
Talent Management and Labor Productivity: The Moderating Role of Organizational Goal-Setting

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SUMMARY

Despite growing interest in talent management, the extant research leaves insufficiently answered whether and under what boundary conditions talent management contributes to organizational success. The present study examines the relationship between talent management and labor productivity and how organizational goal-setting with respect to the specificity, difficulty, and temporal proximity of goals moderates this relationship. We empirically validate our theory through a multilevel analysis based on cross-industry panel data on 1,997 manufacturers nested in 115 3-digit Standard Industrial Classification (SIC) industries. The findings indicate that talent management is positively associated with labor productivity. Moreover, firms which improved talent management in a given year of observation relative to their average level across the observation period experienced an increase in labor productivity when they also improved their goal-setting practices. In contrast, firms that did not improve their organizational goal-setting practices relative to their average level across the observation period did not experience an increase in labor productivity through talent management. Our study contributes to the nascent literature on the relationship between talent management and organizational performance and on this relationship's boundary conditions.

KEYWORDS

talent management; labor productivity; goal-setting

1 | INTRODUCTION

Talented employees¹ have inherently scarce cognitive abilities, social competence, personality traits, and growth- and learning competencies that contribute to exceptional current and future individual performance (Finkelstein et al., 2018). To fully realize such talented employees' potential, organizations have to establish appropriate talent management (TM) practices that leverage these employees' ability, motivation, and opportunity to perform at high levels (Appelbaum, Bailey, Berg, Kalleberg, & Bailey, 2000). In this regard, the key distinctive feature of TM, as opposed to high-performance work systems (HPWS) (Posthuma, Campion, Masimova, & Campion, 2013), is the scope of targeted employees (Adamsen & Swailes, 2019). While HPWS seek to enhance each employee's ability, motivation, and opportunity to perform, TM focuses on an exclusive subset of high-performing, high-potential employees (i.e., talent) (cf. Swailes, 2013). Despite growing interest in TM (McDonnell, Collings, Mellahi, & Schuler, 2017), the central question concerning whether and under what boundary conditions TM enhances organizational performance remains insufficiently answered.

Two main deficits limit the extant literature's ability to answer the aforementioned research question. First, there is an ongoing debate regarding TM's performance implications. One stream of research argues that TM increases talented employees' motivation and development of valuable knowledge, skills, and abilities, while it decreases turnover, all of which should improve organizational performance (De Boeck et al., 2018). Another stream of exploratory qualitative studies reveals unintended negative implications like talented employees' increased levels of stress (Dries & Pepermans, 2008; Tansley & Tietze, 2013), which may decrease overall organizational performance (Marescaux, De Winne, & Sels, 2013; Pfeffer, 2001). Consequently, researchers raise doubts that TM is universally effective in

¹ The literature uses different terms for 'talented' employees like 'high potentials' (e.g., Finkelstein, Costanza, & Goodwin, 2018) or 'top performers' (e.g., Son, Park, Bae, & Ok, in press). For the sake of consistency, we refer to 'talent' and 'talented employees' in this paper.

enhancing organizational performance (Collings, 2015; Gallardo-Gallardo & Thunnissen, 2016). Second, extant research does not probe deeply into the boundary conditions under which the relationship between TM and organizational performance varies (for an exception, see Son et al., in press). To fill this void, Collings, Mellahi, and Cascio (2019) call for studies examining the moderating role of organizational factors and, more specifically, complementary assets such as management practices that organize and structure work in the organization in such a way as to facilitate the creation of collective outcomes from individual behaviors (Son et al., in press; Thunnissen, Boselie, & Fruytier, 2013). Despite the assumption that organizational factors can change TM's performance effect, the extant literature has not yet examined these complexities.

Our research aim is twofold: First, we theoretically examine and empirically validate the relationship between TM and labor productivity (i.e., the efficiency with which a firm deploys human capital resources to produce output; Y. Kim & Ployhart, 2014). We argue that firms which are able to attract, develop, and retain talent improve performance because they leverage the productivity of their most valuable and unique human capital resources and protect these resources from imitation by competitors. Second, we study the moderating role of organizational goal-setting practices in the relationship between TM and labor productivity. In line with goal-setting theory (Locke & Latham, 2002), we argue that goals are effective in improving TM's performance implications when they are *specific* (i.e., clear and comparable), *difficult* (i.e., challenging, based on a solid rationale), and *temporally proximal* (i.e., have a short-term focus) as such goal-setting improves the alignment of individual with organizational goals and so strengthens the positive relationship between TM and labor productivity. We test our hypotheses using panel data from the World Management Survey (WMS), covering firms of diverse sizes, in diverse industries, in multiple countries, and at various points in time (Bloom, Genakos, Sadun, & Van Reenen, 2012).

We offer two contributions to the literature. First, based on a sample of repeatedly observed firms that cover the spectrum of manufacturing industries and several countries, we provide large-scale evidence on TM's performance implications. We thereby extend the still limited quantitative evidence in this field (Collings et al., 2019; McDonnell et al., 2017). In this regard, our findings also have implications for CEOs who see a shortage of talent as a barrier to organizational growth (PwC, 2014) but struggle to realize a return on their investment in talent (Martin & Schmidt, 2010). Second, we contribute to the ongoing debate regarding the performance implications of TM by identifying important boundary conditions under which the relationship varies. More specifically, we show how TM's positive influence on labor productivity becomes stronger (or vanishes) when moderated by goal-setting practices. Thus, our research is in line with De Boeck et al. (2018) who point out that research on boundary conditions of TM at the organizational level of analysis is urgently needed as we take into account the organizational context in which individual performance unfolds. Our study also contributes to the limited literature on macro (i.e., organizational) goal-setting and organizational outcomes (Young & Smith, 2013).

2 | THEORY AND HYPOTHESES

2.1 | Talent management and labor productivity

TM encompasses attracting, developing, and retaining talent (Silzer & Dowell, 2010). Following the logic that “substantial improvements in average workers may provide little value to the organization as a whole, whereas very small changes in the performance of an elite worker may determine whether a firm survives or dies” (Aguinis & O’Boyle Jr., 2014: 337f.), TM requires specific investments in talented employees who are expected to deliver the greatest return on investment in terms of contributing to competitive advantage (Cappelli & Keller, 2014). Thus, TM is limited to certain employee groups (e.g., professionals and managers) and is highly selective (i.e. the share of employees included in talent pools ranges

from less than 1 to 10 percent of the total workforce; (Dries & De Gieter, 2014)). In this regard, TM differs from the paradigm of ‘one HRM system fits all’ which traces back to the long-held assumption that individual performance is normally distributed and overall productivity can be maximized by improving workers’ output to the same degree using the same practices (Aguinis & O’Boyle Jr., 2014).

The literature stresses that organizations should follow a talent pool strategy (Collings, 2017), which requires policies and practices that serve three objectives: increasing the applicant pool’s quantity and quality to ensure a sufficient talent supply from which firms identify candidates for their talent pool, developing talented employees’ abilities to qualify them for successively broader responsibilities with a more proximal impact on organization-level (rather than individual or unit-level) outcomes, and ensuring talent’s continued commitment and motivation to prevent turnover and the attendant loss of valuable human capital resources. These three objectives aim at increasing the current and future output of talent and securing a sufficient quantity and quality of talent. Because talent is rare, valuable, difficult to imitate, and hard to substitute, organizations that can attract, develop, and retain talent should outperform those that cannot (Ployhart, 2006). Next, we explain how organizations can improve labor productivity through the attraction, development, and retention of talent.

Considering that talent is rare (Wright, McMahan, & McWilliams, 1994), an organization’s ability to attract large numbers of applicants allows for more selective hiring and more selective talent identification so as to generate a superior talent pool, and with it a competitive advantage over other employers. Specifically, organizations that offer a distinctive employee ‘value proposition’ in terms of establishing what the organization is and what it expects from and offers to employees (Lawler III, 2005) improve labor productivity through higher talent levels (i.e., talent pool quantity and quality). A distinctive employee value proposition also facilitates talented candidates’ ex ante-assessment of person-organization fit,

increasing organizational attraction and job acceptance rates (Kristof-Brown, Zimmerman, & Johnson, 2005). Enhanced person-organization fit perceptions also foster employees' belief in complementarities between their abilities and the employer's characteristics such as values and structure, thereby enhancing job-embeddedness and reducing the incentive to change employers (Delery & Roumpi, 2017).

Building strong talent pools also requires providing developmental work experiences and regular feedback through coaching and mentoring, which increase talented employees' motivation and ability to behave in ways consistent with the organization's goals, thereby improving labor productivity. Because high talent levels might be imitable over time, talent development also renders sustainable an initial advantage of superior endowment with talent considering that talent development is firm-specific and, hence, increases the social complexity (i.e., the relevance of tacit knowledge to performance) and the causal ambiguity (i.e., the uncertainty about performance-related factors) of talented employees' human capital so as to prevent imitation (cf. Coff, 1997). Building talent pools also reduces human capital costs since organizations can exploit information asymmetries on talented employees' actual potential to save on compensation costs and ensure a better fit compared to external hires (Bidwell, 2011). Incentives for increasing the talent pool's strength ensure that senior managers put effort into TM activities and communicate throughout the organization that (managing) talent is a top priority. Communicating talent as a top priority contributes to a common perception within the management ranks what behaviors are expected and rewarded, thereby promoting (the quality of) practice implementation (Arthur, Herdman, & Yang, 2016) and the effectiveness of talent development in enhancing labor productivity.

Organizations that are attentive and responsive to talented employees' turnover intentions (e.g., in terms of i-deals; Rousseau, Ho, & Greenberg, 2006) avoid the detrimental effects on labor productivity that come with the loss of valuable firm-specific human capital

(Kwon & Rupp, 2013) and the costs incurred by replacement through external hires who are likely to be poorer fits (Bidwell, 2011). Given that both organizational decision-makers and employees tend to underestimate the portability of human capital between organizations (Groysberg, Lee, & Nanda, 2008), many organizations underinvest in retaining talent. Such underinvestment leads to a mismatch between the reality and talented employees' expectations (e.g., with respect to the provision of clear career perspectives; Dries & De Gieter, 2014; Dries & Pepermans, 2008), decreases motivation, and increases these employees' turnover (Trevor, Gerhart, & Boudreau, 1997). Thus, organizations that are effective in preventing turnover among their most capable and productive employees, thereby safeguarding their investment in the attraction and development of talent, should outperform organizations that are less responsive to talented employees' needs.

In summary, TM enhances labor productivity by increasing the quantity and quality of the organization's talent pool, further developing their abilities so as to enhance their output, and retaining talent to safeguard their contributions to labor productivity. In sum, we hypothesize:

Hypothesis 1. *TM is positively associated with labor productivity.*

2.2 | The moderating role of organizational goal-setting practices

Organizational goals are precise, measurable future states that specify what must be done to attain a firm's mission or vision (Hill, Jones, & Schilling, 2015). However, to reach their goals, firms must be capable of coordinating their resources efficiently (Barney, 1991), including exploiting the valuable and rare human capital that is inherent in talented employees. Therefore, we expect those firms to achieve higher levels of labor productivity that align their targeted investment of resources in talent with effective goal-setting practices than do firms that invest in talent but use less effective goal-setting practices.

According to goal-setting theory (e.g., Latham & Locke, 2007; Locke & Latham, 2002), goal characteristics relate to individuals' performance based on the premise that goals regulate the direction, intensity, and duration of individuals' actions (Locke, 1991). Goal-setting theory is inductively derived from research in laboratory, simulated, and organizational settings involving mainly individuals as the level of analysis, but also groups, organizational units, and organizations (Locke & Latham, 2002). Yet, a review by Young and Smith (2013) shows that only a few studies focus on organizational goal-setting. In line with the extant goal-setting research that suggests that the basic principles of goal-setting theory apply to multiple levels of analysis (Locke & Latham, 2017), we follow Schneider (2018) in transferring goal characteristics as individual-level constructs to the organizational level of analysis to examine the moderating role of organizational goal-setting practices on the relationship between TM and organizational performance. According to Berson, Halevy, Shamir, and Erez (2015), effective goal-setting requires formulating specific (i.e., clear and comparable), difficult (i.e., challenging, based on a solid rationale), and temporally proximal goals. Consistent with this literature, we examine the moderating effect of goal specificity, difficulty, and proximity on the relationship between TM and labor productivity.

Goal specificity refers to clearly defining and communicating performance goals, which direct attention and effort toward goal-related activities at the expense of other activities (Locke & Latham, 2006). In contrast, vague and abstract goals, such as to 'do one's best', which are often encountered in organizational settings, are open to idiosyncratic interpretation, resulting in a wide range of performance levels that employees deem appropriate (Locke & Latham, 2002). On the organizational level of analysis, goal specificity refers to the promotion of goal clarity by clearly defining and communicating individual performance goals. We argue that goal specificity enhances the positive effect of TM on labor productivity because it improves the alignment of managers' efforts to attract, develop, and retain talent with the organization's

goals. Goal specificity also improves the alignment of talented employees' activities with organizational goals by making clear how these employees are expected to contribute to achieving organizational goals, resulting in higher labor productivity.

Specific goals convey clear information to senior managers about the human capital resources the organization needs to reach its goals, so these specific goals improve decision-making regarding the attraction and selection of the 'right' talent for goal achievement, which increases labor productivity. Since specific goals direct attention and effort to goal-related activities (Locke & Latham, 2006), these specific goals increase senior managers' effort and persistence in attracting talent, thus increasing the quantity and quality of the firm's talent pool and generating higher levels of labor productivity.

Specific goals also reinforce senior managers' accountability for developing the talent pool. At a deeper level, specific goals provide direction to senior managers in coaching and mentoring talent since such goals make it easier to provide talent with accurate and reliable feedback on the progress made toward attaining their performance goals. Thus, talented employees find out earlier when they are below target so they can increase their effort (Matsui, Okada, & Inoshita, 1983) or devise new strategies to catch up (Locke & Latham, 2002). Hence, goal specificity reduces uncertainty about performance expectations and about the competencies needed to achieve these goals, enhancing talented employees' meta-cognition—that is, the planning, monitoring, and evaluation of the progress they have made toward goal attainment (Locke & Latham, 2006)—and increasing their output. In this way, goal specificity enhances talent development's positive effect on labor productivity.

Goal specificity also enhances the effect of talent retention on labor productivity because specific performance goals reconcile potentially ambiguous expectations and hence reduce role ambiguity (Jackson & Schuler, 1985) from talented employees' perspective, thereby increasing their motivation and commitment to the firm and preventing the loss of

valuable human capital. Qualitative research on the ‘dark side’ of talent status indicates that talent is expected to conform to corporate culture and existing power structures while also challenging the status quo and demonstrating their uniqueness (Daubner-Siva, Ybema, Vinkenburg, & Beech, 2018; Dubouloy, 2004). Therefore, organizations that promote goal clarity by providing talent with specific goals reduce role ambiguity, thereby increasing talented employees’ commitment (Jackson & Schuler, 1985). Because of talented employees’ increased organizational commitment, organizations that provide these employees with specific goals will find it easier to persuade them to stay when competitors try to poach them. In sum, we hypothesize:

Hypothesis 2a. *The relationship between TM and labor productivity is moderated by goal specificity such that the positive association is stronger when organizations ensure that performance goals are clearly defined and communicated.*

Goal difficulty refers to the energizing function of goals. Goals serve as benchmarks with which individuals compare their performance. Therefore, goals that are difficult to achieve require a higher level of performance than easy goals do to experience positive affect, thus increasing individuals’ effort and persistence in the pursuit of their goals (Latham & Locke, 2007). At the organizational level of analysis, goals that are reasonably difficult to achieve and are based on a solid rationale that is clear to employees convey that these goals are attainable and important, thereby stimulating employees’ commitment, effort, and persistence toward achieving them (Latham & Locke, 1991). We argue that, defined this way, goal difficulty enhances the positive effect of TM on labor productivity because it increases managers’ and talented employees’ effort and commitment toward achieving organizational goals, thereby increasing labor productivity.

From the perspective of senior managers, a large supply of talent is instrumental in realizing challenging organizational goals and increasing labor productivity, so difficult yet attainable goals incentivize senior managers to invest in attracting talent. Challenging goals

also force managers to focus on identifying and matching talent to roles in which these employees can best use their human capital to contribute to achieving organizational goals and, thus, increasing labor productivity. Likewise, firms in competitive product markets, which necessitate setting difficult organizational goals, tend to be better managed than are firms in less competitive markets because competitive markets force firms to use their (human capital) resources well (Bloom & Van Reenen, 2010). Goal difficulty also enhances the positive effect of TM on labor productivity because challenging goals are instrumental in developing the skills and demonstrating the competencies that are required to be put on the ‘fast track’ to advancement (Mento, Locke, & Klein, 1992). Thus, difficult organizational goals increase talented employees’ motivation to contribute to achieving these goals, thereby increasing labor productivity. Similarly, firms that set difficult yet attainable organizational goals serve talented employees’ preference for challenging work environments (Trank, Rynes, & Bretz Jr., 2002), thus facilitating senior managers’ efforts to prevent turnover and to safeguard talented employees’ contributions to labor productivity. Firms that set challenging organizational goals also benefit from senior managers’ paying attention to talented employees’ needs to ensure their retention, since the loss of such human capital has an immediate detrimental impact on the chances of attaining goals when goals are difficult to attain. Hypothesis 2b summarizes our arguments.

Hypothesis 2b. *The association between TM and labor productivity is moderated by goal difficulty such that the positive association is stronger when organizations set challenging organizational goals.*

Goal proximity refers to a goal’s time horizon. Goal proximity has been introduced into the study of goal-setting as a way to expand the boundaries of goal-setting theory to complex and dynamic tasks that involve learning, which depletes the same cognitive resources as the pursuit of performance goals (Sun & Frese, 2013). To lower individuals’ cognitive load in complex and dynamic situations, Latham and Seijts (1999) suggest setting proximal goals to

ease error management. Setting proximal goals in addition to distal goals increases the immediacy and urgency of distal goals, which facilitates goal attainment by increasing motivation, promoting self-efficacy, and increasing the difficulty level of self-set goals (Sun & Frese, 2013). However, the empirical reality in organizations is that intermediate goals that are based on performance measures like sales growth and customer satisfaction are weakly (and sometimes even negatively) correlated (Meyer, 2002). Moreover, today's highly volatile and uncertain business environments put organizations at risk of their temporally distal goals becoming obsolete before they are met. In contrast, a focus on proximal organizational goals provides more reliable information with less 'noise' on the steps to take to achieve the goals, promotes motivation and goal commitment, and facilitates a shared understanding of the organizational strategy (i.e., strategic consensus; Kellermanns, Walter, Lechner, & Floyd, 2005).

Accordingly, we argue that focusing on temporally proximal goals enhances the positive effect of TM on labor productivity by conveying reliable information about the talent needed to achieve the organization's goals. Because of today's volatile business environments, demand for talent may change rapidly (Cappelli & Keller, 2014) such that temporally distal organizational goals do not convey reliable information about the demand for talent. In contrast, when provided with temporally proximal (i.e., short-term) organizational goals, senior managers are better able to assess talent demand and adjust their search for talent to secure a sufficient supply of the 'right' talent, thereby increasing labor productivity. In addition, a focus on proximal goals addresses the coordination problem imposed by the simultaneous pursuit of multiple performance goals with varying time horizons (Ethiraj & Levinthal, 2009) by equipping managers with unambiguous information about the matching of talent with tasks and responsibilities. In sum, we hypothesize:

Hypothesis 2c. *The association between TM and labor productivity is moderated by goal proximity such that the positive association is stronger when organizations focus on temporally proximal organizational goals.*

3 | METHOD

3.1 | Sample

We tested our hypotheses on international cross-industry panel data drawn from the WMS, an ongoing project that started in 2002 to collect information on the use of management practices to explain differences in productivity among firms, industries, and countries (Bloom et al., 2012). This study builds on data originally used for analyses reported in Bloom et al. (2012).

Our final sample consists of 4,567 organization-year observations for 1,997 organizations that participated in the survey between 2006 and 2010. Complete information (responses made in each of the survey's five years) is available for 28 percent of these organizations, while other organizations participated four times (9%), three times (8%), twice (5%) or once (50%). The average number of observations per organization is 2.29. Organizations in the sample are clustered in 115 three-digit U.S. Standard Industrial Classification (SIC, 1987 version) manufacturing industries (SIC codes 201-399), with sample sizes at the industry level ranging from 1 to 92 organizations for an average of 17.37 organizations. The organizations in the sample employ between 50 and 5,000 employees averaged across observations and are located in China, France, Germany, Greece, Italy, Japan, Poland, Portugal, Sweden, and the United Kingdom.

3.2 | Data collection

The management data were collected from randomly drawn national samples of firms via semi-structured telephone interviews with plant managers (in manufacturing industries) conducted by native-speaking MBA and Ph.D. students in the respondents' native language (Bloom et al., 2012). A double-blind technique was applied to avoid bias on the part of the

respondents and the interviewers. To prevent the interviews from appearing to be assessments, respondents were not told that their companies would be scored, and the interviewers were usually unaware of the financial performance of the organizations they surveyed, as the organizations were typically too small to be covered in the press and interviewers had only received the firm's name, industry, and contact details. The interview guidelines provided interviewers with a description of what the survey items sought to capture, open-ended questions to guide the interview, and a scoring grid that anchored scores at 1 ('worst practice'), 3, and 5 ('best practice') in terms of the firms' behaviors (Bloom, Sadun, & Van Reenen, 2010). The interviews were semi-structured in that interviewers continued asking open-ended questions until they could make an accurate assessment of the respective practice (Bloom et al., 2012). To ensure the ratings' reliability, all interviewers received the same initial training, were overseen by a group manager who provided individual feedback after each interview, participated in weekly survey-calibration meetings, and were each required to conduct ten interviews in at least two countries. In nearly three-quarters of the interviews a second person listened silently to the interview to provide an independent second rating, which yielded an interrater-reliability of .89. A response rate of approximately 50% was achieved. Financial and employment data were obtained from independent sources.

3.3 | Measures

3.3.1 | Labor productivity

We estimated labor productivity via an augmented Cobb-Douglas production function with the logarithm of sales per employee (in thousands of U.S. dollars) on the left-hand side of the equation and *inter alia* logarithmized labor and capital input on the right-hand side (cf. Birdi et al., 2008; Bloom et al., 2012). Labor productivity is closely linked to HRM practices and the human capital resources those practices create (Crook, Todd, Combs, Woehr, & Ketchen Jr., 2011). Labor productivity is affected by external factors to only a minor extent, while still being

closely related to profit growth, so most HR managers emphasize this measure of performance (Y. Kim & Ployhart, 2014). For the same reasons, the strategic HRM literature commonly uses labor productivity as a measure of firm performance (e.g., Datta, Guthrie, & Wright, 2005; Shin & Konrad, 2017).

3.3.2 | Talent management

The Appendix provides a detailed overview of the survey items we used to measure the firms' TM practices. We combined three variables (Bloom et al., 2010: variables 13, 17, and 18) as indicators of TM using an additive index, which is the common approach to operationalizing bundles of HR practices (cf. Chadwick, Way, Kerr, & Thacker, 2013). The survey items that capture TM were designed to assess 1) the emphasis on TM, including senior managers' accountability for building talent (e.g., "How do senior managers show that attracting and managing talent is a top priority?"), 2) the strength of the organizations' employee value proposition (e.g., "What makes it distinctive to work at your company as opposed to your competitors?"), and 3) the organizations' efforts to retain talent (e.g., "If you had a star performer who wanted to leave what would the company do?") (Bloom et al., 2010). The highest possible score (i.e., best practice) was anchored with the following descriptions of firm behaviors (referring to the numbering above): 1) "Senior managers are evaluated and held accountable on the strength of the talent pool they actively build"; 2) "We provide a unique value proposition above our competitors to encourage talented people to join our company"; 3) "We do whatever it takes to retain our talent" (Bloom et al., 2010).

3.3.3 | Goal specificity

The Appendix also shows the survey items used to measure the goal-setting practices. We operationalize goal specificity by the extent to which individual performance goals are clearly defined (i.e., easily understandable and not too complex) and strongly communicated so that performance (goal attainment) is comparable. The interview questions for goal

specificity included: “If I asked your staff directly about individual targets what would they tell me?” and “Does anyone complain that the targets are too complex?” (Bloom et al., 2010). The highest possible score (i.e., best practice) was anchored with the following description of firm behavior: “Score 5: Performance measures are well defined, strongly communicated and reinforced at all reviews; performance and rankings are made public to induce competition” (Bloom et al., 2010).

3.3.4 | Goal difficulty

We operationalize goal difficulty by the extent to which performance goals are based on a solid rationale to ensure commitment to achieving the goal and are appropriately difficult to achieve (i.e., challenging, neither too easy nor impossible to achieve), and whether the level of difficulty is applied consistently throughout the organization. The interview questions included: “How tough are your targets? Do you feel pushed by them?” and “Do you feel that all groups receive the same degree of difficulty, in terms of targets? Do some groups get easy targets?” The highest possible score (i.e., best practice) was anchored with the following description of firm behavior: “Score 5: Goals are genuinely demanding for all divisions. They are grounded in solid, solid [*sic*] economic rationale.”

3.3.5 | Goal proximity

We operationalize goal proximity by organizational goals’ time horizon. The interview questions included: “What kind of time scale are you looking at with your targets?” and “Which goals receive the most emphasis?” To accord with our hypothesis concerning the role of goal proximity in the relationship between TM and labor productivity, we reverse-scored the scale such that the highest possible score was anchored with the following description of firm behavior: “Score 5: Top management’s main focus is on short term targets.”

3.3.6 | Control variables

We also included several control variables in our analyses. We controlled for labor and capital input by including the logarithm of the number of employees and that of the value of tangible fixed assets. Since labor productivity is also affected by labor (Pagano & Schivardi, 2003) and capital intensity (Datta et al., 2005) at the industry level, we controlled for the average number of employees and the average value of tangible fixed assets at the industry level. Since average educational attainment among firm employees has been shown to be associated with labor productivity (Lebedinski & Vandenberghe, 2014), we controlled for the proportion of employees who had attained a college degree. Based on a similar rationale, we controlled for an industry's human capital intensity, proxied by the average proportion of employees who had attained a college degree in organizations in a three-digit SIC industry (Leonardi, 2015). We used country fixed effects (reference category: UK) to account for cross-country variations in productivity (see, e.g., Hall & Jones, 1999) and included time fixed effects (ref. cat.: 2006) to remove the influence of time-varying macroeconomic conditions on parameter estimates. We accounted for the particular characteristics of each interview (duration, day of the week, time of day, interview reliability indicator), each interviewer (interviewer fixed effects), and each respondent (seniority and company tenure) (Bloom et al., 2012). Other controls account for the organization's type of ownership (government-owned, family-/founder-owned and -managed, and other ownership type (ref. cat.)), and multinational status (foreign multinational, domestic multinational, and domestic (ref. cat.)).

3.4 | Analytical procedures

Because of the multilevel nature of our data, we used hierarchical linear regression analysis (Snijders & Bosker, 2012), which allows us to separate the sources of variation at the observation level, the organization level, and the industry level and to estimate models for these levels simultaneously. We employed maximum likelihood estimation using the expectation-

maximization algorithm. Since we examined panel data covering 2006 to 2010, we had repeated observations (Level 1) for organizations (Level 2) that are clustered in industries (Level 3). As we were interested in neither cross-country variation in labor productivity per se nor in its explanation, we captured country-specific characteristics with country dummies. Our statistical model is a generalization of the random effects panel regression model to three levels and unbalanced panel data, as discussed by Baltagi, Song, and Jung (2001). The basic structure of the model is as follows: $\ln(Y_{ijk}) = \mathbf{X}'_{ijk}\boldsymbol{\beta} + \mathbf{T}'_{jk}\boldsymbol{\gamma} + \mathbf{Z}'_k\boldsymbol{\delta} + u_{ijk}$, where Y_{ijk} is the output at measurement occasion i of organization j in industry k , \mathbf{X} is a vector of observation-level variables, \mathbf{T} is a vector of organization-level variables, \mathbf{Z} is a vector of industry-level variables, and u_{ijk} is the error part.

Level 1 predictors were group mean-centered (i.e., centered at the organization mean), whereas Level 2 and Level 3 predictors were grand mean-centered. Centering Level 1 predictors at the organization mean results in interpreting Level 2 effects as total between-organization effects, while centering Level 1 predictors at the grand mean results in interpreting Level 2 effects as ‘emergent’ effects above and beyond the Level 1 effects (Bliese, Maltarich, & Hendricks, 2018). The same holds for centering decisions with respect to Level 2 and Level 3 predictors. Since, from a theoretical viewpoint, we had no reason to assume the presence of emergent effects of Level 2 predictors, we used group mean-centering at Level 1. In this case, a Level 1 effect reflects the association between values on X and Y relative to the group mean (i.e., organization mean) (Bliese et al., 2018). Therefore, we refer to Level 1 (Level 2) effects as within-organization (between-organization) effects in presenting the results. In contrast, we grand mean-centered Level 2 and Level 3 predictors since the Level 3 effects are best understood as emergent or contextual effects that emanate from industry contexts. In interpretation of effects, it should be recognized that Level 2 and Level 3 effects refer to effects on the organization and industry mean of labor productivity. To retain valuable information,

calculations of Level 2 and Level 3 variables were based on all observations available for the respective variable (up to $N = 5,652$) rather than being based only on observations of the regression sample ($n = 4,567$) (Snijders & Bosker, 2012).

3.5 | Aggregation statistics

We examined the predictors' $ICC(1)$ and $ICC(2)$ values to determine whether aggregating lower-level observations to higher levels is appropriate (Bliese, 2000). For the organization-level predictors, $ICC(1)$ values ranged between .73 and .95, indicating that most of the variance is situated between (Level 2) rather than within organizations (Level 1); $ICC(2)$ values ranged between .86 and .98 (Table 1-1), exceeding the conventional .70 threshold for reliability (Bliese et al., 2018). For the industry-level predictors, based on the first observation for each organization, $ICC(1)$ values ranged between .06 and .20, and $ICC(2)$ values ranged between .52 and .81 (Table 1-1). While 6 percent of the variance (in the log number of employees) residing between (Level 3) rather than within industries (Level 2) must be considered a low but still non-negligible fraction (Bliese, 2000), the corresponding $ICC(2)$ of .52 could attenuate statistical power to detect a Level 3 effect (Bliese et al., 2018). However, industry labor intensity serves only as a control, and excluding it leaves the results essentially unchanged.

4 | RESULTS

Table 1-1 presents means, standard deviations, reliabilities, and the correlations between the study variables. The average firm in the sample employs 476 employees, has fixed assets of 32.7 million U.S. dollars, and generates revenues of 279,920 U.S. dollars per employee.

TABLE 1-1
Means, Standard Deviations, and Correlations between Study Variables

| Variable | <i>M</i> | <i>SD</i> | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|--|----------|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Organization level | | | | | | | | | | | | | |
| 1. Labor productivity ^a | 279.92 | 307.91 | – | | | | | | | | | | |
| 2. TM | 2.67 | .66 | .21*** | (.89) | | | | | | | | | |
| 3. Goal specificity | 2.61 | .88 | .06* | .38*** | (.88) | | | | | | | | |
| 4. Goal difficulty | 3.02 | .83 | .26*** | .44*** | .32*** | (.86) | | | | | | | |
| 5. Goal proximity | 3.05 | 1.00 | -.27*** | -.46*** | -.34*** | -.52*** | (.86) | | | | | | |
| 6. Labor (log no. employees) ^a | 476.08 | 605.82 | -.05* | .16*** | .19*** | .07** | -.15*** | (.98) | | | | | |
| 7. Capital (log fixed assets) ^a | 32.70 | 98.27 | .45*** | .19*** | .12*** | .18*** | -.23*** | .57*** | (.98) | | | | |
| 8. % of employees with college degree | 14.23 | 14.62 | .18*** | .23*** | .10*** | .16*** | -.14*** | .09*** | .16*** | (.90) | | | |
| 9. Domestic MNC | .25 | .43 | .12*** | .04 | -.01 | .05* | -.05* | .10*** | .08*** | .04 | – | | |
| 10. Foreign MNC | .31 | .46 | .23*** | .16*** | .12*** | .18*** | -.19*** | .02 | .11*** | .03 | -.38*** | – | |
| 11. Managed by government | .04 | .20 | -.13*** | -.10*** | .00 | -.06* | .05* | .08*** | -.01 | .03 | -.06** | -.07** | – |
| 12. Managed by family/founder | .27 | .45 | -.11*** | -.13*** | -.15*** | -.13*** | .16*** | -.15*** | -.08*** | -.11*** | -.02 | -.28*** | -.13*** |
| Industry level | | | | | | | | | | | | | |
| 1. Human capital intensity | 14.39 | 8.45 | (.73) | | | | | | | | | | |
| 2. Industry labor intensity (mean log no. employees) ^a | 544.40 | 460.61 | .11 | (.52) | | | | | | | | | |
| 3. Industry capital intensity (mean log fixed assets) ^a | 54.80 | 142.42 | .27** | .61*** | (.81) | | | | | | | | |

Note. $n_j = 1,997$ organizations, $n_k = 115$ industries. Reliabilities ($ICC(2)$) are shown in parentheses. Means, standard deviations, and correlations are based on industry or organization means except for organization-level variables 9-12 (which are time-variant), which reflect the first chronological observation for a firm. ^a Mean and standard deviation values based on raw variables are reported for ease of interpretation (with labor productivity in thousands of U.S. dollars and capital input and industry capital intensity in millions of U.S. dollars); correlations and subsequent analyses were conducted with logarithmized variables.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 1-2 shows the results of the regression analyses. Model 1 is the null model with random intercepts at Levels 2 and 3, which we used to examine the unconditional partitioning of variance in labor productivity. For labor productivity, $ICC(1)$ was estimated at $\hat{\rho}_y = .21$ ($SE = .03$) for $ICC(1) = \varphi_0^2 / (\varphi_0^2 + \tau_0^2 + \sigma^2)$ and at $\hat{\rho}_y = .92$ ($SE = .00$) for $ICC(1) = (\varphi_0^2 + \tau_0^2) / (\varphi_0^2 + \tau_0^2 + \sigma^2)$. These intra-class correlation coefficients show that 21 percent of the variance in labor productivity (measured at Level 1) occurs at the industry level and that 92 percent occurs at the organization and industry levels. Model 2 also includes the control variables.

4.1 | Main effects

To test Hypothesis 1, we estimated a model that contained all main effects in addition to the control variables (Model 3). TM was significantly associated with labor productivity at Level 1 (within-organization effect; $\beta = .05$, $p = 0.026$) and Level 2 (between-organization effect; $\gamma = .12$, $p < .001$), lending support to Hypothesis 1. The coefficients indicate an increase in sales per employee by $100 * (\exp(\beta_{TM} * SD_{TM(L1)}) - 1) = 1.16\%$ for a positive one- SD deviation from an organization's mean TM score (i.e., within-organization effect) and by $100 * (\exp(\gamma_{TM} * SD_{TM(L2)}) - 1) = 8.31\%$ for a one- SD increase in the organization's mean TM score (i.e., between-organization effect). The goal-setting predictors were not significantly associated with labor productivity.

4.2 | Moderating effects

To test Hypotheses 2a, 2b, and 2c, we added interaction terms at Level 1 (with group mean-centered variables) and Level 2 (with grand mean-centered variables) (Model 4). Since the coefficients of the Level 2 interactions of TM with goal specificity ($\gamma = .02$, $p = .494$), goal difficulty ($\gamma = -.02$, $p = .510$), and goal proximity ($\gamma = .04$, $p = .212$) were all non-significant, we focus on the corresponding Level 1 interactions in the following. The non-significant Level

2 interactions indicate that between-organization differences in the level of TM are associated with labor productivity unconditional upon levels of goal-setting practices.

TABLE 1-2

Regression Analysis for Predicting Log Sales per Employee (in thousands of U.S. dollars)

| Fixed part | Model 1 | | Model 2 | | Model 3 | | Model 4 | |
|--|---------|--------------------|---------|-------------------|---------|-------------------|---------|-------------------|
| | Coeff. | SE | Coeff. | SE | Coeff. | SE | Coeff. | SE |
| Intercept | 5.07*** | .06 | 4.65*** | .19 | 4.64*** | .19 | 4.66*** | .19 |
| Level 1: Observation level^a | | | | | | | | |
| TM | | | | | .05* | .02 | .05* | .02 |
| Goal specificity | | | | | .00 | .01 | .00 | .01 |
| Goal difficulty | | | | | -.01 | .01 | -.01 | .01 |
| Goal proximity | | | | | .01 | .01 | .01 | .01 |
| TM x Goal specificity | | | | | | | .16** | .06 |
| TM x Goal difficulty | | | | | | | .10 | .05 |
| TM x Goal proximity | | | | | | | .16** | .05 |
| Labor (log no. employees) | | | -.64*** | .03 | -.64*** | .03 | -.64*** | .03 |
| Capital (log fixed assets) | | | .28*** | .02 | .28*** | .02 | .28*** | .02 |
| % employees with college degree | | | .00 | .00 | .00 | .00 | .00 | .00 |
| Level 2: Organization level^b | | | | | | | | |
| TM | | | | | .12*** | .03 | .12*** | .03 |
| Goal specificity | | | | | .04 | .02 | .04 | .02 |
| Goal difficulty | | | | | .05 | .03 | .05 | .03 |
| Goal proximity | | | | | -.01 | .02 | -.01 | .02 |
| TM x Goal specificity | | | | | | | .02 | .03 |
| TM x Goal difficulty | | | | | | | -.02 | .04 |
| TM x Goal proximity | | | | | | | .04 | .03 |
| Labor (log no. employees) | | | -.25*** | .03 | -.26*** | .03 | -.26*** | .03 |
| Capital (log fixed assets) | | | .32*** | .02 | .31*** | .02 | .31*** | .02 |
| % employees with college degree | | | .00*** | .00 | .00* | .00 | .00* | .00 |
| Level 3: Industry level^c | | | | | | | | |
| Human capital intensity | | | .01* | .01 | .01* | .01 | .01* | .01 |
| Industry labor intensity (log no. employees) | | | -.31** | .09 | -.32** | .09 | -.32*** | .09 |
| Industry capital intensity (log fixed assets) | | | .19*** | .05 | .20*** | .05 | .20*** | .05 |
| Country and time dummies, ownership controls, MNE controls, and noise controls | | No | | Yes | | Yes | | Yes |
| Random Part | | | | | | | | |
| | | [95% CI] | | [95% CI] | | [95% CI] | | [95% CI] |
| L3 intercept variance (ϕ_0^2) | .32 | .06 [.22, .45] | .06 | .01 [.03, .09] | .05 | .01 [.03, .09] | .05 | .01 [.03, .09] |
| L2 intercept variance (τ_0^2) | 1.03 | .04 [.96, 1.11] | .50 | .02 [.46, .54] | .49 | .02 [.45, .53] | .49 | .02 [.45, .53] |
| L1 residual variance (σ_0^2) | .12 | .00 [.11, .13] | .09 | .00 [.09, .10] | .09 | .00 [.09, .10] | .09 | .00 [.09, .10] |
| LR Chi ² ^d | | | | 2151.72*** | | 52.76*** | | 24.00*** |
| Model Deviance (-2LL) | | 9054.73 | | 6903.02 | | 6850.26 | | 6826.26 |

Note. $N = 4,567$ measurement occasions (L1), $n_j = 1,997$ organizations (L2), and $n_k = 115$ industries (L3). ^a Observation-level variables are organization mean-centered. ^b Organization-level variables (organization means) are grand mean-centered. ^c Industry-level variables (industry means) are grand mean-centered. ^d Chi² values refer to likelihood ratio (LR) tests of the focal model and the previous model.

* $p < .05$; ** $p < .01$; *** $p < .001$.

4.2.1 | Talent management \times goal specificity

As depicted in Table 1-2 (Model 4), the coefficient of the within-organization interaction of TM with goal specificity was significant ($\beta = .16, p = .004$), indicating an enhancing effect of goal specificity on the association between TM and labor productivity. Figure 1-1a, which illustrates this interaction, indicates a negative effect of TM at low levels of goal specificity and a positive effect at high levels of goal specificity (mean ± 1 SD). To avoid over- or understating the evidence for this interaction effect, we followed the recommendation by Kingsley, Noordewier, and Bergh (2017) in calculating the range of values of the moderator (i.e., Level 1 goal specificity) for which the marginal effect of TM is significantly different from zero. Our calculation of the boundaries of significance based on the Johnson-Neyman technique (Preacher, Curran, & Bauer, 2006), as depicted in Figure 1-1b, shows that the within-organization effect of TM, conditional on levels of goal specificity, is significantly negative at an alpha level of 5% for values of goal specificity that are lower than -1.01 (to the left of Point A in Figure 1-1b) and significantly positive for values of goal specificity that are higher than -0.03 (to the right of point B in Figure 1-1b). Since only 0.63 percent of observations in the sample have Level 1 goal specificity values below -1.01, the lower bound of significance is negligible.

In contrast, the upper bound of significance (to the right of point B) indicates that the effect of TM on labor productivity turns significant and positive for goal specificity values above -0.03. More specifically, the larger the positive deviation of goal specificity at one measurement occasion from the organization mean (i.e., positive changes in goal specificity), the larger the effect of positive deviations of TM from the organization mean (i.e., positive changes in TM) on labor productivity. As an illustrative example, the simple slope at high goal specificity (i.e., mean + 1 SD), represented by the solid line in Figure 1-1a ($\beta = .10, SE = .03, p < .001$), is twice as steep as the simple slope at the mean value of goal specificity ($\beta = .05,$

$SE = .02, p = .026$) and amounts to a $100 * (\exp(\beta_{TM} * SD_{TM(L1)}) - 1) = 2.64\%$ increase in labor productivity for a one- SD increase in the TM score relative to the organization mean. In sum, these results lend support to Hypothesis 2a concerning the within-organization effect of TM.

4.2.2 | Talent management \times goal difficulty

As depicted in Table 1-2 (Model 4), the coefficient of the within-organization interaction of TM with goal difficulty was barely non-significant ($\beta = .10, p = .061$). Again, to avoid over- or understating the evidence for this interaction effect solely based on the p -value of the second-order coefficient (Kingsley et al., 2017), we plotted the interaction effect at the mean and at the mean $\pm 1 SD$ of Level 1 goal difficulty (Figure 1-2a). We also calculated the range of the values of goal difficulty for which the marginal effect of TM is and is not significant. Using an alpha level of 5%, the effect of TM on labor productivity was calculated to be significantly positive for values of goal difficulty above -0.05 (to the right of Point A in Figure 1-2b). As an illustrative example, the simple slope at high goal difficulty (i.e., mean + $1 SD$), represented by the solid line in Figure 1-2a ($\beta = .08, SE = .03, p = .004$), reflects an increase in labor productivity of $100 * (\exp(\beta_{TM} * SD_{TM(L1)}) - 1) = 2.10\%$ for a one- SD increase in the TM score relative to the organization mean. Taking the above information into account, we find at least partial support for Hypothesis 2b concerning the within-organization effect of TM.

4.2.3 | Talent management \times goal proximity

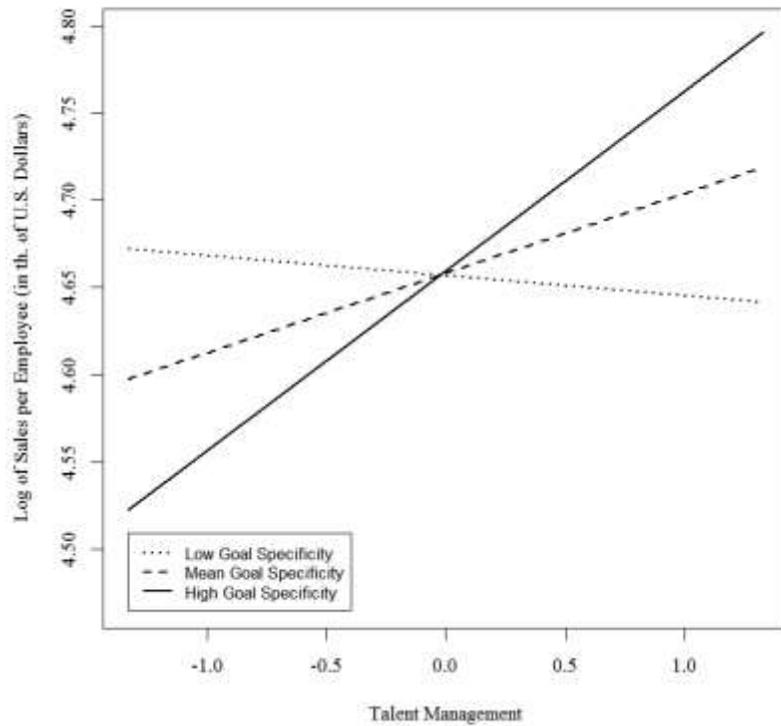
As depicted in Table 1-2 (Model 4), the coefficient of the within-organization interaction of TM with goal proximity was significant and positive ($\beta = .16, p = .001$), indicating an enhancing effect of goal proximity on the association between TM and labor productivity. Figure 1-3a illustrates this interaction effect, indicating a negative effect of TM for low levels of goal proximity and a positive effect for high levels of goal proximity (mean

$\pm 1 SD$). Calculating the boundaries of significance showed that the effect of TM on labor productivity was significantly positive for above-mean levels of goal proximity (to the right of point B in Figure 1-3b) and significantly negative for low levels of goal proximity (to the left of point A in Figure 1-3b). When goal proximity is high (mean + 1 SD), a one- SD deviation of TM from the organization mean ($\beta = .11$, $SE = .03$, $p < .001$) is predicted to increase labor productivity by $100 * (\exp(\beta_{TM} * SD_{TM(L1)}) - 1) = 2.88\%$. Given that only 3.72 percent of observations deviate more than -0.83 from the organization mean of goal proximity (i.e., the lower bound of significance), we refrain from interpreting this interaction as a disordinal one. In sum, these findings lend support to Hypothesis 2c concerning the within-organization effect of TM.

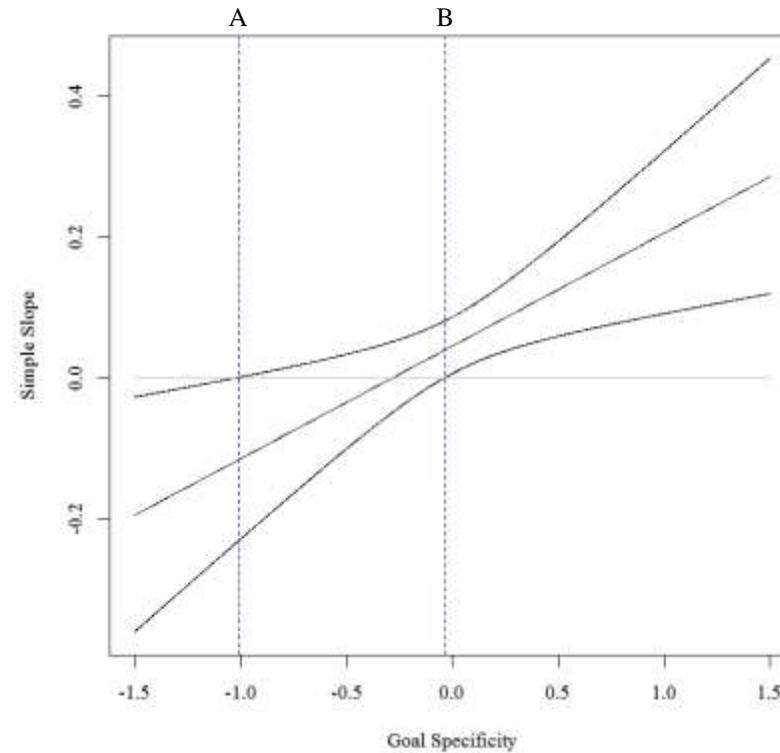
FIGURE 1-1

Within-Organization Moderator Effect of Goal Specificity

(a) Interaction Plot



(b) Boundaries of Significance Plot

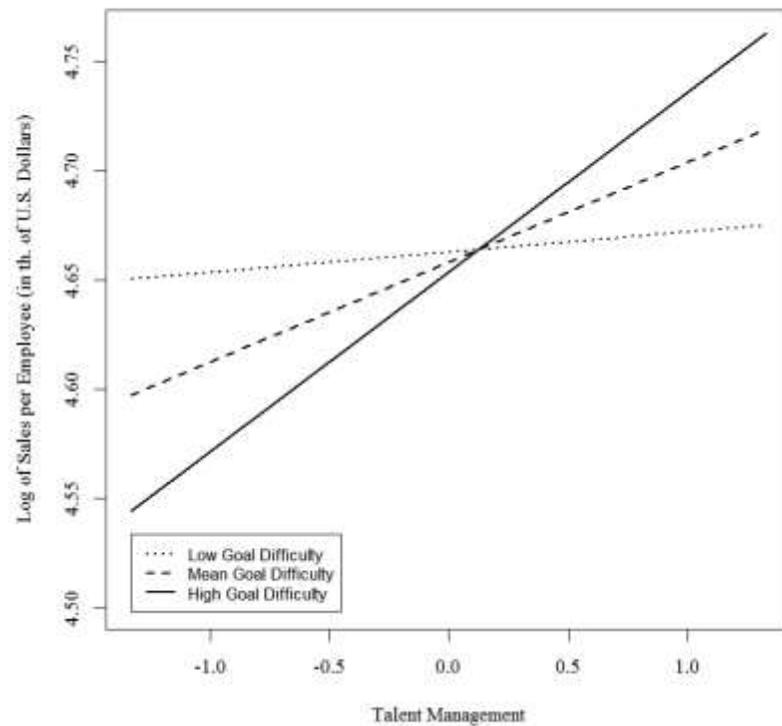


Note. (a) Simple slopes are plotted at the mean ($\pm 1 SD$) of the moderator variable (i.e., organization mean-centered goal specificity). Deviations of observation-level TM scores from the organization mean are depicted on the x-axis. (b) This plot depicts the 95% confidence band of simple slopes of the within-organization effect of TM, conditional on within-organization levels of goal specificity. The dashed vertical lines mark the lower (point A) and upper (point B) bounds of significance, with simple slopes being significant *outside* this region. The boundaries of significance have been estimated, and the plot has been generated with an R-web interface online tool provided by Preacher et al. (2006), available at <http://quantpsy.org/interact/hlm2.htm> (18.03.2019).

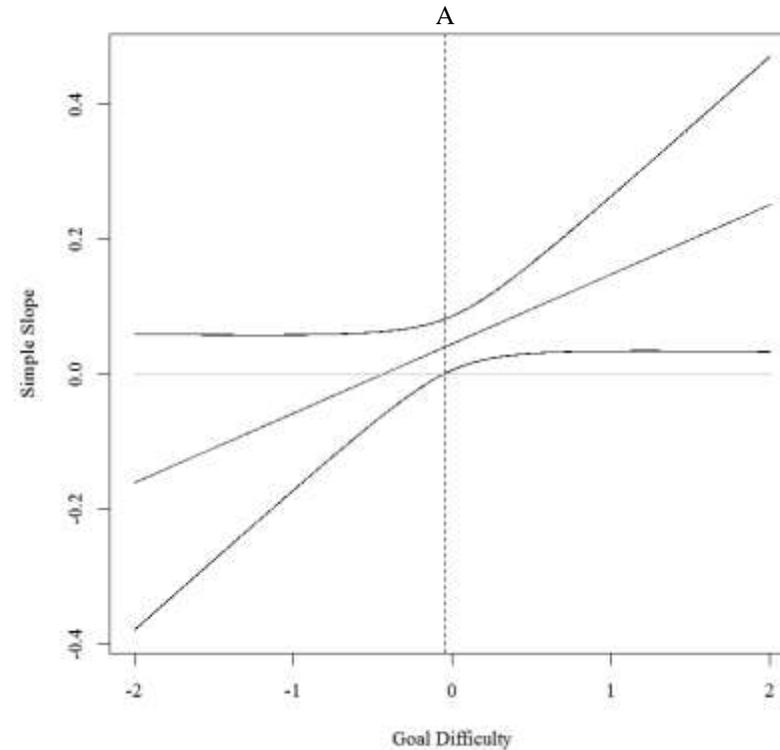
FIGURE 1-2

Within-Organization Moderator Effect of Goal Difficulty

(a) Interaction Plot



(b) Boundaries of Significance Plot

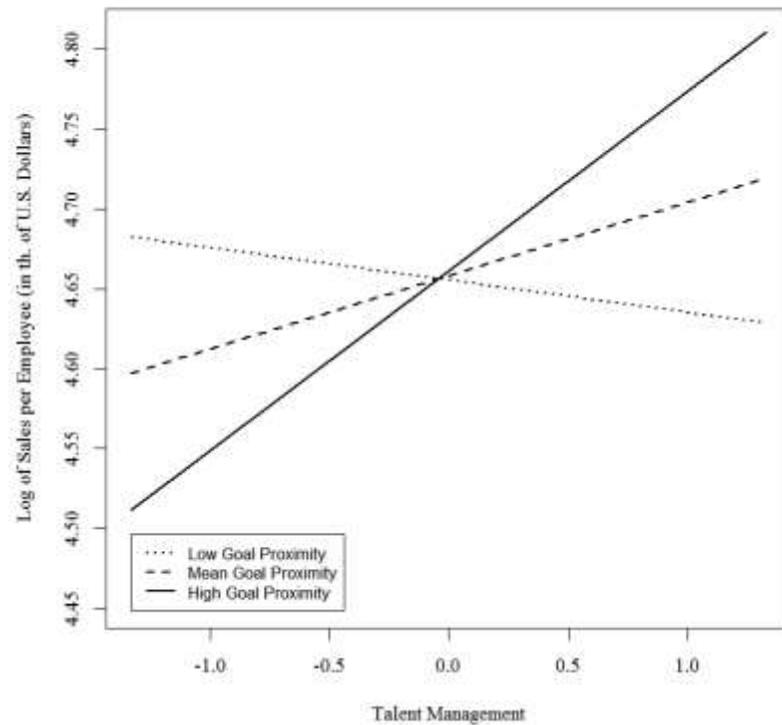


Note. (a) Simple slopes are plotted at the mean ($\pm 1 SD$) of the moderator variable (i.e., organization mean-centered goal difficulty). Deviations of observation-level TM scores from the organization mean are depicted on the x-axis. (b) This plot depicts the 95% confidence band of simple slopes of the within-organization effect of TM, conditional on within-organization levels of goal difficulty. The dashed vertical line marks the lower bound of significance (point A), with simple slopes being significant *above* this level of goal difficulty. The upper bound of significance was estimated to fall outside of the empirical range of the moderator variable. The boundaries of significance have been estimated, and the plot has been generated with an R-web interface online tool provided by Preacher et al. (2006), available at <http://quantpsy.org/interact/hlm2.htm> (18.03.2019).

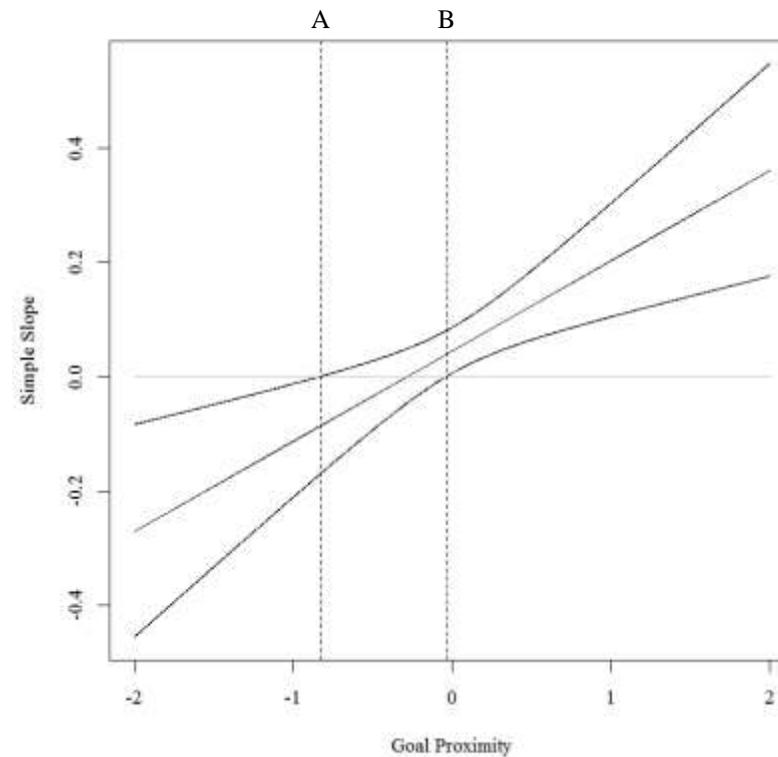
FIGURE 1-3

Within-Organization Moderator Effect of Goal Proximity

(a) Interaction Plot



(b) Boundaries of Significance Plot



Note. (a) Simple slopes are plotted at the mean ($\pm 1 SD$) of the moderator variable (i.e., organization mean-centered goal proximity). Deviations of observation-level TM scores from the organization mean are depicted on the x-axis. (b) This plot depicts the 95% confidence band of simple slopes of the within-organization effect of TM, conditional on within-organization levels of goal proximity. The dashed vertical lines mark the lower (point A) and upper (point B) bounds of significance, with simple slopes being significant *outside* this region. The boundaries of significance have been estimated, and the plot has been generated with an R-web interface online tool provided by Preacher et al. (2006), available at <http://quantpsy.org/interact/hlm2.htm> (18.03.2019).

4.3 | Robustness checks

We conducted several additional analyses based on the specification of Model 4 to verify the robustness of our findings. First, we checked whether firms that underwent significant organizational change might have biased the results by re-running Model 4 excluding the thirty-six most extreme cases of upsizing and downsizing, whose maximum relative annual increase or decrease in workforce size over the observation period was above the 99th percentile (increases larger than 115.56% per annum) or in the 1st percentile (decreases larger than | -56.03% | per annum) of corresponding indicator variables. This did not substantially change the direction, magnitude, or significance of results, except for the Level 1 interaction between TM and goal difficulty, which almost reached significance ($\beta = .10$, $SE = .05$, $p = .052$). Second, we checked whether increasing the minimum firm size from 50 to 100 employees, referring to the average across observations, would change the results, but dropping these 149 firms from the sample yielded similar results.

We also made changes to the model specification to explore the robustness of our results. First, given that our theoretical focus was not on explaining between-industry variance in labor productivity, we replicated our analyses with a two-level model using industry fixed effects and found our findings to be robust to this change in model specification. Second, following Becker and Huselid (1998), we complemented Model 4 with firms' five-year sales growth rate (prior to the observation period) as an additional control to account for slack resources that may have affected firms' subsequent investments in TM and subsequent labor productivity. As expected, the effect of this proxy for slack resources on labor productivity was large and highly significant ($\beta = .41$, $SE = .02$, $p < .001$), but more important was that the effects of the focal predictors remained stable except for the (first-order) effect of TM at Level 2, which was somewhat smaller ($\Delta = -.04$) but still significant ($\gamma = .09$, $SE = .03$, $p = .003$). Third, as noted in the section on aggregation statistics, we re-ran Model 4 excluding industry labor

intensity since we found this aggregated measure to have low reliability ($ICC(2) = .52$), but doing so did not substantially change the direction, magnitude, or significance of our results.

5 | DISCUSSION

Our results revealed that TM is positively related to labor productivity. More specifically, referring to the between-organization effect of TM, firms with higher average levels of TM across the observation period showed higher average levels of labor productivity. Referring to the within-organization effect of TM, our results showed that firms which improved TM in a given year of observation relative to their average level across the observation period experienced an increase in labor productivity when they also improved their goal-setting practices (in terms of setting more specific, difficult, and temporally proximal goals). In contrast, firms that did not improve their organizational goal-setting practices relative to their average level across the observation period did not experience an increase in labor productivity by improving TM. Next, we discuss the theoretical implications of our results in more detail.

By showing empirically, based on a large dataset with repeated observations of firms covering diverse industries and multiple countries, that TM increases labor productivity, our findings add to the literature and the current debate about the effectiveness of TM (McDonnell et al., 2017). Our findings suggest that TM increases talented employees' motivation, development of valuable knowledge, skills, and abilities, and retention, all of which favor labor productivity. This supports the notion that it is important to account for differences in employee groups' human capital when examining the effectiveness of strategic HRM, acknowledging that firms use different HRM practices for different employee groups (Boon, Eckardt, Lepak, & Boselie, 2018). For example, senior managers are limited in numbers and restricted by their scope of responsibilities in the time they can spend on attracting, developing, and retaining talented employees, such that only an exclusive subset of high-potential, high-performing

employees can benefit from their attention. While the above-mentioned positive implications of TM seem to outweigh potential unintended negative consequences for talent (e.g., increased pressure and stress; Tansley & Tietze, 2013), the question concerning how employees who are not designated as talent react to TM practices remains. Given that the share of employees who are included in talent pools ranges from less than 1 percent to 10 percent of the total workforce (Dries & De Gieter, 2014), employees who are not designated as talent make up the large majority of employees in the workforce. Therefore, a fruitful avenue of research would be an examination of potential adverse effects of TM on other employees' work attitudes and behaviors.

Our findings about organizational goal-setting practices also contribute to the ongoing debate regarding how the performance implications of TM vary in the presence of boundary conditions. In particular, our results support McDonnell et al.'s (2017) recent proposition that the organizational context in which individual performance unfolds influences the effects of TM on organizational performance because goal-setting practices help to explain why some firms are more successful in leveraging their productivity through improvements in TM. To support the deployment and retention of their talent pools, firms need to align their talent pool strategies with their organizational goals (Collings et al., 2019). We show that goal-setting practices help to align TM with organizational goals, thus enhancing the impact of TM on labor productivity. Conversely, improving TM over time does not increase labor productivity if an organization does not simultaneously improve its goal-setting practices. In this case, additional investment in TM is ineffective. Finally, our findings add to the literature on the role of consensus on organizational goals among managers in shaping organizational performance outcomes (Kellermanns et al., 2005) because goal-setting practices seem to successfully reinforce a shared understanding among senior managers of priorities among organizational

goals with regard to TM. Therefore, achieving consensus among senior managers about these goals helps to translate improvements in TM into higher labor productivity.

We found that greater goal specificity enhances the positive effect of TM on labor productivity. Promoting the clarity of goals and transparency in how to achieve these goals reinforces the positive influence of TM on both talented employees and senior managers who are responsible for the efficient utilization of talent. Previous research suggests that firms should direct their employees' attention and effort toward achieving organizational goals by translating these goals to behavioral indicators and performance metrics through competency modeling (Campion et al., 2011), which should have maximum impact on organizational goal attainment when performance goals are specific and clearly communicated. Setting such goals is particularly important for talented employees, because they are likely placed in positions with significant responsibility and autonomy to organize and structure work in the organization and, therefore, have more latitude to impact organizational performance than do employees in lower-level positions. Clearly defined goals also help talented employees build and develop the knowledge, skills, abilities, and other characteristics that are required to contribute to organizational performance.

Our results show that challenging goals enhance the positive effect of TM on labor productivity, which extends existing knowledge about psychological contract fulfillment (e.g., Ehnrooth et al., 2018; Khoreva, Vaiman, & Van Zalk, 2017). Finkelstein et al. (2018) discuss learning and growth competencies like learning agility and developmental readiness as essential attributes of talented employees that affect both their capacity and their motivation to learn and grow (Finkelstein et al., 2018). Talented employees prefer to work for firms that pursue ambitious goals, considering that individuals who are high in need for achievement tend to have a learning goal orientation and therefore choose to set ambitious goals for themselves (Payne, Youngcourt, & Beaubien, 2007). Talented employees perceive demanding goals as a

challenge, which motivates and inspires them to achieve these goals and to develop new skills and abilities in the process. At the same time, TM contributes to the fulfillment of talented employees' psychological contract by offering them clear and reliable career paths if they achieve these challenging goals.

With regard to goal proximity, our results suggest that the informational value of goals in guiding decision-makers to manage talent effectively, thereby enhancing labor productivity, is greatest when organizations' focus is on short-term goals, that is, when organizations favor exploitation of current resources and capabilities over exploration (cf. Sitkin, See, Miller, Lawless, & Carton, 2011). Although the increasing pressure on organizations to achieve short-term goals might increase the opportunity costs of developing talent internally instead of buying external talent because of its associated immediate costs (Cooke, Saini, & Wang, 2014), our findings indicate that setting temporally proximal goals enhances labor productivity when firms set out to improve their TM activities. We suggest that goal proximity might also enhance the association between TM and organizational flexibility because focusing on short-term goals might be an indication of a firm's general ability to respond quickly to competitive market changes (i.e., strategic flexibility; Chang, Gong, Way, & Jia, 2013). In addition to labor productivity, a central goal of HRM is to promote organizational flexibility so as to achieve a dynamic fit with the demands of a firm's competitive environment (Wright & Snell, 1998). TM could be considered as flexibility-enhancing in that it promotes "the development of a human capital pool possessing a broad range of skills and that are able to engage in a wide variety of behavior" (Wright & Snell, 1998, p. 758). In contrast, goal proximity may be less relevant to the impact of TM on organizational outcomes like social legitimacy that require incremental improvements over a longer period.

Finally, an important question concerning the implications of TM remains: Is there a dark side of TM? The positive effect of TM on labor productivity we found does not rule out

that TM might come at the cost of increased internal competition among employees for privileged access to resources (Pfeffer, 2001). In the long run, such a competitive climate could diminish employees' well-being, erode collaboration among employees, increase the self-satisfaction and complacency of talented employees (Ehrnrooth et al., 2018), and facilitate victimization of talented employees by envious co-workers (e.g., E. Kim & Glomb, 2014). Altogether, this might result in high turnover (Son et al., in press). Based on their findings, Son et al. (in press) refer to TM as a 'double-edged sword' because it increases not only innovation but also turnover rates. Hence, as already noted by McDonnell et al. (2017), there is still a need to adopt a multi-stakeholder perspective to determine whether and how TM affects the various stakeholder groups in a workforce.

5.1 | Practical implications

Our estimates of the effect of TM on labor productivity are practically meaningful, given that talent shortages are a significant barrier to organizational growth (PwC, 2014). However, CEOs may be reluctant to invest in TM because of the uncertain return on internal development of talent versus relying on sufficient supply of higher-level employees from the external labor market when they are needed. In terms of between-organization effects, our results suggest that a one-*SD* increase in TM is associated with an 8.31 percent increase in labor productivity (Model 3). This effect is slightly higher than the effect sizes of HPWS on labor productivity (i.e., sales per employee) reported by other studies. For example, based on data from U.S. manufacturing firms, Datta et al. (2005) report a 7.98 percent increase and Becker and Huselid (1998) find a 4.8 percent increase in sales per employee per one-*SD* increase in their HPWS scales, based on a U.S. multi-industry sample. However, a comparison of these estimates should be treated with caution because of the conceptual difference between HPWS and TM in terms of the scope of activities, the coverage of employees (cf. Adamsen & Swailes,

2019), and the differences in the sampling frame, especially with regard to the samples of U.S. firms versus our sample of firms outside the U.S.

Our findings also have implications for the role of TM in creating sustainable competitive advantage. Based on a sub-sample of 563 firms with balanced data (i.e., firms observed from 2006 to 2010 in all years), we found that 73 percent of the variance in TM is situated between rather than within organizations ($ICC(1) = .73$ for the balanced sub-sample; $ICC(1) = .78$ for the full sample). This finding suggests a strong persistence of differences between firms with respect to TM over time, with positive implications for the ability of a firm to sustain a competitive advantage from superior TM. Moreover, finding that not only improvements in TM over time (i.e., ‘within’ organizations, conditional upon goal-setting practices), but also differences in TM relative to other organizations (i.e., ‘between’ organizations) are associated with higher labor productivity, we are confident in stating that the performance effects of TM persist over time and, thus, create a sustainable competitive advantage.

5.2 | Limitations

We focused on labor productivity as an organization-level indicator of the degree to which organizations deploy their human capital resources efficiently (Y. Kim & Ployhart, 2014). Therefore, our results reflect the aggregated impact of TM on talented and other employees. We focused on labor productivity rather than on the productivity of talented and/or non-talented employees, although TM might adversely affect the work attitudes and behaviors of those not designated as talent (cf. Malik & Singh, 2014). However, we are limited by the WMS data to examining individual-level processes provoked by TM in more detail. Therefore, future research might examine the differential effects of TM on various employee groups using longitudinal data to examine the work attitudes and behaviors of talented and non-talented employees prior and post to the designation as talent or non-talent.

Incorporating between-country differences in labor productivity in our analyses via fixed effects could raise concerns. We applied this approach because we were not interested in explaining between-country variability in labor productivity and because a sample size of $l = 10$ at the country level would have been too small to justify modeling *random* deviations from the grand mean of labor productivity by country.

5.3 | Conclusion

Based on a dataset with repeated observations of firms over a five-year period, this study demonstrates that TM is positively associated with labor productivity. Moreover, the results of the present study show that goal-setting practices serve as boundary conditions of the relationship between TM and labor productivity for improvements in TM ‘within’ organizations. Thus, we contribute to the ongoing debate regarding the performance implications of TM and the conditions under which the association varies.

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APPENDIX

Survey Items Used to Capture TM Practices and Goal-Setting Practices

| TM practice: | Survey item targeted at: | Questions asked: | Scores |
|--|---|--|--|
| 1) Instilling a talent mindset/ Managing Talent | Tests what emphasis is out on overall TM within the organization. | <p>a) How do senior managers show that attracting and managing talent is a top priority?</p> <p>b) Do senior managers get any rewards for bringing in and keeping talented people in the company?</p> | <p>Score 5: Senior managers are evaluated and held accountable on the strength of the talent pool they actively build.</p> <p>Score 3: Senior management believe and communicate that having top talent throughout the organization is a key way to win.</p> <p>Score 1: Senior management do not communicate that attracting, retaining and developing talent throughout the organization is a top priority.</p> |
| 2) Distinctive Employee Value Proposition | Tests the strength of the employee value proposition. | <p>a) What makes it distinctive to work at your company as opposed to your competitors?</p> <p>b) If you were trying to sell your firm to me how would you do this (get them to try to do this)?</p> <p>c) What don't people like about working in your firm?</p> | <p>Score 5: We provide a unique value proposition above our competitors to encourage talented people to join our company.</p> <p>Score 3: Our value proposition to those joining our company is comparable to those offered by others in the sector.</p> <p>Score 1: Our competitors offer stronger reasons for talented people to join their companies.</p> |
| 3) Retaining Talent | Tests whether the organization will go out of its way to keep its top talent. | <p>a) If you had a star performer who wanted to leave what would the company do?</p> <p>b) Could you give me an example of a star performers [<i>sic</i>] being persuaded to stay after wanting to leave?</p> <p>c) Could you give me an example of a star performer who left the company without anyone trying to keep them [<i>sic</i>]?</p> | <p>Score 5: We do whatever it takes to retain our talent.</p> <p>Score 3: We usually work hard to keep top talent.</p> <p>Score 1: We do little to try and keep our top talent.</p> |

Note. Taken from Bloom et al. (2010) following a recommendation by WMS project partner Nick Bloom (personal communication).

Survey Items Used to Capture TM Practices and Goal-Setting Practices (Continued)

| Goal-setting practice: | Survey item targeted at: | Questions asked: | Scores |
|---------------------------------------|--|---|---|
| 4) Clarity and Comparability of Goals | Tests how easily understandable performance measures are and whether performance is openly communicated to staff | a) If I asked your staff directly about individual targets what would they tell me? b) Does anyone complain that the targets are too complex? c) How do people know about their own performance compared to other people's performance? | Score 5: Performance measures are well defined, strongly communicated and reinforced at all reviews; performance and rankings are made public to induce competition. Score 3: Performance measures are well defined and communicated; performance is public in all levels but comparisons are discouraged. Score 1: Performance measures are complex and not clearly understood. Individual performance is not made public. |
| 5) Target Stretch | Tests whether targets are based on a solid rationale and are appropriately difficult to achieve | a) How tough are your targets? Do you feel pushed by them? b) On average, how often would you say that you meet your targets? c) Do you feel that all groups receive the same degree of difficulty, in terms of targets? Do some groups get easy targets? d) What is the rationale behind the targets? | Score 5: Goals are genuinely demanding for all divisions. They are grounded in solid, solid economic rationale. Score 3: In most areas, top management pushes for aggressive goals based on solid economic rationale. There are a few "sacred cows" that are not held to the same rigorous standard. Score 1: Goals are either too easy or impossible to achieve; managers low-ball estimates to ensure easy goals. |
| 6) Time Horizon of Targets | Tests whether firm has a '3 horizons' approach to planning and targets | a) What kind of time scale are you looking at with your targets? b) Which goals receive the most emphasis? c) Are long term and short term goals set independently? d) Could you meet all your short-run goals but miss your long-run goals? | Score 5*: Top management's main focus is on short term targets. Score 3*: There are short and long term goals for all levels of the organisation. As they are set independently, they are not necessarily linked to each other. Score 1*: Long term goals are translated into specific short term targets so that short term targets become a "staircase" to reach long term goals. |

Note. Taken from Bloom et al. (2010) following a recommendation by WMS project partner Nick Bloom (personal communication). * The scale of survey instrument 6) is reverse-coded to fit with Hypothesis 2c.