

## How do transformational leaders influence followers' affective well-being? Exploring the mediating role of self-efficacy

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Transformational leaders employ a visionary and creative style of leadership that inspires employees to make independent decisions and develop in their work. There is some evidence that the transformational (inspirational) leadership style is linked to employee burnout and stress. However, little research has focused on the psychological mechanisms that could explain this link, nor has there been a focus on positive affective well-being. We propose that transformational leaders influence their followers' self-efficacy, thereby affecting affective well-being in followers. This study extends previous work by examining the direct link between leadership and well-being both cross-sectionally ( $N = 447$ ) and longitudinally ( $N = 188$ ), and testing the mediating effects of self-efficacy. The study was carried out within parts of an elderly care department in a Danish local government. A theory-driven model of the relationships between leadership, self-efficacy and affective well-being was tested using Structural Equation Modelling. The results indicated that followers' self-ratings of self-efficacy mediated the relationship between transformational leadership style and positive affective well-being. Only limited evidence for a direct path between leadership behaviour and positive affective well-being was found. These findings have implications for how organizations may promote employee well-being, through interventions directed at supporting transformational leadership behaviours.

**Keywords:** transformational leadership; affective well-being; self-efficacy; healthcare workers

### Introduction

An emerging body of research has identified a link between leadership styles and health and well-being outcomes at work (Offermann & Hellmann, 1996; Shieh, Mills & Waltz, 2001; Sosik & Godshalk, 2000; van Dierendonck, Haynes, Borril, & Stride, 2004; see Kuoppala, Lamminpää, Liira, & Vainio, 2008 for a recent review). In particular, transformational (inspirational) leadership styles have been negatively linked to health outcomes such as burnout and job-related stress (Seltzer, Numerof, & Bass, 1989; Sosik & Godshalk, 2000). Although the possible mediating effects of work characteristics on this link have been studied (Arnold, Turner, Barling, Kelloway, & McKee, 2007; Nielsen, Randall, Yarker, & Brenner, 2008; Nielsen, Yarker, Brenner, & Randall, 2008), the psychological mediating mechanisms that are

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responsible for this association have yet to be explored. In the present study, we propose that followers' *self-efficacy* may be one such mechanism.

Self-efficacy (the belief in one's capabilities to organize and execute the courses of action required to produce given attainments, Bandura, 1997, p. 3) is widely recognized as an important predictor of health outcomes (Ajzen, 2002). Self-efficacy has been shown to either mediate or moderate a number of relationships between work design and a variety of organizational outcomes, such as performance (Parker, 1994). For example, it has been shown to moderate the association between manager support and performance (Griffin & Hesketh, 2003) and between work-related stressors and psychological and physical strain (Jex & Bliese, 1999). Although self-efficacy may also link transformational leadership and positive affective well-being (Sivanathan, Arnold, Turner, & Barling, 2004), this link has yet to be explored. To our knowledge, as yet no studies have investigated (i) the direct effects of transformational leadership on positive affective well-being over time, and (ii) whether self-efficacy mediates the relationship between transformational leadership behaviour and followers' positive affective well-being. Understanding how transformational leaders may impact on followers' well-being will help us understand how well-being at work may be promoted. Building on previous research, this study tested the relationships between these factors. Using a longitudinal design we examined whether there is evidence of such direct links and mediational effects in both cross-sectional data (i.e., at Time 1 and at Time 2) and longitudinal data (i.e., in the relationships between Time 1 and Time 2 measures). Data from workers providing care to the elderly were used to test the hypotheses.

### ***Transformational leadership and health and well-being of followers***

Transformational leaders are those who "broaden and elevate the interests of their followers, generate awareness and commitment of individuals to the purpose and mission of the group, and . . . they enable subordinates to transcend their own self-interests for the betterment of the group" (Seltzer et al., 1989, p. 174). The concept is composed of idealized influence/charisma (the leader acts as a role model and promotes desirable behaviour, thus ensuring the respect and trust of followers), inspirational motivation (the leader formulates a clear and attractive vision and exhibits high expectations of followers that they may reach this vision), intellectual stimulation (the leader encourages followers to make their own decisions and be creative and innovative thus enabling new ways of working) and individualized consideration (the leader acts as a coach and a mentor and provides personal attention to the development of the individual employee) (Bass, 1985, 1999).

Studies have mainly focused on the organizational outcomes of transformational leadership and have found associations between transformational leadership style and innovation and performance (among others, Berson & Linton, 2005; Bono & Judge 2003; Judge & Piccolo, 2004). Further, there is a growing literature that focuses on individual outcomes, mainly ill-health (Kuoppala et al., 2008). For example, cross-sectional studies have found negative relationships between transformational leaders and followers' subjective reports of job-related stress (Seltzer et al., 1989; Sosik & Godshalk, 2000) and burnout (Corrigan, Diwan, Campion, & Rashid, 2002; Hetland, Sandal, & Johnsen, 2007; Seltzer et al., 1989; Vaishali & Kumar, 2003). These studies focused on how transformational leadership may be related to *absence*

of ill-health or job satisfaction (measuring the pleasure dimension of well-being). However, there is at present increased interest in the positive aspects of well-being as a concept that goes beyond the absence of ill-health (Linley & Joseph, 2004). It has been hypothesized that transformational leadership has the ability to elevate followers and increase positive affective well-being (Sivanathan et al., 2004). Warr (1987, 1994) identified two main dimensions of affective well-being: pleasure and level of arousal. In order to examine positive affective well-being, we used a measure that captured followers' perceptions of high arousal and high pleasure. This is also referred to as general well-being in the literature.

Van Dierendonck et al. (2004) found positive effects of leadership behaviours on both work-related and general well-being. It has been suggested that transformational leadership elevates followers and enables followers to transcend beyond their own self-realization (Bass, 1999). We, therefore, wanted to examine whether transformational leadership behaviours may also bring about wide-ranging changes in followers outside the work context. We, therefore, measured general affective well-being rather than work-related well-being. Note, that work-related well-being has been found to be highly related to general well-being (Hart, 1999; Higginbottom, Barling, & Kelloway, 1993; Judge & Watanabe, 1993).

Previous studies have found links between leadership behaviours and well-being. In a cross-sectional study, Gilbreath and Benson (2004) found that a range of leadership behaviours were related to psychological well-being. These behaviours included encouraging employees to make independent decisions, acknowledging employees and showing consideration and concern for them. In a longitudinal study, van Dierendonck et al. (2004) found that leaders who exhibited coaching behaviours and encouraged independent decision making, treated employees with respect and were open about expectations (all of these being aspects of transformational leadership) increased their followers' job-related and general well-being. It is likely that transformational leadership behaviours may also be related to positive affective well-being. Previous research has found that transformational leaders are more optimistic than other leaders (Spreitzer & Quinn, 1996) and tend to interpret their surroundings more positively (Ashkanasy & Tse, 2000). Indeed, McColl-Kennedy and Anderson (2002) found that transformational leadership was positively associated with followers' optimism. Through idealized influence, leaders enact what is right, rather than what is cost-effective, and employees who see their leaders doing the right thing may trust and respect them and have positive perceptions of interpersonal justice (Turner, Barling, & Zacharatos, 2002). It is possible that transformational leaders who formulate a positive vision for the work of followers make them feel better – more energized and better about themselves – as they have a clear direction in their work. Further, it is possible that through intellectual stimulation leaders encourage followers to make their own decisions and be creative and innovative in their work and as such they may feel more challenged and thereby also more aroused. Finally, through individualized consideration, leaders show concern for their employees through listening and being compassionate. They provide personal attention to the development of the individual employee. Such a close relationship between leader and follower may increase employees' sense of well-being (Sivanathan et al., 2004). To validate and extend the existing research we therefore first tested whether a direct link existed between transformational and positive affective well-being, both cross-sectionally and longitudinally.

*Hypothesis 1:* A direct relationship exists between transformational leadership and positive affective well-being, both cross-sectionally and over time.

### ***Transformational leadership, self-efficacy and well-being***

Self-efficacy, derived from Bandura's (1997) socio-cognitive model, refers to one's belief about the ability and capacity to accomplish a task or cope with environmental demands. Self-efficacy has been linked to well-being: Employees high in self-efficacy are more likely to report lower levels of perceived stress (O'Leary, 1992). High levels of self-efficacy have been found to be related to job satisfaction, and may buffer the adverse effect of poor working conditions on well-being (Jex & Bliese, 1999, Jex, Bliese, Buzzell, & Primeau, 2001; Stetz, Stetz, & Bliese, 2006).

A number of studies suggest that transformational leadership may exert its influence on followers through self-efficacy (Jex & Bliese, 1999; Stetz et al., 2006). The main determinant of self-efficacy is enactive mastery (Bandura, 1997); this depends on factors such as verbal persuasion from others, vicarious learning and emotional arousal – all of these may be brought about by the transformational leader (Sivanathan et al., 2004). It has been suggested that transformational leaders may instil a sense of self-efficacy in their followers by expressing high expectations, thereby leading followers to believe they can deal with challenges effectively (the Pygmalion effect, Eden, 1990). A study by Sutton and Woodman (1989) found that leaders expressed higher expectations (an aspect of transformational leadership, Bass, 1985) for those followers whom they believed to have high potential. Subsequently, these followers reported higher levels of self-efficacy. However, it is also possible that transformational leaders develop their followers' sense of efficacy not only through high expectations but also through intellectual stimulation to cope with the demands of the job and find improved ways of doing things, and as a result they feel more capable (Sivanathan et al., 2004; Turner et al., 2002). This may lead to self-efficacy in that followers come to believe that they can solve difficult problems and handle challenging situations without the help of the leader. Transformational leaders encourage followers' continual development and empowerment, thus increasing their abilities and motivation (Kark, Shamir, & Chen, 2003). Through inspirational motivation, transformational leaders may influence self-efficacy by communicating an attractive vision and setting clear goals. This helps the followers to frame their role in the organization (Ilies, Judge, & Wagner, 2007). Through individualized consideration the transformational leader helps the followers develop a sense of self-worth (Avolio & Bass, 1995).

Research on self-efficacy has focused both on general self-efficacy (a generalized trait consisting of one's overall estimate of one's ability to affect requisite performances in achievement situations, Eden & Zuk, 1995, p. 629) and occupational self-efficacy (the estimate of one's ability to cope with challenges in the workplace) (Stajkovic & Luthans, 1998). Schyns and von Collani (2002) suggested that occupational self-efficacy is appropriate when examining organizational outcome measures. In this study, we used a general measure of self-efficacy because we measured the employee's general well-being and not an organizational outcome. The two concepts of self-efficacy have been found to be highly related (Schyns & von Collani, 2002; Stajkovic & Luthans, 1998).

Research on the predictive power of transformational leadership on self-efficacy shows mixed results (van Knippenberg, van Knippenberg, De Cremer, & Hogg, 2004). In a cross-sectional study of bank managers, Kark et al. (2003) found that transformational leadership marginally predicted self-efficacy. In an opportunity sample of white and blue collar workers, Schyns (2001) found high correlations between transformational leadership and occupational self-efficacy. She explored this relationship further and found that respondents low in self-efficacy also reported their leaders to be less transformational than did respondents with high or mid-level scores on self-efficacy. However, those with high levels of self-efficacy did not evaluate their leader to be more transformational than those with low- or mid-level scores of self-efficacy. Due to the cross-sectional nature of the study, it was not possible to draw conclusions on the direction of transformational leadership and self-efficacy. One study failed to confirm such a relationship; Felfe and Schyns (2002) failed to replicate the finding that transformational leadership predicted occupational self-efficacy. The authors suggested that a possible explanation may be that the sample was drawn from a bureaucratic organization in which leaders had little opportunity to lead beyond the rules. Due to this inconsistency in previous research findings there is reason to explore this relationship further.

To fully understand how transformational leadership influences positive affective well-being, the nature and extent of any mediation by self-efficacy needs to be examined. We therefore hypothesized the following:

*Hypothesis 2:* The relationship between leadership and followers' affective well-being is mediated by followers' self-efficacy, both longitudinally and cross-sectionally.

### ***Direction of the relationship between transformational leadership and followers' self-efficacy***

A body of research has focused on the effects of followers' developmental levels (including their level of self-efficacy) on leaders' ability to exhibit transformational leadership behaviours. Moore (1976) suggested that leadership behaviours that focus on developing followers put greater demands on followers (and therefore require a certain developmental level) in order for followers to embrace such behaviours. It may be that followers' self-efficacy also influences their experiences of leadership behaviour, that is, it establishes a "feedback loop" linking follower self-efficacy and leader behaviour as suggested by Dvir and Shamir (2003). They confirmed this reverse relationship in a longitudinal study: followers' self-efficacy predicted their leaders' transformational leadership behaviours over time. A possible explanation may be that those followers who feel secure and confident that they are able to deal with challenges at work, are also more open to transformational leaders that encourage independent problem solving and taking responsibility. However, a purely cognitive mechanism may also be at play – followers who perceive themselves positively may also see their manager in a positive light. In line with previous research, we hypothesize the following:

*Hypothesis 3:* Followers' self-efficacy will over time influence their leaders' transformational leadership behaviour.

## Method

This study used a longitudinal survey design. Questionnaires were distributed on two occasions to followers with an 18-month interval in between. On both occasions, participants were asked about their self-efficacy, health and well-being and were asked to rate their immediate manager (i.e., line manager) on a variety of leadership behaviours. Transformational leadership has been shown to operate (and to be important) at this managerial level (Bass, 1999). Participants returned their completed questionnaires directly to the research group.

## Participants

The sample consisted of staff working within care of the elderly in a large Danish local government. Fifty-one percent of the healthcare staff worked in the homecare and the remainder in the elderly care homes. Staff included cleaning personnel, canteen personnel, healthcare assistants, nurses, physiotherapists and maintenance staff. Staff were organized into permanent groups, for example, home care staff covering a geographical area or staff covering a nursing home would constitute a group. Each group had a formal leader with managerial responsibilities; this was the manager they were asked to rate.

At Time 1, questionnaires were distributed to 551 staff members and 447 questionnaires were returned, yielding a response rate of 81%. Ninety-three percent were females, the average age was 44 ( $SD = 11.1$ ), and they had been working in their current workplace for 12 years on average. The majority of staff was healthcare assistants (62%), 12% were nurses, 18% had other health-related educations and the remaining 8% had no healthcare-related education. At Time 2, the questionnaire was distributed to 521 staff members and 274 returned the questionnaire, yielding a response rate of 53%. Surveys were sent to all employees working at the centres and thus new staff ( $n = 92$ ) were included in the second round of the survey. Ninety-one percent were females, the average age was 45 ( $SD = 10.9$ ), and they had been working in their current workplace for 7 years on average. A majority of the staff were healthcare assistants (65%), 10% were nurses, 19% had other health-related education and the remaining 6% had no healthcare-related education.

One hundred eighty-eight participants provided data at both Time 1 and Time 2. Of these, 93% were female. The mean age was 45 years ( $SD = 9.9$ ) and they had been working in their current workplace for 9 years ( $SD = 7.7$ ) on average (at Time 1). A majority of staff were healthcare assistants (61%), 12% were nurses, 21% had other health-related educations and the remaining 8% had no healthcare-related education. This longitudinal sample was representative of the T1 and T2 samples.

## Measures

*Transformational leadership.* This concept was measured using the Global Transformational Leadership Scale developed by Carless, Wearing, and Mann (2000). It consists of seven items and has been found to have a high degree of convergent validity with more established and lengthier questionnaires such as the Multifactor Leadership Questionnaire (MLQ; Avolio, Bass, & Jung, 1995) and the Leadership Practices Inventory (LPI; Kouzes & Posner, 1990) (Carless et al., 2000). An example of items is: "My leader encourages thinking about problems in new ways and

questions assumptions.” Response categories were: 1 = To a very large extent, 2 = To a large extent, 3 = Somewhat, 4 = To a small extent, 5 = To a very small extent. Cronbach’s alpha was .90 at Time 1, and .94 at Time 2.

*Self-efficacy.* A reduced seven-item version of self-efficacy was used (Schwarzer, 1992; Schwarzer & Jerusalem, 1995). An example of an item is “*I can always manage to solve difficult problems if I try hard enough.*” Responses categories were: 1 = Exactly true, 2 = Moderately true, 3 = Hardly true, 4 = Not at all true. For the analyses the scale was reversed such that a high value represents a high level of self-efficacy. Cronbach’s alpha was .79 at both Time 1 and Time 2.

*Well-being.* This 5-item scale was taken from the COpenhagen PsychoSOcial Questionnaire (COPSOQ; Kristensen, Borg, & Hannerz, 2002; Kristensen, Hannerz, Hogh, & Borg, 2006). This scale measured the degree to which employees reported having been in a positive state of mind, for example, happy and vivacious. An example of an item is: “Have you over the past two weeks felt active and energetic?” Response categories were: 1 = All the time, 2 = Most of the time, 3 = A bit more than half of the time, 4 = A bit less than half of the time, 5 = Only a little of the time, 6 = Not at all. For the analyses the scale was reversed such that a high value represented a high level of well-being. Cronbach’s alpha was .87 at Time 1, and .85 at Time 2.

### **Statistical analyses**

As all outcomes were measured on different scales, these were standardized so they ranged from 0 to 100, with 100 representing the highest score on the construct. This was done to enhance clarity in the interpretation and meaning of the results.

To test our hypotheses, we performed a two-step structural equation modelling (Anderson & Gerbing, 1988) using LISREL 8.7 (Jöreskog & Sörbom, 1999). First, the measurement model was assessed to discriminate empirically the theoretical constructs of the model and to validate the operational measures included in our study. Second, the structural equation model, specifying the relationships between the latent variables, was tested using pairwise deletion. The maximum likelihood method of parameter estimation was used with the covariance matrix as input. Scale scores were used as indicators for each construct in the models. Mediation effects were tested in three ways: at Time 1, at Time 2 (synchronous effects) and between Times 1 and 2 (i.e., temporal causality). Based on Nielsen, Randall et al. (2008), it was hypothesized that mediation over time takes place over a two-step mechanism: transformational leadership at T1 will be related to self-efficacy at T1, and self-efficacy at T1 will then influence T2 self-efficacy, which in turn will be associated with well-being at T2.

First, we tested the stability of our measures over time (Stability Model) by regressing Time 2 transformational leadership over Time 1 transformational leadership, with the same procedure used to examine the stability of self-efficacy and affective well-being. Then we went on to test a direct effects model between transformational leadership and well-being. We tested this both cross-sectionally and longitudinally (Model 1; M1).

We tested the mediating mechanism of self-efficacy through four models. A full mediation model (M2) was tested that assumed that the direct relationships previously found in research would not be present because of the mediating effects

of followers' self-rated self-efficacy. To test for partial mediation, we tested three different partial mediation models: We tested synchronous mediation at Time 1 by including a direct path between transformational leadership T1 and well-being T1 (M3). Then we tested synchronous partial mediation at Time 2 including a direct path from transformational leadership T2 to well-being T2 (M4). Finally, we also explored partial mediation over time. We included a direct path from transformational leadership T1 to well-being T2 (M5). To test our third hypothesis that there would be a reciprocal relationship between self-efficacy and transformational leadership, a path between Time 1 self-efficacy and Time 2, transformational leadership was included in all models.

To assess model fit, a range of fit indexes are used:  $\chi^2$ , Root Mean Square Error of Approximation (RMSEA), non-normed fit index (NNFI), adjusted-goodness-of-fit index (AGFI) and comparative-fit index (CFI). Models are compared against the previous model to determine which model represents the best fit to the data and thus explore if they offer significant gains in explanatory power. A model is considered to fit the data better than a rival model if the  $\chi^2$  value is significantly lower ( $p < .05$ ) than that of the one to which it was compared. The cut off levels for acceptable fit followed the recommendations of Marsh, Balla, and McDonald (1988) and Anderson and Gerbing (1988).

## Results

### *Preliminary analyses*

Table 1 shows the scales, means, standard deviations, scale reliabilities, and intercorrelations of all variables in this study. All scales were correlated except for transformational leadership and self-efficacy at T1. This non-significant relationship suggests that we are unlikely to find a significant path between these two variables in our SEM. Therefore, self-efficacy at Time 1 may not mediate the association between transformational leadership at Time 1 and well-being at Time 1.

We first examined the measurement model of our variables. We included six latent factors: transformational leadership T1 and transformational leadership T2 (both having seven items), self-efficacy T1 and self-efficacy T2 (each having seven items), and well-being T1 and well-being T2 (with five items each). The  $\chi^2/df$  ratio was 1.89, RMSEA was .04, NNFI = .91, and CFI = .91, indicating acceptable model fit. All factor loadings connecting the latent factors to the corresponding items were significant at the  $p < .001$  level. We used Harman's single-factor test (Podsakoff,

Table 1. Intercorrelations between scales.

Scale	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	1.	2.	3.
	(T1)	(T1)	(T2)	(T2)			
1. Transformational leadership T1	59.10	20.64	61.90	20.30	.47**	.23**	.18*
2. Self-efficacy T1	68.03	14.98	67.16	15.56	.08	.55**	.22**
3. Well-being T1	66.47	17.21	67.63	15.76	.27**	.22**	.53**

Note: Correlations below the diagonal are from Time 1 and above the diagonal from Time 2. Correlations on the diagonal are between Time 1 and Time 2.

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



MacKenzie, Lee, & Podsakoff, 2003) to assess whether common method variance posed a problem. Using CFA we tested a one-factor model for the associations among the 38 items of our six scales. This model presented a poor fit to the data: The  $\chi^2/df$  ratio was 7.09, RMSEA was .11, NNFI = .67 and CFI = .69, indicating poor model fit. Comparison of chi-square values revealed that the one-factor model fitted the data significantly poorer than the six-factor model,  $\Delta \chi^2 (df = 15) = 3,294$ ,  $p < .001$ .

Second, we tested whether the measures were stable over time. The results of the Stability Model indicated strong relationships between transformational leadership at Time 1 and Time 2 ( $\beta = .44$ ,  $p < .001$ ), self-efficacy at Time 1 and Time 2 ( $\beta = .51$ ,  $p < .001$ ), and affective well-being at Time 1 and Time 2 ( $\beta = .48$ ,  $p < .001$ ). However, the overall model presented a poor fit to the data, indicating that further relationships existed among the constructs.

### Testing the hypotheses

First, we tested a direct relationship between transformational leadership and well-being (hypothesis 1). We tested this synchronously, by including paths from transformational leadership T1 to well-being T1 and from transformational leadership T2 to well-being T2, as well as longitudinally, by including a path from transformational leadership T1 to well-being T2. This model revealed a poor fit to the data: AGFI and NNFI were below the recommended level of .90, and the RMSEA was .15, which is higher than the cut off value of .08 that signifies acceptable model fit (see Table 2). Inspection of the parameter estimates indicated that at both Time 1 ( $\beta = .45$ ,  $p < .001$ ) and Time 2 ( $\beta = .08$ ,  $p < .05$ ) there was a significant direct path from transformational leadership to well-being. The corresponding longitudinal path from transformational leadership T1 and well-being T2 was not significant.

We then tested whether the relationship between transformational leadership and well-being was mediated by self-efficacy (Hypothesis 2) and whether followers' levels of self-efficacy influenced their leaders' transformational leadership behaviour over time (Hypothesis 3). The first fully mediated model (Model 2, testing the mediating mechanism of self-efficacy) revealed an unsatisfactory fit to the data: although AGFI was .92 and CFI .94, NNFI was only .87 and RMSEA .24. Next, we tested for partial mediation at Time 1 by including a direct path from transformational leadership Time 1 to well-being at Time 1 (Model 3). This model presented an excellent fit to the data. CFI, NNFI and AGFI were above .90 and the RMSEA was .04. The  $\Delta \chi^2$

Table 2. Fit indices for nested sequence of longitudinal models.

Model	$\chi^2$	df	NNFI	CFI	AGFI	RMSEA
Stability model	60.55	9	.86	.92	.92	.10
M1: Direct path model	13.06	1	.79	.96	.88	.15
M2: Full mediation model	230.19	7	.87	.94	.50	.24
M3: Partial mediation model T1-T1	11.20	6	.98	.99	.98	.04
M4: Partial mediation model T2-T2	8.89	5	.98	.99	.98	.04
M5: Partial mediation model T1-T2	9.99	5	.98	.99	.97	.04

Note: NNFI = non-normed fit index; AGFI = adjusted-goodness-of-fit index; CFI = comparative-fit index; RMSEA = root-mean-square error of approximation.

( $df=1$ ) = 230.19,  $p < .001$ , revealed a significantly better fit to the data for model M3 than did the fully mediated model M2. Inspection of the parameter estimates confirmed the direct path from transformational leadership T1, and well-being T1 was significant. We kept this path in the subsequent analyses.

We then tested the fourth model, exploring the synchronous partial mediation of self-efficacy at Time 2 by including a path from transformational leadership T2 to affective well-being T2. This model also fitted the data well: CFI, NNFI and AGFI were all above the recommended value of .90 and the RMSEA was .04. However, the model did not represent a better fit to the data than model M3:  $\Delta\chi^2$  ( $df=1$ ) = 2.31,  $p > .05$ . The direct path from T2 leadership to T2 affective well-being was non-significant, and we therefore omitted this path in our fifth model. Finally, we tested for partial mediation over time (M5) by including a path from transformational leadership T1 to affective well-being T2. This model also revealed a good fit to the data; CFI, NNFI and AGFI were all above .90 and RMSEA was .04. However, this model did not represent a significantly better fit than model 3 (M3);  $\Delta\chi^2$  ( $df=1$ ) = 1.21,  $p > .05$ . We therefore concluded that M3 with a direct path from transformational leadership T1 to well-being T1 provided the best fit to the data.

Figure 1 presents the direct path model (M3). It provides an overview of the relationships between transformational leadership, self-efficacy and positive affective well-being. For all constructs, Time 1 measures predicted Time 2 levels. In conclusion, hypothesis 1 only received limited support. Only cross-sectionally did we find a direct path between transformational leadership and affective well-being (no longitudinal relationship was found). Our third model revealed that the path from transformational leadership T1 to self-efficacy T1 was non-significant. However, this relationship was significant at T2. Significant paths from self-efficacy to well-being at both time points were found. Therefore, only at T2 were we able to confirm hypothesis 2: At Time 2 the relationship between transformational leadership and well-being was fully mediated by self-efficacy (no direct path existed between transformational leadership T2 and well-being T2). No direct relationship

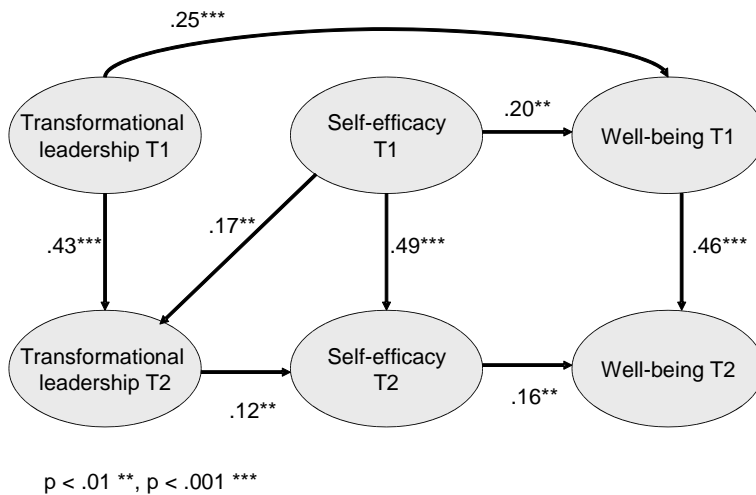


Figure 1. Final, partial mediation model (M3) showing the relationships between transformational leadership, self-efficacy and positive affective well-being at Time 1 and Time 2.

existed between transformational leadership T1 and well-being at Time 2 after including self-efficacy T2. Hypothesis 3 was also confirmed: Followers' level of self-efficacy predicted their perceptions of their leader as exerting more transformational leadership behaviours.

## **Discussion**

This study aimed to enhance our understanding of the link between transformational leadership and well-being outcomes. We extended current research by using positive affective well-being as an outcome measure as well as by using a longitudinal design, which enabled us to test the proposed paths both cross-sectionally and longitudinally. Further, building on previous research, we examined whether the hypothesized link between transformational leadership and well-being could be explained by assuming that transformational leaders install a sense of self-efficacy in followers. Finally, we were able to test the reverse effect on followers' self-efficacy on their perceptions of their leaders' transformational leadership behaviours. As such the study allows us to draw three main conclusions: (1) There is support for a cross-sectional direct path between transformational leadership and positive affective well-being, (2) the mediating effect of self-efficacy between transformational leadership and positive affective well-being received only limited support, and (3) followers' level of self-efficacy predicts transformational leadership behaviours over time.

### ***The relationship between transformational leadership and follower well-being***

We found only limited support for hypothesis 1: only cross-sectionally did we find a significant direct path between transformational leadership and positive affective well-being. There was no longitudinal relationship. Previous studies have reported direct cross-sectional relationships between transformational leadership and well-being (e.g., Corrigan et al., 2002; Hetland et al., 2007; Seltzer et al., 1989; Sosik & Godshalk, 2000), and we were able to confirm this in our analyses. However, this direct relationship was not confirmed over time. By adopting a more rigorous testing procedure, our extended approach allowed us to test the relationship between transformational leadership and well-being twice cross-sectionally and once longitudinally. Only cross-sectionally were we able to replicate the findings of previous research. Whereas previous research has focused on negative outcomes such as burnout and stress symptoms, this study focused on positive affective well-being. As such it contributes to our understanding of the link between transformational leadership and well-being. This may suggest that the effect of transformational leadership behaviours is simultaneous, rather than influencing well-being over a longer period of time. Thus, it is only through the current exertion of transformational leadership behaviours, that middle managers or supervisors can influence the well-being of their followers.

### ***The mediating role of self-efficacy***

Our hypothesis that the relationship between leadership and followers' affective well-being is mediated by followers' self-efficacy was partially supported. At T1, we failed to find a mediating mechanism because transformational leadership was unrelated to

self-efficacy. This also means that our two-step mediation over time was not confirmed. However, full mediation took place cross-sectionally at T2. Transformational leadership at T2 was related to self-efficacy at T2, which in turn was related to positive affective well-being at T2. This helps us to understand the psychological impact of transformational leaders on followers and how this is related to positive affective well-being. At T2, our findings confirm the importance of exploring the psychological mechanisms that may explain the link between managers' leadership style and followers' health and well-being. Furthermore, our findings suggest that transformational leadership may be related to general affective well-being through the link with general self-efficacy; it may indeed be possible for transformational leaders to influence their followers beyond the immediate work context, through their impact on followers' general self-efficacy.

There is currently inconclusive evidence in the literature for the idea that transformational leadership is related to followers' levels of self-efficacy; some studies found such an association whereas others failed to find this relationship (e.g., Felfe & Schyns, 2002). Unfortunately, our study adds to this inconsistency, as we only found a relationship between transformational leadership and well-being at T2, and not at T1. Felfe and Schyns (2002) suggested that in their study, the absence of a link between leadership and well-being could be due to the study context; it was a bureaucratic organization in which formal rules took over some of the tasks that transformational leaders could perform. In our study, we found inconclusive evidence in the same organization with data collected over two time points. This suggests that transformational leadership may simply be weakly linked to self-efficacy. At Time 1, we did not find a significant relationship between transformational leadership and self-efficacy. This may be because that the organization had only recently started to focus on transformational leadership behaviours, and the immediate impact of employee's perceptions of themselves may only become apparent after a while. We did find a direct relationship at Time 1 and suggest that factors other than self-efficacy may explain this relationship. Previous research has suggested that working conditions may be the mediator through which transformational leaders influence their followers' well-being (Nielsen, Randall et al., 2008), thus, it may be by this means that transformational leaders influence well-being.

### *The reciprocal nature of self-efficacy*

Our results supported the reciprocal nature of the relationship between managers' perceived transformational leadership style and self-efficacy (Dvir & Shamir, 2003). In all the four mediating models, we found that self-efficacy T1 influenced transformational leadership at T2. This supports previous research that the characteristics of the followers influence their manager's leadership style (Dvir & Shamir, 2003). According to Burns (1978), "leaders and followers raise one another to higher levels of morality and motivation" (p. 20), and findings from this study lend support to this view.

The results have important implications for those aiming to implement organizational-level interventions to improve the follower's health and well-being. The longitudinal nature of our study indicates that it is likely that by training leaders to exert certain behaviours it may be possible to improve the followers' well-being;

rather than implementing wide-ranging organizational-level changes to job design and organization of followers' work; leadership training may bring about positive effects in followers. Previous studies have confirmed that transformational leadership behaviours can be learned (Barling, Weber, & Kelloway, 1996; Parry & Sinha, 2005).

### *Study limitations*

The main strengths of our study are the ability to test our hypotheses in three ways simultaneously, both cross-sectionally and longitudinally. However, some limitations should be considered when interpreting our results. Although this study employed a longitudinal design, the results are based on self-report data which means that common method and common source bias may pose a threat to our results (Podsakoff et al., 2003). We used several methods to minimize such bias, both in data collection and data analyses. First, we ensured respondent confidentiality. Second, we counterbalanced questionnaire items such that it was not clear to the respondents which items belonged to which scales. Finally, we attempted to use items that were clear, simple and specific. The questionnaire was piloted to a steering group of employee representatives and managers before being distributed at the elderly care centres to ensure this. Also we conducted Harman's one-factor test to examine whether scales used in the study were distinctive. The response rate at Time 2 was relatively low, but representative of the population (average age 45 years compared to 42 years in the general population; 91% were women, both in the sample used for analysis and in the population that received the questionnaire).

The transformational leadership paradigm provides a useful, but not exhaustive account of leadership style. Our study used a broad, but reliable and valid measure of transformational leadership to test the validity of mediated relationships. The measure chosen was well-suited to a study population that had few academic educational qualifications: it was feared that a lengthy questionnaire would adversely influence response rates without leading to substantial gains in reliability and validity. This study employed one single scale of transformational leadership sub-components (Bass, 1999; Judge & Piccolo, 2004); this is not an unusual procedure as the four aspects of transformational leadership are highly correlated (Avolio & Bass, 1995). Future studies should examine whether the sub-components of transformational leadership exhibit direct effects on well-being over time. Of course, training needs analysis may suggest that for training purposes it may be more desirable to focus on the measurement and development of specific sub-components of transformational leadership. Another limitation of this study is that the sample was drawn from a single organization. It has been suggested that transformational leadership plays a vital role in healthcare (Murphy, 2005; Sofarelli & Brown 1998; Thyer 2003), and thus the sample appears to be appropriate, although it raises the concern of the generalizability of our results.

Bass (1999) concluded that transformational leadership is relevant at all levels and all sectors, but our results should be interpreted with caution. Some of our relationships were weak, for example, only at one time point did we find a relationship between transformational leadership and self-efficacy. Previous research has also found contradictory results and therefore more research is needed to explore these links. The contradictory results of previous studies (e.g., Felfe & Schyns, 2002; Schyns, 2001) suggest that a mediating mechanism may not be readily transferable to

all settings. Therefore, these links should be explored in other settings in order to test the replicability of our results. Although the study took place in the elderly care sector, we did include all staff employed at the elderly care centres including maintenance, canteen and cleaning staff. We believe this strengthened our results.

## Conclusions

This study highlights three new and important implications for research and practice. First, it was found that the direct relationship between transformational leadership and positive affective well-being only existed cross-sectionally; this direct relationship may be mediated through the manager's ability to increase self-efficacy in the followers. Second, our results suggest new ways of understanding how the high levels of affective well-being may be realized. These findings have implications for intervention research, for example, our results suggest that training managers to exert transformational leadership behaviours may promote employee health. This may prove to be a cost-effective method of promoting well-being. This is not to say that interventions focusing on improving working conditions should be abandoned, but it may be possible to achieve positive effects on the followers' well-being by supporting managers in transformational leadership behaviours. Finally, the reciprocal relationship over time between self-efficacy and transformational leadership styles may also be practically relevant. Employees with high levels of self-efficacy may either make it easier for the manager to exert transformational leadership behaviours or may find it easier to benefit from these behaviours because they appraise the managers' behaviour in a positive manner or may feel capable of rising to the challenge.

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