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Employee Performance Management System Characteristics with Performance Management System Effectiveness: Exploring the Mediating Role Of Fairness.

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ABSTRACT
Based on expectancy theory, goal-setting theory and control theory we propose a model in which perceived fairness mediates the relationship between characteristics of employee performance management systems and their perceived effectiveness by employees. The model was tested on a sample of 3192 employees, using structural equation modelling. The findings advance research to the role and functionality of performance management systems by showing that (a) the manner in which performance management systems are shaped and executed is of fundamental importance for their effectiveness, (b) fairness partially mediates the relationship between performance management system characteristics and their effectiveness, and (c) the three motivational theories appear useful for understanding the consequences of performance management practices on individual employees.

Keywords: performance management, employee performance, fairness

INTRODUCTION

Performance management (PM), which refers to the measurement and management of employee performance aimed at increasing organizational effectiveness (Den Hartog, Boselie and Paauwe 2004), is an increasingly prevalent practice in organizations (Aguinis and Pierce 2008). Throughout the past decades single performance appraisal moments in which a line manager discusses the annual report of a subordinate's functioning have changed into subordinates receiving continuous feedback through PM systems, which consist of different elements that each account for a part of the PM process (Fletcher 2001; Levy and Williams 2004). Elements of PM systems typically involve a number of performance standards, methods to measure and evaluate performance based on those standards (i.e. performance appraisal), tools to improve performance (e.g., reward structures), and feedback (e.g., performance reviews) (Armstrong and Baron 2005). PM research has traditionally examined the relationship between different PM systems and performance improvement, which is the ultimate purpose of PM systems (Levy and Williams 2004; Aguinis and Pierce 2008). Although research on effective configurations of PM systems is progressing (Pritchard, Harrell, DiazGranados and Guzman 2008), there still is much to learn about (a) which elements of PM systems are crucial for the effective management of performance (e.g., Latham, Almost, Mann and Moore 2005; DeNisi and Pritchard 2006) and (b) which factors affect the impact of PM systems on performance (Den Hartog et al. 2004; Dewettinck 2008). In this study we aim to reduce this knowledge gap by (a) examining the relationship between PM system characteristics and PM system effectiveness and (b) by testing to what extent this relationship is mediated by

the perceived fairness of the performance appraisal. Furthermore, this study answers a broader call for employee reactions in HRM and more specifically PM research (Den Hartog et al. 2004; Purcell and Hutchinson 2007).
Since the relationship between PM systems and organizational performance is expected to be mediated by employee attitudes and behavior (Den Hartog et al. 2004), there is a clear need for studies that examine the individual perspective. Finally, we advance a theory-driven framework for the relationship between PM system characteristics and PM system effectiveness. Scholars have scrutinized the lack of theoretical embeddedness of most PM research (e.g., Buchner 2007).This study, however, is guided by three theories of motivation (i.e. expectancy theory, goal-setting theory and control theory) and offers insight in their applicability to the PM literature.

Formal performance reviews

Formal performance reviews refer to the pre-scheduled face-to-face encounters between supervisor and subordinate with the purpose of discussing the subordinate's overall performance and/or development. The role and perceived importance of formal reviews has decreased over the years. While in the 1930s discussions were being held about introducing reviewing programs 'on a large scale or for any long period with the expectation that tangible results for that company will justify the expense and effort' (Ewing 1933, p. 114), after the 1970s the performance review hardly received any attention from the research community (Fletcher 2001). A noteworthy exception is the work of Kikoski (e.g., Kikoski 1999), who argued that the huge amount of work on the means to appraise performance contradicts the neglecting of the delivery of performance appraisal – i.e. the performance review. Because it is in the formal review that employees hear about how the actual results relate to the result standards and about how the results are evaluated, Kikoski and Litterer refer to the performance review as 'the Achilles' heel of the entire process' (1983, p. 33). As control theory denotes that the congruence between result standards and actual results are easier to provide and to understand over a short time than over a longer period, it expect PM system effectiveness to increase with more frequent formal performance appraisals. Hypothesis 1a: The frequency of formal performance reviews is positively related PM system effectiveness. To In addition, given that understanding evaluations and discussing how to adjust actions to the normative standards takes time, we expect PM system effectiveness to increase with an increased duration of formal performance reviews.

Hypothesis 1b: The duration of formal performance reviews are positively related PM system effectiveness. To Informal Performance reviews- Informal performance reviews refer to unscheduled face-to-face encounters between supervisor and subordinate in which explicitly or more implicitly the subordinate's performance and/or development is discussed. Although PM systems generally do not explicitly refer to informal performance reviews, there is often a notion of the importance to stay in touch with the employee and meet them frequently. One reason for this is that – in contrast to the formal performance reviews - regular interactions provide the opportunity to offer the employee specific, behavioural and timely feedback (Roberts 2003). Hence, where formal performance reviews help the employee to understand the process and the outcome of performance appraisal, informal performance reviews help the employee to live up to the criteria of the performance appraisal system. In other words, while formal performance reviews effect performance improvement through mechanisms described by control theory (i.e. increased insight in discrepancies between result standards and actual results), informal performance reviews enhance performance through a combination of mechanisms as described by goal-setting theory (i.e. enhanced understanding of goal specificity) and control theory (increased insight in discrepancies between result standards and actual results). We therefore expect informal performance reviews to be positively related to PM system effectiveness. Hypothesis 2: The frequency of informal performance reviews is positively related to PM system effectiveness.

Performance review focus

Next to the frequency and duration of the performance reviews, It is expected the content or focus of the performance reviews to impact PM system effectiveness. As the performance reviews are the HRM delivery moments to the

employees, the content of the performance reviews is likely to be determined by the HRM approach within an organization. Researchers have discussed different approaches to HRM (soft versus hard; Guest 1987), different performance appraisal purposes (development versus evaluation; Jawahar and Williams 1997) and different PM purposes (development versus result oriented; Dewettinck 2008), which all reflect the more theoretical discussion on whether the focus in HRM should be placed on the human or the resource (Truss et al. 1997). The first regards intrinsic motivation as the key to unlocking human potential and emphasizes that behaviour is primarily self-regulated. In this perspective organizations are expected to create competitive advantage in particular by empowering their employees. In contrast, the more resource-based view on employees tends to regard 'human resources' as a production factor that needs to be directed towards the strategic business objectives and thatshould be controlled by sanctions and pressures (Dewettinck 2008; Truss et al. 1997). For our purposes this distinction is highly relevant because the difference between the two approaches can also be understood by contrasting the perspectives of control theory on the one hand and goal-setting theory and expectancy theory on the other. As the development-oriented approach stresses the importance of employee self-regulation, it shares with control theory the assumption that employees will autonomously adjust their actions when they are confronted with dissimilarities between the results of their actions and the results standards. With its emphasis on intrinsic motivation the role of supervisory evaluation and feedback in the development-oriented approach is therefore important less in terms of outcomes but rather for enhancing the employee's ability to autonomously monitor, evaluate and adjust his or her actions. In contrast, with its focus on aligning employees with the business objectives the evaluation-based approach resembles the belief of goal-setting theory that clear, specific and challenging goals are needed to steer employees in the right direction and that they need to be evaluated by supervisors. Moreover, the use of pressures and sanctions reveals the more extrinsic understanding of motivation in the evaluation-based approach that stands somewhat opposite to the more intrinsic understanding of motivation in the development-oriented approach. Whereas the development-oriented approach is thus more concerned with the actions-to-results connection, the evaluation-based approach focuses more on the results-to-evaluations-to-outcomes connection. This suggests that in practice these approaches can be combined when they are applied in the compatible phases, and empirical research has indeed found combinations of these two approaches in practice (e.g., Truss et al. 1997). However, research has also found significant differences in the performance appraisal and management purpose across organizations (Dewettinck 2008; Jawahar and Williams 1997; Milliman et al. 2002; Rao 2009), which indicates that most organizations generally focus more on one of the two approaches. When employees feel that their information and input is asked and used, the discussions between employees and managers lead to an increased understanding of the job, less resistance to change, and an increased sense of control (Kleingeld et al. 2004). These are essential attitudes for the self-regulating ability of employees that enables them to autonomously control the gap between actual results and result standards. Hence, both goal-setting theory and control theory provide explanations for the positive impact of employee participation on employee performance. We therefore hypothesize that employee participation enhances PM system effectiveness.

Hypothesis 4: The level of employee participation is positively related to the level of PM system effectiveness.

The mediating role of evaluation fairness Fairness has recently received a significant amount of attention in performance appraisal research (Lau, Wong and Eggleton 2008; Narcisse and Harcourt 2008; Steensma and Visser 2007; see also Folger, Konovsky and Cropanzano 1992). Fairness was found to be particularly important for enhancing employee understanding about the connection between results and evaluations (i.e. the appraisal process) and between evaluations and outcomes (i.e. the reward process). As it are ultimately employee reactions to the appraisal and reward processes that determine to what extent employees are motivated to improve their performance (DeNisi and Pritchard 2006; Levy and Wiliams 2004), employee perceptions of fairness are essential for the effectiveness of PM systems. Regarded as such, fairness functions as a mediator of the relationship between PM system characteristics and PM system effectiveness. While PM can directly enhance performance by the processes

described earlier, PM can stimulate performance more indirectly as well by improving perceptions of fairness, which in turn is positively related to performance improvement. In a qualitative study among employees representing different hierarchical levels of a public service company, Narcisse and Harcourt (2008) identified (a) the congruence between actual performance and appraisal rating (i.e. the results-to-evaluations connection) and (b) the extent to which appraisal rating resulted in compatible outcomes like pay or promotion (i.e. the evaluation-to-outcome connection) as the main determinants of perceptions of fairness. For evaluations to be perceived as fair, it is thus necessary that both the action-to-results connection and the results-to-evaluations connection are optimized. As all characteristics of PM systems discussed above are expected to optimize either the connection between actions and results and/or the connection between results and evaluations (cf. DeNisi and Pritchard 2006), we expect all those characteristics of PM systems to positively effect perceptions of evaluation fairness, which in turn is expected to be
positively related to PM system effectiveness. Hypothesis 5a: The frequency of formal performance reviews, the duration of formal performance reviews, the frequency of informal performance reviews, performance review focus, and the perceived level of involvement in PM are all positively related to the level of perceived evaluation fairness. Hypothesis 5b: Perceived evaluation fairness is positively related to PM system
effectiveness. Hypothesis 5c: Perceived evaluation fairness mediates the relationships the number of formal performance reviews, the duration of formal between performance reviews, the frequency of informal performance reviews, performance review focus, and the perceived level of involvement in PM and PM system effectiveness.

METHOD

Sample Data was gathered from 3.192 Indian employees who filled out a web-based survey that was published on the website of a well-known weekly free job advertising magazine.

Table 1

Variable and category	%a		
Gender		Years in organization	31
Male	48	0<2	29
Female	52	2-5	20
Age (in years)	14	6-10	8
<25	24	11-15	5
26-30	19	16-20	8
31-35	14	>20	69
36-40	20	Type of organization	26
41-50	9	Private	5
>50	1	Public	33
Education	19	Other	67
Primary	48	Listed on stock market	8
Secondary	31	Yes No	18
College	8	Number of employees	19
University	21	<10	13
Functional level	40	10-49	11
Blue-collar	24	50-199	32
Clerical	6	200-499	73
Professional	1	500-999	27
Middle management	18	1000>	1
Senior management	26	Gender of supervisor	6
Top management	25	Male	14
Functional experience	13	Female	22
0<2 2-5 6-10 11-15 16-20	8	Age of supervisor	36
>20	10	<25	22
		26-30	
		31-35	

		36-40 41-50 >50	

Table 1 shows the characteristics and background of the respondents and the organizations the respondents are employed at. The most notable employee sample characteristics are a balanced split in terms of gender and considerable variety in age, educational level, functional experience and seniority. We also note that about 85 % of the sample consists of clerical, professional and middle management employees. Looking at the organizations the respondents are employed at, we see a fairly balanced distribution in terms of company size. 69 % of the employees are from private organizations, of which 33 % are listed on the stock market. Finally, we also asked about the age and gender of the supervisors of our sample respondents. The table indicates that 73 % of the supervisors were male and that 21 % of the respondents had a supervisor who is younger than 36 years old, 22 % had a supervisor between 36 and 40 years old, 36 % between 41 and 50 and 22 % indicated to have a supervisor who is aged over 50. In the following, we first report on how we operationalized our independent variables (i.e. PM system characteristics), the mediator variable (i.e. fairness) and the dependent variable (PM system effectiveness). Subsequently we explain how we analyzed the data and tested our hypotheses.

Measures

Formal performance reviews. The number of formal performance reviews was measured by the open-ended question 'How often have you discussed your performance with a person from your organisation that was ordered by your organisation? (e.g., appraisal/development/evaluation review)'. The duration of formal performance reviews was assessed by the open-ended question 'What was the average duration of those reviews'? Informal performance reviews. The frequency of informal performance reviews was measured by the question 'How often have you discussed your performance with a superior in an informal manner (for example, after departmental meetings with your supervisor, during a move, during an informal lunch or drink, your supervisor who unplanned drops by at your desk, …)' on a nine-point Likert scale ranging from daily to once per year. Employee participation. Employee participation was measured by Arnold et al's (2000) five items of participative decision making on a five-point Likert scale ranging from absolutely disagree to absolutely agree (e.g. my supervisor encourages work group members to express ideas/suggestions) and had an internal reliability of .93 (Cronbach's a).

Performance review focus. Performance review focus was measured by two five-point scales that assess the focus of performance reviews from one focal point to another (during the (appraisal) reviews with my supervisor, the focus is on (1) results/development; (2) what if must do/how I do my work(Dewettinck 2008) and had an internal reliability of .63 (Cronbach's a).

Perceived fairness. Perceived fairness was measured by two items on a 5-point scale assessing evaluation fairness (e.g. up till now my performance has been evaluated fairly). The two items of evaluation fairness had an internal reliability of .90 (Cronbach's a). PM system effectiveness. As the formal and informal performance reviews are the delivery moments of the PM process, we assume their motivational effect to function as a proxy for PM system effectiveness. Based on Dewettinck's (2008) indicator of PM system effectiveness, nine 5-point scale items were used to assess PM system effectiveness (see Appendix 1). The ten items had an internal reliability of .93 (Cronbach's a). Analyses

Measurement properties were assessed by examining the factor structure underlying the items and the correlations between constructs. The hypotheses were simultaneously tested in a structural model, using maximum likelihood estimation in AMOS (Arbuckle and Wothke 1999). Frequency of formal and informal performance reviews and duration of the formal performance reviews were inserted into the model as single indicators. The other constructs in the model (focus, participation, fairness and effectiveness) were represented by latent constructs with each of the variables as indicators (ranging from two indicators for fairness to 9 indicators for PM system effectiveness). Using Structural Equation Modelling (SEM) has several advantages. First, it provides a systematic basis for evaluating the 'fit' of the hypothesized model to data based on a $\chi 2$-statistic, incremental fit indices (e.g. non-normed fit index, comparative fit index) and other indicators of absolute fit including Root Mean Square Error of Approximation (MacCallum and Austin 2000). Second, it provides control over measurement error that can constitute over 50 percent of the observed variance and that often introduces substantial bias in estimated effects and hypothesis testing (Ping 2001).

According to Baron and Kenny (1986), a variable functions as a mediator when it meets the following conditions: (a) variations in levels of the independent variable significantly account for variations in the presumed mediator, (b) variations in the mediator significantly account for variations in the dependent variable, and (c) when controlling for the relationships between the independent variable and the mediator and for the relationship between the mediator and the dependent variable, a previously significant relation between the independent and dependent variables is no longer significant, with the strongest demonstration of mediation occurring when this path is zero (Baron and Kenny 1986, p. 1176). They further propose that, to test for mediation, one should estimate the three following regression equations: first, regressing the mediator on the independent variable; second, regressing the dependent variable on the independent variable; and third, regressing the dependent variable on both the independent variable and on the mediator. Separate coefficients for each equation should be estimated and tested (Baron and Kenny 1986, p. 1177). We followed their recommendations in our analyses and tested two structural models: one with only the direct effects between the characteristics of PM systems on PM system effectiveness and one model in which indirect effects through evaluation fairness were also specified.

RESULTS

Table 2 reports the mean scores, standard deviations and correlations between the key constructs and control variables in our model. Table 3 shows the underlying factor structure of the latent constructs in our model. Although some of the correlations between key constructs are significant, the exploratory factor analysis indicates a clear factor structure. The four factors together explain 73 % of the variance in the data.

Insert Table 2 and 3 About Here

Direct effects model-EDIT

To test hypotheses 1-4 in accordance with Baron and Kenny's (1986) procedure to test mediating effects, we first assessed a structural model with direct relationships between PM system characteristics and PM system effectiveness. The regression weights, standard errors and model fit statistics are presented in Table 4.

Insert Table 4 About Here

strong support for Hypothesis 4-

In terms of overall fit, Table 4 reveals the following fit statistics: $\chi 2 = 2\ 166.32$, df = 198, $p < .001$, GFI = .94, NNFI = .94, CFI = .95, RMSEA= 0.056 (90% CI = 0.054 to 0.058). Despite the significant chi-square that indicates a lack of fit, the relative fit indicators exceed .90 and the absolute fit indicators suggest that the residuals are acceptable (< .07) and tightly distributed (cf. 90 % confidence interval of RMSEA = 0.054 to 0.058). Consistent with this, the parsimony fit indicator, NNFI, exceeds .90, indicating that the model has adequate over- identifying restrictions for parsimony. Based on these statistics and the fact that the chi- square statistic easily obtains significance when sample size is large, we conclude that the direct effects model provides an adequate fit to the data. Table 4 further shows a small but significant positive effect between the number of formal performance reviews and PM system effectiveness (B= .05, p< .01), thus confirming hypothesis 1a. We also found a positive relationship between duration of formal performance reviews and PM system effectiveness (B= .03, p< .01). Thus, Hypothesis 1b is also confirmed. In line with Hypothesis 2, we found that the frequency of informal performance reviews was positively related to PM system effectiveness (B= .09, p< .01). Performance reviews that focus more on employee development were associated with higher levels of PM system effectiveness than performance reviews that focus more on performance evaluations (B= .25, p< .01), thereby confirming hypothesis 3. Finally, we found a positive relationship between the level of participation and PM system effectiveness (B= .47, p< .01), providing

Mediation model

The results of the mediation model that we used to examine if fairness functions as a mediator in the relationship between PM system characteristics and PM system effectiveness are presented in Table 5. The fit statistics ($\chi 2 = 2\ 315.13$, df = 232, $p < .001$, GFI = .94, NNFI = .94, CFI = .95, RMSEA= 0.053 (90% CI = 0.051 to 0.055) indicate that the model provides an adequate-to-good fit to the data. In line with Hypothesis 5a the regression weights indicate that all PM system characteristics are positively related to evaluation fairness. Small effect sizes were found for the number of formal performance reviews (B = .04, $p < .01$), the length of formal performance reviews (B = .04, $p < .01$) and the frequency of informal performance reviews (B = .07, $p < .01$) on evaluation fairness. Large effect sizes were found for PM focus (B = .21, $p < .01$) and participation (B = .48, $p < .01$) on evaluation fairness. Furthermore, the regression weights showed that evaluation fairness is positively related to PM system effectiveness (B = .44, $p < .01$), thereby lending support to Hypothesis 5b. The finding that all independent variables are positively related to the mediatorvariable and that the mediator variable is positively related to the independent variable indicate that the relationship between PM system characteristics and PM system effectiveness is mediated by evaluation fairness. However, the direct relationship between the independent and the dependent variable in the mediation model needs to be taken into account as well in order to know if it is a full mediating effect (when relationships between the PM system characteristics and PM system effectiveness that were significant in the direct effects model are no longer significant in the mediation model) or a partial mediating effect (when the significance of relationships between the PM system characteristics and PM systemeffectiveness has decreased but remained significant). Table 5 shows that the direct relationships between the number of formal performance reviews (B = .03, $p < .01$), PM system focus (B = .16, $p < .01$), participation (B = .26, $p < .01$) and PM system effectiveness in the mediation model are still significant, which rules out the option of a full mediating However, as all effect sizes of the relationship between these PM system characteristics and PM system effectiveness in the mediation model are smaller than the effect sizes regarding the same relationships in the direct effects model (with effect size differences varying from $\Delta B = .02$ for the

relationship between the number of formal performance reviews and PM system effectiveness to ΔB= .21 for participation), our results indicate that evaluation fairness partially mediates the relationship between the number of formal performance reviews, the frequency of informal performance reviews, PM system focus, and participation and PM system effectiveness, thereby partially supporting Hypothesis 5c. Finally, Table 6 shows that the mediation model provides a better fit to the data than the direct effects model.

Insert Table 6 About Here

DISCUSSION

The current cross-functional study among 3 192 employees of Indian organizations advances our understanding of the relationship between PM systems and their effectiveness in two ways. First, we build on empirical evidence that shows that PM practices enhance individual performance, but in such a way that it is clear what the contribution of each individual PM practice is. PM and – more general – HRM research to the effectiveness or consequences of different HRM systems has relied mainly on composite measures of HRM practices (cf. Pritchard et al. 2008). Recently some authors (Wall and Wood 2005; Paauwe 2009) have argued that such a systems approach falls short in verifying the added value of individual practices. Our finding that performance review focus and employee participation strongly relate to perceptions of evaluation fairness and PM system effectiveness and that the frequency of informal performance reviews is more strongly related to PM system effectiveness than the frequency of formal performance reviews suggests that the manifest expressions of PM have more impact on PM system effectiveness rather than the more latent characteristics of PM systems. Phrased differently, our results indicate that perceptions of evaluation fairness and PM system effectiveness are much more effected by the more informal aspects of PM systems than by the more formal and structural elements-. As these more informal aspects are shaped by the deliverer of the PM system (i.e. the supervisor or manager), these results lend credence to the model of Den Hartog et al. (2004) who proposed that front-line managers mediate the effects of PM practices on employee perceptions and attitudes. Furthermore, it provides further support for Kikoski's (1999) argument that performance reviews are the delivery moments of PM. Second, with its embeddedness in expectancy, goal-setting and control theory this study progresses our theoretical understanding of the dynamics underlying the relationship between characteristics of PM systems and PM system effectiveness. A general critique of much PM research – but also of HRM research – is the lack of grounded theory and theory development (DeNisi and Pritchard 2006; Buchner 2007). Our study provided indirect evidence of the applicability of the three aforementioned theories of motivation to PM research. Before we turn to our suggestions for further research and to the managerial implications of our findings,

Study limitations

We used a cross-sectional, single-source research design. This enabled us to investigate employee perceptions of PM system characteristics and effectiveness on a large scale, across organizations and industries and thus made it possible for us to build on and to advance the current state of academic research on PM. Such a design has however also limitations. First, although we build on theoretical insights that suggest causality, longitudinal designs are needed for an empirical assessment of the proposed causal relationships. Secondly, common method variance may have biased the validity of the structural relationships, although the anonymous and independent nature of the survey reduces the risk on such bias as compared to a survey that is promoted by and offered in the organization where the respondents are employed (Spector 2006). PM system effectiveness could have been assessed by HR or line managers (and possibly even by quantifiable data) instead of by employees themselves, but our aim was to assess the impact of the PM delivery moments, which, we believe, should be assessed by employees. Furthermore this design offered the possibility to cover many different types of workers and PM practices, thereby enhancing the generalizability of the findings.- 20

Finally, we took a narrow approach to fairness by focusing solely on evaluation fairness because conceptually it could be clearly and directly linked to our model. A study of Narcisse and Harcourt (2008) identified what we coined evaluation fairness together with outcome fairness (i.e. the extent to which evaluations yield compatible outcomes) as the main determinants of employee perceptions of fairness in PM. Future research is needed to investigate how these two types of fairness are related to the more general and established measures of procedural, interactive and distributive justice (see e.g. Cropanzano, Bowen and Gilliland 2007). Theory development and avenues for further research into PM In this study, three theories on employee motivation showed to be useful in developing specific hypotheses and gaining a better understanding into PM system effectiveness. Expectancy theory provided solid ground to introduce and explore the mediating role of fairness perceptions to link PM practices and PM system effectiveness. Goal-setting theory enabled us to link informal aspects of PM systems (such as the frequency of informal reviews and participation) to PM system effectiveness. Finally, control theory provided a rationale for the hypotheses on the relative importance of informal versus formal PM reviews and for the relevance of PM review focus to better understand the drivers of PM system effectiveness. The applicability of these theories for the conceptual part of our study suggests their usefulness to develop more specific and relevant hypotheses in order to further enhance our understanding of PM dynamics in organizations. One specific suggestion relates to the possible useful role of expectancy theory for further theorizing in linking PM to reward management. We believe that insights into evaluation to outcome linkages could be a useful starting point.

Our study also advances PM theory by delineating the mediating role of fairness in the relationship between PM practices and PM system effectiveness. This opens up opportunities for further examinations into how the broader concept of justice affects the relationship between PM practices and PM system effectiveness. Finally, as our sample mainly consisted of clerical, professional and middle management employees, generalization of our findings requires other empirical studies involving different target samples. Furthering our insights into PM dynamics for higher level managers seems a very useful avenue in this respect-.

Managerial implications

This study also has some noteworthy implications for PM in practice. First, our findings indicate that PM system effectiveness can be improved by raising the frequency of formal and informal performance reviews and by fostering employee participation into PM. Part of the reason for this is that more frequent PM reviews and stronger employee participation tend to lead to a higher perceived fairness. Also, our study suggests that emphasizing the developmental side of PM will increase its effectiveness in terms of improving employee performance. This is an important finding as several studies confirm that the result-oriented side of PM rather than the developmental side tends to be emphasized in daily PM practice. Recent studies (Dewettinck 2008; Rao 2009) indicate that organizations and managers still predominantly perceive the primary purpose of the PM process to be performance evaluation and control rather than employee development. More generally, our study confirms the crucial role of line management in shaping PM within the organization. Thus debates on how to change formal characteristics of PM systems should be complemented with discussions on how to maximally involve and support line management into PM activities. Questions on how to create buy-in from line management are difficult to answer, but for sure are key in developing PM systems that maximally improve performance at the employee and organizational level.

Conclusion Three major conclusions can be drawn from this study. First, expectancy theory, goal-setting theory and control theory have been found useful for understanding the relationship between PM practices and PM system effectiveness. Second, the manner in which PM practices are shaped and executed appear to be especially important for PM system effectiveness, which implies that the role of the line manager is crucial for effective PM. Third, fairness has been identified as a partial mediator of the relationship between PM practices and PM system effectiveness. While some of these findings provide rather straightforward implications for practitioners whishing to

improve their PM system, other findings reveal a clear need for further research into this important and intriguing HR field-.

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TABLE 2

Means, standard deviations and correlations among constructs [a]

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1. Age supervisor	4.49	1.21										
2. Job experience	2.96	1.53	-.09									
3. Job level employee	3.96	1.05	.24	-.13								
4. Freq. formal reviews	1.83	1.96	-.10	-.02	-.08							
5. Length formal reviews	45.22	39.3	-.08	-.19	-.03	.13						
6. Freq. informal reviews	4.29	2.55	-.05	-.09	-.09	.19	.12					
7. Focus	2.80	.87	-.04	-.03	-.09	.08	.08	.21				
8. Participation	3.39	.96	-.08	-.14	-.11	.13	.19	.42	.35			
9. Fairness	3.00	1.18	-.02	-.08	-.12	.14	.16	.33	.33	.55		
10. Effectiveness	3.05	.90	-.08	-.07	-.17	.17	.16	.37	.37	.57	.62	

[a] N = 3192. Construct mean and standard deviation based on average mean and standard deviation of observed items' raw score per construct

[b] correlations > .046, $p < .001$

TABLE 3

Factor structure of key constructs

	Factor			
	1	2	3	4
Participation1		.789		
Participation2		.944		
Participation3		.886		
Participation4		.915		
Participation5		.786		
Focus1				.863
Focus2				.606
Fairness1	-.116		1.014	
Fairness2			.952	
Effectiveness1	.630		.205	
Effectiveness 2	.697		.143	
Effectiveness 3	.648		.107	
Effectiveness 4	.634		.184	
Effectiveness5	.734			
Effectiveness6	.715			
Effectiveness7	.843		-.254	
Effectiveness8	.939		-.213	
Effectiveness9	.660			

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.

TABLE 4

Estimated parameters and fit statistics for the direct effects model

	Dependent Variable	
	PM effectiveness	
Independent Variable	B (S.E.)	t-value
Age supervisor	.01 (.01)	1.00
Job experience employee	-.08 (.01)	8.00
Functional level employee	.01 (.01)	1.00
# formal performance reviews	.05 (.01)	5.00
Length formal performance reviews	.03 (.01)	3.00
Frequency informal performance reviews	.09 (.01)	9.00
Focus	.25 (.02)	12.50
Participation	.47 (.02)	23.50
	R_2 = .47	

In bold = p δ .01
Fit-statistics: χ_2= 2166.32, df = 198 (p < 0.001), GFI = 0.94, NNFI = 0.94, CFI = 0.95, RMSEA = 0.056 (90 % CI = 0.054 to 0.058).

TABLE 5

Estimated parameters and fit statistics for the structural model

	Dependent Variable			
	Fairness		PM effectiveness	
Independent Variable	B (S.E.)	t-value	B (S.E.)	t-value
Age supervisor	-.04 (.01)	4.00	-.01 (.01)	1.00
Job experience employee	-.05 (.01)	5.00	-.06 (.01)	6.00
Functional level employee	-.01 (.01)	1.00	.00 (.01)	0.00
# formal performance reviews	.04 (.01)	4.00	.03 (.01)	3.00
Length formal performance reviews	.04 (.01)	4.00	.01 (.01)	1.00
Frequency informal performance reviews	.07 (.02)	3.50	.06 (.01)	6.00
Focus	.21 (.02)	10.50	.16 (.02)	8.00
Participation	.48 (.02)	24.00	.26 (.02)	13.00
Fairness	---		.44 (.02)	22.00
	R^2 = .40		R^2 = .59	

In bold = p δ .01
--- = relationship not hypothesized / specified
Fit-statistics: χ^2=2315.13, df = 232 (p < 0.001), GFI = 0.94, NNFI = 0.94, CFI = 0.95, RMSEA = 0.053 (90 % CI = 0.051 to 0.055).

TABLE 6

Comparison of the fully and partially mediating models

	χ^2	df	$\Delta\chi^2$	Conclusion
Baseline model: Fully mediating model	2813.3	240		
Alternative model: partially mediating model	2315.1	232	498,2	Significantly better fit than baseline model