

Having two bosses: considering the relationships between LMX, satisfaction with HR practices, and organizational commitment

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This study went beyond previous research on leader–member exchange (LMX) by examining employees who are supervised by more than one boss. Using data from 122 PhDs from a Dutch university, this study had three research objectives. First, to examine the effects of PhDs' LMX with both their promoter and their assistant promoter on affective organizational commitment (AOC). Second, to examine the mediating role of satisfaction with human resource (HR) practices in the two LMX–AOC relationships. Since the promoter as the higher level boss has more influence on different HR practices the third objective was to examine whether the LMX–AOC relationship is stronger for the promoter than for the assistant promoter. The results showed that both promoter LMX and assistant promoter LMX were positively related to PhDs' AOC, and both relationships were fully mediated by PhDs' satisfaction with HR practices. As expected, these effects were significantly stronger for the promoter than for the assistant promoter.

Keywords: affective organizational commitment; dual bosses; hierarchical organizations; LMX; satisfaction with HR practices

Introduction

Despite the plethora of research on the topic of leader–member exchange (LMX defined as the quality of the relationship between the leader and the subordinate; Graen and Uhl-Bien 1995; Gerstner and Day 1997; Mueller and Lee 2002; Boies and Howell 2006) and its associated outcomes, the literature does not seem to address many practical situations in which employees are supervised by more than one boss. Organizational hierarchies are increasingly common in almost every organizational setup, where an employee has a direct supervisor (group leader or functional manager) and another boss at a higher level or with a different organizational status such as branch manager (departmental head, project manager, and so on; Kuprenas 2002). The simple chain of command, one man–one boss relationship is seldom operational in contemporary organizations, except in extremely small organizations (Lawson 1986; Kuprenas 2002). The structure of such organizations relies largely on the vertical hierarchy and on the chain of command to define reporting relationships (Anand and Daft 2007). It is highly likely that the subordinates in such situations will have LMX of varying quality with each of their supervisors at different hierarchical positions as LMX relationships are by implication dyadic, one to one, and individualized.

A few extant studies report how employees develop different levels of loyalties with different constituencies such as senior management, boss, customers, and union and

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that employee commitment with each constituency leads to unique attitudinal and behavioral employee outcomes. A recent study done by Redman and Snape (2005) showed that only employee commitment with senior management could significantly predict employee withdrawal cognitions among other constituencies mentioned above. Furthermore, they found that only commitment to the boss was significantly related to performance ratings. It could thus be extended from this research finding that just as employees demonstrate different levels of loyalties with different organizational anchors leading to unique outcomes associated with each anchor, employee dyadic LMX relationships with each boss could also lead to unique outcomes and call for research attention.

For the purposes of this study we chose one representative employee attitudinal outcome, i.e. employee affective organizational commitment (AOC) because it has frequently been reported to be a key proximal precursor in explaining voluntary turnover intentions (Griffeth, Hom and Gaertner 2000), performance (Mathieu and Zajac 1990), organizational effectiveness, absenteeism (Steers 1977), and extra role behavior (Katz and Kahn 1978) and has also been suggested to be related to job satisfaction and job involvement (Steers 1977). Thus, the first aim of this study was to examine the following: is employees' quality of LMX with each of the two bosses related to employees' AOC?

Extant research suggests that human resource (HR) responsibilities are being devolved on supervisors to an increasing extent, thus making them highly influential in the implementation of various HR practices on the shop floor (Guest 1987; Storey 1992; Thornhill and Saunders 1998). As a result of this higher degree of supervisory control over various HR practices, we can expect that employees high in LMX perceive HR practices more positively and are thus more satisfied with these HR practices. Satisfaction with HR practices has also been related to positive employee attitudes such as AOC (Kinnie, Hutchinson, Purcell, Rayton and Swart 2005). Using elements of social exchange theory (Blau 1964), we aimed to find out whether satisfaction with HR practices provides employees with a mechanism to reciprocate high LMX with high AOC. The second research goal of the study was, therefore, to answer the following: does satisfaction of the subordinates with HR practices mediate the LMX–AOC relationships?

The senior manager, owing to his or her higher organizational status, is entitled to greater formal authority over various HR practices; therefore, she/he is expected to exert a stronger influence on the distribution of tangible organizational resources (among the subordinates) than the junior manager. Owing to the differences in the formal authority and thus influencing power of the two bosses over various HR practices, it is possible that employees' attitudes are determined differently through the two LMX relationships. We aimed to explore such differences in the present study, leading to the following research question: are the effects on AOC of the two LMX relationships significantly different?

We chose PhDs at a Dutch university as our study sample. PhDs [in Dutch: *Assistent in Opleiding* (AiO), *promovendus*, or research assistant] typically have a fixed-term contract of four years with the university and are entitled to a small salary, health insurance, maternity leave, and pension insurance (Fischer and Lohner 2001). PhD candidates have offices, are required to show some regular progress, should communicate holiday plans, and receive instruction from their supervisors. Although these research assistants receive training and supervision, they are at the same time expected to contribute to the research output of faculties or research institutes and have teaching obligations up to a maximum of 25% of their total working time (Weert 2001). This implies a hierarchical relationship between PhD candidates and their university, in which they develop a special kind of leader–subordinate relationship with their supervisors, one of whom is called assistant

promoter (similar to direct supervisor or group leader in other organizations) and the other one is called promoter (similar to senior manager or department head in other organizations).

It is important to highlight the role and formal authority of the two PhD supervisors according to organizational policy. Promoter is normally a full-time professor (can also be the departmental head or at a senior position) who has the role of principal advisor; the assistant promoter can be a post doc, assistant, or associate professor (Promotiereglement Universiteit 2007; PhD Candidate Network of the Netherlands 2009; PhD Centre Netherlands 2010). The assistant promoter has the formal role of supervising (providing feedback to) the PhD student on a more regular or daily basis, while supervision is done by the promoter on a weekly or monthly basis. In the Dutch system, the salary structure of the PhD is predetermined and more or less fixed at the beginning of the employment contract. However, formally, the promoter is the central figure in the process with whom the HR decisions regarding aspects of the PhD's work such as supplementary research activities, the PhD's nomination for conferences, research seminars, training courses, workshops, and related career development and training activities largely lay (Promotiereglement Universiteit 2007; PhD Candidate Network of the Netherlands 2009; PhD Centre Netherlands 2010). Likewise, every thesis has to be approved by a promoter before it can be submitted for defense. Annual progress reports are prepared in cooperation with and signed by the promoter, and extension of the PhD's contract, if needed, is dependent mainly on the recommendation of the promoter as well (Promotiereglement Universiteit 2007). From the above-stated facts, it could be concluded that whereas the assistant promoter is responsible only to supervise the research project of the PhD or making recommendations regarding training courses or attending seminars/conferences, final decisions regarding the research project, training courses or conferences, and other HR decisions pertaining to the PhD's employment rest largely in the hands of the promoter. Thus, owing to his/her greater hold over implementation of HR policies on account of being at the higher organizational status at the university compared to the assistant promoter, it is assumed that the PhDs perceive the promoter as the 'more powerful source'.

It is also important to mention here some features of the situation of PhDs in the Netherlands, which also provide the rationale behind the choice of AOC as an important employee attitude. Scarcity of scientific staff has been noted in several European countries, including the Netherlands (Tan and Meijer 2001). The literature shows higher dropout rates of PhDs during different stages owing to dissatisfaction with their supervisors and poor working conditions (Fischer and Lohner 2001), leading to the loss of their motivation and commitment and thus resulting in voluntary turnover. The loss of motivated PhD students is not only a bad experience for the students themselves; it is a loss of scientific work and future staff which are desperately needed in the face of depleting academic staff (Tan and Meijer 2001). A large pool of academic scientists are retiring in the coming years but much less fresh talent is available in the labor pool (Fischer and Lohner 2001). This makes it necessary for the universities to do their utmost to keep young talent. As noted above, AOC has been reported to be the strong predictor of turnover and many other employee and organizationally relevant outcomes; however, to date, we know little about the AOC of PhDs. In the context of the above discussion, the purpose of this study was to focus on the relative role that key interpersonal relationships in the workplace can play in increasing employees' AOC and explain the link through employees' satisfaction with HR practices.

The first section of this article deals with theory relevant to interrelationships between LMX, AOC, and satisfaction with HR practices, drawing hypotheses from this. The

second section explains the research method and procedures used to test the hypotheses. The third section explains the results (tests of the hypotheses). The discussion and conclusion are in the fourth section; implications, research limitations, and possible future research directions follow in the last two sections.

Theories and hypotheses

LMX–AOC relationship drawn from social exchange theory

As noted above, in this study we focused on AOC, which refers to identification with, involvement in, and emotional attachment to the organization (Allen and Meyer 1990; Meyer and Allen 1991). Thus, affectively committed employees remain in the organization because they *want to* do so (Allen and Meyer 1990, p. 1). Research findings show that leaders differentiate between various subordinates by providing high LMX employees with more challenging, autonomous, and enriching jobs that require use of different sets of skills, entrusting them with whole projects, and delegating responsibilities of greater importance, as compared with their low LMX counterparts (Graen and Uhl-Bien 1995). Following from social exchange theory (Gouldner 1960; Blau 1964), high LMX employees, in receiving something of value, feel themselves to be more valuable for the organization and thus feel obligated to reciprocate by offering organizationally desired contributions such as commitment (also in line with the inducements–contributions theory by March and Simon 1958). Thus, even though employees might hold the same job title and carry out the same responsibilities, they can experience differential relationships with their supervisor and exhibit different attitudes accordingly. Many studies give evidence of LMX being positively related to organizational commitment (Kinicki and Vecchio 1994; Settoon, Bennett and Liden 1996; Liao, Hu and Chung 2009; Brunetto, Farr-Wharton and Shacklock 2010). Nystrom (1990) examined the quality of the relationship between managers and their bosses and its impact on their organizational commitment, which turned out to be very strong and positive for managers who had high-quality exchange. These research findings on the positive LMX–AOC relationship have gained support from many other study findings (e.g. Sisson 1994; Kacmar, Carlson and Bryner 1999; Kidd and Smewing 2001; Lee 2005; Ansari, Hung and Aafaqi 2007).

Since PhD candidates are dependent on both their assistant promoter and their promoter for supervision and feedback from the start of the project till the end and regarding other HR matters on their respective promoter, we expected that LMX quality with both the supervisors could determine their AOC. Drawing from the LMX literature, social exchange theory, and norms of reciprocity, this would mean that PhDs who have a quality LMX with their bosses perceive or actually have better access to the organizational resources which are important for their research; they are also expected to receive more timely and quality feedback and can therefore be expected to reciprocate through higher organizational commitment compared with their counterparts lower in LMX relationships. In line with the discussion, our first hypothesis was formulated as follows:

H1: Promoter LMX (a) and assistant promoter LMX (b) are positively related to PhDs' AOC.

Satisfaction with HR practices as a mediating mechanism in the relationship between LMXs and organizational commitment

In the previous section, using social exchange theory and the extant literature, we aimed to explain the link between LMX and AOC. It remains unclear, however, how these

exchange relationships are conceptualized or how they are facilitated (Rupp and Cropanzano 2002). Below, we aim to explain the underlying mechanism in the LMX–AOC relationship.

The extant research suggests an increasing role of supervisors and line managers in which they are held responsible for translating organizational policies and strategies into practice and managing HR (Guest 1987; Storey 1992; Thornhill and Saunders 1998; Kidd and Smewing 2001). Due to the increased devolution of responsibility, supervisors enact, translate, and communicate the goals of the organization by implementing organizational policies (Guest 1987). Owing to the influential role of the supervisor, LMX quality has frequently been considered likely to influence employee satisfaction with HR practices, either positively or negatively, depending on the quality of relationship (Purcell and Hutchinson 2007). Although the idea of some employees being treated better than others seems to violate norms of equality (Meindl 1989; Kabanoff 1991), the focus of LMX theory, as noted above, is on the development of differentiated LMX (Scandura, Graen and Novak 1986). Since this differentiation of subordinates involves unequal distribution of both tangible and intangible resources, it gives rise to differences in their levels of satisfaction with HR practices. It seems quite logical to assume that subordinates who have varying LMX quality with their supervisors will also have different perceptions regarding HR practices and thus different levels of satisfaction with HR practices. Therefore, high LMX employees were expected to be more satisfied with HR practices because of the distribution of resources tilted in their favor. In line with this, the second hypothesis was formulated as follows:

H2: Promoter LMX (a) and assistant promoter LMX (b) are positively related to PhDs' satisfaction with HR practices.

Employee attitudes are formed on the basis of employee perceptions of HR practices implemented by their supervisors (Purcell and Hutchinson 2007). These perceptions determine employee satisfaction with HR practices and employees react to them in terms of their attitudes and behaviors (Hiltrop and Despres 1994; Ostroff and Bowen 2000; Bowen and Ostroff 2004; Kinnie et al. 2005; Purcell and Hutchinson 2007). Research findings suggest a positive relationship between employee satisfaction with HR practices such as career opportunities, performance appraisal, rewards and recognition, involvement, communication, openness, and work–life balance and employee's organizational commitment (Kinnie et al. 2005). From the existing theory on these relationships we developed the following hypothesis:

H3: PhDs' satisfaction with HR practices is positively related to their AOC.

Taken together, these findings suggest that although LMX relationships can be pivotal in influencing the AOC of employees, this relationship is not simple and straightforward; rather, it is routed through internalized cognitions of employees' satisfaction with HR practices, and satisfaction with HR practices provides a valuable link in the establishment of this relationship. This means that this relationship is executed through the formation of subordinates' levels of satisfaction with HR practices, depending upon the quality of their LMX with their bosses. This led us to the development of the following hypothesis:

H4: PhDs' satisfaction with HR practices mediates the relationship between (a) promoter LMX–AOC and (b) assistant promoter LMX–AOC.

Higher organizational status normally implies that the senior boss has more power to allocate tangible organizational resources compared with the boss lower in the hierarchy.

In various empirical studies, relative power of the two supervisors has been reported to influence employee work outcomes such as their job performance accordingly (Katz and Allen 1985). Purcell and Hutchinson note that 'it is, in HR terms, not just the quality of this LMX relationship but the extent to which first line supervisors are perceived to be the provider of HR practices' (2003, p. 8). In any organization, employees attend more to those managers who have more influence over technical strategies, resources, rewards, and promotional and staffing decisions (Oldham 1976). Therefore, we expected the LMX–AOC relationship to be stronger for promoter than assistant promoter since the promoter has the greater formal control and final decision-making power over various HR practices compared with the assistant promoter owing to his or her higher organizational status, as noted above. The following hypothesis was developed:

H5: The relationship between PhDs' LMX and AOC is stronger for the promoter than for the assistant promoter.

Methodology

Study sample and procedure

Data were collected using a population of PhD students at a Dutch university. The university offers education and research in areas ranging from public policy studies and applied physics to biomedical technology. The university had a total of 620 doctoral researchers at the time of the research. However, owing to errors and mutations that were not yet implemented in the contact records of PhD candidates, around 18% of the population could not be invited to participate in this study. Questionnaires were, therefore, sent online to 550 PhDs.

An online questionnaire was developed to measure the different concepts and test the different relationships. An initial draft of the questionnaire was sent to the PhD experts of the university (board members of the network association of PhDs) for their feedback to ensure the face validity and readability of scale items. Based on their feedback the wording of some of the questions was slightly modified. The invitation containing a link to the online questionnaire was then distributed via email to all departments of the university in the target population using the platform of the PhDs network at the university. To solicit a higher response rate, a reminder email was sent to all PhDs two weeks after the first email. The survey remained open to responses for a period of one month.

Out of the 550 questionnaires, 136 were filled out; and of these, 122 were completely filled out, giving a response rate of 22%. Sixty-six percent of the respondents were male, 11% had children, and 57% were Dutch. The mean age of the respondents was 28 years, with a mean experience of 2.9 years with this university.

Measures

For all items in the questionnaire, we used a five-point scale with anchors of 1 = strongly disagree and 5 = strongly agree.

Affective organizational commitment

Eight items were used to measure AOC using the scale developed by Allen and Meyer (1990) with slight modification. Sample items are 'I would be very happy to spend the rest of my career in the (name of university)' and 'This university has a great deal of personal meaning to me'. Cronbach's α for this scale was 0.84.

Promoter LMX and assistant promoter LMX

A 15-item scale developed by Liden and Maslyn (1998) was used to measure LMX with some change of words according to the needs of the study. Sample items are 'I like my assistant promoter very much as a person' and 'Working with my assistant promoter is very stimulating'. Cronbach's α for this scale was 0.97. To measure promoter LMX, the same scale was used except that the word 'assistant promoter' was replaced with 'promoter'. Sample items are 'I like my promoter very much as a person' and 'Working with my promoter is very stimulating'. Cronbach's α for the promoter LMX scale was 0.96.

Satisfaction with HR practices

To measure PhDs' satisfaction with HR practices, a comprehensive scale consisting of 28 items was developed by Torika (2007; see Appendix 1). It included items to measure training and development opportunities, job design, task content, working conditions, supervision and feedback, participative HR practices, and facilities to perform research. All these practices are highly significant in the research work of PhDs. In order to investigate the additive effect of all these HR practices on employee attitudes and the relative influences of the two bosses on them all, we created a 'Satisfaction with HR practices' index to measure the satisfaction of PhDs with HR practices in total. We created this composite HR index because of strong evidence from the literature that the additive affect of HR practices is more outcome-oriented and reinforcing, and that it better reflects the organization's investments in employees (Delery and Doty 1996; Youndt, Snell, Dean and Lepak 1996). The use of additive indices assumes that HR practices are additive in relation to employee outcomes. Moreover, an additive index provides a conservative estimate that may understate the synergies or multiplicative effects of combining practices (Batt 2002). It assumes that firms may achieve incremental results by investing in some of the practices, but they will achieve more positive results using a full range of HR practices (e.g. Ichniowski, Kochan, Levine, Olson and Strauss 1996). Inclusion of all the practices also leads to findings that show a fuller picture. The index was created following the steps given by Doellgast (2008): we first computed the z-scores for all items measuring PhDs' satisfaction with HR practices and then took the average of the z-scores to arrive at the composite HR index. Sample items from this index are 'The amount of autonomy and freedom in my work' and 'Opportunities to visit conferences'. Reliability for this scale was high (Cronbach's $\alpha = 0.95$).

Control variables

Various demographic characteristics of the PhDs like age, gender, having children, and experience were controlled for because a significant relationship was found in some studies between demographic characteristics of individuals and their organizational commitment and turnover intentions. For example, Mathieu and Zajac (1990) found a positive relationship between age and experience and organizational commitment. Furthermore, since this was an international university with a fair representation of non-Dutch PhDs, we controlled for nationality to account for any cultural background differences.

Since data were collected from individual PhDs within the five different faculties of the university, we computed an interclass correlation coefficient (Bliese 2000) to check for differences in the AOC of PhDs with respect to their faculty. The intra-class correlation

for AOC was found to be 0.02, meaning that only 2% of the variance (of AOC) occurred between the different faculties, and 98% of the variance was related to the individual level. Since our primary interest was the differences among PhDs, we did not control for faculty in our subsequent regression analyses and did not analyze the results using multilevel analysis techniques.

Testing common method variance

Because all data were self-reported and collected using the same questionnaire during the same period of time, Harman's one-factor test (Podsakoff and Organ 1986) was used to investigate the potential influence of common method variance. All study variables were entered in a principal factor analysis, using varimax rotation, to determine the number of factors necessary to account for the variance in the variables. The results showed four factors (promoter LMX, assistant promoter LMX, AOC, and satisfaction with HR practices) with an Eigenvalue greater than 1, accounting for 77.95% of the variance. The largest factor did not account for a majority of the variance, nor was there a general factor that accounted for the majority of the covariance in these variables. This result suggests that common method variance was not of great concern.

Results

Descriptive statistics of the sample

Table 1 reports the descriptive statistics, including mean, standard deviation, and inter-correlations, for each measure.

The pattern of correlations between independent variables and AOC shows that both promoter LMX and assistant promoter LMX were moderately and significantly related to AOC of PhDs ($r = 0.35$, $p < 0.01$ and $r = 0.34$, $p < 0.01$, respectively). Also, both predictor variables were moderately related to PhDs' satisfaction with HR practices ($r = 0.66$, $p < 0.01$ and $r = 0.60$, $p < 0.01$, respectively). Nationality was not significantly related to AOC. However, significant differences [$t(120) = -2.09$, $p < 0.039$] were observed with respect to quality of LMX of Dutch ($M = 3.2$) and non-Dutch respondents ($M = 3.5$) with their promoter. No significant differences were found, however, between Dutch respondents ($M = 3.3$) and non-Dutch respondents ($M = 3.4$) with respect to assistant promoter LMX [$t(120) = -0.52$, $p = 0.60$]. It was also found that non-Dutch respondents ($M = 0.16$) showed significantly higher [$t(120) = -2.50$, $p = 0.014$] levels of satisfaction with HR practices compared with Dutch respondents ($M = -0.12$).

Another important statistic to be noted in Table 1 is the significantly high relationship between LMX promoter and LMX assistant promoter ($r = 0.67$, $p < 0.01$). To rule out the possibility of multicollinearity among the two LMXs we examined the variance inflation factor (VIF) in the subsequent regression analyses. The largest VIF value was 2.42, which is much lower than the cut-off value of 10 (Chatterjee, Hadi and Price 2000); thus multicollinearity did not seem to be a problem. Moreover, as noted in the results of Harman's single factor analysis, LMX promoter and LMX assistant promoter turned out to be loaded on distinct factors.

The results of the regression analyses conducted to test the various hypotheses are presented in Table 2. The analyses were run after the demographic variables were controlled for; no significant effects were found (except for a small negative effect of experience on satisfaction with HR practices in one model).

Table 1. Means, standard deviations, and correlations of sample ($N = 122$).

Variables	Mean	SD	1	2	3	4	5	6	7	8
1. Gender	1.43	0.50								
2. Age (in years)	28	3.1	-0.34**							
3. Experience (in years)	2.9	1.4	-0.13	0.38**						
4. Children	1.89	0.32	0.05	-0.16	-0.07					
5. Nationality	1.21	0.45	-0.18	0.32**	-0.23*	-0.19*				
6. AOC	2.96	0.42	0.03	0.05	0.05	-0.09	0.01			
7. Promoter LMX	3.34	0.99	-0.09	0.18*	-0.03	-0.08	0.25**	0.35**		
8. Assistant promoter LMX	3.4	1.0	0.06	0.11	-0.03	-0.16	0.15	0.34**	0.67**	
9. Satisfaction with HR practices index	0.00	0.55	0.02	-0.06	-0.09	0.23	0.03	0.35**	0.66**	0.60**

Notes: ** $p < 0.01$, * $p < 0.05$.

Gender: 1, male; 2, female; children: 1, yes; 2, no; nationality: 1, Dutch; 2, non-Dutch. AOC, promoter LMX, assistant promoter LMX, and satisfaction with HR practices were measured on a Likert scale from 1–5.

Table 2. Results of regression analyses (N = 122).

Variables	AOC											
	Step 1 (H1 and H5)			Satisfaction with HR practices			Step 3 (H3)			Step 4 (H4)		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 1	Model 2	Model 1	Model 2	Model 3
Gender	0.07	0.01	0.04	0.05	-0.03	0.01	0.02	0.03	0.00	0.02	0.00	0.02
Age	-0.01	-0.00	-0.02	-0.13	-0.16	-0.15	-0.01	-0.03	-0.04	-0.04	-0.04	-0.04
Experience	0.06	0.06	0.06	-0.13	-0.05	-0.11*	0.17	0.14	0.16	0.14	0.16	0.14
Nationality	-0.06	-0.03	-0.05	0.11	0.22	0.14	-0.06	-0.06	-0.04	-0.05	-0.04	-0.05
Children	-0.07	-0.03	-0.05	0.02	0.09	0.06	-0.08	-0.08	-0.06	-0.06	-0.06	-0.06
Promoter LMX	0.37**		0.25*	0.67**		0.45**		0.18		0.13		0.13
Assistant promoter LMX		0.34**	0.18		0.62**	0.32**			0.17	0.11		0.11
Satisfaction with HR practices							0.38**	0.26*	0.28*	0.23 [†]		0.23 [†]
R ²	0.14	0.12	0.16	0.48	0.44	0.54	0.17	0.19	0.18	0.19	0.18	0.19
Adjusted R ²	0.10	0.09	0.11	0.46	0.41	0.51	0.12	0.13	0.13	0.13	0.13	0.13
Change in R ²	0.14	0.12	0.04	0.48	0.44	0.10	0.17	0.19	0.18	0.18	0.18	0.01
F-value	2.90**	2.72**	2.87**	15.51**	12.90**	16.58**	3.31**	3.23**	3.21**	3.21**	3.21**	2.96**

Notes: **p < 0.01, *p < 0.05 and [†]p < 0.1.

All β coefficients appearing in the table are standardized.

The relationships between the predictor, outcome, and mediators were tested using steps from Baron and Kenny (1986). Step 1 in Table 2 shows the results of the tests of H1a, H1b, and H5. We proposed in H1a and H1b that both promoter LMX and assistant promoter LMX influence PhDs' AOC positively. H5 stated that promoter LMX explains greater variance in PhDs' AOC. We analyzed three models in Step 1. In Model 1, AOC was regressed on promoter LMX: a positive β value of 0.37 ($p < 0.01$; $R^2 = 0.14$) was attained. In Model 2, AOC was regressed on assistant promoter LMX to find its unique effects. The results showed a β value of 0.34 ($p < 0.01$; $R^2 = 0.12$). This means that both H1a and H1b were confirmed.

We entered promoter LMX and assistant promoter LMX simultaneously in Model 3 to find how they related to AOC when combined and what their relative effects were. The results revealed that, when entered together, only promoter LMX significantly influenced PhDs' AOC, while the effects for assistant promoter LMX became insignificant (from $\beta = 0.25$, $p < 0.05$ to $\beta = 0.18$, n.s., respectively; $R^2 = 0.16$). Model 3 showed the best fit with a higher explained variance. This means that H5 was confirmed, as the effect size for promoter LMX was larger and significant while effect size for assistant promoter LMX, although positive, was both smaller and insignificant.

In Step 2, we tested H2, which stated that both promoter LMX and assistant promoter LMX are related to satisfaction with HR practices. We entered the independent variables in three different models again. This was done in an effort to find unique effects of the quality of PhDs' promoter LMX and assistant promoter LMX on their satisfaction with HR practices. The results indicate that entering promoter LMX in Model 1 yielded a positive β of 0.67 ($p < 0.01$; $R^2 = 0.48$). Model 2 indicates a positive β of 0.62 ($p < 0.01$; $R^2 = 0.44$) when assistant promoter LMX was entered into the equation independently of promoter LMX. In Model 3, we entered both promoter LMX and assistant promoter LMX to show their combined and simultaneous effect on PhDs' satisfaction with HR practices. The results show that both promoter LMX and assistant promoter LMX significantly influenced satisfaction with HR practices ($\beta = 0.45$, $p < 0.01$; $\beta = 0.32$, $p < 0.01$, respectively; $R^2 = 0.54$).

Moving on to Step 3, we regressed PhDs' AOC on their satisfaction with HR practices to test H3, which predicted a positive relationship between the two. The results showed that satisfaction with HR practices was positively and significantly related to AOC ($\beta = 0.38$, $p < 0.01$; $R^2 = 0.17$), thus confirming H3. Satisfaction with HR practices thus fulfilled the first two conditions for qualification as a mediator variable, according to conditions specified by Baron and Kenny (1986).

Step 4 was performed to test for the mediation of satisfaction with HR practices in the promoter LMX–AOC and in the assistant promoter LMX–AOC relationship, i.e. H4a and H4b. Model 1 of Step 4 indicates that satisfaction with HR practices mediates the relationship between promoter LMX and AOC as the β coefficient for promoter LMX became nonsignificant (from $\beta = 0.37$, $p < 0.01$ to $\beta = 0.18$, n.s., $R^2 = 0.19$) while the β coefficient for satisfaction with HR practices was significant ($\beta = 0.26$, $p < 0.05$). Thus, H4a was confirmed. H4b was also supported as mediation of satisfaction with HR practices was suggested in the relationship between assistant promoter LMX and AOC in Model 2 of Step 4. The results indicate that the β coefficient for assistant promoter LMX became nonsignificant (from $\beta = 0.34$, $p < 0.01$ to $\beta = 0.17$, n.s.; $R^2 = 0.18$) while the β for satisfaction with HR practices was significant ($\beta = 0.28$, $p < 0.05$). As shown in Model 3 of Step 2, mediation of satisfaction with HR practices was also confirmed when both promoter LMX and assistant promoter LMX were jointly entered in the equation

($\beta = 0.13$, n.s., $\beta = 0.11$, n.s., $\beta = 0.23$, $p < 0.1$, $R^2 = 0.19$, for promoter LMX, assistant promoter LMX, and satisfaction with HR, respectively).

Discussion and conclusions

This study was aimed at highlighting the effects of differences in effects of LMX on employee outcomes when subordinates have more than one boss. The study was also aimed at explaining the two LMX–AOC relationships using the framework of satisfaction with HR practices. The results of the study were largely supported and bring to light some important conclusions.

The first research result indicated a positive relationship between LMX and the AOC of the employee. This finding is consistent with the findings of previous researches of its kind (e.g. Ansari et al. 2007; Liao et al. 2009; Brunetto et al. 2010). However, the current findings go beyond the existing literature on the LMX–AOC relationship by highlighting the situation of two bosses. We can infer from the results that a high-quality LMX of a PhD with both supervisors (i.e. promoter and assistant promoter) can lead to a higher level of emotional attachment with the organization. However, it was also found that, when entered together, the effects of assistant promoter LMX on PhDs' AOC, although positive, are not significant. Following the already established line of argumentation, the results suggest that good quality relationships with the boss who has greater authority can lead to a more positive and significant effect on attitudinal outcomes of employees (Rupp and Cropanzano 2002). This could be because employees value the authority relationships more, because of their perceptions of greater influence of the senior boss in the hierarchy.

An alternative explanation for these results is possible – that is the varying nature of supervisory assignments of promoter and assistant promoter. Since the assistant promoter or daily supervisor is directly involved only in the task content of the PhD candidate and has a small degree of control over HR activities such as deciding on participation in conferences (the assistant promoter generally has no final decision-making authority), it is possible that the assistant promoter more strongly influences other foci of commitment like task commitment, job commitment, or maybe occupational commitment. What we intend to emphasize here is that, in situations where there is more than one boss, it can be assumed that each boss has a different formal or informal job description and a different degree of influence, and variance in employee outcomes depends on the specific degree of control of each supervisor over the various HR practices and the quality of the employee's relationship with each boss. It is interesting to note that there were no significant differences between the means of promoter LMX and assistant promoter LMX (3.34 and 3.4, respectively), which means that PhDs on average had the same quality relationship with both their bosses. However, there were significant differences in the effects of the two LMXs on employees' satisfaction with HR practices and consequent AOC. This finding further supports our point that even if employees have the same quality relationship with each boss, the two bosses cannot be related equally to employee outcomes – the line of reasoning is their formal role and authority and employees' perceptions of the same (in line with H5).

The second research result shows a positive link between both LMXs and the subordinates' satisfaction with HR practices, which are also in line with previous research findings (Purcell and Hutchinson 2007). Likewise, the third research result shows a positive relationship between satisfaction with HR practices and AOC. We came across only a few studies in which this relationship was examined (e.g. Kinnie et al.

2005), and our findings are consistent with theirs for this relationship. Therefore, the present research provides additional evidence to the literature by considering the relationship between employees' satisfaction with a large pool of HR practices and AOC.

In the test of H4, the present research goes a step further in providing a mechanism and logical explanation for the LMX–AOC relationship. The findings of the test of the mediation of satisfaction with HR practices suggest that PhDs' LMX with both the promoter and the assistant promoter translates into higher AOC with the university, and this process is routed through their satisfaction with HR practices, over which the two bosses have a relative degree of control. PhDs' satisfaction with HR practices is important for the achievement of their outcomes because these practices directly affect or determine their ultimate goal through their effect on the quality of their research and skills (in the form of the PhD thesis or number of publications in reputed journals, and so on). The results show that PhDs who have a better quality LMX with their bosses feel in a relatively advantageous position when it comes to the distribution of resources and, therefore, are more satisfied with the HR practices of the university; thus, they tend to reciprocate with a higher AOC with the university. Research evidence suggests many a studies that reflect LMX as a mediator in the relationship between various predictors and organizational commitment (e.g. Rupp and Cropanzano 2002). However, we hardly found any study that examines the mechanism underlying LMX–AOC relationship. One recent study, however, examined the effects of LMX on AOC and showed employee morale to mediate the relationship (Brunetto et al. 2010). This study, therefore, adds to the literature by providing an explanation as to how LMX–AOC relationship might be executed.

It can be seen in Step 1 of Model 3, Table 2, that when both promoter LMX and assistant promoter LMX are entered into the equation, assistant promoter LMX becomes insignificant. This may suggest mediation of assistant promoter LMX in the promoter LMX–AOC relationship. It possibly reflects that the higher boss is powerful enough to influence the LMX–AOC relationship between the subordinate and the boss with lower authority.

Implications

When aiming to influence employee attitudes (which have been reported to translate directly into employee behaviors and then influence both employee and organizational performance), the management of any organization might do well to consider that not all employer–employee relationships affect employee outcomes alike in triadic situations. Owing to the subtle processes involved in the chain, mechanisms may be altogether different for the two kinds of relationships. No two bosses can affect their subordinates' attitudes similarly because they have varying influencing power, as also perceived by the employee. Moreover, two bosses affect employees' satisfaction with HR practices differently owing to the differences in their relative power to influence various HR practices as perceived by employees. The LMX quality, especially with the higher boss, may lead to more variance in employee outcomes. The results have implications for enhancing employee commitment through interventions aimed at enhancing the quality of LMX. This means that enhancing work-related interaction through coaching or delegation can result in higher-level employee outcomes owing to greater levels of satisfaction with HR practices. After all, satisfaction with HR practices is not the end goal; it is a means to an end, namely, organizational commitment and other important attitudes.

Limitations and suggestions for future research

The study had some limiting factors. Owing to the unavailability of updated contact records of PhD candidates within the PhD network at the university, not every PhD candidate could be asked to complete the questionnaire, resulting in a relatively small response rate. As in most research in the social sciences, another important limitation of this research was the use of a cross-sectional approach. This type of paradigm makes the causality ambiguous, which is unlikely to happen if a longitudinal approach is used. A longitudinal approach is more advantageous because data collection is done from the same sample but at regular intervals, leading to more unambiguous and dependable causality. Future research could be directed toward longitudinal analyses to establish this causality, or to establish reverse causality, if any. Collection of data from a single university can be considered another limitation of this study. The scope of future research could be increased to enhance the generalizability. Although, multicollinearity statistic and principal factor analysis did not suggest the presence of multicollinearity between LMX promoter and LMX assistant promoter, the concern cannot be completely ruled out and might be considered as a limitation of this study. Alike, although Harman's one-factor model did not indicate the presence of common method variance, the possibility of potential bias due to a single data source cannot be ruled out completely. Data from multiple sources could have greatly strengthened the results, thus providing direction for future research.

Its limitations aside, we believe that the current study findings provide insight allowing for an interesting extension in the LMX literature, thus enabling some suggestions to be made for future research. The topic is relatively new and there appears to be a lot of margin for future research in this area.

Results showed that mean LMX promoter and LMX assistant promoter were considerably high with no significant differences between them (3.3 and 3.4, respectively). On the one hand this result strengthens our line that despite similar LMX relationship with the two bosses, the senior manager influences PhD's AOC more strongly owing to his/her higher organizational status and influence over HR practices, but on the other hand this result also provides direct for future research. To overcome this homogeneity in the sample, it would be interesting to divide the data between respondents with low and high LMX, and to look at the link with commitment in this context. This would help to really clarify the relationship further.

This study was set in the midst of the Dutch PhD labor arena, where PhDs' status in the organization is that of employee, contrary to that of students in many other countries, which probably limits the possibilities for generalizing the findings to other PhD labor arenas. It would be interesting to replicate this kind of research in other contexts.

In this study, the differences in influences were based on different policy documents and were used as an assumption in the theoretical elaboration. If future researchers measure employee perceptions of the power sources relating to the two bosses, it could lead to interesting findings and explanations of the underlying mechanism. Also, inclusion of other behavioral and performance outcomes in the investigation of dual LMX relationships could lead to further understanding.

Concluding remarks

The findings of this article provide important insights for the management of organizations (not only within universities) because similar triadic relationships are common: employees have a hierarchical supervisor and a project supervisor/leader. This type of triadic

relationship is becoming increasingly common, as more and more companies organize their work in projects with a fixed goal and time frame. Our conclusions from the current analyses appear to match the cognitive thinking and evaluations of employees who can draw a great deal of AOC from their senior managers. Previous study reports indicate that LMX positively influences many employee outcomes, including organizational commitment, but we draw the conclusion from the current findings that not all LMX relationships have the potential to significantly alter all employee outcomes. Rather it depends, among other things, on the relative degree of control of each supervisor over various HR practices, the hierarchical status of each supervisor, and the quality of LMX of the employee with each supervisor. The findings show that LMX relationships and their influences may not be as simple as has been reported in the past, because employees often report to two bosses in contemporary complex organizational structures.

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Appendix 1

Satisfaction with HR practices (Torka 2007): respondents were asked to indicate (on a five-point Likert scale ranging from 1 = completely satisfied to 5 = completely dissatisfied) how satisfied they are with the following set of HR practices.

1. The amount of autonomy and freedom in my work
2. The amount of variety in my work.
3. Challenge in my work.
4. Salary.
5. Fringe benefits (e.g. retirement pay, reimbursement of traveling costs).
6. Job security.
7. Career opportunities.
8. Opportunities for development.
9. Opportunities for additional education and training.
10. Opportunities to visit conferences.
11. Work–life balance.

12. Information on rewards and fringe benefits.
13. Information on education and courses.
14. Influencing (co-deciding) on the content of my PhD.
15. Influencing department decisions.
16. Availability of own PC at the workplace.
17. Own permanent workplace.
18. Space in my office.
19. Facilities to perform my research well.
20. The amount of appreciation.
21. The quality of appreciation.
22. The amount of supervision.
23. The quality of supervision.
24. The amount of support.
25. The quality of support.
26. The opportunity to work together with colleagues.
27. The adequacy of the professional competence of my promoter.
28. The supervision and training plan.