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On the relationship between leadership styles and relevant organisational outcome criteria  
in a German fire department

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### I

Over the past decades, a substantial body of research has accumulated leadership theories (Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008; Yukl, Gordon, & Taber, 2002). Numerous theories were proposed and tested in thousands of empirical studies (Bass & Avolio, 1990). This research has explored the effects of different leadership styles on organisational outcome criteria like job satisfaction, commitment or job performance. Leadership researchers are still interested, if specific leadership behaviours are more effective than others or which leadership style is the most effective. Although a great body of research on leadership exists, these issues are still unexplained (Yukl, 1999; Yukl, 2002; Yukl et al., 2002). Despite the need for integrated research, that test the relationship of various leadership styles, studies, investigating different leadership styles or theories, are nearly non-existent (House & Aditya, 1997).

There is meta-analytical support for the relevance of specific leadership styles referring to organisational relevant outcome criteria and support the existence of positive relationships between leadership styles and several indicator of leadership effectiveness. Like most the other studies, these meta-analyses only focus on one isolated leadership theory and do not compare and contrast of the different leadership theories. For example, Judge, Piccolo and Ilies (2004) found out, that initiating structure and consideration are positively related to performance. Furthermore, a meta-analysis on the relationship between transformational and transactional leadership and performance also confirmed positive correlations (Judge & Piccolo, 2004).

Despite a multitude of studies, we still do not know which leadership styles has the strongest relationship to outcome criteria such as performance, commitment or satisfaction. This is problematic, because for practitioners the important question which leadership style to focus on in leadership selection, training, and feedback interventions cannot be answered.

For leadership research and its progress it is strongly recommended to have a extensive investigation of the different leadership constructs in order to further advance in leadership theory. For example, the overlap in relative criterion-oriented validity of various leadership styles could yield insight into the processes that underlie the relationships between leadership styles and criteria of effective leadership such as followers' performance. From a theoretical perspective it is not unproblematic to hypothesize several separated leadership theories. No theory existed that aimed at unifying these separated theories.

As a consequence of this problematic situation, integrative work in the field of leadership has a high priority on the agenda of leadership research (House & Aditya, 1997; Judge et al., 2004; Sashkin, 2004; Yukl, 1989; Yukl, 1999b; Yukl, 2002). Thus, the present research analyses the relationships of seven leadership styles (transformational and transactional leadership, instrumental leadership, laissez-faire, initiating structure and consideration, leader-member-exchange and ethical leadership). Also, this study addresses the question, which leadership style is more effective than others (criterion validity).

Within the present work, three indicators for the different facets of effective leadership are included. First, job satisfaction was incorporated as an indicator of satisfied followers. Next, followers' affective commitment has important implications for their intention to stay within the respective organization and other positive, work-related attitudes (Meyer, Stanley, Herscovitch, & Topolnysky, 2002). Third, job performance is a highly important indicator of effective leadership. At least one of these three indicators have been included in a large number of leadership studies and meta-analyses (Dumdum, Lowe, & Avolio, 2002; Judge, Piccolo, & Ilies, 2004; Judge & Piccolo, 2004). Consequently, these three indicators of effective leadership were included into the present study.

## Method

### *Samples and Procedures*

The study was conducted in a German fire department and the sample consisted of  $N=284$  fire fighters (Ferdinand, 2008). These participants rated the leadership style of their direct supervisors. The mean age of this sample was 33.81 years ( $SD=11.6$ ). The proportion of women was 11.1 per cent, and according to this 88.9 per cent were male. The average tenure of the employees was 14.41 years ( $SD=10.96$ ). 54.5% of this sample had a Primary High School graduation, 24.4% a Secondary High School graduation and 21.1% an university degree. Only 4.00% of the rated supervisors were female, 96.00% were male. The leaders had a mean tenure of 23.78 years ( $SD=10.84$ ). 89.9% of the leaders worked at the middle or the top level.

### *Instruments*

*Transactional and transformational leadership.* Four items from a German validated version (Heinitz & Rowold, 2007) of the Transformational Leadership Inventory (Podsakoff, MacKenzie, & Bommer, 1996; TLI; cf. Podsakoff, MacKenzie, Moorman, & Fetter, 1990)

were utilized to assess transactional leadership (sample item: "...provides me with positive feedback if I perform well"). Also, 22 items from the TLI were utilized for the assessment of transformational leadership (sample item: "...has inspiring plans for the future").

*Instrumental leadership.* A German validated version of Antonakis and House's Instrumental Leadership Scale (Lit) was utilized in the present study to assess instrumental leadership. One of the 16 items was : "...develops specific policies to support his/her vision".

*Laissez-Faire.* For the assessment of Laissez-Faire, four items were newly designed (sample item: "...tries to avoid decisions").

*Consideration and initiating structure.* The leadership style of consideration was assessed by 22 items from a German validated version (Fittkau-Garthe & Fittkau, 1971) of the SBDQ (Fleishman, 1953) (sample item: "...shows interest in the individual well-being of his/her subordinates"). Initiating structure was assessed by 12 items from the same questionnaire (sample item: "...assigns specific tasks to his/her subordinates").

*LMX.* For the assessment of leader-member exchange, a German validated version (Schyns, 2002) of Graen and Uhl-Bien's (1995) LMX scale was used (7 items, sample item: "I trust my coach enough to defend his/her decisions.").

*Ethical leadership.* The ten items from the Ethical Leadership Scale developed by Brown (Brown, Trevino, & Harrison, 2005) were utilized to assess ethical leadership (sample item: "...sets an example of how to do things the right way in terms of ethics").

*Job Satisfaction.* Seven items from Neuberger and Allerbeck's (1993) scale for the assessment of job satisfaction were implemented in the present study (e.g., "I am satisfied with my colleagues").

*Affective Commitment.* Eight items from a German validated version (Schmidt, Hollmann, & Sodenkamp, 1998) of Allen and Meyer's questionnaire (Allen & Meyer, 1990) were utilized to assess affective commitment (e.g., "I really feel as if this organization's problems are my own").

*Job Performance.* Four items were newly constructed in order to assess subordinates self-rated performance (e.g., "My job performance is high").

## Results

Table 1 shows the descriptive statistics and intercorrelations of the different leadership styles and outcome criteria. With except for three correlations concerning the organisational

outcome criterion job performance, all correlations are statistically significant. The results revealed strong positive correlations of the assessed leadership styles.

Table 1

*Descriptive Statistics, Internal Consistency Estimates, and Intercorrelations*

|     | M    | SD   | TF     | TA     | LF     | C     | IS    | LMX   | EL    | JS    | AC    | JP  |
|-----|------|------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-----|
| TF  | 3.29 | .78  | .94    |        |        |       |       |       |       |       |       |     |
| TA  | 3.17 | 1.01 | .76**  | .84    |        |       |       |       |       |       |       |     |
| LF  | 2.12 | 1.10 | -.49** | -.40** | .91    |       |       |       |       |       |       |     |
| C   | 3.46 | .82  | .75**  | .70**  | -.59** | .94   |       |       |       |       |       |     |
| IS  | 3.40 | .65  | .83**  | .72**  | -.57** | .78** | .84   |       |       |       |       |     |
| LMX | 3.41 | .89  | .76**  | .66**  | -.49** | .79** | .76** | .92   |       |       |       |     |
| EL  | 3.32 | .94  | .86**  | .74**  | -.48** | .80** | .84** | .80** | .93   |       |       |     |
| JS  | 3.82 | .69  | .64**  | .60**  | -.42** | .64** | .66** | .69** | .61** | .84   |       |     |
| AC  | 3.49 | .44  | .26**  | .26**  | -.11   | .24** | .32** | .29** | .30** | .43** | .13   |     |
| JP  | 4.08 | .63  | .16**  | .16**  | -.09   | .16** | .24** | .18** | .21** | .26** | .34** | .84 |

*Note.* Estimates of internal consistency (Cronbach's Alpha) are presented along the diagonal;

\*  $p < .05$ ; \*\*  $p < .01$ .

### *Discussion*

The present studies documents that nearly all leadership styles are associated with organisational relevant outcome criteria.

In contrast to all other leadership styles, laissez-faire is only correlated with job satisfaction. Results indicate meaningful overlap between the leadership constructs (i.e., strong convergent validities). The results show the importance of leadership behaviours for outcome criteria. Most notably, with regard to the correlations of the (non-)leadership style laissez faire, it seems appropriate and important for subordinates to show leadership behaviour.

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