs have in common (s. Table I, and upper half of Table II) predicted the strength of the empirical relationship between these constructs (s. Table II, lower half). Interestingly, the seven dimensions of theoretical overlap are valuable for our understanding of shared attributes of leadership constructs. Apparently, these seven dimensions may help us to critically compare and contrast the basic content of leadership theories. Also, they are potentially useful for designing a comprehensive and integrated leadership theory. Nevertheless, the seven dimension should be viewed as merely a starting point for a more thorough and detailed analysis. Other theoretical characteristics of leadership constructs should be defined and utilized to analyze differences and similarities between leadership constructs. Ultimately, the results of the present study are helpful for an integrative theory of leadership – something which is being called for by experts (Yukl, 2002).

Based on the leadership styles' correlation matrix, a series of confirmatory analyses was calculated. These analyses revealed a good fit for the one-factor model as well as for the model with two correlated leadership factors. However, it was decided to reject the two-factor model, given the high correlation of $\rho = 0.94$ between the task behavior and relations behavior factors and the nearly identical indicator loadings between the one- and the two-factor models. Also, the abdication of artifact corrections for the meta-analytical correlation estimates (Schmidt and Hunter, 1998) – which enhances the correlations, making a one-factor solution more likely – underlines the existence of a general leadership factor. It can be argued that all leadership constructs investigated represent facets of a common dimension. A possible explanation that is in line with the review of the theoretical literature is the assumption of activity as the underlying dimension. Leader's activity was the only dimension derived from theory that all leadership constructs had in common. This result is in line with Bass (1985a) notion that leadership constructs line up on a continuum from highly active to highly passive. In contrast, the notion that one common dimension is sufficient to account for variance in leadership constructs is in sharp contrast to prior theoretical work that emphasized two broad categories of leadership constructs (e.g. consideration vs task orientation).

Besides leader's activity, another construct that accounts for leadership styles interrelations is liking (i.e. a positive relationship between leader and led). Given the pattern of indicator loadings on the general leadership factor, liking, or relation quality could be the explaining underlying constructs for this solution. LMX, the construct that focusses most on the quality of the relation between leader and led, exhibits the highest loading ($\lambda = 0.91$), whereas initiating structure – a task-related leadership style – shows the smallest coefficient with a value of $\lambda = 0.68$. If one considers laissez-faire's loadings in the two factorial model, it is apparent that the perception of leadership is related to relation behaviors ($\lambda = -0.58$), whereas task behavior is factually uncorrelated ($\lambda = -0.03$). In line with this, Ashforth and Humphrey (1995) assert that the key factor of all leadership is to evoke emotions. Thus, the importance of interpersonal affect in the leader and follower relationship has been documented in previous work suggesting that affect felt toward a leader influences follower evaluations of leadership (Hall and Lord, 1995). Additionally, the assessment of transformational leadership is highly influenced by the interpersonal affect raters feel toward their leader (Brown and Keeping, 2005).

In sum, the leadership constructs are highly intercorrelated, questioning their intended uniqueness and construct validity. Comprehensive underlying dimensions

such as the ones summarized in Table I can explain at least a meaningful amount of leadership styles’ variance. This study suggests that leadership can be modeled by a single dimension, which promotes an integrated theory of leadership rather than an isolated consideration of the leadership constructs. Taken to extremes, leadership research does not deal with transformational leadership or consideration but with a single activity or a liking factor.

Managerial implications

Practitioners often are confronted with several possible instruments for the assessment of leadership constructs. One implication of the present study for practice is that transformational and transactional leadership, laissez-faire, consideration, initiating structure, and LMX are highly convergent. Because of the convergences and redundancies described above, practitioners should pay special attention to criterion validity of these leadership constructs. In practice, criterion-oriented validity is the central criterion for choosing a leadership construct for personal development, assessment, and selection. In this manner, practitioners should choose a success criterion of the respective leadership construct, which is adequate and target aimed in the context of the leadership construct decision. Entrepreneurial and individualized situational aspects should be a guideline to pick the most important leadership outcome criterion such as employee satisfaction, commitment, or well-being. Furthermore, leadership trainings should include strategies to improve leadership behaviors with regard to the proposed underlying dimensions of leadership (activity and liking). Practitioners are intended to strengthen techniques which result in either more active leadership behavior or relational-oriented behavior patterns.

Limitations and directions for future research

Future research should continue to disentangle the phenomenon of leadership. Although the present study explored the leadership constructs investigated most, these constructs represent only a fraction of the numerous leader styles proposed. It seems that it would be profitable to investigate other leadership styles which provide new and unique aspects, like authentic, ethic, or servant leadership, if the database of available primary studies is sufficient to transfer the classifications on these constructs and to conduct meta-analytic computations.

Innovative approaches to leadership such as leadership clarity (West *et al.*, 2003) should be included in future research. Also, non-leadership constructs such as dispositional constructs (e.g. locus of control) should be included to further validate the nomological network of leadership constructs. DeRue’s *et al.* (2011) meta-analysis was an important starting point for combining leader’s trait characteristics and leadership behaviors. Also, it would be interesting to know the relative criterion validity of leadership constructs. While prior meta-analytic research found criterion validities for sets of two or three leadership styles, it would be important to explore the relative criterion-oriented validity of more (e.g. six) leadership constructs. While the present study reported general associations between leadership constructs, future research should explore potential boundary conditions of these relationships. For example, is the relationship between transformational leadership and LMX stronger in non-profit or in profit organizations (Rowold and Rohmann, 2009)?

An extension of the analyses toward a situational or contingency approach by considering different moderator variables, which specify different leadership contexts, could provide further insights into the entire understanding of leadership ability. Yet, a

comparison of direct and non-direct leadership theories in future research could help to confirm a one leadership dimension model. Whilst the interpretation of the present study's results proposes an activity or liking factor, this factor could include adaptive leader behavior in different situations and contexts. A highly contingency-oriented leader may exert one of the different leadership constructs depending on the specific situation resulting in high correlations between these constructs. More research is needed to integrate moderator variables in comparative studies and to test this assumption.

In addition, a hierarchical model of leadership should be taken in account. Due to identification and the number of degrees of freedom, the hierarchical model could not be tested. The high correlation of task and relations behavior suggests a solution of a general factor of leadership with sub dimensions like task or relations behavior on a lower level.

Advanced methodological approaches could shed additional light on the interrelationships of leadership constructs. For example, multitrait-multimethod (MTMM) analyses explore the convergent and discriminant validity of constructs, based on data from multiple methods (e.g. leader's rating vs followers' ratings vs colleagues' ratings). Because MTMM analyses control for rating sources, more realistic estimates of interrelationships between constructs can be calculated. Also, in SEM-based MTMM, potential biasing factors such as liking can be modeled.

References

References marked with an asterisk indicate studies included in the meta-analysis.

- Antonakis, J. and House, R.J. (2002), "The full-range leadership theory: the way forward", in Avolio, B.J. and Yammarino, F.J. (Eds), *Transformational and Charismatic Leadership: The Road Ahead*, JAI, Amsterdam, pp. 3-34.
- Antonakis, J., Avolio, B.J. and Sivasubramaniam, N. (2003), "Context and leadership: an examination of the nine-factor full-range leadership theory using the multifactor leadership questionnaire", *Leadership Quarterly*, Vol. 14 No. 3, pp. 261-295.
- Ashforth, B.E. and Humphrey, R.E. (1995), "Emotions in the workplace: a reappraisal", *Human Relations*, Vol. 48 No. 2, pp. 97-125.
- Ashkanasy, N.M. and Tse, B. (2000), "Transformational leadership as management of emotion: a conceptual review", in Ashkanasy, N.M., Härtel, C.E.J. and Zerbe, W.J. (Eds), *Emotions in the Workplace: Research, Theory and Practice*, Quorum Books, Westport, CT, pp. 221-235.
- Avolio, B.J. (2002), *Developing Potential Across a Full Range of Leadership*, Lawrence Erlbaum Associates, Mahwah, NJ.
- Avolio, B.J. and Bass, B.M. (1995), "Individual consideration viewed at multiple levels of analysis: a multi-level framework for examining the diffusion of transformational leadership", *Leadership Quarterly*, Vol. 6 No. 2, pp. 199-218.
- Avolio, B.J. and Yammarino, F.J. (2002), *Transformational and Charismatic Leadership: The Road Ahead*, JAI, Amsterdam.
- Barling, J., Weber, T. and Kelloway, E.K. (1996), "Effects of transformational leadership training on attitudinal and financial outcomes: a field experiment", *Journal of Applied Psychology*, Vol. 81 No. 6, pp. 827-832.
- Barrasa, A. (2004), "Hierarchical taxonomy of leadership behavior: antecedents, structure, and influence in work groups effectiveness", research paper, Complutense University of Madrid, Madrid.

- Bass, B.M. (1985a), "Leadership – good, better, best", *Organizational Dynamics*, Vol. 13 No. 3, pp. 26-40.
- Bass, B.M. (1985b), *Leadership and Performance Beyond Expectations*, The Free Press, New York, NY.
- Bass, B.M. (1990), "From transactional to transformational leadership – learning to share the vision", *Organizational Dynamics*, Vol. 18 No. 3, pp. 19-31.
- Bass, B.M. and Bass, R. (2008), *Bass's Handbook of Leadership*, The Free Press, New York, NY.
- Blake, R.R. and Mouton, J. (1964), *The Managerial Grid, The Key to Leadership Excellence*, Golf Publishing, Houston, TX.
- Block, J. (1995), "A contrarian view of the five-factor approach to personality description", *Psychological Bulletin*, Vol. 117 No. 2, pp. 187-215.
- Brown, D.J. and Keeping, L.M. (2005), "Elaborating the construct of transformational leadership: the role of affect", *Leadership Quarterly*, Vol. 16 No. 2, pp. 245-272.
- Burns, J.M. (1978), *Leadership*, Harper & Row, New York, NY.
- Bycio, P., Hackett, R.D. and Allen, J.S. (1995), "Further assessments of Bass (1985) conceptualization of transactional and transformational leadership", *Journal of Applied Psychology*, Vol. 80 No. 4, pp. 468-478.
- Byrne, B.M. (2001), *Structural Equation Modeling with Amos: Basic Concepts, Applications, and Programming*, Lawrence Erlbaum Ass., New York, NY.
- Cohen, J. (1988), *Statistical Power Analysis for the Behavioral Sciences*, Erlbaum, Hillsdale, NY.
- DeRue, D.S., Nahrgang, J.D., Wellman, N. and Humphrey, S.R. (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.
- Dumdum, U.R., Lowe, K.B. and Avolio, B.J. (2002), "A meta-analysis of transformational and transactional leadership correlates of effectiveness and satisfaction: an update and extension", in Avolio, B.J. and Yammarino, F.J. (Eds), *Transformational and Charismatic Leadership: The Road Ahead*, JAI, Amsterdam, pp. 35-66.
- Erdogan, B., Kraimer, M.L. and Liden, R.C. (2004), "Work value congruence and intrinsic career success: the compensatory roles of leader-member exchange and perceived organizational support", *Personnel Psychology*, Vol. 57 No. 2, pp. 305-332.
- Fleishman, E.A. (1953), "The description of supervisory behavior", *Journal of Applied Psychology*, Vol. 37 No. 1, pp. 1-6.
- Fleishman, E.A. (1973), "Twenty years of consideration and structure", in Fleishman, E.A. and Hunt, J.G. (Eds), *Current Developments in the Study of Leadership*, Southern Illinois University Press, Carbondale, IL and Edwardsville, IL, pp. 1-40.
- Gerstner, C.R. and Day, D.V. (1997), "Meta-analytic review of leader-member exchange theory: correlates and construct issues", *Journal of Applied Psychology*, Vol. 82 No. 6, pp. 827-844.
- Geyer, A.L.J. and Steyrer, J.M. (1994), "Transformationale führung, klassische führungstheorien und erfolgsindikatoren von bankbetrieben", *Zeitschrift für Betriebswirtschaftslehre*, Vol. 64 No. 8, pp. 961-979.
- Graen, G.B. and Uhl-Bien, M. (1995), "Relationship-based approach to leadership: development of leader-member exchange (LMX) theory of leadership over 25 years: applying a multi-domain perspective", *Leadership Quarterly*, Vol. 6 No. 2, pp. 219-247.
- Hall, R.J. and Lord, R.G. (1995), "Multi-level information-processing explanations of followers' leadership perceptions", *The Leadership Quarterly*, Vol. 6 No. 3, pp. 265-287.

- Halpin, A. and Winer, B. (1957), "A factorial study of the leader behavior descriptions", in Stogdill, R. and Coons, A.E. (Eds), *Leader Behavior*, Ohio State University, Columbus, OH, pp. 39-55.
- Hedges, L.V. and Olkin, I. (1985), *Statistical Methods for Meta-Analysis*, Academic Press, Orlando, FL.
- Hedges, L.V. and Vevea, J.L. (1998), "Fixed- and random-effects models in meta-analysis", *Psychological Methods*, Vol. 3 No. 4, pp. 486-504.
- House, R.J. and Aditya, R.M. (1997), "The social scientific study of leadership: quo vadis?", *Journal of Management*, Vol. 23 No. 3, pp. 409-473.
- Hu, L.T. and Bentler, P.M. (1995), "Evaluating model fit", in Hoyle, R.H. (Ed.), *Structural Equation Modeling: Concepts, Issues and Applications*, Sage, Thousand Oaks, CA, pp. 76-99.
- Hu, L.T. 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.
- Humphreys, J.H. and Einstein, W.O. (2003), "Nothing new under the sun: transformational leadership from a historical perspective", *Management Decision*, Vol. 41 No. 1, pp. 85-95.
- Hunt, J.G. and Conger, J.A. (1999), "From where we sit: an assessment of transformational and charismatic leadership research", *Leadership Quarterly*, Vol. 10 No. 3, pp. 335-343.
- Hunter, J.E. and Schmidt, F.L. (2004), *Methods of Meta-analysis: Correcting Error and Bias in Research Findings*, Sage, Newbury Park, CA.
- Judge, T.A. and Piccolo, R.F. (2004), "Transformational and transactional leadership: a meta-analytic test of their relative validity", *Journal of Applied Psychology*, Vol. 89 No. 5, pp. 755-768.
- Judge, T.A., Piccolo, R.F. and Ilies, R. (2004), "The forgotten ones? The validity of consideration and initiating structure in leadership research", *Journal of Applied Psychology*, Vol. 89 No. 1, pp. 36-51.
- Jung, D.I. and Avolio, B.J. (2000), "Opening the black box: an experimental investigation of the mediating effects of trust and value congruence on transformational and transactional leadership", *Journal of Organizational Behavior*, Vol. 21 No. 8, pp. 949-964.
- Keller, R.T. (2006), "Transformational leadership, initiating structure, and substitutes for leadership: a longitudinal study of research and development project team performance", *Journal of Applied Psychology*, Vol. 91 No. 1, pp. 202-210.
- Kelley, E.L. (1927), *Interpretation of Educational Measurements*, World, Yonkers, NY.
- Lewis, K.M. (2000), "When leaders display emotion: how followers respond to negative emotional expression of male and female leaders", *Journal of Organizational Behavior*, Vol. 21 No. 2, pp. 221-234.
- Liden, R.C. and Graen, G.B. (1980), "Generalizability of the vertical dyad linkage model of leadership", *Academy of Management Journal*, Vol. 23 No. 3, pp. 451-465.
- Lievens, F., Van Geit, P. and Coetsier, P. (1997), "Identification of transformational leadership qualities: an examination of potential biases", *European Journal of Work and Organizational Psychology*, Vol. 6 No. 4, pp. 415-430.
- Lowe, K.B., Kroeck, K.G. and Sivasubramaniam, N. (1996), "Effectiveness correlates of transformational and transactional leadership: a meta-analytic review of the MLQ literature", *Leadership Quarterly*, Vol. 7 No. 3, pp. 385-425.
- McCull-Kennedy, J.R. and Anderson, R.D. (2002), "Impact of leadership style and emotions on subordinate performance", *Leadership Quarterly*, Vol. 13 No. 5, pp. 545-559.

- Mulla-Feroze, A.H. and Krishnan, V.R. (2000), "Consideration, initiating structure, and transformational leadership: the role of gender", *Paper Presented at the 37th Annual Meeting of the Eastern Academy of Management, Danvers, MA*, available at: www.rkvenkat.org/aashiana.pdf (accessed May 8, 2013).
- Pillai, R., Schriesheim, C.A. and Williams, E.S. (1999), "Fairness perceptions and trust as mediators for transformational and transactional leadership: a two-sample study", *Journal of Management*, Vol. 25 No. 6, pp. 897-933.
- Podsakoff, P.M., MacKenzie, S.B. and Bommer, W.H. (1996), "Transformational leader behaviors and substitutes for leadership as determinants of employee satisfaction, commitment, trust, and organizational citizenship behaviors", *Journal of Management*, Vol. 22 No. 2, pp. 259-298.
- Rowold, J. and Heinitz, K. (2007), "Transformational and charismatic leadership: assessing the convergent, divergent and criterion validity of the MLQ and the CKS", *Leadership Quarterly*, Vol. 18 No. 2, pp. 121-133.
- Rowold, J. and Laukamp, L. (2008), "Charismatic leadership and objective performance indicators", *Applied Psychology: An International Review*, Vol. 58 No. 4, pp. 602-621.
- Rowold, J. and Rohmann, A. (2009), "Transformational and transactional leadership styles, followers' positive and negative emotions, and performance in non-profit orchestras", *Nonprofit Management & Leadership*, Vol. 20 No. 1, pp. 41-59.
- Sashkin, M. (2004), "Transformational leadership approaches: a review and synthesis", in Antonakis, J., Cianciolo, A.T. and Sternberg, R.J. (Eds), *The Nature of Leadership*, Sage, Thousand Oaks, CA, pp. 171-196.
- Schmidt, F.L. and Hunter, J.E. (1998), "The validity and utility of selection methods in personnel psychology: practical and theoretical implications of 85 years of research findings", *Psychological Bulletin*, Vol. 124 No. 2, pp. 262-274.
- Seltzer, J. and Bass, B.M. (1990), "Transformational leadership: beyond initiation and consideration", *Journal of Management*, Vol. 16 No. 4, pp. 693-703.
- Seltzer, J. and Numerof, R.E. (1988), "Supervisory leadership and subordinate burnout", *Academy of Management Journal*, Vol. 31 No. 2, pp. 439-446.
- Shamir, B., House, R.J. and Arthur, M.B. (1993), "The motivational effects of charismatic leadership: a self-concept based theory", *Organization Science*, Vol. 4 No. 4, pp. 577-594.
- Shin, S.J. and Zhou, J. (2003), "Transformational leadership, conservation, and creativity: evidence from Korea", *Academy of Management Journal*, Vol. 46 No. 6, pp. 703-714.
- Stogdill, R.M. (1974), *Handbook of Leadership: A Survey of the Literature*, Free Press, New York, NY.
- *Tejeda, M.J., Scandura, T.A. and Pillai, R. (2001), "The MLQ revisited – psychometric properties and recommendations", *Leadership Quarterly*, Vol. 12 No. 1, pp. 31-52.
- Tepper, B.J. and Percy, P.M. (1994), "Structural validity of the multifactor leadership questionnaire", *Educational and Psychological Measurement*, Vol. 54 No. 3, pp. 734-744.
- Tosi, H.L., Misangyi, V.F., Fanelli, A., Waldman, D.A. and Yammarino, F.J. (2004), "CEO charisma, compensation, and firm performance", *Leadership Quarterly*, Vol. 15 No. 3, pp. 405-420.
- Viswesvaran, C. and Ones, D. (1995), "Theory testing: combining psychometric meta-analysis and structural equations modeling", *Personnel Psychology*, Vol. 48 No. 4, pp. 865-885.
- *Wang, H., Law, K.S., Hackett, R.D., Wang, D. and Chen, Z.X. (2005), "Leader-member exchange as a mediator of the relationship between transformational leadership and followers' performance and organizational citizenship behavior", *Academy of Management Journal*, Vol. 48 No. 3, pp. 420-432.

- West, M.A., Borill, C.S., Dawson, J.F., Brodbeck, F., Shapiro, D.A. and Haward, B. (2003), "Leadership clarity and team innovation in health care", *Leadership Quarterly*, Vol. 14 Nos 4-5, pp. 393-410.
- Ximénez, C. (2006), "A Monte Carlo study of recovery of weak factor loadings in confirmatory factor analysis", *Structural Equation Modeling*, Vol. 13 No. 4, pp. 587-614.
- Yukl, G. (1989), "Managerial leadership: a review of theory and research", *Journal of Management*, Vol. 15 No. 2, pp. 251-289.
- Yukl, G. (1999a), "An evaluation of conceptual weaknesses in transformational and charismatic leadership theories", *Leadership Quarterly*, Vol. 10 No. 2, pp. 285-305.
- Yukl, G. (1999b), "An evaluative essay on current conceptions of effective leadership", *European Journal of Work and Organizational Psychology*, Vol. 8 No. 1, pp. 33-48.
- Yukl, G. (2002), *Leadership in Organizations*, Prentice Hall, Upper Saddle River, NJ.
- 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. 15-32.

Further reading

- *Adams, E.F. (1978), "A multivariate study of subordinate perceptions of and attitudes toward minority and majority", *Journal of Applied Psychology*, Vol. 63 No. 3, pp. 277-288.
- *Aiken, W.J., Smits, S.J. and Lollar, D.J. (1972), "Leadership behavior and job satisfaction in state rehabilitation agencies", *Personnel Psychology*, Vol. 25 No. 1, pp. 65-73.
- *Antonakis, J. and House, R. (2004), *On Instrumental Leadership: Beyond Transactions and Transformations*, UNL Gallup Leadership Institute Summit, Omaha, NE.
- *Ardichvili, A. and Kuchinke, K.P. (2002), "Leadership styles and cultural values among managers and subordinates: a comparative study of four countries of the former Soviet Union, Germany, and the US", *Human Resource Development International*, Vol. 5 No. 1, pp. 99-117.
- *Arnold, K.A., Turner, N., Barling, J., Kelloway, E.K. and McKee, M.C. (2007), "Transformational leadership and psychological well-being: the mediating role of meaningful work", *Journal of Occupational Health Psychology*, Vol. 12 No. 3, pp. 193-203.
- *Atwater, L.E. and Yammarino, F.J. (1992), "Does self-other agreement on leadership perceptions moderate the validity of leadership and performance predictions?", *Personnel Psychology*, Vol. 45 No. 1, pp. 141-164.
- *Avolio, B.J. and Yammarino, F.J. (1990), "Operationalizing charismatic leadership using a levels-of-analysis framework", *The Leadership Quarterly*, Vol. 1 No. 3, pp. 193-208.
- *Avolio, B.J., Howell, J.M. and Sosik, J.J. (1999), "A funny thing happened on the way to the bottom line: humor as a moderator of leadership style effects", *Academy of Management Journal*, Vol. 42 No. 2, pp. 219-227.
- *Ayman, R., Korabik, K. and Morrison, S. (2009), "Is transformational leadership always perceived as effective? Male subordinates' devaluation of female transformational leaders", *Journal of Applied Social Psychology*, Vol. 39 No. 4, pp. 852-879.
- *Basu, R. and Green, S.G. (1997), "Leader-member exchange and transformational leadership: an empirical examination of innovative behaviors in leader-member dyads", *Journal of Applied Social Psychology*, Vol. 27 No. 6, pp. 477-499.
- *Berson, Y. and Linton, J.D. (2005), "An examination of the relationships between leadership style, quality, and employee satisfaction in R&D versus administrative environments", *R&D Management*, Vol. 35 No. 1, pp. 51-60.

- *Borgmann, L. and Rowold, J. (2008f), “On the relationship between leadership styles and relevant organizational outcome criteria in a department store chain”, working paper, University of Münster, Münster.
- *Borgmann, L. and Rowold, J. (2008e), “On the relationship between leadership styles and relevant organisational outcome criteria in a German bank”, working paper, University of Münster, Münster.
- *Borgmann, L. and Rowold, J. (2008c), “On the relationship between leadership styles and relevant organizational outcome criteria in a German church administration”, working paper, University of Münster, MünsterGermany.
- *Borgmann, L. and Rowold, J. (2008d), “On the relationship between leadership styles and relevant organisational outcome criteria in a German fire department”, working paper, University of Münster, Münster.
- *Borgmann, L. and Rowold, J. (2008b), “On the relationship between leadership styles and relevant organizational outcome criteria in a German insurance company”, working paper, University of Münster, Münster.
- *Borgmann, L. and Rowold, J. (2008a), “On the relationship between leadership styles and relevant organizational outcome criteria in the public sector”, working paper, University of Münster, Münster.
- *Borgmann, L. and Rowold, J. (2009b), “The relationship between leadership styles and relevant organizational outcome criteria in a snowball sample”, working paper, University of Münster, Münster.
- *Borgmann, L. and Rowold, J. (2009a), “On the relationship between leadership styles and relevant organizational outcome criteria in German orchestras”, working paper, University of Münster, Münster.
- *Brown, M.E. and Trevino, L.K. (2002), “Conceptualizing and measuring ethical leadership: development of an instrument”, *Academy of Management Proceedings*, Vol. 2002 No. 1, pp. D1-D6.
- *Brown, M.E., Trevino, L.K. and Harrison, D.A. (2005), “Ethical leadership: a social learning perspective for construct development and testing”, *Organizational Behavior and Human Decision Processes*, Vol. 97 No. 2, pp. 117-134.
- *Brown, S.E. and Dalton, S.L. (1980), “Relationship between initiating structure and consideration leadership dimensions of school business managers”, *The Entity From Which ERIC Acquires the Content, Including Journal, Organization, and Conference Names, or by Means of Online Submission from the Author Education*, Vol. 100 No. 3, pp. 209-213.
- *Cable, D.M. and Judge, T.A. (2003), “Managers’ upward influence tactic strategies: the role of manager personality and supervisor leadership style”, *Journal of Organizational Behavior*, Vol. 24 No. 2, pp. 197-214.
- *Chacko, H.E. (1990), “Methods of upward influence, motivational needs, and administrators’ perceptions of their supervisors’ leadership styles”, *Group & Organization Management*, Vol. 15 No. 3, pp. 253-265.
- *Chan, A.T.S. and Chan, E.H.W. (2005), “Impact of perceived leadership styles on work outcomes: case of building professionals”, *Journal of Construction Engineering & Management*, Vol. 131 No. 4, pp. 413-422.
- *Ching-Yang Hsu, C. and Newton, R.R. (1974), “Relation between foremen’s leadership attitudes and the skill level of their work groups”, *Journal of Applied Psychology*, Vol. 59 No. 6, pp. 771-772.
- *Connell, P.W. (2005), “Transformational leadership, leader-member exchange (LMX), and OCB: the role of motives”, *Dissertation Abstracts International*, Vol. 66 Nos 11-B.

- *Deluga, R.J. (1991), "The relationship of leader and subordinate influencing activity in naval environments", *Military Psychology*, Vol. 3 No. 1, pp. 25-39.
- *Deluga, R.J. (1992), "The relationship of leader-member exchanges with laissez-faire, transactional, and transformational leadership in naval environments", in Clark, K.E., Clark, M.B. and Campbell, D.P. (Eds), *Impact of Leadership*, Center for Creative Leadership, Greensboro, CH, pp. 237-247.
- *Den Hartog, D.N. and Van Muijen, J.J. (1997), "Transactional versus transformational leadership: an analysis of the MLQ", *Journal of Occupational & Organizational Psychology*, Vol. 70 No. 1, pp. 19-34.
- *Dobbins, G.H. and Zaccaro, S.J. (1986), "The effects of group cohesion and leader behavior on subordinate satisfaction", *Group & Organization Management*, Vol. 11 No. 3, pp. 203-219.
- *Doherty, A.J. and Danylchuk, K.E. (1996), "Transformational and transactional leadership in interuniversity athletics management", *Journal of Sport Management*, Vol. 10 No. 3, pp. 292-309.
- *Dörr, S.L. (2006), *Motive, Einflussstrategien und transformationale Führung als Faktoren effektiver Führung. Ergebnisse einer empirischen Untersuchung mit Führungskräften*, Hampp, München.
- *Doucet, O., Simard, G. and Tremblay, M. (2008), "Leadership and commitment: the mediating role of trust and support", *Relations Industrielles/Industrial Relations*, Vol. 63 No. 4, pp. 625-648.
- *Dubinsky, A.J., Yammarino, F.J., Jolson, M.A. and Spangler, W.D. (1995), "Transformational leadership: an initial investigation in sales management", *Journal of Personal & Sales Management*, Vol. 15 No. 2, pp. 17-29.
- *Durand, D.E. and Nord, W.R. (1976), "Perceived leader behavior as a function of personality characteristics of supervisors and subordinates", *The Academy of Management Journal*, Vol. 19 No. 3, pp. 427-438.
- *Dussault, M., Payette, D. and Leroux, M. (2008), "Principals' transformational leadership and teachers' collective efficacy", *Psychological Reports*, Vol. 102 No. 2, pp. 401-410.
- *Felfe, J. (2006), "Transformationale und charismatische Führung: Stand der Forschung und aktuelle Entwicklungen", *Zeitschrift für Personalpsychologie*, Vol. 5 No. 4, pp. 163-176.
- *Fernandez, C.F. and Vecchio, R.P. (1997), "Situational leadership theory revisited: a test of an across-jobs perspective", *Leadership Quarterly*, Vol. 8 No. 1, pp. 67-84.
- *Gee-Woo, B., Wei-Liang, N. and Yuhyung, S. (2008), "The effect of a perceived leader's influence on the motivation of the members of nonwork-related virtual communities", *IEEE Transactions on Engineering Management*, Vol. 55 No. 2, pp. 292-303.
- *Geyer, A.L.J. and Steyrer, J.M. (1998), "Transformational leadership and objective performance in banks", *Applied Psychology: An International Review*, Vol. 47 No. 3, pp. 397-420.
- *Goodwin, V.L., Wofford, J.C. and Whittington, J.L. (2001), "A theoretical and empirical extension to the transformational leadership construct", *Journal of Organizational Behavior*, Vol. 22 No. 7, pp. 759-774.
- *Graen, G., Dansereau, J. and Minami, T. (1972), "Dysfunctional leadership styles", *Organizational Behavior & Human Performance*, Vol. 7 No. 2, pp. 216-236.
- *Graham, G.H. (1971), "Interpersonal attraction as a basis of informal organization", *Academy of Management Journal*, Vol. 14 No. 4, pp. 483-495.
- *Hammer, T.H. and Dachler, H.P. (1975), "A test of some assumptions underlying the path goal model of supervision: some suggested conceptual modifications", *Organizational Behavior and Human Performance*, Vol. 14 No. 1, pp. 60-75.

- *Heinitz, K. (2006), “Assessing the validity of the multifactor leadership questionnaire”, doctoral dissertation thesis, Freie Universität Berlin, Berlin.
- *Hills, R.J. (1963), “The representative function: neglected dimension of leadership behavior”, *Administrative Science Quarterly*, Vol. 8 No. 1, pp. 83-101.
- *Hinkin, T.R. and Schriesheim, C.A. (2008), “An examination of ‘nonleadership’: from laissez-faire leadership to leader reward omission and punishment omission”, *Journal of Applied Psychology*, Vol. 93 No. 6, pp. 1234-1248.
- *Hood, J.N. (2003), “The relationship of leadership style and CEO values to ethical practices in organizations”, *Journal of Business Ethics*, Vol. 43 No. 4, pp. 263-273.
- *Horwitz, I.B., Horwitz, S.K., Daram, P., Brandt, M.L., Charles Brunicaardi, F. and Awad, S.S. (2008), “Transformational, transactional, and passive-avoidant leadership characteristics of a surgical resident cohort: analysis using the multifactor leadership questionnaire and implications for improving surgical education curriculums”, *Journal of Surgical Research*, Vol. 148 No. 1, pp. 49-59.
- *Howell, J.M. and Avolio, B.J. (1993), “Transformational leadership, transactional leadership, locus of control, and support for innovation: key predictors of consolidated-business-unit performance”, *Journal of Applied Psychology*, Vol. 78 No. 6, pp. 891-902.
- *Howell, J.M. and Hall-Merenda, K.E. (1999), “The ties that bind: the impact of leader-member exchange, transformational and transactional leadership, and distance on predicting follower performance”, *Journal of Applied Psychology*, Vol. 84 No. 5, pp. 680-694.
- *Humphreys, J.H. (2005), “Contextual implications for transformational and servant leadership: a historical investigation”, *Management Decision*, Vol. 43 No. 10, pp. 1410-1431.
- *Hyland, P. (2007), “Resistance to organizational change: the impact of followers’ disposition toward change & supervisors’ leadership style”, doctoral dissertation thesis, Columbia University, New York, NY.
- *Johanson, J. (2008), “Perceptions of femininity in leadership: modern trend or classic component?”, *Sex Roles*, Vol. 58 Nos 11/12, pp. 784-789.
- *Judge, T.A. and Bono, J.E. (2000), “Five-factor model of personality and transformational leadership”, *Journal of Applied Psychology*, Vol. 85 No. 5, pp. 751-765.
- *Kane, T.D. and Tremble, T.R. (2000), “Transformational leadership effects at different levels of the army”, *Military Psychology*, Vol. 12 No. 2, pp. 137-160.
- *Kanste, O., Miettunen, J. and Kyngäs, H. (2007), “Psychometric properties of the multifactor leadership questionnaire among nurses”, *Journal of Advanced Nursing*, Vol. 57 No. 2, pp. 201-212.
- *Katerberg, R. and Hom, P.W. (1981), “Effects of within-group and between-groups variation in leadership”, *Journal of Applied Psychology*, Vol. 66 No. 2, pp. 218-223.
- *Kennerly, S.M. (1989), “Leadership behavior and organizational characteristics: implications for faculty satisfaction”, *Journal of Nursing Education*, Vol. 28 No. 5, pp. 198-202.
- *Knight, W.H. and Holen, M.C. (1985), “Leadership and the perceived effectiveness of department chairpersons”, *The Journal of Higher Education*, Vol. 56 No. 6, pp. 677-690.
- *Koene, B.A.S., Vogelaar, A.L.W. and Soeters, J.L. (2002), “Leadership effects on organizational climate and financial performance: local leadership effect in chain organizations”, *The Leadership Quarterly*, Vol. 13 No. 3, pp. 193-215.
- *Koh, W.L., Steers, R.M. and Terborg, J.R. (1995), “The effects of transformational leadership on teacher attitudes and students performance in Singapore”, *Journal of Organizational Behavior*, Vol. 16 No. 4, pp. 319-333.

- *Krishnan, V.R. (2004), "Impact of transformational leadership on followers' influence strategies", *The Leadership and Organization Development Journal*, Vol. 25 No. 1, pp. 58-75.
- *Krishnan, V.R. (2005), "Transformational leadership and outcomes: role of relationship duration", *Leadership & Organization Development Journal*, Vol. 26 No. 6, pp. 442-457.
- *Kuehl, C.R., DiMarco, N. and Wims, E.W. (1975), "Leadership orientation as a function of interpersonal need structure", *Journal of Applied Psychology*, Vol. 60 No. 1, pp. 143-145.
- *Lee, J. (2005), "Effects of leadership and leader-member exchange on commitment", *Leadership & Organization Development Journal*, Vol. 26 No. 8, pp. 655-672.
- *Liden, R.C., Wayne, S.J., Zhao, H. and Henderson, D. (2008), "Servant leadership: development of a multidimensional measure and multi-level assessment", *The Leadership Quarterly*, Vol. 19 No. 2, pp. 161-177.
- *Lindgreen, A., Palmer, R., Wetzels, M. and Antiocho, M. (2009), "Do different marketing practices require different leadership styles? An exploratory study", *The Journal of Business & Industrial Marketing*, Vol. 24 No. 1, pp. 14-26.
- *Lok, P. and Crawford, J. (2004), "The effect of organisational culture and leadership style on job satisfaction and organisational commitment: a cross-national comparison", *Journal of Management Development*, Vol. 23 No. 4, pp. 321-338.
- *Lok, P., Westwood, R. and Crawford, J. (2005), "Perceptions of organisational subculture and their significance for organisational commitment", *Applied Psychology: An International Review*, Vol. 54 No. 4, pp. 490-514.
- *McCann, J.T. (2007), "Leadership in the apparel manufacturing environment – an analysis based on the multi-factor leadership questionnaire", Capella University, Minneapolis, MN.
- *Maher, K.J. (1997), "Gender-related stereotypes of transformational and transactional leadership", *Sex Roles*, Vol. 37 Nos 3/4, pp. 209-225.
- *Matsui, T., Ohtsuka, Y. and Kikuchi, A. (1978), "Consideration and structure behavior as reflections of supervisory interpersonal values", *Journal of Applied Psychology*, Vol. 63 No. 2, pp. 259-262.
- *Morrison, R.S., Jones, L. and Fuller, B. (1997), "The relation between leadership style and empowerment on job satisfaction of nurses", *Journal of Nursing Administration*, Vol. 27 No. 5, pp. 27-34.
- *Neubert, M.J., Carlson, D.S., Kacmar, K.M., Chonko, L.B. and Roberts, J.A. (2008), "Regulatory focus as a mediator of the influence of initiating structure and servant leadership on employee behavior", *Journal of Applied Psychology*, Vol. 93 No. 6, pp. 1220-1233.
- *Osborn, R.N., Hunt, J.G. and Pope, R. (1973), "Lateral leadership, satisfaction, and performance", *Academy of Management Proceedings*, Vol. 1973 No. 1, pp. 440-446.
- *Parry, K.W. and Proctor-Thomson, S.B. (2002), "Perceived integrity of transformational leaders in organisational settings", *Journal of Business Ethics*, Vol. 35 No. 2, pp. 75-96.
- *Petty, M.M., Odewahn, C.A., Bruning, N.S. and Thomason, T.L. (1977), "An examination of the moderating effects of supervisor sex and subordinate sex upon the relationships between supervisory behavior and subordinate outcomes in mental health organizations", *Proceedings – Academy of Management*, Vol. 1977 No. 1, pp. 408-412.
- *Pounder, J.S. (2008), "Transformational leadership: practicing what we teach in the management classroom", *Journal of Education for Business*, Vol. 84 No. 1, pp. 2-6.
- *Rowold, J. (2006), "Transformational parry and transactional leadership in martial arts", *Journal of Applied Sport Psychology*, Vol. 18 No. 4, pp. 312-325.
- *Rowold, J. (2008a), "Effects of transactional and transformational leadership of pastors", *Pastoral Psychology*, Vol. 56 No. 4, pp. 403-411.

- *Rowold, J. (2008b), "Relationship between transformational, transactional, and moral-based leadership: results from two empirical studies", *Leadership Review*, Vol. 8, Winter, pp. 4-17.
- *Rowold, J. and Borgmann, L. (2008), "Relationships between leadership styles and trainees' self-efficacy", working paper, University of Münster, Münster.
- *Rowold, J. and Heinitz, K. (2008), "Einfluss von transformationaler, transaktionaler, mitarbeiter- und aufgabenorientierter Führung auf Stress", *Zeitschrift für Personalpsychologie*, Vol. 7 No. 3, pp. 129-140.
- *Rowold, J. and Kersting, M. (2008), "The assessment of charismatic leadership: validity of a German version of the Conger-Kanungo Scales", *European Journal of Psychological Assessment*, Vol. 24 No. 2, pp. 124-130.
- *Sarros, J.C., Gray, J. and Densten, I.L. (2002), "Leadership and its impact on organizational culture", *International Journal of Business Studies*, Vol. 10 No. 2, pp. 1-26.
- *Savic, B.S., Pagon, M. and Robida, A. (2007), "Predictors of the level of personal involvement in an organization: a study of Slovene hospitals", *Health Care Management Review*, Vol. 32 No. 3, pp. 271-283.
- *Schriesheim, C.A. and Murphy, C.J. (1976), "Relationships between leader behavior and subordinate satisfaction and performance: a test of some situational moderators", *Journal of Applied Psychology*, Vol. 61 No. 5, pp. 634-641.
- *Serafini, D.M. and Pearson, J.C. (1984), "Leadership behavior and sex role socialization: two sides of the same coin", *Southern Speech Communication Journal*, Vol. 49 No. 4, pp. 396-405.
- *Silins, H.C. (1994), "Leadership characteristics and school improvement", *Australian Journal of Education*, Vol. 38 No. 3, pp. 266-281.
- *Sosik, J.J. and Dinger, S.L. (2007), "Relationships between leadership style and vision content: the moderating role of need for social approval, self-monitoring, and need for social power", *Leadership Quarterly*, Vol. 18 No. 2, pp. 134-151.
- *Sosik, J.J. and Godshalk, V.M. (2000), "Leadership styles, mentoring functions received, and job related stress: a conceptual model and preliminary study", *Journal of Organizational Behavior*, Vol. 21 No. 4, pp. 365-390.
- *Sosik, J.J., Potosky, D. and Jung, D.I. (2002), "Adaptive self-regulation: meeting other's expectations of leadership and performance", *Journal of Social Psychology*, Vol. 142 No. 2, pp. 211-232.
- *Southwick, R.B. (1998), *Antecedents of Transformational, Transactional, and Laissez-Faire Leadership*, University of Georgia, Athens, GA.
- *Spangler, W.D. and Braiotto, L. Jr (1990), "Leadership and corporate audit committee effectiveness", *Group & Organization Management*, Vol. 15 No. 2, pp. 134-157.
- *Stathatos, P.A. (1999), "The impact of traditional and innovative environments on transformational and transactional leaders. (traditional environment)", *Dissertation Abstracts International*, Vol. 60 Nos 5-B.
- *Stordeur, S., D'hoore, W. and Vandenberghe, C. (2001), "Leadership, organizational stress, and emotional exhaustion among hospital nursing staff", *Journal of Advanced Nursing*, Vol. 35 No. 4, pp. 533-542.
- *Sueki, L.T. (1998), "The relation of transformational leadership and transactional leadership to constructive organizational culture", doctoral dissertation, California School of Professional Psychology, Los Angeles, CA.
- *Swanson, R.G. and Johnson, D.A. (1975), "Relation between peer perception of leader behavior and instructor-pilot performance", *Journal of Applied Psychology*, Vol. 60 No. 2, pp. 198-200.

- *Teas, R.K. (1983), "Supervisory behavior, role stress, and the job satisfaction of industrial salespeople", *Journal of Marketing Research*, Vol. 20 No. 1, pp. 84-91.
- *Vandenberghe, C., Stordeur, S. and D'hoore, W. (2002), "Transactional and transformational leadership in nursing: structural validity and substantive relationships", *European Journal of Psychological Assessment*, Vol. 18 No. 1, pp. 16-29.
- *Vecchio, R.P. (1987), "Situational leadership theory: an examination of a prescriptive theory", *Journal of Applied Psychology*, Vol. 72 No. 3, pp. 444-451.
- *Vecchio, R.P. (1992), "The impact of differences in subordinate and supervisor age on attitudes and performance", *Psychology and Aging*, Vol. 8 No. 1, pp. 112-119.
- *Vecchio, R.P. and Gobdel, B.C. (1984), "The vertical dyad linkage model of leadership: problems and prospects", *Organizational Behavior and Human Performance*, Vol. 34 No. 1, pp. 5-20.
- *Vecchio, R.P., Bullis, R.C. and Brazil, D.M. (2006), "The utility of situational leadership theory: a replication in a military setting", *Small Group Research*, Vol. 37 No. 5, pp. 407-424.
- *Watson, K.D. (2007), "Remote management: traditional leadership behaviors in a contemporary work environment", Kansas State University, Manhattan, KS.
- *Wofford, J.C., Goodwin, V.L. and Whittington, J.E. (1998), "A field study of a cognitive approach to understanding transformational and transactional leadership", *Leadership Quarterly*, Vol. 9 No. 1, pp. 55-84.
- *Yammarino, F.J. and Bass, B.M. (1990), "Transformational leadership and multiple levels of analysis", *Human Relations*, Vol. 43 No. 10, pp. 975-995.
- *Zimmermann, R.D., Mount, M.K. and Goff, M. (2008), "Multisource feedback and leaders' goal performance: moderating effects of rating purpose, rater perspective, and performance dimension", *International Journal of Selection and Assessment*, Vol. 16 No. 2, pp. 121-133.
- *Zohar, D. (2002), "The effects of leadership dimensions, safety climate, and assigned priorities on minor injuries in work groups", *Journal of Organizational Behavior*, Vol. 23 No. 1, pp. 75-92.

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