The effects of transformational leadership on employees' absenteeism in four UK public sector organisations

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Past research indicates that a supportive leadership style leads to lower levels of employee absence. However, few studies have looked at other aspects of leadership that could have positive effects on absence such as transformational leadership, despite the fact that it has been the most influential theories of leader behaviour in recent years. A transformational leader is not only supportive of employees' needs but is also able to set a personal example, to stimulate, develop and inspire employees. This style of leadership has consistently been found to relate to a wide range of positive work outcomes including job satisfaction, commitment and work performance. Only a handful of studies have shown that transformational leadership has beneficial effects in terms of reducing employee absence, but these studies present a number of limitations. They were predominantly conducted in the private sector, some considered senior management only and none controlled for the health effects associated with absenteeism.

Given these shortcomings, the present study sought to fill this gap in research. By surveying employees of both managerial and non-managerial grades, it explored to what extent transformational leadership can affect employee absence in a sample of UK public sector organisations.

Absence from work due to ill-health is currently costing the British economy £17 billion per year (EEF, 2005). Given that 30 million of working days lost in Great Britain are due to workrelated ill-health and 6 million due to workplace injury (HSE, 2007), it is important to shed light on the processes by which rates of employee absence can be reduced. Absence is a complex phenomenon likely to have multiple causes as determined by previous research (Johns, 1997, 2001). Work characteristics other than the quality of leadership were therefore taken into account in this study.

The objectives of the study were:

- To identify to what extent transformational leadership is associated with employees' absenteeism in a sample of UK public sector organisations.
- To explore how transformational leadership works alongside other factors known for their positive or negative influence on absence (eg work climate, work-family conflict, and health).

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EXECUTIVE SUMMARY

Background

Past research indicates that a supportive leadership style leads to lower levels of employee absence. However, few studies have looked at other aspects of leadership that could have positive effects on absence such as transformational leadership, despite the fact that it has been the most influential theories of leader behaviour in recent years. A transformational leader is not only supportive of employees' needs but is also able to set a personal example, to stimulate, develop and inspire employees. This style of leadership has consistently been found to relate to a wide range of positive work outcomes including job satisfaction, commitment and work performance. Only a handful of studies have shown that transformational leadership has beneficial effects in terms of reducing employee absence, but these studies present a number of limitations. They were predominantly conducted in the private sector, some considered senior management only and none controlled for the health effects associated with absenteeism.

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Method

Data collection
Survey data were collected from three local authorities and one police force between November 2006 and January 2007. A total of 1498 employees completed the survey representing a 31% response rate with 711 respondents giving their agreement to use their recorded absence data at a six month follow up. The absence data collected included the average number of days absence per person and the frequency of absence over the year before the survey and six months after i.e. from November 2005 through to July 2007.

The mean age of the respondents was 44 years. Fifty four percent were females. The average length of service in the organisation was 12.7 years and 5.7 years in the post. The sample consisted of manual and office workers with 15 % of them occupying managerial posts. An average of 7.65 self reported days lost and 6.75 company recorded days lost per employee per year were found before the leadership survey and 4.35 days lost were recorded at the six-month follow-up. These figures fall below the annual survey average of 8.4 days lost and well below the public services organisations average of 10.3 days lost (CIPD, 2007).

Main Findings

Respondents' perceptions of their line managers' leadership did not quite fit the traditional transformational-transactional distinction. Instead, two broad leadership constructs emerged from the analyses, which were *'transformational-reward'* and *'performance-oriented'* leadership. The former comprised five dimensions and was close to the transformational leadership model as originally conceptualised in leadership research. The latter formed a single dimension which reflected a vigilant "failure will not be tolerated" orientation on the part of the leader.

When respondents reported that their line manager adopted a transformational-reward style of leadership, they also reported fewer days of absence. This was not observed for the other aspect of leadership. In terms of predicting subsequent absence at six months follow up, when both aspects of leadership were assessed together in the regression equation, transformational-reward leadership was a significant predictor of lower absence after controlling for a range of variables but, performance-oriented leadership shows the opposite sign by contributing to higher absence. These effects on absence although significant were relatively modest. However, when tested separately in the regression equation, transformational-reward leadership remained significant but on decreasing absence spells only, not days. Performance-oriented leadership significantly predicted increased absence days but not spells. These results suggest that line managers who create a vision and focus on rewards and success may reduce absence, but this effect tends to be cancelled out if they are also seen as continually demanding high standards and pointing out when individuals slip from those standards.

The next set of analyses using structural equation modelling showed by which processes leadership might affect employees' absence and the main conclusion is that these processes are indirect and that neither of the two types of leadership is a significant predictor of absence at follow up. Each type of leadership was tested separately on absence, and simultaneously with other job-related factors. Both leadership types were seen at time 1 (using self-reports of absence) as reducing absence via indirect paths running through work climate to health complaints and ultimately to absence. However, these indirect effects were not evidenced at follow up (using company recorded absence data). This suggests that variables other than leadership were stronger predictors of absence.

As shown in Figure 1, the transformational-reward leadership was strongly related to aspects of work climate (defined as collective identity, group performance, social support, empowerment and manager's commitment to safety). Work climate was then linked to reduced health complaints, lower work-family conflict and to more favourably perceived physical work conditions. The two latter factors were however conducive of employees' higher levels of health complaints which in turn led to absence. At follow-up, when both leadership aspects were tested for their indirect effects on absence, these were not significant. It was the occurrence of negative life events and health complaints that were among the strongest predictors of absence.

These results on indirect paths of transformational-reward leadership (as construed in this study) on absence at time 1, are in line with previous cross-sectional research reporting that leadership was mediated by other factors to affect absence. However, much greater effect sizes were found in these studies and a single factor was responsible for the mediating effects whereas in the present study a chain of mediators was needed to affect absence. To our knowledge, no reported absence studies have tested transformational leadership on absence longitudinally, so no comparison was possible with regard to the non significant indirect effects found in our predictive structural model at time 2.

Although between 12% and almost up to 20% (including prior absence) of the variance in absence was explained by the structural and regression models respectively, a low percentage or sometimes an insignificant proportion of these was attributable to leadership behaviours.
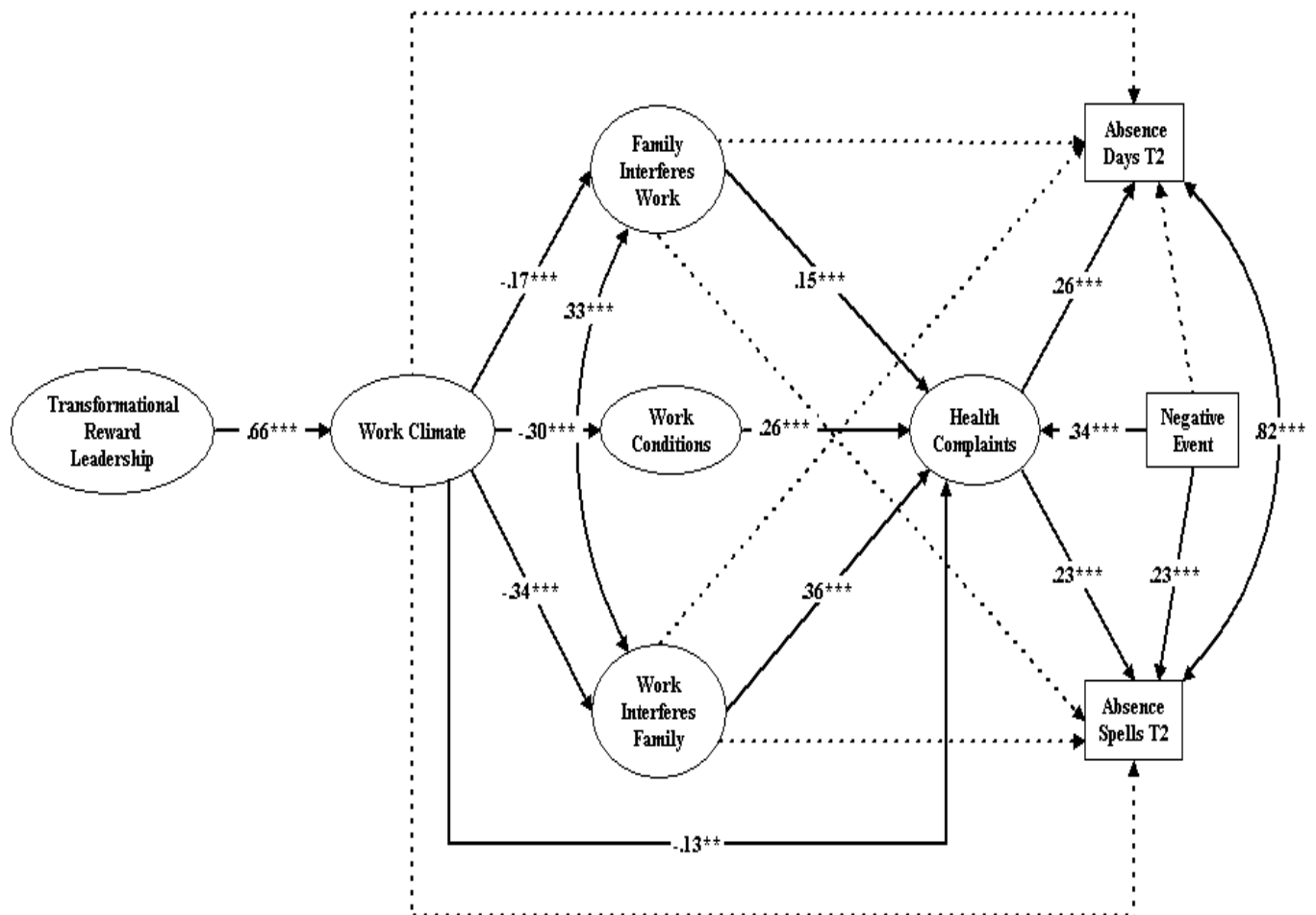
Figure 1 Structural equation model for transformational-reward leadership predicting absence outcomes at follow-up.

Note: Bold arrows represent significant paths, dotted arrows denote non significant paths. N= 653

To shed more light on what characterises the frequency of absence, 1409 survey respondents were regrouped into four clusters (no absence, infrequent, frequent, extended), according to their number of days and spells of absence. The clusters were then compared on a number of work and non-work variables.

The results demonstrate that clustering, which was done on the basis of time 1 self-reported absence, retained its validity at time 2, in that the *'no absence'* group remained the lowest on both days and spells, the *'extended absence'* group remained easily the highest on days, and the *'frequent absence'* group recorded the highest mean number of absences. This provides evidence for a degree of continuity over time in patterns of absence. Interestingly, several of the variables proved capable of differentiating between clusters. Differences were seen, especially between *'infrequent'* and frequent absence groups for health complaints (higher in frequent absence group), poor working conditions (worse in frequent absence group). Although indicative of a trend, no statistically significant differences for transformational leadership were found. Noticeably, the work climate variables such as follower effects and empowerment show differences between clusters (both were less favourable in the frequent absence group). Perhaps the most striking findings concern the impact of negative life event on respondents' absence. In the extended absence group half of the people reported a negative event, compared with one in eight in the no absence group, one in six in the infrequent absence group, and about one in four in the frequent absence group.

Conclusions

Although leadership behaviours may have beneficial effects on employees' absence, as suggested by prior research, the transformational leadership behaviours tested in this study had, at best, modest effects. When concurrently assessed with other contributors of absence in structural models, leadership effects were indirect or not significant in the prediction of forthcoming reduced absence. The low impact of leadership on absence may be somewhat explained by the context in which leadership is enacted. The fairly rule-bound nature of both local authorities and police forces organisational contexts may reduce the scope for line managers to, for example, create a vision, one of the major dimensions of transformational leadership. Furthermore, the period of six months follow up absence chosen as a cut-off might not have been long enough to detect significant impact of leadership on future reduced levels of absence.

While our sample reflected some of the patterns of absence generally found in the general population (for example junior grades and females reporting slightly higher frequency of absence than others), caution must be taken in generalising the present results to the public sector organisations as a whole as they were drawn from four organisations only. Surveying diverse populations with a stronger prospective study design will help to generalise the findings across work contexts within the public sector.

There is evidence in this study that transformational leadership is able to foster an encouraging work climate which then decreases the number of psychosomatic symptoms reported by employees. This warrants further consideration of the set of transformational leadership behaviours responsible for these beneficial effects. In terms of recommendations for an absence reduction programme, the present findings suggest that attention could be paid to:

- Sympathetic and vigorous attempts to help people manage the impact of negative life events.
- Further initiatives to help make work commitments compatible with family commitments.
- The development and maintenance of physically comfortable work environments.
- The maintenance of a healthy work climate leading to reduced health complaints.

1   INTRODUCTION

1.1   WORKPLACE ABSENTEEISM

Absence from work due to ill health is currently costing the British economy £17 billion per year (EEF, 2005). The Health and Safety Executive (HSE) notes that 30 million of working days lost in Great Britain are due to work-related ill-health and 6 million due to workplace injury (HSE, 2007). One of the UK Revitalising Health and Safety targets is to reduce the number of working days lost per worker due to work-related injury and ill-health by 30% by 2010. Relying on absence figures from the Labour Force Survey, the HSE concludes that there has been a significant fall in working days lost per worker since the base period (June 2000) in spite of a recent rise from 2005/06 to 2006/07 to 1.5 days, but at this stage, progress is not on track to meet the Revitalising target (HSE, 2007).

Other sources of information on absence such as the 2007 employers' survey on absence management conducted by the Chartered Institute of Personnel and Development (CIPD) revealed that the average level of employee absence has increased to 3.7 % of working time lost compared with 3.5% for the previous 12 months. This represents an increase in absence days per worker from 8 to 8.4 days over the same period.

Sectoral variations are also reported in the 2007 CIPD survey which show that the public services sector levels of absence have increased to 4.5% (10.3 days) from 4.3% for the previous 12 months. A rise was also noted in the private services sector with the rate of absence increasing to 3.2% (7.2 days) from 3%. Another source, the CBI / AXA absence survey (2006) tends to confirm this difference in days lost between public and private sector. In 2005, the average public sector worker was off sick for 8.5 days whilst the average private sector worker was absent for 6 days.

However, these sectoral variations disappear when the effects of demographic factors such as age, gender and size of organisation are partialled out as shown in the Survey of Workplace Absence, Sickness and (Ill) Health (HSE, 2006). The SWASH surveyed 10,193 individuals and indicates a mean difference of 0.3 days lost only between public and private sector.

Alongside this debate on sectoral variation, a great deal of attention is being brought to reducing workplace absence in the public sector. In his Spending Review 2004, the Chancellor acknowledged the issue of sickness absence management in the public sector and emphasised the need to review the sector's long-term sickness absence in addition to the self-certification of short-term absence specifically in the Civil Service. A Ministerial Task Force for Health, Safety and Productivity was subsequently formed, comprising ministers and officials from the Cabinet Office and Treasury. The Task Force's main objective is to ensure that "ministerial and management effort is devoted to securing culture change in the management of sickness absence in the civil service and public sector" (Cabinet Office et al., 2004). Some of the conclusions of the Task Force were that absence could be tackled by reducing stress, enhancing job control, social support, and having good management practices. By exploring the role of transformational leadership on absence, the present study is an attempt to explore good management practices linked to reduced levels of absence in UK public sector organisations.

However, the role of leadership in absence will have to be assessed in conjunction with other work or individual characteristics known to affect absence. Johns (1997, 2001) among others pointed out that absence is a complex and slippery phenomenon likely to have multiple antecedents and distinguished no less than nine explanatory models of the causes of absence. These include: process and decisions, withdrawal, demographic, medical, stress,

social and cultural, conflict, deviance and economic models. Similarly, other researchers (e.g. Janssen, Kant, Swaen, Janssen & Schroer, 2003) view absence as being influenced by individual (personality, health), social (e.g. health care, culture), organisational (e.g. company size, absence policies), and work-related factors (work content, work conditions). Commenting on the causes of the frequency of sickness absence, Kivimaki et al. (1997) concluded that psychosocial factors such as work characteristics, life events, social support and personality traits may be partially responsible for the frequency of absence but that is currently impossible to provide a consistent picture of the combined effects of these psychosocial factors on sickness absence. Aside from having contradictory findings on the implication of job control and social support on absence (Kivimaki et al., 1997), some authors note that it is still unclear how interactions between work factors such as job control, mastery of work, or rewards predict sickness absence rates (Eriksen, Bruusgaard & Knardahl, 2003).

It is also argued that absence is to a large extent due to personal ill-health (Janssen et al. 2003), but recurring psychological or physical symptoms might be caused or made worse by aspects of the workplace including the lack of supervisor support. Despite some mixed findings, on the whole, there is ample evidence that unfavourable work characteristics generate distress and physical illness leading to absence from work (e.g. Marmot, Feeney, Shipley, North, & Syme, 1995; Niedlhammer, Bugel, Goldberg, Leclerc, & Gueguen, 1998; Smulders & Nijhuis, 1999; Voss, Floderus, & Diderichsen, 2001). In addition, the work withdrawal model posits that individuals can be absent from work because they are trying to avoid or escape from unfavourable work conditions (Johns, 2001). The present study will therefore consider a range of work characteristics including leadership and will also include individual factors such as demographics and health.

1.2   LEADERSHIP AND ABSENTEEISM

Relatively few studies have examined the link between leadership and absence. Furthermore, only a handful of absence studies have conceptualised leadership behaviour as transformational despite the fact that this concept of leadership has been the most influential in research into leader behaviour in recent years (Bass, 1999; Bass & Avolio, 1994; Judge & Piccolo, 2004). Whilst it might be conjectured that subordinates' satisfaction, motivation and inspiration (engendered partly by transformational leadership) will encourage them to be present in their workplace whenever possible, research on absence has produced mixed findings on how these processes might manifest. Absence appears to be a hard-to-explain phenomenon. If, as O'Driscoll and Beehr (1994) suggest, supervisors are the most immediate and salient persons in individuals' work context, then they are most likely to have a direct influence on employees' behaviour, including absence. However, previous research has seldom looked at the possible association between effective leadership and absence, and very few studies have looked at the effects of transformational leadership on absence.

Some of the discussion of absence in the social science literature assumes that it is at least partly a discretionary phenomenon. Whilst this is plausibly the case, there are times when a person is sufficiently ill, or temporarily overcome by a major life event such as bereavement, for the occurrence of absence to be considered non-discretionary. Furthermore, the leader probably had no control over the occurrence of the event or illness. Even so, a leader may still have some effect on absence. The leader's style may have some (probably small) impact on its duration, because that style could affect how quickly the person feels ready and willing to return to work.

There are then those factors which leaders can affect directly, and which in turn affect absence, directly or through a longer causal chain. As noted by Ostroff and Bowen (2000),

it would be short-sighted to expect a direct link between particular organisational practices and outcomes without considering a range of other potentially relevant factors. As will be argued later, a leader's behaviour may be geared to enhance team spirit, a safe work environment, or other desirable features, and these features may influence other variables (including health, work-family conflict) which in turn cause absence.

1.3   STUDY OBJECTIVES

The objectives of this research were:

- To identify to what extent transformational leadership is associated with employees' reduced absence in a sample of UK public sector organisations.

- To explore how transformational leadership works alongside other factors known for their influence on absence (e.g. team collective identity, work-family conflict, and individual health).

2 THEORETICAL FRAMEWORK

2.1 HOW MIGHT TRANSFORMATIONAL LEADERSHIP REDUCE EMPLOYEES' ABSENCE?

The concept of transformational leadership has risen to prominence in leadership theory over recent years. Transformational leadership concerns the extent to which the leader promotes an inspirational vision for the future, seeks to relate to and develop subordinates as individuals, stimulates free thinking, and sets a personal example (Bass, 1990). It is often contrasted with transactional leadership, where the leader uses incentives to influence effort and clarifies the work needed to obtain rewards (Yukl, 1989).

Originally based on charismatic leadership theory, and the work of Burns (1978) and Bass (1985), transformational leadership is based on the notion that leaders motivate followers to "perform beyond the level of expectations". Rather than simply monitoring employee performance, administering rewards accordingly and running an existing system, transformational leaders seek to establish a clear and optimistic vision of what can be achieved. They try to engender a team spirit where individuals are willing to put personal considerations aside in order to benefit the collective. In order to do this, they are willing, among other things, to make personal sacrifices and set an example. The use of the word "transformational" is significant – leaders who take this approach aim to change mindsets, enhance and harness employees' thinking and creativity, raise collective expectations of what can be achieved, and stimulate innovation in how it can be achieved.

A large number of research studies over the last 15 years or so have supported the contention that transformational leadership is strongly associated with both satisfaction and performance both individually and collectively (see Judge & Piccolo, 2004 for a meta-analytic review). For example, the correlation of transformational leadership with subordinate work satisfaction across 87 studies is .58, and with various work-group and organisational performance measures reaches .26. Not all of these studies have a strong design, so it is necessary to exercise a little caution in interpreting these findings. Nevertheless, the cumulative evidence is overwhelming, and some studies (for example Geyer & Steyrer, 1998) do have a design that makes causal inference plausible.

Although this sounds good to many audiences, there have been debates about the ethics as well as possible limits to the effectiveness of transformational leadership. Several authors (e.g. Price, 2003; Tourish & Pinnington, 2002) have argued that the concept of transformational leadership all too easily reduces to a smooth-talking leader who is out for what he or she can get and who imposes his or her ideas on others through sheer force of personality. Bass and Steidlmeier (1999) amongst others make the counter-argument that this would be pseudo-transformational leadership because it neglects or distorts too much of what true transformational leaders stand for. Denhardt and Campbell (2006) examine transformational leadership in the context of public service, and note that many analyses have focused on its performance outcomes at the expense of moral and ethical issues. However, they also conclude that there is a strong element of 'inclusivity' and democracy in Burns' ideas, and that values of liberty, equality, justice and community are fundamental to it. For this reason, they believe that transformational leadership is highly applicable to public service. In the UK, Alimo-Metcalfe and Alban-Melcalfe (2001) have developed the Transformational Leadership Questionnaire and validated it in the UK local government.

As well as the debates and research noted earlier, there have also been more psychometrically orientated discussions about the nature of transformational leadership and how best to assess it. From the description above, it is clear that it is a multi-faceted construct. In Bass' work, distinctions were made between four components: *Individualised*

consideration: The leader treats each follower on his or her own merits, and seeks to develop each follower through mentoring, coaching and delegation. *Intellectual stimulation:* The leader encourages free thinking, and emphasises reasoning before any action is taken. *Inspirational motivation:* The leader creates an optimistic, clear and attainable vision of the future, thus encouraging others to raise their expectations. *Idealised influence or charisma:* The leader makes personal sacrifices, takes responsibility for his or her actions, shares any glory, and shows great determination.

Not everyone has agreed that this is the optimal way of construing transformational leadership (see for example Rafferty & Griffin, 2004, for one recent analysis). Podsakoff, MacKenzie, Moorman and Fetter (1990) reviewed the literature and found six common key components of transformational leadership used across studies. The six components identified by Podsakoff et al. (1990) are identifying and articulating a vision, providing an appropriate model, fostering acceptance of group goals, high performance expectations, providing individualised support, and intellectual stimulation.

We employ their components because we believe they are the most carefully derived of all. In the present study, each of them is hypothesised to be associated with lower levels of subordinates' absence. Although the six are conceptually separable, in practice they tend to go together in the sense that the extent to which a leader is perceived as exhibiting one component is a good predictor of the extent to which he or she will be perceived to exhibit the others. This is an almost universal finding in empirical studies of transformational leadership. The very few studies looking at transformational leadership and absenteeism include Zhu, Chew & Spangler (2005), and Richardson & Vandenberg (2005).

Zhu et al. (2005) surveyed 170 companies based in Singapore. Nearly 70% of respondents were from Asia and the remaining from western countries. Data were collected from CEO and Human Resources Managers. The authors found that human resource management practices (e.g. performance appraisal, staffing, training, and compensation systems) partially mediated the negative relationship between employees' ratings of CEO transformational leadership and absenteeism levels as measured by three successive years of company absence records. Richardson & Vandenberg (2005) surveyed 167 work units employing programmers from 7 U.S software companies and found a positive association between supervisor transformational leadership and absenteeism, and that this effect was mediated by perceptions of a climate of involvement, operationalised as perceived autonomy, information, training and rewards. In both these studies, the statistical relationships found were much lower than the effects of leadership typically found for satisfaction and commitment. In Zhu et al. (2005), the correlation between transformational leadership and absence was -.16, and in Richardson and Vandenberg (2005) it was a rather more impressive -.27. The latter might be due to the fact that the data were analysed at unit rather than individual level.

It might be argued that absence could be one of the limits to the effectiveness of transformational leaders, because in order to be inspired, an employee needs to be present in the workplace. Perhaps transformational leaders help employees feel good once they get to work, but not so good that they are inspired to make it to work if there are impediments, such as feeling mildly ill, or having family-care crises where the simplest (but not necessarily the only) solution is to stay at home for the day. The counter-argument, of course, is that transformational leaders should make work an altogether more attractive prospect for subordinates, and that this will encourage them to be present even if there are other attractions.

Despite these modest relationships, and some of the cautions noted earlier, there seem to be plausible reasons to expect transformational leadership to have some impact on follower absence. The individualized-support component of transformational leadership is likely to

be of particular importance in reducing absenteeism. Prior research using other concepts of leadership, such as initiating structure and leader consideration, found that attention to individuals' concerns and supportive behaviour were negatively associated with absence from work (Tharenou, 1993; Boumans & Laandeweerd, 1993; Smulders 1984). Supervisor support is the most commonly measured aspects of leadership in absence and often the sole aspect.

In addition, a transformational leader, having *high performance expectations* and providing intellectual stimulation may have an impact on staff absence behaviour. By inspiring their team members with a vision of the future, expecting the best from them and challenging them in new ways of thinking, leaders tap into followers' wishes to achieve and to be taken seriously, and to be part of a successful enterprise. As *role models*, leaders set personal examples. In this context, this would include of course being at work. The leader's behaviour will tend to be salient to followers, and be seen as the approved way to be. When articulating a vision, transformational leaders foster not only the *acceptance of group goals*, but also use this vision to shape a collective identity for followers (Shamir, House & Arthur, 1993). By influencing employees to transcend their own interests or needs for the sake of the group (Kark, Shamir & Chen, 2003), this should influence employees' presence at work because their contribution to the group performance is highly valued. A vision can also be seen as analogous to a goal – so if it is difficult but not impossible to achieve, and the followers may feel they have participated in its formation (back to intellectual stimulation again) then it is likely to have energising qualities.

2.2 TRANSACTIONAL LEADERSHIP AS COMPLEMENT OF TRANSFORMATIONAL LEADERSHIP

Transformational leadership is often contrasted with transactional leadership. The two are distinct but not mutually exclusive styles, recognising that the same leader may use both types at different times in different situations (Yukl, 1989). According to Pearce and Sims (2002), transactional leadership is based on three theoretical strands. It is drawn from expectancy theory where the focus is on clarifying the effort-reward relationships, using rewards to achieve maximal motivation. It is also based on exchange/equity theory which explains that higher levels of effort can be generated through higher levels of reward; and finally upon reinforcement theory which posits that the consequence of behaviour determines whether behaviour will be repeated (Pearce & Sims, 2002). The authors suggest that transactional leadership acts through reinforcing (rewarding) behaviours that are desired. In Bass' (1990) analysis, transactional leadership was said to have two components: Contingent reward, and management by exception. The former refers to leaders who make sure that, as far as it is in their power, subordinates are rewarded for doing what the leader wants them to do. The latter refers to a leader who generally does not seek to intervene as long as things seem to be running fairly smoothly. Podsakoff, Todor, Grover and Huber (1984) argued that management by exception does not really imply any kind of transaction between leaders and subordinates. Instead, they preferred to construe transactional leadership as consisting of contingent reward and contingent punishment.

The contingent reward element of transactional leadership is often thought of as an effective complement to transformational leadership. Judge and Piccolo (2004) found in their meta-analysis that contingent reward had even greater validity than transformational leadership on several occasions – for example, it correlated .64 with follower work satisfaction, compared with .58 for transformational leadership. The contingent 'punishment' aspect, which emphasises the negative consequences of non-performance, might also encourage attendance at work by increasing the degree to which subordinates perceive that their work is monitored and that future rewards are contingent upon their level of performance (Komaki, Desselles & Bowman, 1989; MacKenzie, Podsakoff, & Rich, 2001).

2.3 INDIRECT LEADERSHIP EFFECTS ON ABSENTEEISM

2.3.1 Work climate

A general assumption underlying this study is that if successful leaders are able to *transform* followers into believing in themselves and strengthen their motivation these effects will be seen through a particularly favourable work climate which can lead to reduced absenteeism. Given its different emphasis, the contingent reward element of transactional leadership will operate in different ways to influence the work climate. Hofmann & Johns (2005) argue that leaders whose behaviours emphasise contingent rewards and reinforce the importance of meeting performance expectations create a shared norm that encourages efficient, systematic and organised behavioural regularities (Walumbwa, Wu, & Orwa, 2007). This shared norm might contribute to the sense of the work-group collective identity. Through systematic effort-reward exchange, transactional leaders might also enhance empowerment by rewarding the desired behaviours.

Work climate is a well studied topic and can be traced to the pioneering work of Kurt Lewin and his colleagues in the 1930s (Koslowski & Doherty, 1989). Assessing both supervisors and employees in three different plants, the authors found that employees with high-quality supervisor relations had more positive climate perceptions than did employees with low-quality relations. When measured at individual level, work climate refers to 'individuals' perceptions of, and the meaning they assign to, their work environment' (Dickson, Resick & Hanges, 2006, p 351). In their analytic review, Parker, Baltes, Young, Huff, Altmann, Lacost & Roberts (2003) indicate that most studies construe work climate by five domains which are characteristics of job, role, leadership, work group and organisational attributes. These domains have been found to affect work attitudes, motivation, performance and absenteeism. However, Wilson, DeJoy, Vandenberg, Richardson, & McGrath, 2004) have argued that there is no clear consensus for delineating the dimensions of organisational climate and that organisational or management support appears to play a key role in shaping the climate of the organisation (Ribisl & Reischl, 1993). In their study, the authors operationalised 'organisational climate' with dimensions of organisational support, co-workers support, participation and involvement, communication and health and safety climate.

In the present study, we take account of both the above conceptualisations of work climate, but also the research done on charismatic and transformational leadership. 'Successful' leaders are found to generate a particular work climate by enhancing subordinates' feelings of empowerment, collective identity and group task performance. According to Conger, Kanungo and Menon (2000), these three components have consistently been mentioned in the leadership literature as hypothesised follower effects. To the extent that absence behaviour is discretionary, we can then expect that these positive feelings of being empowered, of being part of a cohesive and performing group will encourage a person to be present at work. This is because it will affirm their personal and group identities, and perhaps because they feel a sense of obligation to contribute to the collective effort.

Collective identity

Collective identity refers to the feeling of group cohesiveness, i.e. the extent to which members of a group perceive they have the same values and work for the same goals. Conger et al., (2000) found that collective identity was directly related to the leader's vision, its articulation and sensitivity to members' needs. Transformational leadership is also shown to create such feelings among followers by highlighting their membership of the

unit and emphasizing the identity of the unit by stressing its uniqueness from other units and impacting positively on outcomes (Walumbwa, Wang, Lawler, & Shi, 2004). Pillai & Williams (2004), in a study with 271 fire rescue personnel, demonstrated that group cohesiveness and self-efficacy acted as partial mediators of the effects of transformational leadership on commitment and performance outcomes. Bass, Avolio, Jung & Berson (2003) found that cohesiveness within the work unit mediated the effects of transformational and transactional leadership on unit performance. Lastly, Johns (1997) noted that in general, group cohesiveness is negatively associated with absenteeism.

Group performance

Perceived group task performance is another commonly researched outcome of leadership. In the Conger et al study, it was found to be directly related to the leader's sensitivity to the environment through his/her capacity to recognise the physical, human or social constraints in the organisation that may stand in the way of achieving organisational objectives. There is great emphasis in transformational leadership on performance and the achievement of goals. A meta-analysis by Lowe, Kroech & Sivasubramaniam (1996) confirmed the positive relationship between transformational leadership and performance. Higher levels of group performance might be negatively linked to absence because the group members value a sense of success and achievement, and to be part of a successful collective confers a positive self-identity as well as a sense of obligation and motivation to contribute to the cause.

Empowerment

When transformational leaders are successful in transforming their followers into believing in themselves and elevating their self-expectations, they heighten their feeling of empowerment. Empowerment is defined by several aspects encompassing dimensions of competence, impact, meaning, and self-determination (Spreitzer, 1995). The way leaders increase empowerment is by providing meaning and challenge to their followers' work, enhancing levels of self-efficacy, and confidence and self-determination (Avolio, Zhu, Koh & Bhatia, 2004). The aspect of self-efficacy contained in empowerment has been linked, according to Dineen, Shaw, Duffy & Wiethoff (2007) to cognitive withdrawal or withdrawal behaviour, including absenteeism, in prior research. Avolio et al. (2004) found empowerment to be a mediator of the effect of transformational leadership on organisational commitment. On the assumption that people like to feel empowered, we can speculate that a sense of empowerment via work will also contribute to their willingness to be present in their workplace.

Work-related social support

Additional follower effects were developed in this study for the specific test of their influence on absence. Derived from the stress literature, social support is a work characteristic found to predict sickness absence in many stress studies (Michie & Williams, 2003). The amount of support that followers receive from their transformational leader or co-workers may well help reduce levels of absence by making work a more pleasant place to be, and perhaps by helping the person find solutions to work family conflict or other problems that might produce absence. On the other hand, it is possible that such support could be construed by followers as condoning or at least reducing the negative consequences of absence, thus inadvertently encouraging absence. Rael, Stansfeld, Shipley, Head, Feeney, & Marmot, (1995) in the Whitehall II study with a large sample of UK civil servants reported that the higher the level of social support that was perceived, the higher the level of absence.

Management commitment to safety

If leadership is to have a significant effect on absence, part of this can be expected to be via health and safety practices, as well as through other practices which affect employees' inclinations to be absent (or not). Barling, Loughlin & Kelloway (2002) found that safety-specific transformational leadership predicted occupational injuries through safety consciousness, safety climate and safety related events. Kelloway, Mullen & Francis (2006) also found that transformational leaders positively influence safety consciousness whereas passive leadership had a negative influence. In turn a safer work environment will lead to fewer injuries and fewer ill-health problems and hence to fewer absences.

Work climate effects on the work-family conflict

Given the dual role that many workers have with responsibilities at work and at home, it is increasingly important to identify the interplay between work and non work factors in absence research. Absence research indicates that work-family conflict influences both health and sickness absence (Piirainen, Rasanen, & Kivimaki, 2003; Jansen, Kant, van Amelsvoort, Kristensen, Swaen, & Nijhuis, 2006). Anderson, Coffey & Byerly (2002) found a link between work-family conflict and a wide range of outcomes including stress, job satisfaction, turnover intentions, and absenteeism.

Few studies have found linkages between leadership and work-family conflict. Lack of managerial support was found to be a predictor of conflict between work and family in a study conducted by Anderson et al., (2002) on a national representative sample of US employees. In the present study, because of its hypothesised strong link with work climate, it is expected that leadership might impact work-family conflict through the work climate. How might the work climate then influence work-family conflict? A lack of cohesion in teams, individuals or teams with low empowerment or recognition, and poor work-related social support might aggravate the imbalance between home and work responsibilities. Byron (2005) has reported a meta-analysis showing that amongst the strongest correlates of work-family conflict are work schedule inflexibility (in a sense the antithesis of empowerment) and job stress. It seems that negative spillover effects from one realm to the other are much more likely than over-commitment to an engrossing work (or family) role to cause work-family conflict. In any case, as Greenhaus and Powell (2006) have argued, the allocation of personal resources at work and at home should not be seen as a zero-sum game. If work (or home) commitments are demanding in the positive and challenging ways that are encouraged by transformational leaders, they can have invigorating effects that help a person to fulfil his or her commitments in other arenas.

2.3.2   Other salient contributors of absence

Physical work conditions

In a recent review by Allebeck & Mastekaasa (2004) work factors systematically found to predict absence were job control/decision latitude and the physical work environment (Nielsen, Rugulies, Christensen, Smith-Hensen & Kristensen, 2006). Other sources also confirm the impact of the poor physical work conditions on absenteeism (Melchior, Krieger, Kawachi, Berkman, Niedhammer & Goldberg, 2005; Smulders & Nijhuis, 1999, Steers & Rhodes, 1978).

Health complaints

As noted above, people may well experience health complaints that lead to absence for reasons that are entirely unconnected with leadership at work. On the other hand, it is also

possible that some health complaints are attributable to leadership, at least indirectly and in part. There is a long tradition in stress research that shows how features of the job and the working environment can, over time, affect people's psychological and physical health (Cox, Griffiths & Rial-Gonzalez, 2000). Although less emphasis in leadership research has been placed on affective reactions (Driscoll & Bheer, 1994), leadership has been linked to outcomes such as general health or strain (Driscoll & Bheer, 1994), emotional exhaustion (Stordeur, D'hoore, & Vandenberghe, 2001), physical and psychological health (Hyde, Jappinen, Theorell & Oxenstierna, 2006; Harris and Kacmar, 2006; Gilbraith and Benson, 2004) or bullying and distress (Stogstad, Einarsen, Torsheim, Schanke, & Hetland, 2007). Most of these studies did not use transformational style of leadership.

Aside from the demographic variables (age, gender etc), personal ill-health has been found to be among the most salient reasons for absence (Janssen, Kant, Swaen, Janssen & Schroer, 2003). However, leadership studies have generally omitted to account for ill-health effects on absence, resulting perhaps in inflating the relationship between the predictor and the absence outcome. This is an important limitation that the present study sought to address by examining the direct and indirect paths of work factors through ill-health causing absenteeism.

Negative life events

Although daily hassles often explain more variance in work outcomes than major life events do, we cannot ignore the latter (Holmes & Rahe, 1967). Events, especially negative ones such as bereavement, accidents, and marital breakdown, can all affect a person's ability and willingness to be at work. Probably, a large part of this will express itself in health complaints, but not necessarily all. Manning and Osland (1989) found that life events were correlated with 1-day absences in the subsequent year but not to longer spells of absence or days of absence in successive years. Surveying 763 local government employees over a 5 year period, Kivimaki et al. (1997) also found that negative events predicted forthcoming absence rate and that it increased the risk of absence 1.2 times relative to situations without negative life events. It is therefore necessary to take major life events into account, both as an indirect predictor of absence via health complaints, and as a direct predictor.

Moral obligation

Absence proneness within individuals shows significant stability over time, and across situations i.e. individuals who tend to be absent more in a given period will continue to be absent in later periods (Smulders & Nijhuis, 1999, Vahtera, Pentti & Uutela, 1996). Some authors have suggested that part of this phenomenon can be dispositionally-based (Judge et al, 1997). Research that has looked at the link between personality traits and absence has produced mixed findings and in any case small evidence (see Salgado, 2002, for a meta-analysis of studies using the so called Big Five personality traits and counterproductive behaviours including absenteeism). Rather than assessing enduring personality traits, we chose 'moral obligation' as a dispositional explanation. Moral obligation is usually construed as a personal responsibility to behave in ways that promote the collective good (Kaiser and Scheuthle, 2003). It can be expected that a high level of moral obligation for work attendance will prevent people from being off work for non-sickness reasons.

2.4   OPERATIONALISATION OF EMPLOYEES' ABSENCE

Days and spells of absence are two common measures used in absence studies. In a meta-analysis, Johns (1994) concluded that the days lost measure seems to dominate the literature but that absence frequency particularly of short spells is supposed to best represent voluntary absences as it is less affected by involuntary long term illnesses than are time-lost

measures (Johns, 1994, Geurts, Schaufeli & Buunk 1993). The present study will use both types of measures with sickness absence defined as "the period individuals have been away from work due to illness or injury".

An issue often raised in absence research is the validity of self-reports. Some authors judge self-reported measures of absence as being valid measures (e.g. Johns, 1994, Boumans & Landeweerd, 1993) while others advocate the use of recorded absence measures. Recorded measures are thought to be more valid because of their objective nature (e.g. Smulders & Nijhuis, 1999). It is viewed as a particularly important measure to rule out recall bias (Nielsen, Rugulies Smith-Hansen, Christensen & Kristensen, 2004). However, Johns (1994) outlines that although absence self-reports risk random or systematic error (e.g. under-reporting) the same can be said of recorded absence data depending on how well records have been kept. By using both self-reports and recorded absence data, this study increases the accuracy and validity of the absence measure.

As explained further in the Method section, we took both self-reported and recorded absence measures (in each case, both days and spells) for the year ending when the respondent completed the questionnaire (time 1). In line with ethical and Data Protection requirements, we requested organisations' and individual respondents' consent to obtain recorded absence data from organisational records. Not all organisations, and not all individuals, gave this consent. We also, wherever possible, obtained recorded absence data for the six months after our data-collection (time 2). This gave an added important dimension to the study. Much research on absence uses absence data that refer to a time period that ends when the other data are collected (e.g. the previous year) which leaves open the possibility that an individual's absence has, for example, caused the leader to adopt a certain style with him/her rather than vice versa. This of course could be the case with our time 1 absence data, so we regard the time 2 absence data as an important validity check. Similar designs and time periods had been used in previous absence research (e.g. Judge, Martocchio, & Thoresen, 1997). Judge et al. note that the six month cut-off for post survey absence aggregation period represents the best choice to minimize potential threats to internal validity (Harrison & Hulin, 1989).

2.5 RESEARCH MODEL AND HYPOTHESES

Based on the foregoing arguments, we propose a general research model as shown in Figure 2 with the following research questions and hypotheses:

Research question 1: What observations can be made about variables predicting absence, and with what level of success?

Research question 2: In considering the variables reviewed above, by which routes do any indirect effects of leadership work on absence?

Research question 3: Given that absence is a complex phenomenon to explain, does analysing the data using clusters of absence rather than linear absence variables shed further light on the factors associated with the frequency of absence?

Hypothesis 1. There will be significant negative correlations between absence and (a) transformational leadership; and (b) transactional leadership.

Hypothesis 2. After controlling for work and non-work variables as shown in Figure 2, the relationships between leadership and absence will be non-significant. That is, the effects of leadership will be entirely indirect.

Hypothesis 3. Direct effects on absence will be observed for (i) work climate, (ii) health complaints, (iii) major negative event, (iv) work-family conflict, (v) physical work conditions and (vi) moral obligation to be at work.

Hypothesis 4. Using cluster analysis, it is expected that the frequent absence groups will show differences compared to infrequent absence groups. The differences will be significant on:

- Demographics and other individual variables (e.g. health complaints will be higher in frequent group)
- Work variables (e.g. Poor working conditions will be perceived as being worse in frequent absence group; Leadership, follower effects and empowerment will be less favourable in frequent absence group).
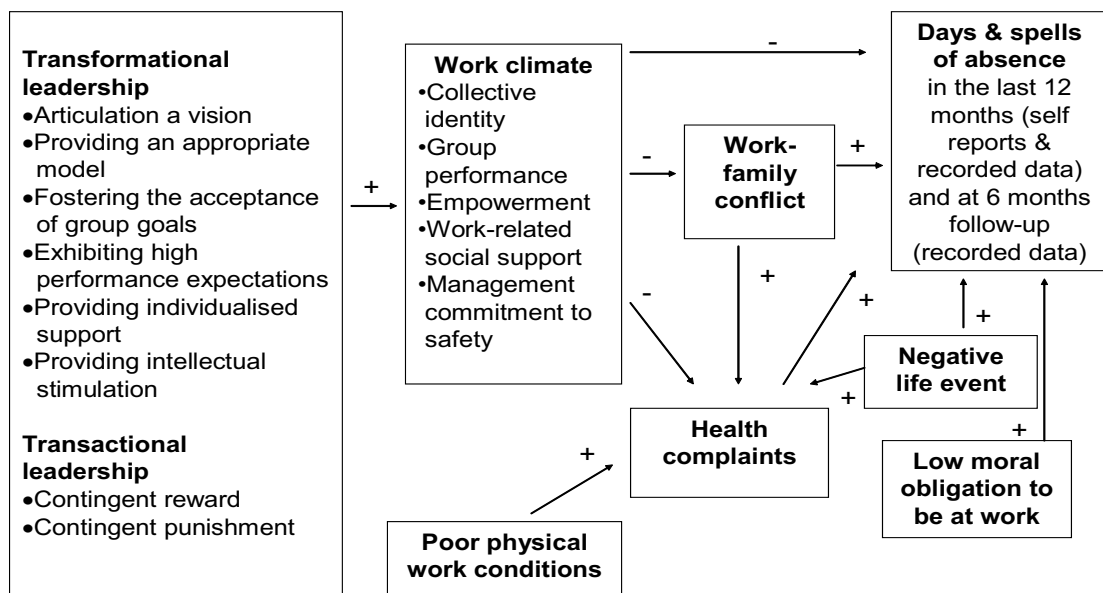

Figure 2 The proposed general research model

Note: The + and – signs denote a positive and negative relationship respectively between variables e.g. Leadership will affect positively Work Climate which will then negatively affect (hence reduced) Days and Spells of absence.

3   METHOD

3.1   SAMPLE AND PROCEDURE

The sample selection done in 2006 was based on employers' national absence surveys (CIPD, 2006) indicating higher absence levels in UK local and central government than in the police and health sectors. Therefore having a mix of these sectors was judged appropriate. It should be noted however, that a year after the sample selection, the CIPD 2007 survey data showed a significant fall in local government absence rate to 8.5 days lost and a large increase in the health sector (12.6 days lost).

After discussions and negotiations with five local authorities, three police forces, and one health sector organisation, the final sample consisted of three local authorities and one police force. The intention with the local authorities was to obtain data from matching departments to allow for some comparison across local authorities e.g. manual versus office based staff, but in practice this was not possible and specific departments were selected by local authorities on the basis of their own preferences. It was possible to select half of the employees at random for the police force giving a probabilistic type of sample for this organisation.

The four organisations involved in this study were surveyed for the first time (time 1) between November 2006 and January 2007. A paper survey was sent to each participant with a free-post response envelope to return their completed questionnaire direct to the researchers. The survey was coded and included an informed consent form for participants to complete to authorise the use of their absence records. This procedure was particularly important in order to comply with the Data Protection Act and to the ethical standards of the British Psychological Society. A study on absence usually raises concern among organisations and also respondents. Respondents were guaranteed confidentiality, and informed that participation in this study was voluntary and that they were under no obligation to complete the survey. They were informed that their absence data would be collected from the organisation's records using the code which appeared at the back of their questionnaire and their absence would be collected in terms of days and spells but not in terms of reasons for absence.

A total of 4782 questionnaires were sent to participating organisations and 1498 respondents returned their completed surveys giving a 31% response rate. This type of return rate is often found in research when recorded absence data are collected (Johns, 1994; Moser & Kalton, 1989). Other research studying the link between personality and recorded absence (e.g. Furnham & Bramwell, 2002; Judge, Martocchio & Thoresen, 1997) obtained similar response rates, 31% and 28% respectively.

One of the local authorities eventually decided not to permit us to ask employees for recorded absence data (senior managers there cited likely industrial relations and/or administrative difficulties). In the three organisations where recorded data were collected, a large number of respondents (75%) gave their consent for collecting their recorded absence data. This equates to 1123 participants. However, due to unmatched surveys with company absence data records, the remaining sample for recorded absence data was 711 respondents at both time 1 and time 2 (six months period after the survey).

The respondents' mean age was 44 years. Forty five percent were male and 54 percent female. The average length of service in the organisation was 12.7 years (SD = 10) and 5.7 years (SD = 6.2) in the post. Participants had spent on average 2.8 years (SD = 2.8) with the current manager they rated on leadership. The sample was comprised of 212 respondents with managerial responsibility.

3.2   MEASURES

Most of the scales used were previously published and validated scales. Unless otherwise indicated, all measures were assessed using a five-point Likert-type scale ranging from (1) Strongly disagree to (5) Strongly agree.

Transformational leadership: Eighteen of the 23 items in the Transformational Leadership Behaviour Inventory (TLBI) of Podsakoff et al. were used to tap six transformational leadership dimensions, each with three items. Some items were slightly modified to reflect the unique aspect of the focal organisation. Example items include "My line manager is always seeking new opportunities for the section"; and "My line manager leads by example".

Transactional leadership: This dimension comprised two aspects: Contingent *reward* leadership was measured by five items from Podsakoff, Todor, Grover and Huber (1984) and contingent *punishment* leadership was measured by three items. A sample item for the former is "My line manager always gives me positive feedback when I perform well", and for the latter: "My line manager would indicate his/her disapproval if I performed at a low level".

Dimensions of work climate: Five dimensions were used to define facets of work climate. *Collective identity, group performance and empowerment* were measured by nine items adapted from Conger et al. (2000). Items included "In my group, we see ourselves as a cohesive team"; "My group is high performing"; "I can influence decisions taken in my group". Three items from Cheyne, Cox, Oliver and Tomas (1998) assess to what extent employees perceived *management commitment to safety* in the workplace, e.g. "Management turn a blind eye to safety issues". Finally five items of *work related social support* from Snow, Swan, Raghavan, Connell, and Klein, (2003) assess the extent to which participants received support when faced with difficulties and demands at work, from e.g – Your day-to-day work colleagues? – Your line manager? – Your spouse, partner? The scale had two items referring to support from people at work, and three items referring to support from people outside work. The latter was discarded due to over 400 missing cases, probably because many respondents did not have a spouse or partner, or other relatives.

Work-family conflict: This dimension was operationalised with three items tapping each of two dimensions (Grandey, Cordiero, & Crouter, 2005): work interference with family (WIF) with the following sample item: "When I get home from my job, I do not have the energy to do work around the house" and family interference with work (FIW). A sample item was "Worrying about what's going on at home makes it difficult for me to do the job well".

Physical work conditions: The adequacy of the physical work conditions was assessed by four items taken from Smulders and Nijhuis (1999) e.g. "Are you much hindered in your work by…Temperature fluctuations; noise; etc". Responses were recorded on a five-point scale from (1) Never to (5) All the time. Therefore a high score meant problems with physical working conditions, so this variable will henceforth be referred-to as poor working conditions.

This study used a self reported measure of *health complaints*, derived from the psychosomatic symptom checklist developed by Piko (2003). It includes five items such as "How often in the last 12 months, have you… had lower back pain, headache, etc." In addition, a measure of psychological health was added to this scale. "How often in the last 12 months, have you… had you suffered from stress? Responses were coded on a 5-point scale from (1) Never to (5) All the time.

The occurrence of a *major life event* in the last year that would have had an impact on work attendance was assessed as "Has any major event happened to you in the last 12 months which has had a bad effect on you, for example, death of a close relative, redundancy of partner?" A dichotomous scale was used 'Yes' = 1, and 'No' = 0.

In addition, *moral obligation to be at work* was intended to be measured as covariate between work characteristics and absenteeism. A scale adapted from Arnold, Loan-Clarke, Coombs, Bosley and Martin (2006) was used with three items, e.g. "even if I am feeling unwell, I would feel guilty if I didn't turn up for work". This scale showed low reliability (alpha coefficient = .54) therefore was discarded from consideration in the main analyses.

Demographics such as age, gender, grade and tenure in the organisation, in the post and with current manager were included in the survey as previous research suggests these can be confounding factors on absence.

Absence measures:
At time 1, absence was operationalised as follows:
- Two self-reported measures using data from the questionnaire: Absence days (number of days in the last 12 months preceding the survey) and absence spells (number of separate spells of absence in the last 12 months, irrespective of the length of each spell). Respondents were asked to include all absences, whether certified or not.
- Two measures drawn from organisational records, with the permission of respondents. These referred to the 12-month period ending December 2006, and were therefore intended to tap the same period of time as the self-reported measures.

At time 2, only organisational records were used. The number of absence days and spells for the six month period ending in July 2007 were recorded. There was no self-reported absence measure at time 2.

3.3   DATA ANALYTIC STRATEGY

3.3.1   Data transformation

We found that the distributions of days and spells of absence were positively skewed. This is often the case as most employees tend to exhibit little absence and only a few incur a great deal (Johns, 1994). To reduce skewness in the data, the natural log transformation, a procedure described by Field (2005), was applied to both self reported and recorded absence days and absence spells. All tests of statistical significance are based on the transformed data.

3.3.2   Confirmatory factor analyses (CFA)

Prior to hypothesis testing all scales included in the survey questionnaire with more than three items were examined for uni-dimensionality by congeneric factor analysis (a CFA in which all items load on a single latent variable). With three or fewer items, the CFA model is a saturated one and the fit is necessarily perfect. Both leadership measures and work-family conflict were not uni-dimensional. In addition, there were some measurement inadequacies in the conceptual scales in that some items had low loadings on their respective latent indicators. A number of analyses were therefore conducted to develop a set of scales with more acceptable measurement properties.

Leadership measures

Transformational leadership was conceptually defined by six dimensions and transactional leadership by two dimensions. A CFA of a two component model was conducted as originally defined by Podsakoff et al. (1990) but this model failed to converge. The final solution obtained included two components but not exactly with the dimensions as usually reported in research. Most notably, the individualised support dimension of transformational leadership was not retained. The contingent reward leadership dimension fitted better with transformational leadership than transactional leadership (this is often found in research e.g. Barling, et al., 2002, Stordeur et al., 2001, Bycio et al., 1995, Lowe et al., 1996). What we termed the *transformational-reward leadership* component was modelled by a second order factor model, the subscales of which were the dimensions of Vision, Modelling, Collaboration, Stimulation and Contingent Reward. A separate component that we termed *performance-oriented leadership* was formed by five items (two from the transformational leadership performance expectations dimension and three from transactional leadership contingent punishment). The structures of the transformation-reward and performance-oriented leadership components are shown in Appendix 2.

Work family conflict

A CFA on work-family conflict revealed that a one-factor model was a poor fit to the data. This construct was better explained by a two-factor model (Work interfering with family (WIF), and Family interfering with work (FIW)). One item from WIF ("When I get home from my job, I do not have the energy to do work around the house") was removed due to its cross-loading with another item in the structural equation model. The final two-factor model provided a good fit to the data. All items had substantial loadings on their respective factor as shown in Appendix 2.

Work climate

An exploratory principal components analysis with varimax rotation was performed on the collective identity, group performance, empowerment, commitment to safety items, and the work-related social support items that referred to support from people in the workplace. Items designed to measure the first two dimensions formed a single factor that we called "Follower Effects". Items loaded between .52 and .80, onto the factor, with no major cross-loadings. To identify the relative strength of each of the work climate dimensions, each one was measured separately in the regression analyses. However, for the purposes of structural equation modelling, a single work climate variable was used to reduce model complexity (See Appendix 2 for the structure of the work climate variable).

3.3.3 Reliability analyses

The scales used in the subsequent analyses are shown in table 3.0. All empirical scales and subscales had a satisfactory alpha reliability coefficient i.e. close to or greater than 0.70 which is the minimum recommended by Nunnally (1978). Work-related social support scale was deemed acceptable as the lower reliability can be due to the fact that only two items formed this scale.

Table 3.0 Scales used in the study

Scales	Number of items	Reliability (Cronbach Alpha)
Transformational-reward leadership	**17**	**.93**
Vision	3	.89
Modelling	3	.94
Collaboration	3	.89
Stimulation	3	.88
Contingent reward	5	.93
Performance-oriented leadership	**5**	**.83**
Follower effects	**7**	**.78**
Group performance	3	.84
Collective identity	4	.85
Empowerment	**3**	**.67**
Work-related social support (work)	**2**	**.61**
Manager commitment to safety	**3**	**.82**
Family interferes with work	**3**	**.81**
Work interferes with family	**2**	**.84**
Poor working conditions	**4**	**.79**
Health complaints	**6**	**.78**

3.3.4 Data analysis

Descriptive statistics on all measures, and the intercorrelations between them, were first calculated in order to establish the overall picture and test hypothesis 1.

Two complementary approaches were adopted in order to test hypotheses 2 and 3 and research questions 1 and 2. First, multiple regression analyses were performed. Absence measures were used as outcomes; demographic variables as controls; leadership, work climate, work conditions, health complaints, work-family conflict, and major negative life event variables were the predictors of absence. Further analyses were performed using maximum likelihood structural equation modelling (SEM) with Mplus (version 5) statistical program (Muthén & Muthén, 2007). SEM is appropriate because it allows estimation of multiple associations simultaneously, and thus the most plausible overall causal configuration of variables.

For the SEM analyses, it was necessary to reflect the nature of the data whilst also simplifying it somewhat to avoid unnecessary complexity. Systematic experimentation with different models led to the following decisions about the structural model to test. First, each of the two aspects of leadership (transformational-reward and performance-oriented) would be modelled separately. Second, one general work climate latent variable was constructed which included collective identity, group performance, empowerment, commitment to safety, and also the two work-related support items that referred to support from manager and colleagues in the workplace. Third, the two aspects of work-family conflict (WIF and FIW) were modelled as separate but correlated latent variables. Fourth, the two absence measures, days and spells were treated as observed variables. Although highly correlated, their meaning was different, and when they were combined in preliminary SEM analyses there was a negative error variance estimate, which is a sign that the two should not be combined.

Research question 3 was tested by first using cluster analysis on the absence days and spells measures using all survey respondents cases, in order to see whether it was possible to form

groups of respondents with characteristically different absence profiles. If so, the groups would be compared on work and non-work characteristics using analysis of variance (ANOVA).

4 RESULTS

4.1 PERCEPTIONS OF LEADERSHIP AND OTHER FACTORS

Examining the mean scores and standard deviations as presented in table 4.2, it can be seen that overall line managers were perceived to exhibit moderate amounts of both transformational-reward and performance-oriented leadership, with the latter significantly ahead ($t = 9.75$, df = 1484, $p < .001$).

On the whole, respondents felt personally empowered in their work, whilst being somewhat less sure of the commitment to safety, group identity and group performance in their workplace, though still above the midpoint of the scale (and therefore agreeing more than disagreeing) on those variables.

Physical working conditions were seen moderately favourably, but the mean score was near enough to the midpoint, and the standard deviation large enough, to indicate that quite a lot of respondents felt there were some inconveniences and annoyances in the physical features of their workplace. Family interference with work was perceived to be quite low, whilst work interference with family was considerably higher ($t = 24.3$, df = 1487, $p < .001$) though still below the midpoint of the scale.

Just under 1 in 5 respondents reported a major event in the last 12 months that had had a negative effect on them. The level of health complaints was overall quite low, but again with enough variation to indicate that some respondents experienced significant psychosomatic symptoms.

4.2 ABSENCE LEVELS

Table 4.2 shows the transformed log variables for absence. These are not easy to interpret in terms of raw data, so Tables 4.0 and 4.1 show a breakdown of the raw absence data. It can be seen that during 2006 more than half of the respondents reported and had recorded less than 3 days and less than 2 spells of absence. In the first six months of 2007, more than half of the respondents recorded no absence at all. In addition, the mean self-reported absence at time 1 was **7.65 days**, with a median of 2. The equivalent recorded figure was slightly lower, at **6.75 days**, again with a median of 2. Corresponding figures for spells at time 1 were self-reported mean **1.22** and median 1; recorded mean **1.26**, median 1.

At time 2, the mean recorded absence days was **4.35,** and spells **0.72**, both with a median of zero. The skewed nature of the data (which required the log transformation) is very common in absence research, and the mean in particular can be quite misleading. For example, the self-reported mean of 7.65 days of absence at time 1 disguises the fact that more than 80% of respondents were absent for less than that amount of time. The gap between mean and median is much less marked for absence spells, but even so two-thirds of respondents fall below the mean number of spells.

Table 4.0 Percentage of respondents by days of absence

	0	1	2	3-5	6-10	11-20	21+
Self-reported absence days time 1	37	10	10	18	10	7	8
Recorded absence days time 1	36	10	8	18	14	5	6
Recorded absence days time 2*	54	8	8	15	6	3	6

* Time 2 refers to absence for only the first half of 2007, whilst the time 1 variables refer to the whole of 2006.

Table 4.1 Percentage of respondents by spells of absence

	0	1	2	3	4+
Self-reported absence spells time 1	37	30	18	8	7
Recorded absence spells time 1	36	31	16	10	7
Recorded absence spells time 2*	54	29	11	4	2

* Time 2 refers to absence for only the first half of 2007, whilst the time 1 variables refer to the whole of 2006.

The relationships of demographic variables with absence are discussed in the commentary on the multiple regressions (see section 4.4.1).

4.3 DIFFERENCES BETWEEN ORGANISATIONS

There were statistically significant differences between the four organisations on most of the variables shown in Table 4.2. However, in practical terms most of these differences were small. For example, one-way analysis of variance revealed a between-groups effect at $p < .01$ for health complaints, but the mean scores for health complaints varied only between 2.27 and 2.42.

Differences for performance-oriented leadership were also quite small (organisational means varied between 3.48 and 3.70), though for transformational-reward leadership one of the local authorities scored higher (3.70) than the other three organisations (all between 3.32 and 3.36). Perhaps not surprisingly given the 24-hour nature of policing, the police force respondents reported greater work interference with family than the other organisations. One of the local authorities had higher self-reported absence than the other three organisations, but amongst the subset of respondents for whom recorded absence data were available, this difference disappeared. The police force respondents tended to have fewer recorded absence spells than other respondents.

Table 4.2 Means, standard deviations, and intercorrelations of study variables

	N	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.Transformational-reward leadership	1487	3.37	0.80	--															
2.Performance-oriented leadership	1485	3.51	0.76	.50***	--														
3.Follower effects	1468	3.58	0.71	.38***	.23***	--													
4.Empowerment	1487	3.93	0.63	.14***	.13***	.39***	--												
5.Commitment to safety	1463	3.65	0.86	.49***	.23***	.45***	.33***	--											
6. Work-related social support	1480	3.88	0.84	.52***	.25***	.41***	.29***	.39***	--										
7.Family interferes with work	1488	2.13	0.71	-.02	.03	-.10***	-.19***	-.13***	-.11***	--									
8.Work interferes with family	1488	2.75	0.99	-.13***	.04	-.18***	-.18***	-.24***	-.16***	.35***	--								
9.Poor working conditions	1492	2.67	0.90	-.07**	-.04	-.07*	-.06*	-.18***	-.05	.10***	.11***	--							
10.Health complaints	1493	2.34	0.74	-.20***	-.02	-.18***	-.17***	-.23***	-.24***	.28***	.39***	.32***	--						
11.Negative life event	1479	0.18	0.38	-.04	.02	-.04	-.06*	-.03	-.03	.07**	.01	.07**	.18***	--					
12.Self-reported absence days Time 1	1460	1.18	1.21	-.10***	-.02	-.08**	-.09**	-.07*	-.06**	.14***	.11***	.14***	.23***	.23***	--				
13.Self-reported absence spells Time 1	1425	0.63	0.56	-.09***	-.02	-.09***	-.11***	-.08**	-.02	.12***	.08**	.18***	.19***	.14***	.78***	--			
14.Recorded absence days Time 1	711	1.19	1.16	-.08*	-.01	-.02	-.03	-.07	-.08*	.10**	.10**	.13***	.21***	.23***	.89***	.68***	--		
15.Recorded absence spells Time 1	711	0.65	0.57	-.13***	-.07	-.08*	-.05	-.10**	-.10**	.06	.09*	.17***	.16***	.15***	.72***	.83***	.82***	--	
16.Recorded absence days Time 2	711	0.81	1.09	-.07	.05	-.06	.03	-.02	-.04	.07	.06	.08*	.19***	.09*	.31***	.31***	.29***	.30***	--
17.Recorded absence spells Time 2	711	0.41	0.49	-.11**	.02	-.07	.03	-.02	-.03	.04	.03	.14***	.16***	.12***	.31***	.38***	.29***	.36***	.82***

*p<= .05; ** p <=.01; *** p <= .001.
N varies from 711 to 1492 due to differences in self-reports and recorded absence data
All absence variables are transformed log variables. The Work Climate variable not shown here is broken down by its components (variables 3, 4, 5 & 6).

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4.4 TEST OF HYPOTHESES

4.4.1 Correlations and regression analyses

The correlations shown in table 4.2 reveal that both types of leadership were positively associated with climate variables, but only transformational-reward leadership "followed through" to health complaints, work-family conflict and absence. The strongest and most consistent correlates of absence were health complaints and the occurrence of a negative life event. Work-family conflict was associated with health complaints.

Regarding the absence data, the high level of agreement between self-reported and recorded absence at time 1 is noticeable. The means are almost identical and the correlations reported in table 4.2 are .89 for days and .83 for spells. Correlations between recorded absence at time 1 and time 2 are moderate (.29 for days and .36 for spells). This indicates some consistency in absence behaviour, but not so much that one could infer that it is a quasi-dispositional phenomenon, especially as part of the correlation over time for absence spells will no doubt be due to absence spells which span the two recording periods.

Hypothesis 1 stated that there will be significant negative correlations between absence and (i) transformational leadership and (ii) transactional leadership. Because the leadership data did not support exactly this way of distinguishing between forms of leadership, we must look at the correlations between absence and (i) transformational-reward leadership and (ii) performance-oriented leadership. The former is quite close to the traditional notion of transformational leadership, whilst the latter reflects a focus on performance standards and willingness to highlight performance weaknesses where they occur.

The correlations provide clear albeit modest support for the hypothesis as far as transformational reward leadership is concerned. The extent to which respondents reported that their line manager adopted this style was significantly negatively correlated with five of the six absence measures, with the significant correlations ranging from -.08 to -.13. On the other hand, there is no support for the hypothesis when it comes to performance-oriented leadership. This was not significantly correlated with any of the six absence measures.

Hypothesis 2 predicted that there would be no direct effects of leadership on absence but indirect effects. To test this hypothesis, multiple regression analysis was performed and results are presented in Table 4.3. Demographic control variables were entered first into the regression equation in order to remove (and note) any effects they might have. Then a set of variables other than leadership that are potential predictors of absence were entered. At the third step, the two leadership variables were entered into the equation in order to check whether they can explain any additional variance in absence – this would signal a likely direct link between leadership and absence. Finally, for the time 2 measures of absence, we also entered the time 1 absence score in order to see if there is continuity over time in absence that is not explained by the predictor variables.

For the time 1 absence outcomes, hypothesis 2 was largely supported. For none of the time 1 absence outcomes, did the combined effects of the two leadership variables approach statistical significance. Specifically, in no case did performance-oriented leadership contribute to the explained variance in absence over and above the other predictors. This is not surprising given the non-significant correlations between this form of leadership and absence (see Table 4.2). For the two self-reported absence measures, transformational-reward leadership approached statistical significance, but did not quite reach it.

Interestingly, hypothesis 2 was refuted by the regression analyses with time 2 absence tested as the dependent variable. For both reported days and reported spells of absence, both

forms of leadership contributed significantly to the prediction of absence over and above the other variables. Furthermore, although the two forms of leadership themselves are positively correlated, their relationships with absence were opposite in sign. That is, when respondents perceived that their line manager used transformational-reward leadership, their absence tended to be low, whilst when they perceived performance-oriented leadership from their manager, absence tended to be high. Although the two forms of leadership are perceived as going together given their correlations, it appears to be important for leaders to differentiate between them if absence management is a priority.

As already noted, the two leadership variables are quite highly correlated with each other (0.5, i.e. if the correlation is squared this means that 25 percent of the variance is shared between both variables). Although this is not exceptionally high by any means, it could complicate interpretation of the regression findings. Additional analyses where just one of the two leadership variables was entered into the equation showed that the significant negative relationships between transformational-reward leadership and time 2 absence became non-significant (absence days) but still significant (absence spells) when performance-oriented leadership was not included. The significant positive relationship of performance-oriented leadership with absence days at time 2 survived when transformational-reward leadership was excluded from the analysis, but it was weakened, and became just non-significant for absence spells at time 2. The same results were obtained whether absence at time 1 was entered at first or last step in the equation.

Table 4.3 Results of multiple regression analyses for each absence outcome measure

	Cross-sectional models				Predictive models	
	Self-reported days t1 (log) N = 1186	Self-reported spells t1 (log) N = 1163	Recorded days t1 (log) N = 627	Recorded spells t1 (log) N = 627	Recorded days t2 (log) N = 627	Recorded spells t2 (log) N = 627
Step 1 (control variables) R^2 added	**.029*****	**.069*****	**.047*****	**.088*****	**.041*****	**.089*****
Age		-.13***				
Gender					.11**	.09*
Organisational tenure		-.07*				
Job tenure					.09*	
Time with manager						
Grade	.06*		-.09*	-.11*	-.12*	
Dummy org 1		- .17***		-.28***		
Dummy org 2		-.11***	-.13*			-.19**
Dummy org 3	.08*	-.10***	N/A	N/A	N/A	N/A
Step 2 (climate, health, etc variables) R^2 added	**.096*****	**.069*****	**.086*****	**.058*****	**.047*****	**.043*****
Follower effects						
Empowerment					.12**	.11**
Commitment to safety						
Work-related social support						
Family interferes with work	.08*	.06*				
Work interferes with family						
Poor working conditions		.10***		.09*		
Health complaints	.14***	.12**	.12**		.14**	.12**
Negative life event	.19***	.09**	.19***	.10*		
Step 3 (leadership variables) R^2 added	**.002**	**.003**	**.001**	**.001**	**.016****	**.019****
Transformational-reward	-.07 $p<.10$	-.07 $p<.10$			-.13**	-.16**
Performance-oriented					.13**	.14**
Total Adjusted R^2	**.111*****	**.117*****	**.107*****	**.119*****	**.079*****	**.126*****
Step 4 Additional R^2 explained by time 1 absence					**.055*****	**.068*****

How should we interpret these results? We think this is a substantive finding, albeit a weak one, and not a quirk of the data. Transformational-reward and performance-oriented leadership tend to go together, in the sense that line managers who are perceived by their subordinates as using one tend also to be perceived as using the other. This is not surprising, as both include elements of leaders linking subordinate behaviour with outcomes, and leader concern with team success. Therefore when just one of them is entered into the regression equation, an element of the other is incorporated into it. When both are included in the analysis, the statistics indicate the relationship with absence of transformational-reward leadership without the element it shares with performance-oriented leadership. Also, it is the relationship with absence of the element of performance-oriented leadership that it does not share with transformational reward leadership that is seen in these results. What the regression findings suggest is that leaders who create a vision and focus on rewards and success may reduce absence, but this effect tends to be cancelled out if they are also seen as continually demanding high standards and pointing out when individuals slip from those standards.

In order to test further this interpretation, we looked more closely at the respondents for whom absence data were available at time 2. We identified those respondents who rated their leader below the mean on transformational reward leadership and above it for performance-oriented leadership (N = 112), and compared them with those who showed the opposite pattern (i.e. above the mean on transformational reward leadership but below it on performance-oriented leadership (N = 115). We found that the mean time 2 log absence days for the former group was 1.06, and for the latter group it was 0.78. A t-test showed the difference was not quite statistically significant (t = 1.84, p = .067). For absence spells, the respective means were 0.52 and 0.39 which was on the border of significance (t = 1.96, p = .051). This provides some support for our interpretation, but it also stresses the modest (at best) relationship between leadership and absence.

Hypothesis 3 stated that direct effects on absence will be observed for (i) work climate, (ii) health complaints, (iii) major negative event, (iv) work-family conflict, v) physical work conditions and vi) moral obligation to be at work. This hypothesis is supported in some respects but not all by the findings in Table 4.3.

Work climate

Regarding the work climate variables (follower effects, empowerment, social support and commitment to safety), there is no sign at all that they had direct links with any indicator of time 1 absence. The same is true of time 2 absence for follower effects and commitment to safety. However, empowerment was related to the time 2 absence days and spells measures. Unexpectedly, the relationship was positive: that is, the more empowered the person felt, the more likely they were to be absent. This might signal an unfortunate use of personal control. On the other hand, separate analyses (not shown) for the 212 respondents who were themselves managers revealed that, for their own time 1 self-reported absence, a sense of empowerment was associated with lower absence. On the whole though, there was surprisingly little evidence for any direct impact of work climate on absence.

Health complaints and negative events

The evidence for direct effects of health complaints and major negative events was much more consistent. The former was significantly associated with five of the six absence outcome measures, and the latter with all four of the time 1 absence outcomes. The fact that both these variables independently explained variance in absence suggests that major life events do not only have an effect via health complaints, and that, conversely, the effects of health symptoms are not only due to major life events. It is notable that the role of health complaints seemed to be longer-lasting than that of negative life events. Given that we asked, at time 1, about events in the last 12 months, it is likely that the worst impact of most of these events would have been over during the period between time 1 and time 2. Also notable is that health complaints were about equally related to both absence days and absence spells, whereas for major negative events the relationship was stronger with days than spells. A major life event is more likely to lead to one or a very small number of long absences rather than a lot of short ones.

Work-family conflict

There was only little evidence for a direct link between work-family conflict and absence. Work interfering with family does not score at all, and family interfering with work only on the two time 1 self-reported absence outcome variables. Notwithstanding the generally good correspondence between self-reported and recorded absence, this might suggest that individuals are aware of a certain amount of unrecorded absence that was due to family commitments.

Physical working conditions

Regarding hypothesis 3, there was some evidence that poor working conditions contributed to absence but this was only observed on self-reported measures.

Moral obligation to be at work

Originally we intended to include a measure of moral obligation felt to be at work, but unfortunately its psychometric properties were poor as noted in the Method section, therefore this scale has not be used for the main regression analysis. However, supplementary analyses (not shown in the tables) using this measure showed that it added statistically significantly to the explanation of absence but only just. It therefore cannot be considered a major factor, though it is quite possible other enduring aspects of a person's personality or attitudes may be important.

Regarding **research question 1**, first of all the multiple regressions succeed in explaining comparatively low proportions of the variance in absence, typically 11-12% at time 1, but almost up to 20% for time 2 absence spells when time 1 absence spells are included in the analysis. Absence is notoriously difficult to explain (Johns, 2001), and these results are not out of line with other research. Given that it has been suggested that absence spells are a better reflection of voluntary absence than absence days, we might expect that our work climate and leadership variables would be better at predicting absence spells than absence days. However, the amount of variance explained in the relationship between the predictors and both absence outcomes (spells and days) was almost similar.

The highly significant relationship between time 1 and time 2 absence in the multiple regressions even after many other predictors of time 2 absence had been taken into account is another indication that by no means all relevant predictors of absence have been identified. It is possible that there is a significant "habitual" element to absence that operates more or less independently of work and family circumstances which will be

worthwhile to assess. Our moral obligation scale was not suitable to ascertain this. Alternatively or additionally, it may be that there are other predictors of absence that were unmeasured in this study but which partly determine absence at both time 1 and time 2. Because they are unmeasured, it appears in the regression analyses that prior absence itself is the predictor when perhaps it is not.

With respect to the demographic control variables, these showed some patchy relationships with absence. There was a small but significant tendency for women to be absent more than men, especially at time 2. Senior staff were absent a little less than junior ones, at least according to recorded absence data. One of the local authorities showed higher self-reported absence than the other organisations. The police organisation tended to have lower recorded absence, especially spells. Quite a vigorous absence management policy was in place that might have been partly responsible for this.

Finally concerning all regressions, it should be noted that there were a few signs in the diagnostic statistics of moderate multicollinearity. This can occur when pairs or groups of variables explain a high proportion of the variance in each other, and it can make regression weights rather misleading. The empowerment and follower effects variables were the most implicated in this. However, supplementary analyses (not shown) excluding one or the other of these variables produced only very small changes in the beta weights shown in table 4.3. The same was true when the control variables were excluded.

4.4.2   Structural equation modelling

To shed further light on the overall patterns of relationships in the data, we conducted structural equation modelling. As noted in the section earlier on our data analysis strategy, we combined the climate variables into a one aggregate latent variable and produced separate models for each leadership variable in order to keep the resulting diagram interpretable. The models tested were consistent with the general model shown in Figure 2.0. Results are shown in Figures 4.0, 4.1, 4.2 and 4.3. Figure 4.0 tests transformational-reward leadership with self-reported time 1 absence data, and Figure 4.1 transformational-reward leadership with recorded time 2 absence data. Figures 4.2 and 4.3 respectively do the same job for performance-oriented leadership. Interspersed between both sets of Figures are diagnostic statistics that help to interpret the models.

Most path estimates are presented in standardised form, and may be interpreted in the same way as the beta coefficients in a regression equation. For example, the coefficient of 0.70 associated with transformational-reward leadership in figure 4.0 means that a one standard deviation change in transformational-reward leadership is associated with 0.70 standard deviation change in work climate. The exception is the path coefficients for negative event. This is because negative event is a dichotomous variable, which can only take the values 0 (event did not occur) and 1 (event occurred). Therefore it makes little sense to report the effects of a one standard deviation change in negative life event. These path coefficients are therefore presented in a partially standardized form; for instance in figure 4.0, the coefficient of .48 associated with negative event means that a change of one unit in negative life event is associated with a 0.48 standard deviation change (i.e. nearly half of a standard deviation) in health complaints.

A number of conclusions and observations can be drawn on the basis of these models. First, the amount of variance in the absence variables that is explained by the overall models is small. The predictive structural model explained 11% of variance in recorded absence outcomes and the cross-sectional model 17% in the self-reported absence (Tables 4.5 and 4.8). Second, both leadership variables have small though highly statistically significant indirect effects on self-reported absence at time 1, but not on recorded absence at time 2.

Transformational reward leadership is somewhat stronger than performance-oriented leadership, and both contribute to reduced absence except at time 2. Indirect effects are a noteworthy insight provided by structural equation modelling. Leadership has small (but bigger than for absence) indirect effects on health complaints. The more of each kind of leadership the line manager is perceived to use, the lower the level of health complaints. The size of an indirect effect is interpreted in the same way as a path coefficient. Thus for example in table 4.6, the indirect effect of -0.251 from transformational-reward leadership to health complaints at time 1 means that an increase of one standard deviation in transformational-reward leadership is associated with a decrease of .0.251 standard deviations in health complaints. It is apparent that the indirect effects of both types of leadership are relatively modest. The effects of transformational-reward leadership on absence are however clearly larger than those for performance-oriented leadership.

Third, the fit indices for the models are all satisfactory. This means that the models are plausible interpretations of the causal configuration of the variables. Although all the chi-square statistics are highly significant (higher chi-squares indicate less good fit), with large samples this is inevitable. Of more importance are the comparative fit index (CFI), the Tucker-Lewis index (TLI) and the root mean square error of approximation (RMSEA) statistics. For the first two of these, it is a case of the higher the better, up to a theoretical maximum of 1. The figures of around .95 to .96 indicate a good fit. For the RMSEA, the lower the better, down to a theoretical minimum of zero. The readings of around 0.03 to 0.04 again indicate a good fit. This optimistic picture needs to be qualified in two ways. First, it is likely that slightly (though not greatly) different configurations of the variables would produce equally good fit indices. Second, as the dotted lines indicate, some of the hypothesised paths were non-significant.

This leads on to a fourth general observation about the structural equation models. In some ways they reinforce the regression results. Taking areas of agreement first, again there are no direct links from work climate to absence. Health complaints and negative event are again the most powerful predictors of absence. The structural equation models tell us rather more about these variables than the regressions do though. As we expected, both appear to exert a positive effect on absence i.e. increase absence, and negative life events also work indirectly, through health complaints. Family interference with work is directly, albeit weakly, linked with self-reported absence at time 1, but not with other absence measures.

Finally, although no direct effects of leadership on absence were hypothesised, we checked the modification indices in the structural equation modelling outputs in order to make sure that no direct paths were flagged up as being a significant improvement to the model we specified. They were not. In a way this is a contrast to the regression findings for absence at time 2, when both leadership variables had significant beta weights. In another way, though, it is not a contrast because these effects only showed up strongly when both leadership variables were considered together, which they were not in the structural equation models.

What do the structural equation results say that is relevant to our hypotheses and research questions? They support hypothesis 2, that there will be no direct effects of leadership on absence. They support the regression findings that there is partial support for hypothesis 3, in that work climate and work conditions have no direct relationship with absence, work-family conflict very little, and negative event and health complaints quite a lot.

Regarding **research question 2**, all four structural models suggest that the indirect effects of leadership run through work climate to health to absence. Between work climate and health complaints, the link is strongest via work-family interference, then via poor working conditions, and least strong via family interference with work. Leaders are likely to be least able to affect family events.

Table 4.4 Fit statistics of structural equation models for transformational-reward leadership

Models	Sample size	χ^2 (df)	CFI	TLI	RMSEA
Transformational-reward leadership and self-reported absence at time 1 (figure 4.0)	1279	881.744 (330)	0.963	0.958	0.036
Transformational-reward leadership and recorded absence at time 2 (figure 4.1)	653	627.049 (330)	0.961	0.955	0.037

χ^2 (df): chi-square (degrees of freedom); CFI: Comparative Fit Index; TLI: Tucker-Lewis Index; RMSEA: Root Mean Square Error of Approximation.

Table 4.5 Amount of variance explained in absence outcomes by the whole model

	Estimate R^2	Standard Error (S.E)	Estimate of S.E	2-tailed Probability
Self-reported absence days at time 1 (figure 4.0)	0.110 (11%)	0.017	6.374	0.000
Self-reported absence spells at time 1 (figure 4.0)	0.062 (6.2%)	0.014	4.379	0.000
Recorded absence days at time 2 (figure 4.1)	0.060 (6%)	0.021	2.881	0.004
Recorded absence spells at time 2 (figure 4.1)	0.052 (5.2%)	0.019	2.666	0.008

Table 4.6 Standardised total indirect effects from transformational-reward leadership to outcomes

	Estimate	Standard Error (S.E)	Estimate of S.E	2-tailed Probability
Health complaints (figure 4.0)	-0.251 (*)	0.024	-10.687	0.000
Health complaints (figure 4.1)	-0.236	0.032	-7.302	0.000
Self-reported absence days at time 1 (figure 4.0)	-0.074	0.022	-3.440	0.001
Self-reported absence spells at time 1 (figure 4.0)	-0.069	0.022	-3.133	0.002
Recorded absence days at time 2 (figure 4.1)	-0.033	0.029	-1.130	0.259
Recorded absence spells at time 2 (figure 4.1)	-0.044	0.029	-1.504	0.133

Note that adding direct paths from leadership to self-reported absence days and absence spells makes a non-significant difference to chi-square and both paths are non significant. Therefore we can confirm there are no direct effects between transformational-reward leadership and self-reported absence, likewise for recorded absence data.

Note that the total effects from transformational-reward leadership to outcomes are similar to the indirect effects; therefore they are not reported in the above table.

(*) This reads as one standard deviation in transformational-reward leadership is associated with a decrease of 0.251 standard deviations in health complaints.
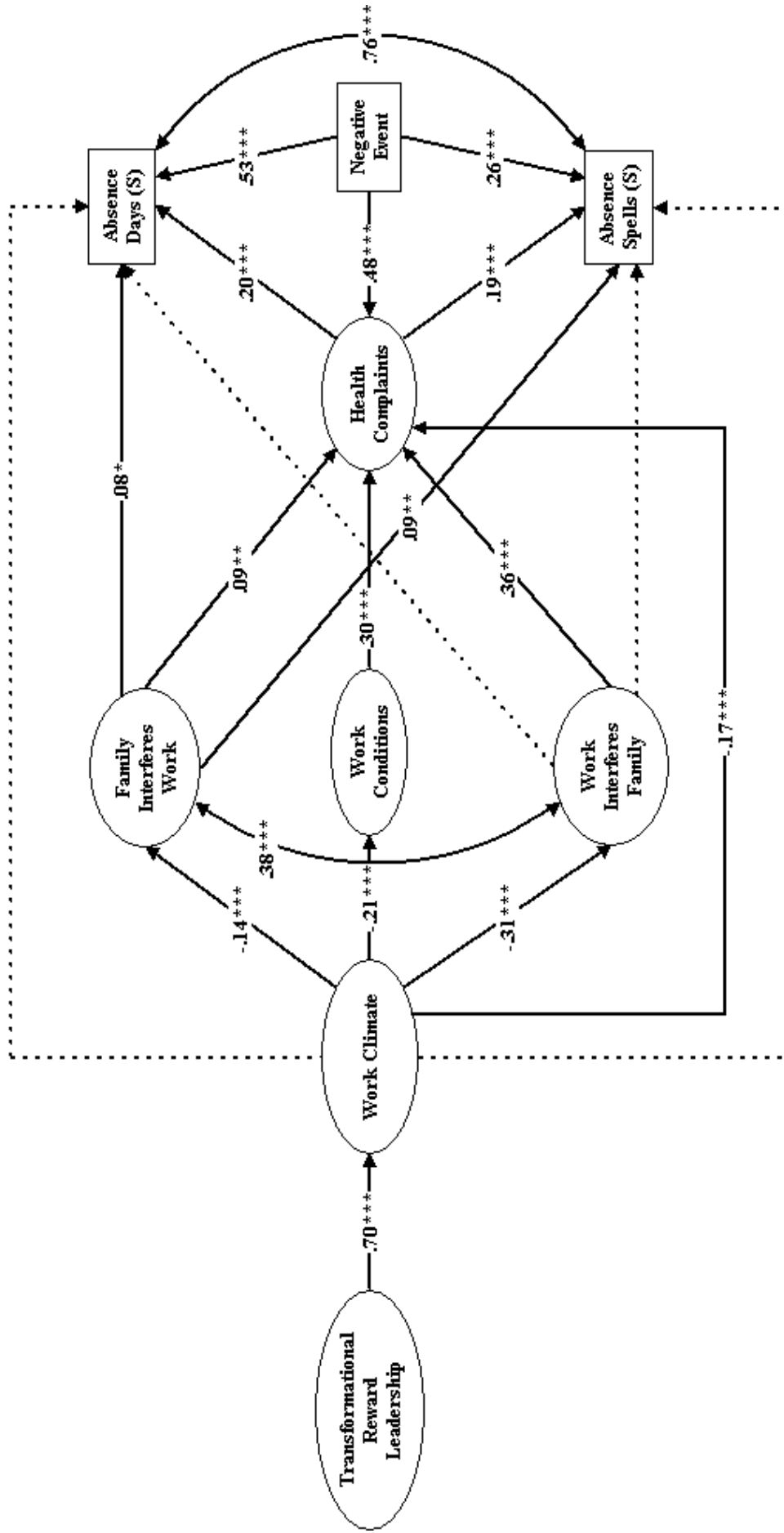
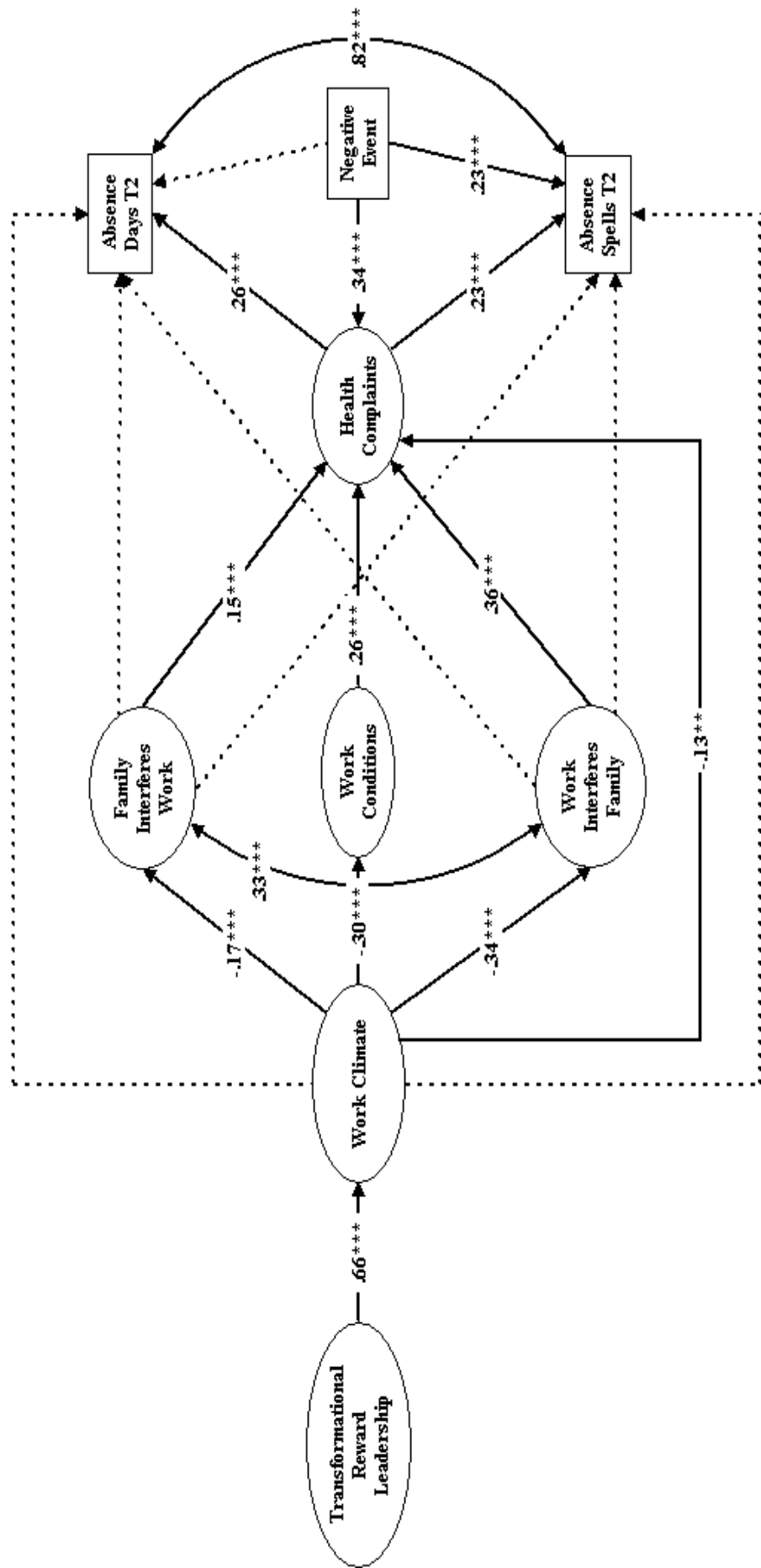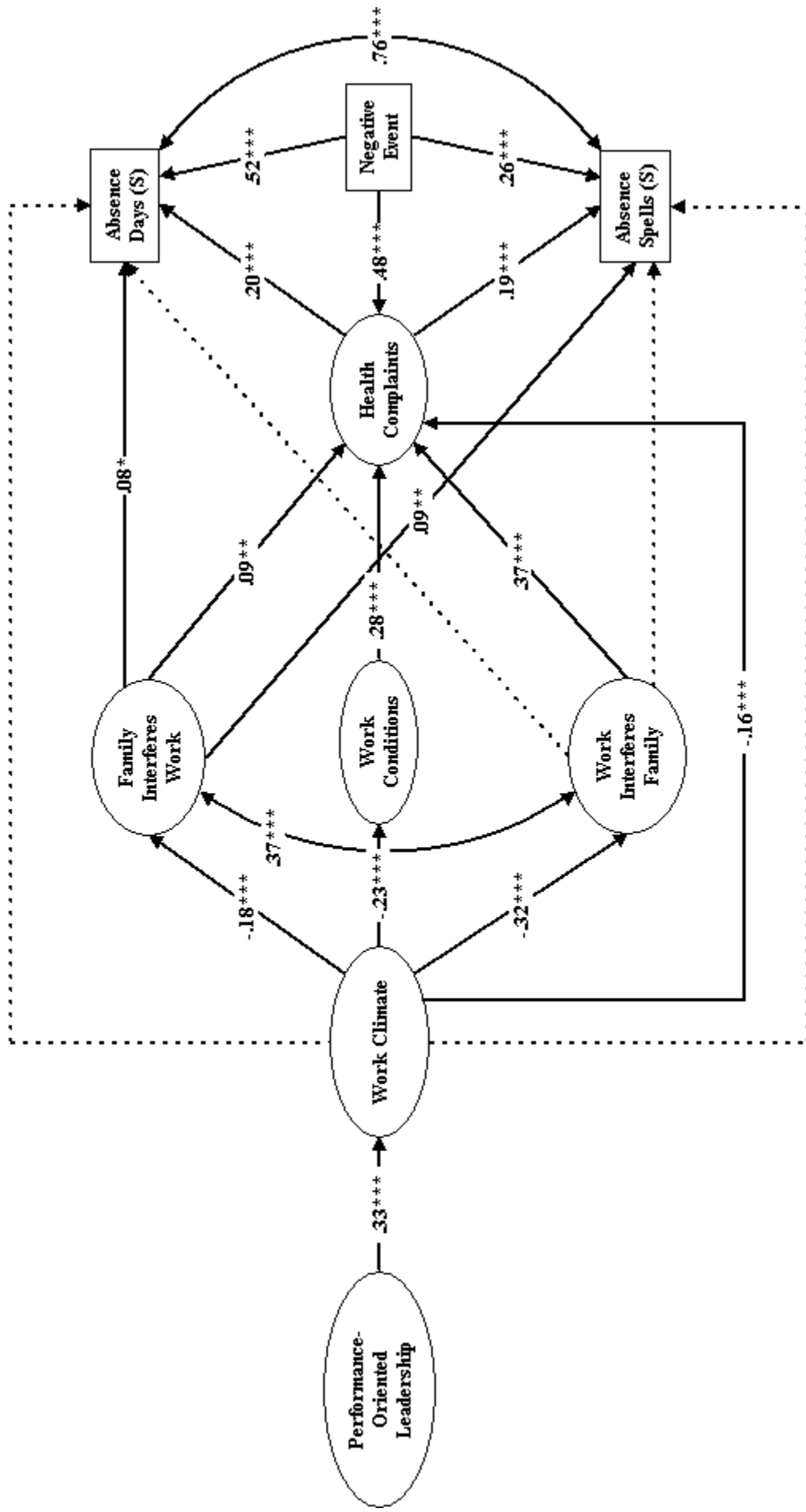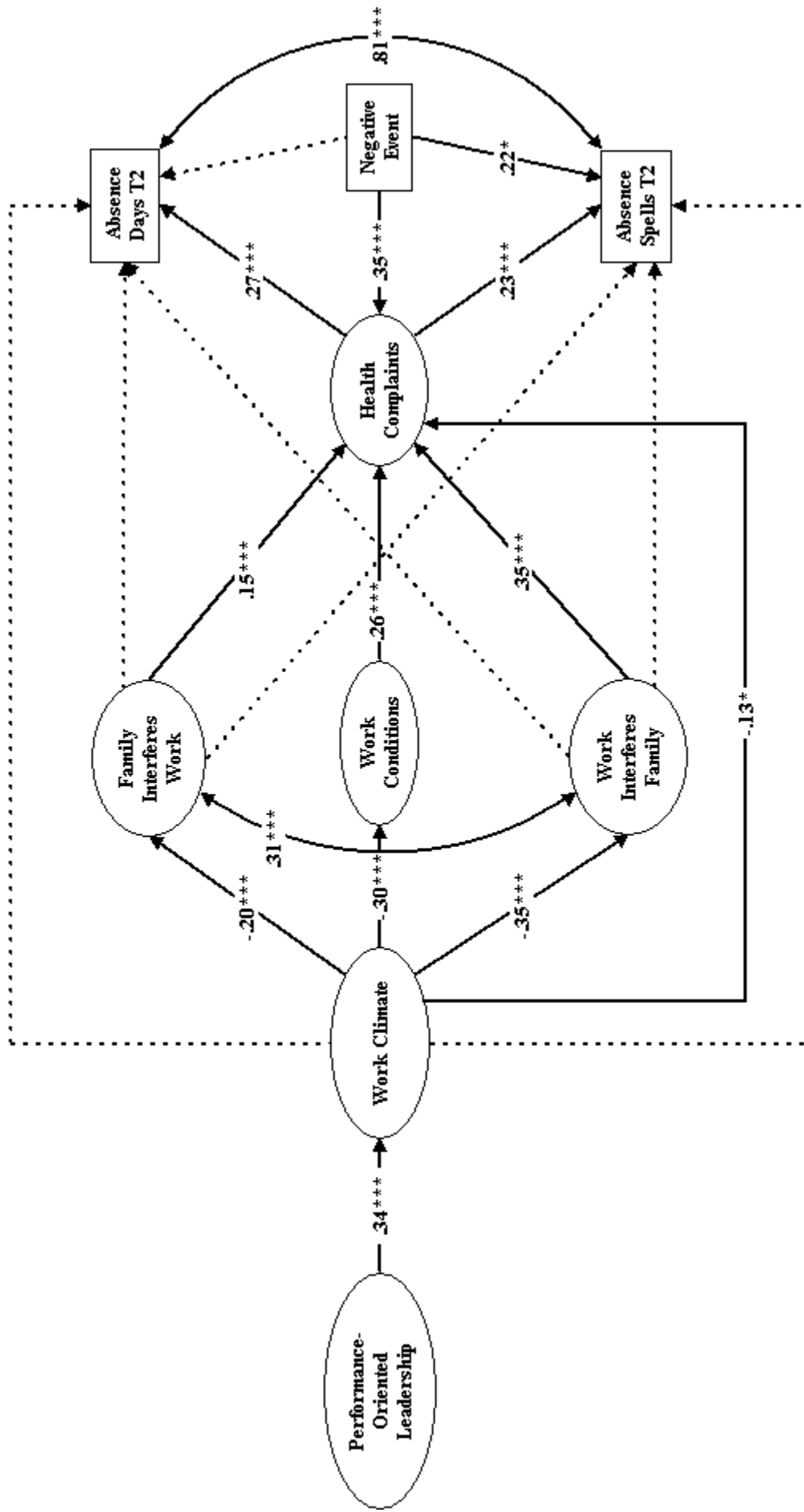**Figure 4.0** Structural equation models for transformational-reward leadership and self-reported absence at time 1

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Figure 4.1 Structural equation model for transformational-reward leadership and recorded absence at time 2

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Table 4.7 Fit statistics on structural equation models for performance-oriented leadership

Models	Sample size	χ^2 *(df)*	CFI	TLI	RMSEA
Performance-oriented leadership and self-reported absence at time 1 (Figure 4.2)	1264	854.587 (330)	0.956	0.949	0.035
Performance-oriented leadership and recorded absence at time 2 (Figure 4.3)	646	639.864 (330)	0.949	0.942	0.038

χ^2 *(df): chi-square (degrees of freedom); CFI: Comparative Fit Index; TLI: Tucker-Lewis Index; RMSEA: Root Mean Square Error of Approximation.*

Table 4.8 Amount of variance explained in absence outcomes by the whole model

	Estimate R^2	Standard Error (S.E)	Estimate of S.E	2-tailed Probability
Self-reported absence days at time 1 (figure 4.2)	0.112 (11.2%)	0.017	6.394	0.000
Self-reported absence spells at time 1 (figure 4.2)	0.064 (6.4%)	0.014	4.418	0.000
Recorded absence days at time 2 (figure 4.3)	0.059 (5.9%)	0.021	2.813	0.005
Recorded absence spells at time 2 (figure 4.3)	0.049 (4.9%)	0.019	2.565	0.010

Table 4.9 Standardized indirect effects from performance-oriented leadership to outcomes

	Estimate	Standard Error (S.E)	Estimate of S.E	2-tailed Probability
Health complaints (figure 4.2)	-0.117 (*)	0.016	-7.283	0.000
Health complaints (figure 4.3)	-0.123	0.023	-5.394	0.000
Self-reported absence days at time 1 (figure 4.2)	-0.035	0.011	-3.223	0.001
Self-reported absence spells at time 1 (figure 4.2)	-0.036	0.011	-3.233	0.001
Recorded absence days at time 2 (figure 4.3)	-0.011	0.016	-0.693	0.488
Recorded absence spells at time 2 (figure 4.3)	-0.015	0.016	-0.950	0.342

Note that the total effects are similar to the total indirect effects; therefore they are not reported in the table.

(*) This reads as one standard deviation in performance-oriented leadership is associated with a decrease of 0.117 standard deviations in health complaints.

Figure 4.2 Structural equation model for performance-oriented leadership and self-reported absence at time 1

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Figure 4.3 Structural equation model for performance-oriented leadership and recorded absence at time 2

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4.4.3 Absence cluster analyses

Research question 3 asked whether treating absence as a clustered variable (i.e. types of absence) sheds light on absence that treating it as a linear variable does not. Cluster analysis involves the classification of employees' responses into groups with differences within groups being small, and differences between groups being large (non-overlapping).
As indicated in table 4.10, four main clusters of absence were found using a total of 1409 cases. These were: No absence, infrequent, frequent and extended absence clusters. In effect, this is splitting the sample into four groups where the no absence group is what it says; the infrequent group is not necessarily very low on days (ranging from 1 to 40 days), but it is on spells (ranging from 1 to 2 spells); the frequent absence group is not necessarily very high on days, (ranging from 2 to 40 days) but it is on spells (ranging from 3 to 8 spells), and the extended absence group is very high on days (ranging from 11 to 250 days), but not comparatively high on spells (ranging from 1 to 11 spells). These mean clusters of days and spells are graphically represented in figures 4.4 and 4.5 respectively.

Table 4.10 Absence clusters based on self-reported absence

Type of absence clusters	Number of respondents per cluster	Days mean (Range min-max)	Spells mean (Range min-max)
No absence	528	0	0
Infrequent	638	5.2 (1 - 40)	1.4 (1 - 2)
Frequent	182	10.3 (2 - 40)	3.7 (3 - 8)
Extended	61	85.4 (11 - 250)	2.7 (1 -11)
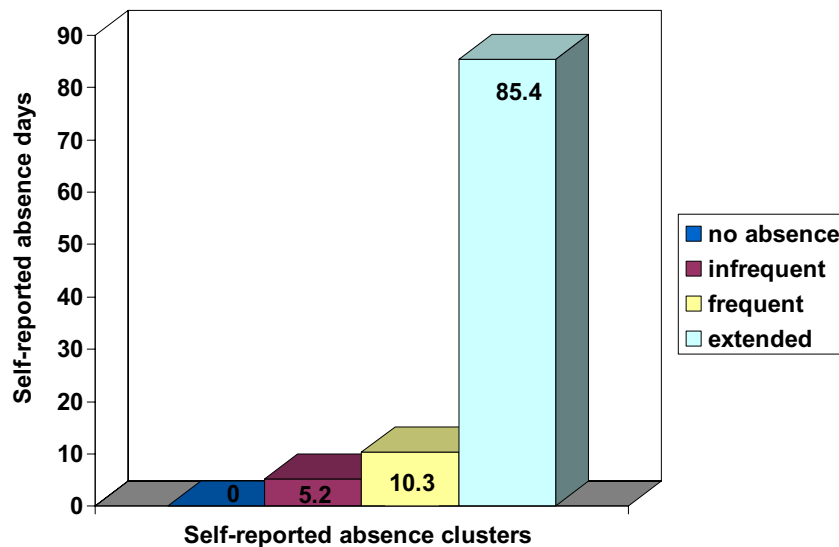
Figure 4.4 Mean of absence days by clusters
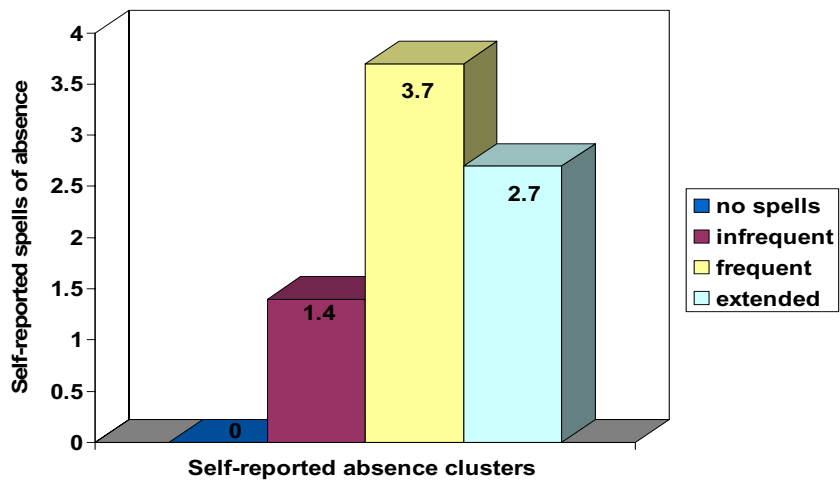
Figure 4.5 Mean of absence spells by clusters

To test hypothesis 4, a one-way analysis of variance was performed to assess the significance of the differences amongst the absence clusters in their link with work and individual factors. Table 4.11 reports the mean of each study variable by cluster. The F-value for means (reported in the last column of table) when followed by a probability value (**) indicates that there are significant differences between clusters. The clustering, which was done on the basis of time 1 self-reported absence, retained its validity at time 2, in that the "no absence" group remained the lowest on both days and spells, the extended absence group remained easily the highest on days, and the frequent absence group recorded the highest mean number of absences. Again, this provides evidence for a degree of continuity over time in patterns of absence (Figure 4.6).
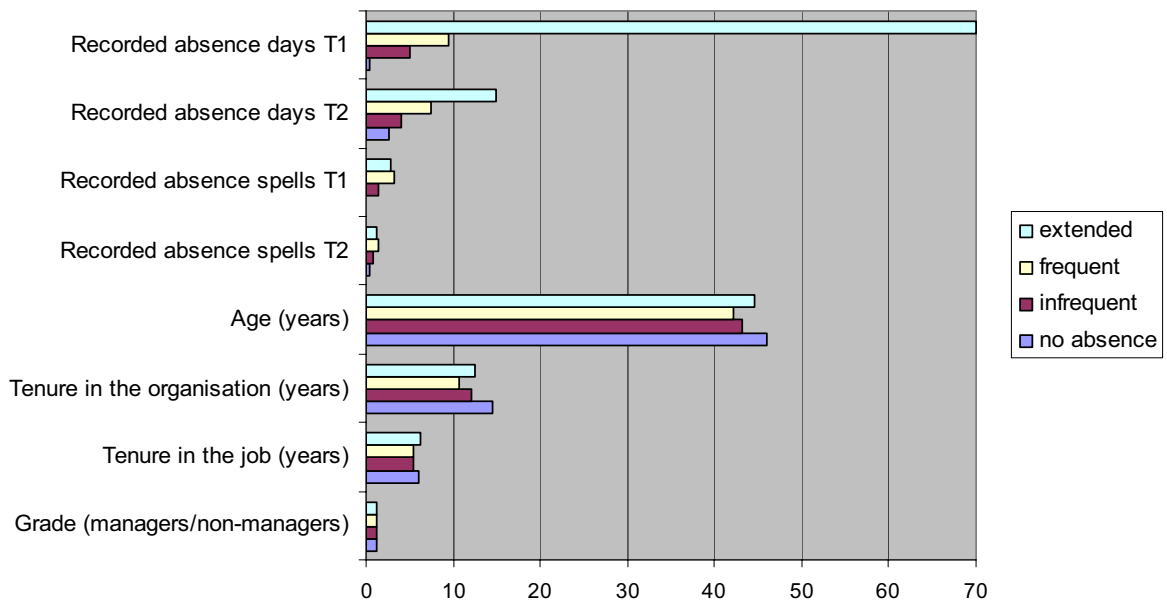
Figure 4.6 Differences across absence clusters on T1, T2 recorded absence and demographic variables

Interestingly, several of the variables proved capable of differentiating between the *no absence* and *infrequent* absence groups, which one might have expected to be pretty similar (indeed they are in many respects). Using Scheffe post-hoc tests, these two differed in age (no absence group was older), poor working conditions (no absence group better), health complaints (no absence group lower), and tenure in the organisation (no absence group higher).

The *infrequent* and *frequent* absence groups were perhaps less different than might be expected. Scheffe tests showed significant differences only for health complaints (frequent group higher), poor working conditions (frequent group worse), follower effects and empowerment (frequent group lower). All of these differences were significant at the 0.05 level (Figure 4.7).

Perhaps the most notable findings concern the *extended absence* group. Again, they are not different from the other groups in all respects, but the differences that do exist are striking. This is most clear for negative events, where half of the people in the extended absence group reported one, compared with one in eight in the no absence group, one in six in the infrequent absence group, and about one in four in the frequent absence group. This group differs in health complaints from the no absence and infrequent absence groups, but not from the frequent absence group. The same applies to both work-family conflict measures.

Table 4.11 Differences across absence clusters

	Mean				F^a
	No Absence	Infrequent Absence	Frequent Absence	Extended Absence	
Recorded absence days T1	0.36	5.07	9.47	69.92	477.8***
Recorded absence days T2	2.65	4.00	7.51	14.96	10.8***
Recorded absence spells T1	0.13	1.40	3.21	2.73	304.3***
Recorded absence spells T2	0.40	0.74	1.38	1.27	26.6***
Age (years)	46.00	43.15	42.18	44.53	9.3***
Tenure in the organisation (years)	14.48	12.07	10.77	12.56	8.7***
Tenure in the job (years)	6.01	5.42	5.44	6.25	1.1
Grade (managers/non-managers)†	1.19	1.13	1.13	1.13	3.0*
Transformational-reward leadership	3.44	3.38	3.22	3.21	4.3**
Performance-oriented leadership	3.58	3.55	3.50	3.60	0.8
Follower effects	3.64	3.60	3.42	3.51	4.7**
Empowerment	4.00	3.93	3.78	3.96	6.1***
Work-related social support	3.90	3.90	3.85	3.75	0.8
Commitment to safety	3.71	3.67	3.49	3.45	4.1**
Poor working conditions	2.50	2.70	3.00	2.75	15.0***
Family interferes with work	2.04	2.12	2.22	2.41	6.9***
Work interferes with family	2.65	2.75	2.87	3.13	5.8***
Major negative life event	0.12	0.16	0.23	0.50	21.0***
Health complaints	2.18	2.34	2.54	2.77	20.6***

a ANOVA F-ratio (df =3); *p<= .05; ** p <=.01 *** p <= .001.
† Percentage of managers in each category: No absence= 19.4%; Infrequent= 13.4%; Frequent= 13%.0; Extended= 13.0%.
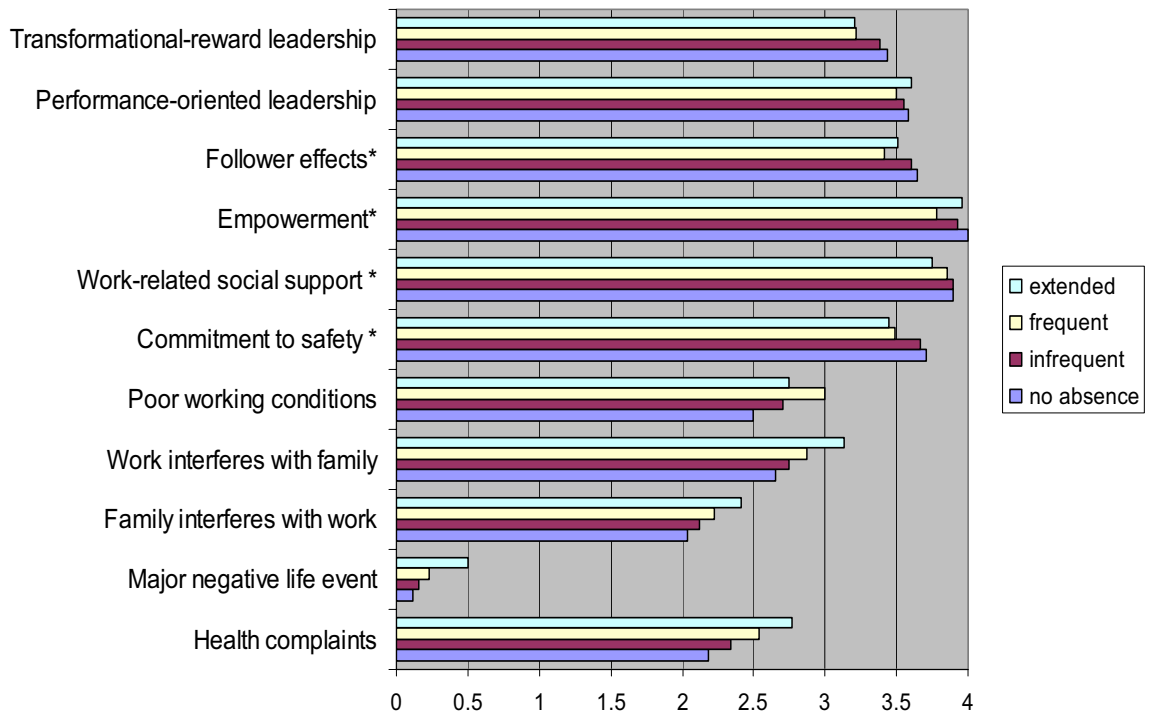
Figure 4.7 Differences across absence clusters on work and health factors
(* denote Work Climate variable)

5   DISCUSSION

The present study was conducted in order to primarily identify the leadership processes potentially influencing absence behaviours. Data were collected from 1498 people working in three local authorities and one police force and included a range of leadership behaviours, other work-related variables, self-rated health, self-reported and (for about half the respondents) organisationally recorded absence data over two time periods. The results provided partial support albeit weak for some of our hypotheses. Overall the findings suggest that transformational leadership has a small and distal impact on absence.

5.1   THE DISTAL EFFECTS OF TRANSFORMATIONAL LEADERSHIP ON ABSENTEEISM

Our conclusions were complicated somewhat by the fact that respondents' perceptions of their line managers' leadership did not quite fit the transformational-transactional distinction. Nevertheless, of the two broad leadership constructs that emerged, one (which we called transformational-reward leadership) did pick up most of the elements of transformational leadership as usually conceptualised. The other called performance-oriented leadership reflected a vigilant "failure will not be tolerated" orientation on the part of the leader, which was separable from transformational-reward leadership even though it tended to go along with it in the respondents' perceptions of their line managers' behaviour.

The influence of transformational leadership (including a dimension of reward) on absence through work climate, work-family conflict and health complaints suggest that transformational leadership had an indirect effect on absence. This is in line with recent work (e.g. Richardson & Vandenberg, 2005, Zhu et al., 2005) reporting that leadership was mediated by other factors to affect absence. However, much greater effect sizes were reported in these studies and a single factor was responsible for the mediating effects whereas in the present study a chain of mediators was needed to affect absence. Therefore contrary to previous research, we found that leadership had a distal impact on absence. It is important to outline that the comparison with these two studies is problematic because none of them controlled for the individual health effects on absence. The former analysed data at unit rather than individual level and both samples were drawn for the private sector.

When concurrently assessed in structural models with other contributors of absence none of the leadership types was a significant contributor of subsequent lower absence. To our knowledge, no reported absence studies, including the ones cited above, have tested transformational leadership on absence, longitudinally, so no comparison was possible with regard to our predictive model.

The present study illustrates that transformational leadership was quite strongly related to aspects of work climate defined as collective identity, empowerment, social support and management commitment to safety. This replicates previous research suggesting that transformational leadership can foster team spirit and help team members build collective identities (Shamir et al., 1993); empower individuals who display higher commitment to their organisation and create higher focus of health and safety practices (Barling et al., 2002). It was expected that if inspiring, charismatic leadership does not reduce absence directly, it might contribute indirectly to reducing it through influencing group norm processes as reflected in the work climate. However, there was no evidence of a direct influence of work climate on absence but on health complaints. Like leadership itself, the impact of work climate on absence was indirect through work-family conflict, physical work conditions and health complaints.

There are some possible contextual explanations for the findings of this study. The relatively low levels of absence reported might have prevented us from detecting significant contribution of leadership on absence at time 2. The correlations between leadership and absence were not very high and this increased the difficulty in establishing a definitive causal relation between the predictors and absence. During 2006 more than half of the respondents reported and had recorded less than 3 days and less than two spells of absence. In the first six months of 2007, more than half of the respondents recorded no absence at all. The decrease in mean absence days at follow up is highly significant with 4.35 at time 2 for recorded absence days against 6.75 at time 1 (and 7.65 for self-reported absence). The study required participants to give researchers their consent to use their absence records and this procedure might have deterred employees with higher absence levels to either participating in the study or giving their permission to use their absence data. Hardy Woods & Wall (2003) found that participants who gave their permission to access their absence records reported significantly lower absence during the preceding months than those refusing permission. Given the low mean absence days at time 2, the time period of six months follow up absence chosen as a cut-off might not have been long enough to detect significant impact of leadership on future reduced absence levels.

Furthermore, the weak influence of transformational type of leadership on outcomes might be due to its relevance in the organisational context it has been tested. The impact of transformational leadership behaviours might be somewhat limited by the fairly rule-bound nature of both local authorities and police forces. This may limit the scope for line managers to, for example, create a vision and define organisational goals, some of the major dimensions of transformational leadership. Some commentators have outlined this restraint role of managers in public sector stating that "leadership of public sector organisations in England appears less about transforming circumstances (…) and more about embedding change that others, policy-makers, have initiated (Currie & Lockett, 2007). Others (e.g. Alimo-Metcalfe and Alban-Metcalfe, 2001, 2005) arguing that existing transformational instruments are too culturally-biased, have introduced in their Transformational Leadership Questionnaire, new cultural dimensions such as the "genuine concern for others' well being and development" believed to reflect more appropriately UK-based organisational contexts.

Perhaps, a noteworthy criticism is that the Transformational Leadership Behaviour Inventory from Podsakoff et al. (1990) used in this study, is not behaviour-oriented enough. The same criticism was addressed to the Multifactor Leadership Questionnaire of Bass and colleagues by Yukl (1989) who argues that some of the scales appear to measure intervening outcomes rather than behaviours. The MLQ asks respondents if they have greater enthusiasm, effort and new ways of thinking as a result of something the leader did, but specific, observable behaviour causing these outcomes is not identified. This issue may need to be considered in future research.

5.2   OTHER CONTRIBUTORS OF ABSENCE

Given that in the structural models, the direct links between work factors and absence spells were not significant, and only family interfering with work was, this indicates that much absence was genuinely caused by ill-health and family commitments and not necessarily by voluntary withdrawal behaviours.

The findings also illustrate that variables other than leadership were stronger predictors of absence. It was the occurrence of negative life events and health complaints which were among the strongest direct predictors of absence. Prior absence was also an important causal factor in subsequent absence as shown in regression analyses. Even so, the majority of the variance in absence went unexplained. Overall, the predictive structural model explained 11% of variance in recorded absence outcomes and the cross-sectional model

17% in the self-reported absence. The multivariate regression analyses explained between 11% to 12% of variance in self reported absence and almost up to 20% for time 2 recorded absence spells when time 1 absence spells are included in the analysis (accounting for 7%). Leadership and job-related factors accounted for a small proportion of this.

Other research also found significant but small effects size of predictors on absence. Hardy et al. (2003) using a sample of 323 employees from four National Health Service Trusts found small effects size of distress on absence. However, the authors conclude that if one translates these observed effects into days absent, employees who have high psychological distress scores (the highest 25% of the sample) were found to take twice as many days of absence than the remainder of the sample, then it is worthwhile focusing on the issue of distress to reduce absence. Similarly, Kimiwaki et al. (1997) reported between 6 and 7% of the variance in absence explained by work characteristics and conclude that this relatively low proportion is not surprising given the multi-causality of sickness absence and the control for a wide variety of potential confounders (Nicholson, 1993).

In common with a lot of prior research, we have perhaps missed some key predictors, or absence is simply too subject to unpredictable factors to explain very satisfactorily. Most of the variables assessed in this research refer to how things are on the whole. This even applies to the health complaints measure. The only "one-off" type measure was negative life event. Perhaps a lot of absence is due to momentary or very short-term factors such as whether I have a headache today (as opposed to a lot of the time), and whether my line manager encouraged me yesterday, (as opposed to whether (s)he is usually encouraging). Ill-health complaints might be job-related. The links between health and work climate and work-family conflict were strong enough to suggest this, and leadership had significant indirect links with health.

5.3   STUDY LIMITATIONS

External validity

Although our sample reflects some of the patterns of absence generally found in the general population (for example junior grades and females reporting slightly more absence than others), the sample used might restrict the generalisability of the results to the public sector organisations as a whole as it is drawn from four organisations only. Surveying diverse populations will help to generalise the findings across work contexts. The emergence in this study of a "performance orientation" factor in perceptions of leadership may reflect cultural change towards performance management in police forces and local authorities – something which could be taken for granted and therefore not so salient in some other sectors.

Common method variance

Although the present study measured the independent variables (perceptions of leadership and other factors) with self-reports and the dependent variables (absence days and spells) with recorded data in addition to self-reports, it might still be subject to the common method variance bias. According to Garson (2006), common method variance is "a type of spurious internal consistency which occurs when the apparent correlation among indicators or even constructs is due to their common source..." The correlation may be due to the propensity of the subject to answer similarly to multiple items even when there is no true correlation of constructs". In addition to common source, method variance can be attributable to response format similarity and social desirability (Spector, 1987). Even though variables on leadership were highly correlated (which is often reported in the leadership literature), other work factors were not. For example, physical work conditions

and work-family conflict measures showed different patterns of correlations with other work factors and absence.

Causality

The determinants of absence were tested once, and the absence outcomes were taken before and after the leadership measures. This design helped to clarify the causal direction of the relationships between leadership predictors and absence outcomes to some extent. A more robust design however is needed. Having more than one prospective wave of absence outcomes with time lags of varying length is recommended to ascertain the true and optimal causal time period for a given relationship (Kinnunen, Geurts & Mauno, 2004). Also, longitudinal measurements of both the independent and the dependent variables over time would provide a better understanding of these issues and allow to test for reverse causality. Although difficult and costly to implement on a large scale, through such designs, it could then be observed whether changes in leadership and other work factors may be reflected in the changes of absence rates.

5.4   IMPLICATIONS OF THE RESEARCH

Despite the efforts that managers can make in preventing absence behaviours, Furnham (2005) argues that they still have a limited role to play to tackle this issue as it is a complex phenomenon. That is not to say, however, that leadership does not matter. Past research shows clear links between leadership and satisfaction or performance, and in our study transformational-reward leadership and to a lesser extent performance-oriented leadership made for an invigorating and supportive work environment in the eyes of respondents. It is simply that the links from leadership to perceptions of work climate and from these perceptions to absence, were not strong enough to suggest transformational leadership behaviours to be the key focus for absence management programmes. Increasing the incidence of transformational-reward leadership is likely to have some small positive effect on absence, but to a limited extent. In future guidance to employers on managing absence, it would be beneficial to include aspects of work-life balance that is generally missing in current absence assessment tools.

The findings that the positive work climate fostered by the transformational leadership behaviours has beneficial effects on employees' health might inform current national health and safety policy research which directs attention to line manager behaviours change[1] in an attempt to reduce stress and other negative job-related outcomes.

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[1] *UK Management Standards for Work-Related Stress .http://www.hse.gov.uk/stress/standards/*

6   CONCLUSIONS

The present study has provided some insight on the processes by which transformational-reward and performance-oriented leadership can potentially influence absence behaviours. Overall the findings suggest that both types of leadership have, at best, a small and indirect impact on absence when assessed simultaneously with other contributors of absence, and no significant influence on subsequent absence at six months follow up. Absence is notoriously difficult to explain and these results showing a relatively low proportion of variance in absence are not out of line with other research.

Limitations of the present study have been acknowledged such as the small number of organisations surveyed and the perhaps too short time period of six months follow up absence which might be responsible for the lack of significant predictive effects of leadership on future absence. Surveying diverse populations with a stronger prospective study design will help to generalise the findings across work contexts within the public sector.

On the whole, these findings may indicate that transformational leadership is not a powerful antidote to withdrawal behaviours at least in the context it has been tested, but further research is needed to draw firmer conclusions. There is evidence nevertheless, that transformational leadership is able to foster an encouraging work climate which then decreases the number of psychosomatic symptoms reported by employees. This warrants further consideration of the set of transformational leadership behaviours responsible for these beneficial effects.

To the extent that the present findings did pick up on the salient causes of absence, they signal that in order to reduce absence, attention could be paid primarily to:
- Sympathetic and vigorous attempts to help people manage the impact of negative life events.
- Further initiatives to help make work commitments compatible with family commitments.
- The development and maintenance of physically comfortable work environments.
- The maintenance of a healthy work climate leading to reduced health complaints and stress.

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8 APPENDICES

Appendix 1: Survey questionnaire

Section 1 : Postholder Details

1)   How long have you worked for XXX?   years .....months

2)   How long have you worked in your current post?   ..…years .....months

3)   How long have you worked for your current manager

4)   How old are you?   ..…years .....months

5)   Are you: □ Male   □ Female

6)   What band/grade are you?

7a)   What working patterns do you have? (You might need to tick *more* than one box)

Compressed working hours	□
Part time working (under 37 hours)	□
Job sharing	□
Part year working	□
Flexible working hours	□
Standard working hours	□

7b)   On average how many days per week do you work at home? (Please only tick ONE box)

0 days	□
1 day or less	□
2 days	□
More than 2 days	□

8)   As far as you can recall, how many days have you had away from work due to sickness absence[2] in the last 12 months? **…………..days**

9)   As far as you can recall, how many separate times (regardless of duration) have you been off sick in the last 12 months? **………...times**

10)   Has any major event happened to you in the last 12 months which has had a bad effect on you, for example, death of a close relative, redundancy of partner?
          □ **Yes**   □ **No**

11)   In which Division or Department do you work in?

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[2] "sickness absence" refers to the period you have been away from work due to illness or injury

Section 2: Leadership (Please only tick ONE box for each question). Please comment on your line manager. If you have moved job in the last 12 months or if your line manager has changed, comment on the line manager you have been with for the longest period of time during the last 12 months.

	My Line Manager…	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	Is always seeking new opportunities for our team	□	□	□	□	□
2	Inspires others with his/her plans for the future	□	□	□	□	□
3	Is able to get others committed to his/her plans	□	□	□	□	□
4	Leads by 'doing' rather than simply by 'telling'	□	□	□	□	□
5	Provides a good model for me to follow	□	□	□	□	□
6	Leads by example	□	□	□	□	□
7	Will not settle for second best	□	□	□	□	□
8	Gets our team to work together for the same goal	□	□	□	□	□
9	Encourages collaboration among work groups	□	□	□	□	□
10	Shows us that he/she expects a lot from us	□	□	□	□	□
11	Lets me know about it when I perform poorly	□	□	□	□	□
12	Insists on only the best performance	□	□	□	□	□
13	Commends me when I do a better than average job	□	□	□	□	□
14	Encourages employees to be 'team players'	□	□	□	□	□
15	Shows respect for my personal feelings	□	□	□	□	□
16	Gives me special recognition when my work is very good	□	□	□	□	□

	My Line Manager…	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
17	Asks questions that prompt me to think	□	□	□	□	□
18	Has stimulated me to rethink the way I do things	□	□	□	□	□
19	Deals with me without considering my personal feelings	□	□	□	□	□
20	Always gives me positive feedback when I perform well	□	□	□	□	□
21	Behaves in a manner thoughtful of my personal needs	□	□	□	□	□
22	Frequently does not acknowledge my good performance	□	□	□	□	□
23	Personally compliments me when I do outstanding work	□	□	□	□	□
24	Would indicate his/ her disapproval if I performed at a low level	□	□	□	□	□
25	Challenges me to think about old problems in new ways	□	□	□	□	□
26	Points out to me when my productivity is not up to par	□	□	□	□	□

27) How long have you been working with your line manager you just commented on?

…………years………months

Section 3: Perceptions of your Section's functioning (Please only tick ONE box for each question).

	*Section: For Non managers, please comment about the section you are in. For Managers, please comment not on the section you manage personally but on the section/group you belong to as a member (i.e. the section your line manager manages).	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
28	The section* I belong to nearly always achieves its targets	□	□	□	□	□
29	The section I belong to is high performing	□	□	□	□	□
30	Members of our section generally share the same values about our task and purpose	□	□	□	□	□
31	Most of our section's tasks are accomplished quickly and efficiently	□	□	□	□	□
32	Management acts decisively when a safety concern is raised	□	□	□	□	□
33	Members of the section I belong to, generally agree about how our work should be done	□	□	□	□	□
34	In the section I belong to, any conflict is out in the open and constructively handled	□	□	□	□	□
35	In my workplace managers and supervisors show an interest in my safety and health	□	□	□	□	□
36	In the section I belong to, we see ourselves as a cohesive team	□	□	□	□	□
37	Management turn a blind eye to safety issues	□	□	□	□	□

Section 4: Perception of Empowerment & Support (Please only tick ONE box for each question).

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
38	I have the skills required to do my job well	□	□	□	□	□
39	I can influence decisions taken in my section	□	□	□	□	□
40	I can handle the challenges I face at work	□	□	□	□	□

How often are the following supportive regarding difficulties and demands you face at work from…? (Please tick only ONE box for each question)

		Never	Rarely	Some-times	Often	All the time	Not Appli-cable
41	Your day-to-day work colleagues	□	□	□	□	□	□
42	Your line manager	□	□	□	□	□	□
43	Your spouse/partner	□	□	□	□	□	□
44	Other family members	□	□	□	□	□	□
45	Friends outside work	□	□	□	□	□	□

Section 5: Perception of Work-life balance (Please only tick ONE box for each question)

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
46	When I get home from my job, I do not have the energy to do work around the house	☐	☐	☐	☐	☐
47	Even if I'm feeling unwell, I would feel guilty if I didn't turn up for work	☐	☐	☐	☐	☐
48	My job keeps me from spending enough time with my family and/or friends	☐	☐	☐	☐	☐
49	I spend so much time working that I am unable to get much done at home	☐	☐	☐	☐	☐
50	I believe I owe it to my employer to contribute my skills and experience at every possible opportunity	☐	☐	☐	☐	☐
51	Worrying about what's going on at home makes it difficult for me to do my job well	☐	☐	☐	☐	☐
52	I'm so tired from all the things I have to do at home that it's hard to have the energy for my job	☐	☐	☐	☐	☐
53	The demands of my family life make it hard for me to do my job well	☐	☐	☐	☐	☐
54	Even if circumstances at home were difficult, I would still feel I ought to get to work if at all possible	☐	☐	☐	☐	☐
55	I am very personally involved in leisure and/or community activities outside work	☐	☐	☐	☐	☐
56	Most of my interests are centred on my leisure and/or community activities outside work	☐	☐	☐	☐	☐
57	The most important things that happen to me involve my leisure and/or community activities outside work	☐	☐	☐	☐	☐

Section 6: Perception of the Physical Working Conditions (Please only tick ONE box for each question)

	At work are you bothered much by…?	Never	Rarely	Sometimes	Often	All the time
58	Temperature changes?	□	□	□	□	□
59	Dry air?	□	□	□	□	□
60	Noise?	□	□	□	□	□
61	Lighting conditions?	□	□	□	□	□

Section 7: Perception of your General Well Being (Please only tick ONE box for each question)

	How often in the last 12 months, have you…	Never	Rarely	Sometimes	Often	All the time
62	Had back pain?	□	□	□	□	□
63	Had tension headache?	□	□	□	□	□
64	Had sleeping problems?	□	□	□	□	□
65	Had chronic fatigue?	□	□	□	□	□
66	Had heart palpitations?	□	□	□	□	□
67	Suffered from stress?	□	□	□	□	□

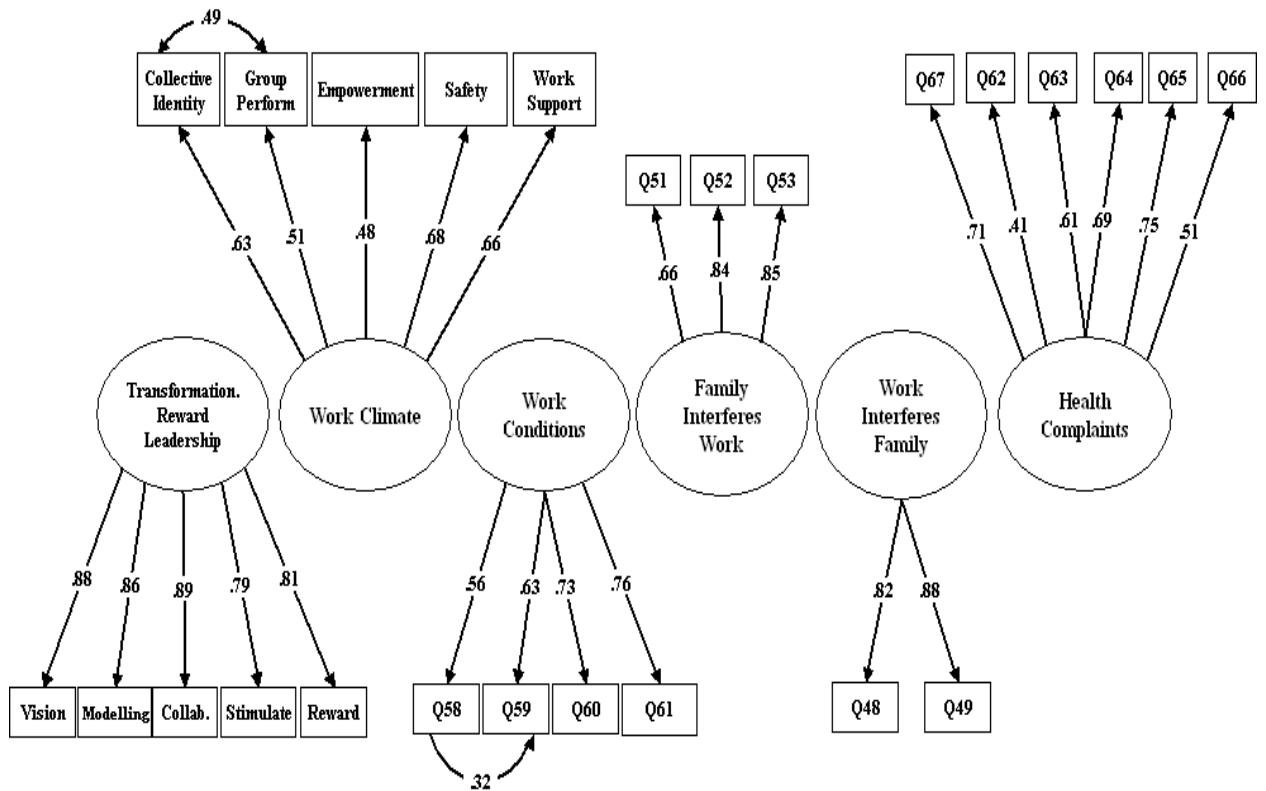## Appendix 2: Factor analyses - Measurement models

Figure A2.1 Measurement model showing indicators of latent variables for Transformational-reward oriented leadership

Notes to model:
1. *All coefficients shown on diagram are significant at p < .001.*
2. *All latent variables were allowed to covary. Covariances are omitted from the model diagram for clarity, and are reported in Table A2.1.*
3. *The summated scales used as indicators in the model are defined in Table A2.3.*
4. *Fit Indices: No. observations: 1360, Chi-Sq 735.9, df = 258, p <.001. CFI = .97; TLI = .96, RMSEA = .037.*

Table A2.1 Correlations between latent variables (not shown on diagram)

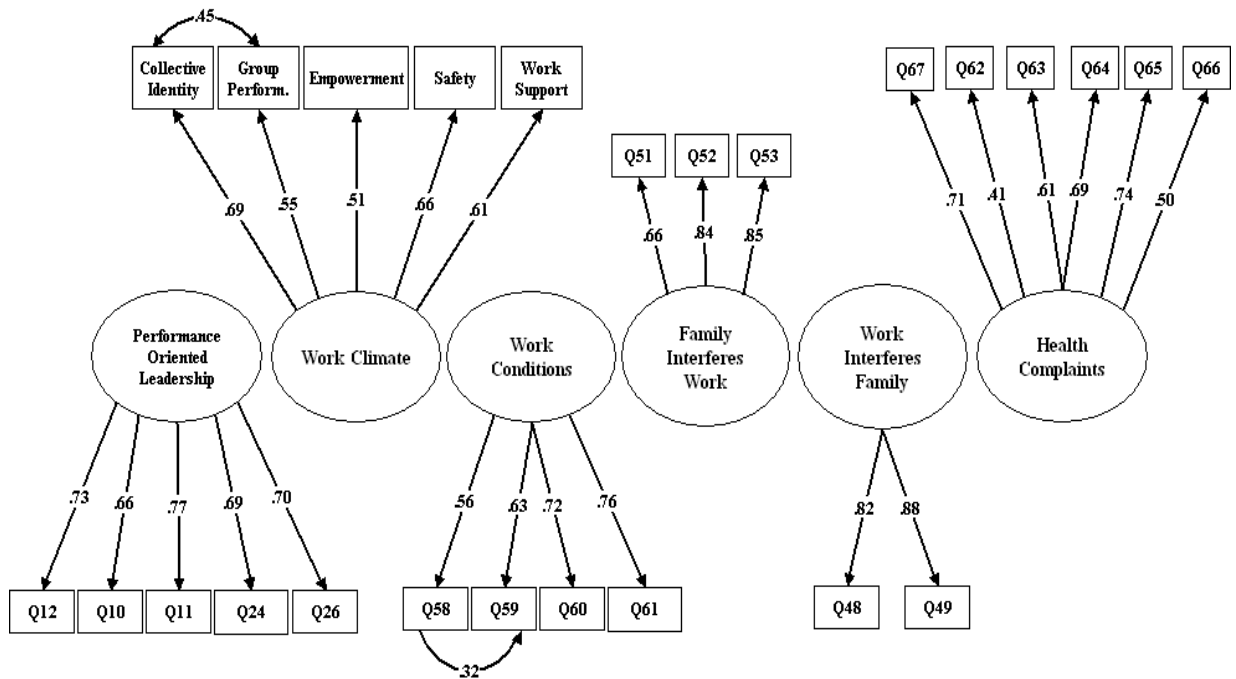|		1	2	3	4	5
1	**Transformational-reward leadership**	-				
2	**Work climate**	.71***	-			
3	**Physical work conditions**	-.09**	-.20***	-		
4	**Family interferes with work**	-.01	-.19***	.15***	-	
5	**Work interferes with family**	-.14***	-.33***	.20***	.39***	-
6	**Health complaints**	-.23***	-.38***	.39***	.31***	.49***

Figure A2.2 Measurement model showing indicators of latent variables for performance- oriented leadership

Notes to model:

1. *All coefficients shown on diagram are significant at p < .001.*
2. *All latent variables were allowed to covary. Covariances are omitted from the model diagram for clarity, and are reported in Table A2.2.*
3. *The summated scales used as indicators in the model are defined in Table A2.3.*
4. *Fit Indices: No. observations: 1343, Chi-Sq 714.4, df = 258, p <.001. CFI = .96; TLI = .95, RMSEA = .036.*

Table A2.2 Correlations between latent variables (not shown on diagram)

		1	2	3	4	5
1	**Performance-oriented leadership**	-				
2	**Work climate**	.37***	-			
3	**Physical work conditions**	-.05	-.20***	-		
4	**Family interferes with work**	.01	-.19***	.16***	-	
5	**Work interferes with family**	.04	-.33***	.20***	.39***	-
6	**Health complaints**	-.05	-.38***	.39***	.32***	.49***

Table A2.3 Summated scales used as indicators

Scale	*Items*
Leadership: Vision	Q1, Q2, Q3
Leadership: Model	Q4, Q5, Q6
Leadership: Team/Collaboration	Q8, Q9, Q14
Leadership: Stimulation	Q17, Q18, Q25
Leadership: Reward	Q13, Q16, Q20, Q22, Q23
Climate: Empowerment	Q38, Q39, Q40
Climate: Manager commitment to safety	Q32, Q35, Q37
Climate: Work-related social support	Q41, Q42
Climate: Group performance	Q28, Q29, Q31
Climate: Collective identity	Q30, Q33, Q34, Q36

The effects of transformational leadership on employees' absenteeism in four UK public sector organisations

Past research indicates that a supportive leadership style leads to lower levels of employee absence. However, few studies have looked at other aspects of leadership that could have positive effects on absence such as transformational leadership, despite the fact that it has been the most influential theories of leader behaviour in recent years. A transformational leader is not only supportive of employees' needs but is also able to set a personal example, to stimulate, develop and inspire employees. This style of leadership has consistently been found to relate to a wide range of positive work outcomes including job satisfaction, commitment and work performance. Only a handful of studies have shown that transformational leadership has beneficial effects in terms of reducing employee absence, but these studies present a number of limitations. They were predominantly conducted in the private sector, some considered senior management only and none controlled for the health effects associated with absenteeism.

Given these shortcomings, the present study sought to fill this gap in research. By surveying employees of both managerial and non-managerial grades, it explored to what extent transformational leadership can affect employee absence in a sample of UK public sector organisations.

Absence from work due to ill-health is currently costing the British economy £17 billion per year (EEF, 2005). Given that 30 million of working days lost in Great Britain are due to workrelated ill-health and 6 million due to workplace injury (HSE, 2007), it is important to shed light on the processes by which rates of employee absence can be reduced. Absence is a complex phenomenon likely to have multiple causes as determined by previous research (Johns, 1997, 2001). Work characteristics other than the quality of leadership were therefore taken into account in this study.

The objectives of the study were:

- To identify to what extent transformational leadership is associated with employees' absenteeism in a sample of UK public sector organisations.
- To explore how transformational leadership works alongside other factors known for their positive or negative influence on absence (eg work climate, work-family conflict, and health).

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