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**THE IMPACT OF LEADERSHIP
ON EMPLOYEES' ATTITUDES TOWARDS THEIR PAY**

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Dissertation

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ABSTRACT

The present work encompasses a comprehensive model of the relationship between leadership and psychological contracts as determinants of employee attitudes and focuses on employees' pay satisfaction. Each of the three studies presented in this dissertation contributes to the understanding how leadership and psychological contracts serve as antecedents of employees' pay satisfaction. The first study focuses on the effect of transformational leadership on pay and job satisfaction, and commitment. In addition, this study scrutinizes whether the impact of leadership on pay and job satisfaction was transmitted through differential forms of psychological contracts. The results from nine charitable institutions ($N = 421$) indicated that the relationship between transformational leadership and job satisfaction was mediated by relational psychological contracts, while transactional psychological contracts transmitted the effect on pay satisfaction. On the basis of the results obtained, a second study was conducted to closely examine pay satisfaction as a multidimensional construct. In line with recent research the facets structure/administration, level, raises, benefits, and, complying with the trend of performance-based pay, bonus satisfaction were distinguished. Further extending the first study, transformational leadership was contrasted with transactional leadership to analyze whether the two leadership behaviors differentially affect the pay satisfaction facets. Again, psychological contracts were regarded as key mechanisms mediating these relationships. Results from 216 employees of eight institutions showed that transformational leadership had a particularly strong impact on structure and bonus satisfaction, which was transmitted by relational psychological contracts, while transactional leadership exhibited, through transactional contracts, equally strong relationships to the pay facets. Within the framework of the research on leadership and pay satisfaction a third study finally investigated the causality of the proposed effects. For a sample of 169 employees of eight institutions, which implemented performance-based pay systems, longitudinal analyses showed that transformational leadership influenced employees' pay and bonus satisfaction through transactional contracts, while the relationships between transformational leadership and job satisfaction as well as commitment were mediated by relational contracts. Overall, the results of the studies suggest that the perceptual variables leadership and psychological contracts serve as important antecedents of pay satisfaction. Finally, theoretical and practical implications are discussed.

INTRODUCTION

AIMS AND RESEARCH QUESTIONS

Compensation represents one of the most important and influential organizational exchange relationships. For employees, pay plays a vital role in their economic and social well-being (Milkovich & Newman, 2008), which becomes evident in the link between employees' pay satisfaction and commitment, turnover, absenteeism, and performance (Currall, Towler, Judge & Kohn, 2005; Tekleab, Bartol & Liu, 2005; Vandenberghe & Tremblay, 2008; Weiner, 1980; Williams, McDaniel & Nguyen, 2006). As research shows that pay satisfaction affects employees' attitudes, behavior, and consequently organizational effectiveness (Currall et al., 2005; Schuster & Zingheim, 1992; Williams, McDaniel & Ford, 2007), organizations devote substantial resources to provide satisfactory compensation and select from a growing variety of compensation systems to achieve the desired consequences. Hence, the basic question of interest is how employees' pay satisfaction can be enhanced, which is why research on pay satisfaction focused to a large part on the antecedents of pay satisfaction. To put it in a nutshell, empirical evidence shows that actual pay is only weakly related to pay satisfaction (Currall et al., 2005; Morgeson, Campion & Maertz, 2001; Orpen & Bonnici, 1990; Tekleab et al., 2005), which fortunately complies with the organizations' finite possibilities to consistently increase wages. Recent research on pay satisfaction agrees on focusing on perceptual variables as antecedents, but pursues different paths to identify significant determinants. One line of research places primary emphasis on distributive and procedural justice as antecedents (Folger & Konovsky, 1989; McFarlin & Sweeney, 1992; Tekleab et al., 2005; Vandenberghe & Tremblay, 2008). This research indicates that not only the perceived ratio of contributions and outcomes, but also the perceived accuracy, impartiality and consistency of pay decisions are important factors for employees' judgement of their pay. Yet, the strong theoretical and empirical overlap between the concepts of pay satisfaction and organizational justice rather emphasizes the importance of the communication of pay issues, than the identification of justice as a decisive determinant of pay satisfaction.

An emerging parallel line of research builds on the assumption that knowledge and understanding of the pay system are crucial for the impact of an organization's compensation system on employees' attitudes towards their pay (Brown & Huber, 1992; Dyer & Theriault, 1976; Salimäki, Hakonen & Heneman, 2009). One conclusion that can be drawn on the basis of these studies is the relevance of providing meaning to the pay system and enhancing the transparency of distribution processes in order to positively influence employee pay satisfac-

tion. This also is an area of potential practical implications for organizations. Yet, the question of how the meaning of the pay system is provided to the employee has not been fully investigated. A sizeable number of studies suggest that leaders assume a crucial role in making this knowledge available (Brown & Huber; Judge, 1993; Salimäki et al., 2009). To date, however, the actual impact of a leader's behavior on employees' pay satisfaction has not been examined. Transformational leadership as first defined by Bass (1985) is explicitly aimed at providing meaning, communicating an inspiring goal, and giving employees the feeling that their needs are respected. Building on this, the present work firstly contributes in exploring the link between transformational leadership and employees' pay satisfaction. Second, as recent work on transformational leadership calls for research on potential mediators, the underlying mechanism of psychological contract fulfillment is closely examined. This concept is chosen as leaders are referred to as the organizations' key agents through which employees form their perceptions of the organization's obligations and their fulfillment (Liden, Bauer & Erdogan, 2005). Yet, while research on psychological contracts boasts a long tradition, the relationship between leadership and employees' perception of the organization's fulfillment of obligations requires further scrutiny, which is aimed to be provided in the present work.

STRUCTURE OF THE PAPER

The present work is divided into six chapters. Following the introduction, chapter 2 covers the theoretical and conceptual fundamentals of pay satisfaction, whereby the major research fields on antecedents will be exemplified, and gaps identified. To portray the conceptual framework of this work, theories of leadership and psychological contracts will be introduced and linked to pay satisfaction. Chapter 3 encompasses the first study, which focuses on the impact of transformational leadership on employee attitudes and examines the mechanisms mediating these relationships. Chapter 4 extends the first study on the analysis of leadership as it contrasts transformational with transactional leadership, regards pay satisfaction as a multidimensional construct, and is embedded in the context of performance-based pay systems. Chapter 5 finally examines the causality of the effects of transformational leadership on employee attitudes through psychological contracts against the background of the implementation of a pay-for-performance system. The dissertation closes with a summarized discussion of the results obtained in the three studies. The contribution of the present work for research in the field of work and industrial psychology and implications for managerial practice conclude chapter 6.

THEORETICAL BACKGROUND

The study of employee pay satisfaction is an area of longstanding psychological research. Two theories in particular have largely guided research on pay satisfaction. Adams (1965) developed the first theory of pay satisfaction during a time where there was widespread societal concern over employee dissatisfaction. “Equity theory was a solution for managing dissatisfaction with pay” (Cropanzano, 2001, p. 9). According to Adams (1965), satisfaction emerges from the perception of equity in social exchange. Characteristic to the exchange process is the conceived ratio of an employee’s contributions (skills, education, effort, etc.) and outcomes (pay, promotion, job status, etc.), which is compared to the ratio of a referent other’s inputs and outcomes. Hence, employees’ pay satisfaction is derived from the perception of their pay being in the right proportion compared to their inputs and to the pay-input ratio of other employees. It is to equity theory’s credit that it maintained emphasis on the relative comparison of outcomes. Yet, equity theory was developed to elaborate on justice theories (Cropanzano, 2001), so that the focus on pay satisfaction was soon after the introduction of equity theory extended or replaced by job satisfaction and other outcome variables.

Historically, the most influential researcher who has directly addressed compensation is Edward E. Lawler (Heneman, Fay & Wang, 2002). He placed pay in the context of organizational effectiveness showing the practical importance of compensation to organizations. Lawler (1971) defined pay satisfaction as the discrepancy between the perception of the received amount of pay and the amount that the employee feels entitled to receive. The perception of expected pay is described to depend on a variety of perceived personal inputs and perceived job characteristics, whereas the employee derives the perception of the amount of pay from actual pay and perceived non-monetary outcomes. In addition, the described perceptions are influenced by an employee’s compensation history and the perception of inputs and outcomes of referent others – an aspect that Lawler incorporated from equity theory to point out that employees determine what their own inputs and outcomes should be by comparing themselves to what others are contributing and receiving. Lawler’s contribution is particularly the emphasis on procedures that create performance-outcome contingencies as an approach to adjust rewards to valent outcomes (Miner, 2007). Yet, critics have argued that employees may not only be dissatisfied with specific outcomes, but with the overarching system that determines those outcomes (Carrell & Dittrich, 1978). Dyer and Theriault (1976) thus extended Lawler’s (1971) model and incorporated organizational pay administration policies and practices in the model of pay satisfaction. A second decisive modification was undertaken by

Heneman and Schwab (1985), who disaggregated the construct of pay satisfaction into multiple dimensions. Their model includes satisfaction with the *pay structure* and *administration*, which refers to how pay is determined and distributed to the employees and builds on Dyer and Theriault's (1976) work, *level*, which characterizes the satisfaction with the actual wage the employee receives, while *raises* refer to the employees' attitudes towards changes in pay level. Finally, *benefits* reflect the satisfaction with indirect payments such as pension, vacation, or insurance. The following development of the Pay Satisfaction Questionnaire (PSQ, Heneman & Schwab (1985) led to notable interest in the measurement of pay satisfaction. The vast majority of empirical evidence supports the idea of the multidimensionality, showing that the components are distinct but related (Judge, 1993; Williams et al., 2007). The results of confirmatory factor analyses (e.g. Judge, 1993; Judge & Welbourne, 1994) have presented the most compelling evidence that pay satisfaction is best described by a four-factor solution, in which structure and administration collapse on a single factor.

There are several areas of agreement between Adams (1965), Lawler (1971), and the extension of Lawler's model (Dyer & Theriault, 1976; Heneman & Schwab, 1985). First, the theories suggest that when the perceived amount of pay received and the perceived amount of pay that should be received are equal, employees will be satisfied with their pay. Second, the models suggest that dissatisfaction with pay creates a dissonance, which the employee seeks to reduce. Third, the theories emphasize the perceptual nature of the determinants of pay satisfaction.

ANTECEDENTS OF PAY SATISFACTION

While early research on the antecedents of pay satisfaction focused primarily on actual pay and pay raises, a considerable amount of research consistently shows that the mere increase of employees' pay is only weakly related their pay satisfaction (Currall et al., 2005; Morgeson et al., 2001; Orpen & Bonnici, 1990; Tekleab et al., 2005). Thus, research on the antecedents of pay satisfaction has shifted its attention towards other perceptual or attitudinal variables, which is in line with both Adams' (1965) and Lawler's (1971) theory accentuating that pay satisfaction is a perceptual phenomenon.

Organizational Justice as a Predictor of Pay Satisfaction

Among the perceptual variables, organizational justice has been examined as a potential predictor of pay satisfaction. Organizational justice refers to the extent to which people perceive organizational events as being fair (Greenberg, 1987). Two primary constructs, dis-

tributive and procedural justice, receive the greatest research attention. *Distributive justice* refers to the perceived fairness of the distribution of outcomes, while *procedural justice* is defined as the perceived fairness of procedures used to decide upon the distribution of outcomes (Colquitt & Greenberg, 2003). Folger and Konovsky (1989) examined the impact of justice on reactions to pay raise decisions and found that distributive justice accounted for more variance in pay satisfaction than procedural justice. Also, McFarlin and Sweeney (1992) showed that distributive justice was a stronger predictor of pay satisfaction than procedural justice. These results were supported by a recent meta-analysis of Williams et al. (2006). Yet, research did not consistently support the predominance of distributive over procedural justice. Several studies show that procedural justice plays a significantly larger role for employees' satisfaction with their benefits (Tremblay, Sire & Balkin, 2000) and with the pay system (Miceli & Mulvey, 2000). One conclusion that can be drawn on the basis of these results is that not only employees' perception of their input-outcome ratio compared to relevant others, but that also the consistency of procedures for evaluating performance and the transparency of decision processes enter into employees' judgement of their pay, particularly when different facets of pay satisfaction are taken into account. These are important findings, since they underline the multidimensional nature of pay satisfaction, and may enhance organization's effort toward developing compensation policies that promote a sense of justice among employees (Dulebohn & Martocchio, 1998).

However, several problematic aspects emerge from the focus on organizational justice within the context of pay satisfaction. First, the role of justice as an antecedent remains questionable. While several authors see justice preceding pay satisfaction (Folger & Konovsky, 1989; McFarlin & Sweeney, 1992; Tekleab et al., 2005; Tremblay et al., 2000; Vandenberghe & Tremblay, 2008), they use cross-sectional designs, which do not provide evidence of such causality. Respectively, authors such as Dulebohn and Martocchio (1998) regard pay satisfaction as an antecedent of the perception of organizational justice. And a third line of researchers treats justice as a correlate of pay satisfaction without the assumption of a particular causal order (Williams et al., 2006). These inconsistencies stem to a large part from the problematic overlap between the two concepts, or "construct correspondence" as termed by Williams et al. (2006, p. 405). On the one hand, distributive justice and pay satisfaction share the same theoretical foundation: equity theory. Adams (1965) expected pay satisfaction to result from perceived equity. As equity theory is cited to define pay satisfaction (Curall et al., 2005; Sturman & Carraher, 2007), as well as distributive justice (Cohen-Charash & Spector, 2001; Colquitt, Conlon, Porter & Ng, 2001; Miceli & Mulvey, 2000), the overlap becomes problematic be-

cause an examination of pay satisfaction scales reveals that the scales include the measurement of justice (Scarpello, Carraher & Carraher, 2006). Further, research shows that employees do not differentiate between satisfaction and perceived fairness of their input-outcome ratio, so that justice and pay satisfaction are perceived to be equivalent (Scarpello et al., 2006). The prevalently found predominance of distributive justice over procedural justice therefore may be due to distributive justice being a similar construct to pay satisfaction (Williams et al., 2006). On the other hand, construct correspondence plays also a role for procedural justice and pay satisfaction. This stems from the use of pay-focused measures of procedural justice in the context of pay satisfaction analysis. Jones, Scarpello, and Bergmann (1999) for example conducted the Procedural Fairness Scale (Scarpello & Jones, 1996), which assesses the fairness of compensation procedures, such as pay raise determination. Also, the PSQ implicitly takes procedural elements into account (Fong & Shaffer, 2003): One of the items for example asks respondents how satisfied they are with the consistency of the company's pay policies, which clearly reflects aspects of procedural justice as defined by Leventhal (1980). Thus, Heneman and Judge (2000) argue that pay satisfaction can be considered as being similar to both, distributive and procedural justice. The introduction of interactional justice as an antecedent of pay satisfaction (Fong & Shaffer, 2003) does not solve the problem. As leaders communicate pay plans, performance-measures criteria, and performance results and payout (Fong & Shaffer, 2003), interactional justice points to the importance of leadership, which is examined in the present work.

Understanding of the Pay System as an Antecedent of Pay Satisfaction

Another group of studies drew conclusions about the determinants of pay satisfaction based on the effect of employees' knowledge and understanding of pay policies on employees' satisfaction with their pay (Brown & Huber, 1992; Dyer & Theriault, 1976; Heneman & Judge, 2000). This line of research reaches back to Dyer and Theriault (1976), who suggested that pay satisfaction would be influenced by perceptions of the perceived adequacy of pay-system administration, which was defined as employee perceptions concerning the appropriateness of pay criteria, understanding of pay criteria, accuracy of performance assessment, and adherence to pay policies. Building on this, Thierry (2001) proposes in his *Reflection Theory* that pay system knowledge is a basic requirement for the effect of pay systems on employee attitudes. A study by Mulvey, Le Blanc, Heneman and McInerney (2002) finds that poor knowledge of pay processes and base pay is related to low pay satisfaction. Similarly, a longitudinal study conducted by Brown and Huber (1992) demonstrates that understanding of

a pay system affects employees' pay satisfaction over time. In sum, this research suggests that understanding the pay system positively influences employees' pay satisfaction. In addition, this research has provided insight into some of the underlying perceptual mechanisms involved, as well as the potential for organizations to enhance employee knowledge, which are important contributions. At the same time however, it is important to identify *how* organizations may enhance this understanding. Several studies analyzing the importance of pay system knowledge suggest the crucial role leaders thereby assume. Salimäki et al. (2009) demonstrated the leader's impact on employees' pay satisfaction by providing meaning to and understanding of the pay system. Also, Brown and Huber (1992) see a leader's duty in carefully explaining the pay system. Yet, while these studies point to the role of the leader, no study has analyzed how the leader's behavior, which might be aimed at providing meaning, impacts employee pay satisfaction. The present work builds on the model of transformational and transactional leadership to examine potential antecedents of pay satisfaction.

Transformational and Transactional Leadership

Over the last fifteen years, transformational leadership theories have turned out to be the most frequently researched theories (Bass & Riggio, 2006; Judge & Piccolo, 2004). The theory of *transformational leadership* suggests that leaders who provide challenge and support, communicate an inspiring vision, and act as a role model, activate employees higher-order values such that employees identify with the leader, feel better about themselves, and perform beyond expectations (Avolio, 1999; Avolio, Reichard, Hannah, Walumbwa & Chan, 2009; Bass, 1985; Bass & Avolio, 1993; Bass & Riggio, 2006). Four facets describe transformational leadership. *Idealized influence* refers to leaders who are respected, trusted and seen as having an attractive vision and holding high standards. *Inspirational motivation* reflects behaviors such as providing meaning to increase understanding of mutually desired goals, and encouraging employees to envision attractive future states. *Intellectual stimulation* describes leaders encouraging employees to question assumptions, stimulating employees to be innovative and creative, and include them in the process of finding solutions. With *individualized consideration* employees are treated equitably on a one-to-one basis, their individual needs and desires are recognized, and new learning opportunities are provided along with a supportive climate, which aims at developing them to higher levels of potential.

A plethora of studies have reported on the substantial positive relationships between transformational leadership and employee attitudes such as job satisfaction or commitment (see Avolio, Bass, Walumbwa & Zhu (2004) and Judge & Piccolo (2004) for a summary and

meta-analysis). Bono and Judge (2003) conclude “there is little controversy regarding the positive associations between such leadership and follower attitudes such as trust, job satisfaction and organizational commitment” (p. 554). Yet, no known research analyzed the role of transformational leadership in enhancing employees’ pay satisfaction. Bass’ (1985, 1990, 1998) concept of transformational leadership reflects leadership behavior that is aimed at providing meaning and understanding, which – according to Brown and Huber (1992), Heneman and Judge (2000), Salimäki et al. (2009) – precedes employees’ pay satisfaction. Building on this, the present work examines transformational leadership as a key determinant of employees’ positive attitude towards their pay. Thus, the studies contribute in extending research on the consequences of transformational leadership by examining overall pay satisfaction (Studies 1, 3) and analyzing the differential impact of transformational leadership on the facets of pay satisfaction (Study 2).

According to Bass and his colleagues transformational leadership is contrasted with *transactional leadership*. Transactional leadership includes three factors. *Contingent reward* involves a positively reinforcing interaction between leader and employee that emphasizes an economic exchange relationship. *Management by exception* in its more *active* form reflects leadership behavior such as monitoring, communicating what constitutes ineffective behavior, and providing negative feedback. In its *passive* form, management by exception describes leaders waiting for problems to emerge and intervening after problems became serious. Bass (1985) argued that transactional leadership is the necessary precondition for transformational leadership to be effective. Notable research has found evidence for this so-called augmentation effect (Bass & Avolio, 1993; Bass, Avolio, Jung & Berson, 2003; Judge & Piccolo, 2004). Yet, far less attention has been paid to transactional leadership than to transformational leadership (Hinkin & Schriesheim, 2008). The disregard of transactional leadership may be explained firstly by the low reliability of the management by exception active scale (Felfe, 2006). Second, the problematic closeness to laissez-faire leadership and questionable transactional basis of the management by exception passive scale (Yukl, 1999) cause concerns. Eventually the high correlation between contingent reward and transformational leadership is seen critical (Goodwin, Wofford & Whittington, 2001). Still contingent reward is the most studied sub-dimension of transactional leadership (Hinkin & Schriesheim, 2008), as it best reflects traditional research’s emphasis on hypothesized effective transactional aspects such as identifying goals and linking them to what the leader expects to accomplish and to the rewards for the employee if objectives are met. As this leadership behavior is aimed at providing clear performance-reward relationships, which might influence employees’ perception of

their pay, it is integrated in the present work (Study 2). Following the research tradition of testing the augmentation effect of transformational over transactional leadership, the present work examines the incremental variance of transformational leadership with regard to the facets of pay satisfaction (Study 2). Thus, the dissertation contributes in not only examining the effects of transformational leadership on pay satisfaction as a so far neglected outcome variable, but moreover analyzes the differential effects of transformational and transactional leadership with regard to the pay satisfaction facets.

Finally, the current literature has relied almost exclusively on questionnaires administered only once, the potential shortcomings of which have been identified elsewhere (see, for example, Blau, 1994; Heneman, 1985; Huselid & Becker, 1996). For example, correlations among items may be inflated because respondents may answer questions on the same survey similarly in order to appear consistent. Yet, only two studies have investigated the causal link between leadership and employee attitudes. Fry, Vitucci and Cedillo (2005) found that higher spiritual leadership (employees experience meaning, have a sense of making a difference and feel understood and appreciated), which can be regarded as incorporating transformational leadership, is associated with higher commitment over time. Condrey, Facer and Hamilton (2005) showed that trusted leadership and communication improve employees' job satisfaction during organizational change. The studies by Fry et al. (2005) and Condrey et al. (2005) did not explicitly examine transformational leadership. The causal effect of transformational leadership on employees' attitudes toward their job, pay and organization is examined to fill this gap with further insight (Study 3).

PSYCHOLOGICAL CONTRACTS AS MEDIATORS OF THE RELATIONSHIP BETWEEN LEADERSHIP AND EMPLOYEE ATTITUDES WITHIN THE CONTEXT OF PAY

Yukl (1999) argues that "the underlying influence processes for transformational leadership and transactional leadership are still vague ... the theory would be stronger if the essential influence processes were identified more clearly and used to explain how each type of behavior affects each type of mediating variable and outcome" (p. 287). Recent research on the relationship between transformational leadership and employee attitudes finds that interpersonal affect employees feel towards the leader (i.e. liking; Brown & Keeping, 2005), empowerment (Avolio, Zhu, Koh & Bhatia, 2004; Jung & Sosik, 2002), and self-concordance (Bono & Judge, 2003), and trust (Jung & Avolio, 2000) serve as mediators of this relationship. These findings suggest that employees' perceptions of the leader-employee relationship mediate the effect of leadership on attitudes. The present work builds on the assumption that

psychological contracts are basic to the exchange relationships between leaders and employees. Drawing on the seminal work of Argyris (1969) and Schein (1965), Rousseau (1989, 1995) developed psychological contract theory, which is increasingly seen as an important framework to understand the employment relationship (Zhao, Wayne, Glibkowski & Bravo, 2007). Psychological contracts are defined as “an individual’s beliefs in mutual obligations between that person and another party such as an employer. ... This belief is predicated on the perception of that a promise has been made and a consideration offered in exchange for it, binding the parties to some set of reciprocal obligations” (Rousseau & Tijoriwala, 1998, p. 679). The fulfillment of psychological contracts is evaluated by comparing inputs and outcomes relative to what was promised (Morrison & Robinson, 1997). Within the psychological contract literature there is a strong agreement that the content can be categorized in two types of contracts: relational and transactional (Conway & Briner, 2005; Coyle-Shapiro & Kessler, 2000; Rousseau, 1990). Relational contracts, which emphasize personal, socio-emotional and value-based interactions (e.g. obligations about personal support; Robinson, Kratz & Rousseau, 1994), are distinguished from transactional contracts, being based on more specific, monetary and economic elements of exchange (e.g. obligations about high pay and merit pay).

According to Rousseau and Ho (2000) employees develop promissory expectations in their psychological contract through interactions with organizational agents. From the work of Rousseau and Ho (2000) one can further derive assumptions of the role of leadership in the formation of psychological contracts. “Explicit and implicit cues associated with compensation can be provided by a variety of message senders in a given firm, from immediate supervisor to human resource representatives” (Rousseau & Ho, 2000, p. 278). Liden et al. (2005) also see leaders as the representatives of the organization and purveyors of resources, and eventually as responsible for the development of psychological contracts. Moreover, Liden et al. (2005) argue that leaders are held responsible for the fulfillment of obligations such as support. From the literature on leadership Goodwin et al. (2001) refer to psychological contracts as the process through which leadership influences employee attitudes. Building on this, the present work closely examines the influence of transformational (Studies 1-3) and transactional (Study 2) leadership as for the perception of relational and transactional psychological contract fulfillment.

Psychological contracts have mainly been studied with regard of their consequences. Job satisfaction, commitment and turnover intention have received extensive attention. Job satisfaction, as seen as a function of the perceived relationship between what the employee expects from the job and what the employee perceives it as offering (Locke, 1969), is likely to

emerge if the discrepancy between promised and perceived inducements is low, i.e. the psychological contract is perceived as being fulfilled (e.g. Raja, Johns & Ntalianis, 2004; Robinson & Rousseau, 1994; Tekleab, Takeuchi & Taylor, 2005; Zhao et al., 2007). Likewise, affective commitment is likely to occur. Commitment describes the strength of an employee's identification with and attachment to an organization (Allen & Meyer, 1990). When psychological contracts are fulfilled, employees are likely to identify with the organization and maintain their commitment (Conway & Briner, 2005; Coyle-Shapiro & Kessler, 2000; Raja et al., 2004). Relational psychological contracts are found to be stronger related to job satisfaction and commitment than transactional contracts (Cavanaugh & Noe, 1999; Grimmer & Oddy, 2007; McDonald & Makin, 2000; Robinson & Rousseau, 1994). While job satisfaction and commitment are the most heavily researched outcomes of psychological contracts (Zhao et al., 2007), the relationship to pay satisfaction has been neglected so far. The only work suggesting a link between pay satisfaction and psychological contracts comes from Rousseau and Ho (2000), who argue that pay plays a fundamental role in the formation and fulfillment of psychological contracts. They describe compensation as the most salient aspect of the employment relationship, because employees can easily compare their pay to another employee's or to what was promised. Rousseau and Ho (2000) state that employees react with dissatisfaction if psychological contract terms concerning pay are not fulfilled. Additionally they argue that particularly transactional psychological contracts play a role in the context of compensation. Taken together, their statements suggests firstly, that psychological contracts are mainly influenced by compensation strategies, second, that the fulfillment of psychological contracts may influence employees satisfaction with their pay and third, that transactional contracts may be stronger related to pay satisfaction than relational contracts. Yet, no known research has examined the impact of psychological contracts on pay satisfaction. The present work examines the question whether leadership influences employee attitudes such as pay and job satisfaction and commitment (Studies 1, 3) and the facets of pay satisfaction (Study 2) through differential mechanisms of psychological contracts.

CORRELATES OF PAY SATISFACTION

“Studies in pay satisfaction can contribute substantially to our basic understanding of the work state in such areas as job satisfaction, motivation, organizational commitment” (Shapiro & Wahba, 1978). In the context of pay systems two other variables, focusing on subjective estimates of the organization's pay system, merit investigation: job satisfaction and commitment (Huber, Seybolt & Venemon, 1992). Tremblay et al. (2000) for example argue

that managing pay processes enhances not only pay satisfaction but also satisfaction with the job itself. While pay satisfaction and commitment have consistently been found to be positively related, the relationship between job satisfaction and pay satisfaction is not as clear. Several authors regard pay satisfaction as a facet of job satisfaction (Nguyen, Taylor & Bradley, 2003; Smith, Kendall, Hulin, 1969; Weiss, Dawis, England & Lofquist, 1967). Yet, since over 30 years, considerable research has focused on assessing pay satisfaction independently of job satisfaction (Curall et al., 2005). Moreover, pay satisfaction research suggests that the determinants of pay satisfaction require independent research attention (Currall et al., 2005). The question therefore arises whether leadership influences pay and job satisfaction in a similar way or whether differential-underlying mechanisms may be identified (Studies 1, 3). In addition, if employers satisfy employees' needs through compensation, employees are likely to reciprocate with commitment (Miceli & Mulvey, 2000). Since committed employees have a general positive attitude towards their organization (Mowday, Steers, & Porter, 1979), commitment should be related to pay satisfaction. Two meta-analyses and several studies have shown that pay satisfaction is positively associated with commitment (Cohen & Gattiker, 1994; Huber et al., 1992; McFarlin & Sweeny, 1992; Mathieu & Zajac, 1990). There is an ongoing debate of the relationship between job satisfaction and commitment. On the one hand research supports the assumption, that job satisfaction influences commitment as well as there is research hypothesizing the direction of commitment resulting in job satisfaction (e.g. DeCotiis & Summers, 1987; Vandenberg & Lance, 1992), and on the other hand one finds studies viewing job satisfaction and commitment as correlates (Mathieu & Zajac, 1990). The position taken in the present work is to follow the last-mentioned approach and view job satisfaction and commitment as correlates, since the aim is to analyze antecedents, which are supposed to be shared.

RECENT DEVELOPMENTS: PAY-FOR-PERFORMANCE

While organizational scientists and practitioners have recognized the importance of rewarding employees on the basis of their performance since the turn of the last century, recently an increased effort has been made by organizations to develop various forms of pay-for-performance systems (Dulebohn & Martocchio, 1998). Building on the trend of the growing implementation of performance-based pay, Sturman and Short (2000) identify employees' lump-sum bonus satisfaction as a distinct dimension of pay satisfaction. This facet reflects employee attitudes towards their compensation that is paid in recognition of goal achievement and performance. In addition to the question whether leadership impacts em-

employees' overall pay satisfaction recent research on the multidimensionality implies that leadership may influence the pay satisfaction facets differentially (Study 2).

Many organizations are facing incisive changes of their pay systems, as a growing variety of performance-based pay plans is becoming visible (Milkovich & Newman, 2008). Few studies have examined pay satisfaction within the context of pay intervention and change programs (Heneman, 1985). This gap in the literature is unfortunate, as research may derive information required to improve the implementation of compensation systems through the identification of important determinants. A notable exception is the work of Lawler and colleagues (Lawler & Hackman, 1969; Jenkins & Lawler, 1981) and Morgeson et al. (2001) building on this research, which concentrate on process-related issues such as participation. Lawler and Hackman (1969) showed the effectiveness of participating employees in the development of pay incentive plans. Jenkins and Lawler (1981) found that employee involvement in the pay system design predicted pay satisfaction. Yet, in a longitudinal study, Morgeson et al. (2001) failed to show a participation effect on pay satisfaction "casting doubt on the organizational development benefits of this common intervention" (p. 133). The implementation of a new pay system can be regarded as a period of organizational change. Transformational leadership is especially influential during organizational change and times of uncertainty (Bass et al., 2003; Bass & Riggio, 2006), as transformational leaders propose an attractive future, consider individual development, empower employees and communicate how the new challenges will be approached (Waldman, Ramírez, House & Puranam, 2001). These findings suggest for this work that transformational leadership may be of particular importance during the implementation of a performance-based pay system (Studies 2, 3).

To sum up, the key concern of the present work is to examine a comprehensive framework of leadership as a determinant of employee pay satisfaction, to analyze the underlying mechanism of psychological contracts and moreover to take the multidimensionality of pay satisfaction into account. The following three studies present in detail the specific approach taken and describe the results found for each step of analysis.

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STUDY I: TRANSFORMATIONAL LEADERSHIP AND PAY SATISFACTION: THE MEDIATING ROLE OF PSYCHOLOGICAL CONTRACTS

INTRODUCTION

Pay is an important topic for organizations not only because it is one of the largest cost factors for organizations. Pay is perceived as a means to attract and to retain good employees and to motivate them to perform well in exchange for their pay. Research for over three decades considers pay satisfaction as a crucial variable mediating this relationship. Thus, research aims for a better understanding of how pay satisfaction is assessed, thereby indicating how pay satisfaction might be positively influenced. Actual pay or pay raise seems not to determine pay satisfaction alone, as studies show fairly weak correlation coefficients between pay satisfaction and actual pay (Currall, Towler, Judge & Kohn, 2005; Morgeson, Campion, Maertz, 2001; Orpen & Bonnici, 1990; Tekleab, Bartol & Liu, 2005). Lawler's (1971) model of the determinants of pay satisfaction argues that pay satisfaction is determined by the difference between employees' beliefs about what they should receive and their perceived pay – actual pay is assumed to be only one in a row of factors influencing these perceptions. Thus, researchers have concentrated on identifying perceptual variables that seem to have a stronger impact on pay satisfaction than actual pay or pay raise (Huber, Seybolt & Venemon, 1992; Tekleab et al., 2005; Williams, McDaniel & Nguyen, 2006). One line of research focuses on distributive and procedural justice as sources of pay satisfaction (Folger & Konovsky, 1989; Heneman & Judge, 2000; Huber et al., 1992; Sweeny & McFarlin, 1993; Tekleab et al., 2005; Tremblay, Sire & Balkin, 2000). However, focusing on organizational justice as an antecedent of pay satisfaction raises some problems. While without doubt there is a conceptual difference between justice and pay satisfaction, empirically the distinction of the two constructs is not as unquestionable (Howard, 1999). Scarpello, Carragher and Carragher (2006) demonstrate that pay satisfaction and pay fairness (i.e., equity) share the same construct space and are by the majority of respondents perceived to be equivalent. Accordingly, Heneman and Judge (2000, p. 92) state that the strong correlation between justice and pay satisfaction does not sufficiently “address the question of *how* employees come to feel that their pay is unfair”.

Yet, the justice approach makes the contribution of showing that not only the perceived fairness of the amounts of compensation received (*distributive justice*) but also the perceived fairness of the means used to determine these amounts (*procedural justice*) impacts employees' satisfaction with their pay. For example Folger and Konovsky (1989) analyzed the justice-pay satisfaction relationship and underlined the importance of procedural aspects

such as leader's taking employees' views into consideration, informing them about their expectations, and showing genuine respect. Recently, Tekleab et al. (2005) demonstrated the relationship between procedural justice and pay raise satisfaction, and resumed that leaders should particularly pay attention to "explain pay raise procedures... so that individuals can use the information as part of their determination of their pay raise satisfaction" (p. 917). Thus, the link between justice and pay satisfaction hints to the importance of leadership as a possible antecedent of pay satisfaction: Leaders have the possibility and obligation to make sense of the organization's pay system, show concern for employees' individual needs, inform them about upcoming changes in the distribution of pay, and ensure that employees perceive to receive equitable treatment. These procedural aspects are reflected in a transformational leader's concrete behavior. Regarding transformational leadership as an antecedent of employees' pay satisfaction therefore has the benefit to provide a more direct and specific way to influence employees' pay satisfaction, and to avoid the problematic overlap between organizational justice and pay satisfaction.

Following Bass (1985) *transformational leadership* is characterized by providing meaning, challenge and support to the employees. Studies using a wide variety of samples have shown that transformational leadership is related to employees' job satisfaction, commitment and organizational citizenship behavior (Bass, 1990; Bass & Avolio, 1993; Bycio, Hackett & Allen, 1995; Podsakoff, McKenzie, Moorman & Fetter, 1990; Podsakoff, Todor, Grover & Huber, 1984). So far in research history, very little attention has been paid to the role of leadership with regard to pay satisfaction. This shortcoming is approached in this article. Transformational leadership essentially involves behaviors such as giving meaning to the organization's system, and letting employees feel that their needs and goals are respected. If employees perceive their leader to show concern for individual demands, to make the pay system transparent and integrate it in the vision of the organization, it is likely that employees' satisfaction with their pay should be enhanced. Thus, this study builds on research showing that understanding of the pay system is an important antecedent of employees' attitude towards their pay (Brown & Huber, 1992; Dyer & Theriault, 1976) and extends previous research by considering leadership as essential to provide meaning to the pay system.

Further, the leader is seen as the contractual partner who is responsible for fulfilling the organizations obligations (such as pay, career development, support). Since contracts involve explicit as well as implicit agreements of exchange, one can speak of *psychological contracts* containing both elements (Rousseau, 1995), which emerge in the leader-employee relationship. It is assumed that leadership influences employee attitudes indirectly by estab-

lishing and fulfilling psychological contracts. Along with Rousseau (1995) *transactional* psychological contracts (monetary and economic elements being focused) are to be distinguished from *relational* psychological contracts (socio-emotional elements of the contract being more important). Along with Goodwin, Wofford and Whittington (2001) it is proposed that leadership has an impact on employees' perceptions of transactional and relational elements. There is no research empirically investigating the role of leadership and psychological contracts as predictors of employee attitudes. Thus, the purpose of this study is to examine the role transformational leadership plays with respect to pay and job satisfaction, and commitment, using two types of psychological contracts (transactional and relational) as potential mediators.

Transformational Leadership and Employee Attitudes

Bass' (1985) model of leadership distinguishes between transactional and transformational leadership. *Transactional* leadership is based on an exchange process in which the leader clarifies his or her expectations, provides recognition and rewards as well as punishment in return for the employee's effort to achieve agreed-upon goals (Bass, 1985; Bass, Avolio, Jung & Berson, 2003). The primary factors of Bass' (1985) transactional leadership model include *management-by-exception active* (leader specifies ineffective behavior and monitors for mistakes), *management-by-exception passive* (leader waits for problems to be serious and avoids to clarifying expectations) and *contingent reward* (leader offers recognition when goals are achieved). Thus, the key aspect of these leadership behaviors is a performance-reward contingency (Judge & Piccolo, 2004). The second dimension of Bass' (1985) leadership model is *transformational* leadership. Transformational leaders "do more with colleagues and followers than set up simple exchanges or agreements" (Bass & Riggio, 2006, p. 5). They seek to arouse and satisfy higher needs, stimulate and inspire employees to perform beyond expectations and transcend employees' self interest for the sake of the organization. Essential leadership behaviors are communicating an attractive vision, acting as a role-model, responding to individual employee's values, needs, and goals, and empowering their employees, thereby fostering a climate of trust (Bass, 1985; Bass & Riggio, 2006). The primary factors of the transformational leadership model conceptualized by Bass (1985) include *idealized influence attributed* and *idealized influence behavior* (employees identify with the leader, admire and trust him/her), *inspirational motivation* (leaders communicate an attractive vision, provide meaning and challenge to employees' work), *intellectual stimulation* (employees are encouraged to reframe problems and creatively find new solutions), and *individualized consideration* (leader-employee interactions are personalized as the leader pays

attention to employee's needs, goals, and values, and acts as a mentor). Thus, challenge and support are the basic concepts of transformational leadership (Bass & Riggio, 2006).

Bass (1985) expected particularly transformational leadership to have a positive impact on employee attitudes. Transformational leadership takes individual skills and goals into consideration, thereby paying attention to emotional needs and values. Transformational leaders express confidence in the employee, encourage them to reframe problems and empower employees to solve them, so that pride in the actions of the leader and the employee and joint success in overcoming obstacles positively impact employees' job satisfaction (Bass & Riggio, 2006). Further, positive effects on employees' affective commitment are expected. Affective commitment describes employees' emotional attachment and identification with the organization (Allen & Meyer, 1990). Wanting to emulate the leader and emotionally identify with him or her enhances employees' identification with the leader's goals and values (Bass, 1998). Under transformational leaders, participation in achieving the shared vision becomes an expression of membership and identity with the leader and the organization (Bass & Riggio, 2006). This identity enhances employees' commitment (Bass, 1998). There is a substantial amount of evidence in form of numerous studies and several meta-analyses showing positive effects of transformational leadership on job satisfaction and commitment (Bass et al., 2003; Bycio et al., 1995; DeGroot, Kiker & Cross, 2000; Dumdum, Lowe & Avolio, 2002; Judge & Piccolo, 2004; Lowe, Kroeck, & Sivasubramaniam, 1996; Podsakoff et al., 1990).

Yet, the role of leadership with regard to pay satisfaction is not sufficiently addressed. Research on pay satisfaction was strongly influenced by Lawler's (1971) *discrepancy theory*, which describes pay satisfaction as the difference between the individual's belief of what one should receive and what one perceives to actually receive. Lawler's model was extended by Dyer and Theriault (1976) by including the perceived adequacy of pay-system administration. In a seminal paper Heneman and Schwab (1985) hypothesized that pay satisfaction is a multidimensional construct with the four dimensions (1) structure and administration, reflecting how pay is determined and distributed to the employees, (2) level, referring to the employee's current wage or salary, (3) raises, reflecting to the changes in pay level, and (4) benefits, reflecting indirect pay such as insurance, pension, vacations. Since then, much evidence has supported the multidimensionality of pay satisfaction, with each of the four dimensions contributing to an overall pay satisfaction (Curall et al., 2005; Judge, 1993; Scarpello, Huber & Vandenberg, 1988; Vanderberghe & Tremblay, 2008).

At first sight, one would expect transactional leadership to play a role in influencing employees' pay satisfaction as transactional leaders strengthen the performance-reward rela-

tionship. However, an important aspect of national characteristics with regard to the leader's influence on pay decisions has to be pointed out, as the national differences can be regarded as evident for the leadership-pay satisfaction relationship. One of the major differences between US-American and German pay systems lies in the managers' influence on employees' pay (Milkovich & Newman, 2008): Leaders of US-American organizations are often incorporated in the pay system, as they are involved in determining the pay at organizational entry and have influence on promotions and pay raises in conjunction with performance appraisals (Tekleab et al., 2005). The German "socio-political and culture system constrains organizations' use of pay as a strategic tool" (Milkovich & Newman, 2008, p. 529). Most employees in Germany are bound to collective labour agreements, which determine pay grades and steps within grades and link annual pay raises to collective bargaining. Pay-for-performance systems were until recently not up for discussion. Thus, leaders in Germany (still) have comparably little direct influence with regard to individual pay on the shop floor level, particularly as pay-for-performance systems based on goal setting or performance evaluations have only recently started to become more popular at this level (Antoni & Berger, 2007).

Hence, transactional leadership is of minor interest in this study, as the key aspect of these leadership behaviors is the performance-reward contingency (Judge & Piccolo, 2004), and the leaders in this study did not have the possibility to reward good performance in a monetary form. Yet, it is likely that transformational leadership plays an important role influencing employees' pay satisfaction, and will therefore focus on this leadership behavior.

As mentioned above, transformational leadership influences employees' job satisfaction (Judge & Piccolo, 2004), and as pay satisfaction can be seen as one facet of employees' overall job satisfaction (e.g. Nguyen, Taylor & Bradley, 2003; Smith, Kendall, Hulin, 1969; Weiss, Dawis, England & Lofquist, 1967), one could argue that pay satisfaction will therefore be as well related to transformational leadership. However, correlations between pay satisfaction and job satisfaction are only moderately positive (Harris, Harris & Harvey, 2007; Katzell, Yankelovich, Fein, Ornati & Nash, 1976; Nguyen et al., 2003; Tremblay et al., 2000), and notable research has analyzed pay satisfaction irrespective of job satisfaction (Currall et al., 2005; Harris et al., 2007; Heneman & Schwab, 1985; Miceli & Lane, 1991). Accordingly, independent research of the antecedents and underlying mechanisms that impact pay satisfaction is essential (Currall et al., 2005).

Apart from the link to job satisfaction, there are several reasons of relevance why transformational leadership positively impacts employees' pay satisfaction. "Designing a pay system is ... an exercise of justification aimed at giving the people involved the confidence

that equity is realized and needs are respected.” (Emans, 2007, p. 99). As a representative of the organization transformational leaders communicate the purpose and virtue of the pay system as being part of the organizational system. Transformational leaders engage in inspirational behavior that provides meaning for the employees (Bass, 1998). Understanding and meaning in turn have been shown to be important determinants of pay satisfaction (Brown & Huber, 1992). Leaders however not only reinforce employees’ acceptance of the pay system by making it transparent, additionally, showing individualized consideration has a positive impact. Under transformational leaders, employees feel that their personal needs are being met, because transformational leaders show genuine concern for their employees (Bass & Riggio, 2006) and recognize individual differences in terms of needs and desires (Bass, 1998). Thus, transformational leaders also positively influence employees’ pay satisfaction by giving them the feeling that their needs and desires are respected, as this is a constituting element of transformational leadership according to Bass (1985). Further, under transformational leadership employees identify with the leader and the organization, which should positively impact employees’ attitude towards the organization’s pay system (Bass, 1985).

As reviewed there is a lack of research investigating the question of the role of transformational leadership with regard to employees’ pay satisfaction. The present research investigates this issue and proposes the following hypothesis:

Hypothesis 1: Transformational leadership is positively related to job satisfaction and commitment, as well as to employees’ pay satisfaction.

Psychological Contracts as Mediators of the Relationship between Leadership and Job Satisfaction, Commitment and Pay Satisfaction

Moreover, it is suggested that transformational leadership indirectly enhances employee attitudes through psychological contracts. A psychological contract refers to “individual beliefs, shaped by the organization, regarding the terms of a reciprocal exchange agreement binding both the individual and the organization” (Rousseau & Ho, 2000, p. 274). According to Rousseau (1998) perceptions of mutual obligations are the basis of psychological contracts. Since psychological contracts are subjective and depending on interpretations (Rousseau, 1998), it is not the actual fulfillment of obligations that plays a role, but rather the perception of the fulfillment. Employees derive these perceptions from organizational actions, observation of treatment received by others and direct interactions (Rousseau & McLean-Parks, 1993). Further, Rousseau and Ho (2000) state that implicit and explicit cues associated with pay and other work related aspects are provided by a variety of message senders. It is

argued that the perception of psychological contracts is strongly affected by the leader's behavior. The reason for this assumption is threefold: Firstly, the leader is seen as the representative of the organization. Accordingly, Rousseau (1995) shows that employees personify explicit commitments made to them by their leaders as reflecting the whole organization, even if the leader was acting in own interest. Secondly, the employee can also derive beliefs of mutual obligations from direct interactions with the leader. Thirdly, employees can perceive the leaders' treatment of others to derive perceptions of the leader's obligations and assumptions of contributions expected from them. Thus, the employee derives assumptions about commitments and perceptions of fulfillment from the leader's actions as reflecting the organization. Building on Goodwin et al. (2001) who suggested that transformational leaders establish relational contracts, while leaders who negotiate the relationship between performance and rewards emphasize transactional contracts, it is supposed that transformational leadership influences employee attitudes through both forms of psychological contracts. In the following section the forms of psychological contracts will be closely examine and linked to transformational leadership.

Rousseau and McLean Parks (1993, p. 5) argue that the forms as well as the elements of psychological contracts vary due to "socially defined meaning attached to promises, time perspectives, and relationships between the parties". Following Rousseau's (1989) conceptualization a *relational* psychological contract is based upon exchanges especially of socio-emotional elements (such as loyalty and support), and is therefore characterized by less concrete agreements. Relational psychological contracts contain beliefs about support from the employer such as training and personal and career development (Herriot & Pemberton, 1996). In contrast, a *transactional* psychological contract focuses on the exchange of mainly extrinsic returns (pay or career development) for good work compared to others and own skills (Rousseau, 1989). Employees perceive the terms of employment to be predominantly calculative and instrumental (Herriot & Pemberton, 1996). Thus, employees will concentrate particularly on the outcomes of the relationship (Millward & Brewerton, 1999). However, psychological contracts contain both relational and transactional elements, as the two forms are viewed as ends on a continuum (McDonald & Makin, 2000; Robinson, Kraatz & Rousseau, 1994). It is likely that transformational leadership influences perceptions of obligation fulfillment of transactional as well as relational elements.

Let us first consider transformational leadership and its link to relational psychological contracts. Rousseau and Ho (2000) argue that if employees perceive a supportive environment, they will interpret their job as reflecting a personal relationship with the employer.

Drawing this idea to the concept of leadership Goodwin et al. (2001) assume that as transformational leaders value trust, good faith, and fair dealing, employees will interpret agreements and promises as reflecting a personal relationship with the leader. Transformational leaders get followers involved in envisioning an attractive future (Bass & Riggio, 2006). Also, they encourage a “two-way exchange in communication”; they listen effectively, are aware of individual concerns and see the individual as a whole person rather than just an employee, so that interactions with followers are personalized (Bass, 1998, p. 6). Bass (1985) thus characterizes the transformational leader – employee relationship as being based on social exchange. As relational psychological contracts comprise particularly socio-emotional elements (Rousseau, 1989), transformational leadership is likely to influence employees’ perceptions of relational psychological contracts (Goodwin et al., 2001).

Relational psychological contracts are in turn associated with employees’ job satisfaction and commitment: When an employee perceives that his expectations from the personal relationship to the leader (e.g. support, empowerment, consideration of individual strengths and values) are met, the employee is likely to experience job satisfaction. There is much evidence showing that relational psychological contracts positively influence employees’ job satisfaction (Cavanaugh & Noe, 1999; McDonald & Makin, 2000; Robinson & Rousseau, 1994). Employees accepting organizational goals, willing to work hard and stay with the organization are regarded as being committed to the organization (Mowday, Porter & Steers, 1982). Commitment is developed over time as a result of the relationship between the employee and the organization and its representatives (Mowday et al., 1982). One aspect of this relationship, which influences employees’ commitment, is the perceived fulfillment of employer obligations (Coyle-Shapiro & Kessler, 2002; Schalk & Roe, 2007). Research indicates that particularly perceptions of fulfilled relational obligations produce a state of commitment (McDonald & Makin, 2000). Therefore it is expected that transformational leadership influences commitment through relational psychological contracts.

Being aware of the debate whether job satisfaction results in commitment or commitment influences satisfaction, there is research supporting each direction of influence (e.g. DeCotiis & Summers, 1987; Vandenberg & Lance, 1992), as well as studies viewing job satisfaction and commitment as correlates (Mathieu & Zajac, 1990). The position taken in this study is to follow the last-mentioned approach and view job satisfaction and commitment as correlates, since the aim is to analyze antecedents they are supposed to share.

Hypothesis 2: Transformational leadership influences employees’ job satisfaction and commitment through relational psychological contracts.

It is expected that transformational leadership not only impacts employees' perceptions of the fulfillment of relational obligations, but also influence transactional psychological contracts. Transactional exchange is governed by quid pro quo norms (e.g. "a fair day's work for a fair day's pay", Rousseau & Ho, 2000, p. 283), whereby obligations are defined and parties expect compensation for their contributions. Thus, balance and repayment are particularly important when the exchange agreement is transactional (Morrison & Robinson, 1997). The transactional exchange of transformational leadership is however not on a level of simple performance-reward contingencies. Leaders in this study did not have the possibility to influence employees' pay. Yet, transformational leaders could provide meaning to the pay system, make it transparent, communicate reasons for the system's fairness, and give employees the feeling that their desires and goals are recognized. When the organization's pay system operates in line with what the leader communicated, the leader is seen as the responsible person who fulfilled his or her obligation to recognize employees' needs and goals. Consequently, the employee will perceive the economic elements of exchange (such as career development and pay) in a positive light. Thus, it is likely that transformational leadership positively influences transactional psychological contracts, because transformational leaders provide meaning to transactional exchange and are seen as responsible for fulfilling transactional obligations.

As pay is one major outcome of interest for the employee (Milkovich & Newman, 2008) and transactional psychological contracts put attention towards outcomes, fulfillment of transactional psychological contracts should have a positive impact on employees' pay satisfaction. Knights and Kennedy (2005) argue that the violation of transactional obligations such as pay, benefits, and promotion results in a decrease of job satisfaction. While the present study follows their argument that perceived fulfillment of transactional obligations has an impact on employees' satisfaction, it is differentiated between pay and job satisfaction, as it is expected that transactional psychological contracts influence employees' pay satisfaction, while it is suggested that, contradicting Knights and Kennedy's (2005) assumption, in accordance with recent research (Cavanaugh & Noe, 1999; McDonald & Makin, 2000; Robinson & Rousseau, 1994), job satisfaction is associated with relational psychological contracts. Thus, the following mediation is supposed:

Hypothesis 3: Transformational leadership influences employees' pay satisfaction through transactional psychological contracts.

METHOD

Data for this study were collected from 421 employees of nine different charitable institutions. All scales were analyzed by confirmatory factor analyses. To determine the goodness of fit, the model fit indicators Comparative Fit Index (CFI), Tucker Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Residual (SRMR) were used. If a model fit of CFI and TLI above .80 is achieved, the model fit is acceptable; above .90 it is good. RMSEA less than .08 is acceptable, less than .06 is good; SRMR indicates good fit for values < .08 (for a detailed description of model fit indicators see Hu & Bentler, 1999). Hu and Bentler (1999) particularly recommend the combination of CFI and SRMR. In order to save degrees of freedom, all structural equation models were analyzed with item packages of two to three items. Because more than 5% of the data were missing, maximum likelihood imputation was used, which has the least bias (Byrne, 2001).

Demographic Details of the Sample. Data were collected from 421 employees and employers. Of them, 67% were female and 33% were male. The respondents' mean age was 40.9 years ($SD = 10.3$). The minimum number of years they had spent within the organization was 0.5; the maximum was 39 years ($M = 9.6, SD = 7.4$). Their total work experience including tenure at the current organization ranged from 0.5 to 42 years ($M = 18.4, SD = 11.4$). Most respondents were permanent employees of the organization (88%), while 12% were temporarily employed. All employees were bound to collective labour agreements. 70% were roman-catholic, 22% protestant, 7% were not religious, and 1% was Muslim.

Measures

Leadership. The most widely used scale to measure transformational leadership is the Multifactor Leadership Questionnaire (MLQ) (Bass & Avolio, 1995; Felfe, 2006), which assesses the factors idealized influence attributed ("My leader instils pride in me for being associated with him or her"), idealized influence behavior ("My leader specifies the importance of having a strong sense of purpose"), inspirational motivation ("My leader articulates a compelling vision of the future"), individualized consideration ("My leader seeks differing perspectives when solving problems"). Each factor was measured with four items. The respondents were asked to answer the MLQ by judging how strongly they agreed or disagreed with each statement in the questionnaire, using a five point scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *neither disagree nor agree*, 4 = *agree*, 5 = *strongly agree*). Confirmatory factor analysis showed that the factor loadings of the transformational leadership scale were above .50. In accordance to other researchers (Judge & Bono, 2000; Judge & Piccolo, 2004) the factors of

transformational leadership are combined, because of the high correlations among the sub dimensions (the average correlation among the latent transformational factors was .87). Confirmatory factor analysis for a second-order factor model showed that the cut-off criteria for good fit were met for CFI, TLI and SRMR, but not for RMSEA ($\chi^2 = 85.48$, $df = 16$, $p = .000$, CFI = .96, TLI = .93, RMSEA = .117, CI = .093-.142, SRMR = .03). As Bentler and Hu (1999) particularly recommend the combination of CFI and SRMR, and these fit indexes indicated good fit, the model was kept. Cronbachs Alpha was .95.

Psychological Contracts. The scale measuring psychological contract fulfillment contains 11 items. Eight of these items were used from the scale by Coyle-Shapiro and Kessler (2002), three items were added to adapt for the specific context of service work. The respondents were asked to answer the questions by judging to what extent they believe their employer fulfills these aspects, using a 5-point scale (1 = *not at all*, to 5 = *fulfills much more than obligated*). Relational psychological contract was measured with eight items (for example long-term job security or support at problems with customers), transactional psychological contract with three items (for example fair compensation in comparison to employees doing similar work). Confirmatory factor analysis ($\chi^2 = 27.44$, $df = 13$, $p = .000$, CFI = .98, TLI = .98, RMSEA = .064, CI = .032-.096, SRMR = .07) supported the two dimensions conceptualized by Coyle-Shapiro & Kessler (2002); all factor loadings were above the accepted threshold of .50. Cronbach Alphas for relational and transactional psychological contract were .87, and .77 respectively.

Job Satisfaction. Four items from the Questionnaire for Assessing Innovativeness (Klusemann, 2003) were used to measure job satisfaction (“Overall, I am satisfied with my job”). Respondents were asked to judge how strongly they agree or disagree with each statement, using a 5-point Likert scale. Confirmatory factor analysis ($\chi^2 = 12.39$, $df = 2$, $p = .000$, CFI = .99, TLI = .96, RMSEA = .129, CI = .067-.201, SRMR = .02) showed good fit when CFI, TLI and SRMR were considered. Cronbachs Alpha was .91.

Commitment. Affective commitment was measured using four items from the scale of Allen and Meyer (1990, Schmidt, Hollmann & Sodenkamp, 1998). An example item is “I feel a strong sense of belonging to my organization”. The answer format was the same as for job satisfaction. Cronbach Alphas for commitment was .93. The results of the confirmatory factor analysis ($\chi^2 = 5.31$, $df = 2$, $p = .07$, CFI = .99, TLI = .99, RMSEA = .072, CI = .000-.150, SRMR = .01) indicate very good fit.

Pay Satisfaction. 18 items from the Pay Satisfaction Questionnaire (Heneman & Schwab, 1985) were used to measure pay satisfaction. The factors – structure/ administration,

level, raises, and benefits— were measured through four or six items per factor. Answer-format was similar to the scales above. Cronbach Alphas for overall pay satisfaction was .96. The dimensions of pay satisfaction were combined, because of the high average correlation (.73) among the four latent pay satisfaction factors. A second-order confirmatory factor analysis showed good model fit ($\chi^2 = 72.28$, $df = 23$, $p = .000$, CFI = .98, TLI = .97, RMSEA = .082, CI = .061-.104, SRMR = .03).

Analyses

Hypothesis 2 and 3 suggested an indirect effects model, in which the relationships between leadership and the outcome variables are transmitted by psychological contracts. A mediator “accounts for the relation between the predictor and the criterion” (Baron & Kenny, 1986, p. 1176). Mediation analyses are most often guided by the causal steps strategy outlined by Baron and Kenny (1986) requiring: (1) a significant relationship between the predictor and the outcome ($c \neq 0$), (2) a significant relation between mediator and outcome ($a \neq 0$), (3) a significant relation between mediator and outcome controlling for the predictor ($b \neq 0$), and (4) the outcome does not cause the mediator.

However, the Baron and Kenny strategy has been criticized as simulation studies consistently show that the causal step approach is among the lowest in power (MacKinnon, Lockwood & Williams, 2004). Another problem with regard to this approach is that indirect effects are not estimated based on tests of the product term (ab) but rather inferred from a set of tests on their constituent paths (Hayes, 2009). Recent work by Preacher and Hayes (2004, 2008; Hayes, 2009; Preacher, Rucker & Hayes, 2007) demonstrates the advantage of not focusing on the individual paths in the mediation model, but to focus on the indirect effect of the predictor on the outcome through the mediator, which is quantified as the product term ab (MacKinnon, Warsi & Dwyer, 1995; Preacher & Hayes, 2008). At this juncture, the product term of the unstandardized coefficients a and b is used to assess the presence, strength, and significance of the indirect effect (Preacher et al., 2007). The statistical significance of ab is most commonly determined by Sobel tests (also called product-of-coefficients approach), which compares the ratio of ab/σ_{ab} to a critical value from the standard normal distribution (Sobel, 1982). This approach is more powerful than Baron and Kenny’s (1986) multi-step strategy, because it addresses mediation more directly (Preacher & Hayes, 2004). However, the Sobel test has “a major flaw” (Hayes, 2009), because it is based on the assumption that the sampling distribution of the indirect effect is normal. As the sampling distribution is rather asymmetric (Preacher & Hayes, 2008), this assumption is questionable. The Sobel test there-

fore uses too large critical values, so that it has less power to detect the true mediation effect (see also MacKinnon et al., 2004). So instead of relying on p -values of the Sobel test, a more powerful and reasonable strategy is to obtain bootstrapped indirect effects (Hayes, 2009; Preacher & Hayes, 2008). Bootstrapping builds indirect effect and confidence intervals for the indirect effect by empirical approximation of the sampling distribution (Hayes, 2009; Preacher & Hayes, 2008). If zero is not between the lower and upper bound of the bootstrapped confidence interval, the indirect effect is viewed as being significant. Bootstrapping has several advantages because it does not assume a particular shape of the sampling distribution of the indirect effect (Hayes, 2009). In a simulation study MacKinnon et al. (2004) showed that bootstrapping provided a lower Type I error rate and higher power than the methods of Baron and Kenny (1986) and Sobel (1982). Preacher and Hayes (2008) particularly recommend bias-corrected bootstrapping for testing indirect effects in multiple mediator models, and the present study follows their approach.

As the study was dealing with two potential mediators, a multiple mediator model was analyzed. In models with two or more mediators, a specific indirect effect is the indirect effect through a given intervening variable, and the sum of the specific effects is called the total indirect effect (Hayes, 2009). In contrast to separate simple mediation models the multiple mediator approach has several advantages such as determining not only the total indirect effect, but to estimate to what extent a specific form of psychological contract mediates the effect of leadership on the outcome variables, conditional on the presence of the other form of psychological contract. Hayes (2009) demonstrates the possibility that the total indirect effect may be insignificant in spite of the existence of significant specific indirect effects. Further, according to Preacher and Hayes (2008), the indirect effect through a mediator in the multiple model is not the same as the indirect effect through the mediator alone, except when all mediators are uncorrelated. Since transactional and relational psychological contracts are inter-correlated, the multiple mediator approach seemed advisable. Following Preacher and Hayes (2008) contrasts of the indirect effects were conducted to estimate whether the two indirect effects differ significantly, because even if it is found that only one of the specific indirect effects is significant, it is possible that the two indirect effects can not be distinguished in terms of magnitude (Preacher & Hayes, 2008). Thus, investigating mediation involves three parts: the total indirect effect (whether the set of the two mediators transmits the effect of transformational leadership on the outcome variables), the specific indirect effects associated with each form of psychological contract, and the contrast between the two specific indirect effects.

Structural equation modelling in Mplus was used to fit the multiple mediator model, because Mplus is the only program that implements bootstrap methods for estimating total as well as specific indirect effects (Preacher & Hayes, 2008). Further, structural equation modelling has the benefit of modelling measurement error using latent constructs rather than measured indicators (Preacher & Hayes, 2008). The residuals associated with the mediators were, according to Preacher and Hayes (2008) permitted to covary in order to account for unmodelled sources of covariation between the mediators. Further covariation between the residuals associated with the outcome variables was allowed. The direct effect of leadership on the outcome variables were estimated and did not constrain the *c'* values to zero in order not to inflate estimates of the indirect effect (Preacher & Hayes, 2008).

RESULTS

Descriptive Statistics

Table 1 presents descriptive statistics for and Pearson correlations between the variables in the study – transformational leadership, relational and transactional psychological contract, job satisfaction, commitment, and pay satisfaction.

Table 1. Descriptive statistics, correlations, and reliabilities

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1 Transformational leadership	4.37	0.89	(.95)					
2 Relational contract	2.77	0.73	.53***	(.87)				
3 Transactional contract	2.67	0.80	.21***	.44***	(.77)			
4 Job satisfaction	4.89	0.80	.49***	.42***	.15**	(.91)		
5 Commitment	4.65	1.06	.44***	.42***	.11*	.61***	(.93)	
6 Pay satisfaction	3.76	0.83	.31***	.34***	.41***	.31***	.32***	(.96)

Note. *** $p < .001$, ** $p < .01$. * $p < .05$.

Replicating results of several studies, transformational leadership is significantly positively related to job satisfaction ($r = .49, p < .001$), and commitment ($r = .44, p < .001$). Further, the expected positive relationship between transformational leadership and pay satisfaction could be confirmed ($r = .31, p < .001$). Thus, H1 is supported.

Mediator Analyses

To test hypotheses two and three, which suggested an indirect effect through relational contracts on job satisfaction and commitment, and an indirect effect through transactional contracts on pay satisfaction, a multiple mediator model was analyzed using structural equation modelling. The results indicate that the theoretical model (figure 1) fits the data well ($\chi^2 = 487.81, df = 214, p = .000, CFI = .96, TLI = .95, RMSEA = .055, CI = .049-.062, SRMR = .04$). From figure 1, the directions of the *a* and *b* paths are consistent with the interpretation that transformational leadership leads to greater relational and transactional psychological contracts, and greater relational psychological contracts lead to greater job satisfaction and commitment, while greater transactional psychological contracts lead to increased pay satisfaction. Further, the results show that 32% of the variance in job satisfaction is explained by leadership and psychological contracts. For commitment, the amount of variance explained is 27%, for pay satisfaction predictor and mediator explain 39% of the variance.

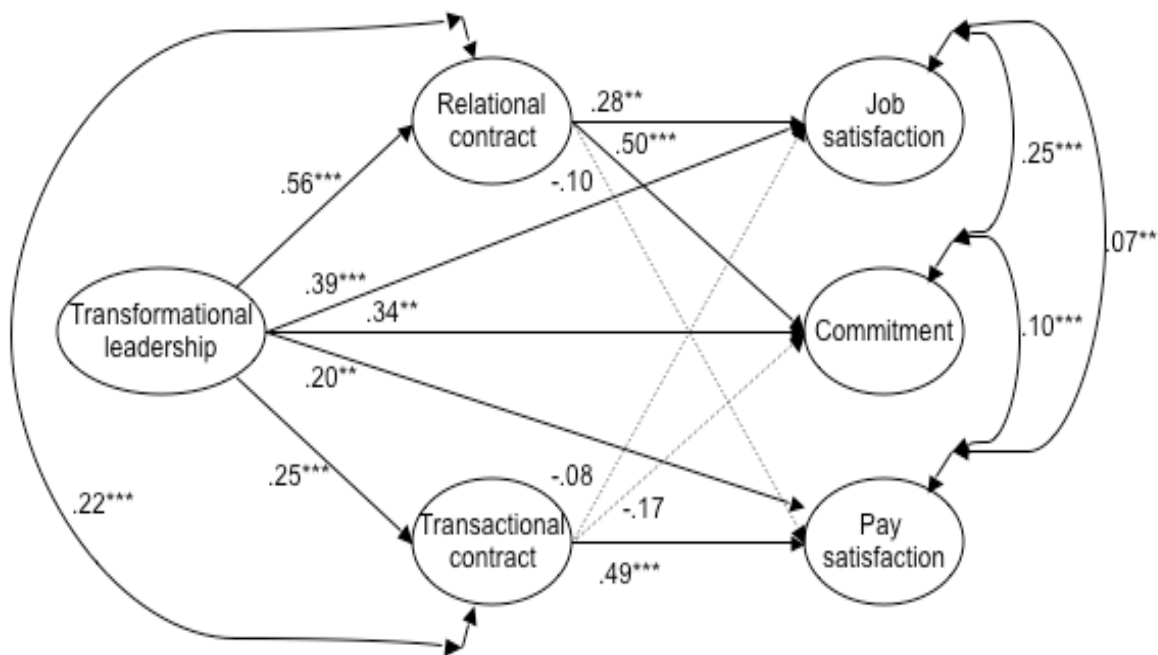


Figure 1. Mediation model: Unstandardized coefficients (straight lines), correlations (curved lines), significant paths (solid lines), and insignificant paths (dashed lines) shown.

*** $p < .001$, ** $p < .01$

It was expected that transformational leaders influence employees' job satisfaction and commitment through fulfillment of the relational psychological contract. For job satisfaction, the total indirect effect of transformational leadership is .14. The asymptotic critical ratio for the total indirect effect is $z = 2.84$, which leads to a rejection of the null hypothesis that the total indirect effect through both forms of psychological contract is zero ($p < .01$). The spe-

cific indirect effects are $ab = .16$ (through relational psychological contract) and $ab = -.02$ (through transactional psychological contract). Of the potential mediators examined one can conclude from the product-of-coefficient approach that the relational psychological contract is an important mediator ($z = 3.01, p < .01$), whereas transactional psychological contract is not ($z = -0.85, p > .10$). Because, as mentioned above, the assumption of normality of the sampling distribution is questionable, the confidence intervals for the indirect effects were bootstrapped. The estimates and 95% confidence intervals (BC) are in table 2. In agreement with results of the product-of-coefficients strategy, relational psychological contract is a significant mediator of the transformational leadership – job satisfaction relationship, as this confidence interval does not contain zero $\{.06, .26\}$, while the confidence interval for transactional psychological contract contains zero $\{-.08, .02\}$.

Table 2. Mediation of the effect of transformational leadership on job satisfaction through psychological contracts

Job Satisfaction	Point Estimate	Product of Coefficients		Bootstrapping BC 95% CI	
		SE	Z	Lower	Upper
Indirect effect					
Relational contract	.16	.05	3.01	.06	.26
Transactional contract	-.02	.02	-0.85	-.08	.02
Total indirect	.14	.05	2.94	.04	.24
Contrast					
Relational vs. transactional contract	.18	.06	2.74	.06	.32
Direct effect	.39	.07	5.75	.27	.53

Note. BC = bias corrected; 5,000 bootstrap samples.

As it is of interest to see whether these two indirect effects differ significantly, contrasts were estimated, which were as well bootstrapped to examine the 95% CIs, following Preacher and Hayes' (2008) approach. The confidence interval for the contrast between relational and transactional psychological contract is $\{.06, .32\}$. Because zero is not contained in the interval, the two indirect effects are significantly different from zero. The direct effect of transformational leadership on job satisfaction is significant ($z = 5.75, p = .000$). Thus, for job satisfaction one can conclude that the effect of transformational leadership is partially transmitted by relational psychological contracts.

For commitment, similar results can be observed. The total indirect effect is $.23$ ($z = 3.85, p < .001$). The specific indirect effects are $ab = .28$ (through relational psychological

contract) and $ab = -.04$ (through transactional psychological contract). The results of the product-of-coefficient approach show that relational psychological contract is a significant mediator ($z = 3.01, p < .001$) while transactional psychological contracts do not contribute to the indirect effect above and beyond relational psychological contracts ($z = -1.57, p > .10$). The examination of the 95% CIs confirms that only relational psychological contracts are a mediator (table 3). The contrast of the indirect effect shows that difference between the specific indirect effect through relational psychological contract and through transactional psychological contract is significant $\{.17, .50\}$. As the direct effect of transformational leadership is significant ($z = 3.35, p < .001$), partial mediation is present.

Table 3. Mediation of the effect of transformational leadership on commitment through psychological contracts

Commitment	Point Estimate	Product of Coefficients		Bootstrapping BC 95% CI	
		SE	Z	Lower	Upper
Indirect effect					
Relational contract	.28	.07	4.08	.15	.42
Transactional contract	-.04	.03	-1.57	-.11	.00
Total indirect	.23	.06	3.85	.12	.36
Contrast					
Relational vs. transactional contract	.32	.08	3.84	.17	.50
Direct effect	.34	.10	3.35	.15	.54

Note. BC = bias corrected; 5,000 bootstrap samples.

Further it was found that the total indirect effect for pay satisfaction was $.07$ ($z = 1.08, p > .10$), which is insignificant. The set of the two forms of psychological contract are therefore not significantly transmitting the effect of transformational leadership on pay satisfaction. The specific indirect effects are $ab = -.05$ (through relational psychological contract) and $ab = .12$ (through transactional psychological contract). Because zero is contained in the interval, the specific indirect effect through relational psychological contract is not significant, which is in line with the results of the product-of-coefficients approach ($z = -1.03, p > .10$). Yet, the specific indirect effect of transformational leadership on pay satisfaction through transactional psychological contract is significant ($z = 2.37, p < .05$), accordingly, the confidence interval does not contain zero (table 4). Examination of the contrast of the indirect effect shows that the specific indirect effect through transactional psychological contract is significantly larger than the specific indirect effect through relational psychological contract, with a BC 95%CI of

-.35 to -.03. The direct effect of transformational leadership is significant ($z = 2.95, p < .01$); therefore the effect is only partially transmitted through transactional contracts.

Table 4. Mediation of the effect of transformational leadership on pay satisfaction through psychological contracts

Commitment	Point Estimate	Product of Coefficients		Bootstrapping BC 95% CI	
		<i>SE</i>	<i>Z</i>	Lower	Upper
Indirect effect					
Relational contract	-.05	.05	-1.03	-.16	.04
Transactional contract	.12	.05	2.37	.04	.24
Total indirect	.07	.06	1.08	.06	.19
Contrast					
Relational vs. transactional contract	-.17	.08	-2.15	-.35	-.03
Direct effect	.20	.07	2.95	.08	.35

Note. BC = bias corrected; 5,000 bootstrap samples.

To sum up, the results show that the effects of transformational leadership on job satisfaction and commitment are mainly transmitted through relational psychological contracts, while transformational leadership is related to pay satisfaction through its impact on transactional psychological contracts. Thus, hypotheses two and three can be supported.

DISCUSSION

It was expected that transformational leadership has a positive influence on employees' attitudes. The results show the expected positive relationship between transformational leadership and job satisfaction and commitment, with correlation coefficients being of comparable size to the results of a large German sample analyzed by Felfe (2006). Further, transformational leadership should have a positive influence on employees' pay satisfaction. The key elements of the relationship between transformational leadership and pay satisfaction are that transformational leaders provide meaning of the organizational (pay) system and give the employees the feeling that their needs and desires are recognized. No known research so far has analyzed this relationship. This research therefore makes an important contribution by linking transformational leadership to pay satisfaction.

Further it was suggested that the effect of leadership on employee attitudes is transmitted by psychological contracts. Particularly it was expected that relational psychological contracts mediate the relationship between transformational leadership and job satisfaction and

commitment. As transformational leaders build a personal relationship to their employees, the terms of exchange should be perceived as being based on socio-emotional elements, which in turn positively affect employees' job satisfaction and commitment. The results show that transformational leadership and relational psychological contract significantly influenced job satisfaction and commitment, supporting previous studies indicating positive effects of transformational leadership on the one hand (Judge & Piccolo, 2004), and studies showing significant associations between relational psychological contract and the outcome variables on the other hand (Cavanaugh & Noe, 1999; McDonald & Makin, 2000; Robinson & Rousseau, 1994). Therefore, the study finds support for the assumption that leaders establish depending on their behavior different psychological contracts (Goodwin et al., 2001). Moreover, the study is unique in empirically linking transformational leadership to relational psychological contracts and demonstrating indirect effects on job satisfaction and commitment. The results indicate that the total indirect effect is significant, which suggests that both forms of psychological contracts mediate the effect of transformational leadership on job satisfaction and commitment. The results for the specific indirect effects further show that only relational psychological contracts make a significant contribution, while the effect of transactional psychological contracts is not different from zero. Thus, the specific indirect effect through relational psychological contracts is significantly larger than the specific indirect effect through transactional psychological contracts. This indicates that the socio-emotional elements and personalized relationship between the transformational leader and the employees plays a particularly important role influencing the satisfaction with their job and emotional attachment to the organization. However, since the direct effect of transformational leadership was found to be significant, one speaks of partial mediation. Thus, relational psychological contracts did not fully mediate the relationship between transformational leadership and job satisfaction and commitment. So far, no single mediator is identified to fully transmit the effects of transformational leadership. Shamir, House and Arthur (1993) assumed several possible mediators of transformational leadership such as heightened self-esteem, identification or value internalization, all being effects on the self-concept of the employee. Accordingly, Bono and Judge (2003) for example found self-concordance to partially mediate the relationship between transformational leadership and commitment, and Sparks and Schenk (2001) identified the belief in a higher purpose as a mediator of the transformational leadership-job satisfaction relationship. The study contributed to this research in showing that the perception of an equitable relationship and the belief of mutual obligations with regard to socio-emotional terms of exchange as well form an important mediator.

Further, it was expected that the effect of transformational leadership on pay satisfaction is transmitted by transactional psychological contracts. Transformational leaders provide meaning and present values of the goals. This result extends research showing the positive association between understanding of the pay system and pay satisfaction (Brown & Huber, 1992). Further, transformational leaders support employees' career development, communicate that employees' needs will be recognized, and are seen as responsible to fulfill transactional obligations, while the employee identifies with the leader's goals and works towards the shared vision. This has an impact on employees' perception of transactional obligations and mutual agreements. The results show that while the total indirect effect of transformational leadership through both forms of psychological contracts was not different from zero, the specific indirect effect through transactional psychological contracts was significant. This suggests that transactional contracts alone unfold the effect of transformational leadership on pay satisfaction, while the supplement of socio-emotional elements does not enhance this effect. However, the effect of transformational leadership on pay satisfaction was only partially mediated by transactional contracts. Thus, the effect of transformational leadership on employees' pay satisfaction goes beyond giving the employee the feeling of obligation fulfillment. Under transformational leadership employees identify with the organization and the leader and want to emulate him or her (Bass, 1985), which might positively influence employees' self-esteem so that employees have a greater overall satisfaction and perceive to have a positive value balance, which is associated with their pay satisfaction. While it is found that part of the transactional psychological contract is attributed to the leader, the strong relationship between transactional psychological contracts and pay satisfaction hints to the possibility that some transactional obligations are ascribed to the organization only. Further research is needed to explore the role of leadership and the role of the organization with regard to transactional psychological contracts. Yet, the study's findings contribute in analyzing whether transformational leadership influences employees' pay satisfaction, and showing that this effect is partially transmitted by transactional psychological contracts. This indicates that even though leaders in a German institution with employees being bound to collective labour agreements and having only little direct influence on pay decisions, transformational leadership can unfold a positive effect on employees' pay satisfaction emphasizing transactional psychological contracts.

Our study further contributes in demonstrating differential mechanisms influencing employees' job and pay satisfaction. Job and pay satisfaction were moderately related ($r = .31$), supporting previous research finding correlation coefficients around .30 (Harris et al.,

2007; Nguyen et al., 2003, Tremblay et al., 2000). Structural equation modelling shows that the correlation even decreases as other factors are controlled for. Also, the underlying mechanisms of transformational leadership influencing job and pay satisfaction are found to be different: The indirect effect for job satisfaction is transmitted by relational psychological contracts, while the indirect effect on pay satisfaction is transmitted by transactional psychological contracts. These findings underline the importance of assessing pay satisfaction independently from job satisfaction, supporting results from recent studies (Currall et al., 2005; Harris et al., 2007; Heneman & Schwab, 1985; Miceli & Lane, 1991).

Limitations

Despite these strengths, some limitations should be kept in mind when interpreting the study's results. First, the variables of interest were not examined in a longitudinal study. Although the cross-sectional results provide interesting insights in the underlying mechanisms of transformational leadership, one cannot draw causal linkages between leadership, psychological contracts, and the outcome variables. Longitudinal designs would therefore be a desirable extension.

Second, the measures were obtained from the same individuals. This creates the potential of common method variance, which may cause systematic measurement error and bias the estimates of the true relationship among theoretical constructs. The limitation is however minimized since the results indicated indirect effects, which are more difficult to identify if common method variance is present (Harris et al., 2007). Nevertheless, several tests to control common-method variance were conducted. If common method variance is largely responsible for the relationship among the variables, the one-factor model should fit the data as well as the complex model (Cunningham, 2006; Korsgaard & Roberson, 1995; Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Therefore a confirmatory factor analysis with all variables loading on one factor to examine the fit of the model was run. The results of the confirmatory factor analysis showed that the single-factor model did not fit the data well ($\chi^2 = 3722.36$, $df = 230$, $p = .000$, $CFI = .48$, $TLI = .42$, $RMSEA = .190$, $CI = .185-.195$, $SRMR = .14$); neither did a two factor (leadership and psychological contracts forming one factor; $\Delta\chi^2 = 2281.01$, $df = \Delta 25$, $p = .000$) or three factor (leadership, both psychological contracts on one factor, all outcome variables on one factor) model ($\Delta\chi^2 = 1790.62$, $df = \Delta 23$, $p = .000$); the assumed model with six factors showed the best fit. Further, it was analyzed whether the proportion of variance explained in the outcome variables is inflated by a same-source bias by adding a first-order factor with all of the measures as indicators to the model the procedure as

recommended by Podsakoff and colleagues and applied in several studies (Carlson and Kacmar, 2000; Podsakoff et al., 1990; Podsakoff et al. 2003). Results from these analyses indicated that the method factor did improve model fit ($\chi^2 = 362.58$, $df = 191$, $p = .000$, CFI = .97, TLI = .97, RMSEA = .046, CI = .039-.053, SRMR = .03), significantly ($\Delta\chi^2 = 125.33$, $\Delta df = 23$, $p = .000$). The addition of this factor further did reduce the amount of variance in all dependent variables accounted for by transformational leadership and psychological contracts. The proportion of variance in job satisfaction decreased from 32% to 29%, in commitment from 27% to 18%, and in pay satisfaction from 39% to 36%. However, although the inclusion of this factor reduced the proportion of variance explained, a significant and considerable amount of explained variance remained. Even with common-method variance controlled, the predictors still accounted for 18% to 36% of the variance in the outcome variables dimensions. While the results of these analyses do not preclude the possibility of common method variance, they do suggest that common method variance is not of great concern and thus is unlikely to confound the interpretations of results.

A third limitation comprises the generalizability of the findings to profit companies and institutions outside of Germany or organizations without collective labour agreements. Even though the perceptual nature of the topic suggests that the idea of leadership influencing employees' attitudes via psychological contracts should hold across settings, future research should examine the impact of leadership on pay satisfaction with additional samples. Since in charitable institutions transformational leadership seems to better reflect the underlying organization's culture and philosophy, profit organizations might have more leaders whose behavior would be perceived as more transactional. The charitable context may limit the generalizability of the results to other employees and organizations. To determine if this is the case, future research should replicate the findings in other organizational contexts.

Future Research Directions and Managerial Implications

The findings of the present study highlight various ways in which research on the relationship between leadership and pay satisfaction could be extended. Firstly, given the shift towards greater emphasis on pay for performance, not only in the U. S. (Milkovich & Newman, 2008), but also in Germany (Antoni & Berger, 2007), one avenue that is in need of exploration is the leadership-pay satisfaction relationship for performance-based pay systems taking both transformational and transactional leadership into account.

In the case of performance-based pay, transactional leadership in the form of contingent reward seems worth analyzing. Contingent reward leaders communicate their expecta-

tions and specify what rewards will be given for goal achievement. The strong focus on rewards as well as the clarification of mutual obligations may be related to transactional psychological contracts as well as to employees' pay satisfaction. Thus, further work is needed that explores the impact of leadership on pay satisfaction via psychological contracts in the context of performance-based pay.

Bonuses depending on performance assessment involve subjective assessment by leaders (Tekleab et al., 2005). Therefore, transformational leadership is likely to play a stronger role influencing employees' pay satisfaction. With regard to performance-based pay leaders have to consider employees' strengths and weaknesses when goals are negotiated or performance is assessed, motivate employees to see goals as challenges and encourage them to find innovative solutions. In this context, relational aspects could play a stronger role in the form of employees trusting the leader that goals are negotiated and not set, that the performance criteria are reachable for the employee, and that the goal achievement is fairly assessed. Therefore, relational psychological contracts are likely to be an important mediator with regard to the effect of transformational leadership and employees' bonus perceptions.

The present research shows that transformational leadership is related to overall pay satisfaction and the underlying mechanisms influencing job and pay satisfaction are different. Based on these results, a path for future research includes an examination of differential leadership effects on the pay satisfaction dimensions. Heneman and Schwab (1985) and considerable research following their approach (Currall et al., 2005; Judge, 1993; Vanderberghe & Tremblay, 2008) distinguish the facets structure/administration, level, raises, and benefits, which was used as first order factors contributing to an overall pay satisfaction. However, it is conceivable that facets like structure and administration satisfaction are stronger positively influenced by leaders providing meaning of the organizational pay system, than facets like level satisfaction. Moreover, as pay for performance gains popularity, Sturman and Short (2000) recently introduced a fifth facet of pay satisfaction, which they called lump-sum bonus satisfaction. Thus, to examine the differential effects with regard to the pay satisfaction dimensions seems a fruitful path for future research.

The findings of the study have several practical implications for leaders. Foremost, the results suggest that transformational leadership influences employees' perceptions of two forms of psychological contract, which in turn impact employees' job satisfaction, commitment, and pay satisfaction. Therefore, it is important for leaders to be aware that employees form beliefs about mutual obligations. According to Rousseau (1998), obligations in the form of expectations arise from the exchange of promises, and as it was argued, the leader is a key

person for the employee as he or she is seen as a representative of the organization. Thus, leaders should pay attention to the promises that might go along with their actions. Herriot and Pemberton (1996) advocate that expectations about mutual obligations should be made more transparent and explicit. The psychological contract is the employee's interpretation of an exchange agreement (Rousseau, 1998), but leaders may address the key issues to reduce uncertainties and achieve a shared understanding of mutual obligations.

In the current study, some important steps have been taken to understand the relationship between leadership, especially transformational leadership, and employees' pay satisfaction. The study contributes in closely examining two forms of psychological contract as mechanisms differentially transmitting the effect of leadership on job satisfaction and commitment on the one hand, and the impact on pay satisfaction on the other hand. In future studies, the effect on pay satisfaction could be scrutinized by considering different facets of pay satisfaction and long-term linkages between leadership and employees' attitudes towards their pay could be investigated.

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STUDY II: THE MULTIDIMENSIONALITY AND ANTECEDENTS OF PAY SATISFACTION: LEADERSHIP AND PSYCHOLOGICAL CONTRACTS

INTRODUCTION

The enhancement of employees' pay satisfaction can be regarded as one of the goals of an organization, since pay satisfaction influences employees' attitudes and behavior such as commitment, performance, and turnover intentions and has an impact on organizational outcomes, such as absenteeism (Currall, Towler, Judge & Kohn, 2005; Vandenberghe & Tremblay, 2008; Williams, McDaniel & Ford, 2007). According to Adams' equity principle (1965) pay satisfaction depends on the ratio of an employee's inputs and outcomes compared to referent others. However, the possibilities to increase employees' pay are finite, and moreover, a substantial amount of evidence indicates that actual pay is only weakly linked to employees' pay satisfaction (Currall et al., 2005; Morgeson, Campion, Maertz, 2001; Orpen & Bonnici, 1990; Tekleab, Bartol & Liu, 2005). Therefore the question arises how organizations can increase employee's satisfaction with their pay. Lawler (1971) suggests that pay satisfaction is determined by the difference between employees' beliefs about what they should receive and their perceived pay. Thus, pay satisfaction has to be regarded as a perceptual phenomenon and therefore more factors have to be considered than objective equity (Emans, 2007).

Research on pay satisfaction has identified understanding of the pay system as antecedents of employees' attitude towards their pay and suggests that leaders assume a crucial role in providing this knowledge (Brown & Huber, 1992; Dyer & Theriault, 1976; Salimäki, Hakonen & Heneman, 2009). Based on the concept of transactional and transformational leadership (Avolio, Reichard, Hannah, Walumbwa & Chan, 2009; Bass, 1985; Bass & Riggio, 2006) the impact of leadership on employees' pay satisfaction is closely examined. Thereby it is on the one hand expected that transactional leadership is related to pay satisfaction, by setting performance standards, clarifying effort-reward contingencies, and creating transparent input-outcome exchange relationship (Bass & Riggio, 2006). Transformational leadership on the other hand focuses on establishing a strong link between the organization, the leader and the employees by providing meaning, a common vision, instilling pride and giving employees the feeling that their needs, goals, and values will be considered (Bass & Riggio, 2006; Judge & Piccolo, 2004), which should positively affect employees' attitude towards their pay beyond the influence of transactional leadership.

Further, it is supposed that transactional and transformational leadership behavior influence pay satisfaction via psychological contracts. In order to retain and motivate good employees, organizations aim at maintaining positive relationships with employees by promising various relational inducements (such as opportunities for development) and transactional inducements (such as fair pay) (Montes & Irving, 2008). These promises form employees' psychological contracts (Coyle-Shapiro & Kessler, 2000). As employees personify the organization, the leader is seen as the contractual partner, who is responsible for fulfilling the organization's obligations such as support (Liden, Bauer & Erdogan, 2005). It is argued in line with Goodwin, Wofford and Whittington (2001) that transactional leadership with its focus on clear performance-reward contingencies influences employees' perception of transactional contracts, which focus on materialistic obligations. Under transformational leaders employees work towards the shared vision and rely on the leader to provide appropriate rewards without previous negotiation (Goodwin et al., 2001). Therefore, transformational leadership defines the leader-employee relationship outside the economic contract (Pillai, Schriesheim & Williams, 1999). As the link between leadership and psychological contracts has yet not been empirically investigated this work aims at analyzing psychological contracts as the underlying mechanism through which leadership influences employees' attitudes towards their pay.

Recent evidence shows that the perceived fulfillment of obligations in turn has an impact on satisfaction and commitment (Montes & Irving, 2008; Raja, Johns & Ntallianis, 2004). Building on this it is expected that leadership influences employees' pay satisfaction through transactional and relational psychological contracts. Thus, the purpose of this article is to deepen the understanding of the determinants of pay satisfaction, which may lead to improved compensation system implementation (Gerhart & Milkovich, 1992; Morgeson et al., 2001) and provides an opportunity for organizations to positively influence their employees' pay satisfaction. In accordance with recent research (Currall et al., 2005; Judge, 1993; Vanderberghe & Tremblay, 2008; Williams et al., 2007) pay satisfaction is regarded as a multidimensional construct, with the facets structure/administration, level, raises, benefits, and bonus (Heneman & Schwab, 1985; Sturman & Short, 2000), in order to explore the question whether the two leadership behaviors influence these facets differentially.

Relating Leadership and Pay Satisfaction

The theory of social comparison (Adams, 1965) and discrepancy theory (Lawler, 1971) are regarded as the basis for research on pay satisfaction. According to Adams (1965), employees' pay satisfaction can be derived from their perceptions of their pay being in the

right proportion compared to their inputs and to other employees. Lawler's (1971) model focuses on the discrepancy between what employees perceive to receive and what they think they should receive. Both theories imply that employees receiving the same amount of pay may have different levels of pay satisfaction based on external comparisons or different expectations (Sturman & Carraher, 2007). Thus, pay satisfaction is considered as a perceptual phenomenon (Emans, 2007). Consequently, an increasing number of studies has turned the attention away from the influence of actual pay on employees' pay satisfaction and increasingly focuses on identifying other perceptual variables as determinants (Huber, Seybolt & Venemon, 1992; Tekleab et al., 2005; Williams, McDaniel & Nguyen, 2006). One line of research considers distributive and procedural justice as antecedents of employees' pay satisfaction (Folger & Konovsky, 1989; Heneman & Judge, 2000; Huber et al., 1992; Sweeny & McFarlin, 1993; Tekleab et al., 2005; Tremblay, Sire & Balkin, 2000). While this research contributed in demonstrating that not only the perceived ratio of inputs and outcomes, but also the perceived transparency and participation in pay decisions plays a role, the focus on organizational justice leaves some questions unanswered. The theoretical point of view underlines the problematically strong overlap between pay satisfaction and organizational justice (Heneman & Judge, 2000). Considering the empirical evidence, Scarpello and Carraher (2008) accordingly speak of a "widely accepted assumption that pay satisfaction is equivalent to perceptions of pay fairness" (p. 23). The further differentiation of the concept and measurement of organizational justice, by adding the dimensions of interactional or interpersonal and informational justice (Colquitt, 2001) does not solve this problem. However, the interactional aspect of organizational justice indicates the importance of leadership behavior for organizational justice and pay satisfaction.

Another line of research focuses on the influence of knowledge about the pay system and pay policies (Brown & Huber, 1992; Dyer & Theriault, 1976; Heneman & Judge, 2000; Salimäki, Hakonen & Heneman, 2009). Brown and Huber (1992) as well as Salimäki et al. (2009) point to the role, which the leader assumes in providing meaning to the system. Yet, this research has not investigated the specific leadership behavior, as it is the purpose of the present study. Therefore, the study builds on the theory of Bass (1985), which has largely guided research on leadership. On the basis of theoretical and empirical evidence (e.g. Bass, 1985; Bass & Riggio, 2006; Bono & Judge, 2004; Hinkin & Schriesheim, 2008; Judge & Piccolo, 2004) leadership has been classified into two broad categories of distinct behaviors: transactional and transformational leadership. *Transactional leadership* means that employees agree with, accept, and comply with the leader, and receive rewards, resources, or the avoid-

ance of punishment (Bass & Riggio, 2006). The key element of *transactional contingent reward* is the exchange agreement, in which the leader clarifies expectations, the employee has the opportunity to negotiate what is being exchanged and whether it is satisfactory, and the leader rewards the compliance and performance in the form of praise, recognition, and recommendations for a pay raise or promotion (Bass, 1985; Bass & Riggio, 2006; Hollander, 1978). Transactional contingent reward leadership results in followers achieving expected performance and has consistently shown to be positively related to employees' job satisfaction and commitment (Judge & Piccolo, 2004). It is expected that this leadership behavior is also linked to employees' pay satisfaction. Transactional leaders emphasize clear relation between performance and rewards, which is likely to put attention towards outcomes (Bass, 1985). Pay is a major outcome of interest for the employee (Milkovich & Newman, 2008), so transactional leadership is likely to have an impact on an employees' perception of their pay. By clarifying expectations, specifying goals and contingently rewarding an employee's performance, transactional leadership should reduce the discrepancy between employees' perceptions of what they believe they should receive and their perceptions of what they actually received.

Bass (1985) originally defined transactional leader as consisting not only of contingent reward behavior, but also of management by exception active and passive. Active management by exception refers to leaders specifying what constitutes ineffective performance and taking disciplinary action, while passive management by exception refers to leaders waiting for problems to become serious. Yet, it is argued that management by exception plays a subordinate role for employees' pay satisfaction and therefore do not further take it into account.

Hypothesis 1: Transactional leadership is positively related to pay satisfaction.

Transactional leadership is contrasted with *transformational leadership* (Bass, 1985; Bass & Riggio, 2006; Judge & Piccolo, 2004; Whittington, Coker, Goodwin, Ickes & Murray, 2009). Transformational leaders seek to arouse and satisfy higher needs, stimulate and inspire employees to do more than originally expected and transcend the employee's self interest for the sake of the organization. Respective leadership behaviors are communicating an attractive vision, responding to individual employee's values, needs, and goals, empowering and challenging employees to think on their own and to creatively find innovative solutions (Bass, 1985; Bass & Riggio, 2006). Following Bass (1985; Bass & Avolio, 1993) the components of transformational leadership are *idealized influence attributed* and *idealized influence behavior* (employees identify with the leader and seek to emulate him/her), *inspirational motivation*

(the leader inspires employees with challenge and persuasion, providing meaning and understanding), *intellectual stimulation* (the leader expands employees' use of their abilities), and *individualized consideration* (the leader provides employees with support, mentoring, and coaching). A considerable amount of evidence indicates that transformational leadership has a positive impact on employees' attitudes such as job satisfaction (Avolio et al., 2009; Bass, Avolio, Jung & Berson, 2003; Judge & Piccolo, 2004). While one could argue for the relationship between transformational leadership and pay satisfaction as pay satisfaction can be seen as a facet of job satisfaction, Williams et al. (2007) demonstrate the discriminant validity of the pay satisfaction facets with respect to other job satisfaction facets. Also, Currall et al. (2005) suggest that the antecedents of pay satisfaction require independent research, as it is the purpose of the present study.

The reason why transformational leadership should be related to pay satisfaction is twofold. Firstly, previous research on pay satisfaction demonstrates the positive impact of understanding and knowledge about the pay system and pay policies (Brown & Huber, 1992; Dyer & Theriault, 1976; Heneman & Judge, 2000; Salimäki et al., 2009). Brown and Huber (1992) were able to demonstrate that this effect is stable over time. Salimäki et al. (2009) suggested that the leader plays a crucial role in providing this meaning and understanding of the pay system. Because transformational leadership, as defined by Bass (1985; Bass & Riggio, 2006), aims at giving meaning and understanding, transformational leadership should be strongly related to employees' pay satisfaction. Secondly, need fulfillment is important for employees' pay satisfaction (Emans, 2007). Under transformational leaders employees feel that their needs and demands are recognized, as the leader individually considers employees needs, goals and values (Bass, 1985). Thus, transformational leadership should be related to employees' positive attitude towards their pay.

Hypothesis 2: Transformational leadership is positively related to pay satisfaction.

The development of the Pay Satisfaction Questionnaire (PSQ, Heneman & Schwab, 1985) led to considerable interest in the multidimensional nature of pay satisfaction (Judge, 1993; Curall et al., 2005; Williams et al., 2007). The majority of studies follow Heneman and Schwab's (1985) distinction between four dimensions: Satisfaction with the *pay system and administration* refers to how pay is determined and distributed to the employees. *Level* refers to the satisfaction with the actual wage the employee receives. Satisfaction with pay *raises* refers to the employees' attitudes towards changes in pay level, and *benefits* reflects the satisfaction with indirect payments such as pension, vacation, or insurance. Variable pay has

gained popularity in many organizations, with recent evidence indicating greater use in the future (Milkovich & Newman, 2008), not only in the US but also in Europe (Antoni, 2007). To depict this trend, Sturman and Short (2000) introduced a new facet of pay satisfaction complementing the PSQ: *Bonus* reflects employees' satisfaction with the part of their compensation, which is paid in recognition of some goal achievement or performance.

Considering pay satisfaction as a multidimensional construct gives rise to the question whether transactional and transformational leadership influence the pay satisfaction facets differentially. Research on justice as an antecedent of pay satisfaction has shown that differential hypothesis can be derived. Tekleab et al. (2000) for example find that distributive justice is stronger related to pay level satisfaction, while procedural justice is stronger associated with raise satisfaction. Tremblay et al. (2005) support the predominance of distributive justice over procedural justice with regard to pay level, and moreover find that procedural justice is stronger related to benefit satisfaction. Considering leadership, it may for example, be possible that transactional leadership is particularly strongly related to employees' raises satisfaction, because Bass (1985) argues that recognition in the form of recommendations for promotion is one of the basic behaviors of transactional leaders. Transformational leadership on the other hand might be especially strong related to employees' attitude towards the organization's pay structure, because providing meaning and understanding is a constitutive element of transformational leadership. Thus, it seems fruitful to examine in an exploratory manner whether leadership differentially impacts the facets of pay satisfaction.

Before the underlying mechanisms are closely examined, one aspect of traditional leadership research has to be pointed out. Bass (1997) argues, "measures of transformational leadership add to measures of transactional leadership in predicting outcomes, but not vice versa" (p. 135). Bass et al. (2003) analyzed accordingly whether transactional contingent reward was a necessary basis for transformational leadership to be effective. There is a substantial amount of evidence supporting the augmentation effect for outcomes such as performance, job satisfaction, commitment, and organizational citizenship behavior (Bass & Avolio, 1993; Bass et al., 2003; Judge & Piccolo, 2004). Hence, it is expected that transformational leadership adds a significant amount of variance explained in employees' pay satisfaction.

Hypothesis 3: Transformational leadership augments the effect of transactional leadership in predicting employees' pay satisfaction.

Mediating Role of Psychological Contracts

From the start of the employment relationship, employees are implicitly and explicitly promised various inducements. Such promises form employees' perception of psychological contracts (Coyle-Shapiro & Kessler, 2000). Psychological contracts are defined as "individual beliefs, shaped by the organization, regarding the terms of a reciprocal exchange agreement binding both the individual and the organization" (Rousseau & Ho, 2000, p. 274). The beliefs about commitments and required contributions are derived through interactions with organizational agents (Rousseau & Ho, 2000). As leaders are the key agent of the organization, and therefore employees personify the organization, Liden et al. (2005) argue that eventually the leader is seen as the contractual partner. The fulfillment of a psychological contract is evaluated by comparing inputs and outcomes relative to what was promised (Morrison & Robinson, 1997). Since psychological contracts are subjective and depending on interpretations (Rousseau, 1998), it is not the actual fulfillment of obligations that plays a role, but rather the perception of the fulfillment. Thus, the leader's role goes beyond *forming* the psychological contract, moreover the leader is regarded as the responsible to *fulfill* the organizations' obligations such as support (Liden et al., 2005).

A considerable amount of evidence supports the distinction between two categories of psychological contract elements (Coyle-Shapiro & Kessler, 2000; Montes & Irving, 2008; Rousseau & McLean-Parks, 1993). A *transactional* psychological contract reflects a relationship between employees' hard work in exchange for high extrinsic returns such as pay or career development (Rousseau, 1990). Further, perceived terms of employment are calculative in nature (Herriot & Pemberton, 1996), so that employees are highly vigilant about balance and repayment (Morrison & Robinson, 1997). In contrast, *relational* psychological contracts reflect affect-laden exchanges with an intrinsic and highly subjective focus (Montes & Irving, 2008). They are based on terms of employment that are more than remunerative, comprising promises of the leader's support or expectations about training (Rousseau, 1995; Rousseau & McLean-Parks, 1993). Thus, relational psychological contracts characterize less concrete agreements as transactional contracts, and are based upon exchanges of both socio-emotional elements (such as loyalty and support) and monetizable elements (Rousseau & McLean Parks, 1993). While transactional and relational psychological contracts are distinct, employees' psychological contracts can contain both elements concurrently (Coyle-Shapiro & Kessler, 2000; Montes & Irving, 2008; Rousseau, 1990). Building on the work of Goodwin et al. (2001) it is likely, that perceptions of relational and transactional psychological contract are influenced by different leadership behaviors. The theoretical model is displayed in figure 1.

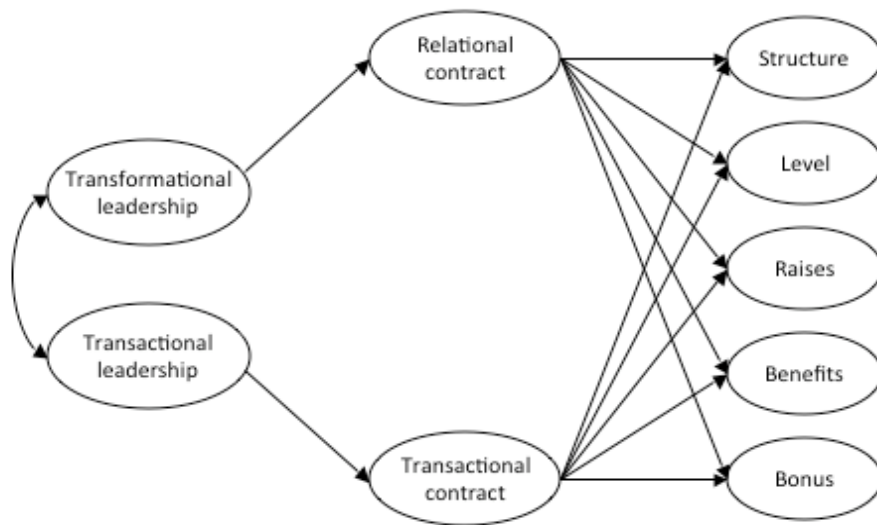


Figure 1. Theoretical model.

From the leadership literature, Pillai, Schriesheim and Williams (1999) and Goodwin, et al. (2001) suggest that transactional leadership emphasizes transactional psychological contract. Transactional leaders base the relationships to their employees on economic exchanges in which employees negotiate what rewards they consider as satisfactory, while the leader clarifies goals, expected performance and rewards, so that both parties are focusing on the outcomes of the exchange (Bass, 1985; Bass & Riggio, 2006). Thus, under transactional leadership there must be a mutual understanding of what leader and employee consider as requirements for the job (Whittington et al., 2009). Further, the goal of transactional leadership is to enter into a mutually beneficial exchange (Whittington et al., 2009). These two aspects are reflected in transactional psychological contracts, as they emphasize calculative terms of the relationship (Herriot & Pemberton, 1996), and enhance the importance of outcomes (Millward & Brewerton, 1999). Thus, for transactional leadership as for transactional contracts the belief that rewards will be received is basic to the exchange process. Due to the strong performance-reward contingency, employees under transactional leaders should perceive transactional obligations such as fair pay as fulfilled. Bass (1985) himself characterizes the relationship between leader and employees as a transactional contract. Yet, while previous work refers to psychological contracts (Bass, 1985; Goodwin et al., 2001; Pillai et al., 1999), no known work has investigated the link between transactional leadership and transactional contracts.

As transactional contracts emphasize the value of outcomes (Rousseau & Ho, 2000) and put attention towards repayment for the contributed effort (Morrison & Robinson, 1997),

it is likely that transactional psychological contracts in turn are related to employees' pay satisfaction.

Hypothesis 4: The relationship between transactional leadership and pay satisfaction is mediated by transactional psychological contracts.

Further relational psychological contracts should to be linked to transformational leadership. Relational psychological contracts emphasize personal, socio-emotional and value-based interactions (Rousseau, 1990). Further, relational contracts are described to represent long-term stable relationships, and involve faith of mutual adjustment (Rousseau & McLean Parks, 1993). Transformational leaders foster a climate of trust and establish a personal relationship to the employee, which is based particularly on socio-emotional elements. According to Bass (1985), transformational leaders empower their employees, stimulate to critically question assumptions, and consider individual's needs and abilities. This likely enhances employees' perceptions of an equitable and personal relationship. Pillai et al. (1999) therefore suggest that transformational leaders emphasize relational exchange relationships. Going beyond that Goodwin et al. (2001) argue, "transformational leaders do not focus on the clarification of appropriate behavior in exchange for rewards, they do fulfill the implicit expectations subordinates have for rewarding behavior that exists even in the absence of overt negotiation" (p. 771). Thus, employees and leaders agree on the value of their shared vision and work towards its achievement (Goodwin et al., 2001). It therefore seems likely that relational psychological contracts can be regarded as the underlying mechanism through which transformational leadership enhances employees' satisfaction with their pay.

Hypothesis 5: The relationship between transformational leadership and pay satisfaction is mediated by relational psychological contracts.

METHOD

Participants and Procedure

The sample for this study consisted of 216 employees from eight organizations. 63% of the employees were female and 37% were male. The respondents' mean age was 41.2 years ($SD = 10.4$). To a large part, the employees were Roman Catholic (65%), or Protestant (26%), 8% were not religious. The minimum number of years they had spent within the organization was one year; the maximum was 39 years ($M = 11.5$, $SD = 8.2$). For 94% of the employees their pay raises were bound to tenure and collective labour agreements. Employees participated voluntarily in the performance-based pay system. From all employees in the

sample 5% of their basic pay was linked to their performance, which was assessed by goal setting or performance appraisals. Thus, employees with a poor performance appraisal would receive 5% less than they would according to the collective bargaining agreement, employees with an excellent performance appraisal could receive their initial 5% plus, depending on the organization, up to 5% on top from the employer. The performance-based pay system was implemented two years ago; data were collected after employees received their second bonus payment. The eight organizations under study were charitable institutions; among them was a clinic, a home for the elderly, a boarding school for children with need of specific help, and a sheltered workshop. The staff ranged from cleaning personnel, canteen personnel, physiotherapists, educators, and maintenance, and was organized in groups, e.g. educators from one residential unit or masseurs from one department would constitute a group. Each group had a formal leader with managerial responsibilities, who was responsible for assessing employees' performance; this was the leader employees were asked to rate.

All scales were analyzed by confirmatory factor analyses. To determine the goodness of fit, the model fit indicators Comparative Fit Index (CFI), Tucker Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA) were used. If a model fit of CFI and TLI above .80 is achieved, the model fit is acceptable; above .90 it is good. RMSEA less than .08 is acceptable, less than .06 is good (for detailed description of model fit indicators see Hu & Bentler, 1999). In order to save degrees of freedom, all structural equation models were analyzed with item packages: The items of pay satisfaction and relational psychological contract were measured by two to four parcels (odd versus even; Bagozzi & Edwards, 1998), the sub dimensions of transformational leadership were due to their high correlation aggregated across items and used the composites so formed for each facet as an indicators (Bagozzi & Edwards, 1993). Following this approach not only reduces the required sample size, but also has the advantage of reducing the number of parameters to be estimated and decreasing the measurement error (Bagozzi & Edwards, 1998). Because more than 5% of the data were missing, maximum likelihood imputation was used, which has the least bias (Byrne, 2001). A sample size of at least 200 is regarded as an appropriate minimum (Kelloway, 1998). Bentler and Chou (1987) suggest that the ratio of sample size to estimated parameters lies between 5:1 and 10:1; with 25 parameters and 216 employees (ratio of 8.6:1) the sample size can be considered as appropriate.

Measures

Leadership. The most widely used scale to measure factors in transformational and transactional leadership is the Multifactor Leadership Questionnaire (MLQ; Bass & Avolio, 1995; Felfe, 2006). Transactional leadership (“Whenever I feel like it, I can negotiate with him/her about what I can get from what I accomplish”) was measured through ten items. Four factors from transformational leadership - idealized influence attributed (“My leader instils pride in me for being associated with him or her”), idealized influence behavior (“My leader specifies the importance of having a strong sense of purpose”), inspirational motivation (“My leader articulates a compelling vision of the future”), individualized consideration (“My leader seeks differing perspectives when solving problems”) – were measured each with four items. The respondents were asked to answer the MLQ by judging how strongly they agreed or disagreed with each statement in the questionnaire, using a five point scale (1= *strongly disagree*, 5 = *strongly agree*). As transformational and transactional leadership were in accordance with previous research (Bass et al., 2003; Felfe, 2006; Goodwin et al., 2001; Judge & Piccolo, 2004), highly correlated, a two- and a one-factor solution were considered. Additionally, an exploratory factor analysis was conducted. Confirmatory factor analyses showed acceptable model fit for the two factors transformational leadership and transactional leadership ($\chi^2 = 47.60$, $df = 13$, $p < .000$, CFI = .97, TLI = .94, RMSEA = .070, CI = .050-.092), which had better fit statistics (TLI, CFI, RMSEA) and a significantly better fit than the one-factor solution ($\Delta\chi^2 = 116.91$, $\Delta df = 1$, $p < .000$). The results of the exploratory factor analysis revealed a four-factor solution, in which the first (54% of the variance), third (5%) and fourth (4%) factor represented transformational leadership, and transactional leadership was, apart from some cross-loadings, represented by the second factor (10%). Cronbachs Alpha for transactional leadership and transformational leadership was .92, and .95 respectively.

Psychological contracts. The scale measuring psychological contracted contained 11 items. Eight items were used from a scale of Coyle-Shapiro and Kessler (2002), three items were added for the specific context of service work. Relational psychological contract was measured with eight items (for example long-term job security or support with problems concerning customers). Transactional psychological contract was measured with three items (for example fair pay in comparison to employees doing similar work in other organizations). The respondents were asked to answer the questions by judging to what extent they believe their employer fulfils these aspects, using a 5-point scale (1 = *not at all*, to 5 = *fulfils much more than obligated*). Confirmatory factor analysis ($\chi^2 = 29.00$, $df = 13$, $p < .01$, CFI = .98, TLI = .95, RMSEA = .048, CI = .024-.071) supported the two dimensions conceptualized by Coyle-

Shapiro & Kessler (2002). The two-factor model had a better fit than a one-factor solution, which was shown by better fit statistics (TLI, CFI, RMSEA), and the Chi-square difference test ($\Delta\chi^2=86.84, \Delta df= 1, p < .000$). Exploratory factor analysis confirmed these results. Cronbach Alphas for transactional and relational psychological contracts were .82 and .92.

Pay satisfaction. Eighteen items from the Pay Satisfaction Questionnaire (Heneman & Schwab, 1985) and four items (bonus/ lump-sum bonus satisfaction) from Sturman and Short (2000) were used to measure pay satisfaction. The facets – structure/ administration, level, raises, benefits, and bonus – were measured through four or six items per factor. The items were measured on a 5-point scale, with 5 connoting *high satisfaction*. Cronbach Alphas for pay structure/ administration, level, raises benefits, and bonus were .93, .96, .89, .96, and .89 respectively. Like previous research (Judge, 1993; Sturman & Carraher, 2007; Williams et al., 2007) level, raise and structure satisfaction were the most correlated factors. Thus, a three-factor model was considered, in which benefits and bonus satisfaction were separate from a factor, which combined the other items. Further, in accordance with previous research (Sturman & Carraher, 2007), four-factor models were tested, which combined any of two of these factors (i.e. level, raises and structure). Confirmatory factor analyses supported the five-factor model ($\chi^2 = 96.48, df = 34, p < .000, CFI = .97, TLI = .95, RMSEA = .058, CI = .045-.072$). Specifically, the five-factor model had significantly better fit than any of the other models it was compared against (all $p < .001$), and the fit statistics for the five-factor model (TLI, CFI, RMSEA) were all better in the five-factor model than in all the other models. As expected (Williams et al., 2007) exploratory factor analysis could not confirm these results due to the high correlations among the dimensions level, structure and raises. As with other research reporting high correlations (Heneman & Schwab, 1985; Judge, 1993; Sturman & Carraher, 2007; Sturman & Short, 2000) the dimensions of pay satisfaction are explored as distinct factors, yet, in the structural equation model their inter-correlation is controlled for.

Analyses

In order to test the relationship between leadership and pay satisfaction (Hypothesis 1 and 2), the inter-correlations between these constructs were analyzed and tested for significant differences between the correlation coefficients. In line with traditional leadership research (Bass et al., 2003; Bass & Riggio, 2006; Felfe, 2006; Judge & Piccolo, 2004), the augmentation effect (Hypothesis 3) was tested by hierarchical regressions. In the hierarchical regression transactional leadership was included in block one; in block two, transformational leadership

was added. If the R^2 change is significant, transformational leadership explains a significant amount of variance additionally to transactional leadership (e.g. Bass et al., 2003).

Hypotheses 4 and 5 suggested an indirect effects model, in which the relationship between leadership and pay satisfaction is transmitted by psychological contracts. The most commonly used approach to test mediation is the causal steps strategy by Baron and Kenny (1986). However, recent work by Preacher and Hayes (2004, 2008; Preacher, Rucker & Hayes, 2007) shows the advantage of not focusing on the individual paths in the mediation model, but to focus on the indirect effect of the predictor on the outcome through the mediator, which is quantified as ab and equal to the difference between the total and the direct effect (MacKinnon, Warsi & Dwyer, 1995; Preacher & Hayes, 2008). The product term of the unstandardized coefficients a and b is then used to assess the presence, strength, and significance of the indirect effect (Preacher et al., 2007) of leadership on pay satisfaction via psychological contracts. The statistical significance of ab is mostly determined by Sobel tests, which compares the ratio of ab/σ_{ab} to a critical value from the standard normal distribution (Preacher et al., 2007). As Preacher and Hayes (2004) state, this approach is more powerful than Baron and Kenny's (1986) multi-step strategy, because it addresses mediation more directly. However, the Sobel test is based on the assumption of normality of the sampling distribution of the indirect effect, which is questionable. Preacher and Hayes (2008) state that the indirect effect is rarely normal distributed and as the Sobel test therefore uses too large critical values, it has less power to detect the true mediation effect (see also MacKinnon, Lockwood & Williams, 2004). So instead of relying on p-values of the Sobel test, the study followed Preacher and Hayes' (Hayes, 2009; Preacher & Hayes, 2008) recommendation and bootstrapped confidence intervals for the indirect effects. If zero is not between the upper and lower bound of the bootstrapped confidence interval, the indirect effect is viewed as being significant. Bootstrapping has several advantages because it does not assume a particular shape of the sampling distribution of the indirect effect (Hayes, 2009). In a simulation study MacKinnon et al. (2004) showed that bootstrapping provided a lower Type I error rate and higher power than the methods of Baron and Kenny (1986) and Sobel (1982). Preacher and Hayes (2008) particularly recommend bias-corrected bootstrapping for testing indirect effects in multiple mediator models, their approach was considered.

A multiple mediator model was tested, in which the residuals associated with the mediators were, according to Preacher and Hayes (2008), permitted to covary in order to account for unmodelled sources of covariation between the mediators. Multiple mediator models have several advantages such as determining to what extent a specific form of psychological con-

tract mediates the effect of leadership on pay satisfaction, conditional on the presence of the other form of psychological contract. The specific indirect effect through a mediator in the multiple model is not the same as the indirect effect through the mediator alone, except when all mediators are uncorrelated (Preacher & Hayes, 2008). Since transactional and relational psychological contracts are inter-correlated, the multiple mediator approach seemed advisable. Structural equation modelling in Mplus was used to fit the multiple mediator model, because Mplus is the only program that implements bootstrap methods for estimating confidence intervals for the indirect effects (Preacher & Hayes, 2008).

Grimmer and Oddy (2007) show a significant correlation between transactional and relational psychological contracts, and studies have consistently found an augmentation effect of transformational over transactional leadership (Judge & Piccolo, 2004). Furthermore, as reported earlier, considerable research demonstrated high correlations between transactional leadership and transformational leadership (Bass et al., 2003; Felfe, 2006; Goodwin et al., 2001; Judge & Piccolo, 2004). Thus, transactional leadership may have a limited impact on perceptions of relational psychological contract and a weak relationship may exist between transformational leadership and transactional psychological contracts (although the relationships suggested in the initial theoretical model seem more plausible). Thus, paths from transformational leadership to transactional psychological contracts and from transactional leadership to relational psychological contract were estimated. Further, covariation between the residuals associated with the pay satisfaction variables was allowed, while in no model correlated error terms were estimated. Also, the direct effect of leadership on pay satisfaction were estimated and the c' values not constrained to zero in order not to inflate estimates of the indirect effect (Preacher & Hayes, 2008).

RESULTS

Descriptive Statistics and Hierarchical Regressions

Descriptive statistics for and Pearson correlations between the variables in the study – transformational and transactional leadership, transactional and relational psychological contract, and the pay satisfaction dimensions – are displayed in table 1.

Table 1. Descriptive statistics, correlations, and reliabilities

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1 Transactional leadership	3.99	0.99	(.92)								
2 Transformational leadership	4.37	0.96	.78	(.95)							
3 Transactional contract	3.76	0.82	.46	.40	(.82)						
4 Relational contract	2.90	0.83	.57	.66	.70	(.92)					
5 Structure	3.69	1.09	.48	.53	.61	.70	(.93)				
6 Level	3.86	1.25	.36	.35	.58	.49	.82	(.96)			
7 Raises	3.67	1.12	.42	.44	.57	.54	.94	.90	(.89)		
8 Benefits	4.26	0.90	.34	.34	.58	.58	.66	.66	.68	(.96)	
9 Bonus	4.18	1.19	.44	.49	.56	.66	.67	.56	.59	.57	(.89)

Note: All correlations are significant at *** $p < .001$.

Transactional leadership was positively related to all pay dimensions, supporting Hypothesis 1. Although the correlation between transactional leadership and the pay satisfaction facets structure, bonus and raises were descriptively higher than the correlations between transactional leadership and level or benefits, the differences were not significant. Thus, transactional leadership is not differentially related to the pay satisfaction facets.

As expected in Hypothesis 2, the correlations between transformational leadership and pay satisfaction were positive. Furthermore, the correlation between transformational leadership and structure was stronger with respect to level ($z = 2.32$, 1-tail $p < .01$), and benefits ($z = 2.44$, 1-tail $p < .01$). The differences with respect to raises were not significant ($z = 1.22$, *n.s.*). The same holds for bonus, which was the second highest relationship; the correlation between bonus and transformational leadership was stronger than the respective correlations between transformational leadership and level ($z = 1.76$, 1-tail $p < .05$) or benefits ($z = 1.88$, 1-tail $p < .05$), but there were no differences with respect to raises ($z = 0.66$, *n.s.*). Thus, transformational leadership was differentially related to the pay satisfaction dimensions.

In order to test the augmentation effect, hierarchical regressions were analyzed (table 2). Results indicated that the transformational leadership scale augmented transactional leadership in predicting structure ($\Delta R^2 = .10$, $p < .001$), level ($\Delta R^2 = .03$, $p < .05$), raises ($\Delta R^2 = .06$, $p < .001$), benefits ($\Delta R^2 = .03$, $p < .05$), and bonus satisfaction ($\Delta R^2 = .04$, $p < .01$). Thus, Hypothesis 3 was supported, stipulating that transformational leadership added a significant amount of variance explained to the effect of transactional leadership.

Table 2. Hierarchical regressions testing the augmentation effect

	Structure	Level	Raises	Benefits	Variable
Step 1	$F = 42.18^{***}$	$F = 19.05^{***}$	$F = 29.29^{***}$	$F = 13.72^{***}$	$F = 22.35^{***}$
Transactional l. (β)	.43**	.31***	.37***	.30***	.34***
R ²	.19	.09	.14	.09	.12
Step 2	$F = 36.68^{***}$	$F = 12.63^{***}$	$F = 22.10^{***}$	$F = 9.37^{***}$	$F = 15.18^{***}$
Transactional l. (β)	.12 n.s.	.14 n.s.	.14 n.s.	.15 n.s.	.16 n.s.
Transformational l. (β)	.45***	.24*	.34***	.23*	.26**
R ²	.29	.12	.20	.12	.16
ΔR^2	.10***	.03*	.06***	.03*	.04**

Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

Mediator Analyses

To test Hypothesis 4 and 5 a multiple mediator model using structural equation modeling was analyzed. Results indicated that the theoretical model (figure 2) had a good fit ($\chi^2 = 416.89$, $df = 239$, $p < .000$, CFI = .96, TLI = .95, RMSEA = .059, CI = .049-.068). Further, the results showed that 53% of the variance in pay structure satisfaction was explained by leadership and psychological contracts. For level, the amount of variance explained was 36%, for raises, benefits, and bonus satisfaction the predictors explained 39%, 40%, and 47% of their variance. The model further showed that the relationships between transactional leadership and relational psychological contract ($B = .12$, $z = 1.31$, $p > .10$), and between transformational leadership and transactional contracts ($B = .09$, $z = 0.81$, $p > .10$) were insignificant. Since the specific indirect effects (i.e. the effects of transactional leadership through relational contracts and the effects of transformational leadership through transactional contracts) were all insignificant, they will not be reported in detail.

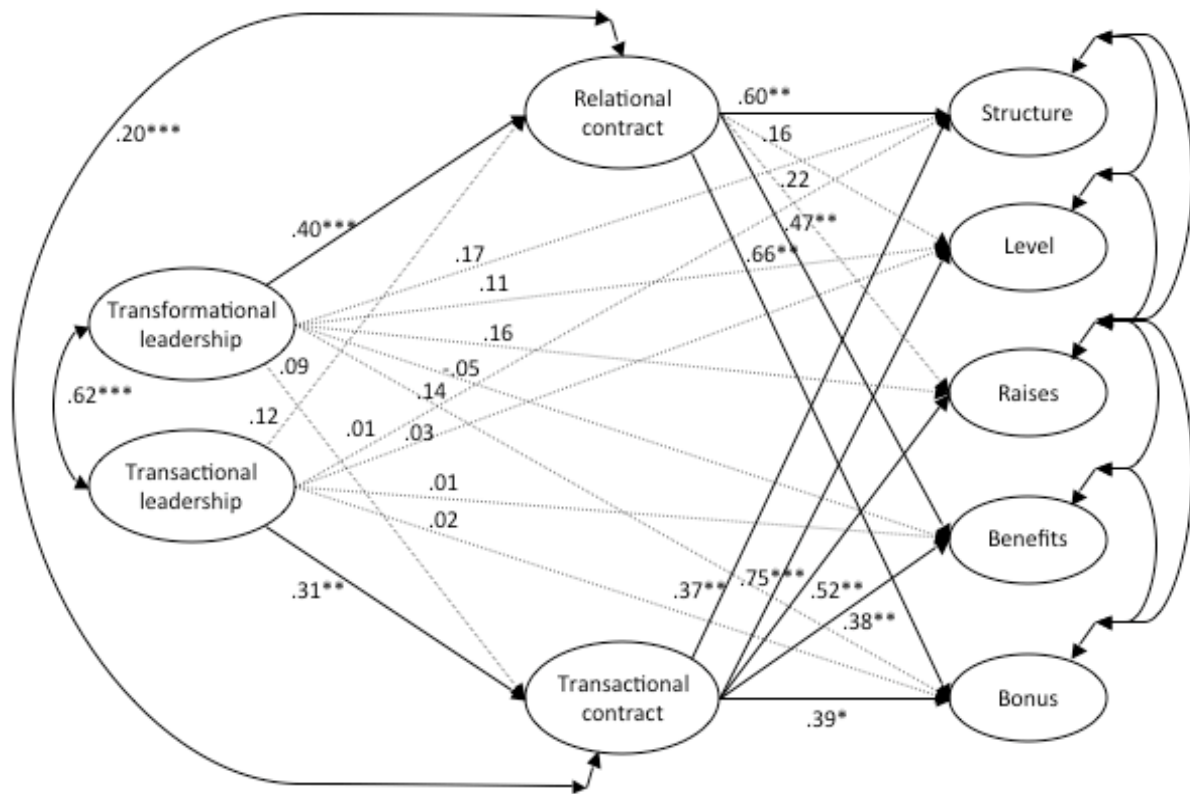


Figure 2. Mediation model: Unstandardized coefficients (straight lines), correlations (curved lines), significant paths (solid lines), and insignificant paths (dashed lines) shown. For reasons of clarity, inter-correlation between pay satisfaction dimensions not shown (B = .59, $p < .001$ to B = .14, $p < .01$). *** $p < .001$, ** $p < .01$.

Considering hypothesis 4 for structure, the specific indirect effect of transactional leadership was $ab = .11$ through transactional psychological contracts. The results of the product-of-coefficient approach indicated that transactional psychological contracts were not a significant mediator, ($z = 1.90, p > .05$). Yet, because the assumption of normality of the sampling distribution is questionable, confidence intervals for the indirect effects were bootstrapped. The estimates and 95% confidence intervals (BC) are displayed in table 3. Because zero was not contained in the interval $\{.02, .11\}$, one can conclude that transactional psychological contracts were an important mediator of the relationship between transactional leadership and structure. For bonus satisfaction ($ab = .12$), a similar pattern can be found: while the z -value indicated non-significance ($z = 1.75, p > .05$), the confidence interval did not contain zero $\{.01, .45\}$, which shows that transactional psychological contracts transmit the effect of transactional leadership on bonus satisfaction. For the other pay satisfaction facets level ($ab = .23, z = 2.27, p < .05$), raises ($ab = .16, z = 2.09, p < .05$), and benefits ($ab = .12, z = 1.97, p < .05$), the results from the product-of-coefficient strategy were in line with the results from the bootstrapped confidence intervals, indicating that transactional psychological contracts medi-

ated the relationships between transactional leadership and these three pay satisfaction dimensions. As neither of the direct effects of transactional leadership on the pay satisfaction dimensions was significant, full mediation was present. One therefore can conclude that of the potential mediators examined, transactional psychological contracts transmitted the effect of transactional leadership on each pay satisfaction facets. Hypothesis 4 was therefore supported.

Table 3. Mediation of the effect of transactional leadership on pay satisfaction through transactional psychological contracts

Pay Dimension	Point Estimate	Product of Coefficients		Bootstrapping BC 95% CI	
		SE	Z	Lower	Upper
Structure	.12	.06	1.90	.02	.11
Level	.23	.10	2.27	.06	.57
Raises	.16	.08	2.09	.04	.43
Benefits	.12	.06	1.97	.03	.34
Bonus	.12	.07	1.75	.01	.45

Note. BC = bias corrected; 5,000 bootstrap samples.

For transformational leadership the examination of the specific indirect effects indicated that relational psychological contracts transmitted the effect on structure satisfaction ($ab = .24, z = 2.79, p < .01$). The examination of the 95% CIs confirms these results $\{.07, .46\}$. Because zero was not contained in the interval (table 4), the specific indirect through relational psychological contract was significant for benefits, and bonus satisfaction, which is in line with the results from the product-of-coefficients approach (benefits: $ab = .19, z = 2.34, p < .05$; bonus: $ab = .27, z = 2.61, p < .05$). The relationships between transformational leadership and level and raises were not mediated by relational psychological contracts (level: $ab = .06, z = 0.70, p > .05$; raises: $ab = .09, z = 1.06, p > .05$). The 95% CIs confirmed these results. Neither of the direct effects of transformational leadership on the pay satisfaction dimensions was significant. Therefore, one can argue that transformational leadership influenced structure, benefits, and bonus satisfaction through relational psychological contracts, while there was no mediation present for level and raises. Thus, H5 was mainly supported.

Table 4. Mediation of the effect of transformational leadership on pay satisfaction through relational psychological contracts

Pay Dimension	Point Estimate	Product of Coefficients		Bootstrapping BC 95% CI	
		SE	Z	Lower	Upper
Structure	.24	.09	2.79	.07	.46
Level	.06	.09	0.70	-.16	.29
Raises	.09	.08	1.06	-.12	.33
Benefits	.19	.08	2.34	.03	.42
Bonus	.27	.10	2.61	.03	.61

Note. BC = bias corrected; 5,000 bootstrap samples.

DISCUSSION

This study was conducted to examine how different leadership behaviors correlate with employees' pay satisfaction and whether different forms of psychological contracts serve as variables mediating these relationships. The results indicate that both leadership behaviors influenced employees' pay satisfaction through the hypothesized form of psychological contract, contributing to previous research suggesting this link.

The analysis revealed that transactional leadership positively influenced all facets of employees' pay satisfaction. Although significant differences between the correlations could not be found, the results indicated that the relationship between transactional leadership and structure, bonus and raises are by trend stronger with respect to level and benefits. It seems plausible that a leader who puts emphasis on transparent effort-reward contingencies influences employees' knowledge how pay is distributed and with that increases employees' acceptance and satisfaction with the organization's pay structure. Moreover, as recognition in the form of recommending a promotion is a constitutive element of transactional leadership (Bass, 1985), transactional leadership might be strongly related to raises. Moreover, the possibility of contingently recognizing good performance by offering a bonus seems to directly play into a transactional leader's hand. In the concept of transactional leadership Bass (1985) explicitly includes the employee's opportunity to negotiate what he or she wants in exchange for the effort. Compared to base pay, a pay-for-performance system contains to a much larger extent negotiation processes between leader and follower, since the goals are defined to be 'agreed-upon'. Therefore, transactional leadership might have had a particularly strong positive impact on employees' bonus satisfaction. Hence, as the leaders did not have direct influ-

ence on employees' pay level and most of their benefits, transactional leadership was less strongly related to these facets of pay satisfaction.

It was further expected in line with Goodwin et al. (2001) that transactional contracts mediate the relationship between transactional leadership and employee attitudes. Transactional leaders clarify expectations, specify standards for compliance, and provide rewards and recognition in exchange for goal achievement. It was suggested that this leadership behavior is likely to result in relationships with the focus lying on the exchange of hard work on the part of the employee for high extrinsic rewards. According to the results, the transactional leader-employee relationship can indeed be characterized by transactions or discrete exchanges of extrinsic outcomes, which are part of transactional psychological contracts (Rousseau, 1990).

With regard to transformational leadership the results show particularly positive relationships to structure and bonus satisfaction. Previous research shows that understanding and knowledge about the pay policies has an impact on employees' pay satisfaction (Dyer & Theriault, 1976). Brown and Huber (1992) as well as Salimäki et al. (2009) regard leaders as responsible to explain the pay system and transport this knowledge. Providing meaning is a constituent element of transformational leadership (Bass & Riggio, 2006). Thus, transformational leaders communicate the purpose and virtue of the pay system, and link it to employees' needs and goals, which explains the strong relationship to employees' attitude towards the organization's pay structure. The positive relationship between transformational leadership and bonus might be explained by performance-based pay providing a good opportunity for transformational leaders to participate employees. Also, performance-based pay enables leaders to show concern and recognition for employees' individual needs and goals, and to support their development. Hence, transformational leadership was particularly strongly related to employees' bonus satisfaction.

It was further expected, building on the work of Goodwin et al. (2001), that the transformational leader-employee relationship is characterized by socio-emotional issues involving loyalty, support, and job security, in other words, relational psychological contracts. The results supported this hypothesis with regard to the relationship between transformational leadership and structure, bonus and benefits, while the indirect effect of transformational leadership on level and raises through relational psychological contracts was not confirmed. Thus, the results show that due to the long-time horizon of relational psychological contracts, transformational leaders create faith of mutual adjustment within the organization's pay system, which positively influenced employees' structure satisfaction. Through the personal relation-

ship between the transformational leader and the employee the leader strengthens the link between pay-for-performance and employee's individual needs and goals. Employees can therefore rely on the leader acting in their best interest, which positively influenced employees' perceptions of their bonus. While structure and bonus satisfaction were highly related to transformational leadership, level, raises and benefits were equally less strongly related. However, only the relationship between transformational leadership and benefits was mediated by relational psychological contracts. It seems possible that even though employees' benefits are mainly legally determined, transformational leaders establish a personal relationship and with that give employees the feeling that the organization addresses their needs and demands in the form of providing insurance, pension and child-raising benefits. In this line, it seems a fruitful path for future research to follow Miceli and Lane's (1991) and Williams, Malos and Palmer's (2002) approach and distinguish different facets of benefit satisfaction. They extended the concept of Heneman and Schwab (1985) by introducing the distinction between benefit system and benefit level satisfaction. As with pay level and pay structure, transformational leadership might have a more positive impact on employees' benefit system satisfaction than the benefit level satisfaction. That the relationship between transformational leadership and level as well as raises was not mediated by relational psychological contracts thus raises some questions. As employees' pay level and to a large part their raises were determined by collective bargaining, it could be possible that employees perceive that the reciprocal obligations (which constitute the relational psychological contract) with regard to their pay level and raises are uncoupled to the relationship with their leader and are rather attributed to the collective bargaining partners' obligations. It would be an interesting avenue for further research to investigate the relationships between transformational leadership, relational psychological contracts and employees' pay level and raises satisfaction in organizations where leaders have more direct influence on the actual pay level and raises.

The mediation findings make important contributions to the leadership, psychological contract and pay satisfaction literature. In this study, transactional psychological contract transmitted the effect of transactional leadership on all pay satisfaction dimensions while relational psychological contracts mediated the relationship between transformational leadership and employees' structure, bonus and benefit satisfaction. Yukl (1999) argues that "the underlying influence processes for transformational leadership and transactional leadership are still vague ... the theory would be stronger if the essential influence processes were identified more clearly and used to explain how each type of behavior affects each type of mediating variable and outcome" (p. 287). The results of the study suggest that by analyzing the mediat-

ing role of two different forms of psychological contract on the relationship between transactional and transformational leadership on employees' pay satisfaction the present work contributed to identify the underlying mechanism of the two leadership behaviors. Further, the findings expand the understanding of relational and transactional psychological contracts. Previous research has demonstrated that relational and transactional contracts vary in terms of content (Rousseau & McLean-Parks, 1993), and showed that relational and transactional elements of exchange are differentially related to employee outcomes (Coyle-Shapiro & Kessler, 2000; Montes & Irving, 2008). The present study extends these findings by demonstrating that different leadership behaviors are differentially related to relational and transactional psychological contracts. Moreover, the study contributed to research on pay satisfaction as a multidimensional construct by showing that transformational leadership was differentially related to the pay satisfaction facets and that the mediation processes differed for the pay satisfaction dimensions.

The present analyses not only make theoretical contributions, but also offer relevance for organizational practice. Given the importance of leadership to shape employees' attitude towards their pay, training transactional and transformational leadership behavior seems a promising organizational strategy. Bass (1998) developed a concept that may serve as a basis for training interventions as he incorporated training to communicate an inspiring vision and providing meaning, which has shown to be of particular importance for employees' pay satisfaction. Moreover, knowing that the leader's behavior impacts employees' perception of the content of psychological contracts and the perception of the fulfillment of obligations, it seems essential that leaders are aware of this influence. Thus, leaders should clarify the set of mutual obligations, and carefully explain and justify changes and breaches. Rigotti (2009) shows the importance of not surpassing the threshold in overall breaches, so leaders should buffer the impact of broken promises on certain aspects with the fulfillment of other aspects.

Limitations and Further Research

The fact that transactional and transformational leadership were highly correlated alludes to a well-known problem of the transactional contingent reward scale: A variety of studies shows a strong linkage between contingent reward and transformational leadership, which is as high as or even higher than one expects for alternative measures of the same construct, but not for distinct aspects like transformational and transactional leadership (Bycio, Hackett & Allen, 1995; Felfe, 2006; Judge & Piccolo, 2004). Yukl (1999) argues that contingent reward not only includes elements of an impersonal exchange process (which is where it was

expected that transactional psychological contracts to come into the play) but also relies on an exchange of personal elements such as providing praise and recognition (i.e. elements of relational psychological contracts), which might explain the closeness to transformational leadership. The overlap is also demonstrated in the results of the hierarchical regression, in which the beta coefficients of transactional leadership turn insignificant after transformational leadership was added. Goodwin et al. (2001) approached the problematic strength and generalizability of the correlation between contingent reward and transformational leadership ($\rho = .80$) by arguing that the contingent reward scale is two-dimensional. According to Goodwin et al. (2001) some items of contingent reward are of a lower order type – associated with explicit contracting (resembling the concept of transactional psychological contracts), whereas the remaining items are of a higher order – associated with implicit contracting (resembling the concept of relational psychological contracts). Several studies reporting high correlations between contingent reward and transformational leadership refer to Goodwin's et al. suggestion (Bass et al., 2003; Felfe, 2006; Heinitz & Rowold, 2007; Hinkin & Schriesheim, 2008; Krishnan, 2005). While it could be shown that the contingent reward as a whole works through transactional psychological contracts, it was further tested whether the two factors suggested by Goodwin et al. (2001) are differentially associated with relational and transactional psychological contracts. Results did not support Goodwin et al.'s (2001) assumption. Although the problem of conceptual overlap between transactional leadership and transformational leadership was not solved, the present work shows that both leadership behaviors work through different psychological contracts. These results provide support for their discriminant validity, yet the problematic overlap should be considered in further research.

Another limitation concerns an issue raised by Sturman and Carraher (2007). While empirical evidence supports the idea of the multidimensionality of pay satisfaction (Heneman & Schwab, 1985; Judge, 1993; Sturman & Short, 2000), Sturman and Carraher (2007) question whether the number of dimensions is constant or might rather differ depending on an employees' ability and motivation to differentiate the four facets. Sturman and Carraher (2007) demonstrate that the strength of a relationship between the hypothesized pay satisfaction dimensions varies across individuals. Building on this, it therefore is possible that leadership not only affects the level of pay satisfaction of certain dimensions, but also that leadership influences how employees perceive pay satisfaction and whether they are able and motivated to differentiate between the dimensions of pay satisfaction. Under transactional leadership employees may perceive raise and structure satisfaction as less separate from each other, because the clarification which rewards can be expected for good performance, might be

closely linked to the explanation of the possibilities and restrictions of the organization's pay system (such as the latitude of recommending promotions). Future research should address this issue and analyze the individually perceived relationships between the dimensions of pay satisfaction depending on the leader's behavior.

Further, one of the limitations of the study is that the ratings of leadership, psychological contracts, and pay satisfaction were collected at the same point in time. Future research should collect these ratings at separate points in time to obtain a better estimate of the causal linkage between leadership and pay satisfaction. Further, given that the perceptions of psychological contracts might change over time, a longitudinal design may be more appropriate. Another limitation is that the sample represented only charitable institutions that only had two years of experience with pay-for-performance plans. Future research should examine the relationships between leadership and pay satisfaction with additional samples of profit organizations. Since in charitable institutions transformational leadership seems to reflect the underlying organization's culture and philosophy, profit organizations might have more leaders whose behaviour would be perceived as more transactional. There, future research could examine the differential effects of transactional leadership on the pay satisfaction dimensions more closely. Accordingly, in smaller firms or organizations, leaders possibly have more influence on pay decisions, so that the relationships between leadership and pay satisfaction could be even stronger in a different context.

Moreover, the use of totally self-report measures is connected to the potential of common method variance. The limitation is however minimized since the study was able to find indirect effects, which are more difficult to identify if common method variance is present (Harris, Harris & Harvey, 2007). Nevertheless the occurrence of common method variance was tested by conducting Harmon's' one-factor test (Podsakoff & Organ, 1986) and entering all variables into an exploratory factor analysis, using principal component analysis with varimax rotation to determine the number of factors that are necessary to account for the variance in the variables. If a substantial amount of common method variance is present, either a single factor will emerge or one general factor will account for the majority of the covariance among the variables (Andersson & Bateman, 1997; Podsakoff & Organ, 1986). Results showed seven distinct factors (two leadership factors: (1) transformational leadership, (2) transactional leadership (three transactional leadership items loaded on the transformational factor); two psychological contract factors: (3) relational, (4) transactional; three pay satisfaction factors: (5) structure/ level/ raises, (6) benefits, (7) bonus) with eigenvalues greater than 1.0, rather than a single factor. The seven factors together accounted for 71.72% percent of

the total variance; the largest factor did not account alone for the variance (41.48%). Thus, no general factor is apparent. Moreover, a confirmatory factor analysis was conducted with all variables loading on one factor to examine the fit of the model. If common method variance is largely responsible for the relationship among the variables, the one-factor model should fit the data as well as the complex model (Cunningham, 2006; Korsgaard & Roberson, 1995; Podsakoff, MacKenzie, Lee & Podsakoff, 2003). The results of the confirmatory factor analysis showed that the single-factor model did not fit the data well ($\chi^2 = 2293.79$, $df = 276$, $p < .000$, $TLI = .47$, $CFI = .55$, $RMSEA = .184$, $CI = .177-.191$). Results from these analysis indicated that common method variance is not a pervasive problem in this study. However, future research should incorporate alternative designs.

Finally, employees who have the same leader share a common environment. Therefore, it can be assumed, that for employees with the same leader the relationship between employees' perceptions of their leader's behavior and their pay satisfaction is more similar than for employees with different leaders. Multilevel models take these hierarchical data structures into account. 192 employees could be matched to their leader, which resulted in 47 groups. With an average group size of 4.7 and 15 groups which consisted of less than three employees, unfortunately it was neither possible to meet the recommended minimum of 30 groups with 30 individuals per group (Hox, 2000), nor the criteria of at least three employees per group (van Dick, Wagner, Stellmacher & Christ, 2005). Since the data did not suffice these requirements, only the main effects of leadership were analyzed while the mediation effects were not estimated. Following Hox (2000) an intercept-only model was analyzed to estimate whether the data met the condition that there be systematic between-group variance in the measures. The intercept-only models for structure, level, raises, benefits and bonus satisfaction indicated that 17% of the variance regarding structure, 9% regarding pay level, 6% regarding raises, 8% regarding benefits, and 16% regarding bonus was at the group level. Next, the predictor variable (leadership) was added at the first level, to estimate whether the parameter is significant and how much residual error is left at the two distinct levels. To compute how much variance is explained at each level the study followed the procedure of Bryk and Raudenbush (1992). To test the improvement of the model, full maximum likelihood estimation method was used so the difference of deviance between the intercept-only model and the predictor model could be computed. Entering transactional leadership into the equation to predict the pay satisfaction facets indicated firstly, that transactional leadership is a significant predictor and therefore the models including transactional leadership showed significant better fit. Secondly, transactional leadership explained variance at the individual between a

minimum of 7% regarding pay level and a maximum of 11% regarding bonus. Thirdly, transactional leadership explained variance at the leader level between a minimum of 23% (pay level) and a maximum of 33% (bonus).

Further, the introducing transformational leadership as a level-one variable showed that transformational leadership was a significant predictor, which improved model fit, and explained the differences between individuals by a minimum of 6% regarding pay level up to a maximum of 18% regarding benefits. Transformational leadership explained the differences between groups by a minimum of 6% regarding structure up to a maximum of 40% regarding bonus. To sum up, transactional and transformational leadership predicted individual employees' pay satisfaction. Also, the level of satisfaction in a group of employees was related to the perceived leadership behavior in this group. While these results should be treated with caution, as the data did not meet the requirements for multilevel analysis, the results point to the same direction as the results from the structural equation model by showing the main effects of leadership being related to pay satisfaction considering the hierarchical structure of the data. It seems a promising path for future research to address the hierarchical nature of data more closely when examining the impact of leadership on employee attitudes.

All in all, this study provided further insight in the antecedents of employees' pay satisfaction by identifying transactional and transformational leadership as two important determinants. Moreover, the study contributed in linking leadership with psychological contract by examining transactional psychological contracts as the mediating process of the relationship between transactional leadership and pay satisfaction, and regarding relational contracts as the underlying mechanism of transformational leadership. Thus, the study presents a comprehensive framework on the antecedents of employees' satisfaction with five facets of pay.

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STUDY III: EFFECTS OF TRANSFORMATIONAL LEADERSHIP ON EMPLOYEES' PAY SATISFACTION – A LONGITUDINAL STUDY

INTRODUCTION

Compensation is an increasingly important area of study, as it is one of the major costs for an organization, a tool for the organization to achieve and sustain competitive advantages, and a means to attract, retain and motivate employees (Lawler, 2003; Milkovich & Newman, 2008). Compensation decisions are particularly salient and important for employees (Morgeson, Campion & Maertz, 2001), which becomes evident in the link between employees' pay satisfaction and turnover, absenteeism, and performance (Currall, Towler, Judge & Kohn, 2005; Tekleab, Bartol & Liu, 2005; Vandenberghe & Tremblay, 2008; Weiner, 1980; Williams, McDaniel & Nguyen, 2006). Thus, one of the main goals of an organization's compensation system is to increase employees' pay satisfaction. Employees' pay satisfaction can be derived from their perceptions of their pay being in the right proportion compared to their inputs and to other employees (Adams, 1965), or, considering Lawler (1971), from the discrepancy between what employees perceive to receive and what they think they should receive. The mere increase of employees' pay reaches not only the organization's financial limits, but pay and pay raises have been found to be only weakly related with employees' pay satisfaction (Currall et al., 2005; Morgeson et al., 2001; Orpen & Bonnici, 1990; Tekleab et al., 2005). Thus, to minimize negative consequences and maximize employees' satisfaction and commitment, designing a pay system is a challenge to meet employees' demands, beliefs and values. Previous research on pay satisfaction has demonstrated the positive impact of understanding the pay system, and argued that leaders assume a crucial role in providing this knowledge (Brown & Huber, 1992; Dyer & Theriault, 1976; Judge, 1993; Salimäki, Hakonen & Heneman, 2009). While the organization determines the pay structure and surrounding conditions, "the greatest system design in the world is useless without competent management" (Milkovich & Newman, 2008, p. 21). Thus, the leader is responsible to answer questions concerning the impact of the policy, technique and decisions with regard to the pay system. Moreover leaders should provide understanding, link the system to employees' goals and values, and eventually positively influence employees' satisfaction with their job and pay and commitment to the organization. The leader reaches these goals not only by transmitting information and providing meaning to the pay system, moreover, the leader is perceived as the contractual partner who forms perceptions about the organization's obligations and is regarded as responsible to fulfill them. Employees derive their beliefs about mutual obligations,

i.e. their perception of psychological contracts (Rousseau, 1998), from a variety of message senders (Rousseau & Ho, 2000). According to Liden, Bauer and Erdogan (2005) leaders are the key agents of the organization through which employees form their perceptions of the organization's and their own obligations. Further, Liden et al. (2005) propose that employees equate the leader's fulfillment of obligations such as support with the organization's fulfillment of these obligations. Also, Goodwin, Wofford and Whittington (2001) suggest a close relationship between psychological contracts and leadership. From this one can derive that if the leader's explanation and promises concerning obligations with respect to the pay system (such as fair pay for hard work) match with the organization's fulfillment of these obligations (such as monthly wages), the leader will be regarded as having fulfilled the communicated obligations. Therefore it is expected that the leader's behavior influences employees' perceptions of the fulfillment of psychological contracts. The perceived fulfillment of obligations in turn leads to a number of attitudes such as satisfaction and commitment (Cavanaugh & Noe, 1999; McDonald & Makin, 2000; Rousseau, 1998), which are important consequences for the organization in the context of pay systems (Milkovich & Newman, 2008). In two previous cross-sectional studies it was shown leadership affected employees' pay and job satisfaction, and commitment through psychological contracts. In this study, the intention is to demonstrate that within the context of the implementation of a new pay system leadership behavior can contribute to employees' satisfaction with their job and pay and commitment to the organization over time by fulfilling psychological contracts.

The Effects of Leadership on Employees' Pay and Job Satisfaction and Commitment

Pay satisfaction is an area of longstanding research interest that has increasingly gained attention during the last decades. Of the pay satisfaction theories Lawler's (1971) definition of pay satisfaction as the discrepancy between what employees perceive to receive and their belief of what they should receive, and Adams equity theory of social comparison (1965) have largely guided research. Research on the antecedents of pay satisfaction has turned its initial attention from demographic variables such as age, gender, and actual pay level due to their low explanatory power, towards perceptual variables (Currall et al., 2005; Fong & Shaffer, 2003; Tekleab et al., 2005). Among the analyzed mechanisms involved in the perception of pay, distributive and procedural justice draw considerable attention (Tremblay, Sire & Balkin, 2000; Vandenberghe & Tremblay, 2008). This research field contributed to the understanding of antecedents by showing that a low discrepancy between employees' contributions and their compensation compared to others (distributive justice) is associated with greater pay

satisfaction (Folger & Konovsky, 1989; McFarlin & Sweeny, 1992; Vandenberghe & Tremblay, 2008). Concurrently, evidence indicates that employees who perceive fair procedures guiding pay decisions (procedural justice) are more satisfied with their pay (Folger & Konovsky, 1989; Tekleab et al., 2005). By showing that these perceptual variables have a greater influence on pay satisfaction than actual pay or the size of pay raises, and that organizations can enhance employees' pay satisfaction by implementing fair procedures, research on organizational justice provided further insight into the determinants of pay satisfaction. Yet, this field of research faces the problem of empirical overlap between the constructs (Heneman & Judge, 2000; Scarpello, Carraher & Carraher, 2006).

Another line of research on the determinants of pay satisfaction demonstrates that factors, which particularly enhance employees' knowledge and understanding of pay policies, have an impact on employees' pay satisfaction (Brown & Huber, 1992; Dyer & Theriault, 1976; Heneman & Judge, 2000). A study by Mulvey, Le Blanc, Heneman and McInerney (2002) finds that poor knowledge of pay processes and base pay is related to low pay satisfaction. Also, according to a longitudinal study conducted by Brown and Huber (1992), understanding of a pay system affects employees' pay satisfaction over time. Further, Reflection Theory (Thierry, 2001) proposes that pay system knowledge is a basic requirement for the effect of pay systems on employee attitudes. Thus, research consistently shows that employees who understand the pay system are more satisfied with their pay. Moreover, several studies analyzing the importance of pay system knowledge point out the crucial role of leaders: Salimäki et al. (2009) demonstrated the leader's impact on employees' pay satisfaction by providing meaning and understanding of the pay system. Also, Brown and Huber (1992) see a leader's duty in carefully explaining the pay system. Bass' (1985, 1990, 1998) concept of transformational leadership reflects behavior that is aimed at providing meaning and understanding. Building on this, transformational leadership should be a key determinant of employees' pay satisfaction. While the present study does not want to lower the contribution research on organizational justice made, it is supposed that the concrete leadership behavior might offer a more specific way to improve employees' pay satisfaction and concurrently circumvent the problematic overlap between organizational justice and pay satisfaction.

Transformational leadership occurs when leaders behave in admirable ways that cause employees to identify with the leader and the organization, when leaders communicate an appealing and inspiring vision, challenge employees with high standards, provide meaning, encourage employees' creativity, attend to employees' needs and goals, and act as a mentor (Bass, 1985; Bass & Riggio, 2006; Judge & Piccolo, 2004). The concept of transformational

leadership is composed of four facets (Bass, 1985; Bass & Avolio, 1993): *idealized influence* (*attributed* and *behavior*) is the degree to which the leader acts as a role model and employees wanting to emulate him or her. *Inspirational motivation* refers to leaders challenging employees, providing meaning, and articulating an attractive vision. *Intellectual stimulation* describes leaders stimulating employees to question routines and creatively find new ways to achieve the goals. *Individualized consideration* reflects leaders recognizing employees' demands and values, and listening to employees' concerns.

Thus, as inspirational behavior is part of transformational leadership (Bass, 1998), transformational leaders are likely to provide meaning to the pay system, make the distribution and administration processes transparent, so that employees' understanding, acceptance, and satisfaction are enhanced. Under transformational leadership employees identify with the leader and the organization (Bass, 1985). Hence, when the leader explains the pay system as being part of the organizational system, employees' positive attitude towards the pay system should be enhanced. Yet, transformational leaders not only influence employees' pay satisfaction by providing meaning, at the same time individualized consideration, as it is a constituting element of transformational leadership (Bass & Riggio, 2006), should positively influence employees' positive attitude towards their pay. Thierry (2001) argues that employees regard the pay system as meaningful when it enables them to reach personally important goals. Transformational leaders give employees the feeling that their personal needs and goals are being recognized (Bass & Riggio, 2006). Thus, it is hypothesized that transformational leadership has an impact on employees' overall pay satisfaction as employees are provided with meaning and understanding of the system, identify with the organization, and have the feeling that their needs and goals are recognized.

Many organizations are facing incisive changes of their pay systems, as a growing variety of performance-based pay plans is becoming visible (Milkovich & Newman, 2008), not only in the U.S., but also in Europe (Antoni, 2007). Building on this trend Sturman and Short (2000) identify employees' lump-sum bonus satisfaction as a distinct dimension of pay satisfaction. This facet reflects employee attitudes towards their compensation that is paid in recognition of goal achievement and performance. It is expected that transformational leadership has a strong impact on employees' satisfaction with their performance-based bonus for several reasons. Firstly, research shows that a leaders' role is particularly emphasized in performance-based pay systems (Miceli & Lane, 1991), because leaders hold the decisive position in processes through which employees' variable amount of pay is determined (Salimäki et al., 2009). Managerial influence over pay is higher in performance-based pay systems than

in compensation systems in which pay is exclusively determined by job level and tenure. Miceli and Lane (1991) argue that perceived managerial influence positively influences employees' pay satisfaction. Thus, leadership should have a stronger impact on employees' satisfaction with their performance-based pay amount. Secondly, according to Dyer and Theriault (1976), accuracy of performance assessment and clear performance criteria are important factors for employees' pay satisfaction. Thus, within the context of performance-based pay the role of leaders includes the communication of clear criteria how performance is related to pay, and the participation of employees in the goal setting or performance assessment process (Salimäki et al., 2009). Transformational leaders fulfill these requirements as they provide clear goals and involve employees to rethink strategies and find innovative solutions. Thirdly, providing a link between employees' goals and the organization's goals is essential for performance-based pay systems to be effective (Salimäki et al., 2009). Transformational leaders recognize individual differences in terms of needs and desires (Bass, 1998). Accordingly, they give employees the feeling that they attend individual demands and listen to their concerns (Bass, 1985). Transformational leaders generate confidence, and agree on goals, which match employees' strengths and weaknesses, while they build identification among employees with the goals of the leader and the organization (Bass, Avolio, Jung & Berson, 2003). It is therefore hypothesized that transformational leadership has a positive effect on employees' satisfaction with their bonus.

Organizations are interested in enhancing employee attitudes not only towards their pay, but also towards their job and their commitment to the organization (Milkovich & Newman, 2008). Milkovich and Newman (2008) find evidence that HR practices such as performance-based pay strongly affect the way employees perceive the organization. Further, research shows that pay satisfaction is related to positive attitudes regarding the organization such as job satisfaction and commitment (Williams et al., 2006; Vandenberghe & Tremblay, 2008). Thus, affective commitment and job satisfaction are outcomes of importance in the context of pay systems. The definition of transformational leadership identifies a number of aspects of a leader's behavior, which are linked to employees' job satisfaction: Transformational leaders are described as giving employees the ability to see beyond the present problems and provide meaning for the task at hand (Bass, 1985). Leaders also encourage employees to take charge of their own development (Bass, 1990). Moreover, several aspects of transformational leadership are associated with employees' commitment: Under transformational leadership employees want to emulate the leader and identify with the leader and the organization (Bass, 1998). Further, transformational leadership enhances employees' feelings of involvement (Bass,

1985). Thus, a large body of empirical research reached the consistently positive conclusion that transformational leadership is strongly positively related to job satisfaction and commitment (Fuller, Patterson, Hester & Springer, 1996; Judge & Piccolo, 2004; Lowe, Kroeck & Sivasubramaniam, 1996). Felfe (2006a) confirmed these results for a large German sample.

In two recent studies the findings that transformational leadership is positively related to employees' job satisfaction and commitment and contribute to the understanding of transformational leadership as an antecedent of employees' bonus and overall pay satisfaction could be replicated. However, these studies as well as the above-mentioned studies linking transformational leadership to job satisfaction and commitment have been cross-sectional. The causal link between transformational leadership and employee attitudes may exist because a leader's behavior is likely to provoke emotional responses in subordinates (Druskat, 1994). There are several studies showing the effect of transformational leadership on performance over time (Howell & Hall-Merenda, 1999; Keller, 2006; Yammarino, Spangler & Bass, 1993). Yet, the only evidence of an effect of leadership on employee attitudes comes from a longitudinal study by Fry, Vitucci and Cedillo (2005) and a longitudinal study by Condrey, Facer and Hamilton (2005). Fry et al. (2005) found that higher spiritual leadership (employees experience meaning, have a sense of making a difference and feel understood and appreciated), which can be regarded as incorporating transformational leadership, is associated with higher commitment over time. Condrey et al. (2005) showed that trusted leadership and communication improve employees' job satisfaction during organizational change. The studies by Fry et al. (2005) and Condrey et al. (2005) did not directly examine transformational leadership and did not look at employees' overall pay satisfaction and satisfaction with their bonus. Thus, it is likely that if employees perceive their leader as transformational, employees' positive attitudes toward their job, pay and their organization is positively enhanced over time.

Transformational leadership is especially influential during organizational change and times of uncertainty (Bass et al., 2003; Felfe, 2006b). Transformational leaders build identification with the leader's vision and goals, so that employees' feelings of involvement, commitment and satisfaction are enhanced (Shamir, House & Arthur, 1993). Studies consistently show that the relationship between transformational leadership and employee attitudes is stronger in times of uncertainties (Bass et al., 2003; Waldman, Ramírez, House & Puranam, 2001). The leader's vision can be regarded as a source of psychological comfort, satisfaction and commitment, which reduces stress by proposing an attractive future of fair pay and individual development, and communicating how the new challenges will be approached (Bass,

1985; Waldman et al., 2001). As the implementation of a new pay system can be regarded as a period of organizational change, transformational leadership is likely to have a strong impact on employee attitudes when a performance-based pay system is implemented. The aim of the study is to analyze the effect of transformational leadership on employee attitudes after a performance-based pay system was implemented in the organizations.

Hypothesis 1: Transformational leadership has a positive effect on employees' job satisfaction and commitment, as well as a positive effect on employees' overall pay satisfaction and satisfaction with their bonus.

Psychological Contracts as Mediators of the Relationship between Transformational Leadership and Employee Attitudes

Moreover, it is expected that psychological contracts are an important mechanism through which leadership influences employee attitudes. Psychological contracts are defined as "an individual's beliefs regarding the terms and conditions of a reciprocal exchange agreement" (Rousseau, 1989, p. 123). According to Rousseau (1989) psychological contracts may take different forms: *Relational psychological contracts* on the one hand emphasize personal and value-based interactions (Conway & Briner, 2005). Relational elements of exchange revolve around trust, respect, support, and loyalty (Herriot & Pemberton, 1996). Under relational psychological contracts, employees therefore focus on socio-emotional terms of the relationship (Rousseau, 1989). *Transactional psychological contracts* on the other hand are based on more specific, monetary and economic elements of exchange such as fair pay or career development for good work (Rousseau, 1989). Thus, employees believe that their contributions to the organization (e.g. effort) correspond with equally valuable inducements (e.g. pay). Hence, under transactional psychological contracts, employees tend to particularly focus on the outcomes of the relationship (Millward & Brewerton, 1999). While transactional and relational psychological contracts may at first sight appear as opposites, the same the exchange relationship can contain varying degrees of both relational and transactional elements (Conway & Briner, 2005).

From the literature on psychological contracts, the work of Liden et al. (2005) points out the crucial role of leaders. According to Liden et al. (2005), leaders are seen as representatives of the organization and purveyors of resources, and therefore personify the organization. Thus, leaders are a key agent of the organization through which employees form their perceptions of mutual obligations (Liden et al., 2005). Further, leaders may be regarded as responsible to fulfill organizational obligations. Dulac, Coyle-Shapiro, Henderson and Wayne (2008) argue that leaders, as they are central agents of the organization, may be blamed for psycho-

logical contract breach. Liden et al. (2005) also propose that leaders not only play a key role in forming perceptions of organizational and the employee's obligations, but employees may also equate the leader's support with organizational support. Thus, employees link the leader's fulfillment of obligations with the organization's fulfillment of these obligations.

Considering research on leadership, the work of Goodwin et al. (2001) deserves particular notice, as they assume a link between leadership and psychological contracts. Goodwin et al. (2001) suggest that under transformational leaders, employees are attracted to and invest in the leader's vision, thereby relying on the leader to provide adequate rewards for their performance. Thus, under transformational leadership a relational psychological contract is established. Pillai, Schriesheim and Williams (1999) as well argue that transformational leadership might emphasize relational exchange. Further, several specific aspects of leadership that are defined as transformational may positively influence employees' perceptions of relational psychological contracts. In challenging employees to find innovative solutions, supporting and developing them, transformational leaders treat employee as equitable partners. Bono and Judge (2003) assume that under transformational leaders "work activities not only represent the job but the person doing the job" (p. 555). Further, transformational leaders see the individual as a whole person rather than as just an employee (Bass, 1998). Thus, interactions with employees are personalized (Bass, 1998). As support is a key element of transformational leadership, this leadership behavior will affect employees' perceptions of socio-emotional elements of exchange. Therefore under transformational leadership employees are likely to perceive relational obligations as fulfilled. Relational psychological contracts in turn have been shown to positively influence employees' job satisfaction and commitment (Cavanaugh & Noe, 1999; Grimmer & Oddy, 2007; McDonald & Makin, 2000; Robinson & Rousseau, 1994). Building on this, it is hypothesized that the impact of transformational leadership on employees' job satisfaction and commitment is transmitted by relational psychological contracts.

Hypothesis 2a: Transformational leadership has a positive effect on employees' job satisfaction through relational psychological contracts.

Hypothesis 2b: Transformational leadership has a positive effect on employees' commitment through relational psychological contracts.

Transformational leaders may also influence employees' perceptions of transactional psychological contracts. Transactional psychological contracts comprise clearly defined mutual obligations, so that balance and repayment are of particular importance (Morrison & Robinson, 1997). Goodwin et al. (2001) argue that leaders who negotiate the relationship be-

tween performance and rewards establish transactional contracts. While they expected transactional leaders to influence transactional contracts, it could as well be argued that as transformational leaders formulate clear goals and facilitate the achievement of these by setting a clear and attractive vision (Bass, 1990), they emphasize transactional elements of exchange. Further, transformational leaders help employees to understand the ends to which they are working and where their work fits in with organizational objectives (Burke, Stagl, Klein, Goodwin, Salas & Halpin, 2006). Also, the leader ensures that employees have the necessary information that is required to work towards the shared vision (Sofarelli & Brown, 1998). Moreover, transformational leaders provide meaning to the organization's system and give employees the feeling that their needs and goals are recognized (Bass, 1985). Hence, the employee will perceive transactional elements of exchange such as pay and career development as incorporated in their psychological contract. As employees perceive their leader to be responsible for these promises and as the organization acts in line with what the leader communicated, the leader is perceived as having fulfilled his or her obligations. Thus, transformational leadership is likely to have a positive effect on employees' perception of fulfillment of transactional obligations. Transactional psychological contracts in turn focus on outcomes, which may have an impact on employees' pay and bonus satisfaction. It is expected that transformational leadership influences employees' overall pay satisfaction and pay bonus satisfaction through transactional psychological contracts. In two recent studies the link between leadership, transactional psychological contracts and employees' pay and bonus satisfaction was shown. In this study these relationships are examined in a longitudinal design.

Hypothesis 3a: Transformational leadership has a positive effect on employees' pay satisfaction through transactional psychological contracts.

Hypothesis 3b: Transformational leadership has a positive effect on employees' bonus satisfaction through transactional psychological contracts.

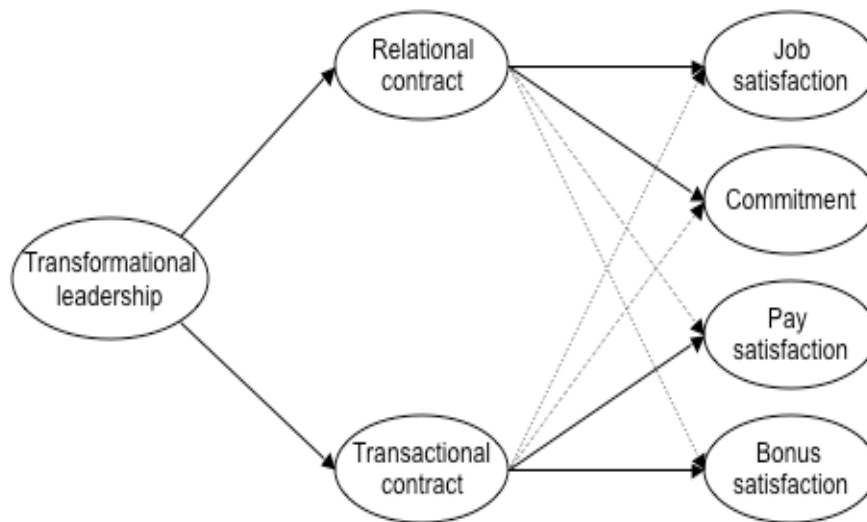


Figure 1. Theoretical mediation model

The hypothesized model is depicted in figure 1. This study builds on previous research and examines whether there is evidence of such mediation in longitudinal data.

METHOD

Design and Sample

The organizations under study are charitable institutions in Germany, which are bound to collective labour agreement. The study was conducted when a performance-based pay system was implemented for a two-year trial. The new system replaced a pay system where pay raises had been solely dependent on the position and tenure. Up to 5% of employees' base pay was linked to their performance. This amount could be re-gained by good performance or goal achievement and, depending on the institution, the organization contributed up to 5% on top. For most employees it was the first time to conduct performance assessments or goal setting. In each organization, project groups developed the new pay system. The project groups' tasks contained organizing and holding trainings for leaders and employees, conducting meetings to inform the staff and give the opportunity for discussion, developing performance criteria and goal setting guidelines, and monitoring the process. Different groups of staff ranging from cleaning personnel, canteen personnel, administration employees, nurses, physiotherapists, and educators participated. Staff was organized in groups, e.g. staff covering one nursing home or working in the kitchen would constitute a group. Each group had a formal leader with managerial responsibilities, who was responsible for holding developmental discussions

with the employees and conducting employees' performance assessment or goal setting; this was the leader employees were asked to rate.

Questionnaires were distributed to all employees who participated in the new pay system on two occasions: before the performance-based pay system was implemented and after employees received their bonus depending on their goal achievement or performance appraisal. The data was matched via identifiers. Full ethics approval was obtained and confidentiality was assured.

In the study, eight separate charitable institutions (2 elderly home, 2 boarding schools, 2 clinics, 1 sheltered workshop, 1 city charity) comprised 421 employees who participated at time 1, and 216 employees who participated at time 2. The final number of employees was $N = 164$, comprising those for whom matching data for the two measurement occasions were present. Of them, 61% were female and 39% were male. The respondents' mean age was 40.8 years ($SD = 10.2$). The minimum number of years they had spent within the organization was 0.5; the maximum was 39 years ($M = 10.8$, $SD = 7.6$). Their total work experience including tenure at the current organization ranged from 0.5 to 42 years ($M = 18.5$ $SD = 11.5$). Most respondents were permanent employees of the organization (90%), while 10% were temporarily employed. All employees were bound to collective labour agreements. 66% were roman-catholic, 24% protestant, 9% were not religious, and 1 % was Muslim.

Measures

The time 1 survey was used to assess employees' perceptions of leadership, psychological contracts and attitudes before performance-based pay was implemented, the time 2 survey was used to assess these variables after employees got their bonus paid. All measures were repeated measures (time 1 and time 2), apart from the scale to measure employees' satisfaction with their bonus (time 2 only).

Leadership. This was assessed using the short version of the Multifactor Leadership Questionnaire (MLQ, Bass & Avolio, 1995; Felfe, 2006a). Four factors of transformational leadership were measured: idealized influence attributed ("My leader instils pride in me for being associated with him or her"), idealized influence behavior ("My leader specifies the importance of having a strong sense of purpose"), inspirational motivation ("My leader articulates a compelling vision of the future"), individualized consideration ("My leader seeks differing perspectives when solving problems"). The factors were assessed using four items each. Responses were on a 5-point scale (1= *strongly disagree*, 5 = *strongly agree*). Cronbachs Alpha was .95 at time 1 and time 2.

Psychological Contracts. 11 items measured psychological contract fulfillment. Eight of these items were used from the scale by Coyle-Shapiro and Kessler (2002), three items were added to adapt for the specific context of service work. The respondents were asked to answer the questions by judging to what extent they believe their employer fulfills these aspects, using a 5-point scale (1 = *not at all*, to 5 = *fulfills much more than obligated*). Eight items reflected relational psychological contract (e.g. long-term job security or support at problems with customers), three items transactional psychological contract (e.g. fair compensation in comparison to employees doing similar work). Cronbachs Alpha for relational psychological contract was .87 at time 1 and .92 at time 2. Cronbachs Alpha for transactional contracts was .77 (time 1) and .82 (time 2).

Job Satisfaction. Four items from the Questionnaire for Assessing Innovativeness (Klusemann, 2003) were used to measure job satisfaction (“Overall, I am satisfied with my job”). Responses were rated on a 5-point scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbachs Alpha was .91 (time 1) and .92 (time 2).

Commitment. Affective commitment was assessed using four items from the scale of Allen and Meyer (1990; Schmidt, Hollmann & Sodenkamp, 1998), (“I feel a strong sense of belonging to my organization”). Responses were measured on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*). Cronbach Alphas for commitment were for time 1 .93 and .94 for time 2.

Pay Satisfaction. To measure pay satisfaction, 18 items from the Pay Satisfaction Questionnaire were used (Heneman & Schwab, 1985). The factors structure/ administration (“The company’s pay structure”), level (“My current salary”), raises (“The raises I have typically received in the past”), and benefits (“The value of my benefits”) were measured through four or six items per factor, with responses on a 5-point scale (1 = *very dissatisfied*, 5 = *very satisfied*). Cronbachs Alpha for overall pay satisfaction was .96 (time 1) and .97 (time 2).

Bonus Satisfaction. Four items were drawn from a scale by Sturman and Short (2000) to assess employees’ bonus satisfaction at time 2. Respondents were asked how satisfied or dissatisfied they feel about their bonus (1 = *very dissatisfied*, 5 = *very satisfied*). Cronbachs Alpha at time 2 was .90.

Analyses

To test the hypotheses structural equation modelling was used. To determine the model fit, the Comparative Fit Index (CFI), Tucker Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Residual (SRMR) were

used. If a model fit of CFI and TLI above .80 is achieved, the model fit is acceptable; above .90 it is good. RMSEA less than .08 is acceptable, less than .06 is good. SMSR indicates good fit for values < .08 (for a detailed description of model fit indicators see Hu & Bentler, 1999).

Structural equation modelling has the benefit of modelling measurement error using latent constructs rather than measured indicators (Preacher & Hayes, 2008). Because of the high correlations among the sub dimensions of transformational leadership and pay satisfaction the items were aggregated the composites so formed were used for each facet as indicators (Bagozzi & Edwards, 1993). Relational and transactional psychological contract, job and commitment were as well modelled as latent variables. To reduce the number of parameters to be estimated and decrease the measurement error, they were measured by two to four parcels (Bagozzi & Edwards, 1998). This approach further has the advantage of requiring smaller sample sizes (Bagozzi & Edwards, 1998), and is appropriate as the study's aim was not to investigate the specific indicators rather than relationships among the latent variables. Following Dollard, Zapf, Dormann, Cox and Petkov (2009) the loadings of the parcels were estimated freely but constrained to equal within time, and the errors were estimated equal but forced to equal within time. Further, the errors of these parcels were autocorrelated over time (estimated freely). At time 1 leadership, psychological contract, and outcome variables were allowed to correlate freely, which is a necessary assumption for longitudinal data analysis (Zapf, Dormann & Frese, 1996). Leadership, psychological contract, and the outcome variables exhibited stability across time. Further a series of models was analyzed to test the hypotheses. Firstly to test hypothesis 1 (the effect of transformational leadership on employee attitudes) a model with direct paths between transformational leadership and employee attitudes was tested.

Hypothesis 2 and 3 suggested an indirect effects model, in which the relationships between leadership and the outcome variables are mediated by psychological contracts. To test for mediation the present study followed Preacher and Hayes' (2004, 2008; Hayes, 2009; Preacher, Rucker & Hayes, 2007) approach in which the product term of the unstandardized coefficients *a* and *b* is used to assess the presence, strength, and significance of the indirect effect. Further, by bootstrapping confidence intervals were built for the indirect effect by empirical approximation of the sampling distribution (Hayes, 2009; Preacher & Hayes, 2008). If zero is not between the lower and upper bound of the bootstrapped confidence interval, the indirect effect is viewed as being significant. Moreover, bootstrapping has several advantages, as it does not assume a particular shape of the sampling distribution of the indirect effect (Hayes, 2009). In a simulation study MacKinnon, Lockwood and Williams (2004) showed

that bootstrapping provided a lower Type I error rate and higher power than the methods of Baron and Kenny (1986) and Sobel (1982). Preacher and Hayes (2008) particularly recommend bias-corrected bootstrapping for testing indirect effects in multiple mediator models. Structural equation modelling in Mplus was used to fit the multiple mediator model, because Mplus is the only program that implements bootstrap methods for estimating total as well as specific indirect effects (Preacher & Hayes, 2008).

As two potential mediators were tested, a multiple mediator model was analyzed. In models with two or more mediators, a specific indirect effect is the indirect effect through a given intervening variable, and the sum of the specific effects is called the total indirect effect (Hayes, 2009). This opens the possibility to determine the total as well as the specific indirect effect. Further, according to Preacher and Hayes (2008), the indirect effect through a mediator in the multiple model is not the same as the indirect effect through the mediator alone, except when all mediators are uncorrelated. Since transactional and relational psychological contracts are related, the multiple mediator approach seemed advisable. Following Preacher and Hayes (2008) contrasts of the indirect effects were conducted to estimate whether the two indirect effects differ significantly, because Preacher and Hayes (2008) show that even if only one of the specific indirect effects is significant, it is possible that the two indirect effects can not be distinguished in terms of magnitude. In addition to the full mediated model shown in figure 1 potential direct effects of leadership on the outcome variables were tested for, because constraining the c' values to zero might otherwise inflate estimates of the indirect effect (Preacher & Hayes, 2008).

RESULTS

Preliminary Analyses

Table 1 displays the scales, means, standard deviations, scale reliabilities and inter-correlations of all variables in this study. All measures relevant to the mediation model were significantly correlated, i.e. measures of transformational leadership, the hypothesized mediating variables and employee attitudes were correlated at both time 1 and time 2, and between time 1 and time 2. Only transactional psychological contracts at time 1 did not correlate significantly with bonus satisfaction time 2 ($r = .16$). The measurement model provided acceptable fit (table 2). Next, it was tested whether measures were stable over time. This model encompasses stabilities of the variables and the correlations at time 1, but no causal paths between predictor, mediator and outcome (Zapf et al., 1996). The results of the stability model

indicate moderate relationships between transformational leadership at time 1 and time 2 ($\beta = .63, p < .001$), relational ($\beta = .57, p < .001$) and transactional psychological contract ($\beta = .46, p < .001$), job ($\beta = .48, p < .001$), and pay satisfaction ($\beta = .57, p < .001$), and commitment ($\beta = .50, p < .001$). However, the overall model fit and modification indices indicate that further relationships exist across the constructs (table 2).

Hypotheses Testing

In order to test hypothesis 1, which suggested a positive effect of transformational leadership on job satisfaction, commitment, pay and bonus satisfaction, a model was tested, in which in addition to the stability effects, transformational leadership had a direct effect on employee attitudes. the paths to and from psychological contracts were for this purpose set to zero, the model fit was good ($\chi^2 = 1844.46, df = 1034, p = .000, CFI = .93, TLI = .92, RMSEA = .041, SRMR = .10$). The results indicate a significant relationship between transformational leadership and job satisfaction ($\beta = .29, p < .001$). There was also a significant relationship between transformational leadership and commitment ($\beta = .34, p < .001$). Further, transformational leadership was significantly related to pay ($\beta = .23, p < .001$) and bonus satisfaction ($\beta = .36, p < .001$). Thus, in support of hypothesis 1 the effects of transformational leadership on employee attitudes were found.

STUDY III: EFFECTS OF TRANSFORMATIONAL LEADERSHIP ON EMPLOYEES' PAY SATISFACTION:
A LONGITUDINAL STUDY

Table 1. Descriptive statistics, correlations, and reliabilities

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Transf leadership Time 1	4.37	0.89	(.95)												
2 Relational contract Time 1	2.77	0.73	.59**	(.87)											
3 Transactional contract Time 1	2.67	0.80	.24**	.50**	(.77)										
4 Job satisfaction Time 1	4.89	0.80	.53**	.44**	.18**	(.91)									
5 Commitment Time 1	4.65	1.06	.45**	.46**	.14*	.65**	(.93)								
6 Pay satisfaction Time 1	3.76	0.83	.34**	.36**	.47**	.34**	.34**	(.96)							
7 Transf leadership Time 2	4.37	0.96	.68**	.48**	.13	.39**	.35**	.16*	(.95)						
8 Relational contract Time 2	2.90	0.83	.42**	.63**	.28**	.31**	.33**	.30**	.65**	(.92)					
9 Transactional contract Time 2	3.76	0.82	.20**	.36**	.44**	.24**	.26**	.35**	.37**	.69**	(.83)				
10 Job satisfaction Time 2	4.73	0.08	.35**	.31**	.12	.54**	.42**	.11	.58**	.58**	.41**	(.92)			
11 Commitment Time 2	4.63	1.06	.38**	.38**	.03	.48**	.62**	.13	.59**	.51**	.41**	.72**	(.94)		
12 Pay satisfaction Time 2	3.66	1.01	.35**	.40**	.30**	.24**	.21**	.48**	.43**	.62**	.61**	.46**	.39**	(.97)	
13 Bonus satisfaction Time 2	4.18	1.19	.37**	.47**	.16	.35**	.33**	.35**	.47**	.66**	.57**	.60**	.49**	.66**	(.90)

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

Table 2. Goodness-of-Fit indicators for hypothesized and alternative models

Model	χ^2	df	$\Delta\chi^2$	Δdf	CFI	TLI	RMSEA (CI)	SRMR
Measurement model	1727.67	996			.94	.93	.039 (.036-.043)	.061
Stability model	1853.67	1032			.93	.92	.041 (.038-.044)	.100
M1: full mediation model	1861.16	1037			.93	.92	.041 (.038-.044)	.081
M2: additional direct effect on job satisfaction	1861.00	1036	0.16	1	.93	.92	.041 (.038-.044)	.081
M3: additional direct effect on commitment	1849.11	1036	12.05***	1	.93	.92	.041 (.038-.044)	.080
M4: additional direct effect on pay satisfaction	1848.98	1035	0.13	1	.93	.92	.041 (.038-.044)	.080
M5: additional direct effect on bonus satisfaction	1849.03	1035	0.08	1	.93	.92	.041 (.038-.044)	.080

Note. *** $p < .001$.

Next, the full mediation model (M1) was tested, which showed a good fit ($\chi^2 = 1861.16$, $df = 1037$, $p = .000$, CFI = .93, TLI = .92, RMSEA = .041, SRMR = .08). Before estimating indirect effects, potential direct effects of transformational leadership on employee attitudes were examined (table 2). Firstly, adding a direct effect of transformational leadership on job satisfaction (M2) did not significantly improve the model ($\Delta\chi^2 = 0.16$ ($df = 1$), $p > .10$). Second, a direct effect of transformational leadership on commitment was added (M3). The model fit was significantly improved ($\Delta\chi^2 = 12.05$ ($df = 1$), $p < .001$). Adding a direct effect of transformational leadership on pay (M4; $\Delta\chi^2 = 0.13$ ($df = 1$), $p > .10$) and bonus satisfaction (M5; $\Delta\chi^2 = 0.08$ ($df = 1$), $p > .10$) did not further improve the model. Thus, the model containing direct effects of transformational leadership on commitment provided the best fit ($\chi^2 = 1849.11$, $df = 1036$, $p = .000$, CFI = .93, TLI = .92, RMSEA = .041, SRMR = .08) and was used for estimating indirect effects (figure 2). In this model, 46% of the variance in job satisfaction was explained, 51% of commitment, 49% of pay satisfaction and 44% of bonus satisfaction

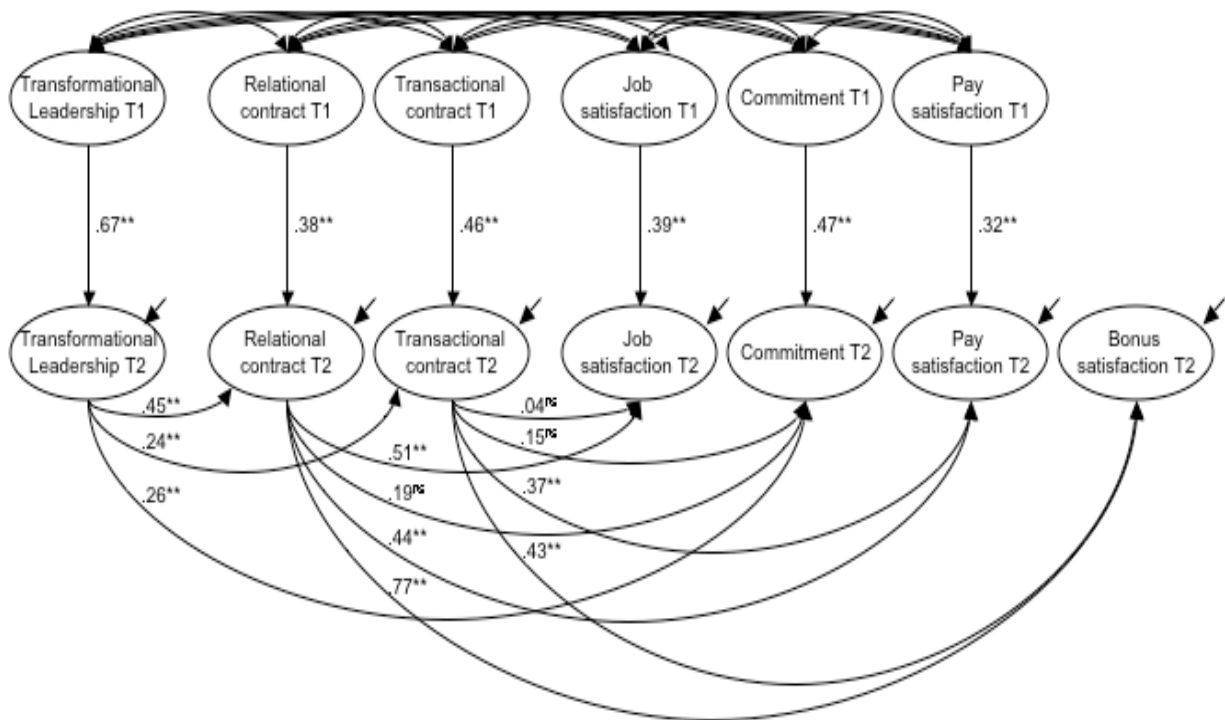


Figure 2. Mediation model: Unstandardized coefficients (single arrow), correlations (curved double arrow), significant paths (solid lines), and insignificant paths (dashed lines) shown. *** $p < .001$, ** $p < .01$, ^{ns} = not significant.

The present work suggested an indirect effect of relational psychological contracts on the relationship between transformational leadership and job satisfaction as well as commitment (hypotheses 2a, 2b). Considering job satisfaction, the results show a total indirect effect of leadership of .24 ($z = 5.21, p < .001$), which leads to a rejection of the null hypothesis that the total indirect effect of both forms of psychological contract is zero (table 3).

Table 3. Mediation of the effect of transformational leadership on job satisfaction through psychological contracts

Job Satisfaction	Point Estimate	Product of Coefficients		Bootstrapping BC 95% CI	
		SE	Z	Lower	Upper
Indirect effect					
Relational contract	.23	.05	4.36	.12	.38
Transactional contract	.01	.03	0.36	-.03	.10
Total indirect	.24	.05	5.21	.13	.38
Contrast					
Relational vs. transactional contract	.22	.07	3.17	.09	.40

Note. BC = bias corrected; 5,000 bootstrap samples; pc = psychological contract.

The specific indirect effects were $ab = .23$ (through relational psychological contract) and $ab = .01$ (through transactional psychological contract). The results from the product-of-coefficients approach indicated that the relational psychological contracts were an important mediator ($z = 4.36, p < .001$), whereas transactional psychological contracts were not ($z = 0.36, p > .10$). Because, as mentioned above, the assumption of normality of the sampling distribution is questionable, the indirect effects were bootstrapped. The estimates and 95% confidence intervals (BC) are in table 3. Confirming the results of the product-of-coefficients strategy, the confidence interval for the indirect effect through relational psychological contracts did not contain zero $\{.12, .38\}$, while the confidence interval for the indirect effect through transactional psychological contract was not significantly different from zero $\{-.03, .10\}$. Further, contrasts were analyzed to estimate whether these two indirect effects differ significantly. The results show that the contrast was significant ($z = 3.17, p < .01$). The confidence interval for the contrast between relational and transactional psychological contract was $\{.09, .40\}$, indicating that the indirect effect through relational psychological contracts was significantly larger than through transactional psychological contracts. Thus, confirming hypothesis 2a, one can conclude that the effect of transformational leadership on job satisfaction is transmitted by relational psychological contracts.

For commitment the total indirect effect was $.12$ ($z = 2.76, p < .01$). The specific indirect effects were $ab = .09$ (through relational psychological contract) and $ab = .04$ (through transactional psychological contract) (table 4).

Table 4. Mediation of the effect of transformational leadership on commitment through psychological contracts

Commitment	Point Estimate	Product of Coefficients		Bootstrapping BC 95% CI	
		SE	Z	Lower	Upper
Indirect effect					
Relational contract	.09	.05	1.70	-.01	.21
Transactional contract	.04	.03	1.30	-.01	.16
Total indirect	.12	.05	2.76	.03	.22
Contrast					
Relational vs. transactional contract	.05	.07	0.73	-.14	.19
Direct effect	.26	.08	3.49	.11	.45

Note. BC = bias corrected; 5,000 bootstrap samples; pc = psychological contract.

The results of the product-of-coefficient approach show that relational psychological contracts ($z = 1.70, p > .05$) were not a significant mediator, and neither were transactional psychological contracts ($z = 1.30, p > .10$). Also, the results indicate that the contrast between the two indirect effects is not significantly different from zero ($z = 0.73, p > .10$). The examination of the 95% CIs confirmed these results. The direct effect of transformational leadership was significant ($z = 3.49, p < .001$). Thus, the effect of transformational leadership on commitment was mainly a direct effect. Therefore, hypothesis 2b could not be supported.

Considering hypotheses 3a and 3b, it was expected that the effect of transformational leadership on pay and bonus satisfaction is mediated by transactional psychological contracts. It was found that the total indirect effect for pay satisfaction was significant ($z = 5.88, p < .001$). The specific indirect effects were $ab = .20$ (through relational psychological contract) and $ab = .09$ (through transactional psychological contract). Because zero was not contained in the interval $\{.10, .33\}$, the specific indirect effect through relational psychological contract was significant, which is in line with the results of the product-of-coefficients approach ($z = 4.05, p < .001$). Further, the specific indirect effect of transformational leadership on pay satisfaction through transactional psychological contract was significant ($z = 2.51, p < .01$), accordingly, the confidence interval did not contain zero $\{.01, .25\}$, (table 5). The contrast of the specific indirect effect shows that the effects did not differ significantly as the BC 95%CI of $-.12$ to $.28$ contained zero. Thus, the effect of transformational leadership on pay satisfaction was transmitted through both relational and transactional psychological contracts, which provides partial support for hypothesis 3a.

Table 5. Mediation of the effect of transformational leadership on pay satisfaction through psychological contracts

Pay Satisfaction	Point Estimate	Product of Coefficients		Bootstrapping BC 95% CI	
		SE	Z	Lower	Upper
Indirect effect					
Relational contract	.20	.05	4.05	.10	.33
Transactional contract	.09	.04	2.51	.01	.25
Total indirect	.29	.05	5.88	.17	.41
Contrast					
Relational vs. transactional contract	.11	.07	1.56	-.12	.28

Note. BC = bias corrected; 5,000 bootstrap samples; pc = psychological contract.

For bonus satisfaction, the total indirect effect of transformational leadership was .45 ($z = 6.38, p < .001$), which leads to a rejection of the null hypothesis that the total indirect effect of both forms of psychological contract is zero. The specific indirect effects were $ab = .35$ (through relational psychological contract) and $ab = .10$ (through transactional psychological contract). Of the potential mediators examined one can conclude from the product-of-coefficient approach that the relational psychological contract was an important mediator ($z = 4.65, p < .001$), as well as transactional psychological contracts ($z = 2.21, p < .05$). In agreement with these results, the 95% confidence intervals (BC) did not contain zero (table 6). The contrast between the specific indirect effects was significant according to the product-of-coefficients approach ($z = 2.42, p < .05$), yet the bootstrapped confidence intervals indicate that the contrast was not significantly different from zero $\{-.13, .49\}$. Thus, hypothesis 3b is partially supported as the effect of transformational leadership on employees' bonus satisfaction is mediated by relational and transactional psychological contracts.

Table 6. Mediation of the effect of transformational leadership on bonus satisfaction through psychological contracts

Bonus Satisfaction	Point Estimate	Product of Coefficients		Bootstrapping BC 95% CI	
		SE	Z	Lower	Upper
Indirect effect					
Relational contract	.35	.08	4.65	.16	.54
Transactional contract	.10	.05	2.21	.01	.34
Total indirect	.45	.07	6.38	.27	.64
Contrast					
Relational vs. transactional contract	.25	.10	2.42	-.13	.49

Note. BC = bias corrected; 5,000 bootstrap samples; pc = psychological contract.

Moreover, as recommended by Zapf et al. (1996), a model with reversed causation was tested, i.e. an effect of employee attitudes (t2) on psychological contracts (t2) and transformational leadership (t2) by controlling for time 1. This model had a significantly worse χ^2 value than the model corresponding to the hypotheses ($\chi^2 = 1980.86, df = 1032, p = .000, CFI = .92, TLI = .91, RMSEA = .044, SRMR = .12; \Delta\chi^2 = 131.75 (df = 4), p < .001$), indicating that the model with reverse causation was not superior to the model. In sum, the results indicate support for hypotheses 2a, while hypotheses 3a and 3b are partially supported.

DISCUSSION

The aim of this study was to test whether transformational leadership influences employee attitudes through psychological contracts over time. With regard to hypothesis 1 the study replicates findings that show a positive relationship of transformational leadership on job satisfaction and commitment (e.g. Judge & Piccolo, 2004), and contributes in demonstrating that these effects are consistent over time. Further, an effect on pay satisfaction was found, as the results indicate that the more employees perceive their leader to show transformational behavior, the more satisfied they are with their pay by controlling for previous levels. This result is in line with research showing that understanding of the pay system positively influences employees' pay satisfaction (Heneman & Judge, 2000; Salimäki et al., 2009). Transformational leaders thereby play a key role to transport the meaning and enhance the understanding of the pay system, and give employees the feeling that their needs and goals are recognized and matched with the organization's goals. The results make the contribution to show that transformational leadership influences employees' pay and bonus satisfaction over time.

Furthermore, the results obtained in this study support the hypothesis that transformational leadership influences employees' job satisfaction through relational psychological contracts (hypothesis 2a). The specific indirect effect through relational psychological contracts was significant while the effect through transactional psychological contracts was not significantly different from zero. The inclusion of a direct effect of transformational leadership on job satisfaction did not improve model fit. Thus, by controlling for previous levels of leadership, relational contract fulfillment and job satisfaction, transformational leadership influenced employees' job satisfaction over time through relational psychological contracts. Hence, the person-focused leader-employee relationship and the socio-emotional elements of exchange transmitted the impact of transformational leadership on employees' satisfaction. The importance of transformational leadership on the one hand and relational psychological contracts on the other hand on job satisfaction are also acknowledged by previous research, however the study contributed in linking transformational leadership to relational psychological contracts. Thus, the results reveal that the perception of fulfilled relational obligations plays a critical role for the impact of transformational leadership on employees' job satisfaction.

Further, it was expected that the effect of transformational leadership on commitment is transmitted by relational psychological contracts. The results indicated that neither rela-

tional nor transactional contracts were significant mediators. Thus, the findings suggest that the effect of transformational leadership on commitment was a direct effect.

Finally, the results suggest that relational and transactional psychological contracts mediated the relationship between transformational leadership and pay and bonus satisfaction (hypothesis 3a, 3b). Since adding the direct effects of transformational leadership on pay and bonus satisfaction did not improve model fit, full mediation was present. For pay and bonus satisfaction examination of the specific indirect effects through relational and through transactional psychological contracts indicates that both forms of psychological contract served as mediators. The pairwise contrasts of these two indirect effects show that they do not differ significantly. It was expected that transactional psychological contracts are more important than relational contracts. While transactional contracts capture instrumental aspects of pay such as buying goods of monetary value, Thierry (2001) argues that pay transports meanings of personal importance beyond monetary value. According to Thierry's Reflection Theory (2001) pay signals how important the employee's work is for the organization, gives information about the employee's status, provides feedback, so that pay reflects images, which are important for an employee's identify. Thus, relational elements of exchange might address these aspects, which leads to employees' enhanced pay and bonus satisfaction. Taken together, the model explained half of the variance in pay satisfaction and a little less than half of the variance in bonus satisfaction.

In sum, the present study demonstrates that the effect of transformational leadership on job satisfaction was mediated by relational psychological contracts, and to show that leaders could contribute to employees' pay and bonus satisfaction through relational and transactional psychological contract fulfillment. While the positive effect of transformational leadership on commitment was supported, results indicated that this effect was mainly direct. All these assumptions were tested against a model with reverse causation, which did not lead to a better model fit. The study therefore contributes in investigating a longitudinal design in which causal and reverse effects were tested, and a mediation effect of transformational leadership on employee attitudes through psychological contracts was shown.

Limitations

The study is not without limitations. First, while the longitudinal design is a major strength of the study, it should be noted that perceptions of transformational leadership, psychological contracts, and employee attitudes were measured from the same source at the same points in time. The longitudinal design accounts for some of the problems of self-report data,

because most of the effects of trait like third variables are controlled for by correlating these variables at time 1 (Dollard et al., 2009; Zapf et al., 1996). A more serious limitation of the study was the absence of a mood variable that may have influenced the results, as the examination of potential occasion factors reveals. Occasion factors represent unmeasured variables such as mood that have an impact on the variables (Zapf et al., 1996). Therefore, the data was inspected whether leadership, psychological contracts and employee attitudes at time 2 had something in common that the causal model could not explain. When latent correlation between the variables at time 2 was added, the model fit was significantly improved ($\chi^2 = 1760.18$, $df = 1022$, $p = .000$, $CFI = .94$, $TLI = .93$, $RMSEA = .039$, $SRMR = .07$; $\Delta\chi^2 = 88.93$ ($df = 14$), $p < .001$). However, adding occasion factors had an unexpected large impact on the effects: Transformational leadership was no longer significantly related to transactional psychological contracts, and neither leadership nor psychological contracts were related to employee attitudes. Apart from the stability coefficients, the only two effects still significant were from transformational leadership on relational contract ($\beta = .24$, $p < .05$), and from relational contract on pay satisfaction ($\beta = .42$, $p < .05$). While influences like mood can exaggerate cross-sectional relationships, for longitudinal studies mood “works like error variance, thus attenuating the observed effects” (Zapf et al., 1996, p. 148). Zapf et al. (1996) also note that as models including the analysis of occasion factors are more parsimonious, most of their fit indexes will be better than the parameters of the originally tested model and clear decisions between models are impossible. Zapf et al. (1996, p. 158) further argue that although structural equation models can take occasion factors into account, there is still little practical experience with complex factor models, and “because estimation problems occur even in simpler analyses, it is better to explicitly measure third variables whenever possible”.

Thus, on the one hand it seems possible that for example employees with negative mood have more likely perceived their leader as less transformational and respond with less job satisfaction. Additionally, employees in a negative mood may have been less likely to perceive their psychological contracts as fulfilled, while employees in a good mood judged all analyzed variables in a more positive light. Therefore, future research might incorporate the assessment of mood variables when exploring the relationship between leadership, psychological contracts and employee attitudes. Yet, considering Zapf et al. (1996), the results of the study can be understood as an indication of the effect of transformational leadership on employee attitudes through psychological contracts.

Second, the time lag deserves some attention. Dulac et al. (2008) recommend taking into consideration that imbalances of the employment relationship might be overlooked if the

time lag is too small. As the second survey was assessed two years after the new pay system was implemented, potential imbalances from the implementation phase might rather have been adjusted after two years. Yet, it would have been fruitful to accompany the process of implementation at several milestones such as the first meetings in which employees were informed about the upcoming changes, or the meeting with their leader in which goals were agreed upon or intermediate results were discussed to assess employees' perceptions of obligation fulfillment and attitudes during certain periods of the implementation. Moreover, further research might attempt to replicate these findings and include a third point in time in order to provide confidence regarding the causal relations among these variables.

A third issue concerns the generalizability of the results to other organizations in the care and the industrial sector. Although charitable institutions are characterized by a mission statement that includes the Christian view of humanity, the emphasis on values such as health, safety and well-being of the patients or customers might apply to other organizations where personal relationships to customers are a crucial factor. Moreover, the employee-oriented culture of charitable institutions might be valued similarly high in other organizations. Further, it is not expected that the results would have differed if institutions, which were not embedded in the Roman Catholic Church, had been conducted, because the assessed employees were rather heterogeneous with regard to their religious background.

While the effects of transformational leadership on job satisfaction and commitment are well documented in the literature (Felfe, 2006a; Judge & Piccolo, 2004), future research is needed to replicate the findings with regard to employee' pay and bonus satisfaction. Also, the context of organizational change needs further clarification and replication. As it was the first time for employees to receive pay contingent on their performance, leaders had to communicate the change, give meaning to the new pay system, integrate it in their vision of the organization, and deal with employees' concerns. Felfe (2006b) argues that the impact of transformational leadership on commitment is stronger in an uncertain context. Thus, for research in organizations that are not involved in human-service related work and in which performance-based pay is part of their self-conception it would be particularly interesting to address whether the present findings are generalizable.

Future Research Directions and Managerial Implications

Based on the results of this study it is concluded that pay satisfaction can be influenced by transformational leadership behavior such as providing information about the pay system, enhancing the meaning of the pay system, giving employees the feeling that their

needs and goals are respected and fulfilled, and matched with the organization's goals. Yet, transactional leadership may be worth exploring, as it is possible that leaders who focus on performance-reward contingencies and actively monitor employees' goal achievement impact employees' perception of their overall pay and bonus. In a recent study it was shown that contingent reward leadership positively influenced employees' pay satisfaction. Additional research is needed to analyze the impact of transactional leadership (in the form of contingent reward and also management by exception) on employees' pay satisfaction over time.

Further, it was shown that transformational leadership impacts employee attitudes via psychological contract fulfillment. Yet, the leaders' role in fulfilling obligations may vary across organizations, so that the leader may not in every context be perceived as the primary source of organizational rewards (Dulac et al., 2008). These differences might have an impact on the extent to which a leader's behavior influences perceptions of psychological contracts. Specifically, it will be necessary to explore in which contexts the leader-employee relationship affects employees' perceptions of fulfilled obligations.

Heneman and Schwab's (1985) development of the Pay Satisfaction Questionnaire (PSQ) led to considerable interest in the multidimensional conceptualization of pay satisfaction and its measurement (Judge, 1993; Mulvey, Miceli & Near, 1991; Scarpello, Huber & Vandenberg, 1988). As there is an increasing trend to implement pay for performance systems at all levels of employment and a wide variety of incentive plans is used (Milkovich & Newman, 2008), recent research contributed in identifying new pay satisfaction facets such as satisfaction with lump-sum bonus (Sturman & Short, 2000) or satisfaction with group incentive plans (Fong & Shaffer, 2003). While research by Sturman and Short (2000) indicates that bonus satisfaction is a distinct facet of pay satisfaction, the results reveal that transformational leadership equally strong influences pay satisfaction and bonus satisfaction and that the underlying mechanisms are the same for both attitudes. Thus, further research is needed to explore the differences between the mechanisms that influence pay and bonus satisfaction.

The results have important implications for managerial practice. Organizational change such as the implementation of a performance-based pay system requires leaders who are able to provide meaning to the change, attend employee development, and stimulate their initiative. According to Bass (1985) organizational change is best led by transformational leaders, who embrace change as a challenge and engage employees with their vision of the future. The present study shows the positive effect of transformational leadership on employee attitudes during the implementation of a new pay system. Further, the study shows that transformational leadership is a key determinant of employees' job and pay satisfaction and

commitment over time and works via psychological contracts. Thus, if organizations want to increase employees' positive attitudes towards their job and pay, their leaders should show transformational leadership behavior such as individualized consideration and inspirational motivation, and clarify mutual agreements in order to establish a shared understanding of the exchange relationship. Moreover, with regard to the impact of leadership on psychological contracts and their effect on employee attitudes, it seems advisable for leaders to communicate their perceptions of mutual obligations and to explain and justify changes in order to reduce the potential of contract breach.

To sum up, the major strength of this research is the identification of transformational leadership as an antecedent of employees' pay satisfaction. Further, the empirical examination of relational and transactional psychological contracts as the underlying mechanism extends research previously suggesting this link (Goodwin et al., 2001). Moreover, in contrast to most existing research, a longitudinal research design was conducted to enhance confidence regarding the causal relations among these variables.

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DISCUSSION

Aim of the present work was to identify leadership as a key determinant of employees' pay satisfaction and to analyze the underlying mechanism of psychological contract fulfillment. Research on antecedents of pay satisfaction shows that understanding and meaning of the pay system serve as important predictors of employees' attitudes toward their pay (Brown & Huber, 1992; Dyer & Theriault, 1976; Heneman & Judge, 2000), and moreover suggests that leaders may be regarded as responsible for providing this knowledge (Brown & Huber, 1992; Salimäki, Hakonen & Heneman, 2009). Yet, studies on leadership still constitute a thereof independent line of research. For the last fifteen years leadership was primarily considered from the perspective of transformational behavior. Building on the work of Bass (1985), transformational leadership is described as supporting employees and empowering them, considering individual's needs and goals, communicating a vision and providing meaning and understanding (Avolio, Reichard, Hannah, Walumbwa & Chan, 2009; Bass & Riggio, 2006). While the concept of transformational leadership explicitly incorporates what is seen as an important determinant of satisfaction with pay, i.e. enhancing employee understanding, it has yet not been linked with research on pay satisfaction. The present work therefore closely examines the influence of transformational leadership behavior on employees' satisfaction with their pay.

As transactional leadership with its focus on economic exchange relationships between leader and employee has been described by Bass and colleagues (Bass, 1985; Bass & Avolio, 1993; Bass, Avolio, Jung & Berson, 2003) as a necessary precondition for transformational leadership to be effective, but more or less slipped from view in current research (Hinkin & Schriesheim, 2008), the present work contributes in contrasting the two leadership behaviors with regard to their influence on employees' pay satisfaction.

As research on leadership calls for a closer examination of the mediating processes (Yukl, 1999), the present work concentrates on psychological contract as the underlying mechanism mediating the relationship between leadership and employee attitudes. Psychological contracts reflect an employee's perception of the relationship towards the organization and include perceptions of mutual obligations (Rousseau, 1989, 1995). While psychological contracts are an increasingly prominent concept for studying employment relationships (Rigotti, 2009), and several studies suggest that leadership might influence employees' perception of psychological contracts (e.g. Liden, Bauer & Erdogan, 2005), no known research has empirically investigated the impact of leadership on employees' psychological contracts. The

present work contributes in analyzing psychological contract as the underlying mechanism transmitting the effect of leadership on employee attitudes. Psychological contracts have been linked to employees' job satisfaction and commitment. However, while Rousseau and Ho (2000) underline the importance of transactional psychological contracts within the context of compensation systems, the present work firstly examines the influence of psychological contracts on employees' attitudes towards their pay. In the following section the results of the three present studies, which investigated these research aims, are critically reviewed. First, the impact of transformational leadership on employees' pay satisfaction will be closely examined. Second, the concept of transactional and transformational leadership is scrutinized by reflecting on several problematic aspects and solutions found so far. Third, the utility of assessing pay satisfaction as a multidimensional construct is questioned. Next, the potential of psychological contracts to mediate the relationship between leadership and employee attitudes will be carefully considered. Further, the generalizability of the results is examined. Finally, theoretical and practical implications are discussed.

TRANSFORMATIONAL LEADERSHIP AS AN ANTECEDENT OF EMPLOYEES' PAY SATISFACTION

A considerable amount of research has devoted its attention towards the relationship between transformational leadership and employees' job satisfaction and commitment (Avolio, Bass, Walumba & Zhu, 2004; Bass & Riggio, 2006; Fuller, Patterson, Hester & Springer, 1996; Judge & Piccolo, 2004). Transformational leadership is expected to positively impact employees' feelings towards their job and their organization by supporting and challenging them, communicating an inspiring vision, and inducing a belief in transcending self-interest for the sake of the organization (Bass, 1985). In the present work, these relationships were supported, not only in a cross-sectional design as preceding studies (e.g. Butler, Cantrell & Flick, 1999; Podsakoff, MacKenzie & Bommer, 1996), but also in a longitudinal study, thereby extending previous research.

The relationship between leadership and pay satisfaction has not attracted research attention so far. Yet, research on the antecedents of pay satisfaction shows the impact of understanding of the pay system on employees' attitude towards their pay and suggests that leaders might play an important role in providing this knowledge (e.g. Salimäki et al., 2009). The present three studies therefore linked transformational leadership with employees' pay satisfaction, building on Bass' (1985) conceptualization of transformational leadership as incorporating behaviors such as providing meaning and understanding. All three studies confirmed

the assumed relationship between transformational leadership and employees' pay satisfaction; considering the cross-sectional relationship as well as the causal effects and moreover regarding overall pay satisfaction as well as different facets of pay satisfaction. Particularly the strong relationship between transformational leadership and structure satisfaction supports the assumption and previous evidence (e.g. Brown & Huber, 1992; Dyer & Theriault, 1976) showing that understanding of the system positively impacts employees' attitude toward the pay structure.

Thus, the present work contributes on the one hand to research on transformational leadership by extending the analysis of consequences in demonstrating the causality of the effects and introducing pay satisfaction as a significant outcome, while on the other hand research on antecedents of pay satisfaction is enriched by the identification of transformational leadership as an important determinant.

TRANSACTIONAL LEADERSHIP AS A NECESSARY PRECONDITION FOR TRANSFORMATIONAL LEADERSHIP?

Bass (1985) viewed leadership as being comprised of two complementary rather than polar facets: transactional and transformational leadership. Specifically, he described transformational leadership to complement transactional leadership and likely to be ineffective in the total absence of a transactional relationship (Bass, Avolio & Goodheim, 1987). In the context of the present study this would mean that leaders should clarify their expectations what performance is needed for goal achievement, offer incentives in the form of promotions, pay raises and bonuses, and reward good performance, so that behaviors such as communicating a vision of a fair pay system, providing meaning to the pay system and considering individual needs when goals are negotiated, take effect on employees' attitude towards their pay. Here, two closely linked problems that generally apply to the conceptualization of leadership by Bass (1985; Bass & Riggio, 2006) become apparent: First, Bass and research following his conceptualization viewed transactional and transformational leadership as distinct behaviors (Avolio et al., 2009; Bass, 1985; Bass et al., 2003; Bass & Riggio, 2006; Judge & Piccolo, 2004). Yet, a leader offering incentives might at the same time consider individual needs – does the employee perceive this as two different behaviors or do transformational leaders rather automatically and consistently employ contingent reward? The question therefore arises whether the two leadership behaviors go so closely hand in hand that they are perceived to be equivalent. Second, the need for a transactional basis for transformational leadership to be effective is rather critical. Hence, is it necessary that leaders clarify expectations before com-

municating a vision or providing meaning? This question is directed at the augmentation hypothesis.

First, the high bivariate correlation among transactional (contingent reward) and transformational leadership, which was found in the second study, will be considered. This problem is well known, as most research incorporating both behaviors report a problematic linkage between contingent reward and transformational leadership (Bycio, Hackett & Allen, 1995; Felfe, 2006a; Judge & Piccolo, 2004; Lowe, Kroeck & Sivasubramaniam, 1996; Tejeda, Scandura & Pillai, 2001). According to Yukl (1999) one reason for this overlap is the inclusion of personal elements such as providing praise and recognition into the contingent reward scale. Employees therefore perceive transformational leadership, which includes behaviors such as providing personal attention to employees, making employees feel that goals can be reached, and giving employees a sense of purpose, as equivalent to leaders showing contingent reward behavior such as communicating expectations, providing assistance and support in exchange for effort, and rewarding good performance by expressing satisfaction. Building on this, Goodwin, Wofford, and Whittington (2001) see the contingent reward scale as two-dimensional.

Table 1. Contingent reward items in the MLQ-Form 5x (Bass & Avolio, 1989)

1	Makes clear what I can expect to receive, if my performance meets designated standards
2	Works our agreements with me on what I will receive if I do what needs to be done
3	Negotiates with me about what I can expect to receive for what I accomplish
4	Tells me what to do to be rewarded for my efforts
5	Gives me what I want in exchange for my support
6	Makes sure that we receive appropriate rewards for achieving performance targets
7	Provides his/her assistance in exchange for my effort
8	I can earn credit from him/her by doing my job well
9	Expresses his/her satisfaction when I do a good job

Goodwin et al. (2001) refer to Rousseau's (1995) concept of psychological contracts and argue that one factor (items 1-4, table 1) of the contingent reward scale represents explicit (or transactional) psychological contracts, as these items reflect leaders clarifying expectations and providing rewards for good performance. The second factor (items 5-9) is argued to be consistent with implicit (or relational) psychological contracts, because "these items assess a follower's expectation that a leader will provide rewards appropriate to performance toward vision accomplishment without a negotiated agreement" (Goodwin et al., 2001, p. 762). Ac-

cordingly, Goodwin et al. (2001) show that the second (relational) factor is stronger related to transformational leadership, while the first factor is stronger associated with management by exception.

Several studies reporting high correlations between contingent reward and transformational leadership refer to Goodwin et al.'s work without further analysis of a two-dimensional structure (Felfe, 2006a; Heinitz & Rowold, 2007; Krishnan, 2005). Bass et al. (2003) did test their contingent reward scale and report that two (out of nine) of their contingent reward items represent transactional contracts. Bass et al. (2003) reran their regression analysis to test for the augmentation effect, which could not be supported using nine items, but could then (yet only for one of the two samples) be supported. The conclusion drawn by Bass et al. (2003) that the Goodwin et al. (2001) approach seems fruitful for future research is questionable insofar as the reasons for not using the item structure found by Goodwin et al. (2001) remains unclear and Bass et al. (2003) do not report whether the two transactional factors actually differ in their relationships to transformational leadership or the outcome variables. Unfortunately, no previous empirical work has analyzed the relationship between the two factors of the contingent reward scale and psychological contracts to confirm the assumption of Goodwin et al. (2001). For the present work, it was tested whether the contingent reward scale is two-dimensional with one factor being stronger associated with relational, the other being stronger related to transactional psychological contracts. As a more actual version (1995) of the MLQ was used than in Goodwin et al.'s analysis, not the exact factor structure could be replicated, yet exploratory factor analysis revealed a two-factor structure with one transactional factor, and one more relational factor, which was not far from the factor structure found by Goodwin et al. (2001). However, confirmatory factor analysis did not support the two-dimensional structure. Further, both subscales were equally strongly related to transformational leadership. Moreover, when their inter-correlation was controlled for, both factors of contingent reward were insignificantly related to both forms of psychological contracts, showing that the amount of shared variance between the two subscales of contingent reward was problematically large. Thus, considering the contingent reward scale as two-dimensional does not solve the overlap between contingent reward and transformational leadership.

Further, the lack of discriminant validity provides the second question regarding the augmentation hypothesis with a new quality. Research on leadership picked up the assumption of transformational leadership augmenting transactional behavior to achieve higher levels of performance and satisfaction (Bycio et al., 1995; Felfe, 2006a; Judge & Piccolo, 2004; Lowe et al., 1996). The augmentation hypothesis is tested throughout by hierarchical regres-

sions, in which transactional leadership is entered first into the regression equation, followed by transformational leadership. Up to this point, there is nothing critical, apart from the fact that a nine or ten-item construct (transactional leadership) is tested against twenty-items (transformational leadership), that reflect by definition the broader construct – thus the additional effect of transformational leadership is rather unsurprising. Yet, the real crux of the problem lies in the display of the results. “We used an F test to determine if the transformational scales added significantly to the prediction of the outcome variables” (Bycio et al., 1995). The common way of presenting support for the augmentation hypothesis is to report whether the amount of variance added by transformational leadership is significant or not (e.g. Bass et al., 2003; Felfe, 2006a). Three studies show why this approach is insufficient and that the solely interpretation of ΔR^2 (or F) values and ignorance of beta-Coefficients or analysis of reversed augmentation are more than problematic. Among these studies, the work of Judge and Piccolo (2004) and Waldman, Bass and Yammarino (1990) has to be highlighted, as these authors question whether “the base of transactional leadership really matters” (Judge & Piccolo, 2004, p. 758). These authors examined the reversed augmentation effect, i.e. if any useful information transactional leadership provides might already be accounted for by transformational leadership. Waldman et al. (1990) find that transactional leadership in the form of contingent reward did not augment the effect on effectiveness beyond transformational leadership. Although Judge and Piccolo (2004) show that transactional leadership did explain incremental variance when transformational leadership was entered first into the regression, the effects of transactional leadership (testing all three subscales) were substantially weakened. Further, the work of Bycio et al. (1995) deserves particular notice, as it is one of the few studies reporting beta-coefficients when testing for the augmentation effect. Their results reflect Waldman et al.’s (1990) finding: “even when all of the transformational scales were combined with contingent reward ... the level of prediction ... was virtually identical to the predictive ability of charismatic leadership alone.” (Bycio et al., 1995, p. 472). In the second study of the present work, it was as well found that the beta-coefficients of contingent reward turned insignificant when transformational leadership was added. Thus, on the one hand the present work shows that the effects of transactional contingent reward and transformational leadership did not differ with regard to the pay satisfaction dimensions, which indicates a lack of discriminant validity. On the other hand, the present work finds that different psychological contracts mediated the relationship between transactional and transformational leadership, which implies support for the distinction between the two leadership behaviors. Psychological contracts would therefore serve as a possible path to further explore the distinction between

the two leadership behaviors, as required by Bass et al.'s (2003). Yet, the in line with Bycio et al. (1995) the results from the present work considering pay satisfaction suggest that research might rather consider combining contingent reward and transformational leadership to one scale. As the effectiveness of transformational leadership without transactional leadership is theoretically questioned and empirically not supported, and both behaviors are perceived to be equivalent, a transformational scale incorporating contingent reward behaviors would rather reflect research results. Two of the present studies show that both, relational and transactional contracts are related to transformational leadership. Using different forms of psychological contracts would therefore be a fruitful way to capture both, relational and transactional elements of exchange, and focus on transformational leadership, which might be complemented with items of the contingent reward scale, not more or less already incorporated. With that the assumption of Bass et al. (1987) of transformational leadership to be ineffective in the total absence of a transactional relationship would be acknowledged, while the problematic overlap between contingent reward and transformational leadership is avoided.

Bycio et al. (1995, p. 472) recommend that future research might contrast the so-called 'active leadership' (i.e. a combination of transformational leadership and contingent reward items) with what could then be called 'passive' rather than 'transactional' leadership. While this might also solve problematic high correlation between management by exception passive and laissez-faire (Felfe, 2006a), the sole distinction between active and passive leadership behavior seems too short-sighted and would not acknowledge the spectrum of leadership behaviors. The study therefore calls for future research to address the overlap between transformational leadership and contingent reward and consider revising the full model of leadership (Bass & Avolio, 1993) without too reducing the range of leadership behaviors beyond applicability.

THE UTILITY OF A MULTIDIMENSIONAL CONCEPT OF PAY SATISFACTION

Early research incorporated pay satisfaction into the measure of job satisfaction. For example, the two most known job satisfaction measures are the Minnesota Satisfaction Questionnaire (MSQ, Weiss, Dawis, England & Lofquist, 1967) and the Job Descriptive Index (JDI, Smith, Kendall & Hulin, 1969). Empirical evidence indicates that these two scales of pay satisfaction are differentiable from other facets of job satisfaction (Gillet & Schwab, 1975). Subsequent theoretical models of pay satisfaction (Lawler, 1971) lead to research focusing primarily on pay satisfaction (Dyer & Theriault, 1976). Research consistently showed that pay and job satisfaction are only moderately related and underlined that pay satisfaction

requires research independent from job satisfaction (Curall, Towler, Judge & Kohn, 2005; Harris, Harris & Harvey, 2007; Katzell, Yankelovich, Fein, Ornati & Nash, 1976; Nguyen, Taylor & Bradley, 2003; Tremblay, Sire & Balkin, 2000). In two of the present studies the distinctness of the concepts could be supported. Firstly, reflecting previous research, job and pay satisfaction were only moderately correlated ($.31 < r < .49, p < .01$). Second, the mechanisms through which transformational leadership influenced them were different: While the effect on pay satisfaction was transmitted by transactional psychological contracts, the relationship between transformational leadership and job satisfaction was mediated by relational psychological contracts. These results show the discriminant validity of pay and job satisfaction and emphasize the additional value of considering pay independent from job satisfaction.

The aim of Heneman and Schwab (1985) was to account for the fact that pay in organizations exists along relatively independent dimensions, so that employees may perceive and experience differential satisfaction with these facets. After Heneman and Schwab (1985) introduced their concept of pay satisfaction consisting of the facets structure/administration, level, raises and benefits, a series of studies was conducted to examine the dimensionality of pay satisfaction (Judge, 1993; Williams, McDaniel & Ford, 2007). A large number of studies find supportive evidence for the validity of a four-factor solution (Judge, 1993; Heneman, Greenberger & Strasser, 1988), in which structure and administration collapse on one factor. Moreover, research shows that the dimensions display differing correlation patterns with their hypothesized antecedents and consequences (Fong & Shaffer, 2003; Judge, 1993; Tremblay et al., 2000). To pick up recent trends in compensation practices, several authors developed new subscales, which complement the Pay Satisfaction Questionnaire (PSQ, Heneman & Schwab, 1985). Sturman and Short (2000) for example developed a scale to assess employees' satisfaction with their lump-sum bonus, while Fong and Shaffer (2003) concentrated on a new dimension which reflects employees' attitude towards group incentive plans. Thus, the multidimensionality of pay satisfaction has gained wide acceptance.

Yet, recently, Williams et al. (2007) critically review research on the PSQ, pointing out a number of weaknesses. While the differentiation between benefits, level and structure consistently found support, a major problem concerns the high correlations of the raises scale with structure and level. Thus, some studies find three-factor solutions, in which half of the raises items load on structure, the other half on level satisfaction (e.g. Scarpello, Huber & Vandenberg, 1988). Heneman and Judge (2000) suggest that these relationships are due to the fact that the pay components themselves are administratively related to each other. Hence, the organization's pay structure may be closely linked to the occurrence of pay raises. For exam-

ple the item “I am satisfied with how my raises are determined” was found to load on the structure dimension although conceptualized to reflect the raises factor (Scarpello et al., 1988). Further, as pay raises have a corresponding effect on pay level, the item “I am satisfied with my most recent raise”, which was supposed to load on the raises factor, was found to load on the level factor (Scarpello et al., 1988). Thus, “it seems natural that pay raise satisfaction and pay level satisfaction would be related” (Williams et al., 2007, p. 431). Sturman and Carraher (2007) argue that the discrepant findings of the dimensionality are due to an employee’s ability and motivation to differentiate between the facets. In the second study of the present work confirmatory factor analysis supported the five dimensions (structure/administration, level, raises, benefits, bonus). Yet, the inter-correlations particularly between raises with regard to level and structure were high ($r > .90$). While the relationship between level and structure was considerably high as well ($r = .82$), these facets correlated significantly different with transformational leadership and relational psychological contracts, indicating support for their discriminant validity. In contrast, raises and level, as well as raises and structure did not show differing patterns of correlations with leadership or psychological contracts. Building on Sturman and Carraher (2007) it is possible that since employees in the sample had their last pay raise some time ago, their ability and motivation to differentiate raises from level was low. Also, their judgement of raises might not have been different from their attitude towards the organization’s system, as the system was likely to be considered as responsible for the temporary cessation of pay raises. Hence, in line with previous research it seemed fruitful to differentiate structure, level, benefits and bonus satisfaction, while the inclusion of raises did not provide further information.

Although it is a contribution to research on pay satisfaction to adapt actual trends and develop scales complementing the PSQ, the recently introduced bonus scale also reveals some problems. The approach of Sturman and Short (2000) to include employees’ attitude towards the level of their bonus (“I am satisfied with my most recent bonus”) as well as towards the structure and administration of the bonus (“I am satisfied with how my bonuses are determined”) closely corresponds to Heneman and Schwab’s (1985) conceptualization of the raises scale. Therefore, it goes along with the same problems of consisting of two different aspects – satisfaction the level of the bonus on the one, satisfaction with the structure and administration of bonuses on the other hand. Confirmatory factor analysis indicated that the bonus scale was distinct from the other facets. Also, transformational leadership was differentially related to the bonus and the level scale. Thus, this problem might not have been of serious concern for the present study. Yet, there is an overlap that should be addressed. Williams, Malos and

Palmer (2002) show for the benefit scale that such problems can be elegantly solved. The benefit scale developed by Heneman and Schwab (1985) reflects employees' satisfaction with the amount of their benefits – the structure aspect is missing completely. By developing an additional scale assessing employees' benefit system satisfaction, Williams et al. (2002) demonstrate that the original idea of Dyer and Theriault (1976) and Heneman and Schwab (1985) to distinguish level from structure satisfaction should be applied to all aspects of employees' pay. While the development of new scales complementing and actualizing the PSQ it is an enrichment for research and practice, future research should take the approach of Williams et al. (2002) into consideration and acknowledge the difference between level and structure in all facets of employees' pay satisfaction or consider formulating items in a way that avoid the distinction between level and structure.

PSYCHOLOGICAL CONTRACTS: A CLOSE LOOK AT THE MEDIATION POTENTIAL

Research so far has neglected the role of leadership in influencing employees' perception of psychological contract fulfillment. This may be due to the fact that psychological contracts are conceptualized as a broader construct compared to theories of specific leadership behavior. Psychological contracts incorporate employees' beliefs of mutual obligations between that person and another party - the typical other party being the organization (Rousseau, 1989). Yet, several studies relate leadership to psychological contracts, mostly in an indirect rather than a direct and empirical way. From the literature on psychological contracts the work of Rousseau (1995) shows that employees personify explicit commitments made to them by their leaders as reflecting the whole organization, thus, employees equate the leader with the organization. A second allusion to leadership is found in the work of Rousseau and Ho (2000), who state that a variety of message senders such as immediate supervisors provide explicit and implicit information, which forms employees' perception of their psychological contract. Finally, and most explicitly, the work of Liden et al. (2005) highlights the role of leadership in influencing employees' perception of psychological contracts, and argues that leaders are the key agent of the organization and may therefore be seen as responsible not only to establish, but also to fulfill obligations. In the leadership literature two studies refer to psychological contracts: Firstly, Goodwin et al. (2001) pick up the concept of psychological contracts in arguing that "for transformational leaders, a psychological contract is established in which the leader and the follower agree on the value of their shared vision and that they will work toward its attainment" (p. 762). Accordingly, for transactional leaders a psychological contract emerges when leaders and employees negotiate the relationship between per-

formance and rewards. Secondly, Pillai, Schriesheim and Williams (1999) argue that relational psychological contracts might explain why transformational leadership positively influences employees' organizational citizenship behavior. They reason that transformational leadership emphasizes social or relational exchange, while employees perceive economic exchange under transactional leadership. To sum up, several authors from independent lines of research point to the link between leadership and psychological contracts, yet no known work has empirically investigated their relationship. The studies of the present work support the assumption of a close link, and furthermore show the causal effect of leadership on employees' perception of contract fulfillment. The first and the third study find that transformational leadership not only influences employees' perception of relational elements of exchange, but that also employees' beliefs concerning the fulfillment of transactional elements can be positively impacted. Moreover, the second study shows support for the assumption of Goodwin et al. (2001) as well as Pillai et al. (1999), that transformational leadership is more closely related to relational, while transactional leadership is more associated with transactional contracts. Yet, these results have to be treated with care, as the above-mentioned overlap between contingent reward and transformational leadership indicates. Thus, future research might rather more closely analyze which relational and transactional obligations may be influenced particularly through the leader, and which inducements are perceived at the organizational level the leader has no influence on. This would as well lead to a better understanding of psychological contracts and help organizations in a practical manner to improve the communication of mutual obligations.

While both the relational and transactional psychological contract scales showed good internal consistencies, it might seem fruitful to complement the transactional psychological contract scale. Rousseau's (1990) concept of transactional contracts incorporated items relating to high pay, performance-based pay, training in exchange for working over-time, engaging in voluntary extra-role activities, and giving notice before quitting. Subsequent research from Coyle-Shapiro and Kessler (2000) reduced the transactional scale, concentrating more explicitly on fair pay and fair fringe benefits. Results from the present study support this approach insofar, as items incorporating the perceived obligation of training, conceptualized by Rousseau (1990) as transactional, loaded on the relational factor. Thus, research views transactional psychological contracts increasingly from a monetary exchange perspective (e.g. Montes & Irving, 2008; Morrison & Robinson, 1997). Yet, the predominant focus on pay related elements of exchange might limit unnecessarily the scope of transactional psychological contracts. Future research might therefore take Rousseau's (1990) original conceptualiza-

tion into account and consider broadening the transactional psychological contract scale to include transactional exchange elements not directly related to pay to depict the broad scope of transactional elements within psychological contracts.

The results from the present work further provide support for the well-documented distinction between relational and transactional contracts (Conway & Briner, 2005; Coyle-Shapiro & Kessler, 2000; Rousseau, 1990). While the stronger impact of relational psychological contracts on job satisfaction and commitment could be replicated (e.g. Raja, Johns & Ntalianis, 2004), the present research contributed in showing an effect in longitudinal data. Further, the link between transactional contracts and pay satisfaction, which was suggested by Rousseau and Ho (2000), but never empirically tested, could be found – cross-sectionally as well as longitudinally.

GENERALIZABILITY OF THE PRESENT RESULTS

The present work concentrated on charitable institutions. Thus, the question arises whether the results found are specific for the charitable context or applicable to organizations of the care, or the industrial sector. Several aspects have to be pointed out that appear as unique characteristics and might limit the generalizability. First, employees of charitable organizations have a mission statement that includes respecting human life, empowering every person to live a self-determined life, offering patients a safe and secure place, and trustfully cooperating with each other. Thus, the emphasis on patients' health and safety will be found in any private care institution in a similar way. Moreover, goals such as customer satisfaction and an employee-oriented culture where participation is an important value, may as well be found within the industrial sector. At first sight the fact that the charitable institutions were embedded in the Roman Catholic Church system appears as a specific characteristic, differentiating the conducted institutions from private care or industrial organizations. Yet, while the Christian faith is incorporated in the mission statement, the assessed employees were rather heterogeneous considering their religion. In one institution for example the same percentage of employees was either Catholic or not religious. Therefore, the religious background does rather not set limits to the generalizability of the findings.

Second, charitable institutions find themselves in a quandary of acting entrepreneurially and maintaining values such as patients' health, safety and employees' participation, since they face high personnel costs, low care rates, and decreasing government grants. This problem corresponds to the situation of private care institutions, which are increasingly in competition with the charitable institutions. Further, the work is perceived as low paying, low

status, with few promotion prospects and emotionally demanding (Machin & Manning, 2004), which increases the organization's problems of recruitment, retention and turnover (Grimshaw & Carroll, 2002). These problems are particularly salient in a sector where the tasks are personal and intimate and relationships are a crucial factor (SFC, 2007). All these problems however apply not only to institutions of the private care sector in a very similar way, but are also found as well in the industrial sector where employees have direct customer contact. In this sense, the findings of charitable institutions are generalizable to other organizations of the private care and industrial sector. Moreover, the fact that the respondents came from different charitable institutions ranging from elderly care to boarding schools and a physiotherapy station may positively contribute to the generalizability.

The possibility to apply the findings to other organizations is underlined when for example transformational leadership is considered. Transformational leadership has been shown to be important in a variety of organizational settings (Judge & Piccolo, 2004), but may be of particular importance within a context, where transformational leadership complies with employees' desire and expectations for empathic and person-centered leadership. Also, transformational leadership is particularly effective in situations of organizational change and uncertainty (Felfe, 2006b). Hulkko-Nymann, Sarti, Hakonen and Sweins (2009) find that in the Finnish and Italian elderly care sector, which faces a similar situation as the German charitable and private care institutions, particularly relational returns such as feeling that one's work is appreciated are important for employees' work engagement. As charitable institutions are under great competitive pressure and face major changes, communicating an attractive vision, presenting challenges as enrichments and giving employees the feeling that their values, needs and goals are recognized, transformational leadership might be of particular importance. The competitive pressure as well as the changes of the pay system to increasingly incorporate performance-based pay may as well be found within the care sector, but as well reflects the situation many industrial organizations face. Thus, it is not expected that the results would have differed greatly if institutions from the private care or the industrial sector would have been conducted. Nonetheless, further research is needed to clearly demonstrate the replicability of the current findings and enhance generalization.

IMPLICATIONS

The present research has several implications for research and managerial practice. First, one of the main benefits of Heneman and Schwab's (1985) conceptualization of pay satisfaction as multidimensional is its adaptability. Using the pay satisfaction facets as a

framework, research can pick up on actual compensation trends such as performance-based pay and develop related items. Fong and Schaffer (2003) complemented the PSQ with items to assess satisfaction with group incentive plans, Sturman and Short (2000) developed a scale to measure employees' bonus satisfaction, Williams et al. (2002) introduced items which reflect employees' benefit system satisfaction. Several authors do not analyze each of the four dimensions in each study, but select the dimension expected to be particularly important for their research aim (e.g. Balkin & Griffeth, 1993; Tekleab, Bartol & Liu, 2005; Tremblay et al., 2000). The same holds true for research on antecedents: Research concentrates on specific antecedents rather than testing all antecedents so far hypothesized to be influential. While Williams et al. (2007) criticize this "piecemeal fashion" of research (p. 430), one could question the utility to throughout measure at least four facets and argue, in line with the results from the present study, for a thoughtful and well planned analysis of a selection of facets, antecedents and determinants. Depending on the research question, it is advisable to select from the pay dimensions the ones hypothesized to be specifically relevant. This flexibility opens an interesting avenue for future research as well as for organizations, and should be seized to deepen the understanding of employees' attitude towards their compensation.

The results considering leadership as an antecedent of pay satisfaction indicate that transformational leadership has strong effects on employees pay satisfaction because transformational leaders emphasize employees' understanding of the pay system. When designing and implementing a pay system, organizations should therefore not only focus on the amount of the pay, but also ensure that leaders provide understanding of the new system to the employees, and give them the feeling that their needs and goals are recognized within the pay system. Communicating an inspiring vision of a new system, articulating change as a challenge, building on employees' strengths to develop them, participating and empowering them are behaviors that can be trained (Bass, 1998). Bass (1998) developed a concept particularly directed at leaders to train transformational behavior, for example by articulating attractive future states. Avolio et al. (2009) recently demonstrated that training interventions are a potential investment with important returns for the organization. Thus, organizations should consider incorporating elements of transformational leadership training in their leader development.

The present work on psychological contracts also offers relevance for organizational practice. The analysis of psychological contracts enables leaders to detect discrepancies between perceived promises and their fulfillment. Given the importance of psychological contracts for shaping employees' work-related attitudes, managing psychological contracts of

employees should be a promising organizational strategy. Firstly, leaders should not provide unrealistic promises during work interactions (Rigotti, 2009). Second, providing explanations and justifications for changes should help to revise the psychological contract and reduce the likelihood of breaches. This implication is supported by Lester, Kickul and Bergman (2007) who empirically underlined the importance of the perceived adequacy of explaining and justifying organizational decisions. Third, leaders should carefully assess their employees' needs and make sincere efforts at fulfilling their obligations.

CONCLUSION

The present work has several strengths that increase confidence in the conclusions drawn on the basis of the findings. First, the present work contributes in extending research on leadership by showing the impact of transformational leadership on employees' pay satisfaction. Further, the present work aimed at disentangling the effects of transactional and transformational leadership on the dimensions of pay satisfaction, and contributes in critically reflecting on the discriminant validity of the two leadership behaviors. Moreover, previous research, which focused on employees' understanding as a crucial antecedent of pay satisfaction (e.g. Brown & Huber, 1992; Dyer & Theriault, 1976; Heneman & Judge, 2000), receives acknowledgement and is extended by the identification of leadership as a source of this knowledge. In addition, the previously only assumed link between leadership and psychological contracts (e.g. Goodwin et al., 2001) is empirically investigated and supported by analyzing psychological contracts as the underlying mechanism of leadership. In addition, the present work pays particular attention to the unique differences in relational and transactional contracts by replicating the stronger effect of relational contracts on job satisfaction (Raja et al., 2004; Zhao, Wayne, Glibkowski & Bravo, 2007) and moreover by demonstrating the thus far only hypothesized (Rousseau & Ho, 2000) stronger relationship between transactional contracts and employees' pay satisfaction. Given these strengths, the present work reflects important considerations for the future theoretical development and study of leadership as an antecedent of employees' attitude towards their pay.

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Erklärung

Hiermit erkläre ich, dass ich die vorliegende Dissertation selbstständig verfasst und keine anderen als die angegebenen Quellen und Hilfemittel verwendet habe. Zudem wurde die Arbeit an keiner anderen Universität zur Erlangung eines akademischen Grades eingereicht.

I declare that I have composed the dissertation on my own and that I have indicated all aids claimed in the dissertation. I assure that my submission is a first-time application for a doctorate and that I have not undertaken previous attempts of a doctorate.

Christine Meier

Köln, 15.12.2009