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Linking Managerial Coaching and Leader–Member Exchange on Work Engagement and Performance

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Abstract

This study investigates how individual- and unit-level performance can be fostered by supervisors' behavioural styles (managerial coaching) and the personal relationship between supervisor and subordinate (leader–member exchange, LMX). The JD-R model holds that good leadership serves as a job resource and triggers a motivational process that will lead through work engagement to good performance. This study first introduces and validates novel measurement instruments for managerial coaching, LMX, and self-rated performance. Then, the study utilizes multilevel methodology (MSEM) to investigate the connections between study variables at the individual- and unit-level. A sample from two organizations (N = 655) was utilized in the measurement validation and a sample from multiple organizations (N = 879) in the hypothesis testing. Samples using self-rating measurements were collected from different Finnish organizations between 2011 and 2012. The results show that, while managerial coaching was connected more to the unit-level performance, LMX had stronger effect to the individual performance and work engagement, which was connected with the unit-level performance. Analysing two leadership constructs at the same time suggests that there are different mechanisms driving managerial coaching and the LMX relationship in the motivational process and towards good performance as the JD-R model proposes. The study also contributes to literature by introducing and validating measurement instruments.

Keywords: Managerial coaching; Leader–member exchange; Work engagement; Performance; JD-R model; Mediation

Introduction

In increasingly competitive markets, the question of how to support and improve performance in an organization is central. Leadership has been established as a powerful factor in performance (Burke et al. 2006; J. Huang et al. 2015) but there is very little research focusing on the mechanisms explaining the connection between leadership and performance. Earlier studies have indicated that the so-called black box between those two elements might be related to the well-being of employees, particularly in relation to work engagement (e.g. Bakker and Bal 2010; Breevaart et al. 2015). Work engagement is linked to the positive feelings about work, meaningfulness of work and flow—all related to the happiness and subjective well-being (Seligman 2002, see Martínez-Martí and Ruch 2017). The Job Demands-Resources (JD-R) model—based on the idea that job characteristics can be divided into two categories; job demands and resources—can aid in investigating that connection (Bakker and Demerouti 2007). Job demands (e.g., high workload) lead to negative outcomes and health impairment, and job resources (e.g., autonomy and social support) lead to positive, motivational processes, for instance to better performance through work engagement. Job resources are physical, psychological, social, or organizational features of the job that can be instrumental to achieving work goals. Supervisory support has proved to be one important aspect of job resources (Bakker and Demerouti 2007) and recent research acknowledges the need for studies focusing on leadership as a job resource (Bakker 2011).

Earlier research focusing on leadership and performance has mainly adopted a transformational leadership perspective (see the meta-analysis of Wang et al. 2011); however, it has been criticised as declamatory and heroic (see van Knippenberg and Sitkin 2013; Yukl 1999) and for perhaps being too grandiose for studies focusing on the leadership in other organisational levels than the highest (Alvesson and Kärreman 2016). Managerial coaching, in other words leadership behaviour that supports and prompts individuals and work groups to set and attain their goals, to improve performance, and to develop competencies, and to strengthen self-directed behaviour, and to understand the broader goals of the organization (Bond and Seneque 2013; Ellinger et al. 2003, 2008), provides an alternative lens on leadership and performance (Wheeler 2011). A positive, trusting, and supportive relationship between a leader and a member is a crucial element in managerial coaching (e.g. Bond and Seneque 2013; Ellinger et al. 2011). Despite that, the relationship between a leaders and a follower does not yet feature strongly in studies of managerial coaching. Most of that research focuses on a leader's actions to the detriment of the employee

perspective. Therefore, to complete our understanding of the relationship between leadership and performance and the mechanism underpinning it, the relational approach to leadership, namely leader-member exchange (LMX) theory is relevant.

LMX is based on the argument that a leader creates a unique exchange relationship with each of his/her followers, and that LMX relationships are based on the social exchanges between parties. The recent meta-analysis by Mazur (2012) shows that LMX is positively related to employees' individual job performance, and the performance of work groups (Le Blanc and González-Romá 2012). A few empirical studies have shown that both a leader's coaching behaviour (Babcock-Roberson and Strickland 2010; Choi 2013) and LMX (U. A. Agarwal et al. 2012; Li et al. 2012) are positively related to employee work engagement, which, in turn, is a fundamental determinant of employee performance in organizations (Christian et al. 2011; Gruman and Saks 2011; Torrente et al. 2012). For instance, it has been shown that an employee's work engagement mediates the relationship between high-quality leader-member exchange (LMX) relationships and performance (Breevaart et al. 2015; Burch and Guarana 2014; Li et al. 2012). However, more studies revealing the underlying, complex processes leading to performance at different levels (individual / group-level) would be welcome. Prior research has concentrated mainly on the effects of leadership on performance either by focusing on leadership in the form of a leader's behaviour, or as an interpersonal relationship quality between leader and subordinate. A recent exception is the study by Burch and Guarana (2014), which simultaneously examines the effects of transformational leadership and LMX on organizational citizenship behaviour and turnover intentions via work engagement. When LMX was considered, the positive effects of transformational leadership became insignificant; indicating interpersonal relationships are more important than leader's behaviour.

Accordingly, this study focuses on the JD-R model's motivational process by studying how managerial coaching and LMX relationships as potential job resources are related to performance and, in addition, if work engagement mediates that relationship. These hypothesis are examined with a big Finnish service sector data utilizing a multilevel structural equation modeling. The study also introduces and validates novel measurement instruments for managerial coaching, LMX, and the scales for self-rated performance. The ultimate aim of the study is to improve understanding of the complex inter-organizational and socio-psychological mechanisms that influence performance. In this study, we use the term *unit* to refer to an organizational entity, where a group of employees work towards

common targets and are led by a single leader (see e.g. R. Agarwal et al. 2009). This paper continues with a literature review and hypothesis building, before outlining its methodology, and reporting its findings.

Literature Review and Hypotheses

Managerial coaching and performance

Some previous research indicates that coaching leadership encourages better individual performance (e.g. Huang and Hsieh 2015; Wheeler 2011). The effects have been seen for example on sales performance (R. Agarwal et al. 2009), completing assigned duties (Huang and Hsieh 2015), and customer satisfaction (Wageman 2001). Although, empirical evidence of a connection between managerial coaching and individual performance is still relatively rare, extant research does include a considerable amount of secondary evidence. For example, managerial coaching is positively connected to job satisfaction (Moen and Federici 2012; Wheeler 2011), which several studies in turn link to better performance at work (e.g. Baptiste 2008; Killic and Dursun 2008). Moreover, many studies with different leadership models have empirically established that good quality leadership predicts good performance in organizations (e.g. Alimo-Metcalfe et al. 2008; Kuvaas 2007). Such research indicates that a leader's active coaching behaviour facilitates an employee reaching her/his goals and performing well at work. Thus, the first hypothesis is set:

Hypothesis 1A: Managerial coaching has a positive connection with individual performance.

There is some research evidence that managerial coaching encourages better performance at the group-level too, through improving group effectiveness (R. Agarwal et al. 2009; Wageman 2001). That occurs when team members engage with the collective goals and take collective responsibility for performance (Duff 2013); by creating better collaborative capabilities (Geroy et al. 2005; Stoker 2008); and by improving self-management, member relationships, and member satisfaction (R. Agarwal et al. 2009). However, the empirical evidence of the connection remains contradictory. For example, the study of Wageman (2001) recorded no influence of managerial coaching on team task performance, although coaching helped to improve self-management, member relationships, and member

satisfaction. However, in other studies, self-management, member relations, and member satisfaction have proved to be important antecedents of team performance (see e.g. Ashill et al. 2005; Torrente et al. 2012). Additionally, Stoker (2008) showed that managerial coaching was positively related to the performance of team members with a long tenure, but not to those relatively new to the team. Group-level outcomes of managerial coaching warrant more investigation and according to Zhao and Chadwick (2014), that should be conducted at the unit-level, because many organizations have no clear team structure. Thus, the following hypothesis will be tested in this paper:

Hypothesis 1B: Managerial coaching has a positive connection with unit-level performance.

Managerial coaching and work engagement

Work engagement has been nominated as an important goal of managerial coaching because it is an important indicator of individual well-being and happiness at work (Bakker 2011) and driver of the development and performance of employees (Duff 2013; Wageman 2001). In addition, there is some empirical evidence that supervisory support is an essential job resource predicting work engagement, even if according to Bakker, Albrecht and Leiter (2011) more research is yet required on the influence of leaders on followers' work engagement. Many of the typical coaching behaviours of a leader such as communicating clear expectations; supporting an employee in developing new skills, and encouraging employees to solve work-related problems, have been proposed as predictors of work engagement (Babcock-Roberson and Strickland 2010; Bakker and Demerouti 2007; Choi 2013). In addition, a recent meta-analysis confirmed that typical coaching behaviours predict the work engagement of employees (Christian et al. 2011). Given the above discussion, the next hypothesis is proposed:

Hypothesis 2: Managerial coaching has a positive connection with work engagement.

LMX and performance

While the relationships between a leader and a subordinate have been addressed in literature on managerial coaching, they are not usually explicitly measured in quantitative studies. Thus, we suggest that leader-member exchange (LMX) relationships should be investigated alongside managerial coaching. LMX relationships are based on the economic and social exchanges between leaders and subordinates (Liden and Maslyn 1998; Schriesheim et al. 1999). It has been shown that subordinates who are party to a high-quality relationship receive more inside information and have a greater influence on decision-making. They are also promoted more frequently, and receive higher bonus payments and salary increases (Varma and Stroh 2001). Moreover, earlier research found that LMX relationships positively relate to organizational citizenship behaviour (Dulebohn et al. 2012; H. Wang et al. 2005), and innovative and creative behaviours (Basu and Green 1997; Tierney et al. 1999) which can be linked to individual performance. Subordinates in high-quality LMX relationships perform well (Dulebohn et al. 2012; Li et al. 2012; Varma and Stroh 2001; see Mazur 2012 for meta-analysis). Thus, it is likely that LMX is positively related to individual performance and therefore we hypothesize:

Hypothesis 3A: LMX has a positive connection with individual performance.

Moreover, as LMX quality reflects the extent to which leaders and each follower exchange resources in that particular dyad, the link to the group-level outcomes, such as unit performance, is not very clear. While LMX has been found to relate to various positive evaluations concerning a job or organization, and high-quality LMX has been found to positively relate to job satisfaction (Fisk and Friesen 2012) and negatively to turnover intention (Harris et al. 2009; Liden and Maslyn 1998), there is no evidence that high-quality LMX relationships lead to better evaluations of unit-level performance. Therefore, the current study proposes the hypothesis:

Hypothesis 3B: LMX has no connection with unit-level performance.

LMX and work engagement

LMX relationships can be viewed as job resources leading to a motivational process because high-quality LMX relationships are characterized by high levels of trust, affect, loyalty, and professional respect (Graen and Uhl-Bein 1995). For instance, trust in a leader (an essential element in LMX relationships) is positively related to work engagement (Chughtai and Buckley 2011). Additionally, high-quality LMX relationships have been found to be positively related to employees' organizational citizenship behaviour (H. Wang et al. 2005) and job satisfaction (Fisk and Friesen 2012). A few earlier studies reported a positive relationship between LMX and work engagement (U. A. Agarwal et al. 2012; Dulebohn et al. 2012; Li et al. 2012), and therefore, the current study suggests the hypothesis:

Hypothesis 4: LMX has a positive connection with work engagement.

Work engagement and Performance

A variety of studies have connected work engagement positively with different measurements of individual performance such as in-role and extra-role performance (Bakker and Bal 2010; Christian et al. 2011), role-based performance (Li et al. 2012), colleague and leader-rated in-role performance (Halbesleben and Wheeler 2008), and financial results (Xanthopoulou et al. 2009). There are several explanations for the positive relationship between work engagement and performance. For instance, it has been argued that engaged employees are committed to their clients, to the team, and to the profession, and they have energy and motivation to concentrate on the tasks at hand (Demerouti and Cropanzano 2010; Yalabik et al. 2015). Based on these findings the following hypothesis is proposed:

Hypothesis 5A: Work engagement has a positive connection with individual performance.

The benefits of work engagement extend beyond mere individual performance. Prior research shows that work engagement is highly infectious, meaning that engaged employees are a key source of inspiration to others and

therefore transfer their engagement throughout their immediate work environment (Bakker and Demerouti 2008), and promote better performance at the unit-level too. Team-level work engagement has been linked, for instance, with in-role and extra-role team performance (Torrente et al. 2012) and with service climate in the work organization (Salanova et al. 2005). In addition, a meta study by Harter, Schmidt and Hayes (2002) has established that unit-level employee satisfaction and engagement is connected to unit-level performance indicators such as customer satisfaction and loyalty, employee turnover, safety, productivity, and profitability. These results lead us to propose the following hypothesis:

Hypothesis 5B: Work engagement has a positive connection with unit-level performance.

Work engagement as a mediator between leadership and performance

The JD-R model holds that good leadership functions as a resource for employees and starts a motivational process that leads via work engagement to strong performance. The current literature review indicates that while managerial coaching has a positive direct effect on individual- and unit-level performance and LMX has a positive direct effect on individual performance, they also contribute to the work engagement of employees, which has an additional positive effect on both individual and unit-level performance. Thus, work engagement operates as a mediator between managerial coaching, LMX, and performance. Recent studies show work engagement to act as a partial or a full mediator between LMX and in/extra-role performance (Bakker and Bal 2010), task performance (Breevaart et al. 2015), role-based performance (Li et al. 2012), organizational citizenship behaviour, and employee turnover intentions (Burch and Guarana 2014). In this study, the following hypotheses are tested based on the JD-R model and previous findings concerning the direct and indirect effects flowing between leadership, work engagement, and performance.

Hypothesis 6A: Managerial coaching has a positive connection with individual performance via work engagement.

Hypothesis 6B: Managerial coaching has a positive connection with unit-level performance via work engagement.

Hypothesis 6C: LMX has a positive connection with individual performance via work engagement.

Hypothesis 6D: LMX has a positive connection with unit-level performance via work engagement.

Methods

Sample

A combined sample was drawn from various Finnish organizations between 2011 and 2012. Samples from a logistics organization (N=488) and a financial organization (N=211) were used to validate the measurements, while samples from a communal day-care organization (N=364), an insurance company (N=334), 13 small and medium-sized enterprises (N=129) and a retail company (N=175) were utilized to examine the hypothesis. Supervisors (N=167) were omitted from the samples, leaving a total of 655 subordinate respondents into the validation data, and 879 respondents in the analysis sample. The employees in the sample worked in 114 units with an average of 7.47 respondents in each.

The data were collected either using a paper copy of the questionnaire or an electronic form distributed via the internet. The paper copy was used if employees did not use a computer related in their daily tasks. Paper copies of the questionnaire were delivered by a member of the research team while attending a meeting arranged by each participating organization, which set aside time to fill in the survey. If there was no opportunity to arrange a meeting, paper questionnaires were delivered with prepaid return envelopes to the relevant supervisor who delivered the questionnaires to his/ her employees who then returned the questionnaires directly to the research team. Electronic form questionnaires were collected by sending the link to the e-questionnaire to the supervisors or an organization's contact person, who then delivered the invitations to employees, which is the reason response rates could not be obtained. The sample was female dominated (69.2 %), and the age of the participants ranged between 18 and 66, with a mean of 41.68. The average tenure with the current employer was 11.10 years and a strong majority of the respondents (80.0 %) had a permanent position at work. The length of the supervisor-subordinate relationship was less than two years for most respondents (68.2 %).

Measures

Managerial coaching

Measures for managerial coaching are still under development in the research literature. In their recent meta-review of scales used to measure managerial coaching, Hagen and Peterson (2014) stated that only a few of the ten scales used in previous studies had a specific theoretical grounding and were based on a validation process or solid reliability testing. In this study, the respondents were asked to evaluate their leader's activity in seven different types of coaching behaviour (see Appendix). Five of the items (numbers 1–5) focused on a leader's coaching behaviours at the group-level, and two of them (numbers 6 and 7) concerned the leader's behaviour at the level of the individual subordinate. These seven items were selected from the questionnaire of 29 items developed earlier in the multi-methodological study with eight semi-structured interviews and data on 1197 supervisors rated by subordinates (Viitala 2004). The seven items were chosen from the questionnaire based on their strong intercorrelations and strong relevance affirmed by previous research on managerial coaching. They were also supported by prior empirical research (e.g. Berg and Karlsen 2007).

LMX

Several different measurement scales for LMX have been developed and utilized in studies over the past three decades (Dansereau et al. 1975; Ferris 1985; Liden and Maslyn 1998). The most established measurement scale to date is the LMX-7 scale (Graen and Uhl-Bein 1995) and the LMX-MDM (Liden and Maslyn 1998) has also been utilized in many studies (Dulebohn et al. 2012). However, LMX measurement has been criticized on several grounds, perhaps the most justifiable being that 1) existing LMX scales do not measure exchanges themselves very much, and that 2) reciprocity is almost lacking from the measurement instruments (see Dulebohn et al. 2012). These two issues are at the very core of LMX theory. LMX measurement scales have also been criticized for overlapping too much with those measurement instruments which focus on leaders' behaviour and / or leadership style, even though conceptually those are different phenomena (Joseph et al. 2011). In addition, there are some other problematic issues with the measurement scales that can cause both theoretical and practical problems for studies of

LMX. For instance, the existing scales are worded in such a way that they cannot be used in a similar format for both parties of the dyad. Secondly, especially in the case of the LMX-7 scale (Graen and Uhl-Bein 1995), the answer options are not in a similar format for all the questions.

The items for the novel University of Vaasa LMX scale (LMX-UVA) were generated following a careful review of LMX literature and earlier measurement instruments (Joseph et al. 2011; Liden and Maslyn 1998). In addition, a wide-ranging set of interviews of both subordinates and supervisors were analysed to generate the questions. As our aim was to update existing measures rather than present anything completely new, we decided on a one-dimensional scale, including the items of the most central elements referring to relationship quality (see Appendix). Every item was developed to indicate some kind of exchange between parties, whether tangible or intangible. Each item was also developed in such a way as to harvest the opinions of both parties in the dyad, not only the follower's perception of the leader or the leader's perception of the follower, as has been the case in most of the items in previous LMX measurement scales.

Work performance

The respondents were asked to evaluate both their own task performance and the performance of the unit they worked in from the perspectives of goal attainment, quality, and competences (see e.g. Brudan 2010; Sung and Choi 2014). We chose self-ratings of performance for a number of reasons. Firstly, in a study like the current one, where empirical data is gathered from different kinds of work units in several organisations, objective and comparable measures are impossible to specify for either individual- or unit-level performance measurement (see Folan et al. 2007; Lebas 1995). Secondly, because of many practical reasons, leader-ratings are commonly used as the performance measuring method in studies on one company with a small number of employees (e.g. Steel and Van Scotter 2003; Vigoda-Gadot 2007). In studies like ours, simultaneous research access to several organizations and response rates have to be compromised by requesting supervisor ratings (e.g. Snape & Redman 2010). However, despite some criticism (Pransky et al. 2006) self-report measurements are common in performance research (e.g. Snape & Redman 2010; Vega et al. 2015) and have also been shown to be acceptably consistent with performance ratings made by a superior (see e.g. Jensen et al. 2007; Steel and Van Scotter 2003). Dess and Robinson (1984) have

even argued that subjective perceptual measures (e.g., a question about *overall performance*) are more relevant than objective numerical measures. In the questionnaire, responses to all the items concerning managerial coaching, LMX, and performance (see Appendix) were recorded on a 7-point Likert scale anchored with *strongly disagree* (1) and *strongly agree* (7).

Work engagement

Work engagement was measured with the validated Finnish version (Seppälä et al. 2009) of the Utrecht Work Engagement Scale with nine items (Schaufeli et al. 2006). The items included: '*At my work, I feel bursting with energy*'. Responses were given on a scale ranging from *never* (0) to *every day* (6) and the reliability of the scale was good (Cronbach's $\alpha=.938$).

Control variables

The effects of gender, age in years, organization, years worked in the current organization and the length of the current LMX relationship on work engagement and work performance were controlled for in the analysis.

Analytic strategy

The validity of the work engagement and the novel scales for managerial coaching, LMX, and work performance were investigated using confirmatory factor analysis (CFA). First factor structure was examined with both samples and then a multi-group measurement model was specified to examine measurement invariance, which indicates whether the measurements of a study are interpreted in a similar manner in two different organizations. The logistics organization represented a blue-collar orientation, and the financial organization, a white-collar orientation.

The data of the study are clustered in the work units, which violates the assumption of independent observations leading to downward-biased standard errors if ordinary regression methods are utilized (Preacher et al. 2010). Accordingly, a multilevel structural equation model (MSEM) (Preacher et al. 2010) was utilized to analyse the hypothesis. In the MSEM, random intercepts and fixed slopes were specified. MSEM also strictly, and without bias, separates within-level (individual-level) and between-level (unit-level) effects (Preacher et al. 2010). This enables

modelling at the individual- and unit-level. The unit-level analysis was only conducted with the performance of the unit measure, because summing the individual performance of each employee in the unit does not usually adequately reflect the performance of the unit. The collective estimate of the performance of the unit should be more objective than subjective individual ratings of unit performance. The confidence intervals for indirect effects were estimated with the Monte Carlo method, by way of the interactive online tool devised by Selig and Preacher (2008) with 20,000 iterations.

The validation sample included only a few missing values (N=4-24) for the study variable, which amounted to only 0.6-3.7 % of the total sample. Accordingly, we implemented a list-wise-deletion of missing values in the validation process. The full information maximum likelihood estimation (FIML) was utilized in the hypothesis testing, because the control variables held missing values. All analyses in the study were performed with Mplus 7.4 software (Muthén and Muthén, 1998-2015) using a robust maximum likelihood (MLR) estimation.

Results

Validation of the measurements

The validation process started with an examination of the dimensionality and discriminant validity of the scales with combined dual-organization sample. The standard cut-off values of good fit were used (e.g. L. Hu and Bentler 1999) for the CFA model fit indices. For RMSEA and SRMR < .08 indicates an adequate fit (< .05 a good fit) and for CFI and TLI > .90 indicates an adequate fit (> .95 a good fit). Two different confirmatory factor models were estimated and a model (M1), with a five-factor structure where managerial coaching, LMX, work engagement, individual performance, and the unit-level performance formed their own separate factors, had a clearly better fit to the data in terms of χ^2 -test and fit indices ($\chi^2(7)=902.01$, $p<.001$; $\Delta RMSEA=-.020$; $\Delta SRMR=-.014$; $\Delta CFI=.050$; $\Delta TLI=.073$) (see also Table 1) than a three-factor model (M2) where the items of managerial coaching and LMX formed a unidimensional leadership factor and the performance items loaded on a single performance factor. The five-factor model was also modified regarding the managerial coaching, work engagement and performance of the unit scales by releasing total of five error covariances. In managerial coaching scale the error covariance between ‘My manager

discusses our performance with us sufficiently' and 'My manager ensures that everyone is capable of doing their tasks' was estimated and regarding the work engagement scale two error covariances were estimated between 'At my work, I feel bursting with energy' and 'At my job, I feel strong and vigorous', which both reflect employee vigor and between 'I am immersed in my work' and 'I get carried away when I'm working', which are related to absorption. Two error covariances were estimated also from the performance of the unit scale between 'Operation of our unit is high quality' and 'There is a clear common agreement in our unit about the direction of development of competence' and between 'Our unit always reaches its quantitative goals' and 'The performance of our unit is much better than the average in our organization'. All the estimated error covariances related to items that were measuring a similar phenomenon.

The modified five-factor model (M3) had a significantly better model fit in terms of the χ^2 -test and model fit indices ($\chi^2(5)=593.914$, $p<.001$; $\Delta RMSEA=-.016$; $\Delta SRMR=-.009$; $\Delta CFI=.041$; $\Delta TLI=.044$) than M1 did. The model fit did not improve substantially when more error covariances were released and therefore the M3 model was the measurement model ultimately adopted. All factor loadings were significant and standardized factor loadings generally high ($>.700$), though work engagement had two relatively low loadings (.630 and .579) and personal performance one (.576). There were a few large standardized residual (15% over 2.58, 4% over 4 and maximum - 6.71) and modification indices, but they mainly reflected covariances between unit-level items in different scales, similar wording of the items and some items reflected the same phenomenon. Omitting items or allowing more covariance between error terms did not substantially improve the model fit.

Table 1. Model fit of the CFA models in the validation process

	χ^2 (df)	Scaling correction	RMSEA (95% CI)	SRMR	CFI	TLI
M1: Five-factor model	1801.639 (517)	1.310	.062 (.059–.065)	.051	.910	.902
M2: Three-factor model	2797.523 (524)	1.312	.082 (.079–.084)	.065	.840	.829
M3: Modified five-factor model	1207.725 (512)	1.299	.046 (.042–.049)	.042	.951	.946
<i>Factorial invariance test</i>						
M4: Configural invariance	2073.352 (1024)	1.174	.056 (.053–.059)	.049	.932	.926
M5: Metric invariance (weak)	2151.317 (1053)	1.178	.057 (.053–.060)	.062	.929	.925
M6: Scalar invariance (strong)	2277.520 (1082)	1.174	.058 (.055–.062)	.068	.923	.920
M7: Residual variance invariance (strict)	2510.452 (1116)	1.194	.062 (.059–.065)	.094	.910	.910

Table 2. Characteristics of the study variables

	Scale	No. of items	AVE	CR	1	2	3	4
1 Managerial coaching	1-7	7	.737	.951	-			
2 LMX	1-7	9	.760	.966	.883 / .830	-		
3 Individual performance	1-7	4	.488	.790	.229 / .249	.279 / .258	-	
4 Unit-level performance	1-7	5	.547	.857	.636 / .539	.565 / .422	.483 / .412	-
5 Work engagement	0-6	9	.604	.931	.409 / .330	.408 / .361	.179 / .148	.370 / .342

Note. AVE = average variance extracted, CR = composite reliability. All correlations significant at $p < .001$ level.

Correlations represent first latent variable correlations from the validation sample and second composite variable correlations from analysis sample.

Hair et al. (2010) recommended measures and threshold values to comprise reliability, convergent validity and discriminant validity. The composite reliability (CR) was clearly over the .700 threshold for all measurements (.790-.966) indicating good reliability for the scales (see Table 2). The average variance extracted (AVE) varied between .488 and .760. The AVE of individual performance was just below the .5 threshold, while other measures were above the threshold indicating convergent validity for those measurements. Maximum shared variance (MSV), average shared variance (ASV) and heterotrait-monotrait ratio of correlations (HTMT) (Voorhees et al. 2016) were calculated to examine discriminant validity of the measurements. AVE was higher than ASV (.058-.330) for all measurements and AVE was also higher than MSV (.167-.780) except for managerial coaching and LMX, where MSV was just a little higher. HTMT was below critical value .85 except between managerial coaching and LMX, which was marginally higher (.88). The discriminant validity can also be examined with latent variable correlations. Managerial coaching and LMX were highly correlated ($r=.883 / .830$) while other correlations of measures were low or moderate (see Table 2). On the other hand, EFA and CFA analysis clearly segregated managerial coaching and LMX, and the examination of structure coefficients supported the suggested factor structure as the structure coefficients to items of other factors were clearly smaller than pattern coefficients of the factors. Also, after all, the discriminant validity can be sampling issue, because utilizing bigger analysis data to the AVE vs. MSV test indicated discriminant validity.

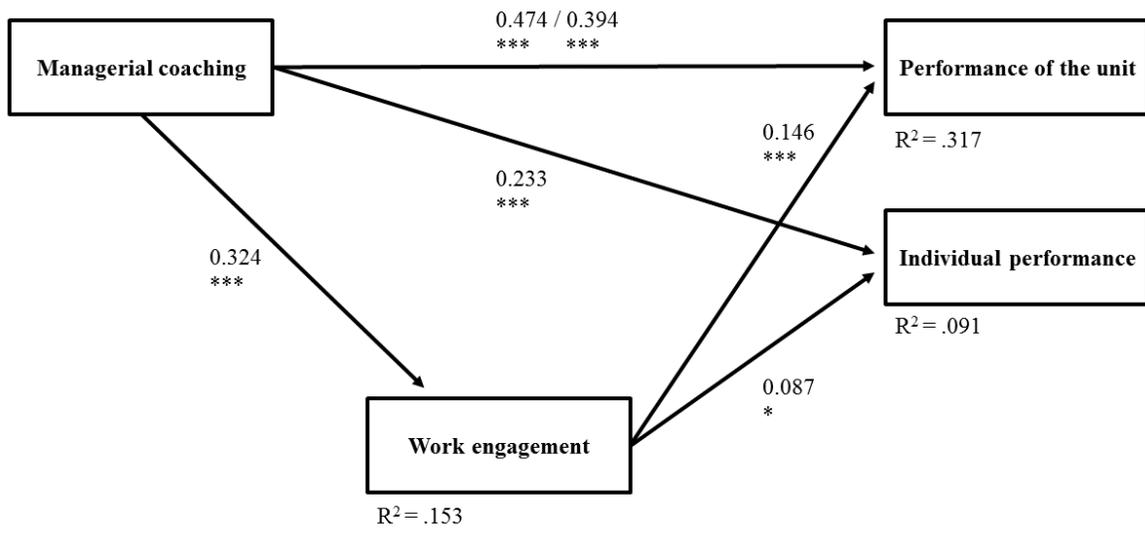
The measurement invariance between blue-collar and white-collar orientation organizations was tested with the suggested model M3. First, a configural invariance model (M4) was estimated for baseline. The level of measurement invariance was defined by comparing the measurement invariance models based on the change in CFI ($>-.005$), RMSR ($>.025$ for metric and $>.005$ for scalar and residual invariance) and RMSEA ($>.010$) (Chen 2007). The metric invariance model (M5), had an acceptable fit to the data and the changes in fit indices were small ($\Delta RMSEA=+.001$; $\Delta SRMR=+.013$; $\Delta CFI=-.003$) compared to the configural model. In the scalar invariance model (M6) the model fit remained acceptable, but the changes in fit indices between the metric and scalar invariant model ($\Delta RMSEA=+.001$; $\Delta SRMR=+.006$; $\Delta CFI=-.006$) were just over the cut-off criteria for SRMR and CFI. Changes in fit indices were more evident ($\Delta RMSEA=+.004$; $\Delta SRMR=+.026$; $\Delta CFI=-.013$) when comparing the residual variance model with the scalar invariance model. The cut-off criteria should be used with caution because for example, model complexity and sample sizes influence the magnitude of changes in fit indices (Chen 2007). The results did not support the strict measurement invariance, which is usual in empirical studies, but it seems safe to

conclude that strong measurement invariance holds, meaning that the measurements are valid for use in both blue-collar and white-collar oriented organizations.

Examination of the hypotheses

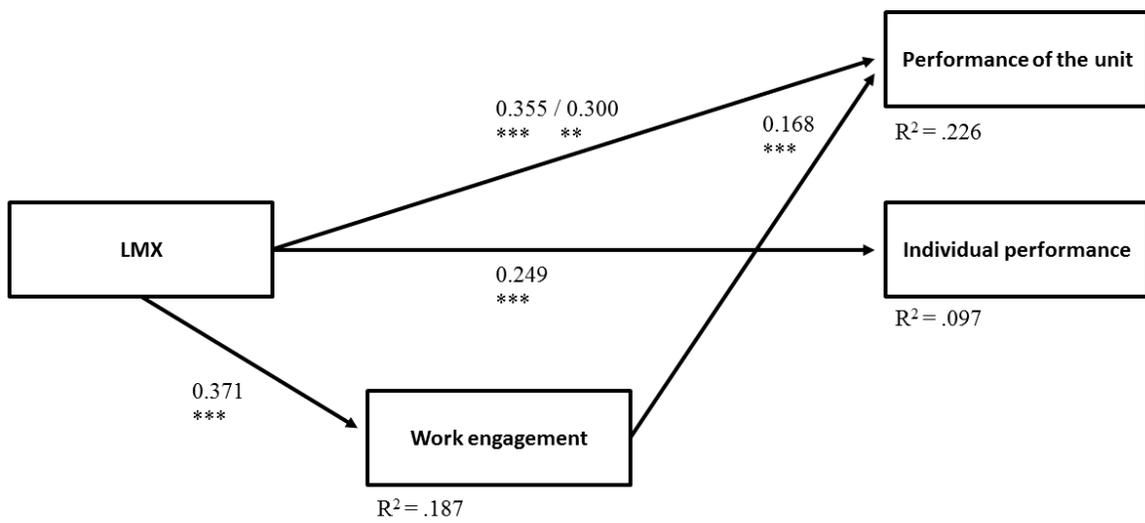
The MSEM analysis was conducted with composite variables rather than latent variables, because there would not have been enough work units to estimate multilevel model with latent variables, which have more parameters. The scale reliabilities were sufficient ($>.7$) when measured with Cronbach's alpha and the composite variable correlations, although slightly lower, were comparable to latent variable correlations (see Table 2).

As managerial coaching and LMX were highly correlated, the MSEM models were first conducted separately for both leadership constructs and then simultaneously. The model fit of the MSEM models were excellent for managerial coaching ($\chi^2(2)=2.668$, $p=.264$; RMSEA=.020; SRMR=.002; CFI=.999; TLI=.980), LMX ($\chi^2(2)=2.516$, $p=.284$; RMSEA=.017; SRMR=.002; CFI=1.000; TLI=.984) and for simultaneous model of managerial coaching and LMX ($\chi^2(3)=2.806$, $p=.423$; RMSEA=0.000; SRMR=.002; CFI=1.000; TLI=1.003). ICCs for the study variables were as follows: managerial coaching (.270); LMX (.186); work engagement (.132); individual performance (.102); and performance of the unit (.259).



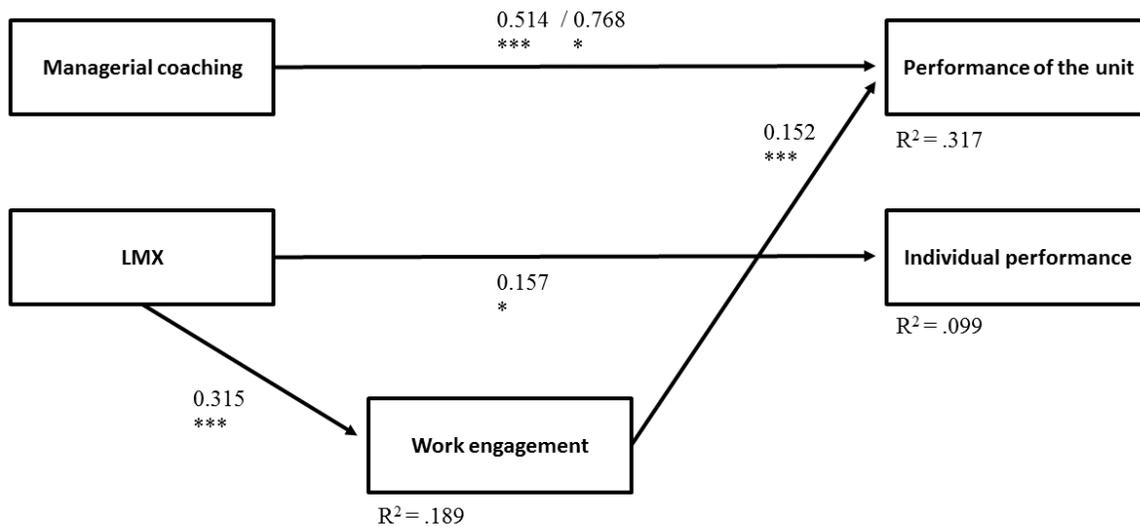
The figure represents the standardized regression coefficients of the significant connections between study variables.

Figure 1. Managerial coaching, work engagement and performance



The figure represents the standardized regression coefficients of the significant connections between study variables.

Figure 2. LMX, work engagement and performance



The figure represents the standardized regression coefficients of the significant connections between study variables.

Figure 3. Managerial coaching, LMX, work engagement and performance

Three different MSEM models were estimated. First, managerial coaching (Figure 1) and LMX (Figure 2) were studied separately and then simultaneously (Figure 3). Leadership constructs were connected directly and indirectly via work engagement to performance. The measures of managerial coaching and LMX correlate highly and therefore their connections were fairly similar in separate models, though managerial coaching was clearly stronger connected with performance of the unit than LMX, but LMX had stronger connection with work engagement. These results are also supported by the bivariate correlations (Table 2). Furthermore, the simultaneous model where managerial coaching and LMX were analysed simultaneously suggests that managerial coaching was directly connected only with performance of the unit at both within- ($\beta=0.514$) and between-levels ($\beta=0.768$) while LMX was connected with work engagement ($\beta=0.315$) and individual performance ($\beta=0.157$), which are more subjective and personal constructs. In this model work engagement was connected only with performance of the unit ($\beta=0.152$). Although the within- and between-level effects differed noticeably in some instances in all models, they did not however differ significantly, thus there was no contextual effect.

Total effects combined the direct and indirect effects. Coaching had a significant total effect on the individual performance ($\beta=0.26$) and the performance of the unit at the within- ($\beta=0.52$) and between-level ($\beta=0.40$) when studied separately and in the simultaneous MSEM model the connection with the performance of the unit at the within- ($\beta=0.52$) and between-level ($\beta=0.78$) were rather similar (the standard error in the between effect was large) and significant. These results of the MSEM models combined with the correlation analysis (see Table 2) gained partial support for the hypothesis 1A and full support for hypothesis 1B. In the separate analysis coaching was positively and significantly connected with work engagement ($\beta=0.32$) and the correlation between coaching and work engagement was also positive. Thus, partially supporting the hypothesis 2.

LMX had also a significant total effect on individual performance in a separate ($\beta=0.27$) and in a simultaneous ($\beta=0.18$) analysis and in a separate analysis the total effects on performance of the unit at the within- ($\beta=0.42$) and between-levels ($\beta=0.31$) were significant. As, in addition, the correlations indicated predicted results the H3A gained full support and H3B partial support from the analyses. The hypothesis 4 was also fully supported as correlation and both separate and simultaneous MSEM models revealed a positive direct effect between LMX and work engagement.

The correlations and MSEM models indicated that work engagement was positively connected with performance. In the coaching model work engagement was connected with both the individual performance ($\beta=0.09$) and with the performance of the unit ($\beta=0.15$), while in the LMX ($\beta=0.17$) and in the simultaneous model ($\beta=0.15$) work engagement was significantly connected only with the performance of the unit. Therefore, H5A gained only weak support and H5B full support.

In all estimated models there were significant indirect effects between leadership and performance. In the managerial coaching model work engagement mediated the connections of coaching and individual performance ($b = 0.02$, 95% CI: 0.00 – 0.04) and performance of the unit ($b = 0.04$, 95% CI: 0.02 – 0.06). In addition, the indirect effect between LMX and performance of the unit was significant in LMX ($b = 0.05$, 95% CI: 0.03 – 0.08) and simultaneous ($b = 0.04$, 95% CI: 0.02 – 0.07) models. Thus, the results suggest strong support for hypothesis 6D and partial support for 6A and 6B. In addition to the hypothesized MSEM model an alternative model, where leadership had indirect effect on work engagement via performance, had an inferior fit to the data (e.g. $\chi^2(1)=150.271$, $p<.001$; $\Delta RMSEA=+.209$; $\Delta SRMR=+.027$; $\Delta CFI=-.078$), which supports the hypothesized model.

All analysed models explained relatively well work engagement ($R^2=.153-.189$) and performance of the unit ($R^2=.226-.317$), but did not explain individual performance ($R^2=.091-.099$) very well, which suggests that other aspects of work, and for example, the personality of the workers contribute more to the rating of personal performance. There was a big difference in R^2 between the models explaining performance of the unit, which also suggests that it was indeed managerial coaching and not LMX that was connected with performance of the unit. The strongest empirical support suggest that managerial coaching was connected with the subjective experience of unit-level performance and the group estimate of managerial coaching was connected to the more objective collective rating of the unit-level performance, while LMX was connected with work engagement and individual performance.

Conclusions and Discussion

The current study examined how managerial coaching and LMX relationships relate to work engagement and performance and, in addition, how work engagement mediates this relationship. Our study improves the understanding of the JD-R model's motivational process by providing evidence of leadership as a job resource and especially by showing the different roles that managerial coaching and the LMX relationship play in the motivational process. In particular, by studying work engagement, study increases our knowledge about the antecedents and outcomes of well-being and happiness at work. This study also introduced and validated novel measurement instruments for managerial coaching, LMX (LMX-UVA), and the scales for self-rated performance.

Managerial coaching has been advocated in the literature by the fact that it prompts people to improve performance at work (Ellinger et al. 2011). This study has some support that high quality managerial coaching is connected with good individual performance (H1A), which is in line with previous studies (R. Agarwal et al. 2009; J.-T. Huang and Hsieh 2015) but the relationship became nonsignificant when LMX-relationship was adjusted. There was however strong support that managerial coaching is connected to perceived unit level performance (see below). In any case, supervisory behaviour may have a relatively weak direct influence on an individual's performance for many reasons. Autonomous motivation (see Deci and Ryan 2000) to perform well can be fostered in other ways, for example, by job design, interpersonal relations in work group, and compensation (Gagne and Forest 2008). Personal self-image, ambition levels, reflexive capabilities, and personal desires might give rise to more variation in the sample than

leader's behaviour. However, this finding can also be considered a result of managerial coaching. Previous research findings indicate that managerial coaching increases goal awareness (Kim et al. 2013), which may also make the subordinate strongly aware of both their current level of performance and the gap to ideal performance, and this could cause the subordinate to rate their performance as modest rather than excellent. At its worst, strong managerial coaching could even cause feelings, that performance could always be better and nothing is enough. In general, the variance among subjective ratings was quite small (largely representing the *modest* performance level rather than the very bad or excellent). A partial explanation for the absence of bad self-ratings might be that employees in contemporary working organisations with a constant threat of downsizings have to - and usually want to - perform well enough in order to maintain their employment relationships.

However, there was a strong support that managerial coaching had a positive direct effect on unit-level performance, rated both at the individual and at the more objective collective unit-level, and thus H1B gained support. The people in a unit form a group with common goals and require collaborative capabilities (Geroy et al. 2005), which in the light of our study, can be supported by managerial coaching. Thus, our findings confirm earlier findings (R. Agarwal et al. 2009) and also respond to Zhao and Chadwick (2014), who call for more investigation on the unit-level.

In addition, our findings suggest managerial coaching has no connection to employees' well-being, that is, work engagement, when LMX is adjusted, but when managerial coaching was examined separately there was a significant connection with work engagement as in some previous studies (Christian et al. 2011). The H2 was not therefore fully empirically supported. The personal factors presented in relation to performance may also explain this finding. In particular, the respondents' motivation might explain more of their work engagement than the behaviour of their managers, which was the case in a recent study by Shu (2015) of the connections between leadership style (either authoritative or /authentic) and work engagement. Supervisory support has been suggested to be an important aspect of job resources (Bakker and Demerouti 2007), but there may also be some substitutes for leadership support operating in the work place, such as a cohesive work group and peer support (see e.g. Xu et al. 2013).

In our data, a dyadic relationship between leader and follower (LMX) had a positive relationship with work engagement, thus supporting H4 and was also positively related to individual performance, H3A. LMX was not connected with performance of the unit in the simultaneous model, which supports H3B. These findings contribute to the understanding of the JD-R model and well-being and happiness at work, and provide evidence that leadership

as a job resource (Bakker and Demerouti 2007) is not only a question of leadership style, but should be approached from the relational leadership perspective. As a high-quality LMX relationship is positively linked to work engagement it seems to function as an antecedent for well-being and happiness in working life. If we reflect on this finding in relation to the general understanding of happiness, developing and having a high-quality relationship with the leader may not always lead to the experience of maximal pleasure and positive emotions (cf. hedonism) as it may mean a need for flexibility and completion of challenging tasks. However, a high-quality LMX relationship is likely to lead employees to successfully use their strengths and engage in activities and may therefore lead to authentic happiness and good life through engagement (Seligman 2002). It is likely that managerial coaching explains the relationship between LMX and unit-level performance as simultaneous model suggests, which indicate that the direct effects of LMX are mainly found at the individual-level (Dulebohn et al. 2012). Earlier literature on LMX has shown that high-quality LMX is typically related to better access to information in the organization, and employees enjoying high-quality LMX have a greater influence on decision-making (Graen and Uhl-Bein 1995). It may also be possible that a high-quality LMX relationship leads to better job resources, such as autonomy, and through that affects the motivational process. However, unearthing the detail of such a mechanism would require fresh research.

In sum, it can be said of these two perspectives on leadership that unit-level performance benefits from having a leader with strong coaching behaviour, and that for individual performance it is essential to have a good LMX relationship with the leader. In addition, to support employees' work engagement, the influence of LMX is more important than managerial coaching; a finding in line with a recent study by Burch and Guarana (2014), which found a positive relationship between LMX and work engagement, but not between transformational leadership and work engagement.

It was surprising that work engagement was not constantly connected with individual performance (H5A). Nevertheless, the results showed a positive relationship between work engagement and the performance of the unit (H5B). Here too the reasons may relate to aspects of the self-rating of performance mentioned earlier. The personality of the employee might also have an impact on the relationship. Highly-engaged workers might be at their most critical when evaluating their own performance. In addition, some tasks (e.g. manual labour) might not require an employee to be highly engaged to reach the performance goals required. Demerouti and Cropanzano

(2010) have also noted when studying the relationship between work engagement and performance, that those studies utilizing general performance indicators have not explained the performance variance as well as studies using more specific performance measures, which might explain the relatively low coefficient of determination for individual performance.

There was some support that work engagement mediates the connection between managerial coaching and performance (6A and 6B), but the effects become nonsignificant when LMX was studied simultaneously. There was however strong support that work engagement function as a mediator between LMX and unit-level performance (H6D). This suggests that managerial coaching directly influences unit-level performance, but LMX also operates through increased work engagement, as suggested in the recent studies of Bakker and Bal (2010), Breevaart et al. (2015), and Li et al. (2012). Analysing the two leadership constructs at the same time suggests that there are different mechanisms driving managerial coaching and the LMX relationship in the motivational process and towards good performance, as the JD-R model asserts. This finding may also be linked to the general understanding of happiness (Martinez-Marti & Ruch, 2017; Seligman, 2002). It is possible that through work engagement LMX also supports employees' tendency to use their strengths to achieve something larger than their individual goals (cf. eudemonia), for instance, performance of their unit. However, as this was not focus in our study and further research is needed.

The current study has some limitations. First, the findings come from a cross-sectional design, meaning the causal direction of the effects cannot be confirmed. Longitudinal studies would be required to confirm the connections between leadership, work engagement, and performance. While the study validated new measurements for study variables and strong measurement invariance between white-collar and blue-collar oriented work was supported and the measures had good reliability and mostly sufficient validity. There were some concerns relating to the new measurements. Convergent validity for individual performance was marginally lower than threshold value, which means that inter-correlations of items were low and the measure should be used with caution. Also, the measurements related to leadership correlate highly and discriminant validity was not fully established and the measures should be used together with caution. These concerns might be caused by sampling and therefore validity testing with different samples is welcomed. Future studies should also compare the scales to other established instruments. In addition, we suggest that future research should simultaneously consider different perspectives on

leadership, as doing so could provide rich and multifaceted evidence of their effects on organizational- or individual-level outcomes. It would also be fruitful to study the interactions of different leadership perspectives. Moreover, it is also recommended that other underlying mechanisms governing how leadership affects, for instance, performance should be studied.

One limitation of the study is also that the data were obtained only via the self-ratings of respondents. There were some remedies in the survey form, which were designed to minimize the common method bias. The variables were psychologically separated in the form and work engagement was measured with different scale anchors, but the risk that common method variance (CMV) could bias the results still remained. CMV was tested with unmeasured latent factor technique (e.g. Podsakoff et al. 2012) and the model fit of the latent common method factor model was a bit better than the original CFA model ($\chi^2(33)=169.169$, $p<.001$; $\Delta RMSEA=-.005$; $\Delta SRMR=-.004$; $\Delta CFI=+.011$; $\Delta TLI=+.010$). However, a closer examination of the models revealed that standardized regression weights differed in most cases only a little and few bigger differences related to unit-level questions, which suggests that the common factor captured mainly variation relating to unit-level. These results suggest that CMV should not have a significant effect on the measurements, but future studies should examine the hypothesis with other more objective measures, perhaps supervisor-rated ones.

Our findings could have several practical implications for leaders, subordinates, and senior management. For the leaders, it is important to understand the value of coaching behaviour and of building good quality relationships with every subordinate. However, subordinates should consider their role in the leadership process and especially in building LMX relationships, because there are always two parties involved. The timidity of respondents in performance self-ratings might indicate a need to amplify target setting and systematic evaluations in discussions between supervisors and followers. Additionally, managers and supervisors should focus on improving common goal awareness, collaborative capabilities, and member satisfaction in their units and work groups. Even if opportunities to directly influence an individual's performance seem limited, they are more obvious at the group-level. To bolster competitiveness in the organization, upper management and HR professionals should scrutinize the quality of leadership and provide development programmes to equip leaders to undertake their role as managerial coaches. A practical implication drawn from our findings is that relating to the importance of the LMX relationship, which should be acknowledged in organizations. As LMX quality is a question of dyadic relationship building, all

members of the organization should be trained to understand their own role in that process. Putting effort into developing LMX relationships, would enable organizations to deliver performance in a sustainable way.

Overall, more investigation would be welcome to clarify when and how managerial coaching positively influences engagement and performance among employees. The contingency perspective (e.g. one examining the type of work) would be valuable, as would both subjective and objective measures to understand the complex mechanisms involved.

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