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# People management: developing and testing a measurement scale

Eva Knies[a], Peter Leisink[a] and Rens van de Schoot[b,c]

[a]Utrecht University School of Governance, Utrecht, The Netherlands; [b]Department of Methods and Statistics, Utrecht University, Utrecht, The Netherlands; [c]Optentia Research Program, Faculty of Humanities, North-West University, Vanderbijlpark, South Africa

**ABSTRACT**

The central concept in this study is people management, referring to line managers' implementation of HR practices and their leadership behaviour oriented at supporting the employees they supervise at work. In this study we conceptualize people management and develop a multidimensional scale to measure it from the perspectives of both employees and line managers. Using a Study 1/ Study 2 design, including two-wave multilevel data from employees and line managers of a financial service provider, and cross-sectional data from teachers, educational support staff, and supervisors, we demonstrate the scale's reliability and multidimensionality across samples and over time. We provide evidence of the convergent validity by showing that employees' and line managers' perceptions of people management are significantly related, and that people management is significantly related to transformational and transactional leadership. Also, we demonstrate that people management adds explained variance above and beyond transformational and transactional leadership in predicting team performance. We demonstrate criterion-related validity through people management's relationship with job satisfaction, commitment, and work engagement. We discuss the implications of our measure for theory and research on people management, its antecedents, and its effects.

**KEYWORDS**

HRM implementation; leadership behaviour; line managers; people management; scale development



## Introduction

From the 1990s onwards, we have witnessed a growing scholarly interest in HRM, its antecedents, and its effects on organizational and employee outcomes. In particular, research has focused on the antecedents and effects of HR practices, either single practices (such as training and development or compensation and benefits)

**CONTACT** Eva Knies E.Knies@uu.nl

or systems/bundles of practices. A large majority of the empirical studies into HRM apply a quantitative research design. This raises the question of how HRM is to be defined and measured. Although the conceptualization and operationalization of HRM have improved significantly over the past decades, we signal three measurement issues that remain.

First, many measures generate an over-simplified assessment of HR practices. Boselie, Dietz, and Boon (2005) distinguish three types of measures and conclude that, in most studies, the presence of practices is determined by using a dichotomous variable (present/not-present). Notable exceptions are studies by Huselid (1995) and Guest, Michie, Conway, and Sheehan (2003) that use a so-called coverage measure, reflecting the proportion of the workforce covered by certain HR practices. According to Boselie et al., the most 'sophisticated' measure is one that measures the intensity of HR practices, i.e. the degree to which an individual employee is exposed to the practices. However, with the exception of Truss (2001), this type of measure is hardly ever used.

Second, in many studies, it is the presence of HR practices as such that is measured. Although it is recognized that, in many organizations, line managers are increasingly responsible for HR implementation (Brewster, Brookes, & Gollan, 2015), their critical role in the enactment process is under-researched (Gilbert, De Winne, & Sels, 2011; Purcell, Kinnie, Hutchinson, Rayton, & Swart, 2003). In response, Guest and Bos-Nehles (2013) advocate a shift from the measurement of practices as such to how these are applied, typically by line managers.

Third, the role of line managers' leadership behaviour in shaping employees' perceptions of HRM is often overlooked. According to Guest (2011, p. 7): 'Advocates of the influence of leadership will tell us that it is good leadership that makes a difference; and leadership will have an impact on the content and practice of HRM as well as on management activities'. However, HRM and leadership appear to be two rather separate academic disciplines and, as a consequence, insights from leadership theory and research are rarely used in HRM studies.

Addressing the issues outlined above, Purcell and Hutchinson (2007) introduced the concept of people management. This concept acknowledges that line managers play a crucial role in shaping employees' perceptions of HRM through their implementation of HR practices and their leadership activities. This is an important advance in theory development. However, Purcell and Hutchinson did not offer a systematic conceptualization and operationalization of people management. That is a good reason to examine related concepts and measures that tap into dimensions of people management, such as Gilbert et al.'s (2011) measure of line manager enactment of HR practices, perceived supervisor support (Eisenberger, Stinglhamber, Vandenberghe, Sucharski, & Rhoades, 2002), and taxonomies of leadership behaviour (Bass & Bass, 2008; Yukl, 2012). We will examine these related measures in the next section where we will also elaborate on the theoretical reasons for the need for a systematic measure of people management.

In this article, we conceptualize people management and develop a multidimensional scale to measure it. In so doing, we contribute to the literature by addressing the issues outlined above. Specifically, the measure of people management we present (1) captures the degree to which individual employees are exposed to people management (i.e. intensity of people management), (2) is based on the acknowledgement that line managers play a crucial role in shaping perceptions of HRM, and (3) combines insights from the HRM and leadership bodies of knowledge to conceptualize the symbiotic relationship between the implementation of HR practices and line managers' leadership behaviour. Our people management scale provides scholars with a reliable and valid measure, which allows them to examine people management from the perspectives of both employees and line managers.

## Theoretical framework

In this section, we first discuss the theoretical distinction between intended, implemented, and perceived HRM. Next, we introduce the concept of people management. Then, we provide the theoretical case for the need for a measure of people management. We conclude by outlining our conceptualization of people management, which lays the foundations for our scale development.

### *HRM from three perspectives: the role of line managers*

Recent conceptual frameworks (Purcell & Kinnie, 2007; Wright & Nishii, 2013) make a distinction between intended, implemented, and perceived HRM. The underlying assumption is that there can be differences between the designed HR practices, the way these are implemented, and employees' perceptions of these practices. *Intended* practices are those designed by senior management or HR management. *Implemented* practices are those that are actually applied, typically by line managers. This conceptual differentiation is based on an awareness that not all practices are implemented in the ways intended, and that some will not be implemented at all. According to the framework, the implemented practices will then be subjectively perceived by employees. Thus, we arrive at *perceived* practices: those experienced and judged by individual employees.

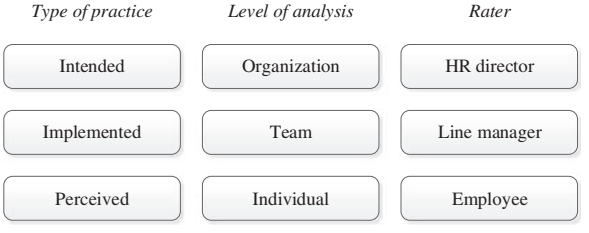


**Figure 1.** HRM from three perspectives (adapted from Wright & Nishii, 2013).

This distinction has implications when it comes to selecting respondents to rate HRM and for the level of analysis. HR representatives or senior management can be asked about intended HRM, line managers about implemented HRM, and employees about perceived HRM (Gerhart, Wright, McMahan, & Snell, 2000). This implies that perceived practices should be measured at the individual level of analysis. Implemented practices are situated on the team level, since all employees supervised by one manager are subjected to the HR practices implemented by this manager. Intended practices can be measured at the organizational level. This is graphically displayed in Figure 1. In this article, we will develop a scale to measure both implemented and perceived people management because this is an underdeveloped area compared to intended practices.

The distinction between intended and implemented HRM draws attention to the actors responsible for the translation of intended into implemented HR practices. The literature mentions several HR 'delivery channels' such as HR shared service centres, HR professionals, and line managers (Farndale, Paauwe, & Boselie, 2010). In this article we specifically focus on line managers as organizational agents (Eisenhardt, 1989). This choice is based on the observation that, in many organizations, line managers have an important responsibility for HRM (Brewster et al., 2015).

## *People management: theoretical case for a systematic measure*

The theoretical case for developing a measure of people management is based on our view of the nature of the relationship between the two core components, which subsequently has implications for their operationalization. According to Purcell and Hutchinson (2007, pp. 3–4):

> The twin aspects of FLMs' [frontline managers] people management activities, leadership behaviour and the application of HR practices, imply a symbiotic relationship between them. FLMs need well designed HR practices to use in their people management activities in order to help motivate and reward employees and deal with performance issues and worker needs. The way FLMs enact these practices will be influenced by their leadership behaviour.

The view taken here is that line managers have a set of roles including the manager motivating subordinates and the HRM role which do not operate independently. As Purcell and Hutchinson, we see line managers' people management activities as 'more discretionary than other aspects of FLM duties especially those related to the primary task of the work unit' (p. 6). The discretionary nature of their people management activities implies that line managers' implementation of HR practices will be influenced by their leadership behaviour. The degree of discretion may vary between HR practices depending on the degree of formalization of an organization's HR policies (Purcell & Hutchinson, 2007, p. 6). However, the discretionary nature of line managers' people management as such suggests the need to conceptualize HRM more broadly, including both the implementation of

HR practices and line managers' leadership behaviour, and the need to recognize that these components can mutually reinforce each other.

The variability of line managers' people management is an important factor explaining differences in perceived HR practices among employees. Purcell and Hutchinson (2007, p. 5) add that the quality of the relationship between employees and line managers is also likely to influence employees' perceptions of HR practices. Following LMX theory (Graen & Uhl-Bien, 1995), they argue that the quality of the LMX relationship and the extent to which the line manager is seen as people manager both contribute to the strength of the HRM system (p. 17). We follow the suggestion inherent in this argument that people management and the LMX relationship are conceptually distinct.

Anticipating more detailed arguments in later sections, we see the symbiotic relationship between the implementation of HR practices and line managers' leadership behaviour as requiring operationalizations that are mutually attuned and oriented to the support of the individual employee the line manager supervises. This means that existing related measures were not incorporated as components of our people management measure, although we made use of these in developing our items. More concretely, concerning the implementation of HR practices, we followed Boselie et al.'s (2005) argument that the most sophisticated measure of HRM is one that measures the degree to which an *individual* employee is exposed to HR practices. Therefore, we developed items from the employee perspective that referred to the perception of the individual employee of a specific HR practice or leadership behaviour with regard to him or herself. This theoretical rationale differs from the concept of line managers' enactment of HR practices and line managers' relations-oriented leadership behaviour developed by Gilbert et al. (2011), which concerns the individual employee's perception of how his/her supervisor acts towards all subordinates generally.

Regarding the leadership behaviour component of people management, we examined taxonomies of leadership behaviour such as Yukl's (2012) which differentiates between four meta-categories that are held to influence performance. However, many of these leadership behaviours are not related to line managers' implementation of HR practices, and are not oriented to the support of employees at their job. For our purpose the relations-oriented leadership behaviours are the most relevant, which following Yukl (2012) consist of supporting, developing, recognizing, and empowering employees. Focusing on these, we note that relevant measures have been developed but that these still require adaptation to fit the people management concept. Rafferty and Griffin (2006) are an interesting example in this respect as their study includes three items for both supportive and developmental leadership, which relate to the two leadership dimensions in our study (see further). However, their items are rather abstract dealing with supervisors' attention to personal feelings, personal needs, and employees' interests, rather than for instance concretely showing an interest in how the individual employee does his/her job.

This evaluation also holds for the related concept of perceived supervisor support (PSS), which is commonly measured as perceived organizational support (POS) but replacing the word 'organization' with 'supervisor' (Eisenberger et al., 2002). The items that make up the PSS measure concern the individual employee ('me') but refer mostly to general attitudes of human beings that are not set in the work context (Rhoades, Eisenberger, & Armeli, 2001, p. 828). Example items that illustrate this observation are 'My supervisor really cares about my well-being' and 'My supervisor strongly considers my goals and values'. Therefore, these existing measures of relations-oriented leadership behaviour and PSS were not incorporated in the people management concept, but we drew on these literatures for developing our people management measure.

Summarizing, we argue that the people management concept requires a systematic operationalization which fits the symbiotic relationship between its two main components, and its orientation on line managers' support for the employees they supervise at their job. To our knowledge there are no existing measures that meet these requirements and that can be incorporated as such. Therefore, we developed and validated a multidimensional scale to measure people management, for which we drew on existing measures by adapting items to the people management concept. We will return to this choice in the conclusions and discussion section. We proceed by elaborating on the two components of people management.

### *Implementation of HR practices*

The first element of the people management concept, the implementation of HR practices, has its roots in the HR devolution literature (Perry & Kulik, 2008). According to Larsen and Brewster (2003, p. 228), 'the notion of line management accepting greater responsibility for HRM within employing organizations is now received wisdom'. They distinguish several HR policy areas, such as pay, training and development, and health. These policy areas closely reflect the seven HR practices scale developed by Boon, Den Hartog, Boselie, and Paauwe (2011) that together represent a set of 'high performance' HR practices. In contrast to Boon et al., we do not focus on HR practices as such, but on their implementation by line managers towards the employees they supervise.

When studying employees' perceptions of their line manager's implementation it is not sufficient to focus solely on the presence of practices (Boselie et al., 2005). The perceptions that employees have of the reasons why management has adopted certain HR practices (so-called 'HR attributions') are also important. Nishii, Lepak, and Schneider (2008) introduced this concept, arguing that HR attributions have consequences for employees' attitudes. They show that practices that are perceived as commitment-focused (i.e. intended to enhance service quality and employee wellbeing) are positively related to employees' attitudes, whereas practices that are perceived as control-focused (i.e. designed to reduce costs and exploit employees) are negatively associated with their attitudes. This important

distinction is not recognized by Gilbert et al.'s hypothesis (2011, p. 1622) that 'employee perceptions of effective enactment of HR practices by their line managers are positively related to employees' affective commitment'. In the notion of effective enactment, 'effective' refers to producing the results that were intended. However, when management's intentions are aimed at reducing costs, the effective implementation of HR practices by line managers will likely be perceived by employees as control-focused and, following Nishii et al., be negatively related to employees' affective commitment. Because we share the scholarly interest in the effect HRM can have on organizational and employee outcomes through positively affecting employees' attitudes and behaviours, this study will operationalize the implementation of HR practices and line managers' leadership as supportive behaviours.

According to Guest (2007), two levels of HR implementation can be distinguished. On the one hand, line managers implement general practices, ones that apply to all employees in their team. On the other hand, line managers are increasingly expected to make tailor-made arrangements with individual employees. HR practices established at the organizational level outline the framework for such deals.

The literature on high performance or high commitment work practices is closely related to the implementation of general practices. The basic assumption is that organizations develop practices aimed at stimulating employees' ability, motivation, and opportunity to perform (Wright & Boswell, 2002). In this article, we will study line managers' implementation of HR practices in the various HR areas distinguished by Boon et al. (2011).

In terms of the implementation of tailor-made arrangements we were inspired by the literature on idiosyncratic deals (Rousseau, 2005) and deals made in a 'cafeteria' system (Benders, Delsen, & Smits, 2006). Tailor-made arrangements can take various forms, but have two common characteristics. First, these are voluntary 'deals' that employees make with their supervisor and that potentially can cover any HR practice or aspect of their employment relationship. Second, these must, in some way, contribute to the functioning or well-being of employees. One type of tailor-made arrangement (idiosyncratic deals or i-deals) is completely individualized and differs in some fashion from those received by colleagues hired to do the same work (Rousseau, 2005, p. 8). Another type of tailor-made arrangement is made in a 'cafeteria' system, in which employees exchange money and free time to suit their preferences (Benders et al., 2006).

### *Leadership behaviour*

The second element of the people management concept, leadership behaviour, builds on the notions of social exchange, PSS, and POS. Eisenberger, Huntington, Hutchinson, and Sowa (1986) used the concept of POS to explain employee commitment to an organization. Based on social exchange theory, they argue that high

levels of POS create feelings of obligation, through which employees feel that they ought to reciprocate and engage in behaviour that supports organizational goals. Organizational support theory holds that employees see supervisors as agents acting on behalf of the organization. Several studies (Eisenberger et al., 2002; Rhoades & Eisenberger, 2006) have shown that employees' PSS is positively related to employees' POS, organizational commitment, and performance.

In this article, leadership behaviour is understood as a manager demonstrating supportive behaviour through specific acts that aim to help employees at work. That is, we focus on the relations-oriented dimension of leadership (Bass & Bass, 2008; Yukl, 2012) which aims at fostering the quality of human relations, organizational commitment, and other employee attitudes in which we are interested from the perspective of the effect that HRM can have on organizational and employee outcomes through positively affecting employees' attitudes and behaviours. As Gilbert et al. (2011, p. 1622), we did not include task-oriented leadership because its primary objective is associated with improving productivity and reducing costs, which following Nishii et al. (2008) is likely to evoke control-oriented perceptions among employees. More specifically, Greenhaus, Parasuraman, and Wormley (1990) describe supportive behaviour by supervisors as including the provision of career guidance, performance feedback, and opportunities that promote employee development. Oldham and Cummings (1996) observe that supervisors are supportive when they show concern for their employees' feelings and needs, encourage them to voice their own concerns, provide feedback, and facilitate their development.

Based on earlier research by Knies and Leisink (2014), a distinction can be made between two focal points: supportive behaviour aimed at increasing employees' personal commitment; and supportive behaviour aimed at supporting their career development. This parallels the distinction in the leadership literature between supportive and developmental leadership (Rafferty & Griffin, 2006), and the distinction made in the literature on mentoring (Allen, Eby, Poteet, Lentz, & Lima, 2004) which distinguishes between psychosocial support and career-related support provided by mentors to their protégés.

## *Concluding remarks*

People management is defined as line managers' implementation of HR practices and their leadership behaviour in supporting the employees they supervise at work. We distinguish two components of people management: the implementation of HR practices by line managers and their leadership behaviour. Both components are broken down into two sub-dimensions. In the implementation of HR practices, we distinguish two levels of implementation: general practices and tailor-made arrangements. With regard to the leadership behaviour of line managers, two focal points are distinguished: the support of employees' commitment and the support

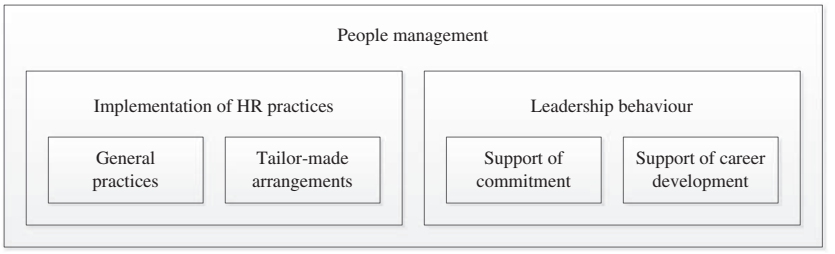


**Figure 2.** Conceptualization of people management.

of employees' career development. Our conceptualization of people management is graphically displayed in Figure 2.

## Study 1: research design

We conducted two studies to develop our people management scale and accumulate evidence on the validity of the measure. In this section, we introduce the four-step procedure followed in Study 1, and then present the research sample used in Study 1.

### *Steps in scale development and validation*

In developing and testing the validity of our people management measure, we followed the procedure outlined by DeVellis (2003). The data analysis was carried out using Mplus (Muthén & Muthén, 2012).

#### *Phase 1: item generation*

In Phase 1, we generated a pool of potential items to measure the four theoretically-derived dimensions of people management.

#### *Phase 2: psychometric properties of the scale*

In Phase 2, we evaluated the proposed multidimensional scale for measuring people management for its psychometric properties. First, we examined *dimensionality* by performing an exploratory factor analysis (EFA) using the data from those employees who only participated in our study at Time 2 (see under research sample), and confirmatory factor analyses (CFAs) using the data from those employees and their line managers who participated in the survey at both Time 1 and Time 2. We conducted both first- and second-order CFAs because the literature suggests that people management is a multidimensional construct with four underlying dimensions. We examined the fit of the models and determined whether the models needed to be modified to improve the fit. Second, we assessed *reliability* by examining the Cronbach's alpha coefficients. Third, in order to assess the extent to which the instrument measured the same constructs across time, we

tested for *metric invariance over time*. Finally, we assessed the *temporal stability* of the people management scale.

### *Phase 3: convergent validity of the scale*

In order to establish convergent validity, we examined the relationship between our scale and conceptually similar constructs. In Phase 3, we examined the relationship between line managers' and employees' perceptions of people management. We expected to find a positive relationship between the two variables based on theoretical models of the HRM-performance chain, which assume that the implemented HRM has an effect on employees' perceptions of HRM (Purcell & Kinnie, 2007; Wright & Nishii, 2013). Moreover, research on multisource performance ratings (Conway & Huffcutt, 1997) indicates that managers' self-ratings and employees' ratings are significantly correlated. Therefore we test the following hypothesis: there is a positive relationship between line managers' and employees' perceptions of people management.

In line with Wright and Boswell's (2002) call for more multilevel analyses in the field of HRM, we conducted a multilevel analysis to test the hypothesis with implemented people management from a line manager's perspective measured on the team level of analysis, and employees' perceptions measured on the individual level. That is, individual employees are nested in supervisor groups.

### *Phase 4: criterion-related validity of the scale*

In Phase 4, we determined the criterion-related validity of the scale by examining the relationship between people management and two outcomes with which people management should be theoretically related: job satisfaction and affective commitment. The premise that people management is positively related to employee attitudes such as job satisfaction and commitment is founded in social exchange theory that suggests that employees will have positive attitudes towards their job and their organization if they have the feeling that the organization values their contribution and cares about their wellbeing (Settoon, Bennett, & Liden, 1996). Empirical studies by Takeuchi, Chen, and Lepak (2009) and by Wu and Chaturvedi (2009) found that supportive HR practices indeed have a positive effect on employees' job satisfaction. There is also empirical evidence that HRM has a positive effect on affective commitment (Allen, Shore, & Griffeth, 2003; Gould-Williams, 2003). In addition, studies of PSS and POS have reported positive relationships with job satisfaction and affective commitment (Rhoades & Eisenberger, 2002). Therefore, the hypothesis that will be tested is: the extent to which employees perceive people management activities being practiced is positively related to their (1) job satisfaction, and (2) affective commitment. We measured job satisfaction with a single item: 'Generally speaking, I am very satisfied with my job'. Wanous, Reichers, and Hudy (1997) demonstrated that satisfaction can be reliably measured with a single item. We measured commitment using four items from Allen and Meyer's (1990) scale. A sample item is: 'My team has a great deal of personal

meaning for me'. Cronbach's alpha was .83. Respondents used a five-point Likert scale to rate all items.

### *Research sample*

The data assessed in Study 1 come from a two-wave study (time lag: 17 months) in a financial service provider in the Netherlands. At Time 1, 6160 employees and 730 line managers completed the questionnaire. This is a response rate of 44 and 58% respectively. At Time 2, 3368 employees and 354 line managers participated again in the survey. The data for this article come from those respondents who completed the questionnaire on both occasions. To check for a potential attrition bias in the data, we compared those respondents who participated in the research once, to those who participated twice. T-tests showed no significant differences between the two groups on this study's variables. Thus, the analysis provides evidence against there being an attrition bias. The data from those employees who only participated in the study at Time 2 ($n$ = 3255) are used for performing the EFA.

The employees and line managers in the data-set are linked in the dyad, based on the team code included in the survey. 53.8% of the employees were male, 46.2% were female. 72.6% of the line managers were male and 27.4% were female. The mean age of employees was 42.5 years (SD = 8.9 years), the mean age of line managers was 43.2 years (SD = 6.9 years). Fifty-five percent of all employees and 80% of all line managers had completed a higher education, and a further 37% of the employees had completed mid-level education.

## Study 1: results

In this section, we present the results of Study 1 of the successive steps in the empirical development and collection of evidence on the validity of our people management scale. We performed all the steps using both employee and line manager data collected at Time 1 and at Time 2. For each step, we first present the results generated by analysing our employee data, followed by those generated from our line manager sample.

### *Phase 1: item generation*

The goal of the first phase in the procedure was to operationalize the dimensions of people management. Items were generated targeting the four dimensions of people management.

For the dimension *supportive HR practices* we first made an inventory of possible HR practices. As this list consisted of 38 HR practices the limits set on the survey for Study 1 required us to cluster these practices. Consultation with a practitioner panel for Study 1, which consisted of three HR professionals and two line managers, ultimately resulted in a list of seven clusters which resembles

the seven dimensions of perceived HR practices by Boon et al. (2011). One difference is that employees who pilot-tested our questionnaire advised us not to include recruitment and selection, because employees with a long organizational tenure would not have a reliable recollection of whether the selection process had supported them at the time. Other differences are that our list splits performance appraisal and compensation (which are combined by Boon et al.) and that we included job mobility as a separate HR cluster while Boon et al. include this in the training and development cluster.

Based on Rousseau (2005) and Benders et al. (2006) we developed four items for the *implementation of tailor-made arrangements*. The items dealing with the tailor-made arrangements were formulated rather generally because these arrangements can potentially concern any HR practice. Rather than elaborating on specific types of tailor-made arrangements distinguished in the literature (see Hornung, Rousseau, & Glaser, 2008), we felt that it was relevant to concentrate on arrangements to support the employee's personal situation on the one hand and their job performance on the other. One item was deleted based on the feedback from the practitioner panel because it did not refer to the implementation of tailor-made arrangements itself but rather to precedents which these may cause.

The items for the dimensions support of employees' commitment and support of employees' development were taken from an earlier study of line manager support for older workers (Leisink & Knies, 2011) and adapted for support for employees in general (irrespective of age). The scale measuring *support of employees' commitment* corresponds with the scale to measure support of older workers' commitment, which originally consisted of six items which were derived from open interviews with older workers and related to Oldham and Cummings (1996) concept of supervisor support. Based on expert judgements by three researchers, two items were deleted because they did not fit construct validity.

The scale measuring *support of employees' career development* consisted originally of six items which were also derived from open interviews with older workers and related to Greenhaus et al.'s (1990) concept of supervisor support. Based on expert judgements by three researchers, three items were deleted because they did not fit construct validity. One item was split in two items to differentiate unequivocally between horizontal and vertical mobility. The two resulting scales with four items each, which had been rephrased to refer to employees generally, were discussed and accepted by the practitioner panel of Study 1.

As outlined above, most of the generated items were co-developed with practitioners. We also discussed the items with several academic experts on HRM and organizational behaviour ($n = 4$), and with a methodology expert. Based on their comments, we modified several items. Next, the questions were tested with a small panel of testers ($n = 5$) to ensure the clarity of the items.

Ultimately, our item generation activities resulted in two comparable 18-item questionnaires. Given that our goal was to develop a scale to measure both perceived and implemented people management, we developed two sets of paired

**Table 1.** Questionnaire items.

| | |
|---|---|
| Supportive HR practices | |
| | I experience the following HR practices as being implemented to support me:<br>*I experience the following HR practices as being implemented to support my employees*: |
| SP1 | (1) training and development |
| SP2 | (2) transition to another job |
| SP3 | (3) appraisal |
| SP4 | (4) compensation and benefits |
| SP5 | (5) changes in job design (e.g. changes in tasks, career advice) |
| SP6 | (6) vitality (e.g. prevention and health) |
| SP7 | (7) work-life balance (e.g. flexible hours, leave, working from home) |
| Implementation of tailor-made arrangements | |
| ITA1 | My supervisor tailors employment conditions to my personal situation<br>*If it is required, I tailor employment conditions to an employee's personal situation* |
| ITA2 | My supervisor tailors employment conditions to my individual needs so I can do a better job<br>*I tailor employment conditions to my employees' needs so they can do a better job* |
| ITA3 | If I request my supervisor to tailor employment conditions to my needs, he/she does not do so because this will create a precedent (R)<br>*If I am asked by employees to tailor employment conditions to their needs, I do not do so because this creates precedents (R)* |
| Support of employees' commitment | |
| SEC1 | My supervisor shows an interest in how I do my job<br>*I show an interest in how employees do their job* |
| SEC2 | My supervisor shows an interest in my personal functioning<br>*I show an interest in employees' personal functioning* |
| SEC3 | If my supervisor appreciates the job done by me, he/she does not let this pass unnoticed<br>*If I appreciate the job done by an employee, I do not let this pass unnoticed* |
| SEC4 | My supervisor asks me if I can manage my job<br>*I ask employees if they can manage their job* |
| Support of employees' career development | |
| SED1 | My supervisor informs me about opportunities for training and development<br>*I inform employees about opportunities for training and development* |
| SED2 | My supervisor offers me opportunities to participate in training<br>*I offer employees opportunities to participate in training* |
| SED3 | My supervisor supports me in utilizing opportunities for vertical mobility<br>*I support employees in utilizing opportunities for vertical mobility* |
| SED4 | My supervisor supports me in utilizing opportunities for horizontal mobility<br>*I support employees in utilizing opportunities for horizontal mobility* |

Note: Line manager items displayed in italics.

items to reflect both employees' and line managers' perspectives. An example of the paired items is: 'My supervisor shows an interest in how I do my job' (employee) and 'I show an interest in how employees do their job' (line manager). Table 1 lists the questionnaire items.

The items reflecting the employee's perspective were formulated with regard to the individual employee by the use of 'I' and 'me'. We chose to address the individual employee's perception of line manager's behaviour with regard to him/herself for two reasons. First, we followed Boselie et al.'s (2005) assessment that the most sophisticated measure is one that measures the degree to which an individual employee is exposed to HR practices. Second, employees can more accurately assess their own situation than that of employees generally.

The items reflecting the line manager's perspective are formulated with regard to all employees who are supervised by the line manager. The individual line manager is addressed by 'I', while the plural 'employees' refers to all his/her subordinates.

All items operationalizing the dimensions implementation of tailor-made arrangements, support of employees' commitment, and support of employees' career development include some kind of individual manager behaviour such as 'I show …', 'I ask …', and 'I offer …'. These dimensions refer to HR practices and leadership behaviour in which line managers can exert considerable agency. In case of the implementation of general HR practices, line managers may have less discretion depending on the degree of formalization of an organization's HR policies (see Purcell & Hutchinson, 2007, p. 6). HR practices such as performance appraisal and compensation are often regulated by protocols and collective systems. Therefore, the wording of these questionnaire items was adapted to 'I experience the following HR practices [7 practices, each of which was assessed separately] as being implemented to support my employees', where the passive form 'being implemented' reflects the relative lack of discretion line managers may experience in their implementation, and the words 'support *my* employees' explicitly focus on their own subordinates rather than employees generally.

All items were formatted to be responded to using a five-point Likert scale, from strongly disagree to strongly agree. There were three reasons for adopting a 5-point Likert scale. First, there are many other HRM concepts measured using this scale. This means that respondents are used to answering these kind of questions. Also, we wanted to adopt the same scale throughout the questionnaire. Third, we wanted to prevent that respondents would not be able to distinguish reliably between adjacent categories, which can be the case when adopting a 7-point scale (Groves et al., 2009, p. 239).

## *Phase 2: psychometric properties of the scale*

The goal of the second phase was to test the following psychometric properties of our scale: its dimensionality, reliability, metric invariance, and temporal stability.

### *Dimensionality*

First, we examined the dimensionality of the people management construct by performing an EFA and CFAs to determine the relationship between the observed variables (questionnaire items) and the latent variables (constructs). To determine model fit, following the recommendations by Jackson, Gillaspy, and Purc-Stephenson (2009), we examined the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the value for $\chi^2$/df. A fit is considered acceptable provided both the CFI and the TLI are .90 or above, and the RMSEA is no greater than .08 (Bentler, 1990). To determine the relative quality of our models, and to provide a logic for model selection, we used the Akaike information criterion (AIC) and the Bayesian information criterion (BIC) fit indices. Before conducting the EFA and CFAs, we screened the data for influential outliers, missing data, and tested the distributional characteristics of the data. There were no influential outliers, and only limited missing data which

occurred randomly. However, our data were not normally distributed. Therefore, and because we used a 5-point Likert scale, we decided to treat all the observed variables as categorical (ordinal) data (Johnson & Creech, 1983). As a result, most of the fit indices of our models improved, as will be demonstrated below. We used the WLSMV estimator (Weighted Least Squares with a mean and variance correction for non-normality) because this is a robust estimator which does not assume normally distributed variables and provides the best option for modelling categorical data (Brown, 2015). The WLSMV estimator provides WLS parameters estimates by using a diagonal weight matrix.

In the EFA, we included the 18 original items and compared a one-factor, two-factor, three-factor, and four-factor model to assess if our assumption of a four-dimensional structure indeed fits the data. We used oblimin rotation because this allows for the factors being correlated, which is expected to be the case for the dimensions of people management.

Table 2 shows the model fits of the different models. The four-factor solution showed the best fit compared to the one-factor, two-factor, and three-factor models. The factor structure was as we had expected theoretically. However, we had to delete one item (ITA3) because it had a factor loading of .223 which is below the suggested cut-off value of .40. A reason why ITA3 showed insufficient internal consistency might be that it was the only item that was formulated negatively (see Morren, Gelissen, & Vermunt, 2010). We will return to this issue in the discussion section. The factor loadings ranged from .577 to .820 for supportive HR practices, from .727 to .731 for implementation of tailor-made arrangements, from .698 to .880 for support of employees' commitment, and from .733 to .888 for support of employees' career development. None of the items loaded on more than one factor.

Next, based on the results of the literature study and the EFA, we tested both first- and second-order models using CFAs. In the first-order models, seven items loaded onto the supportive HR practices dimension (SP1–SP7), two items loaded onto the implementation of tailor-made arrangements dimension (ITA1–ITA2), four items onto the support of employees' commitment dimension (SEC1–SEC4), and four onto the support of employees' career development dimension (SED1–SED4). To verify whether these four suggested dimensions were indeed dimensions of the underlying people management construct, we conducted second-order CFAs, loading the four dimensions on the second-order construct people management.

**Table 2.** Results exploratory factor analysis.

| | CFI | TLI | RMSEA | $\chi^2$/df (*p*) | AIC | BIC |
|---|---|---|---|---|---|---|
| One-factor | .865 | .847 | .198 | 128.40 (<.001) | 115,228 | 115,776 |
| Two-factor | .913 | .887 | .170 | 95.23 (<.001) | 109,416 | 110,067 |
| Three-factor | .949 | .924 | .140 | 64.65 (<.001) | 106,100 | 106,849 |
| Four-factor | .981 | .967 | .092 | 28.59 (<.001) | 104,922 | 105,762 |

**Table 3.** Psychometric properties: factor loadings, standard errors and Cronbach's alpha.

| | Employee | | Line manager | |
|---|---|---|---|---|
| Variable | Time 1 | Time 2 | Time 1 | Time 2 |
| Supportive HR practices | *.90 [.89–.90]* | *.91 [.90–.91]* | *.83 [.79–.85]* | *.84 [.81–.86]* |
| SP1 | .805 (.009) | .848 (.007) | .771 (.027) | .789 (.025) |
| SP2 | .862 (.007) | .865 (.006) | .804 (.023) | .711 (.029) |
| SP3 | .817 (.009) | .841 (.007) | .692 (.034) | .740 (.032) |
| SP4 | .739 (.010) | .778 (.009) | .677 (.031) | .687 (.033) |
| SP5 | .880 (.007) | .879 (.006) | .759 (.029) | .802 (.027) |
| SP6 | .773 (.010) | .773 (.009) | .600 (.039) | .699 (.029) |
| SP7 | .705 (.011) | .695 (.010) | .565 (.041) | .654 (.034) |
| Implementation tailor-made arrangements | *.85 [.84–.86]* | *.85 [.84–.86]* | *.60 [.55–.65]* | *.66 [.59–.73]* |
| ITA1 | .911 (.007) | .922 (.006) | .560 (.054) | .656 (.058) |
| ITA2 | .891 (.007) | .895 (.006) | .815 (.057) | .972 (.066) |
| Support of employees' commitment | *.91 [.90–.91]* | *.92 [.92–.93]* | *.62 [.56–67]* | *.71 [.65–.75]* |
| SEC1 | .922 (.004) | .933 (.003) | .694 (.047) | .819 (.035) |
| SEC2 | .937 (.004) | .954 (.003) | .653 (.052) | .826 (.039) |
| SEC3 | .867 (.006) | .903 (.004) | .579 (.056) | .730 (.045) |
| SEC4 | .839 (.007) | .864 (.006) | .584 (.052) | .569 (.054) |
| Support of employees' career development | *.86 [.85–.87]* | *.90 [.89–.90]* | *.70 [.64–.75]* | *.81 [.77–.84]* |
| SED1 | .806 (.008) | .863 (.006) | .797 (.035) | .821 (.030) |
| SED2 | .750 (.009) | .806 (.008) | .805 (.034) | .797 (.030) |
| SED3 | .884 (.006) | .915 (.004) | .691 (.042) | .792 (.029) |
| SED4 | .901 (.006) | .933 (.004) | .627 (.039) | .836 (.027) |

Notes: Standardized factor loadings of the unconstrained model are displayed. Standard errors are displayed between parentheses. Values for Cronbach's alpha are displayed in italics; 95% confidence intervals are between brackets.



We first conducted a first-order CFA. The fit indices for the resulting model using the employee data were: CFI = .976; TLI = .973; RMSEA = .053; $\chi^2$/df = 10.38, $p < .001$; AIC = 216,877; BIC = 217,557. All the items loaded significantly onto the latent variables ($p < .001$). Factor loadings ranged from .705 to .937 at Time 1 and from .695 to .954 at Time 2 (see Table 3). When we compare these results with the fit of the model in which all the observed variables were treated as continuous (CFI = .937; TLI = .929; RMSEA = .054; $\chi^2$/df = 10.67, $p < .001$; AIC = 215,802; BIC = 216,598), we see that three of the six fit indices (CFI, TLI, RMSEA) are substantially improved by using categorical data. Despite two other fit indices (AIC, BIC) suggesting that the model with continuous variables was preferable, we treated all the variables as categorical because they were not normally distributed.

To check the robustness of our four-factor solution we compared it with a one-factor model, a two-factor model combining the items for the dimensions implementation of HR practices and leadership behaviour, and all possible three-factor models combining two dimensions (see also Armenakis, Bernerth, Pitts, & Walker, 2007). The fit indices for all these alternative models are worse than for our four-factor model. These results provide evidence for the validity of our four-factor model.

We conducted the same first-order CFA using the data from the line managers. The fit indices treating the line manager data as categorical were as follows: CFI = .934; TLI = .925; RMSEA = .051; $\chi^2$/df = 1.92, $p < .001$; AIC = 21,914; BIC = 22,417. All the items loaded significantly onto the latent variables ($p < .001$). Factor loadings ranged from .560 to .815 with the Time 1 data and from .569 to

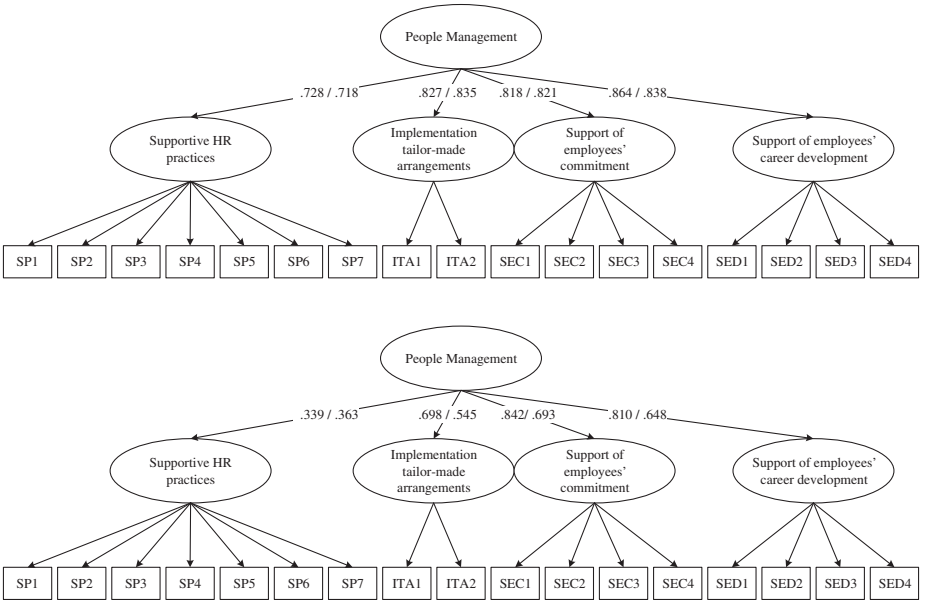


**Figure 3.** Factor structure: people management.
Notes: The upper figure is generated from the employee data, the lower one from the line manager data. The first factor loading is for Time 1, the second for Time 2.

.972 with the Time 2 data (see Table 3). This model again fitted the data better than when all the observed variables were treated as continuous (CFI = .848; TLI = .829; RMSEA = .056; $\chi^2$/df = 2.12, $p < .001$; AIC = 21,914; BIC = 22,417).

Next, because these four variables had been conceptualized as dimensions of the underlying people management construct, we conducted second-order CFAs. Using the employee data, the results of this analysis confirm the proposed structure (CFI = .945; TLI = .940; RMSEA = .078; $\chi^2$/df = 21.66, $p < .001$). The factor loadings of the four dimensions onto the second-order people management construct varied between .728 and .864 using the Time 1 data and between .718 and .838 using the Time 2 data. Figure 3 displays the final factor structure of the items that measure people management.

We also conducted a second-order CFA using the line manager data and the resulting model fit (CFI = .877; TLI = .887; RMSEA = .068; $\chi^2$/df = 2.63, $p < .001$) was slightly below the recommended criteria. However, the factor structure, specifying that the four variables tested in the first-order model are dimensions of the underlying people management construct, is confirmed by the second-order model test. The factor loadings of the four dimensions onto the second-order construct vary between .339 and .842 with the Time 1 data and between .363 and .693 with the Time 2 data. The factor loadings of supportive HR practices onto the second-order people management construct are .339 and .363 using the Time 1 and Time 2 datasets respectively. Given these low values, we decided to also test the second-order model without this dimension. The model fit then satisfied the usual criteria (CFI = .926; TLI = .919; RMSEA = .053; $\chi^2$/df = 1.99, $p < .001$).

Factor loadings onto the second-order construct are then .725 or higher with the Time 1 data and .574 or higher with the later data. Although a three-dimensional model better fitted the data than a four-dimensional model, we decided to retain all the dimensions in our second-order model (see Figure 3). The main reason for this is that we wanted to maintain the parallel factor structures for perceived and implemented people management and the fit indices were only slightly below the suggested criteria. In the discussion section, we will return to this issue.

Thus, overall, the results of the EFA and CFAs support the use of a four-dimensional people management scale made up of 17 items across our two different samples. The only slight reservation is that the supportive HR practices dimension did not load very highly onto the second-order people management construct when using the line manager sample.

### *Reliability*

Second, we assessed the reliability of the scales by examining the Cronbach's alphas. Here, we were guided by Nunally's (1978) suggestion that Cronbach's alpha should be at least .70 for acceptable reliability. The four people management subscales all showed sufficient reliability, using the employee data at both Time 1 and Time 2 (see Table 3).

We conducted similar analyses using the line manager data, and here the indicated reliabilities were more variable (see Table 3). Despite three of these Cronbach's alphas being below the cut-off point of .70 suggested by Nunally, we decided to include these scales in our study for three reasons. First, the factor loadings all had acceptable values (>.560). Second, Kline (1999, in Field, 2005) suggests that, when dealing with psychological constructs, values of Cronbach's alpha below .70 can realistically be expected because diverse constructs are being measured. Third, because there are only two items measuring the implementation of tailor-made arrangements, the obtained values are acceptable. For the support of employees' commitment subscale, we decided to maintain all four items because three of the four Cronbach's alphas were well above the suggested cut-off point.

To sum up, the results of our analyses show that the 17 items used to measure the multidimensional people management concept form a reliable measure.

### *Metric invariance*

Third, we carried out an analysis of the measurement invariance of our people management latent construct and its underlying dimensions. By establishing metric invariance, one can assure that any comparisons made based on the latent variable are valid over time. In practice this means that, if their scores remain unchanged over time, then individuals retain the same position on the latent construct (Schmitt & Kuljanin, 2008). In determining whether our people management scale is indeed metric invariant, we followed the procedure outlined by Van de Schoot, Lugtig, and Hox (2012). We compared two models: a model where factor loadings are allowed to differ over time (Model A) and a model where factor

loadings are constrained to be equal over time (Model B). In both models, all the other parameters are freely estimated. The calculated fit indices indicate that, using the employee data, Model B (CFI = .947; TLI = .944; RMSEA = .076; $\chi^2$/df = 20.20, $p < .001$; AIC = 216,891; BIC = 217,491) fits the data better than Model A (CFI = .945; TLI = .940; RMSEA = .078; $\chi^2$/df = 21.66, $p < .001$; AIC = 216,877; BIC = 217,557). This is an indication of metric invariance.

A similar finding was found using the line manager data with Model B (CFI = .879; TLI = .892; RMSEA = .066; $\chi^2$/df = 2.56, $p < .001$; AIC = 21,986; BIC = 22,066) better fitting the data than Model A (CFI = .877; TLI = .887; RMSEA = .068; $\chi^2$/df = 2.63, $p < .001$; AIC = 22,003; BIC = 22,432), further demonstrating metric invariance.

Thus, based on our comparison of two models, we conclude that our measure is metric invariant, indicating that comparisons made on the basis of the latent variable are valid over time.

### *Temporal stability*

Fourth, we assessed the temporal stability of our people management scale and its underlying dimensions. We examined stability by conducting a test–retest analysis calculating the correlation between the pre- (Time 1) and post-test (Time 2) scores (see Table 4).

Using the employee sample, all the people management dimensions and the second-order construct at Time 1 were significantly related to the same measures at Time 2. We conducted similar analyses using the line manager sample and obtained similar results.

Thus, our people management analysis showed evidence of temporal stability.

## *Phase 3: convergent validity of the scale*

In order to establish convergent validity, we examined the relationship between line managers' and employees' perceptions of people management. We performed a multilevel analysis to test our hypothesis that there is a positive relationship between implemented and perceived people management.

The first step in the multilevel analysis was to determine the intra-class correlations (ICCs). These values indicate how much of the variance is situated on the team level of analysis and can potentially be explained by team-level variables.

**Table 4.** Results test–retest analysis (correlations between Time 1 and Time 2 scores).

| | Employees | Line managers |
|---|---|---|
| Supportive HR practices | .630 | .478 |
| Implementation tailor-made arrangements | .495 | .636 |
| Support of employees' commitment | .479 | .719 |
| Support of employees' career development | .510 | .542 |
| Second-order people management | .681 | .934 |

Note: All correlations are significant ($p < .001$).

ICC values for supportive HR practices show that 15.1 (Time 1) and 17.1% (Time 2) of the variance in supportive HR practices is to be found on the team level of analysis. The remainder of the variance (84.9 and 82.9% respectively) is therefore situated on the individual level of analysis. Similarly, ICC values indicate that 14.1/16.1% of the variance in implementation of tailor-made arrangements is on the team level of analysis, as is 24.6/19.0% of the variance in support of employees' commitment, and 24.7/18.6% of the variance in support of employees' career development. For the second-order people management construct, the ICC values show that 15.9/39.3% of the variance is on the team level of analysis. According to Hox (2010, p. 249), ICC values of .150 or above indicate that a substantial proportion of the variance is on the team level. In our case, almost all the ICC values are above .150.

The next step in the multilevel analysis is to determine which of the people management activities implemented by line managers account for the team-level variance. For supportive HR practices, the regression coefficients are .291 ($p < .001$) and .297 ($p < .001$) at Time 1 and Time 2 respectively. This means that, at Time 1, 8.5% of the variance between teams can be explained by the people management activities undertaken by the line managers. That is, 8.5% of the variance that is situated at the team level of analysis (here 15.1%) is due to different implementations of people management activities. At Time 2, the equivalent figures are 8.8% of the 17.1% variance can be explained by line managers' scores on this dimension. Due to space limitations, the regression coefficients for the other people management dimensions can be found in Table 5.

The multilevel analysis provides support for the hypothesis that there is a positive relationship between the people management activities undertaken by line managers and employees' perceptions of these activities. As such, these findings provide evidence of convergent validity of our people management scale.

### *Phase 4: criterion-related validity of the scale*

In this final phase, we tested the criterion-related validity of our scale by examining the relationships between people management and both job satisfaction and commitment (see Table 6). In order to minimize concerns about common method bias in the data, we used the people management variables measured at Time 1, and the job satisfaction and commitment values recorded at Time 2.

**Table 5.** Results of multilevel analysis (effect of implemented people management on perceived people management).

| | Time 1 | Time 2 |
|---|---|---|
| Supportive HR practices | .291 ($p < .001$) | .297 ($p < .001$) |
| Implementation tailor-made arrangements | .309 ($p < .001$) | .250 ($p < .001$) |
| Support of employees' commitment | .456 ($p < .001$) | .321 ($p < .001$) |
| Support of employees' career development | .367 ($p < .001$) | .333 ($p < .001$) |
| Second-order people management | .222 ($p = .048$) | .370 ($p = .037$) |

Note: Standardized regression coefficients are displayed.

**Table 6.** Results correlation analyses.

| | Job satisfaction | Affective commitment |
|---|---|---|
| Supportive HR practices | .344 | .269 |
| Implementation tailor-made arrangements | .315 | .278 |
| Support of employees' commitment | .318 | .312 |
| Support of employees' career development | .317 | .267 |
| Second-order people management | .402 | .350 |

Note: All correlations are significant ($p < .001$).

The results show that people management and its underlying dimensions are significantly related to job satisfaction. These results provide support for the hypothesis that the extent to which employees perceive people management activities is positively related to their job satisfaction.

We then performed a similar analysis but this time including commitment. The results indicate that people management and its underlying dimensions were significantly related to commitment. Our results provide support for the hypothesis that the extent to which employees perceive people management activities has a positive relationship with their commitment.

To summarize, these analyses have shown that our people management scale is related to other established constructs to which it should theoretically relate (i.e. job satisfaction and commitment). The results from Phase 4 thus support the criterion-related validity of the people management scale.

## Study 2: research design

In order to test the generalizability of the results beyond the single organization that was studied in Study 1, we replicated Study 1 using different samples. In this section, we introduce the procedure followed in Study 2, and then present the research sample.

### *Steps in scale development and validation*

In Study 2 we followed the same procedure as described in the research design for Study 1 (see for details Study 1). The 17-item scale that resulted from Study 1 was our point of departure.

#### *Phase 1: psychometric properties of the scale*

*Phase 1* was to examine the dimensionality and reliability of the scale in order to test the psychometric properties of the scale. Since our Study 2 data are cross-sectional, we have not examined the metric invariance and temporal stability.

#### *Phase 2: convergent validity of the scale*

*Phase 2* was to test the convergent validity of our scale. We examined our scale and its relationship with often used operationalizations of leadership (i.e.

transformational and transactional leadership; Bass, 1985). On the one hand, we expect a significant relationship between people management and transformational and transactional leadership. This would provide evidence of the convergent validity of our scale. On the other hand, we expect that our people management scale explains additional variance above and beyond transformational and transactional leadership in predicting team performance. We measured transformational and transactional leadership using two four-item scales validated by Oterkiil and Ertesvåg (2014) in schools. We used this particular measure for three reasons: the fact that this scale was developed and validated to fit the school context, the length of the questionnaire (traditional measures such as the MLQ are quite extensive), and the fact that the instrument is freely available for researchers. Sample items are: 'I involve staff in debates concerning the school's goals and visions' (transformational leadership) and 'I make sure that each individual staff member is given clear instructions of what their responsibility is regarding their tasks' (transactional leadership). The values for Cronbach's alpha were .67 and .72 respectively. Team performance was measured by using the scale validated by Gould-Williams (2003). A sample item is: 'The quality of education provided by my team is excellent'. Cronbach's alpha for this measure was .87. All items were measured on a five-point Likert scale.

### *Phase 3: criterion-related validity of the scale*

*Phase 3* was the examination of the criterion-related validity of the scale by testing the hypothesis that the extent to which employees perceive people management activities being practiced is positively related to their (1) job satisfaction (see Study 1), and (2) work engagement. As discussed in Study 1, the premise that people management is positively related to employee-attitudes such as work engagement is founded in social exchange theory. Empirical studies show that perceived line manager behaviour and perceived HR practices are positively related to work engagement (Alfes, Truss, Soane, Rees, & Gatenby, 2013; Bal, Kooij, & De Jong, 2013). Therefore, the additional hypothesis that will be tested here is: the extent to which employees perceive people management activities being practiced is positively related to their work engagement. We measured work engagement using the short version of the Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006). A sample item is 'At my work I feel bursting with energy'. Cronbach's alpha was .90. Again, all items were measured on a five-point Likert scale.

## *Research sample*

The data used in Study 2 come from a study in Dutch secondary education schools. These are very relevant to use in collecting additional evidence on the validity of our Study 1 findings, because education and the financial sector are very dissimilar. Not only does the sector (private vs. public) differ, the demographics of

the population vary as well. This means that if Study 1 results are replicated, this provides evidence for the generalizability of our results.

The data for this article come from 1485 teachers, 590 support staff employees, and 137 supervisors (team leaders). These respondents are employed at 17 different schools. The data from teachers and support staff employees are used for accumulating evidence of the validity of the scale for perceived people management (from an employee perspective). The data from supervisors are used for the scale for implemented people management (from a line manager perspective). 50.9% of the teachers, 58.1% of the support staff employees, and 39.1% of the supervisors were female. The mean age for the different samples was as follows: 43.4 years (SD = 12.7 years) (teachers), 47.6 years (SD = 11.3 years) (educational support staff), and 49.1 years (SD = 9.1 years) (supervisors). This is fairly representative in terms of the demographics in the education sector as a whole.

## Study 2: results

In this section, we present the results of the successive steps in Study 2 in accumulating additional evidence on the validity of our people management scale.

### *Phase 1: psychometric properties of the scale*

The goal of the first phase was to test the dimensionality and reliability of our scale.

#### *Dimensionality*

To examine the dimensionality of the people management construct, we performed first-order CFAs, loading the 17 items on the four dimensions. We treated all observed variables as categorical data. The fit indices for the resulting models using the employee data are: CFI = .984; TLI = .981; RMSEA = .062; $\chi^2$/df = 6.73, $p < .001$ (teachers), and CFI = .986; TLI = .984; RMSEA = .073; $\chi^2$/df = 4.15, $p < .001$ (educational support staff). All items loaded significantly onto the latent variables ($p < .001$). Factor loadings ranged from .704 to .952 for teachers, and from .648 to .976 for educational support staff.

We conducted the same first-order CFA using data from supervisors. The model fit indices are as follows: CFI = 1.00; TLI = 1.00; RMSEA = .00; $\chi^2$/df = .83, $p = .731$. All the items loaded significantly onto the latent variables ($p < .001$). Factor loadings ranged from .671 to .902.

Next, we conducted second-order CFAs, loading the four dimensions on the overall people management construct. Using the employee data, the results of this analysis confirm the proposed structure: CFI = .980; TLI = .976; RMSEA = .069; $\chi^2$/df = 8.12, $p < .001$ (teachers), and CFI = .987; TLI = .985; RMSEA = .072; $\chi^2$/df = 4.05, $p < .001$ (educational support staff). The factor loadings of the four dimensions on the second-order construct varied between .594 and .927 with the teacher data, and between .691 and .931 with the educational support staff data.

We also conducted a second-order CFA using the supervisor data: CFI = 1.00; TLI = 1.00; RMSEA: .00; $\chi^2$/df = .918, $p$ = .622. The factor loadings of the four dimensions onto the second-order construct vary between .435 and .838. The factor loading of supportive HR practices onto the second-order people management construct is .435.

Thus, again the results of the CFAs support the use of a four-dimensional people management scale made up of 17 items across our three different samples. Our results corroborate our Study 1 findings. A slight reservation is that the supportive HR practices dimension did not load very highly onto the second-order construct. See Study 1 for an elaborate discussion of this issue. Another slight reservation is the value for $\chi^2$/df in our supervisor sample. This might have to do with the small sample size ($n$ = 137).

### *Reliability*

To assess the reliability of the scales, we examined the Cronbach's alphas. The four people management subscales all showed sufficient reliability, using the employee data from teachers and educational support staff respectively. With this data, the Cronbach's alphas were .91 and .91 for supportive HR practices, .86 and .90 for implementation of tailor-made arrangements, .92 and .95 for support of employees' commitment, and .88 and .91 for support of employees' career development. The reliability estimates for the overall people management scale were .85 and .86.

We conducted similar analyses using the supervisor data. The Cronbach's alphas were .62 for the implementation of tailor-made arrangements, .81 for support of employees' commitment, and .83 for support of employees' career development. The reliability for the overall people management scale was .75.

Overall, these results show that the items used to measure the multidimensional people management construct form a reliable scale. Only one of the Cronbach's alphas (implementation of tailor-made arrangements measured using supervisor data) had a value slightly below the suggested cut-off point of .70. This is in line with Study 1 results. See Study 1 for an elaborate discussion of this issue.

## *Phase 2: convergent validity of the scale*

In order to establish the convergent validity of our scale, we examined the relationship between people management and transformational and transactional leadership. Using the supervisor data, we found a significant relationship between people management and transformational leadership ($r$ = .706, $p$ < .001) and between people management and transactional leadership ($r$ = .325, $p$ < .001).

Next, we performed regression analyses with people management, transformational, and transactional leadership as independent variables, and team performance as the dependent variable. First, we conducted three separate regression analyses each including one of the independent variables. The results show that people management has a positive impact on team performance ($\beta$ = .424,

$p < .001$). The same holds for transformational ($\beta = .419$, $p < .001$) and transactional ($\beta = .493$, $p < .001$) leadership when these variables are included as the only independent variable. Thus, the impact of people management on team performance is about the same strength as the independent impact of both transformational and transactional leadership. Second, we performed a regression analysis including all three independent variables at the same time. The results show that people management significantly relates to team performance ($\beta = .603$, $p = .017$), when transformational ($\beta = -.495$, $p = .210$) and transactional ($\beta = .467$, $p = .024$) leadership are also included in the model. The level of explained variance is 28.5%. The results show that people management is a stronger predictor of team performance than transformational leadership, since this variable is no longer significant when people management is added to the model.

As a robustness check we compared this model with the model including only transformational and transactional leadership as independent variables. Based on the fit indices we can conclude that the model including people management as an additional independent variable fits the data better (CFI = .965; TLI = .959; RMSEA = .050; $\chi^2/df = 1.41$, $p < .001$; AIC = 5242,211; BIC = 5462,499) compared to the model including only transformational and transformational leadership (CFI = .961; TLI = .955; RMSEA = .053; $\chi^2/df = 1.37$, $p < .001$; AIC = 5249,566; BIC = 5466,868).

We also performed a dominance analysis (Azen & Budescu, 2003) to compare the relative importance of people management, transformational, and transactional leadership. Because we want to determine the added value of our independent variables when one or two of the other predictors are also included in our model, we performed a constrained dominance analysis (Azen & Budescu, 2003, pp. 138–139) evaluating the $k = 1$ and $k = 2$ subsets. Based on pairwise comparisons, the results of this dominance analysis suggest that people management dominates both transformational and transactional leadership in both subsets. The evaluation of the $k = 2$ subset is particularly relevant, as this provides the most conservative test comparing the additional contribution of either people management, transformational, or transactional leadership when the other two predictors are also included in the model. The results show that the additional contribution of people management to the $k = 2$ model is .123, compared to .109 for transformational, and .117 for transactional leadership.

**Table 7.** Results correlation analyses.

| | Job satisfaction | | Work engagement | |
|---|---|---|---|---|
| | Teachers | Support staff | Teachers | Support staff |
| Supportive HR practices | .369 | .501 | .270 | .469 |
| Implementation tailor-made arrangements | .329 | .494 | .237 | .436 |
| Support of employees' commitment | .328 | .485 | .270 | .444 |
| Support of employees' career development | .304 | .460 | .222 | .442 |
| Second-order people management | .225 | .601 | .433 | .555 |

Note: All correlations are significant ($p < .001$).

These results provide evidence of the convergent validity of our multidimensional people management scale, and show that our measure adds explained variance above and beyond alternative scales when predicting important outcome variables.

### *Phase 3: criterion-related validity of the scale*

To test the criterion-related validity of our scale, we examined the relationships between people management and both job satisfaction and work engagement (see Table 7). The results show that people management and its underlying dimensions are significantly related to job satisfaction, using the employee data from teachers and educational support staff respectively. These results provide support for the hypothesis that the extent to which employees perceive people management activities is positively related to their job satisfaction. As such, this corroborates our Study 1 finding.

We then performed a similar analysis but this time including work engagement. The results indicate that people management and its underlying dimensions were significantly related to work engagement, using the employee data from teachers and educational support staff respectively. Our findings provide support for our hypothesis that the extent to which employees perceive people management activities has a positive relationship with their work engagement.

These analyses show that our people management scale is related to other established constructs to which it should theoretically relate (i.e. job satisfaction and work engagement). These results provide support for our hypotheses. These findings corroborate Study 1 findings and again provide support for the criterion-related validity of our scale.

## Conclusions and discussion

### *Conclusions*

The purpose of our study has been to address three measurement issues in research of HRM, by providing a clear definition of people management, building on the work of Purcell and Hutchinson (2007), and creating a reliable and valid scale to measure this concept. People management is defined as line managers' implementation of HR practices and their leadership behaviour oriented at supporting the employees they supervise at work. There is a symbiotic relationship between the twin aspects of implementation of HR practices and leadership behaviour. Following Boselie et al.'s (2005) argument about the most sophisticated measure, the concept of people management focuses on employees' and line managers' perceptions of the degree of support employees receive at work through line managers' activities. The developed scale can be used by researchers in the field, as well as by practitioners such as HR managers.

First, we conducted a literature review to clarify the definition of people management. Next, we generated 18 items to measure people management and its four underlying dimensions in co-production with practitioners. We also discussed these items with several academic experts and HR professionals who agreed on their appropriateness. Following this, we collected empirical evidence on the validity of our scale using a Study 1/Study 2 design with data from 5443 employees and 491 line managers in total, employed in two different sectors (financial services and secondary education). We empirically tested the psychometric properties and the convergent and criterion-related validities of our scale. The results indicated that people management was accurately reflected in a four-dimensional construct consisting of 17 items that further demonstrated strong internal consistency. Moreover, our measure was shown to be metric invariant as well as stable over time, indicating that comparisons of the latent variable are valid over time. We provided evidence of the convergent validity by showing that employees' and line managers' perceptions of people management are significantly related, and that people management is significantly related to transformational and transactional leadership. Also, we demonstrated that people management explains variance above and beyond transformational and transactional leadership in predicting team performance. Further, we demonstrated the criterion-related validity of our scale by presenting evidence that people management is significantly related to job satisfaction, affective commitment, and work engagement.

## *Discussion*

Two results from the empirical tests of our people management scale are worthy of further comment. First, the only item that was formulated negatively (item ITA3) showed insufficient internal consistency and consequently was removed from the measurement model. It is possible that respondents did not pay adequate attention to the wording of the item even though we emphasized the negative format using italics (Morren et al., 2010). Although we added this negatively formulated item to avoid response patterns, this might have created some confusion in our respondents. Second, one of the people management dimensions (i.e. supportive HR practices) loaded well onto the second-order people management construct when using employee data, whereas the model fit was just below the suggested level using the line manager data. Despite this result, we decided to retain all the dimensions in our second-order model in order to maintain the parallel factor structure for perceived and implemented people management. The relatively low factor loadings for supportive HR practices in the case of line managers may be because, compared to the other dimensions, line managers experience less agency regarding this element of people management. That is, the other components might, at least from their own perspective, be dependent on their own discretionary actions whereas, with supportive HR practices, their role is to implement 'standardized' practices. It is possible that, as a result, line managers rate this

dimension of people management less positively. For theoretical and empirical reasons, the agency that line managers experience in the implementation of supportive HR practices is a relevant issue to address in future research. Theoretically, it is assumed that line managers have at least some degrees of freedom in the implementation of HR practices, depending on the degree of formalization of an organization's HR policies (Purcell & Hutchinson, 2007). The empirical results presented suggest that this is the case, as employees do perceive the level of support from HR practices, along with the other dimensions of people management, as resulting from their line manager's activities. This is substantiated by the fact that the multilevel analyses (Study 1, Phase 3) showed that a substantial proportion of the variance in supportive HR practices is found on the team level of analysis. This implies that line managers' implementation matters for the perceptions that employees who share the same supervisor have of supportive HR practices.

### *Theoretical contributions*

Our study contributes to existing theory and research in several ways. First, in providing a scale to measure implemented and perceived people management, we avoid that research can but rely on HR professionals as respondents in rating HRM. We demonstrated that it is possible to validly measure both implemented and perceived people management by asking similar questions to line managers and employees respectively. The factor structures for both groups are very similar, with the wording used in the questionnaire items needing only to be slightly different to reflect both employees' and line managers' perspectives.

Second, in our definition and operationalization of people management we capture the crucial role that line managers play in HR implementation (Guest & Bos-Nehles, 2013). Purcell et al. (2003) noted that the role line managers play in the enactment process had received little attention. By showing that the implementation of both general HR practices and of tailor-made arrangements is an essential element of people management, we bring line manager implementation into the limelight, and provide researchers with a valid scale to measure HR implementation. The results from Study 1 indicate that even though all line managers in our sample were employed by the same organization (and therefore implementing the same practices), there is considerable variation on the team level of analysis. This implies that implementation matters and that, both in theory and in practice, it is important to focus not only on the content of HR practices but also to consider the role of supervisors in the implementation.

Third, by including line managers' leadership behaviour as a second element in our definition and operationalization of people management, we have integrated insights from the HRM and the leadership literature streams. Previously, these two bodies of knowledge have been regarded as rather separate disciplines (Wright & Boswell, 2002), and this has meant that the scope of the people management concept has not been fully explicit. By integrating insights from HRM and leadership

literature, we recognize that people management has both functional and relational sides. However, we recognize that the leadership literature has more to offer than we have made use of. The taxonomy of leadership behaviours (Yukl, 2012) elaborates on task- and change-oriented behaviours, elements of which could fit the people management concept, provided that they are related to the line manager's HRM role and oriented on support for the individual employee at work. For instance, if task-related leadership behaviours are not conceptualized as having the primary objective of efficient production (cost reduction) but the objective of serving professional performance, their operationalization would add to the current people management measure and increase its relevance for predicting employee outcomes and performance (Rowold, Borgmann, & Bormann, 2014). We encourage further research on the integration of the HRM and leadership bodies of literature.

### *Limitations*

We recognize that our study has limitations. First, although the use of two-wave data in Study 1 has allowed us to assess the temporal stability of our people management scale (an important advantage over using cross-sectional data), the time lag between the two surveys was only 17 months. It would be interesting to study the robustness of our scale by collecting data at a third point in time. Second, although our test results do overall provide robust evidence of the reliability and validity of our people management scale, some of the test results just fail to meet the suggested criteria. Third, the line managers are surveyed about the people management support they provide to employees (plural), whereas employees have answered questions about the support they receive from their own supervisor (singular). This introduces a potential bias in that line managers may only consider one or two employees when answering the questions, and quite likely preferred workers to whom they offer the most people management support. In future research, it could be useful to ask line managers to complete the questionnaire several times, each time with a different employee in mind.

### *Managerial implications*

This study not only contributes to research and theory, but also has important implications for practice. Our people management scale can become a valuable diagnostic tool in an organizational context. The measure can help in gaining insights into the way employees and line managers experience people management and how this affects several relevant outcomes. The scale provides practitioners with an analytical tool with which to determine important drivers of employee wellbeing and performance, and to identify, through benchmarking, organizational units that require specific attention. Moreover, HR professionals could administer this scale to facilitate team-level discussions on the people

management support provided by line managers and the support perceived by employees, and on any potential differences in their perceptions.

To conclude, our study has generated a reliable and valid multidimensional people management scale. This scale contributes significantly to both research and practice: it measures employees' and line managers' perceptions of people management, a concept that includes both the implementation of HR practices and line managers' leadership behaviour. We hope that this people management scale will contribute to and encourage further growth in the knowledge of implemented and perceived people management, their antecedents, and their effects.

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## Disclosure statement

No potential conflict of interest was reported by the authors.

## ORCID

*Rens van de Schoot* http://orcid.org/0000-0001-7736-2091

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