Identifying, Measuring, and Communicating Employee Fit Through Formal Control Mechanisms: Evidence from the Field

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by

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ABSTRACT

In this dissertation, I utilize proprietary field data to examine two different management control mechanisms used by organizations seeking to optimize fit in their personnel decisions. I also describe my experiences conducting field-based research in management accounting.

In the first essay, "Beyond Performance: When Potential Matters to Employee Career Outcomes", I examine how managers' assessments of employee *potential* (i.e. promotion prospects) are related to employee career outcomes. I first document that (as intended) potential ratings play an important role in managers' promotion decisions, above and beyond performance ratings, and that these ratings also play an incremental role in termination decisions. Next, I examine how potential ratings are related to employees' voluntary separations. Amongst newly-hired employees, I find that the likelihood of an employee voluntarily leaving the organization is decreasing in rated potential, and that an upward revision in potential is associated with a reduced likelihood of leaving. Conversely, for longer-tenured employees, voluntary departures are unrelated to potential ratings, except that the likelihood of departure is greater following a downward revision in potential. Finally, I investigate how the aggregate potential of an organization's employee base evolves over time. I find that with the passage of time the organization experienced an increase in the proportion of employees assessed as "high potential", attributing this to both employee selection effects and motivational effects.

In the second essay, "Who Should Select New Employees, the Head Office or the Unit Manager? Consequences of Centralizing Hiring at a Retail Chain", co-authored with Tatiana Sandino, we examine the allocation of hiring rights in the employee selection process. Specifically, we examine whether centralized hiring (in our study, by the head office of a U.S. retail chain) or decentralized hiring (by store managers) leads to higher quality employee-company matches. In addition to examining the main effect of

centralized hiring on match quality, we develop and test hypotheses pertaining to various store characteristics that may moderate the effect of centralized hiring – specifically, instances where headquarters may have a hiring advantage relative to store managers, and instances where store managers may possess an informational advantage relative to headquarters. While we find no evidence of a main effect of centralized hiring, we do find evidence consistent with our moderating hypotheses – specifically that centralized hiring leads to higher quality matches when store managers are overly busy, while centralized hiring leads to relatively lower quality matches when the store manager is at an informational advantage due to serving a divergent market or repeat customers.

In the third essay, "Field Studies in Management Accounting", I describe my experiences conducting field-based research in management accounting (focusing in particular on the studies featured in the abovementioned essays). In so doing, I provide an overview of each of the main phases involved in a typical field study, discuss lessons learnt, and share tips for other researchers considering conducting a field-based empirical research study.

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To my family, I dedicate this thesis.

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CHAPTER 1

Introduction

Hiring decisions and promotion decisions are two of the most important personnel decisions made by organizations. In both cases, an important consideration is the *degree of fit*, both between the employee and the organization as a whole (for instance, cultural fit) and between the employee's skills and abilities and those required by a specific job. In this dissertation, I utilize archival field data to examine specific management control mechanisms used by two organizations seeking to optimize fit in their personnel decisions. The multinational organization I study in chapter two uses an evaluation system whereby employees are separately evaluated on their performance (a backward-looking metric) and their potential (a forward-looking assessment of their promotion prospects), while the retail chain I study in chapter three switched from a decentralized system of hiring new store employees to a centralized system in the hope of achieving greater alignment between new hires and company values. Despite the prevalence of systems in practice differentiating between employee performance and potential, we have little knowledge of how these assessments play out in an organizational context, especially of how assessments of potential are related to employees' voluntary departure decisions. Similarly, while the importance of employee selection is well-recognized by academics and practitioners, empirical evidence on the outcomes associated with different approaches to the selection process is lacking. The primary goal of this study is to contribute to the empirical literature in management control by presenting new evidence on control systems related to personnel decisions. In addition, I conclude this study by sharing my experiences conducting field-based research, in the hope that doing so may be helpful to future doctoral students pursuing such research.

In chapter two, "Beyond Performance: When Potential Matters to Employee Career Outcomes," I use proprietary data from a multinational organization pertaining to almost 15,000 unique managerial employees to examine how forward-looking evaluations of *potential* (i.e. promotion prospects) are related to employees' voluntary departure decisions (as well as the organization's promotion and involuntary

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termination decisions). Additionally, I examine whether and how the proportion of high-potential employees at the organization evolved over time. Amongst newly-hired employees, I find that the likelihood of an employee voluntarily leaving the organization is decreasing in rated potential, and that an upward revision in potential is associated with a reduced likelihood of leaving. Conversely, for longer-tenured employees, voluntary departures are unrelated to potential ratings, except that the likelihood of departure is greater following a downward revision in potential. As expected, I find that potential ratings have explanatory power, above and beyond performance ratings, in promotion decisions (with the likelihood of promotion increasing in potential) and in termination decisions (with the likelihood of termination decreasing in potential). Finally, I find an increase in the proportion of high-potential employees over time, which I attribute to employee selection and motivational effects, but not to sorting out or changes in the composition of the employee base. Overall, my findings highlight the importance of potential to employees' voluntary departure decisions and to employee selection processes, which has important implications for how firms measure and communicate potential.

In the third chapter, "Who Should Select New Employees, the Head Office or the Unit Manager? Consequences of Centralizing Hiring at a Retail Chain," co-authored with Tatiana Sandino, we examine whether centralized hiring (in our study, by the head office of a US retail chain) or decentralized hiring (by store managers) leads to higher quality employee-company matches. While centralized hiring can ensure that enough resources are invested in consistently hiring people aligned with company values, it can also neglect the unit managers' knowledge about which individuals would best match local conditions. We use difference-in-differences analyses to examine the effects of a switch from decentralized to centralized hiring at our research site. We find that, on average, centralized hiring does not increase the quality of employee-company matches, *except* when store managers are overly busy. Yet, we find that centralized hiring is associated with higher employee departure rates in stores where the manager is likely to be more informed than headquarters (stores that serve repeat customers or customers with atypical demographic characteristics relative to customers typically served by the chain).

In the fourth chapter, "Field Studies in Management Accounting," I share some of my experiences conducting field-based research. In particular, I describe the main stages involved in a typical research project using archival data from the field. My hope is that this may provide future doctoral students with a roadmap for conducting field-based studies in accounting.

CHAPTER 2

Beyond Performance: When Potential Matters to Employee Career Outcomes

2.1 Introduction

In this study, I examine how managers' assessments of employee *potential* (i.e. promotion prospects) are related to employee career outcomes, focusing in particular on voluntary separations (though I also document the role of these assessments in promotions and terminations). Furthermore, I investigate how the aggregate potential of an organization's employee base evolves over time. While organizations are increasingly requiring managers to distinguish between current performance and future-oriented potential when evaluating employees, the management control literature has been almost silent on assessments of potential (c.f. Bol and Leiby [2016]). Such assessments are intended to facilitate managers' personnel decisions at the employee level, and at more aggregate levels of analysis, human resource management and succession planning more broadly (De Pater et al. [2009]). However, these assessments may also influence employees' decisions and behavior. Thus, in addition to documenting managers' use of these assessments, it is important to understand how they factor into the separation decisions of employees, and to identify the underlying firm- and employee-driven mechanisms that explain any changes in an organization's aggregate potential.

Many firms rely on internal promotions of existing employees to fill higher-level positions rather than hiring externally, and a growing body of research examines the basis on which promotion decisions are made. For instance, theoretical and empirical research in accounting and economics shows that performance measures (reflecting employee effort and/or ability) are important determinants of an employee's likelihood of being promoted (e.g. Cichello et al. [2009]; Campbell [2008]; Gibbs [1995]). Promoting employees on the basis of performance provides incentives for employees to exert effort in their current role, and is a mechanism often used by organizations seeking to sort employees to more senior positions that best suit their skills and abilities (Campbell [2008]; Gibbs [1995]). However, performance is typically an incomplete

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metric for identifying employees who should advance the hierarchy, because divergences often arise between an employee's current job performance and his or her suitability for higher-level positions (Bol and Leiby [2016]; Grabner and Moers [2013]; Peter and Hull [1969]).

To support the management of one of their most critical assets – their human resources – many organizations are augmenting their performance evaluation systems with assessments of employees' promotion prospects (i.e. *potential*). The basic premise of these systems is that the combination of performance and potential provides relevant information beyond standalone performance, both at the individual employee level – which can aid firms in making career decisions (i.e. promotions and terminations) – and at the organizational level – whereby understanding the status of the organization's labor force can inform broader organizational policies and efforts (Beer [2009]; De Pater et al. [2009]; Corporate Leadership Council [2005a]).

Despite the prevalence of potential assessments in practice, our knowledge of how these assessments play out in an organizational context is limited. A primary reason being that several characteristics of potential assessments pose important challenges for empirical work in this area. For instance, potential assessments are often not standardized across an organization or captured in a sufficiently systematized manner to enable an empirical study. In other instances, these assessments are not disclosed to employees, or are disclosed only in certain circumstances (for instance, some companies inform only "high potential" employees of their status), resulting in ambiguity as to employees' knowledge of their potential (making it difficult to draw inferences as to how potential assessments influence employees' actions).[1]

In this study, I overcome many of the challenges faced by empiricists wishing to study potential assessments by using archival data from an organization's "performance and potential system". For the purposes of this study, I define "*performance and potential systems*" as the formal routines and procedures that managers use to: (1) explicitly evaluate and rate employees on past performance and future potential

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[1] Of the organizations surveyed in the CEB 2016 HIPO Survey, 21% always communicate high potential status to employees identified as such, 47% sometimes communicate high potential status, and 32% never communicate high potential status. Furthermore, less than half of the surveyed organizations said they had a formal "high potential" definition with consensus across the organization. (Corporate Leadership Council [2016]).

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on a periodic basis; (2) communicate these ratings to employees; and (3) determine compensation and promotion decisions.

In a setting where a less sophisticated system of potential assessments was previously in place, I begin by providing descriptive evidence on the potential assessments from the firm's performance and potential system.[2] I begin in this way since, to the best of my knowledge, this is the first study to analyze data from such a system. Specifically, I document: 1) how observable employee characteristics are related to managers' assessments of potential; 2) the use of potential (and performance) ratings in the organization's promotion and termination decisions; and 3) whether potential is predictive of future performance at the next hierarchical level.

Next, I develop and test hypotheses regarding when and how potential assessments are related to employees' voluntary departure decisions. While promotions and terminations are almost exclusively decided by the organization, employees themselves are the primary decision-makers when it comes to voluntary separations. Understanding how potential assessments may influence employees' voluntary departure decisions has important implications for how firms measure and communicate potential.

In my voluntary departure tests, I consider two distinct sets of employees: those hired prior to the implementation of a performance and potential system ("*original employees*"), and those hired subsequent to implementation ("*newly-hired employees*"). Referring to information asymmetry and match quality, I hypothesize that amongst newly-hired employees – for whom potential assessments should be most informative, and where sensitivity to potential is likely to be the greatest – those assessed as "low potential" will be more likely to leave the organization voluntarily than those assessed as "high potential". Conversely, I hypothesize that there will be no relation between assessed potential and voluntary departures amongst original employees.

Lastly, I examine whether the aggregate potential of the employee base, as measured by the organization's performance and potential system, increases over time. Even where a performance and

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[2] I do not have data pertaining to the period prior to the implementation of the performance and potential system.

potential system simply formalizes an existing implicit or less formal system, it should act to raise the perceived importance of potential to employee career outcomes and long-term organizational success (since aggregate potential is a measure of the organization's pipeline of future managers). To this end, there are three main mechanisms – including deliberate firm actions and employee-initiated actions – which could lead to an increase in the proportion of high-potential employees. These mechanisms are: (1) low-potential employees sorting out of the organization (via terminations and/or voluntary departures); (2) remaining employees increasing their assessed potential (due to motivational effects of the system); and/or (3) high-potential employees sorting into the organization (through the organization's selection practices and/or self-sorting by employees). However, none of these mechanisms is a given and the relative efficacy of each is unknown.

I address the above using proprietary, longitudinal data from a multinational organization. My data pertains to more than 15,000 unique managerial employees, and spans the period 2008 (the year the performance and potential system was implemented) through 2015. My first set of results shows that the likelihood of an employee being rated as high potential is: 1) higher for males, full-time employees, and expats; 2) increasing in current job performance, management level tenure, and hierarchical level; 3) decreasing in age and company tenure; and 4) related to functional area and country of employment. As expected, performance and potential ratings are both positively associated with the probability of promotion, and negatively associated with the probability of termination. Furthermore, I find that potential ratings are predictive of future performance at the next hierarchical level, after controlling for current performance.

Contrary to expectations, I find that newly-hired employees assessed as "low potential" are no more likely to voluntarily depart the organization than employees assessed as "high potential" (the same is true for original employees). However, when I examine the organization's more nuanced potential assessment categories (rather than a simple high/low dichotomy), I find evidence that newly-hired employees exhibit

a negative linear relation between potential ratings and voluntary departures[3], and that the likelihood of departure is reduced following an upwards revision in potential. Conversely, the pattern of results for original employees suggests that while the likelihood of voluntary departure is greater when an employee experiences a downward revision in potential, departures are otherwise unrelated to potential ratings.

Examining the period following the implementation of the performance and potential system, I find that the organization experienced an increase in the proportion of employees assessed as "high potential". While I am not able to attribute any of this increase to low-potential employees sorting out of the organization (mechanism one), I find evidence that remaining employees increased their assessed potential (mechanism two), though only relative to *expected* potential given their demographic and employment profile (*absolute* potential was relatively constant). I find strong evidence that part of this increase was due to high-potential employees sorting into the organization (mechanism three).

This study contributes to the literature in several ways. First, I extend the literature in accounting and economics on performance evaluation systems. With one notable exception, an experimental study documenting that managers distinguish between current job performance and promotion prospects (potential) when performing overall assessments (Bol and Leiby [2016]), the literature has been almost silent on evaluations of employee potential. My study uses archival field data from an organization that has formalized such evaluations, enabling a detailed examination of the attributes of potential assessments, and more importantly, providing empirical evidence on how employee and organizational outcomes are related to these assessments.

Second, I contribute to the literature on employees' voluntary separation decisions. While not a study of performance and potential systems per se, a related study (Björkman et al. [2013]) uses survey data (employees in nine organizations were surveyed) to examine the relation between being identified as "talent" and employees' voluntary departure intentions. The study finds that employees identified as "talent" have lower departure intentions than employees not identified as "talent" (but their departure

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[3] The difference in coefficients between the lowest "high potential" rating and the highest "low potential" rating were not statistically significant, which likely explains why I failed to find significance when simply examining the high/low dichotomy.

intentions are no different to employees who don't know whether they have been identified as "talent"). My study differs from this prior study in several important ways. First, I use comprehensive archival data from a single organization, enabling me to hold firm-level characteristics constant, to control for various employee-level variables, and to study actual voluntary departures rather than departure intentions. Second, I study a continuum of potential ratings rather than a simple "talent" or not dichotomy. Third, all employees in my setting know their potential rating in my sample period and I distinguish between two types of employees – employees hired prior to the implementation of the performance and potential system, and employees hired later.

Third, I speak to the literature examining the mechanisms leading to improvements in aggregate organizational outcomes following the implementation of a new management control system (e.g. Banker et al. [2001]; Lazear [2000]). Prior research in this area has primarily focused on the mechanisms leading new incentive plans to cause performance improvements, whereas in this study the innovation was formally measuring and communicating potential via a performance and potential system, and the outcome of interest is aggregate "potential". Given these different contexts, it was unclear to what extent prior findings would translate to this study.

Finally, this study has practical implications for organizations and their managers as they consider whether and how to measure and communicate potential. The performance and potential system studied in this paper is a variant of what is commonly referred to as a "9-box grid" among practitioners. Despite the popularity of 9-box grid systems, empirical evidence on the effects of such systems is lacking. My study highlights several outcomes of the system following what appears to be a successful implementation by a large, global organization. Hence, this study should be of interest not only to organizations considering adopting such a system, but also to organizations that have already adopted such a system and who may find it timely to assess the impact of the system in their organization.

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2.2 Prior literature and hypothesis development

2.2.1 Potential assessments

In addition to effort, employee productivity depends on the quality of the match between the employee and the organization as a whole, and the employee's skills and abilities and those required by their specific job (e.g. Grabner and Moers [2013]; Gibbs [1995]; Jovanovic [1979]). The importance of match quality is reflected in the *sorting role* of promotions, whereby individuals are promoted on the basis of the match between their skills/abilities and those required at higher levels (Grabner and Moers [2013]; Gibbs [1995]). Much of the empirical research on promotion decisions finds that the likelihood of promotion is increasing in current job performance (e.g. Cichello et al. [2009]; Campbell [2008]; Gibbs [1995]). Promoting employees on the basis of performance provides incentives to employees (since promotions are typically accompanied by increases in pay, prestige, etc.) and, unless the skills and abilities needed in the next job are orthogonal to those needed in the current job, enables the firm to sort employees to some degree.

To the extent that divergences exist between an employee's current job performance and his or her suitability for the next job in the organizational hierarchy, performance represents an incomplete metric for identifying the best promotion candidates (assuming the organization wishes to optimize match quality, rather than using promotions primarily for incentive purposes).[4] Consequently, organizations are increasingly evaluating not only employees' performance, but also their potential (i.e. promotion prospects). Assessments of potential enable an organization to capture factors (including, but not limited to, specific skills and abilities) relevant to an employees' "promotability", but which are not necessarily reflected (or fully reflected) in performance. For instance, these assessments could take into account an employee's leadership competencies (since such competencies are likely to become increasingly important as an employee ascends the corporate hierarchy) and/or the extent to which the employee exemplifies organizational values.

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[4] Chan (2016) provides the following as examples (current job / next job) of where the best performer in the current job is unlikely to be the best candidate for the next job due to the differences in the skills needed: salesperson / sales manager, engineer / project manager, and teacher / school administrator.

Potential assessments are consistent with the '*Informativeness Principle'* (Hölmstrom [1979]) applied to the context of promotions, whereby the optimality of managers' promotion decisions (as well as decisions related to employee development) could be enhanced through the availability of multiple imperfect metrics (i.e. performance and potential), where each conveys relevant information as to an employees' suitability for promotion. The basic premise of evaluation systems capturing performance and potential is that employees selected for promotion will be those assessed as having both high performance and high potential (whereas employees with low performance and low potential are likely to be good candidates for termination). Furthermore, aggregating employee assessments in a performance-potential matrix can provide the organization with an overall snapshot of the status of the organization's labor force, which can inform succession planning and human resource management practices (e.g. Beer [2009]; De Pater et al. [2009]; Corporate Leadership Council [2005a]).

2.2.1.1 Observable employee characteristics and potential assessments

Drawing on the findings of their *High-Potential Management Survey*, the Corporate Leadership Council [2005b] defined a high potential employee as, "someone with the ability, engagement, and aspiration to rise to and succeed in more senior, more critical positions." Two elements of this definition are particularly noteworthy. First, the attributes of a high potential employee as described in this definition are inherently difficult to observe and quantify. Second, potential relates to actions in the future.

Assessing an employee's potential for future promotion is, by nature, a subjective process whereby managers seek to forecast an employee's expected match quality with higher-level positions based on observations of their skills, abilities and behaviors in their current job. Yet, despite "potential" being a latent individual attribute, some observable characteristics may, on average, be associated with the likelihood of an employee being labeled as high potential. For instance, the longer an employee's organizational tenure, the more opportunity the organization has had to assess an employee's match quality and to sort the employee to the position that best suits his or her skills and abilities. Thus, the likelihood of being assessed as high potential will plausibly be decreasing with organizational tenure.

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While typically in the context of assessments gathered via survey instruments (rather than being the result of a formal system within the firm), scholars in management, organizational behavior and psychology have examined various factors associated with managers' assessments of employee promotability. This research has found employees' current job performance, employment characteristics, and to a lesser extent, demographic characteristics, to be associated with promotability assessments (e.g. De Pater et al. [2009]; Hoobler et al. [2009]; Wayne et al. [1999]; Greenhaus et al. [1990]). Research in accounting and economics on promotion decisions has also found these factors to be associated with an employees' likelihood of promotion (e.g. Grabner and Moers [2013]; Cichello et al. [2009]; Campbell [2008]).

Consistent with this research on promotability assessments and promotions, I expect observable employee characteristics to be associated with the likelihood of an assessment of "high potential". Specifically, in Section 4, I consider the following as possible variables that may have explanatory power: current job performance, organizational tenure, job tenure, full-time status, hierarchical level, age, and gender. I also consider an employee's functional area, business unit, and country of employment.

2.2.1.2 Use of potential assessments in promotion and termination decisions

Where organizations separately assess employee performance and potential, the intention is that employees chosen for promotion will be those who score highly on both dimensions. However, managers responsible for promotion decisions may default to using performance as the primary input, particularly if they consider performance to be more objective than potential (Ittner et al. [2003]). Relatedly, managers may be wary of potential assessments conducted by others if they perceive that potential ratings are more prone to favoritism than performance ratings and/or if there is less consensus regarding what constitutes "potential" as opposed to "performance".

In the spirit of providing descriptive evidence on potential assessments (and to ensure that such assessments are meaningful, an implicit assumption of this study), in Section 4, I document the relation between potential (and performance) ratings and managers' promotion and termination decisions, as well

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as their economic magnitudes. I also provide evidence on whether potential ratings are predictive of the subsequent performance of promoted employees, controlling for past performance.

2.2.2 Potential assessments and voluntary departures

In this section, I develop and test specific hypotheses as to how potential assessments are related to employees' *voluntary* departure decisions. For an organization, there can be significant costs associated with voluntary departures, including the loss of firm-specific human capital and costs of hiring and training new employees (Holtom et al. [2008]). As a result, firms generally seek to minimize these departures, and academic research continues to play an important role in identifying the determinants of individuals' voluntary departure decisions (Holtom et al. [2008]).

In addition to the intended use of potential assessments in promotion and termination decisions, an employee's promotion prospects may be an important input to his or her decision to remain with or voluntarily leave an organization. Prior studies have documented that much of an individual's lifetime earnings comes about via promotions (e.g. Gibbs [1995]). Consequently, employees with low promotion prospects may prefer to find alternative employment where their chances of ascending the hierarchy are greater. Furthermore, firms are likely to devote greater resources (e.g. mentoring, training) to employees rated higher on potential. For instance, prior research has found a positive association between supervisors' assessments of employee promotability and the level of mentoring provided (Wayne at el. [1999]).[5] Since perceived organizational support is negatively related to employees' departure decisions (Rhoades and Eisenberger [2002]), this unequal allocation of resources and support may further act to retain high potential employees and result in departures amongst low potential employees.

Despite the rewards stemming from promotions, not all employees desire to be promoted; many employees may derive sufficient intrinsic motivation and extrinsic rewards from their existing job (Prendergast [2008]). Furthermore, employees with low promotion prospects may have similar low

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[5] While Wayne et al. [1999] interpret this association as evidence that higher levels of mentoring lead to better promotion prospects, my interpretation is that supervisors invest more heavily in mentoring those employees with more favorable prospects.

prospects elsewhere[6], and may be better remaining with the organization due to their accumulation of firm-specific human capital and because switching employers is not costless. Consequently, low potential employees may be no more likely to leave an organization voluntarily than high potential employees. In fact, since high potential employees are likely to have more attractive outside options than low potential employees, they may be more likely to leave the organization in search of better external opportunities.[7]

To date, little empirical evidence exists on how potential assessments are related to employees' voluntary departure decisions. Closest to this study is a recent survey-based study of employees across nine organizations, which finds that employees who have not been formally identified by their organization as belonging to a talent pool have higher departure intentions than employees who have been formally identified as belonging to such a pool (Björkman et al. [2013]). However, none of the organizations had a policy of always informing employees of their standing (though all had a formal talent review system in place to identify high performing and high potential employees) and more than two-thirds of respondents did not know whether they were part of their organization's talent pool. Furthermore, it was unclear to what extent performance vis-à-vis potential factored into talent pool decisions, making it difficult to extrapolate these findings to the context of a performance and potential system.

This study examines voluntary departure decisions in the period subsequent to an organization's implementation of a performance and potential system. While all employees were subject to the same system, two subsamples of employees naturally emerge – those hired in the initial years following implementation (referred to as *"newly-hired"* employees), and those hired prior to implementation (referred to as *"original"* employees). Since the degree of information asymmetry and the matching process is expected to vary between these two subsamples (due to differences in average organizational tenure), I expect differential responses to potential.

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[6] While assessments of potential refer to the employee's prospects with their current organization, unless the firm is particularly idiosyncratic, there is likely to be a degree of overlap in the skills desired by the current organization and those desired by firms in the same labor market. What is likely to differ is how the particular skills are weighted by different organizations (Lazear [2009]).

[7] Another alternative, which can arise where an organization recognizes a more nuanced continuum of potential, is that the very lowest and highest potential employees leave (since a very low potential rating may indicate a particularly poor employee-organization match, while a very high potential rating may place the employee in high demand in the labor market). Such a curvilinear relation between performance and voluntary departures has been found in some prior research (Trevor et al. 1997).

<u>Newly-hired employees</u>

Prior research documents more varied career outcomes for new hires, relative to other employees, since there exists much uncertainty early in an employee's tenure regarding his or her ability, match quality, etc. (e.g. Bidwell [2011]; Baker et al. [1994]). Particularly relevant to this study is that departures often occur early in an employee's tenure (Holtom et al. [2008]). Potential ratings can act to reduce information asymmetry amongst newly-hired employees regarding the basis on which promotion decisions in the firm are made, and what an employee's prospects are. Since higher potential ratings signal greater promotion prospects and better match quality between the employee and the organization, low-potential employees may exhibit a greater propensity to leave than high-potential employees. Yet, newly-hired employees may make departure decisions based primarily on job performance with little regard to potential ratings (since they may be more concerned about their initial job fit as opposed to their future prospects), and/or may consider initial potential ratings to be too subjective or premature.

On balance, I expect voluntary departures to be greater amongst low potential employees, formalized in my first hypothesis:

Hypothesis 1a: *Under a performance and potential system, newly-hired employees assessed as low potential will be more likely to voluntarily depart than employees assessed as high potential.*

<u>Original employees</u>

The relation between potential ratings and voluntary departures is more ambiguous for original employees. There are reasons (discussed above) for both low-potential and high-potential employees to leave an organization voluntarily. While on balance it seems most plausible that low-potential employees would be more likely to leave an organization, low-potential employees may tend to leave on the basis of their potential relatively quickly once their potential becomes apparent – this may occur early in an employee's tenure.

Even in the absence of a performance and potential system, original employees may have been able to infer their promotion prospects, for two reasons. First, potential is likely to be a relatively fixed attribute of

an employee reflecting underlying ability, competencies, and overall fit with the organization's culture and values.[8] This is in contrast to performance, which tends to be at least partly a function of employee effort, and thus is more likely to vary over time (e.g. Bonner and Sprinkle [2002]; Datar et al. [2001]).[9] Second, original employees – due to their relatively longer organizational tenure compared to newly-hired employees – have likely had the opportunity to observe who the organization does and does not promote, and to compare their own abilities and competencies to those of promoted and non-promoted employees. Thus, since information asymmetry may be low, the information content of potential ratings may be limited for original employees.

There exists an active debate as to whether organizations should disclose potential ratings (from implicit or less formal systems that fail to meet my definition of a performance and potential system) to employees (Björkman et al. [2013]). The hesitancy to disclose potential ratings largely stems from fears that high performing, yet low-potential employees, will react negatively to their low potential status (e.g. Gelens et al. [2014]; Malik and Singh [2014]; Conger and Fulmer [2003]). Counter to my conjecture above, employees may be unaware of their status. Or where they are aware, low-potential employees may react negatively to receiving an explicit rating to that effect[10]. On the other hand, high-potential employees may welcome and respond positively to formal communication of their status (Björkman et al. [2013]).

The above discussion makes it difficult to predict departure behavior amongst original employees, and I state my hypothesis in the null:

Hypothesis 1b: *Under a performance and potential system, voluntary departures of original employees will be unrelated to assessed potential.*

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[8] One model of "potential" proposes five elements, three of which are particularly difficult to change or learn (motives, leadership assets and 'senior executive identity') and two that can be more easily acquired (skills and knowledge) (Fernandez-Araoz et al. [2011]).

[9] This view is supported by empirical evidence, which shows improved employee performance following the introduction of performance-based incentives (e.g. Bandiera et al. [2007]; Banker et al. [2001]).

[10] On the contrary, a policy of transparency regarding employees' potential status may increase perceptions of organizational justice amongst low potential employees (Dries [2013]).

2.2.3 Evolution in workforce potential

While the previous sections considered employee-level career outcomes under a performance and potential system, in this section I consider aggregate outcomes. Prior research has documented improvements in aggregate organizational outcomes following the implementation of new management control systems and examined the mechanisms through which these improvements arise. Since the novel feature of performance and potential systems is "potential," I examine whether and how an organization using such a system experiences an increase in the overall potential of its employee base.[11]

There are three primary mechanisms through which the "potential" of an organization's employee base could increase over time, all of which have been documented in prior research, though not in the context of "potential" (Campbell [2012]; Banker et al. [2001]; Lazear [2000]). One, low-potential employees could sort out of organization, through voluntary departures or terminations. Two, remaining employees could increase their assessed potential. The implicit incentives associated with potential ratings (through their use in promotion decisions) could motivate these employees to improve their latent potential, both because awareness of these incentives may be heightened in the context of a performance and potential system and because assessing employees on potential should lead to greater clarity regarding the metrics that are important in promotion decisions. Yet, even if latent potential remained unchanged, assessed potential could increase if the passage of time enabled employees the opportunity to demonstrate their existing potential. Three, high-potential employees could sort into the organization, through employee self-selection and/or the organization screening on potential.

Despite the likely desirability of an upward shift in the "potential" of the employee base, such a shift is not guaranteed (particularly if a performance and potential simply formalizes an already existing, less formal system). For instance, as noted previously, "potential" may be a relatively fixed characteristic of an employee that is difficult to change, even in the presence of strong incentives to improve. There exists a

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[11] For an organization, there is likely to be an "optimal" level of aggregate potential whereby aggregate potential below this level poses challenges with respect to filling higher-level positions, while aggregate potential above this level may increase departures of high-potential employees because promotion chances are reduced. Given the "war for talent", I assume the majority of organizations are below their optimal level, and that some increase in aggregate potential is a desirable outcome.

diversity of perspectives regarding whether an individual's ability and personality is more akin to a fixed characteristic or whether there is sufficient scope to develop and improve (Dweck, 2008). Mechanisms available within an organization for employees to develop and improve their potential generally include training, mentoring, and on-the-job experience, but the efficacy of these is uncertain. Furthermore, "sorting out" effects may be limited if employees have already inferred their potential in the absence of a performance and potential system, though terminations initiated by the organization could play an important role. Finally, given limited information about new hires, it may be difficult for organizations to improve their ability to hire "high-potential" employees.

On balance, I expect to find a favorable shift in the distribution of potential across the employee base over time, leading to the following hypothesis:

> *Hypothesis 2:* *Following the introduction of a performance and potential system, the proportion of high-potential employees increases over time.*

To shed further light on the particular mechanisms at play if the proportion of high-potential employees does indeed increase over time, I pose the following three sub-hypotheses:

> *Hypothesis 2a:* *In the period following the introduction of a performance and potential system, employees initially recognized as low potential are more likely to leave the organization than employees initially recognized as high potential.*

> *Hypothesis 2b:* *In the period following the introduction of a performance and potential system, employees present at the time the system was introduced and who remain with the organization will be more likely to receive a high potential rating with the passage of time.*

> *Hypothesis 2c:* *Amongst employees present in the organization at the end of my sample period, employees hired in the period subsequent to the introduction of a performance and potential system will be more likely to be recognized as high potential than employees hired before the system was introduced.*

2.3 Research setting and data

The research site for this study is a large, multinational company ("MULTI"). MULTI employs approximately 50,000 people across 80 countries, and is a major player in the markets in which it competes.

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The company is organized into six primary business units and several functional areas reside within each unit. This study focuses on the organization's managerial employees, of which there are approximately 11,000. The organizational hierarchy comprises six management levels, and for the purposes of this study, I refer to the most senior management level as management level 1, and the most junior level as management level 6.

Following a recent change in leadership and with the global financial crisis posing a number of challenges, in 2008 MULTI began a concentrated effort to transform the organization and create a more performance-driven culture. Widespread organizational efforts to increase the company's competitiveness included a significant acquisition, aggressively directing resources to the most promising brands and markets, adopting a new company vision statement and accompanying company values, and implementing a performance and potential system for managerial employees.

2.3.1 Performance evaluation at MULTI

From the 2008 performance year onwards, the annual performance evaluation process at MULTI culminated in each managerial employee receiving two ratings from their manager: one summarizing the employee's performance over the past year (*PERFORMANCE*), and the other reflecting the employee's future promotion prospects in the organization (*POTENTIAL*). There were four possible performance ratings an employee could receive – *Clearly Below*, *Moderate*, *Strong*, or *Top* – and four possible potential ratings – *Well Placed*, *Horizontal Potential*, *Vertical Potential (1 level)*, or *Vertical Potential (2 levels)* (see Appendix A for the definitions of the potential ratings).[12] Figure 2.1 shows the organization's performance-potential grid.

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[12] As can be seen in Appendix A, some modifications were made to the potential ratings over time (note that 2011 was the earliest year for which I was provided with the rating definitions). For instance, some of the rating names were changed (e.g. from *Right Level* to *Well Placed*) and timing guidelines (e.g. promotable to the next level within two-five years for *Vertical Potential (1 level)*, and promotable to two management levels above the current level within 10 years for *Vertical Potential (2 levels)*) were removed. Furthermore, a requirement for the employee to be "geographically mobile" was added for employees rated *Vertical Potential (2 levels)*, as was a requirement for managers at higher hierarchical levels to have completed an assignment abroad for at least one year to receive this rating. I do not account for these changes explicitly in my empirical analyses (I do include year fixed effects) as these changes appear to have had little bearing on the potential ratings given to employees (for instance, as can be seen in Table

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Figure 2.1: Performance-potential grid
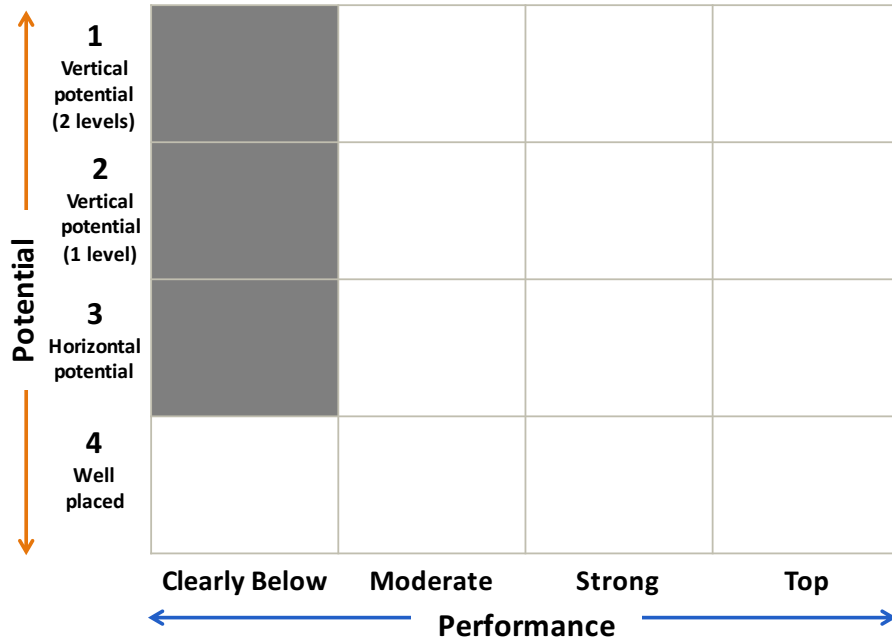
A senior executive at the company explained the rationale for the performance and potential system as follows:

> *"In 2008 we felt we should change… [the existing system]. We need a higher level of transparency regarding performance and also potential; especially the potential part was even more secret than the performance part… We had in parallel [in the existing system] a performance assessment which was shared with the employee [and] what we saw… was that it did not always correlate to the assessment that was done in secret… Therefore, we said, that needs to be aligned; we don't need two systems. We assess performance and share it, and also assess potential and share it."*

Overall ratings under the new system were based on three performance criteria (*Quality and Quantity of Performance*, *Customer Orientation*, and *Teamwork/Cooperation*) and five potential competencies (*Initiative and Determination to Achieve*, *Decisiveness and Risk Taking*, *Driving Change and Innovation*, *Perspective and Judgment*, and *Convincing and Influencing*).[13] Criteria and competencies from the previous evaluation system were the main inputs for the criteria and competencies chosen for the new system. Managers were expected to rate employees on each of the individual criterion/competencies (which

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2.9, I do not observe a sharp increase in the percentage of employees rated as high potential (i.e. those employees rated *Vertical Potential (2 levels)* or *Vertical Potential (1 level)*) when the timing guidelines were removed.

[13] There was an additional performance criterion (*Leadership*) and an additional potential competency (*Coaching and Developing People*) for managerial employees with formal personnel management responsibilities.

followed the same rating scale as the overall ratings), and then subjectively aggregate these individual ratings to arrive at the overall ratings.

To ensure managers sufficiently differentiated amongst employees, the company applied a forced distribution to the overall performance ratings, requiring 5% of employees to be rated as *Clearly Below*, 25% to be rated as *Moderate*, 60% to be rated as *Strong*, and 10% to be rated as *Top*.[14] Employees rated *Clearly Below* for performance were automatically rated *Well Placed* for potential. There was no specified distribution for the potential ratings.

Towards the end of the performance year (which ended on December 31), managers would conduct a preliminary assessment of each of their direct reports. The company then held numerous calibration committee meetings[15] over a two to three month period, whereby several managers would meet to discuss the proposed ratings for their direct reports and make modifications as needed. In a typical calibration committee meeting, each employee's manager summarized the employee's performance for the year and explained the overall performance and potential ratings given. Other managers in attendance would then weigh in, sharing their own experiences with the employee and/or asking questions to the employee's manager, in order to come to a consensus on the ratings. Following the calibration committee meetings, and once all ratings were finalized, managers held individual meetings with each of their direct reports to provide ratings, give feedback, and discuss development actions for the coming year.

2.3.2 Compensation at MULTI

Compensation for managerial employees at MULTI typically comprised a fixed salary and a performance-based bonus.[16] For the performance-based bonus, the majority of managerial employees

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[14] The company allowed a small degree of flexibility regarding the final ratings distribution, particularly when the system was first implemented. Furthermore, in later years, the company relaxed the 5% requirement for *Clearly Below* ratings, allowing the combined total percentage of *Clearly Below* and *Moderate* to be 30%.

[15] See Demeré et al. [2015] for a study on calibration committees. These authors find evidence that calibration committees reduce inter-rater differences in initial ratings and mitigate leniency biases, though they also tend to exacerbate centrality biases. Centrality biases are not a major concern in this study (at least not for performance ratings) given the organization's use of a forced distribution for performance ratings.

[16] The median annual salary during my sample period was approximately $86,000 (USD), while the median annual performance-based bonus (from the STI) was approximately $14,000 (USD).

participated in the company's "short-term incentive plan" ("STI").[17] Managerial employees at higher hierarchical levels also participated in a long-term incentive plan.

While the specifics of the STI plan did vary to some degree over time, the performance-based bonus determined under the STI was always a function of: (1) company performance, (2) team performance, and (3) individual performance. The bonus payout also depended on the employee's target bonus (which was typically a set % of the employee's salary; the % varied by management level). From the 2011 year onwards, the employee's *performance* rating from the performance and potential system was an input into the employee's individual performance score for the STI, and hence affected an employee's annual bonus.[18] Potential ratings were never linked to the STI in any way.

2.3.3 Data

The data for this study are retrieved from MULTI's personnel and performance management systems. Personnel data was extracted as of December 31 for each of the years 2008 through 2015 (inclusive), and comprised a listing of all managerial employees present in the company as of year-end (including employees who exited on the year-end date). The year-end listing included demographic, employment and compensation data for each employee.[19] A listing of employee exits was extracted for each of the years 2009 through 2015 (inclusive), and performance and potential ratings were extracted from the performance management system for the years 2008 through 2014.

In total, my sample comprises 68,678 employee-year observations, representing 16,732 unique managerial employees.[20] To be included in my sample, these observations met the following criteria: (1)

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[17] Some managerial employees however, typically those working in sales functions, did not participate in the STI and instead received performance-based bonuses under a separate, localized, sales-based incentive plan (these employees still received performance and potential ratings under the performance and potential system).

[18] For the 2011-2013 years (inclusive), 50% of the individual performance score was determined by an employee's performance rating (the remaining 50% depended on performance with respect to two individual key performance indicators); for the 2014 year, the entire individual performance score was determined by the performance rating.

[19] Only a subset of this data was made available to me for the employees (approximately 30) at the most senior management level in the company, management level 1 (the company wished to exclude these employees from the study). However, the available data does enable me to trace promotions to the most senior management level during my sample period.

[20] This number excludes the 2015 observations (the 2015 data did not include performance and potential ratings as the data was received in January 2016, before the 2015 ratings were finalized), though these observations were used to trace promotions and exits which occurred in 2015.

the employee was present in the company as of December 31 of the relevant year (or exited on December 31); (2) the employee was at management level 2, 3, 4, 5 or 6[21]; and (3) one observation per year for each employee. Of these observations, 63,959 (93%) included a valid year-end performance and potential rating for the employee.[22]

Table 2.1, Panel A provides descriptive statistics for the full sample of 2008-2014 employee-year observations (58,930 observations) with valid performance and potential ratings, and with complete data for all variables used in my analyses (those variables reported plus variables capturing fixed effects).[23] Descriptive statistics for specific samples used in my empirical analyses are also provided. Table 2.1, Panel B provides the distribution of performance-potential ratings for all managerial employees (appearing in the 2008 year-end listing) for the 2008 evaluation year. Table 2.2 is a correlation matrix of the independent variables used in my analyses.

Table 2.1, Panel A: Descriptive statistics

Descriptive statistics are for the period 2008-2014, where an observation is an employee year. *PERFORMANCE_Top* is an indicator equal to 1 if the employee's performance rating for the year is "Top", 0 for any other performance rating. *PERFORMANCE_Strong* is an indicator equal to 1 if the employee's performance rating for the year is "Strong", 0 for any other performance rating. *PERFORMANCE_Moderate* is an indicator equal to 1 if the employee's performance rating for the year is "Moderate", 0 for any other performance rating. *PERFORMANCE_Clearly Below* is an indicator equal to 1 if the employee's performance rating for the year is "Clearly Below", 0 for any other performance rating. *POTENTIAL_Vertical (2 levels)* is an indicator equal to 1 if the employee's potential rating for the year is "Vertical (2 levels)", 0 for any other potential rating. *POTENTIAL_Vertical (1 level)* is an indicator equal to 1 if the employee's potential rating for the year is "Vertical (1 level)", 0 for any other potential rating. *POTENTIAL_Horizontal is an* indicator equal to 1 if the employee's potential rating for the year is "Horizontal", 0 for any other potential rating. *POTENTIAL_Well Placed* is an indicator equal to 1 if the employee's potential rating for the year is "Well Placed", 0 for any other potential rating. *Male* is an indicator equal to 1 if the employee is male, 0 otherwise. *Age* is the employee's age, in years. *Tenure_with_Co* is the employee's total tenure with the company, in years. *Tenure_in_Mgmt_Level* is the employee's tenure at their current management level, in years. *Full_Time* is an indicator equal to 1 if the employee is employed on a full-time basis, 0 otherwise. *Expat* is an indicator equal to 1 if the employee is on an international assignment, 0 otherwise. *Unemp_Rate* is the country-level unemployment rate for the year. *Promotion* is an indicator equal to 1 if the employee was promoted from one management level to another management level during the year, 0 otherwise. *Termination* is an indicator equal to 1 if the employee exited the company involuntarily during the year, 0 if the employee did not exit during the year or exited voluntarily. *Voluntary_Departure* is an indicator equal to 1 if the employee exited the company voluntarily during the year, 0 if the employee did not exit during the year or exited involuntarily.

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[21] 775 observations relate to employees at a management level that does not appear in the current management hierarchy. This management level was utilized by a small number of countries prior to 2013 (though the vast majority of observations occur in 2008 and 2009). Where possible, I mapped these observations to one of the existing management levels, as this seemed preferable to dropping these observations.

[22] In general, the remaining observations were for employees who had only recently joined the company, who had started in a new position, or who were on extended leave during or at the end of the year, and hence were not assessed under the performance and potential system in that year.

[23] I usually excluded observations if there were less than 100 observations pertaining to the same functional area, or less than 100 observations pertaining to the same country of employment.

Table 2.1, Panel A: Descriptive statistics (Continued)

Full sample

Variable	n	Mean	Median	S.D.	Min	Max
PERFORMANCE_Top	58,930	0.10	0	0.31	0	1
PERFORMANCE_Strong	58,930	0.62	1	0.49	0	1
PERFORMANCE_Moderate	58,930	0.26	0	0.44	0	1
PERFORMANCE_Clearly Below	58,930	0.02	0	0.13	0	1
POTENTIAL_Vertical (2 levels)	58,930	0.03	0	0.18	0	1
POTENTIAL_Vertical (1 level)	58,930	0.26	0	0.44	0	1
POTENTIAL_Horizontal	58,930	0.44	0	0.50	0	1
POTENTIAL_Well Placed	58,930	0.26	0	0.44	0	1
Male	58,930	0.71	1	0.45	0	1
Age (Years)	58,930	42.88	42	8.82	22	74
Tenure_with_Co (Years)	58,930	13.29	11.50	9.09	0.02	51.33
Tenure_in_Mgmt_Level (Years)	58,930	6.07	3.75	6.48	0.00	51.33
Full_Time	58,930	0.97	1	0.17	0	1
Expat	58,930	0.04	0	0.21	0	1
Unemp_Rate	58,930	7.93	7.38	4.13	0.70	27.50

Promotion sample

No employees receiving "Clearly Below" for performance were promoted in the subsequent year, hence they are excluded from the below table.

Variable	n	Mean	Median	S.D.	Min	Max
Promotion$_{(t+1)}$	52,619	0.07	0	0.25	0	1
PERFORMANCE_Top	52,619	0.11	0	0.31	0	1
PERFORMANCE_Strong	52,619	0.65	1	0.48	0	1
PERFORMANCE_Moderate	52,619	0.24	0	0.43	0	1
POTENTIAL_Vertical (2 levels)	52,619	0.03	0	0.18	0	1
POTENTIAL_Vertical (1 level)	52,619	0.27	0	0.44	0	1
POTENTIAL_Horizontal	52,619	0.46	0	0.50	0	1
POTENTIAL_Well Placed	52,619	0.24	0	0.43	0	1
Male	52,619	0.71	1	0.45	0	1
Age (Years)	52,619	42.89	43	8.65	22	74
Tenure_with_Co (Years)	52,619	13.46	11.89	8.99	0.04	47.58
Tenure_in_Mgmt_Level (Years)	52,619	6.06	3.84	6.43	0.00	44.37
Full_Time	52,619	0.97	1	0.17	0	1
Expat	52,619	0.04	0	0.20	0	1
Unemp_Rate	52,619	7.96	7.38	4.16	0.70	27.50

Termination sample

Variable	n	Mean	Median	S.D.	Min	Max
Termination$_{(t+1)}$	56,773	0.03	0	0.18	0	1
PERFORMANCE_Top	56,773	0.11	0	0.31	0	1
PERFORMANCE_Strong	56,773	0.63	1	0.48	0	1
PERFORMANCE_Moderate	56,773	0.25	0	0.43	0	1
PERFORMANCE_Clearly Below	56,773	0.02	0	0.12	0	1
POTENTIAL_Vertical (2 levels)	56,773	0.03	0	0.18	0	1
POTENTIAL_Vertical (1 level)	56,773	0.26	0	0.44	0	1
POTENTIAL_Horizontal	56,773	0.45	0	0.50	0	1

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Table 2.1, Panel A: Descriptive statistics (Continued)

Termination sample (Continued)

POTENTIAL_Well Placed	56,773	0.25	0	0.44	0	1
Male	56,773	0.71	1	0.46	0	1
Age (Years)	56,773	42.75	42	8.69	22	74
Tenure_with_Co (Years)	56,773	13.23	11.58	8.99	0.04	46.02
Tenure_in_Mgmt_Level (Years)	56,773	6.02	3.75	6.42	0.00	44.95
Full_Time	56,773	0.97	1	0.17	0	1
Expat	56,773	0.04	0	0.17	0	1
Unemp_Rate	56,773	7.93	7.38	4.16	0.70	27.50

Voluntary departure sample, original managerial employees

Variable	n	Mean	Median	S.D.	Min	Max
Voluntary Departure$_{(t+1)}$	37,575	0.03	0	0.17	0	1
PERFORMANCE_Top	37,575	0.11	0	0.32	0	1
PERFORMANCE_Strong	37,575	0.64	1	0.48	0	1
PERFORMANCE_Moderate	37,575	0.23	0	0.42	0	1
PERFORMANCE_Clearly Below	37,575	0.02	0	0.13	0	1
POTENTIAL_Vertical (2 levels)	37,575	0.02	0	0.13	0	1
POTENTIAL_Vertical (1 level)	37,575	0.22	0	0.41	0	1
POTENTIAL_Horizontal	37,575	0.46	0	0.50	0	1
POTENTIAL_Well Placed	37,575	0.30	0	0.46	0	1
Male	37,575	0.74	1	0.44	0	1
Age (Years)	37,575	45.13	45	8.00	24	74
Tenure_with_Co (Years)	37,575	15.93	14.42	8.56	1.03	46.02
Tenure_in_Mgmt_Level (Years)	37,575	7.98	6.00	6.96	0.02	44.95
Full_Time	37,575	0.96	1	0.19	0	1
Expat	37,575	0.04	0	0.21	0	1
Unemp_Rate	37,575	7.95	7.38	4.14	0.70	27.50

Voluntary departure sample, newly-hired managerial employees

Variable	n	Mean	Median	S.D.	Min	Max
Voluntary Departure$_{(t+1)}$	6,320	0.09	0	0.28	0	1
PERFORMANCE_Top	6,320	0.10	0	0.30	0	1
PERFORMANCE_Strong	6,320	0.57	1	0.50	0	1
PERFORMANCE_Moderate	6,320	0.32	0	0.47	0	1
PERFORMANCE_Clearly Below	6,320	0.02	0	0.12	0	1
POTENTIAL_Vertical (2 levels)	6,320	0.10	0	0.30	0	1
POTENTIAL_Vertical (1 level)	6,320	0.43	0	0.50	0	1
POTENTIAL_Horizontal	6,320	0.36	0	0.48	0	1
POTENTIAL_Well Placed	6,320	0.10	0	0.30	0	1
Male	6,320	0.61	1	0.49	0	1
Age (Years)	6,320	36.59	35	7.72	22	65
Tenure_with_Co (Years)	6,320	2.23	1.84	1.46	0.04	7.00
Tenure_in_Mgmt_Level (Years)	6,320	1.84	1.50	1.26	0.04	7.00
Full_Time	6,320	0.98	1	0.12	0	1
Expat	6,320	0.03	0	0.16	0	1
Unemp_Rate	6,320	6.84	6.17	2.95	0.70	26.10

Table 2.1, Panel B: 2008 distribution of performance-potential ratings

	Clearly Below	Moderate	Strong	Top
Vertical Potential (2 levels)		0.36% (n=32)	1.63% (n=144)	0.63% (n=56)
Vertical Potential (1 level)		4.27% (n=377)	14.39% (n=1,270)	4.94% (n=436)
Horizontal Potential		8.03% (n=709)	25.33% (n=2,236)	5.40% (n=477)
Well Placed	1.86% (n=164)	9.10% (n=803)	20.94% (n=1,848)	3.12% (n=275)

Table 2.2: Correlation matrix

Correlations are for the period 2008-2014, where an observation is an employee-year. *, **, *** denote significance at the 0.10, 0.05, and 0.01 level, respectively. *PERF_ORD* = 4 for a performance rating of "Top", = 3 for a rating of "Strong", = 2 for a rating of "Moderate, and = 1 for a rating of "Clearly Below". *POT_ORD* = 4 for a potential rating of "Vertical Potential (2 levels)", = 3 for a potential rating of "Vertical Potential (1 level)", = 2 for a potential rating of "Horizontal Potential", and = 1 for a potential rating of "Well Placed". *Male* is an indicator equal to 1 if the employee is male, 0 otherwise. *Age* is the employee's age, in years. *Tenure_with_Co* is the employee's total tenure with the company, in years. *Tenure_in_Mgmt_Level* is the employee's tenure at their current management level, in years. *Full_Time* is an indicator equal to 1 if the employee is employed on a full-time basis, 0 otherwise. *Expat* is an indicator equal to 1 if the employee is on an international assignment, 0 otherwise. *Unemp_Rate* is the country-level unemployment rate for the year.

	Variable	1	2	3	4	5	6	7	8
1	*PERF_ORD*								
2	*POT_ORD*	0.28***							
3	*Male*	-0.03***	-0.13***						
4	*Age*	-0.08***	-0.50***	0.25***					
5	*Tenure_with_Co*	-0.02***	-0.40***	0.17***	0.70***				
6	*Tenure_in_Mgmt_Level*	-0.05***	-0.29***	0.12***	0.51***	0.57***			
7	*Full_Time*	0.01***	0.02***	0.24***	0.01**	-0.02***	-0.04***		
8	*Expat*	0.04***	0.15***	0.00	-0.10***	-0.05***	-0.07***	0.03***	
9	*Unemp_Rate*	0.01	-0.06***	-0.02***	0.02***	0.06***	0.10***	0.01***	-0.06***

2.4 Empirical tests and results

2.4.1 Descriptive evidence – Attributes and use of potential (and performance) ratings

2.4.1.1 Observable employee characteristics and potential ratings

I begin by documenting how observable employee characteristics are associated with the likelihood of an employee being assessed as "high potential", i.e. receiving a rating of *Vertical Potential (2 levels)* or *Vertical Potential (1 level)*. Table 2.3 reports the results of a logit regression of *High_Potential* on various employee characteristics.

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Table 2.3: Observable employee characteristics and high potential status

Logit regression. Robust z-statistics based on standard errors adjusted for clustering at the employee level in parentheses. *, **, *** denote significance at the 0.10, 0.05, and 0.01 level, respectively. *High_Potential* is an indicator equal to 1 if the employee's potential rating is "Vertical (2 levels)" or "Vertical (1 level)". *PERFORMANCE_Top* is an indicator equal to 1 if the employee's performance rating for the year is "Top", 0 for any other performance rating. *PERFORMANCE_Strong* is an indicator equal to 1 if the employee's performance rating for the year is "Strong", 0 for any other performance rating. *PERFORMANCE_Moderate* is an indicator equal to 1 if the employee's performance rating for the year is "Moderate", 0 for any other performance rating. *Male* is an indicator equal to 1 if the employee is male, 0 otherwise. *Age* is the employee's age, in years. *Tenure_with_Co* is the employee's total tenure with the company, in years. *Tenure_in_Mgmt_Level* is the employee's tenure at their current management level, in years. *Full_Time* is an indicator equal to 1 if the employee is employed on a full-time basis, 0 otherwise. *Expat* is an indicator equal to 1 if the employee is on an international assignment, 0 otherwise. *Unemp_Rate* is the country-level unemployment rate for the year. *MANAGEMENT LEVEL_Level Two* is an indicator equal to 1 if the employee's management level is 2, 0 for any other management level. *MANAGEMENT LEVEL_Level Three* is an indicator equal to 1 if the employee's management level is 3, 0 for any other management level. *MANAGEMENT LEVEL_Level Four* is an indicator equal to 1 if the employee's management level is 4, 0 for any other management level. *MANAGEMENT LEVEL_Level Five* is an indicator equal to 1 if the employee's management level is 5, 0 for any other management level. *MANAGEMENT LEVEL_Level Six* is an indicator equal to 1 if the employee's management level is 6, 0 for any other management level.

	High_Potential
Intercept	2.322***
	(7.275)
PERFORMANCE_Top	1.998***
	(41.268)
PERFORMANCE_Strong	0.946***
	(30.396)
PERFORMANCE_Moderate	Base Category
	(Omitted)
Male (Indicator)	0.089**
	(2.324)
Age	-0.133***
	(-38.145)
Tenure_with_Co	-0.046***
	(-13.635)
Tenure_in_Mgmt_Level	0.013***
	(2.793)
Full_Time (Indicator)	0.406***
	(4.044)
Expat (Indicator)	0.745***
	(10.615)
Unemp_Rate	0.012
	(1.153)
MANAGEMENT LEVEL_Level Two	1.533***
	(10.532)
MANAGEMENT LEVEL_Level Three	0.775***
	(9.709)
MANAGEMENT LEVEL_Level Four	0.436***
	(8.740)
MANAGEMENT LEVEL_Level Five	0.419***
	(10.853)

Table 2.3: Observable employee characteristics and high potential status (Continued)

MANAGEMENT LEVEL_Level Six	Base Category (Omitted)
Business Unit Fixed Effects?	Yes
Function Fixed Effects?	Yes
Country Fixed Effects?	Yes
Year Fixed Effects?	Yes
n	51,722
Pr > ChiSq	<0.001
Pseudo R2	0.2622

As expected (since the skills and abilities needed at the next hierarchical level are likely to overlap to some degree with those needed at the current level), I find that that the likelihood of a high potential assessment is increasing in an employee's current job performance (*PERFORMANCE*, using a set of indicator variables to capture the set of possible ratings). With respect to demographic characteristics, the likelihood of being recognized as high potential is decreasing in employee age (*Age*), while males[24] (*Male*=1 if the employee is male) are more likely to be considered high potential.

Turning to employment-related characteristics, the probability of a high potential assessment is decreasing in company tenure (*Tenure_with_Co*), though increasing in management level tenure (*Tenure_in_Mgmt_Level*), and both full-time employees (*Full_Time*=1 if the employee works full-time) and expat employees (*Expat*=1 if the employee is on an international assignment) are more likely to receive a high potential rating.[25] Contrary to my expectations, I find that the probability of a high potential rating is increasing in an employee's hierarchical level (*MANAGEMENT LEVEL*, using a set of indicator variables to capture the set of levels). It may be that organizations become increasingly selective at higher hierarchical levels, such that a greater proportion of employees are likely to possess the skills and abilities needed for even higher levels. Another possibility raised by human resource managers at my research site is that any

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[24] In untabulated analyses, I ran the regression separately for the years 2009-2011 and 2012-2014. While the coefficient on *Male* was positive and significant in the 2009-2011 subsample, it was not significant in the 2012-2014 subsample.

[25] While the positive coefficient on management level tenure may seem surprising (since it is generally thought to represent the time period over which an employee has been passed over for promotion, e.g. Gibbs [1995]), holding all else constant – particularly, age, company tenure, and management level – an employee with longer tenure at the current management level may have greater skills and abilities than an employee with shorter tenure since the employee with longer tenure reached the current management level faster.

leniency biases may be more pronounced at higher levels since managers may be more hesitant to reveal "bad news" to more senior employees (since retention of these employees is particularly important).

I find that the probability of a high potential rating varies across functional areas, countries and years, but not across business units (based on unreported chi-square tests). Finally, I find no relation between the unemployment rate in an employee's country of employment (*Unemp_Rate*) and the likelihood of a high potential rating.

2.4.1.2 Promotions and terminations

In this section, I examine the use of performance and potential ratings (from the organization's performance and potential system) in promotion and termination decisions, and shed light on their economic significance in terms of promotion and termination probabilities. Table 2.4 provides descriptive evidence on the relation between performance and potential ratings and subsequent promotions by displaying, for each year (2008-2014), the percentage of employees in each performance-potential rating combination that are promoted in the subsequent year. The percentage of promoted employees is highest amongst employees exhibiting both high performance and high potential.

Table 2.4: Performance/potential rating combinations and promotions in the subsequent year

M = Moderate Performance, S = Strong Performance, T = Top Performance (no employees receiving Clearly Below for performance were promoted in the subsequent year)
4 = Well Placed Potential, 3 = Horizontal Potential, 2 = Vertical Potential (1 level), 1= Vertical Potential (2 levels)
* Note: There were 158 additional employees promoted in the subsequent year who did not have a valid rating for the year, and hence do not appear in the below table.

	M4	M3	M2	M1	S4	S3	S2	S1	T4	T3	T2	T1	Total
2008	1.19%	1.87%	9.82%	21.43%	1.48%	3.46%	13.39%	19.85%	0.83%	3.71%	18.71%	34.62%	5.80%
	7/590	11/587	33/336	6/28	24/1,626	72/2,080	158/1,180	26/131	2/242	17/458	78/417	18/52	452/7,789
2009	1.40%	3.58%	11.43%	11.11%	1.68%	4.95%	19.45%	33.00%	2.54%	6.49%	21.75%	53.85%	7.51%
	9/643	27/755	40/350	2/18	28/1,667	118/2,384	226/1,162	33/100	5/197	27/416	67/308	28/52	610/8,125
2010	0.98%	1.70%	6.28%	6.67%	1.88%	4.84%	20.29%	33.67%	2.75%	5.96%	24.55%	48.44%	7.62%
	7/714	15/881	13/207	1/15	25/1,332	122/2,519	256/1,262	33/98	3/109	22/369	81/330	31/64	609/7,995
2011	0.46%	1.65%	7.74%	11.11%	2.74%	5.18%	16.92%	31.21%	1.32%	5.30%	22.60%	40.26%	7.63%
	3/652	18/1,092	23/297	2/18	33/1,206	124/2,394	231/1,365	49/157	1/76	16/302	87/385	31/77	618/8,099
2012	0.77%	0.53%	7.83%	16.67%	0.94%	2.81%	16.23%	39.30%	0.00%	2.07%	18.01%	36.67%	7.26%
	5/646	6/1,125	26/332	8/48	9/961	68/2,416	265/1,633	90/229	0/54	5/242	76/422	44/120	602/8,290
2013	0.00%	0.69%	5.57%	7.69%	0.72%	2.02%	14.65%	28.57%	2.04%	1.20%	20.17%	39.83%	6.55%
	0/602	8/1,154	26/396	2/26	7/971	50/2,478	261/1,781	62/217	1/49	3/250	95/471	47/118	562/8,581
2014	0.36%	1.20%	3.03%	20.00%	0.83%	1.82%	14.32%	36.10%	0.00%	1.89%	18.71%	44.55%	6.70%
	2/553	14/1,162	16/407	5/25	7/848	47/2,587	270/1,886	74/205	0/51	5/265	93/497	45/101	578/8,631
Total	0.75%	1.47%	7.61%	14.61%	1.54%	3.57%	16.23%	32.38%	1.54%	4.13%	20.39%	41.78%	7.01%
	33/4,400	99/6,756	177/2,325	26/178	133/8,611	601/16,858	1,667/10,269	367/1,137	12/778	95/2,302	577/2,830	244/584	4,031/57,510

To provide further evidence on the determinants of promotions, I regress (in a logit model) whether an employee is promoted in the subsequent year on current year *PERFORMANCE* and current year *POTENTIAL* (using indicator variables to capture the set of possible ratings[26]). I set the promotion indicator variable (*Promotion*) equal to one if the employee was promoted during the year, and equal to zero if the employee was not promoted during the year.[27] Prior research on promotion decisions includes as controls various employee characteristics and employment conditions that may differentially affect the likelihood of promotion (Grabner and Moers [2013]; Gibbs [1995]). While I demonstrated in Table 2.3 that such variables are associated with the likelihood of an employee being assessed as high potential, these variables may continue to play a role in actual promotion decisions above and beyond their influence in potential assessments. Thus, I control for the employee's age, gender, tenure with the company, tenure in current management level, full-time status, expat status, and the yearly unemployment rate in the employee's country of employment. I also include fixed effects for management level, business unit, function, country of employment, and year. I cluster standard errors at the employee level.[28]

Table 2.5, Column 1 shows that performance ratings and potential ratings are both positively and statistically significantly related to the probability of promotion in the subsequent year. The performance rating coefficients imply that holding all other variables at their mean values, when *PERFORMANCE* is *Top* the probability of an employee being promoted in the subsequent year is 4.14%, when *Strong* the probability is 2.23%, and when *Moderate* the probability is 0.60%. Similarly, when *POTENTIAL* is *Vertical Potential (2 levels)* the probability of promotion is 15.02%, when *Vertical Potential (1 level)* the probability is 7.20%, when *Horizontal Potential* the probability is 1.29%, and when *Well Placed* the probability is 0.44%.

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[26] With the exception of the *Clearly Below* performance category since no employees with this rating were promoted in the subsequent year.

[27] This variable takes a value only if the employee was present in the organization as of the relevant year-end (including employees who exited on December 31).

[28] Results are robust to clustering by manager and robust to using a linear probability model.

Next, I examine the relation between terminations and performance and potential ratings. I expect the probability of termination to be particularly high for employees rated *Clearly Below* for performance, relative to the other performance categories, given the organization used a forced distribution for performance ratings and generally terminated employees in this category. Table 2.5, Column 2 contains the results from a logistic regression of the probability of termination in the next year as a function of current year *PERFORMANCE* and current year *POTENTIAL* (using indicator variables to capture the set of possible ratings). I set the termination indicator variable (*Termination*) equal to zero if the employee did not exit during the year or if the employee exited voluntarily.[29] I set the variable equal to one if the termination reason in my dataset is "employer reason" or "mutual agreement", where the latter indicates that the employee and employer together decided to end their relationship.[30] I include the same control variables and fixed effects as in Column 1. Again, I cluster standard errors at the employee level.[31]

Consistent with expectations, I find that performance ratings and potential ratings are both negatively and statistically significantly related to the probability of termination. The performance rating coefficients imply that holding all other variables at their mean values, when *PERFORMANCE* is *Top* the probability of termination is 0.85%, when *Strong* the probability is 1.17%, when *Moderate* the probability is 3.95%, and when *Clearly Below* the probability is 22.26%. Similarly, when *POTENTIAL* is *Vertical Potential (2 levels)* the probability of termination is 0.80%, when *Vertical Potential (1 level)* the probability is 1.03%, when *Horizontal Potential* the probability is 1.45%, and when *Well Placed* the probability is 3.37%.[32]

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[29] I classify the following termination reasons as voluntary: "development"; "employee's reason"; "external job offer"; "financial"; "job design"; "manager"; and "personal reason".

[30] I exclude from my regressions observations where the employee retired in the subsequent year ("retirement" or "early retirement"). I also exclude observations where the employee exited in the subsequent year if based on the termination reason I was unable to classify the termination reason as "voluntary" or "involuntary" (the termination reasons I did not classify are: "death"; "disinvestment"; "dormant work contract"; "end of probation period"; "leaving"; and "other exit reason").

[31] Results are robust to clustering by manager and robust to using a linear probability model.

[32] The difference in coefficients between *Vertical Potential (2 levels)* and *Vertical Potential (1 level)* is not statistically significant.

Table 2.5: Performance and potential ratings and employee career outcomes

Logit regressions. Robust z-statistics based on standard errors adjusted for clustering at the employee level in parentheses. *, **, *** denote significance at the 0.10, 0.05, and 0.01 level, respectively. Column (1): All pairwise comparisons of the *POTENTIAL* coefficients, and all pairwise comparisons of the *PERFORMANCE* coefficients, are statistically significantly different. Column (2): With the exception of the comparison between *POTENTIAL_Vertical (2 levels)* and *POTENTIAL_Vertical (1 level)*, all pairwise comparisons of the *POTENTIAL* coefficients are statistically significantly different. All pairwise comparisons of the *PERFORMANCE* coefficients are statistically significantly different. *Promotion* is an indicator equal to 1 if the employee was promoted from one management level to another management level during the year, 0 otherwise. *Termination* is an indicator equal to 1 if the employee exited the company involuntarily during the year, 0 if the employee did not exit during the year or exited voluntarily. *POTENTIAL_Vertical (2 levels)* is an indicator equal to 1 if the employee's potential rating for the year is "Vertical (2 levels)", 0 for any other potential rating. *POTENTIAL_Vertical (1 level)* is an indicator equal to 1 if the employee's potential rating for the year is "Vertical (1 level)", 0 for any other potential rating. *POTENTIAL_Horizontal is an* indicator equal to 1 if the employee's potential rating for the year is "Horizontal", 0 for any other potential rating. *POTENTIAL_Well Placed* is an indicator equal to 1 if the employee's potential rating for the year is "Well Placed", 0 for any other potential rating. *PERFORMANCE_Top* is an indicator equal to 1 if the employee's performance rating for the year is "Top", 0 for any other performance rating. *PERFORMANCE_Strong* is an indicator equal to 1 if the employee's performance rating for the year is "Strong", 0 for any other performance rating. *PERFORMANCE_Moderate* is an indicator equal to 1 if the employee's performance rating for the year is "Moderate", 0 for any other performance rating. *PERFORMANCE_Clearly Below* is an indicator equal to 1 if the employee's performance rating for the year is "Clearly Below", 0 for any other performance rating. *Tenure_with_Co* is the employee's total tenure with the company, in years. *Tenure_in_Mgmt_Level* is the employee's tenure at their current management level, in years. *Full_Time* is an indicator equal to 1 if the employee is employed on a full-time basis, 0 otherwise. *Expat* is an indicator equal to 1 if the employee is on an international assignment, 0 otherwise. *Unemp_Rate* is the country-level unemployment rate for the year. *Male* is an indicator equal to 1 if the employee is male, 0 otherwise. *Age* is the employee's age, in years.

	Promotion(t+1)	*Termination(t+1)*
	(1)	(2)
Intercept	-13.178***	0.278
	(-19.799)	(0.497)
POTENTIAL_Vertical (2 levels)	3.692***	-1.465***
	(29.951)	(-5.719)
POTENTIAL_Vertical (1 level)	2.869***	-1.215***
	(27.986)	(-13.251)
POTENTIAL_Horizontal	1.090***	-0.863***
	(11.062)	(-13.872)
POTENTIAL_Well Placed	Base Category	Base Category
	(Omitted)	(Omitted)
PERFORMANCE_Top	1.963***	-3.511***
	(24.122)	(-21.980)
PERFORMANCE_Strong	1.324***	-3.190***
	(18.534)	(-33.139)
PERFORMANCE_Moderate	Base Category	-1.941***
	(Omitted)	(-21.073)
PERFORMANCE_Clearly Below	N/A	Base Category
		(Omitted)
Tenure_with_Co	-0.008*	-0.035***
	(-1.910)	(-7.799)
Tenure_in_Mgmt_Level	0.035***	0.019***
	(7.743)	(3.775)

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Table 2.5: Performance and potential ratings and employee career outcomes (Continued)

Full_Time (Indicator)	0.221	0.152
	(1.534)	(0.887)
Expat (Indicator)	0.596***	0.041
	(7.273)	(0.285)
Unemp_Rate	0.000	-0.027**
	(0.019)	(-1.973)
Male (Indicator) and *Age* included?	Yes	Yes
Mgmt. Level Fixed Effects?	Yes	Yes
Business Unit Fixed Effects?	Yes	Yes
Function Fixed Effects?	Yes	Yes
Country Fixed Effects?	Yes	Yes
Year Fixed Effects?	Yes	Yes
n	52,619	56,773
Pr > ChiSq	<0.001	<0.001
Pseudo R^2	0.2834	0.2087
Implied probabilities		
All variables at mean	1.74%	1.61%
POTENTIAL_Vertical (2 levels) = 1	15.02%	0.80%
POTENTIAL_Vertical (1 level) = 1	7.20%	1.03%
POTENTIAL_Horizontal = 1	1.29%	1.45%
POTENTIAL_Well Placed = 1	0.44%	3.37%
PERFORMANCE_Top = 1	4.14%	0.85%
PERFORMANCE_Strong = 1	2.23%	1.17%
PERFORMANCE_Moderate = 1	0.60%	3.95%
PERFORMANCE_Clearly Below = 1	N/A	22.26%

In Table 2.6, I document the relation between potential ratings and the subsequent performance of newly promoted employees. My sample comprises observations for managerial employees promoted to their current hierarchical level in the current year (from the management level one below their current level) and I report the results of various specifications (adding additional control variables) of an ordered logistic model of an ordinal performance rating variable (where the highest value corresponds to a rating of "Top") on indicators capturing the prior year performance rating and indicators capturing the prior year potential rating. In these analyses, I find that potential ratings are in fact predictive of performance at the *next* hierarchical level.[33]

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[33] In untabulated analyses, I also find that, controlling for current-period performance, current-period potential ratings predict subsequent-period employee performance at the *same* hierarchical level. This is not necessarily surprising since employees were assessed on the same leadership competencies when arriving at the overall potential rating, irrespective of their current management

Table 2.6: Performance and prior year performance and potential ratings

Ordinal logit regressions. Robust z-statistics based on standard errors adjusted for clustering within an individual employee in parentheses. *, **, *** denote significance at the 0.10, 0.05, and 0.01 level, respectively. For all columns, the difference in coefficients between each and every one of the performance ratings is statistically significant. For columns (1) and (3), the difference in coefficients between each and every one of the potential ratings is statistically significant, with the exception of *Vertical Potential (1 level)* and *Horizontal Potential* which are not statistically significantly different from each other. For column (2) the difference in coefficients between each and every one of the potential ratings is statistically significant, with two exceptions: (1) *Vertical Potential (1 level)* and *Horizontal Potential* are not statistically significantly different from each other; (2) *Horizontal Potential* and *Well Placed* are not statistically significantly different from each other. *PERFORMANCE_Top* is an indicator equal to 1 if the employee's performance rating for the year is "Top", 0 for any other performance rating. *PERFORMANCE_Strong* is an indicator equal to 1 if the employee's performance rating for the year is "Strong", 0 for any other performance rating. *PERFORMANCE_Moderate* is an indicator equal to 1 if the employee's performance rating for the year is "Moderate", 0 for any other performance rating. *POTENTIAL_Vertical (2 levels)* is an indicator equal to 1 if the employee's potential rating for the year is "Vertical (2 levels)", 0 for any other potential rating. *POTENTIAL_Vertical (1 level)* is an indicator equal to 1 if the employee's potential rating for the year is "Vertical (1 level)", 0 for any other potential rating. *POTENTIAL_Horizontal is an* indicator equal to 1 if the employee's potential rating for the year is "Horizontal", 0 for any other potential rating. *POTENTIAL_Well Placed* is an indicator equal to 1 if the employee's potential rating for the year is "Well Placed", 0 for any other potential rating. *Changed_Function* is an indicator equal to 1 if the employee's functional area as of the year-end differed to the functional area for the year-end of the prior year. *Changed_BusUnit* is an indicator equal to 1 if the employee's business unit as of the year-end differed to the business unit for the year-end of the prior year. *Changed_Country* is an indicator equal to 1 if the employee's country of work as of the year-end differed to the country of work for the year-end of the prior year. *Male* is an indicator equal to 1 if the employee is male, 0 otherwise. *Age* is the employee's age, in years. *Tenure_with_Co* is the employee's total tenure with the company, in years. *Tenure_in_Mgmt_Level* is the employee's tenure at their current management level, in years. *Full_Time* is an indicator equal to 1 if the employee is employed on a full-time basis, 0 otherwise. *Expat* is an indicator equal to 1 if the employee is on an international assignment, 0 otherwise.

	Dependent Variable: Ordinal_Performance		
	(1)	(2)	(3)
Constant/ cut1	-4.941***	-6.121***	-5.780***
	(-11.105)	(-10.975)	(-6.291)
Constant/ cut2	-0.453**	-1.640***	-1.237
	(-2.275)	(-4.016)	(-1.454)
Constant/ cut3	3.236***	2.127***	2.677***
	(15.369)	(5.212)	(3.146)
PERFORMANCE_Top [lagged]	2.085***	2.271***	2.395***
	(13.247)	(13.775)	(14.087)
PERFORMANCE_Strong [lagged]	0.720***	0.818***	0.861***
	(5.478)	(5.993)	(6.214)
PERFORMANCE_Moderate [lagged]	Base Category	Base Category	Base Category
POTENTIAL_Vertical (2 levels) [lagged]	1.067***	0.918***	1.197***
	(5.316)	(4.021)	(4.966)
POTENTIAL_Vertical (1 level) [lagged]	0.405**	0.335*	0.587***
	(2.304)	(1.688)	(2.879)

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level. Hence, a high potential rating is also likely to indicate that an employee possesses skills and abilities relevant at their current level. This finding could also be due to motivational effects of potential ratings, whereby high potential (low potential) employees may be more (less) motivated in the future, which would likely impact their performance.

Table 2.6: Performance and prior year performance and potential ratings (Continued)

POTENTIAL_Horizontal [lagged]	0.397**	0.309	0.430**
	(2.132)	(1.507)	(2.123)
POTENTIAL_Well Placed [lagged]	Base Category	Base Category	Base Category
Changed_Function		-0.190**	-0.248**
		(-2.115)	(-2.490)
Changed_BusUnit		-0.155	-0.042
		(-1.027)	(-0.235)
Changed_Country		-0.504***	-0.419**
		(-3.213)	(-2.527)
Male		-0.069	-0.107
		(-0.848)	(-1.185)
Age		-0.019**	-0.014
		(-2.396)	(-1.595)
Tenure_with_Co		-0.011	-0.004
		(-1.394)	(-0.481)
Tenure_in_Mgmt_Level		-0.702***	-0.801***
		(-5.410)	(-5.817)
Full_Time		0.238	0.205
		(1.017)	(0.782)
Expat		-0.150	0.008
		(-0.985)	(0.042)
Management level fixed effects?	No	No	Yes
Business unit fixed effects?	No	No	Yes
Function fixed effects?	No	No	Yes
Country fixed effects?	No	No	Yes
Year fixed effects?	No	No	Yes
n	3,363	3,275	3,275
Pr > ChiSq	<0.001	<0.001	Not reported

Overall, the results in Tables 2.4 and 2.5 provide compelling evidence that the ratings from the organization's performance and potential system are important determinants of employees' career outcomes, consistent with the premise of these systems (high-performance, high-potential employees are the most likely to be promoted, whereas low performance, low-potential employees are the most likely to leave involuntarily). The predicted probabilities show that potential is most important to promotion decisions, whereas performance is more important in termination decisions. Table 2.6 provides evidence to support the organization's reliance on these ratings in promotion decisions given that potential ratings (and

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performance ratings) are predictive of the future performance of promoted employees.[34] The importance of performance and potential ratings to employee career outcomes is consistent with the existence of significant implicit incentives linked to these ratings (explicit incentives were also linked to the performance ratings via the incentive plan). In the next subsection, I examine how voluntary departure decisions are related to these ratings.

2.4.2 Voluntary employee departures

In hypothesis 1a, I predicted that newly-hired employees receiving a low potential rating would be more likely to voluntarily depart the organization, and in hypothesis 1b, I predicted that low-potential status would be unrelated to voluntary departures amongst original employees. Table 2.7, Panel A contains the results from logistic regressions of the probability of voluntary departure in the next year as a function of "low-potential" status (*LOW_POTENTIAL*=1 if an employee's potential rating is *Horizontal Potential* or *Well Placed*) and current year performance (indicator variables are used to capture the set of possible performance ratings). I set the voluntary departure indicator variable (*Voluntary_Departure*) equal to zero if the employee did not exit during the year or if the employee exited involuntarily. I set the variable equal to one if the termination reason in my dataset is consistent with a voluntary departure (e.g. "external job offer").[35] I include the full set of control variables and fixed effects from Table 2.5, and cluster observations at the employee level.[36]

Column 1 contains the results for original employees (employed by the organization as a manager as of the start of 2008), whereas column 2 contains the results for newly-hired employees (hired by the

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[34] I refrain from drawing conclusions as to whether the weights placed on performance vis-à-vis potential in promotion decisions are optimal (in light of how performance and potential ratings are related to employees' subsequent performance at the next hierarchical level). Promotion decisions are not necessarily intended to maximize subsequent employee performance in the short-run and measured performance is likely a rough proxy to assess the optimality of promotion decisions in my setting given the multidimensional nature of employee's jobs. One important caveat with respect to Table 2.6 is that high potential employees are likely to receive greater resources and support from the organization relative to low potential employees, which could play a role in the results that I document.

[35] Since employee exit information was contained in multiple sources, in some instances the data included more than one exit reason for an employee. I treated the exit as a termination if any of the exit reasons were suggestive of an involuntary exit (in order to ensure exits I coded as voluntary truly reflected voluntary departures).

[36] Results are robust to clustering at the manager level.

organization as a manager in 2008 or later).[37] In both columns, the coefficient on *LOW_POTENTIAL* is positive, but not statistically significant. Hence, I fail to find compelling support for hypothesis 1a, and I cannot reject hypothesis 1b – in the aggregate, low-potential employees appear to be no more likely to voluntarily exit the organization than high-potential employees. Conversely, *PERFORMANCE* is statistically significantly related to the probability of voluntary departure in the subsequent year, with the likelihood of voluntary departure increasing as performance deteriorates.

In Panel B of Table 2.7, I report logistic regression results of the probability of voluntary departure as a function of the full set of possible *POTENTIAL* ratings (rather than the dichotomous *LOW_POTENTIAL* indicator), and performance. In this specification, I find evidence that potential ratings are associated with the probability of voluntary departure. In the original employees sample (column 1), employees receiving a potential rating of *Well Placed* are statistically significantly more likely to leave voluntarily than employees receiving a rating of *Horizontal Potential* or *Vertical Potential (1 level)*. Notably, voluntary departure decisions of newly-hired employees are much more sensitive to potential ratings. Newly-hired employees exhibit a significant and negative linear relation between potential and the likelihood of departure, with all potential rating coefficient comparisons significant except the comparison between *Vertical Potential (1 level)* and *Horizontal Potential*. Predicted probabilities are reported at the end of Table 2.7, Panel B.[38]

With respect to the control variables in Table 2.7, the probability of voluntary departure is decreasing in employee age and tenure with the company, and is increasing in tenure in management level in some

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[37] Note that I exclude from my analyses observations pertaining to employees that were promoted internally from a non-managerial position to the management ranks during my sample period (irrespective of whether they were hired before or after the system implementation). In untabulated analyses, I examined the voluntary departure decisions of non-managerial employees present at the company at the time the system was implemented who were subsequently promoted to the management ranks during my sample period. Interestingly, within this sample (managerial employee observations for these employees), I find that employees receiving the highest potential rating are more likely to voluntarily leave than employees receiving any other potential rating. No other differences in the potential rating coefficients were statistically significantly different.

[38] Results in Table 2.7, Panel B are robust to clustering by manager and are robust to using a linear probability model.

specifications. The country-level unemployment rate is not significantly associated with the likelihood of

voluntary departure.[39]

Table 2.7, Panel A: Low potential status and voluntary departures

Logit regressions. Robust z-statistics based on standard errors adjusted for clustering at the employee level in parentheses. *, **, *** denote significance at the 0.10, 0.05, and 0.01 level, respectively. Column (1): The difference in coefficients between each and every one of the performance ratings is statistically significant. Column (2): With the exception of the comparison between *PERFORMANCE_Top* and *PERFORMANCE_Strong*, the difference in coefficients between each and every one of the performance ratings is statistically significant. *Voluntary_Departure* is an indicator equal to 1 if the employee exited the company voluntarily during the year, 0 if the employee did not exit during the year or exited involuntarily. *LOW_POTENTIAL* is an indicator equal to 1 if the employee's potential rating for the year is "Horizontal" or "Well Placed", 0 for any other potential rating. *PERFORMANCE_Top* is an indicator equal to 1 if the employee's performance rating for the year is "Top", 0 for any other performance rating. *PERFORMANCE_Strong* is an indicator equal to 1 if the employee's performance rating for the year is "Strong", 0 for any other performance rating. *PERFORMANCE_Moderate* is an indicator equal to 1 if the employee's performance rating for the year is "Moderate", 0 for any other performance rating. *PERFORMANCE_Clearly Below* is an indicator equal to 1 if the employee's performance rating for the year is "Clearly Below", 0 for any other performance rating. *Male* is an indicator equal to 1 if the employee is male, 0 otherwise. *Age* is the employee's age, in years. *Tenure_with_Co* is the employee's total tenure with the company, in years. *Tenure_in_Mgmt_Level* is the employee's tenure at their current management level, in years. *Full_Time* is an indicator equal to 1 if the employee is employed on a full-time basis, 0 otherwise. *Expat* is an indicator equal to 1 if the employee is on an international assignment, 0 otherwise. *Unemp_Rate* is the country-level unemployment rate for the year.

	Voluntary Departure(t+1)	
	Original Managerial Employees (1)	Newly-hired Managerial Employees (2)
Intercept	0.464	-1.378
	(0.716)	(-1.143)
LOW_POTENTIAL	0.056	0.127
	(0.701)	(1.184)
PERFORMANCE_Top	Base Category (Omitted)	Base Category (Omitted)
PERFORMANCE_Strong	0.438***	0.316
	(3.356)	(1.509)
PERFORMANCE_Moderate	1.064***	0.948***
	(7.669)	(4.368)
PERFORMANCE_Clearly Below	1.855***	1.624***
	(8.910)	(4.881)
Male (Indicator)	-0.009	-0.166
	(-0.118)	(-1.557)
Age	-0.037***	-0.023**
	(-5.761)	(-2.489)
Tenure_with_Co	-0.086***	-0.118*
	(-10.688)	(-1.845)
Tenure_in_Mgmt_Level	0.013	0.164**
	(1.394)	(2.446)

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[39] While this may seem somewhat surprising, this is supported by Holtom et al.'s [2008] review of the voluntary departure (turnover) literature – at the individual level, "actual unemployment rates do not affect actual individual-level turnover."

Table 2.7, Panel A: Low potential status and voluntary departures (Continued)

Full_Time (Indicator)	0.007	-0.203
	(0.037)	(-0.485)
Expat (Indicator)	-0.255	0.248
	(-1.476)	(0.727)
Unemp_Rate	-0.035	-0.068
	(-1.272)	(-1.267)
Mgmt. Level Fixed Effects?	Yes	Yes
Business Unit Fixed Effects?	Yes	Yes
Function Fixed Effects?	Yes	Yes
Country Fixed Effects?	Yes	Yes
Year Fixed Effects?	Yes	Yes
n	37,575	6,320
Pr > ChiSq	<0.001	<0.001
Pseudo R^2	0.1240	0.0810
Implied probabilities		
All variables at mean	1.55%	7.00%
PERFORMANCE_Top = 1	0.89%	4.33%
PERFORMANCE_Strong = 1	1.37%	5.85%
PERFORMANCE_Moderate = 1	2.54%	10.46%
PERFORMANCE_Clearly Below = 1	5.43%	18.67%

Table 2.7, Panel B: Specific potential ratings and voluntary departures

Logit regressions. Robust z-statistics based on standard errors adjusted for clustering at the employee level in parentheses. *, **, *** denote significance at the 0.10, 0.05, and 0.01 level, respectively. a and b denote that the difference in coefficients from a pairwise comparison of the two coefficients indicated is statistically significant (at the 0.10 level at a minimum). Column (1): The difference in coefficients between each and every one of the performance ratings is statistically significant. Column (2): The pairwise comparisons, *PERFORMANCE_Top* vs. *PERFORMANCE_Strong*, and *PERFORMANCE_Moderate* vs. *PERFORMANCE_Clearly Below*, are not statistically significantly different; all other pairwise comparisons are statistically significantly different (at the 0.10 level at a minimum). *Voluntary_Departure* is an indicator equal to 1 if the employee exited the company voluntarily during the year, 0 if the employee did not exit during the year or exited involuntarily. *POTENTIAL_Vertical (2 levels)* is an indicator equal to 1 if the employee's potential rating for the year is "Vertical (2 levels)", 0 for any other potential rating. *POTENTIAL_Vertical (1 level)* is an indicator equal to 1 if the employee's potential rating for the year is "Vertical (1 level)", 0 for any other potential rating. *POTENTIAL_Horizontal is an* indicator equal to 1 if the employee's potential rating for the year is "Horizontal", 0 for any other potential rating. *POTENTIAL_Well Placed* is an indicator equal to 1 if the employee's potential rating for the year is "Well Placed", 0 for any other potential rating. *PERFORMANCE_Top* is an indicator equal to 1 if the employee's performance rating for the year is "Top", 0 for any other performance rating. *PERFORMANCE_Strong* is an indicator equal to 1 if the employee's performance rating for the year is "Strong", 0 for any other performance rating. *PERFORMANCE_Moderate* is an indicator equal to 1 if the employee's performance rating for the year is "Moderate", 0 for any other performance rating. *PERFORMANCE_Clearly Below* is an indicator equal to 1 if the employee's performance rating for the year is "Clearly Below", 0 for any other performance rating. *Male* is an indicator equal to 1 if the employee is male, 0 otherwise. *Age* is the employee's age, in years. *Tenure_with_Co* is the employee's total tenure with the company, in years. *Tenure_in_Mgmt_Level* is the employee's tenure at their current management level, in years. *Full_Time* is an indicator equal to 1 if the employee is employed on a full-time basis, 0 otherwise. *Expat* is an indicator equal to 1 if the employee is on an international assignment, 0 otherwise. *Unemp_Rate* is the country-level unemployment rate for the year.

	Voluntary Departure$_{(t+1)}$	
	Original Managerial Employees (1)	Newly-hired Managerial Employees (2)
Intercept	0.625	-1.648
	(0.933)	(-1.347)

Table 2.7, Panel B: Specific potential ratings and voluntary departures (Continued)

POTENTIAL_Vertical (2 levels)	Base Category (Omitted)	Base Category (Omitted)
POTENTIAL_Vertical (1 level)	0.001 a	0.406** a
	(0.005)	(1.991)
POTENTIAL_Horizontal	0.013 b	0.423* b
	(0.060)	(1.938)
POTENTIAL_Well Placed	0.241 a, b	0.825*** a, b
	(1.069)	(3.272)
PERFORMANCE_Top	Base Category (Omitted)	Base Category (Omitted)
PERFORMANCE_Strong	0.429***	0.280
	(3.253)	(1.333)
PERFORMANCE_Moderate	1.037***	0.881***
	(7.360)	(4.046)
PERFORMANCE_Clearly Below	1.698***	1.262***
	(7.822)	(3.546)
Male (Indicator)	-0.012	-0.172
	(-0.148)	(-1.607)
Age	-0.041***	-0.026***
	(-6.230)	(-2.834)
Tenure_with_Co	-0.087***	-0.119*
	(-10.781)	(-1.875)
Tenure_in_Mgmt_Level	0.012	0.155**
	(1.327)	(2.314)
Full_Time (Indicator)	0.008	-0.205
	(0.039)	(-0.489)
Expat (Indicator)	-0.253	0.273
	(-1.464)	(0.801)
Unemp_Rate	-0.036	-0.067
	(-1.299)	(-1.241)
Mgmt. Level Fixed Effects?	Yes	Yes
Business Unit Fixed Effects?	Yes	Yes
Function Fixed Effects?	Yes	Yes
Country Fixed Effects?	Yes	Yes
Year Fixed Effects?	Yes	Yes
n	37,575	6,320
Pr > ChiSq	<0.001	<0.001
Pseudo R^2	0.1247	0.0838
Implied probabilities		
All variables at mean	1.54%	6.95%
POTENTIAL_Vertical (2 levels) = 1	1.43%	4.70%
POTENTIAL_Vertical (1 level) = 1	1.43%	6.90%
POTENTIAL_Horizontal = 1	1.45%	7.01%

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POTENTIAL_Well Placed = 1	1.81%	10.12%
PERFORMANCE_Top = 1	0.90%	4.49%
PERFORMANCE_Strong = 1	1.38%	5.86%
PERFORMANCE_Moderate = 1	2.50%	10.20%
PERFORMANCE_Clearly Below = 1	4.75%	14.25%

The relative insensitivity of voluntary departures to potential ratings amongst original employees (only employees receiving the lowest possible potential rating are more likely to leave) suggests that, even absent a performance and potential system, employees may have already inferred their likely promotion prospects and made their decision to stay or leave accordingly. Alternatively, if potential ratings do reveal new information, the time in their organizational tenure at which employees make voluntary departure decisions on the basis of potential may have already passed. In either case, voluntary departure decisions may be more likely to be impacted where employees experience a change in their potential rating. I test this proposition in Table 2.8 using a logistic regression of the probability of voluntary departure as a function of the full set of potential ratings and indicator variables capturing a drop or increase in potential from the prior period to the current period.[40] For completeness, I do the same for performance.

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[40] I first reran the relevant analyses from Table 2.7, Panel B to ensure the results reported there held in the sample where I was able to construct the relevant increase and drop variables (to ensure the results in Table 2.8 were not due to different samples).

Table 2.8: Changes in potential ratings and voluntary departures

Logit regressions. Robust z-statistics based on standard errors adjusted for clustering at the employee level in parentheses. *, **, *** denote significance at the 0.10, 0.05, and 0.01 level, respectively. Column (1): The difference in coefficients between each and every one of the performance ratings is statistically significant. Column (2): The pairwise comparisons, *PERFORMANCE_Top* vs. *PERFORMANCE_Strong*, and *PERFORMANCE_Moderate* vs. *PERFORMANCE_Clearly Below*, are not statistically significantly different; the pairwise comparison *PERFORMANCE_Strong* vs. *PERFORMANCE_Clearly Below* is almost statistically significant (p-value=0.1027); all other pairwise comparisons are statistically significantly different (at the 0.10 level at a minimum). *Voluntary_Departure* is an indicator equal to 1 if the employee exited the company voluntarily during the year, 0 if the employee did not exit during the year or exited involuntarily. *POT_DR*OP is an indicator equal to 1 if the employee's potential rating was revised downwards (i.e. "worse") this year relative to last year, 0 otherwise. *POT_INCREASE* is an indicator equal to 1 if the employee's potential rating was revised upwards (i.e. "better") this year relative to last year, 0 otherwise. *POTENTIAL_Vertical (2 levels)* is an indicator equal to 1 if the employee's potential rating for the year is "Vertical (2 levels)", 0 for any other potential rating. *POTENTIAL_Vertical (1 level)* is an indicator equal to 1 if the employee's potential rating for the year is "Vertical (1 level)", 0 for any other potential rating. *POTENTIAL_Horizontal is an* indicator equal to 1 if the employee's potential rating for the year is "Horizontal", 0 for any other potential rating. *POTENTIAL_Well Placed* is an indicator equal to 1 if the employee's potential rating for the year is "Well Placed", 0 for any other potential rating. *PERF_DR*OP is an indicator equal to 1 if the employee's performance rating was revised downwards (i.e. "worse") this year relative to last year, 0 otherwise. *PERF_INCREASE* is an indicator equal to 1 if the employee's performance rating was revised upwards (i.e. "better") this year relative to last year, 0 otherwise. *PERFORMANCE_Top* is an indicator equal to 1 if the employee's performance rating for the year is "Top", 0 for any other performance rating. *PERFORMANCE_Strong* is an indicator equal to 1 if the employee's performance rating for the year is "Strong", 0 for any other performance rating. *PERFORMANCE_Moderate* is an indicator equal to 1 if the employee's performance rating for the year is "Moderate", 0 for any other performance rating. *PERFORMANCE_Clearly Below* is an indicator equal to 1 if the employee's performance rating for the year is "Clearly Below", 0 for any other performance rating. *Male* is an indicator equal to 1 if the employee is male, 0 otherwise. *Age* is the employee's age, in years. *Tenure_with_Co* is the employee's total tenure with the company, in years. *Tenure_in_Mgmt_Level* is the employee's tenure at their current management level, in years. *Full_Time* is an indicator equal to 1 if the employee is employed on a full-time basis, 0 otherwise. *Expat* is an indicator equal to 1 if the employee is on an international assignment, 0 otherwise. *Unemp_Rate* is the country-level unemployment rate for the year.

	Voluntary_Departure$_{(t+1)}$	
	Original Managerial Employees (1)	Newly-hired Managerial Employees (2)
Intercept	0.306	-1.490
	(0.440)	(-0.966)
POT_DROP	0.332***	-0.063
	(3.710)	(-0.403)
POT_INCREASE	-0.112	-0.322*
	(1.747)	(-1.754)
POTENTIAL_Vertical (2 levels)	Base Category (Omitted)	Base Category (Omitted)
POTENTIAL_Vertical (1 level)	0.011	0.555** a
	(0.050)	(1.990)
POTENTIAL_Horizontal	-0.065	0.651** b
	(-0.281)	(2.090)
POTENTIAL_Well Placed	0.032	1.099*** a, b
	(0.130)	(2.927)
PERF_DROP	-0.114	0.001
	(-1.166)	(0.008)
PERF_INCREASE	0.192*	-0.312*
	(1.747)	(-1.754)
PERFORMANCE_Top	Base Category (Omitted)	Base Category (Omitted)

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Table 2.8: Changes in potential ratings and voluntary departures (Continued)

PERFORMANCE_Strong	0.567***	0.128
	(4.005)	(0.538)
PERFORMANCE_Moderate	1.280***	0.670**
	(7.881)	(2.298)
PERFORMANCE_Clearly Below	1.988***	0.819*
	(8.226)	(1.654)
Male (Indicator)	-0.016	-0.261*
	(-0.190)	(-1.950)
Age	-0.036***	-0.043***
	(-5.297)	(-3.348)
Tenure_with_Co	-0.087***	-0.253***
	(-10.639)	(-3.127)
Tenure_in_Mgmt_Level	0.013	0.144*
	(1.338)	(1.894)
Full_Time (Indicator)	0.056	-0.484
	(0.252)	(-1.105)
Expat (Indicator)	-0.347*	0.225
	(-1.920)	(0.582)
Unemp_Rate	-0.039	0.046
	(-1.402)	(0.635)
Mgmt. Level Fixed Effects?	Yes	Yes
Business Unit Fixed Effects?	Yes	Yes
Function Fixed Effects?	Yes	Yes
Country Fixed Effects?	Yes	Yes
Year Fixed Effects?	Yes	Yes
n	36,710	4,064
Pr > ChiSq	<0.001	<0.001
Pseudo R^2	0.1297	0.0981
Implied probabilities		
All variables at mean	1.49%	6.34%
POTENTIAL_Vertical (2 levels) = 1		3.62%
POTENTIAL_Vertical (1 level) = 1		6.14%
POTENTIAL_Horizontal = 1		6.71%
POTENTIAL_Well Placed = 1		10.12%
PERFORMANCE_Top = 1	0.75%	5.01%
PERFORMANCE_Strong = 1	1.31%	5.67%
PERFORMANCE_Moderate = 1	2.64%	9.35%
PERFORMANCE_Clearly Below = 1	5.21%	10.69%
POT_DROP = 0	1.44%	
POT_DROP = 1	1.99%	
POT_INCREASE = 0		6.77%
POT_INCREASE = 1		5.00%
PERF_INCREASE = 0	1.48%	6.81%
PERF_INCREASE = 1	1.79%	5.08%

Column (1) of Table 2.8 reports the results for original employees, whereas column (2) reports the results for newly-hired employees. In this specification, I find that the voluntary departure decisions of original employees are no longer sensitive to absolute potential ratings, but rather the likelihood of voluntary departure is greater where an employee experiences a drop in his or her potential rating. Voluntary departures amongst newly-hired employees exhibit the same sensitivity to potential ratings as in Table 2.7, Panel B, with the addition that the likelihood of departure is decreasing where an employee experiences an increase in potential. Interestingly, original employees are more likely to leave if they experience an increase in performance, while newly-hired employees are less likely to leave.[41]

Taken together, my results suggest that voluntary departures of original employees tend to be triggered where employees experience a decline in their rated potential, and that departures are relatively insensitive to absolute potential ratings. On the other hand, voluntary departures of recently hired managers exhibit a negative linear relation with rated potential. This is consistent with potential ratings providing important information to newly hired managers, above and beyond their performance, as to their match quality and likely future prospects with the organization, which then factors into departure decisions.[42] Notably, the likelihood of departure amongst newly-hired employees was not statistically significantly different between employees receiving a *Vertical Potential (1 level)* and a *Horizontal Potential* rating, even though the latter indicated the employee was unlikely to be promoted.

According to my conversations with a senior executive at the company, the distinction between whether an employee had demonstrated potential to take on different roles at the same hierarchical level (*Horizontal Potential*) or had demonstrated potential to be promoted to the next level in the hierarchy (*Vertical Potential (1 level)*) represented the distinction where the lines were most blurry. Hence, my finding may be explained

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[41] Results for the control variables contained in Table 2.8 are the same as Table 2.7, with the exception that in Table 2.8 the negative coefficient on Expat became statistically significant at a 0.10 level of significance for original employees. Results in Table 2.8 are robust to using a linear probability model.

[42] In separate analyses, I also examine the voluntary departure decisions of non-managerial employees present at the company at the time the performance and potential system was implemented who were subsequently promoted to the management ranks during my sample period. Interestingly, within this sample (managerial employee observations for these employees), I find that employees receiving the highest potential rating are more likely to voluntarily leave than employees receiving any other potential rating. No other differences in the potential rating coefficients are statistically significantly different.

by newly-hired employees who receive a *Horizontal Potential* rating believing they have scope to increase their potential to *Vertical Potential (1 level)* in the future.

Notably, my findings seem to provide support for the company's rationale to distinguish between "low-potential" employees by recognizing those with "Horizontal Potential" and those who are simply "Well Placed". While the literature predominantly focuses on "low-potential" versus "high-potential" employees, it appears that employees themselves respond differently depending on the more nuanced "low-potential" signal that they receive. A senior executive at the company described the decision to include a *"Horizontal Potential"* rating when implementing the new system:

> *"... for the potential level, the new level is the kind of horizontal career opportunity where we don't see a move in management level but we see that people can move laterally which we felt is a good signal. Otherwise the people only got the feedback you are not promotable, but ... [that] kind of was a very bad message, especially to those who maybe are not moving up the ranks but have a lot of abilities to fill same level positions in different areas."*

2.4.3 Evolution in proportion of high-potential employees over time and mechanisms

In Sections 2.4.1 and 2.4.2, I examined the role of performance and potential ratings in employee-level career outcomes. In this section, I examine how the aggregate potential of the organization's employee base evolved following the implementation of the performance and potential system, and the mechanisms at play.

2.4.3.1 Aggregate distribution of employees over time

As shown in Section 2.4.1, and consistent with my expectations, there existed strong implicit incentives linked to the potential ratings from the performance and potential system at MULTI (given their importance in promotion decisions, as well as their role in terminations[43]). In hypothesis 2, I predicted that the proportion of employees receiving a "high potential" assessment would increase over time.[44]

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[43] Furthermore, high-potential employees at MULTI were often given more interesting and challenging assignments, provided their performance was satisfactory.

[44] While there also existed implicit and explicit incentives linked to performance ratings, the use of a forced distribution for performance means that the aggregate distribution of employees could change over time only with respect to potential ratings.

Figure 2.2 shows the distribution of high potential and low potential employees over the period 2008-2014. Consistent with my hypothesis, this figure reveals a noticeable increase in the proportion of high potential (i.e. *Vertical Potential*) employees with the passage of time (and, by construction, a decrease in the proportion of low potential (i.e. *Horizontal Potential* or *Well Placed*) employees).

Figure 2.2: Distribution of potential over time
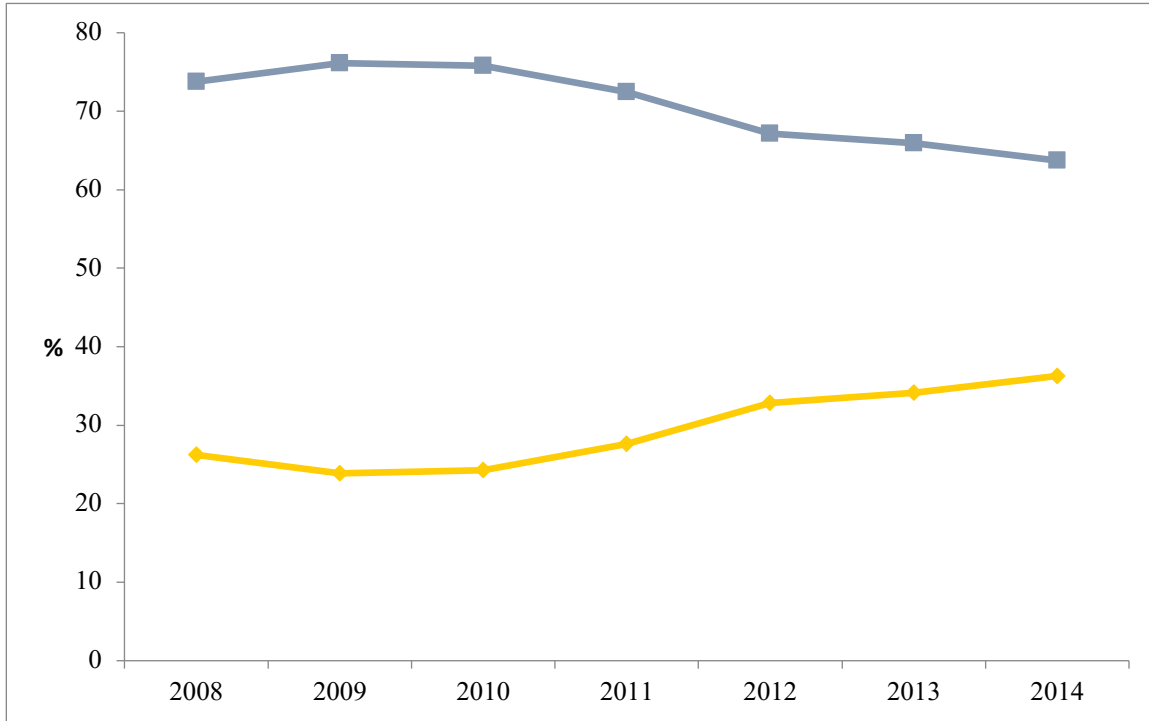
In addition to the three mechanisms described earlier (sorting out, motivational effects, sorting in), aggregate potential could be impacted by changes in the allocation of employees across the organization, for instance across management levels, functional areas, etc., and/or by changes in the profile of employees at the organization. In an attempt to identify the influence of any such changes, I utilize a two-step process (following Fama and French [2001], and Lisowsky et al. [2017]).[45] First, using only 2009 observations[46], I regress *High_Potential* (using a logit model) on variables capturing employee gender, age, and full-time

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[45] I thank Michael Minnis for bringing this approach to my attention.

[46] While the system was implemented in 2008, the functional area was missing for a non-trivial percentage of observations in the 2008 data. Furthermore, fluctuations in the number of employees represented in each function appeared to be unusually high between 2008 and 2009. Thus, I use 2009 as my base year.

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status (*Male*, *Age*, *Full_Time*), and I include management level, business unit, function, and region of employment fixed effects. Results are reported in Table 2.9, Panel A. Second, using the coefficients from this regression, I calculate the expected probability of a high potential rating for each observation in my sample. I then sum these probabilities across all employees in a given year, and divide by the number of employees. The resulting "expected" percentage of high potential employees for each year (2009 through 2014) is reported in Table 2.9, Panel B.[47]

Table 2.9, Panel A: Subset of observable employee characteristics and high potential status

Logit regression; 2009 observations only. Robust z-statistics based on standard errors adjusted for clustering at the manager level in parentheses. *, **, *** denote significance at the 0.10, 0.05, and 0.01 level, respectively. *High_Potential* is an indicator equal to 1 if the employee's potential rating is "Vertical (2 levels)" or "Vertical (1 level)". *Male* is an indicator equal to 1 if the employee is male, 0 otherwise. *Age* is the employee's age, in years. *Full_Time* is an indicator equal to 1 if the employee is employed on a full-time basis, 0 otherwise.

	High_Potential
Intercept	4.362***
	(13.718)
Male (Indicator)	0.206***
	(2.904)
Age	-0.165***
	(-30.803)
Full_Time (Indicator)	0.769***
	(3.738)
Mgmt. Level Fixed Effects?	Yes
Business Unit Fixed Effects?	Yes
Function Fixed Effects?	Yes
Region Fixed Effects?	Yes
n	8,908
Area under ROC	0.8026

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[47] Note that I do not include company tenure, management level tenure, or expat status in this exercise (though they were included in Table 2.3). Here, I want to include only more "exogenous" variables that may influence an employee's likelihood of being assessed as high potential irrespective of their "true" potential (for instance, it seems plausible that it may be more or less difficult for an employee to demonstrate the necessary potential competencies for a high potential rating in different functions), but not variables that may in and of themselves reflect an employee's potential (for instance, high potential employees were often chosen for international assignments).

Table 2.9, Panel B: Expected and actual percentage of high potential employees – All employees

Year	n	Expected	Actual	Difference
2009	8942	23.93%	23.91%	-0.02%
2010	8897	23.39%	24.18%	0.79%
2011	8933	23.12%	27.58%	4.46%
2012	9073	22.79%	32.81%	10.02%
2013	9346	22.60%	34.06%	11.46%
2014	9781	22.74%	36.27%	13.53%

Table 2.9, Panel C: Expected and actual percentage of high potential employees – Various employee categories

Remaining Employees
(Rated in 2009 and 2014)

Year	n	Expected	Actual	Difference
2009	5447	23.75%	25.72%	1.97%
2010	5336	22.15%	24.48%	2.33%
2011	5320	20.59%	26.17%	5.58%
2012	5336	19.10%	28.47%	9.37%
2013	5349	17.49%	27.26%	9.77%
2014	5447	16.00%	25.63%	9.63%

New Hires
(Hired in 2010 and later)

Year	n	Expected	Actual	Difference
2009	0	N/A	N/A	N/A
2010	320	40.76%	50.31%	9.55%
2011	850	39.24%	49.41%	10.17%
2012	1365	38.45%	55.38%	16.93%
2013	1912	38.43%	55.91%	17.48%
2014	2624	38.14%	57.77%	19.63%

Internally Promoted Employees
(Promoted in 2010 and later)

Year	n	Expected	Actual	Difference
2009	0	N/A	N/A	N/A
2010	400	26.68%	21.75%	-4.93%
2011	737	25.76%	26.59%	0.83%
2012	977	24.57%	37.36%	12.79%
2013	1177	22.67%	38.06%	15.39%
2014	1358	21.13%	37.78%	16.65%

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Per Table 2.9, Panel B, there is little variation in the expected percentage of high potential employees during my sample period, and the expected percentage in 2014 is slightly less than that in 2009. Thus, using this methodology none of the increase in potential is explained by changes in the allocation of employees within the organization or by changes in the gender or age profile of the organization.[48] The actual column shows the actual percentage of high potential employees in each year, and the difference column shows the difference between the actual and expected percentage. Consistent with the descriptive evidence in Figure 2.2, the difference is increasing over time. Thus, in the next section I turn my attention to the three possible mechanisms that may be at play.

2.4.3.2 Mechanisms

The three primary mechanisms that could have contributed to the shift in the proportion of high potential employees are: low potential employees sorting out (i.e. via terminations and voluntary departures), remaining employees increasing their potential, and high potential employees sorting in. I begin by examining the role of sorting out effects.

To examine sorting out effects (hypothesis 2a), I test whether employees assessed as low potential (i.e. *Horizontal Potential* or *Well Placed*) in 2008 were more likely to exit the organization by the end of my sample period (year-end 2014) than employees assessed as high potential at that time. Table 2.10 contains the results from logit regressions of the probability of voluntary departure by year-end 2014, termination by year-end 2014, and any form of exit by year-end 2014, in columns 1, 2, and 3, respectively, on an indicator variable for low potential (*Low_Potential*). I control for (as of 2008) the employee's performance, tenure with the company, tenure in current management level, gender, age, full-time status, expat status, and include fixed effects for business unit, function, management level, and country of employment. I cluster standard errors at the manager level.

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[48] Holding constant (as of 2009), the effects of the variables included in my logit model.

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Table 2.10: Sorting out effects – Low potential status (2008) and turnover by end 2014

Logit regressions. Robust z-statistics based on standard errors adjusted for clustering at the performance manager level in parentheses. *, **, *** denote significance at the 0.10, 0.05, and 0.01 level, respectively. *Voluntary_Exit_2014* is an indicator equal to 1 if the employee exited the company voluntarily anytime during the sample period, 0 if the employee did not exit during the sample period or exited involuntarily. *Termination_2014* is an indicator equal to 1 if the employee exited the company involuntarily anytime during the sample period, 0 if the employee did not exit during the sample period or exited voluntarily. *Any_Exit_2014* is an indicator equal to 1 if the employee exited the company anytime during the sample period, 0 if the employee did not exit during the sample period. *LOW_POTENTIAL* is an indicator equal to 1 if the employee's potential rating for the year is "Horizontal" or "Well Placed", 0 for any other potential rating. *PERFORMANCE_Top* is an indicator equal to 1 if the employee's performance rating for the year is "Top", 0 for any other performance rating. *PERFORMANCE_Strong* is an indicator equal to 1 if the employee's performance rating for the year is "Strong", 0 for any other performance rating. *PERFORMANCE_Moderate* is an indicator equal to 1 if the employee's performance rating for the year is "Moderate", 0 for any other performance rating. *PERFORMANCE_Clearly Below* is an indicator equal to 1 if the employee's performance rating for the year is "Clearly Below", 0 for any other performance rating. *Tenure_with_Co* is the employee's total tenure with the company, in years. *Tenure_in_Mgmt_Level* is the employee's tenure at their current management level, in years. *Full_Time* is an indicator equal to 1 if the employee is employed on a full-time basis, 0 otherwise. *Expat* is an indicator equal to 1 if the employee is on an international assignment, 0 otherwise. *Male* is an indicator equal to 1 if the employee is male, 0 otherwise. *Age* is the employee's age, in years.

	Voluntary_Exit_2014	*Termination_2014*	*Any_Exit_2014*
	(1)	(2)	(3)
Intercept	-0.365	-3.171***	-1.767***
	(-0.439)	(-3.243)	(-2.721)
LOW_POTENTIAL (Indicator)	-0.015	0.319***	0.005
	(-0.154)	(2.775)	(0.069)
PERFORMANCE_Top	Base Category	Base Category	Base Category
	(Omitted)	(Omitted)	(Omitted)
PERFORMANCE_Strong	0.097	0.677***	0.466***
	(0.692)	(4.884)	(5.277)
PERFORMANCE_Moderate	0.300*	1.377***	1.207***
	(1.905)	(9.217)	(11.726)
PERFORMANCE_Clearly Below	0.283	2.411***	2.817***
	(0.644)	(9.883)	(9.890)
Tenure_with_Co	-0.082***	-0.020***	-0.035***
	(-7.538)	(-3.341)	(-6.632)
Tenure_in_Mgmt_Level	0.025*	0.024***	0.024***
	(1.799)	(3.657)	(4.633)
Full_Time (Indicator)	-0.062	-0.218	0.283
	(-0.234)	(-0.962)	(1.459)
Expat (Indicator)	-0.314	0.147	-0.142
	(-1.245)	(0.715)	(-0.826)
Male (Indicator) and *Age* included?	Yes	Yes	Yes
Mgmt. Level Fixed Effects?	Yes	Yes	Yes
Business Unit Fixed Effects?	Yes	Yes	Yes
Function Fixed Effects?	Yes	Yes	Yes
Country Fixed Effects?	Yes	Yes	Yes
n	6,195	6,237	6,243
Pr > ChiSq	<0.001	<0.001	<0.001
Psuedo R2	0.1949	0.1195	0.1027

The results indicate that although employees assessed as low potential in 2008 were statistically significantly more likely to experience a termination during the sample period, they were not more likely to experience a voluntary departure or any form of exit than high-potential employees. Hence, my results do not support Hypothesis 2a. In untabulated analyses, I repeat this analysis for any form of exit (i.e. column 3), using a full set of indicators for the various potential ratings, rather than a single indicator for low potential. Here, I find that employees receiving a rating of *Well Placed* in 2008 were more likely to exit during the sample period than employees receiving a *Horizontal Potential* or *Vertical Potential (1 level)* rating. This suggests that sorting out effects worked to sort out *Well Placed* employees, but not low-potential employees in the aggregate.

To examine whether employees present in the company at the time the system was introduced, and who remained with the company throughout the sample period, contributed to the increase in aggregate potential, I calculate the expected percentage of high potential employees for each year (using the methodology described earlier) and compare this to the actual percentage. The results are contained in Table 2.9, Panel C ("*Remaining Employees*").[49] While the actual percentage of high potential employees was relatively constant over time, the expected percentage was steadily decreasing, leading to a positive difference between expected and actual that is increasing over time. Thus, although the remaining employees did not experience an *absolute* increase in their potential, I conclude that there is evidence in support of hypothesis 2b since, *relative to expectations* (given their demographic and employment profile), the potential of these employees increased over the sample period. In untabulated analyses, I use the sample of 2009-2014 observations for "*Remaining Employees*" and regress (in a logit regression) *High_Potential* on *TIME* (where *TIME* = 1 in year 2009, *TIME* = 2 in year 2010, and so on), as well as the variables and fixed effects included in Table 2.9, Panel A. As expected, I find a positive and statistically significant coefficient on

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[49] To be included in this analysis, I required that an employee be assessed under the system in both 2009 and 2014. There are some minor fluctuations in the number of employees represented in the table in the intervening years since in any given year a small number of employees were not assessed (which would arise, for instance, if the employee was on extended leave during a particular year).

TIME. I chose to present the results for the expected and actual probabilities rather than the regression result because I believe the former provides a more complete picture.

Lastly, focusing on the last year in my sample period, I consider whether employees hired in the post-system period were more likely to be assessed as "high potential" than pre-system employees remaining with the organization, reflecting sorting in effects (hypothesis 2c). Since sorting in effects could apply to employees hired by the organization in the post-system period and, likely to a lesser extent, employees internally promoted to the management ranks in the post-system period, in Table 2.9, Panel C, I report expected and actual high potential percentages for both "*New Hires*" and "*Internally Promoted Employees*".[50] Examining the results for 2014, the differences between the actual and predicted probabilities are much greater in magnitude than those for "*Remaining Employees*". To test for selection effects more formally, in untabulated analyses I use the 2014 observations and regress *High_Potential* on indicators for *New Hire* and *Internally Promoted Employee* (with *Original Employee* being the base category), and the variables and fixed effects included in Table 2.9, Panel A. I find that the coefficient on *New Hire* is positive and statistically significantly different to the base category (*Original Employee*) and the *Internally Promoted Employee* indicator, while the coefficient on *Internally Promoted Employee* is positive but insignificant. Given the results for *New Hires*, I conclude that hypothesis 2c is supported. Thus, part of the increase in aggregate potential is attributable to higher potential employees sorting into the organization, which could be due to better screening practices at the organization, or possibly self-sorting by employees.[51]

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[50] Although the system was implemented in 2008, since I use 2009 as my "base year", I consider new hires for the purposes of this analysis to be those employees hired in 2010 or later, while internally promoted employees are those employees who were employed by the organization prior to 2008 but who were internally promoted to the management ranks in 2010 or later.

[51] In untabulated analyses, I examine whether employee selection / (self-sorting) appears to have improved / (increased) over time under the performance and potential system by testing whether the first rating received by an employee was more likely to be "high potential" in later hiring years. I find that this is indeed the case.

2.5 Conclusion

In this study, I examine employee-level and organizational outcomes following the implementation of a management control system whereby managers evaluate not only past employee performance but also future potential. I document that potential ratings and performance ratings are important determinants of promotion and termination decisions, providing some of the first empirical evidence on the use of such a system. I then examine how employees' voluntary departure decisions are related to potential ratings.

I find that voluntary departures of original employees (i.e. those hired prior to the implementation of the new system) in the post-system period are unrelated to potential ratings, except that the likelihood of departure is greater where an employee experiences a drop in his or her potential rating from one period to the next. One interpretation for this finding is that even in the absence of a performance and potential system, employees are able to approximate their potential reasonably well, and employees make departure decisions based on potential relatively early in their organizational tenure. Amongst newly-hired employees (i.e. employees hired in the seven-year period following the adoption of the performance and potential system), I find a negative relation between voluntary departures and potential ratings, consistent with potential ratings providing important information to new hires as they assess their match quality.

Turning to aggregate organizational outcomes, I find that the organization achieved an increase in the proportion of high-potential employees in the years following the implementation of the performance and potential system. While employees receiving the lowest possible potential rating were the most likely to exit the organization, and motivational effects appear to have played a role, the selection of employees hired in the post-system period appears to have played the most significant role in this shift.

My study extends the literature on performance evaluation systems and contributes to the body of research on the determinants of employee career outcomes (promotions, voluntary departures, and terminations) by studying how these outcomes are incrementally affected by evaluations of "potential." This study also contributes to the emerging literature on the role of employee selection in achieving desirable organizational outcomes in the absence of formal contracting (e.g. Campbell [2012]). Finally, the findings from this study speak to the human resources management literature on talent management, and

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provide some insights relevant to the debate as to whether or not organizations should communicate potential status to employees.

My study was based on an empirical analysis of archival data from a single firm. As a result, the findings may not generalize to all organizational settings. My findings are most likely to generalize to organizations with significant promotion opportunities for employees, via either growth in the employee base and/or the creation of vacancies through employee exits. Where promotion opportunities are limited, high-potential employees may exhibit the highest propensity to leave the organization voluntarily (as they seek opportunities elsewhere) and organizations may have difficulty recruiting "high potential" employees since their career advancement will be hindered. Despite the limitations of this study, my hope is that it will be a first step in documenting the role of formal systems in assessing and communicating information about promotion prospects to employees.

CHAPTER 3

**Who Should Select New Employees, the Head Office or the Unit Manager?
Consequences of Centralizing Hiring at a Retail Chain**

3.1 Introduction

Employee selection has long been recognized as a key management control mechanism to align employees with a company's values and goals (Chatman 1989; Merchant and Van der Stede 2017; Ouchi 1979). This mechanism is particularly relevant in settings—such as retail organizations emphasizing customer service and manufacturing firms committed to organizational learning—where employees have to execute multiple tasks, some of which are difficult to measure and contract on, and in which different individuals' abilities and attitudes may result in significant differences in performance. Despite the importance of selection as a control system, it has received little attention in the empirical management accounting and control literature. Work in this area appears to be growing however, with recent studies examining the efficacy of selection as a tool to achieve desirable employee behaviors and performance, and whether and when firms use selection and incentive contracting as substitutive or complementary control mechanisms (Abernethy, Dekker, and Schulz 2015; Campbell 2012; Swaney 2014).

In this study, we examine how the *allocation of decisions rights* in the employee selection process—a key control issue in organizations—impacts the efficacy of employee selection.[52] We contribute to the literatures on employee selection and on the delegation of decision rights by identifying circumstances under which centralized (or decentralized) hiring is likely to be most (or least) beneficial. Whereas studies describing selection as a control mechanism may view a centralized selection system as a means to consistently align employees with company values, the literature on the delegation of decision rights would also highlight the importance of decentralization if unit managers have superior information about the types

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[52] The allocation of hiring rights relates directly to the design of personnel control systems, which are controls intended to increase the likelihood that employees will be motivated and qualified to pursue their organization's strategic goals (Merchant and Van der Stede 2017).

of hires that would best match local conditions (Brickley and Dark 1987; Campbell, Datar, and Sandino 2009; Zabojnik 2002). Specifically, we examine the relation between centralized (versus decentralized) hiring and three outcomes capturing the quality of the resulting employee-company matches: employment duration (at the individual level), monthly employee turnover (at the store level), and financial performance (at the store level); we also test contingencies that may moderate these relations.

We use data from a U.S. retail chain for our empirical analyses and exploit variation in its allocation of decision authority with respect to the selection of new store employees. This variation arose as the organization switched, in a staggered manner, from a decentralized to a centralized model of hiring. This natural experimental setting provides a unique opportunity to study decision rights in the context of employee selection, since: 1) it enables us to more convincingly draw conclusions with respect to causality than would be the case in a cross-sectional regression study; 2) we need not rely on survey instruments to capture the extent of delegation or other variables of interest (c.f. Abernethy, Bouwens, and van Lent 2004; Nagar 2002); and 3) the outcomes where the effect of centralization / decentralization should manifest are relatively clear in this context (especially employment duration).

Research on the delegation of authority recognizes that inherent trade-offs exist in the decision to centralize or decentralize decision-making. In the context of employee selection, centralized hiring can, on the one hand, ensure that enough resources and effort are invested in consistently identifying people who fit the company's values and goals. On the other hand, centralization can neglect the informational advantage a unit manager might have in determining a candidate's fit with the unit team and the local environment. We classify the factors that may affect these tradeoffs into two categories.

The first category, which we label "Headquarters has a Hiring Advantage," consists of factors leading the recruiting team at headquarters to have a hiring advantage relative to the unit manager, due to the recruiters' greater ability and motivation to select employees matching corporate goals and values. The two factors we consider are the busyness of the unit (with respect to selling to customers) and the complexity of the unit's operations. We conjecture that managers of busier stores and/or stores with more complex operations will benefit the most from centralized hiring since they are less likely to have time to fill vacant

positions or to base their selection of new employees on company values. In our setting, we use a store's sales per labor-hour to proxy for the busyness of the unit, and we consider stores operating under the organization's new format to have more complex operations (stores with the new format offered a greater diversity of products and the operations needed to support these products were more involved, placing added demands on store employees).

The second category, which we label "Business Unit Manager has a Local Advantage" includes factors giving the unit manager an informational advantage when identifying employees matching the company's needs at a local level. We capture the unit managers' informational advantage relative to headquarters with three factors: (a) the unit's distance from headquarters; (b) the extent to which the unit serves a different type of market relative to the rest of the organization; and (c) the strength of the relationship between the unit and its customers, measured as whether the unit serves repeat customers. Figure 3.1 summarizes the relations that we test.

Figure 3.1 Summary of relations tested
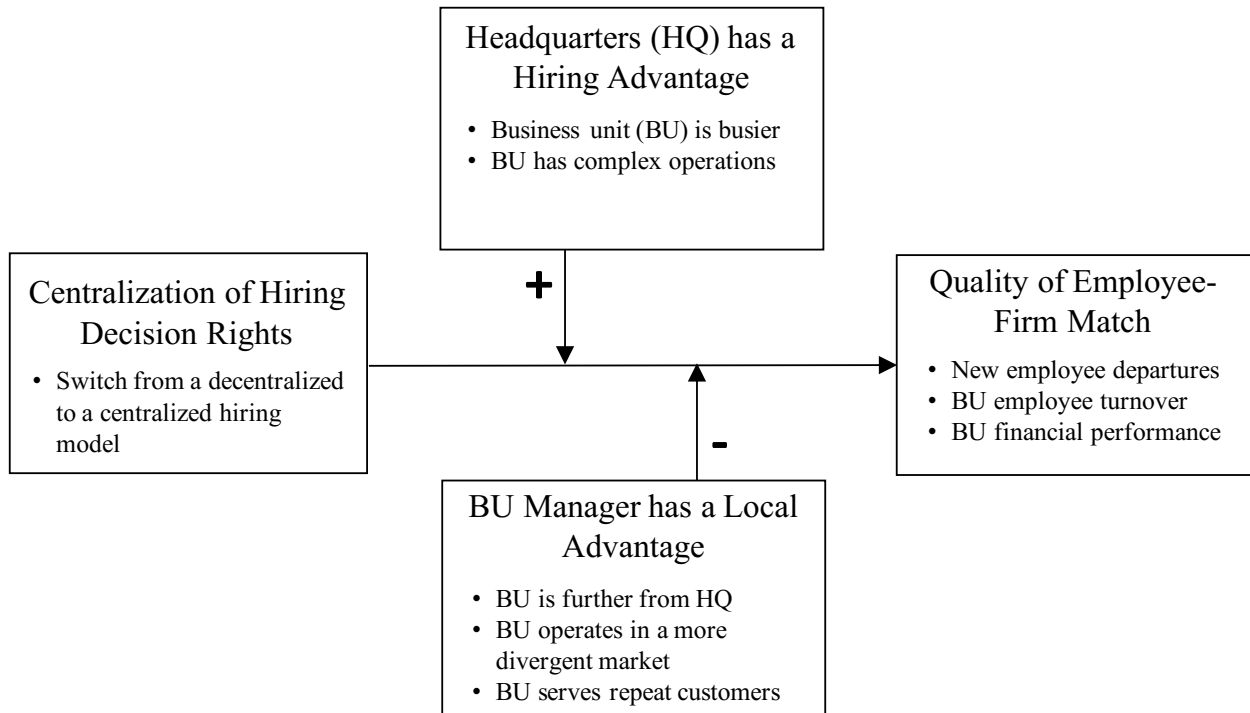
We conduct difference-in-differences analyses using two regression approaches to analyze the data from the retail company: a hazard ratio model to examine effects on employees' employment duration (based on the conditions under which they were hired), and OLS models to examine effects on monthly employee turnover and on sales, both at the store level. Our analyses show that, on average, the switch from decentralized to centralized hiring had no discernible impact on any of our proxies for the quality of the employee-firm match.[53]

Our contingency analyses provide richer insights regarding the effect of centralizing hiring rights on employee and organizational outcomes. Specifically, we find that centralization of hiring rights is associated with better outcomes in circumstances where the headquarters has a hiring advantage relative to the unit manager (we find strong evidence that the shift to centralization led to a lower rate of employee departures and weaker evidence that it reduced monthly employee turnover). In our sample, the introduction of centralized hiring rights was associated with a rate of new employee departures that was 38.3 percent lower for busy stores relative to non-busy stores. However, the centralization of hiring rights was associated with relatively worse outcomes (a higher rate of employee departures and/or higher monthly employee turnover) when the store manager had a relevant information advantage relative to the head office. These effects were most evident when the store's likelihood of having repeat customers was high, and/or the store served a more divergent market. Specifically, for stores that served repeat customers the introduction of centralized hiring was associated with a 154% higher rate of new employee departures and 1.9 percentage points higher monthly employee turnover, relative to stores that did not serve these customers. Similarly, for stores serving divergent markets the shift to centralized hiring was associated with an 80% higher rate of new employee departures and a 3.9 percentage points higher monthly employee turnover relative to stores serving mainstream markets.

Our results add important insights to the emerging empirical literature in accounting that recognizes the relevance of employee selection as a control mechanism to improve alignment. Our analyses

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[53] We view employment duration as the most proximal measure of the quality of the employee-firm match, with monthly employee turnover and store sales more distal measures.

complement and extend this literature by shedding light on the circumstances under which headquarters or local unit managers should select new employees to achieve greater alignment and greater commitment. These insights are likely to be of relevance to practitioners, with 52% of respondents to a 2010 survey of managers at leading retail, hospitality and quick-service restaurant organizations including "*Brand Fit*" as one of the top three characteristics they were looking for in new hires (Aon Hewitt, 2010). Consistent with the retail chain we study beginning from a decentralized hiring system, 57% of respondents indicated that their hiring process for store employees was managed entirely at the local store level.

Our research also contributes to the stream of research, particularly on chain organizations (Bradach 1997; Campbell et al. 2009), examining tradeoffs between centralizing decisions to ensure uniformity and decentralizing decisions to promote entrepreneurial behaviors and adaptation to different markets, taking advantage of managers' local information. Prior research suggests that retail and service firms may delegate decision rights to promote experimentation in some (typically, franchised) units and limit decision rights in other (typically, standardized company-owned) units where the chain aims to set common standards and regularly test their effectiveness (Bradach 1997). We extend this empirical literature by uncovering some circumstances within a company under which the gains from centralizing hiring decisions—uniformity and alignment where unit managers may face time-constraints that make achieving this difficult—may outweigh the gains of decentralizing such decisions—taking advantage of local information—and some circumstances in which the latter may outweigh the former.

The rest of the chapter proceeds as follows: Section 3.2 reviews the literature and develops hypotheses, Section 3.3 describes our research setting, Section 3.4 presents our empirical analyses and results, and Section 3.5 concludes.

3.2 Hypothesis development

Theoretical research in economics and management has long recognized that the match between a firm and its workers can significantly influence alignment, firm performance, and employee turnover (Jovanovic 1979; Ouchi 1979). Yet, while research (primarily in labor economics) has examined the firm-worker

matching process using datasets pertaining to multiple employees and firms in an economy (e.g. Berman 1997; Nagypál 2007), there are few empirical studies at the individual firm level examining the effects of different selection mechanisms on employee-level and aggregate performance outcomes (Oyer and Schaefer 2011; Van Iddekinge et al. 2009). One of the first, Chatman (1991), documented a positive relation between an employee's fit with organizational values at the time of hiring and his or her subsequent tenure with the organization. A more recent paper, Hoffman, Kahn and Li (2017), studies job-testing technologies in the selection process, finding that managers who deviate from test recommendations often make poorer hiring decisions, as reflected in shorter employment durations of those hired.[54]

An emerging literature in management accounting and control provides additional insights into the use and effects of selection mechanisms as management controls promoting goal alignment in firms. Campbell (2012) finds that referrals (relative to other selection channels) are associated with employee behaviors desired by the firm and with employee performance. Abernethy et al. (2015) examine firms' design choices with respect to employee selection and incentive contracting and find instances in which selection mechanisms are either more or less likely to be used as substitutes for incentive contracts. Our purpose is to extend this research by empirically examining the tradeoffs suggested by prior research on a key choice in the design of a firm's employee selection process—to centralize or decentralize hiring—on employee turnover and business unit performance.

3.2.1 Effect of centralized hiring on employee turnover and unit performance

The allocation of decision rights within an organization regarding the hiring (or selection—we use the two terms interchangeably) of new employees can fall along a continuum, but for the purposes of our study, we characterize it as a choice between centralizing hiring rights to the head office or decentralizing hiring rights to unit managers. While we expect the quality of employee-company matches resulting from

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[54] Based on their findings, Hoffman et al. (2017) conclude that managers deviate from the test recommendations due to poor judgment or bias, not because they have superior private information. However, in contrast to our study, they don't consider how the main effect they document may be moderated by business unit location characteristics giving rise to informational advantages.

centralized (vis-à-vis decentralized) hiring to be most directly reflected in the hired employees' duration of employment,[55] it could also be reflected in the overall units' employee turnover and performance. For instance, if centralized hiring resulted in poorly matching employees, the new recruits could undermine the cohesiveness of unit teams. Alternatively, if centralized hiring resulted in employees who match well, units could benefit not only from incorporating qualified employees into their teams, but also from the extra time unit managers and employees could spend focusing on their daily operations rather than on recruitment and training activities.

While centralized hiring likely entails both costs and benefits, centralizing the hiring function can potentially enable an organization to develop the necessary expertise, and invest the necessary resources, to consistently select workers aligned with its goals and values. In particular, head office personnel generally have an informational advantage relative to unit level personnel with respect to their understanding of, and alignment with, the organization's corporate values (Van den Steen 2010). Thus, they are in an ideal position to create and foster standards for new hires, effectively serving as "standards bearers" for the organization, and can also attract, select, and provide a sense of belonging to, candidates naturally fitting the organization's core values and strategic goals. Furthermore, by assuming responsibility for hiring, headquarters can avoid the loss of control that arises when delegating decision-rights—this loss of control gives rise to agency problems since unit managers' incentives may be disparate and less aligned with those of the company (Jensen and Meckling 1992; Feltham, Hofmann, and Indjejikian 2016; Hoffman et al. 2017). Even incentive alignment problems aside, there may be considerable variability in the ability of unit managers to select high-quality employees (Sah and Stiglitz 1991). Thus, by centralizing hiring, the organization may be able to improve decision-making within the organization regarding the hiring of new employees by shifting responsibility to qualified human resources employees located at headquarters (Christensen and Knudsen 2010).

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[55] Labor economics studies such as Hoffman et al. (2017) measure the match quality of employees in this way.

Turning to potential costs of centralization, a centralized hiring process can neglect the informational advantages of unit managers, and reduce or eliminate 1) their opportunity to develop rapport with job candidates during the selection process and 2) their sense of responsibility for the success (in terms of performance and/or retention) of these candidates once hired (Jensen and Meckling 1995, Zabojnik 2002). Furthermore, in light of trends towards decentralizing decision-making within organizations (Zabojnik 2002), unit managers and existing store personnel may view negatively the replacement of a decentralized employee selection system with a centralized system, which could undermine the success of the centralized system.

Given these tradeoffs, we are unable to predict a directional effect of centralizing hiring rights on employee turnover or unit performance. Thus, we state our first hypothesis in the null form:

> *Hypothesis 1:   All else equal, centralized hiring (vis-à-vis decentralized hiring) has no effect on employee turnover and business unit performance.*

Two sets of factors may affect the tradeoffs discussed above: factors that give the headquarters' personnel an advantage in hiring due to their greater ability and motivation to hire employees matching corporate values, such as the complexity or busyness of a unit's operations (which, we claim, affects how much time the unit's manager can dedicate to selecting employees matching company values); and factors that give the unit manager an informational advantage relative to headquarters due to their superior understanding of the local environment, such as the unit's distance from headquarters or repeated interactions with customers.

3.2.2 Factors leading headquarters to have a hiring advantage

The effects of centralized hiring are unlikely to be uniform across all business units in an organization—instead, there are likely to be instances where headquarters is in a better position than the business unit manager to identify job candidates who would best match the firm, and instances where the reverse is true. We refer to the former situations as those where the "Headquarters has a Hiring Advantage." We expect

this advantage to arise (a) in busy units (with respect to selling to customers) and (b) in units with complex operations, since these conditions may leave managers with no time to properly hire their staff.

Selecting new hires best aligned with the company's goals and values requires a clear understanding of, and motivation to pursue, those goals and values, and a significant amount of time, since it involves, amongst other things, screening applications, conducting assessment tests and interviews, and comparing finalists. Centralizing that process can enable the head office to develop a comparative advantage, especially relative to unit managers with limited time due to busy or complex unit operations, and with greater demands to hire qualified personnel able to handle complex operations. Although managers operating units with more time-constrained personnel or added complexity may have better knowledge of what skills and traits they need from new hires, their ability to act on this knowledge may be constrained due to lack of time. Furthermore, since a decentralized selection system is likely to be particularly burdensome for store managers and staff working under demanding conditions, it could result in delays filling vacancies, as well as work overload, leading to employee turnover and poor performance. A centralized system could help fill vacancies relatively faster and more effectively (i.e., with employees who are more aligned with company values), alleviating the burden perceived by those store teams.

The above discussion leads to the following main hypothesis and two sub-hypotheses:

Hypothesis 2:   *Centralized hiring will lead to relatively lower employee turnover and higher financial performance, the more likely it is that the headquarters has a hiring advantage relative to the business unit.*

Hypothesis 2a: *Centralized hiring will lead to relatively lower employee turnover and higher financial performance in business units that are busier.*

Hypothesis 2b: *Centralized hiring will lead to relatively lower employee turnover and higher financial performance in business units with more complex operations.*

3.2.3 Factors giving the unit manager a local information advantage vis-à-vis headquarters

We refer to the situations where we expect the business unit manager to be in a better position to identify high-quality employee matches as those where the "Unit Manager has a Local Advantage". The situations

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we examine relate to three different kinds of information asymmetries—whereby the unit manager possesses an informational advantage relative to headquarters—identified in prior research which typically lead geographically dispersed organizations to decentralize decision rights (often in the form of franchising). These situations are: 1) the business unit is located far from headquarters—making it costlier for the head office to engage in information-gathering and monitoring; 2) the unit's market diverges from the typical market served by company units—giving the unit manager an informational advantage regarding how to best serve those markets; and 3) the unit has strong relationships with customers due to repeated interactions—leading the manager to possess information about how best to serve those customers (Brickley and Dark 1987; Campbell et al. 2009; Fladmoe-Lindquist and Jacque 1995; Martin 1988).

The informational advantage possessed by business unit managers in the circumstances described above suggests that these unit managers would be better placed than headquarters to select new employees. This is because they would know better which job candidates would be most suited to the local unit conditions, customer base, and the local team, and less likely to clash with existing employees (and to negatively affect team cohesiveness and the store team's turnover and performance). Yet, agency conflicts and misalignment may be more pervasive in these circumstances since unit managers are likely to possess greater operational autonomy, which could provide a counterargument to decentralizing hiring rights. They may be more pervasive for three reasons: 1) managers of these units may have a greater chance to engage in opportunistic hiring (e.g. hiring family and friends even when better candidates are available) that may go unnoticed; 2) managers of isolated units may be less informed about corporate goals and values, given their (likely) limited physical exposure to top management (where top management is likely to most exemplify organizational goals and values; Van den Steen 2010); and 3) employees hired at distant or divergent stores may feel less connected to the overall organization. Thus, centralized hiring could play an important role

in reducing opportunistic hiring[56], exposing new employees to the broader organization, and in promoting a greater sense of belonging amongst these employees.[57]

While it is unclear whether circumstances in which business unit managers have an informational advantage—at least in the case of distant and divergent stores—would suffer or benefit from centralized hiring, we rely on the most direct findings from prior empirical research to support the following hypotheses:

Hypothesis 3:   *Centralized hiring will lead to relatively higher employee turnover and lower financial performance, the more likely it is that the business unit manager has a local information advantage relative to headquarters.*

Hypothesis 3a: *Centralized hiring will lead to relatively higher employee turnover and lower financial performance in business units that are located further from headquarters.*

Hypothesis 3b: *Centralized hiring will lead to relatively higher employee turnover and lower financial performance in business units serving markets that differ more from the markets that are typically served by the organization.*

Hypothesis 3c: *Centralized hiring will lead to relatively higher employee turnover and lower financial performance in business units more likely to serve repeat customers.*

3.3 Research setting, data and sample

We test our hypotheses using data from a U.S. retail chain operating in several states.[58] Each of the chain's stores is staffed with a store manager (responsible for day-to-day store operations) and a small team of full-time and part-time employees (roughly a dozen in total). Since the product offerings in its sector are relatively homogenous, the retail chain seeks to differentiate itself by providing superior customer service.

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[56] By improving the alignment of new hires with corporate values, the company could potentially improve its ability to delegate decision rights on other dimensions and achieve better results.

[57] The tensions between decentralization and centralization have been examined since the emergence of multidivisional organizations such as General Motors and Sears Roebuck in the 1950s. Following the growth and expansion of many of these organizations, senior managers recognized the need to decentralize operations as they lacked the specific knowledge necessary to run the operations of, and attend to the different markets served by, their divisions. However, many of these organizations confronted crises as they lost control of their operations, which forced them to develop structures to keep checks and balances over their divisions and pursue economies through integration (Chandler 1990). It is unclear whether centralized hiring should or should not be a mechanism used by organizations to maintain control.

[58] A nondisclosure agreement with the company prevents us from disclosing information that would identify it. Hence, we keep the chain's name and store locations confidential.

3.3.1 The retail chain's hiring process

With the objective of creating a highly committed, culture-focused organization, the CEO introduced a number of initiatives at the retail chain, including a significant reform of its hiring process: switching from a decentralized model of employee selection to a centralized model. In addition to supporting this broader company objective, other goals stated by executives in charge of the centralized hiring initiative included making the hiring process more efficient, and ensuring compliance with legal and ethical practices, especially those related to preventing discrimination.

The switch to the centralized hiring model occurred over a period of time, in a staggered manner, providing us with a natural experimental setting in which to study the allocation of hiring rights.[59] In the traditional decentralized hiring model, the store managers assumed full responsibility for screening, interviewing, and hiring their team members, with the exception that the area sales managers, each of whom oversaw a small number of stores, conducted second-round interviews with candidates.[60] In the centralized hiring model, headquarters assumed all administrative responsibility for the process: it screened applicants to identify suitable candidates, conducted the first round of interviews, and recommended the final candidate/s for hire (often two candidates were put forward to the store manager). While the store manager had the final say via a second-round interview, one of our contacts at the retail chain advised us that in nearly all cases the store manager proceeded with the candidate recommended.[61] According to the senior HR executive, the hiring personnel at headquarters were particularly interested in the extent to which company values resonated with a prospective employee when identifying desirable candidates.

Company executives stated that they did not follow any particular strategy in selecting the order in which stores adopted the centralized hiring model, except for occasional opportunism (for example, they

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[59] Other notable initiatives included increasing the percentage of full-time (versus part-time) employees, and adopting a new set of company values that were more memorable and actionable than the previous values. In contrast to the staggered nature of the employee selection initiative, these initiatives came into effect for the entire chain at once.

[60] Under both the decentralized and the centralized hiring model, store managers held firing rights.

[61] In principle, the fact that store managers could choose between two individuals recommended by the head office (at least in some instances) could have helped incorporate relevant local knowledge into the selection process. However, the final interview stage may be too late in the selection process to really incorporate such information. Furthermore, store managers may have been reluctant to act on their local information if that meant going against headquarters (the lack of use of specific information may have been even more likely among store managers of busy stores who did not want to delay the hiring process).

started with areas where they had recruiters) and a desire to prioritize areas with stores that were to be converted to the organization's new format in the near future. Since the new format required more personnel and placed increased demands on the individuals working at the store (due to a greater variety of products and more complex operations to support the product offerings), the head office sought to alleviate some of the pressures faced by these stores by centralizing hiring there where possible. As described in the sample selection process below, we exclude hires at stores that converted to the new format during our sample period.[62]

Even though the order of the centralized hiring system rollout did not follow a strategy directly related to the outcomes analyzed in this study, the system was rolled out area by area which could have led to significant differences in characteristics between treatment and control stores. To overcome any potential problems related to non-random treatment assignment, we use a propensity score matched sample for our analyses (described later).

3.3.2 Data

We gained access to the company's hiring data for the 33-month period from January 1, 2013 to September 30, 2015. Included in this data was the hire date for each employee, their exit date (if applicable), their current position and store, and whether the employee was hired under the centralized or decentralized system. We exclude employees if the store at which the employee was based either opened during our sample period or was converted to the organization's new format during, or in the three months prior to the start of, our sample period. We further exclude employees if the data did not specify whether the employee was hired under the decentralized or centralized system, as well as employees who either moved stores during the period or had their (for one reason or another) hire date reset. We exclude some additional

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[62] Company executives advised us that in some cases even stores that had not yet switched to the centralized hiring system received hiring support from head office during the period that they were converting to the new store format. Due to this confound, we decided to eliminate all hires and store-months pertaining to stores that converted during our period of interest.

observations for various other reasons; the sample selection process is documented in Table 3.1, Panel A.

Excluding these observations yields a final useable sample of 7,678 employees.

Table 3.1, Panel A: Sample selection – Employee hires

Total hires in data provided	11,897
Less employees with initial job title provided and not an entry-level position	(76)
Less hires where the type of hire (centralized or decentralized) was unknown	(270)
Less centralized hires preceding decentralized hires at a small number of stores that switched from centralized hiring back to decentralized hiring	(53)
Less hires with evidence that the employee changed stores during our sample period or where (for an unknown reason) the employee's hire date was reset[63]	(444)
Less hires pertaining to stores that opened during our sample period	(995)
Less hires that occurred when the store appeared to be winding down operations prior to closing	(3)
Less hires that occurred when the store had non-normal operations due to conversion to the new store format	(392)
Less hires pertaining to outlier store with considerably higher number of hires relative to other stores	(92)
Less hires at store located at company headquarters	(9)
Less hires where there was only one hire at the store during the sample period	(3)
Sub-total	9,560
Less hires (occurring at times of normal operations) at stores that changed to the organization's new format during our sample period or in the three months prior to the beginning of our sample period	(1,882)
Total	7,678

The company also provided us with monthly performance data and monthly employee turnover data for each store, as well as weekly store labor data. We were also provided with the address of each store, and various store-level details (e.g. store opening date, store size, etc.). From the store's address, we were able to determine its longitude and latitude, enabling us to match the store with data about local market characteristics obtained from ESRI databases. Furthermore, using the store's ZIP code, we were able to obtain the number of competitors operating in the same ZIP code, defined as those with a NAICS

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[63] We initially received (in August 2014) hiring data pertaining to employees hired between January 2013 and May 2014. We subsequently received (in December 2015), hiring data pertaining to employees hired between January 2013 and September 2015. Hires pertaining to the same 5,228 employees appeared in both datasets. Of these observations, there were 444 where the store and/or hire date recorded for the employee differed between the original dataset and the subsequent dataset. Since we received the location of an employee at only one (or two if the employee was in both datasets) point in time, we are unable to identify any other instances of employees changing store locations (thus, apart from the observations identified above, we make the assumption that the employee's location at the time of the spreadsheet is the same as the initial location where the employee was hired). Any unidentified employee movements, which we expect to be minimal, would likely only add noise and reduce the chance of us finding significant results.

classification most related to the primary operations of the retail chain. Following a similar procedure for the store level observations to that described above yielded a final useable sample of 13,539 store-months (see Table 3.1, Panel B).

Table 3.1, Panel B: Sample selection – Store-months

Total store-months with normal operations	18,144
Less observations pertaining to stores not represented in the 9,560 employee hires above	(1,312)
Less observations prior to a store's first decentralized hire in our sample period for those stores identified as switching from centralized hiring back to decentralized hiring	(147)
Less observations (with normal operations) pertaining to stores that changed to the organization's new format during our sample period or in the three months prior to the beginning of our sample period	(2,750)
Less observations with incomplete data	(2)
Less observations where the store did not hire any employees during the year	(394)
Total	**13,539**

Dependent Variables: We examine three dependent variables in our empirical tests. The first, *Time to Employee Departure*, is the number of days between an employee's hire date and the date that s/he left the company. Where an employee is still active as of December 14, 2015 (the last recorded exit date in our dataset), *Time to Employee Departure* is the number of days between the employee's hire date and December 14, 2015 (these employee observations are marked as "censored" as of this date). The second, *Monthly Employee Turnover*, is calculated by dividing the number of store employees who exited during the month by the average number of employees at the store for the month. The third, *Monthly Sales,* is simply the dollar value of sales at the store for the month.[64]

Headquarters' Hiring Advantage: We use two variables to proxy for the circumstances where we expect headquarters to have a hiring advantage relative to the business unit. First, we define a continuous variable, *Busyness*, as monthly store sales divided by monthly labor-hours. From this, we create a binary variable, *Busier*, which is equal to one if *Busyness* is above the median (we calculate the median separately within each sample used for our empirical analyses, using the first observation for each store), and equal to

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[64] We winsorize *Monthly Employee Turnover* and *Monthly Sales* at the 1% and 99% level.

zero otherwise. The second, *Complex Operations*, is a binary variable equal to one if the store has the organization's new format, and equal to zero otherwise.

For some of our empirical tests, we use an aggregate indicator variable, *HQ Hiring Advantage*, which equals one if *Busier* and *Complex Operations* are both equal to one, and equals zero otherwise.

Business Units' Local Advantage: We use three variables to capture the circumstances where we expect the business unit manager to have a hiring advantage relative to headquarters. The first, *Distance to Headquarters*, is simply the distance between the store and company headquarters, measured in miles. From this continuous variable, we create a binary variable, *Further from Headquarters*, which is equal to one if *Distance to Headquarters* is above the median, and equal to zero otherwise. The second, *Market Divergence*, captures the extent to which the demographic characteristics of the location where the store operates (population density, income, age, ethnicity, and household size) differs from the average demographic characteristics of the chain's store locations.[65] Again, from the continuous variable we create a binary variable, *Higher Market Divergence*, which is equal to one if *Market Divergence* is above the median, and equal to zero otherwise. Lastly, *Serves Repeat Customers* is a binary variable capturing whether the store's customers are likely to be repeat customers. Following prior literature, we assume a higher proportion of repeat customers in areas that have low population density and are away from highway exits (Brickley and Dark 1987; Martin 1988). Thus, *Serves Repeat Customers* indicates that the store is in a Census block with less than 1,000 people per square mile (according to the 2013 ESRI Demographics data) and is not within two miles of an interstate or US highway exit.

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[65] We measure market divergence following two steps as in Campbell et al. (2009). First, we estimate "normalized divergences" for each demographic location characteristic between the store and the average store at the chain by subtracting the value of each of the demographic variables for the store by its mean across all stores and then dividing this difference by the standard deviation of the variable across all stores. The mean values and standard deviations are calculated as of 2013 using stores in the entire chain (i.e. not just the stores that are used in our empirical analyses) operating at the start of 2013. The values of the demographic variables are obtained from ESRI Demographics data (which draws on the US Census and other data sources) at the Census block group level (the smallest geographical unit for which the US Census publishes sample data, generally defined to contain between 600 and 3,000 people) and include population density (number of inhabitants per square mile), per capita income (in dollars), inhabitants' median age (in years), ethnicity (percentage of white individuals in the population), and average household size (number of persons). Second, we aggregate the normalized divergences of the five demographic variables for each store by adding them together. We perform our calculations using the 2013 ESRI Demographic data and treat market divergence as a time-invariant variable for each store.

For some of our empirical tests, we use an aggregate indicator variable, *BU Local Advantage*, which equals 1 if two of the following three conditions are met, and 0 otherwise: (a) *Further from Headquarters* = 1, (b) *Higher Market Divergence* = 1, (c) *Serves Repeat Customers* =1.

Other Variables: In our propensity score matching model (described below), we include variables pertaining to characteristics of the store and the store team, and the surrounding environment. We focused on identifying variables that had the potential to be correlated both with being selected for centralized hiring and with any of our dependent variables. In terms of the surrounding environment, we include variables capturing the yearly unemployment rate for the Census block group in which the store is located (*Unemployment Rate*); the income per capita in the Census block group where the store operates (*Per Capita Income*); the number of stores that the retail chain has in the same ZIP code as the focal store, including the store itself (*Store Count*); and the number of direct competitors in the same ZIP code as the store (*Competition*). Regarding the store and the store team, we include variables capturing the size of the store in square feet (*Size*), the age of the store in months (*Store Age*), and the store's *Team Size* (number of employees as of the end of the month). We further include the percentage of employees in the store's ZIP code area that were hired in the same year and subsequently promoted during our sample period (*Promotion Opportunities*), and the percentage of store employees who have full-time jobs (*% Full-time Employees*).[66]

In our empirical analyses, we include the following variables from the above as control variables: *Team Size*, *Promotion Opportunities*, and *% Full-time Employees*. We also include month-year fixed effects, store fixed effects, and in our analyses of employment duration, an indicator for whether the employee currently has (or had at the time of departure) a full-time position (*Full-time*). We exclude the other variables from above due to the inclusion of store fixed effects. Those other variables are either time-invariant, or captured

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[66] Note that we do not include in our propensity score matching model an indicator variable for whether the store switched to the new format during our sample period since we excluded those stores from our sample. We also do not include an indicator variable for new format as of the beginning of the sample period (we retained these stores) since we do not match on any of the variables that we examine as moderators; we use new format store to proxy for *Complex Operations*. Note that when we ran the propensity score matching procedure with an indicator variable for new store format (in the interests of understanding whether this was an important determinant of selection during our sample period), this variable was not significant.

relatively stable store or store surrounding characteristics, resulting in high variance inflation factors (indicative that their inclusion would raise multicollinearity concerns).

3.3.3 Propensity score matched sample

While the organization stated that the order of centralizing stores was not driven by store characteristics (with the exception of stores that would be converting to the new format in the near future), the fact that it centralized stores location by location could have led to important differences at any given time between centralized and decentralized stores with respect to their operations, their employee turnover, and/or their performance. During our sample period, 172 stores in six states in close proximity to each other (including the state where the head office is located) transitioned from the decentralized to the centralized hiring model.[67] In three of these states (representing 154 of the stores that transitioned), there existed stores using the decentralized hiring model throughout our sample period, whereas in the other three states (representing just 18 of the stores that transitioned) there existed no stores using the decentralized hiring model throughout our sample period (since the 18 stores were the last stores in their respective states to switch to the centralized hiring model).

We focused our analyses on the three states where some but not all decentralized stores switched to the centralized hiring model. We refer to the stores that switched as "treatment" stores and the stores that remained decentralized as "control" stores. Of our useable sample of 7,678 employees, 2,931 of these employees were hired by the 154 treatment stores, and 1,426 employees were hired by our 86 control stores. The remaining 3,321 employees were hired by stores that were neither a treatment nor a control store.[68]

To ensure that the stores which transitioned to centralized hiring (our treatment stores) are comparable to those which remained decentralized (our control stores) and to assign a "post" period to the controls, we

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[67] This count excludes any stores that were dropped from our useable sample as described in Table 3.1.

[68] Stores would fall in this category if any of the following was true: the store was already centralized as of the start of our sample period; the store was one of the 18 stores that transitioned during the period for which there were no decentralized stores in the state throughout the sample period; the store was decentralized throughout the period and there were no stores in the same state that transitioned during the period.

use a propensity score matching model based on store conditions at the beginning of our sample period (we use data corresponding to the time of the first hiring in each store). Specifically, we use a logit model to obtain propensity scores capturing each store's probability of being selected for centralized hiring. We include in the model any identifiable variables that could simultaneously explain a store's employee turnover or performance, and the company's decision to centralize that store's hiring. The logit model we use is:

$$
\begin{aligned}
Pr(\textit{Centralized Hiring}) = {} & \beta_0 + \beta_1 \textit{ Monthly Sales} + \beta_2 \textit{ Unemployment Rate} \\
& + \beta_3 \textit{ Store Count} + \beta_4 \textit{ Above Median Competition} + \beta_5 \textit{ Per Capita Income} \\
& + \beta_6 \textit{ Store Size} + \beta_7 \textit{ Store Age} + \beta_8 \textit{ Team Size} \\
& + \beta_9 \textit{ Promotion Opportunities} + \beta_{10} \textit{ \% Full-time Employees} \\
& + \beta_n \textit{ (State Fixed Effects)} + \varepsilon
\end{aligned} \tag{1}
$$

Our explanatory variables primarily come from prior literature identifying determinants of a store's employee turnover or performance (Cotton and Tuttle 1986; Banker, Lee, Potter, and Srinivasan 1996; Sandino 2007),[69] though consistent with the literature, we do not match on the variables that we aim to study as moderators to avoid losing variation in these key explanatory variables (see for example, Armstrong, Jagolinzer and Larcker 2010). The variables included above are described under *Other Variables* (see Data section above), with the addition of the store's monthly sales (*Monthly Sales*) and fixed effects to control for the state in which the store is located, and using *Above Median Competition* rather than *Competition* (where *Above Median Competition* is a binary variable if *Competition* is above median).[70]

The logit results reported in Table 3.2, Panel A show that the main drivers explaining whether or not a store was chosen to be centralized during our sample period are related to the store's location and team

---

[69] Missing from our analyses are two measures that prior literature has found to be associated with turnover: (a) employee wages, since we were given wage data for only a small subset of individuals (e.g., we have wage data for only 107 of the 240 initial employee hires (recall we use the first hire at each store) in our sample before running the propensity score matching procedure)- this does not seem to be a problem since this variable was uncorrelated with monthly employee turnover within the small sample available, and when we ran the selection model using only the 107 observations, an employee's beginning wage was not a significant determinant of the likelihood of being selected when we included as other variables factors likely to (at least partly) determine the wage (e.g. whether or not the employee held a full-time position); (b) demographic characteristics and perceptions of the store team, since these variables were not made available to us. We do however control for each store area's income level, which is uncorrelated with the company's decision to centralize hiring.

[70] If we used the raw number of competitors, the matching procedure failed as it did not satisfy the balancing requirements.

characteristics. Stores located in ZIP codes with more competitors and stores located in certain states were more likely to be chosen. Conversely, stores with larger team sizes, a higher percentage of full-time employees, and with more stores from the retail chain in the same ZIP code, were less likely to be chosen for centralization. We matched each treatment store with the nearest control store that (a) had a propensity score within a distance (or caliper) of 0.11[71] and (b) hired employees both before and after the treatment store switched to centralized hiring.

Our final matched sample comprises 2,258 individual hires from 63 treatment and 63 control stores.[72] Table 3.2, Panel B presents a covariate balance analysis using t-tests and chi-squared tests to compare differences in means and differences in proportions respectively between the variables used to match treatment and control stores.[73] The results of these tests suggest there are no significant differences in the means or proportions of these variables. With respect to our outcomes of interest, Table 3.2, Panel B shows that store performance, tenure (for the first person hired), and turnover were similar for our treatment and control samples at the beginning of the period, further validating our matching procedure.

---

[71] This caliper is equal to 0.1 of the standard deviation of the logit of the propensity scores. We use a smaller, more conservative caliper than that suggested by Austin (2011) (0.2 of the standard deviation of the logit of the propensity scores) to ensure comparability across matched stores.

[72] Note that our sample comprises a small number of treatment stores that reverted back to the decentralized hiring regime after switching to the centralized regime, and then switched to the centralized regime again at a later time. We exclude from our sample any employee hires or store-months corresponding to the initial period of centralization. As a robustness test we also exclude all observations pertaining to these stores and their corresponding control stores. Our results remain the same as those summarized later in Figure 3.3, with the exception that we lose one significant result (the coefficient on *Treated x Post x HQ Hiring Advantage* becomes insignificant in our hazard rate analysis, yet the coefficient on *Treated x Post x Busier* remains significant).

[73] We do not tabulate store age averages to protect the confidentiality of the company. But the difference in means between the treatment and control group is insignificant (t-test=0.78)

Table 3.2, Panel A: Propensity score matching using store conditions at the beginning of the sample period

n = 240 stores. Logit regression. *, **, *** denote significance at a 0.10, a 0.05 and a 0.01 level respectively. *Monthly Sales* is monthly store sales in US$. *Unemployment Rate* is the yearly unemployment rate for the Census block group in which the store is located. *Store Count* is the number of stores in the ZIP code in the same retail chain (including the store itself). *Above Median Competition* is an indicator equal to 1 if the number of direct competitors in the same ZIP code as the store is above median, and zero otherwise. *Per Capita Income* is income per capita in the Census block group where the store operates. *Size (Sqft)* is store size in square feet. *Store Age* is store age in months, as of the first of the month. *Team Size* is the number of month-end non-managerial employees working at the store. *Promotion Opportunities* is the percentage of employees hired in the store's ZIP code area and year that were promoted during our sample period. *% Full-Time Employees* is the percent of month-end non-managerial employees that are working full-time at the store. *State 1*, *State 2*, and *State 3* are indicators for state fixed effects.

	Pr(Treated)	
	Coefficients	Z-Statistics
VARIABLES	(1)	(2)
Intercept	0.723	0.616
Monthly Sales	0.000	1.339
Unemployment Rate	-0.045	-1.450
Store Count	-0.403**	-2.065
Above Median Competition	0.881**	2.484
Per Capita Income	0.000	0.262
Size (Sqft)	0.000	0.116
Store Age	-0.002	-1.461
Team Size	-0.149*	-1.902
Promotion Opportunities	1.896	1.519
% Full-time Employees	-2.651**	-2.076
State 1 (Omitted)	n/a	n/a
State 2	2.428***	5.421
State 3	1.721***	3.067
Pseudo R-Squared	0.166	

Table 3.2, Panel B: Covariate balance at the beginning of the sample period

n = 126 stores. None of the differences are significant at the 10% level. *Time to Employee Departure* is the number of days between the employee's hire date and exit date (censored at the final sample period exit date (in December 2015) for employees who were still active with the company at that time). *Monthly Employee Turnover* is monthly turnover among the staff at the store. *Monthly Sales* is monthly store sales in US$. *Unemployment Rate* is the yearly unemployment rate for the Census block group in which the hiring store is located. *Store Count* is the number of stores in the ZIP code in the same retail chain (including the store itself). *Competition* is the number of direct competitors in the same ZIP code as the store. *Per Capita Income* is income per capita in the Census block group where the store operates. *Size (Sqft)* is store size in square feet. *Team Size* is the number of month-end non-managerial employees working at the hiring store at the time of hire. *Promotion Opportunities* is the percentage of employees hired in the same store's ZIP code area and year that were promoted during our sample period. *% Full-Time Employees* is the percent of month-end non-managerial employees that are working full-time at the hiring store at the time of hire. Percentages are expressed in decimals. *State 1, State 2,* and *State 3* are indicators for state fixed effects.

VARIABLES	Mean - Control (1)	Mean - Treatment (2)	Difference in Means (3)	T-Test (4)
Time to Employee Departure	390.41	349.90	40.51	0.69
Monthly Employee Turnover	7.88	7.68	0.20	0.11
Monthly Sales	135,745	133,729	2,016	0.26
Unemployment Rate	7.79	6.99	0.81	0.90
Store Count	1.56	1.41	0.14	0.91
Competition	8.42	8.01	0.40	0.34
Per Capita Income	32,855	35,263	-2,408	-1.28
Size (Sqft)	2,569.78	2,585.90	-16.13	-0.10
Team Size	9.63	9.76	-0.13	-0.25
Promotion Opportunities	0.09	0.11	-0.02	-0.69
% Full-time Employees	0.24	0.23	0.01	0.32
	% Control Stores	% Treatment Stores	Difference in Percentages	Chi-Square
State 1	12%	13%	-1%	0.517
State 2	31%	33%	-2%	
State 3	7%	4%	3%	

3.4 Empirical analyses and results

3.4.1 Research design

To test the overall effect of centralized hiring (H1), we use the following regression model:

$$Outcome = \beta_0 + \beta_1\,Post + \beta_2\,Treated \times Post + \beta_3\,Busier + \beta_m\,(Control\ Variables)$$
$$+ \beta_n\,(Month\text{-}Year\ Fixed\ Effects) + \beta_o\,(Store\ Fixed\ Effects) + \varepsilon \qquad (2)$$

77

We use two different estimation methods to analyze the effects of centralized hiring on newly-hired employee departures, store employee turnover, and store sales. To examine the impact on the rate of employee departures, we use a hazard rate model where *Outcome* is *Time to Employee Departure*.[74] Note that our hazard rate analysis will not result in a linear prediction of the time to employee departure, but will instead model the probability that an employee will depart from the company at a point in time, given that s/he hasn't already departed.[75] To examine the effect of centralized hiring on store employee turnover and store sales we use OLS regressions, where *Outcome* is *Monthly Employee Turnover* and the natural logarithm of the store's monthly sales (*Ln(Monthly Sales)*), respectively. In all of the models described above, we use robust standard errors, clustering observations by store.

In our model, *Treated* is an indicator that the store switched from decentralized to centralized hiring during our sample period, and *Post* is an indicator specifying that either the hire (in the employee level analysis) or the month (in the store level analyses) occurred after (or when) the relevant treatment store switched to centralized hiring. Since each control store is matched to a treatment store, *Post* for the control store is defined as *Post* for the corresponding matching treatment store. Our coefficient of interest in Equation (2) is β_2.[76]

We include as a control variable *Busier*, an indicator variable as described previously, which we later examine as a possible moderator of the effect of centralized hiring.[77] The other variables that we examine later as possible moderators of the effect of centralized hiring (*Complex Operations*, *Further from Headquarters*, *Higher Market Divergence*, and *Serves Repeat Customers*) are time-invariant and thus do not appear in Equation (2) since they would be absorbed by the store fixed effects.

---

[74] Note that our sample size becomes 2,239 employee hires (rather than 2,258) since 19 hires had an employment duration of zero days; these 19 observations are automatically dropped in the hazard rate analysis.

[75] A hazard rate model has the advantage that it allows us to use data from employees that remained with the company as of the end of the sample period (i.e. "survivors"). The model uses data from surviving employees to estimate what proportion of employees departed at time t relative to the employees that survived up to time t-1 (i.e. hazard rate). This hazard rate is modeled as a function of the conditions under which the employees were hired (i.e., our explanatory variables).

[76] Note that *Treated* does not appear in Equation (2) since it is absorbed by the store fixed effects.

[77] We use *Busier* rather than the continuous variable *Busyness* since *Busyness* had a VIF > 10, which indicates multicollinearity issues.

We also include *Team Size*, *Promotion Opportunities*, and % *Full-time Employees* as control variables (described previously), and add a *Full-time* indicator in our hazard rate model regressions. Finally, we include time (month-year) and store fixed effects. All of the variables included in the regressions are defined in full detail in the Appendix.[78]

We test Hypotheses 2, 2a, 2b, 3, and 3a-3c using two sets of analyses, one that combines the moderators into two aggregate indicator variables, and one that tests the effect of each moderator separately.

The first set of analyses relies on the two aggregate indicator variables described earlier. *HQ Hiring Advantage* captures circumstances where we expect the head office to have the greatest advantage to hire new employees relative to the unit store manager, due to greater time availability, while *BU Local Advantage* captures circumstances where store managers are likely to have an informational advantage relative to headquarters.

We test the effects of these moderators using the following regression specification: [79]

$$
\begin{aligned}
Outcome = \beta_0 &+ \beta_1\ Post + \beta_2\ HQ\ Hiring\ Advantage + \beta_3\ Treated \times Post \\
&+ \beta_4\ Treated \times HQ\ Hiring\ Advantage + \beta_5\ Post \times HQ\ Hiring\ Advantage \\
&+ \beta_6\ Post \times BU\ Local\ Advantage + \beta_7\ Treated \times Post \times HQ\ Hiring\ Advantage \\
&+ \beta_8\ Treated \times Post \times BU\ Local\ Advantage + \beta_m\ (Control\ Variables) \\
&+ \beta_n\ (Month\text{-}Year\ Fixed\ Effects) + \beta_o\ (Store\ Fixed\ Effects) + \varepsilon \qquad (3)
\end{aligned}
$$

The control variables and the estimation methods used to analyze the data are defined as they were for Equation (2). Our coefficients of interest in Equation (3) are β_7 and β_8; that is, the triple interaction terms between *Treated*, *Post*, and the two aggregate moderating variables.

The second set of analyses tests hypotheses 2a, 2b, 3a, 3b and 3c, and is based on the following regression specification:

$$
Outcome = \beta_0 + \beta_1\ Post + \beta_2\ Busier + \beta_3\ Treated \times Post + \beta_4\ Treated \times Busier
$$

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[78] Notice that we do not control for individual characteristics in our individual-level (hazard ratio) analyses. We made this design choice since: 1) we want to test the overall effect of having a centralized vs. decentralized process, and do not want to control for hiring choices (in terms of the characteristics of those hired) that may result from the recruiting process itself, and 2) the only individual characteristics for which we have data are gender (if we infer it from the employee names) and age (though only for around 45% of our sample) – thus, even if we wanted to consider individual characteristics we would only be able to provide an incomplete picture. Future studies could potentially incorporate individual characteristics of the selected hires as a potential mediator explaining the effect of centralization on employee turnover and unit performance.

[79] Note that *BU Local Advantage*, *Treated*, and *Treated x BU Local Advantage* do not appear in Equation (3) since these variables are time-invariant and are absorbed by the store fixed effects.

$$+ \beta_5 \text{ } Post \times Busier + \beta_6 \text{ } Post \times Complex \text{ } Operations$$
$$+ \beta_7 \text{ } Post \times Further \text{ } from \text{ } Headquarters + \beta_8 \text{ } Post \times Higher \text{ } Market \text{ } Divergence$$
$$+ \beta_9 \text{ } Post \times Serves \text{ } Repeat \text{ } Customers$$
$$+ \text{ } \beta_{10} \text{ } Treated \times Post \times Busier + \beta_{11} \text{ } Treated \times Post \times Complex \text{ } Operations$$
$$+ \beta_{12} \text{ } Treated \times Post \times Further \text{ } From \text{ } Headquarters$$
$$+ \beta_{13} \text{ } Treated \times Post \times Higher \text{ } Market \text{ } Divergence$$
$$+ \beta_{14} \text{ } Treated \times Post \times Serves \text{ } Repeat \text{ } Customers + \beta_m \text{ } (Control \text{ } Variables)$$
$$+ \beta_n \text{ } (Month\text{-}Year \text{ } Fixed \text{ } Effects) + \beta_o \text{ } (Store \text{ } Fixed \text{ } Effects) + \varepsilon \qquad (4)$$

We use the same variables and estimation methods described for Equation (2). Our coefficients of interest in Equation (4) are β_{10} through β_{14}.[80]

3.4.2 Results

3.4.2.1 Descriptive statistics

Table 3.3, Panel A presents summary statistics for the main variables used in our analysis (reported for the sample of employees hires, with the exception of store-level employee turnover and sales, which are reported using the sample of store-months). With respect to our dependent variables, newly hired employees worked an average of 230 days (ranging from 1 to 1,063 days) with the company during our sample period (recall that these days were censored for any employee that remained with the company as of our last exit date in December 2015). Monthly store-level employee turnover was six percent on average and ranged from 0 to 40 percent. This means that, on average, 72 percent of a store's employees turned over every year, a high but not uncommon level of turnover for entry-level workers in the industry where this company operates. Based on the average team size of 11.1 (reported in Table 3.3 for the sample of employee hires), this suggests that stores lost, on average, roughly 8 employees every year. Store sales also varied significantly from roughly \$62 to \$289 thousand a month, averaging \$148 thousand a month across all store-months.

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[80] Several of the main effects and interactions with *Treated* do not appear due to the inclusion of store fixed effects.

Our main explanatory and moderating variables (*Treated, Post, Busyness, Complex Operations, Distance to Headquarters, Market Divergence,* and *Serves Repeat Customers*) varied widely. Some stores were twice as busy as the average store, with employees selling ~$200 of merchandise per labor hour vis-à-vis the average in our sample of $110 per labor hour, while others were somewhat idle (the least busy store sold $59 worth of merchandise per labor hour). A little over half of the employee hires were at stores operating under the organization's new store format and 36 percent of hires were at stores that served repeat customers. Hiring stores were located between 5.5 and 128.3 miles from headquarters. The mean value of market divergence (3.66) means that the average store operated in a location that diverged roughly 0.73 standard deviations (3.66/5) from the average surrounding demographic characteristics found across all the company's stores (population density measured as inhabitants per square mile, per capita income, median age, ethnicity measured as a percent of white individuals in the population, and household size). This market divergence is greater than the divergence reported for similar retail chains, though within a reasonable range (Campbell et al. 2009).

Finally, our control measures report reasonable variation considering the fact that we matched our stores based on all but one of these variables.[81] Store team size varied from a minimum of 3 to a maximum of 23 employees, and the percent of store employees working full-time ranged from zero to 100 percent. 21 percent of newly hired employees held a full-time position, and promotion opportunities (the percent of newly hired employees promoted during our sample period) was seven percent on average.

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[81] We did not match on *Full-time* since it is an individual level, not store level, variable.

Table 3.3, Panel A: Descriptive statistics

n = 3,944 store-months for *Monthly Employee Turnover* and *Monthly Sales*; *n* = 2,239 employee hires for all other variables. *Time to Employee Departure* is the number of days between the employee's hire date and exit date (censored at the final sample period exit date (in December 2015) for employees who were still active with the company at that time). *Monthly Employee Turnover* is monthly turnover among the staff at the store. *Monthly Sales* is monthly store sales in US$. *Monthly Employee Turnover* and *Monthly Sales* are after winsorizing at the 1% and 99% levels. *Treated* is an indicator equal to 1 if the store switched from decentralized hiring to centralized hiring during the sample period. *Post* is an indicator equal to 1 if the employee was hired after the "treated store" or corresponding "treated store" (in the case of matched control stores) had made the switch from decentralized hiring to centralized hiring. *HQ Hiring Advantage* is an indicator equal to 1 if headquarters has a hiring advantage relative to the store manager. This is, if the store's monthly store sales divided by monthly labor hours (*Busyness*) is above median relative to the sample stores and if the store has *Complex Operations* (where *Complex Operations* is an indicator equal to 1 if the store is operating under the organization's new format). *BU Local Advantage* is an indicator equal to 1 if the store manager had an informational advantage over the headquarters. This is, if 2 of the following 3 conditions were met: the store's distance to headquarters was above median relative to the sample stores, the store's market divergence was above median among the sample stores, and/or the store served repeat customers. *Distance to Headquarters* is the distance from the hiring store to company headquarters in miles. *Market Divergence* is measured as the sum of the absolute values of normalized differences on each location characteristic (population, income, age, ethnicity, household size) between the hiring store and the average value of the location characteristic for the chain. *Serves Repeat Customers* is an indicator equal to 1 if the hiring store is located in a Census block with a population of less than 1000 people per square mile and is not located within 2 miles of an Interstate Highway exit or U.S. Highway exit. *Team Size* is the number of month-end non-managerial employees working at the hiring store at the time of hire. *Promotion Opportunities* is the percentage of employees hired in the same store's ZIP code area and year that were promoted during our sample period. This percentage excludes the employee analyzed in our hazard rate regressions. *% Full-Time Employees* is the percent of month-end non-managerial employees that are working full-time at the hiring store at the time of hire. *Full-time* is an indicator equal to 1 if the employee has a full-time position. Percentages are expressed in decimals.

VARIABLES	Mean (1)	Standard Deviation (2)	Min (3)	Max (4)
Time to Employee Departure	229.96	227.11	1.00	1,063.00
Monthly Employee Turnover	6.01	8.77	0.00	40.00
Monthly Sales	147,500	48,543	62,080	289,119
Treated	0.52	0.50	0.00	1.00
Post	0.54	0.50	0.00	1.00
HQ Hiring Advantage	0.32	0.47	0.00	1.00
Busyness	109.89	23.91	58.51	205.36
Complex Operations	0.52	0.50	0.00	1.00
BU Local Advantage	0.44	0.497	0.00	1.00
Distance to Headquarters	48.21	32.46	5.49	128.33
Market Divergence	3.66	1.77	1.01	11.24
Serves Repeat Customers	0.36	0.48	0.00	1.00
Team Size	11.11	3.48	3.00	23.00
Promotion Opportunities	0.07	0.10	0.00	1.00
% Full-time Employees	0.37	0.16	0.00	1.00
Full-time	0.21	0.41	0.00	1.00

Table 3.3, Panel B: Correlation table

n = 3,944 store-months for correlations appearing in the *Monthly Employee Turnover* and *Monthly Sales* columns; *n* = 2,239 employee hires for all other columns. *Time to Employee Departure* is the number of days between the employee's hire date and exit date (censored at the final sample period exit date (in December 2015) for employees who were still active with the company at that time). *Monthly Employee Turnover* is monthly turnover among the staff at the store. *Monthly Sales* is monthly store sales in US$. *Monthly Employee Turnover* and *Monthly Sales* are after winsorizing at the 1% and 99% levels. *Treated* is an indicator equal to 1 if the store switched from decentralized hiring to centralized hiring anytime during the sample period. *Post* is indicator equal to 1 if the employee was hired after the "treated store" or corresponding "treated store" (in the case of matched control stores) had made the switch from decentralized hiring to centralized hiring. *Busyness* is monthly store sales divided by monthly labor hours. *Complex Operations* is an indicator equal to 1 if the store is operating under the organization's new format. *Distance to Headquarters* is the distance from the hiring store to company headquarters in miles. *Market Divergence* is measured as the sum of the absolute values of normalized differences on each location characteristic (population, income, age, ethnicity, household size) between the hiring store and the average value of the location characteristic for the chain. *Serves Repeat Customers* is an indicator equal to 1 if the hiring store is located in a Census block with a population of less than 1000 people per square mile and is not located within 2 miles of an Interstate Highway exit or U.S. Highway exit. *Team Size* is the number of month-end non-managerial employees working at the hiring store at the time of hire. *Promotion Opportunities* is the percentage of employees hired in the same store's ZIP code area and year that were promoted during our sample period. This percentage excludes the employee analyzed in our hazard rate regressions. *% Full-Time Employees* is the percent of month-end non-managerial employees that are working full-time at the hiring store at the time of hire. *Full-time* is an indicator equal to 1 if the employee has a full-time position. Percentages are expressed in decimals.

VARIABLES	Time to Employee Departure	Monthly Employee Turnover	Monthly Sales	Treated	Post	Busyness	Complex Operations	Distance to Headquarters	Market Divergence	Serves Repeat Customers	Team Size	Promotion Opportunities	% Full-time Employees
Time to Employee Departure	1												
Monthly Employee Turnover	-0.09*	1											
Monthly Sales	-0.02	-0.03*	1										
Treated	-0.05*	0.02	-0.01	1									
Post	-0.25*	0.12*	-0.03	0.05*	1								
Busyness	-0.04*	0.01	0.61*	0.04*	-0.03	1							
Complex Operations	0.00	-0.02	0.51*	0.00	-0.02	-0.21*	1						
Distance to Headquarters	0.01	-0.04*	0.12*	0.38*	-0.20*	0.30*	-0.06*	1					
Market Divergence	-0.06*	0.06*	0.14*	0.11*	0.03	0.19*	-0.02	0.24*	1				
Serves Repeat Customers	-0.03	0.00	-0.02	0.21*	0.09*	0.03	0.01	-0.01	0.09*	1			
Team Size	-0.01	-0.09*	0.56*	0.00	-0.05*	-0.13*	0.63*	0.00	0.08*	0.03	1		
Promotion Opportunities	0.06*	-0.02	0.01	0.07*	-0.09*	0.00	0.01	0.02	0.00	-0.02	-0.08*	1	
% Full-time Employees	-0.10*	-0.04*	0.20*	-0.02	0.19*	0.02	0.19*	-0.14*	-0.09*	-0.10*	-0.06*	0.03	1
Full-time	0.40*	n/a	n/a	-0.06*	-0.02	-0.02	0.06*	-0.10*	-0.04*	-0.05*	-0.01	0.01	0.08*

Table 3.3, Panel B shows correlations among the main variables of interest (reported for the sample of employee hires, with the exception of correlations appearing in the columns pertaining to store-level employee turnover and sales, which are reported using the sample of store-months). Several variables were correlated with our main dependent variables. Time to employee departure (or time to censoring for newly-hired employees still active as of our last recorded exit date) was negatively correlated with the busyness of store, the market divergence of the store, and the percentage of full time employees, and was positively correlated with promotion opportunities. Time to employee departure was also longer for employees holding a full-time position. Store employee turnover was most common in stores with higher market divergence. There was less employee turnover in stores that were located further from headquarters, and in stores with larger team sizes and a higher percentage of full-time employees. Financial performance (in terms of store monthly sales) was higher in busier stores, complex stores, stores with larger teams, and stores with a higher percentage of full time employees. Interestingly, sales were also higher in stores that were in markets that were further from headquarters, and with more divergent demographics (suggesting the company chose to open stores in those markets only when the financial opportunities were very attractive).

Correlations among our explanatory variables were generally low, with the exception of the correlation between team size and complex operations. Since complex operations is a time-invariant variable for the sample of stores that we analyze, it is absorbed by store fixed effects. Our calculated VIFs for team size and the individual store coefficients are all <10, suggesting the regressions we report are not affected by multicollinearity concerns due to the team size-complex operations correlation.

3.4.2.2 Store employee turnover and store sales in the pre-period

Since we use a difference-in-differences approach which requires satisfying the parallel trends assumption, Figures 3.2a and 3.2b show average store employee turnover and the log of monthly store sales,

respectively, for each month in the pre-period for our treatment and control stores.[82] These figures show that the unadjusted trends in these two dependent variables appear to be sufficiently parallel. As an additional test, we create variables capturing the monthly percentage change in each dependent variable (here, we used raw sales). We then perform t-tests of whether the difference in means of these variables between the treatment and control groups in the pre-period is statistically significant. The difference is not statistically significant for either variable (p=0.861 in the case of the monthly percentage change in sales, and p=0.792 in the case of the monthly percentage change in employee turnover).[83] Thus, we conclude that our use of difference-in-differences analyses is appropriate.

Figure 3.2a: Mean of monthly employee turnover (%)

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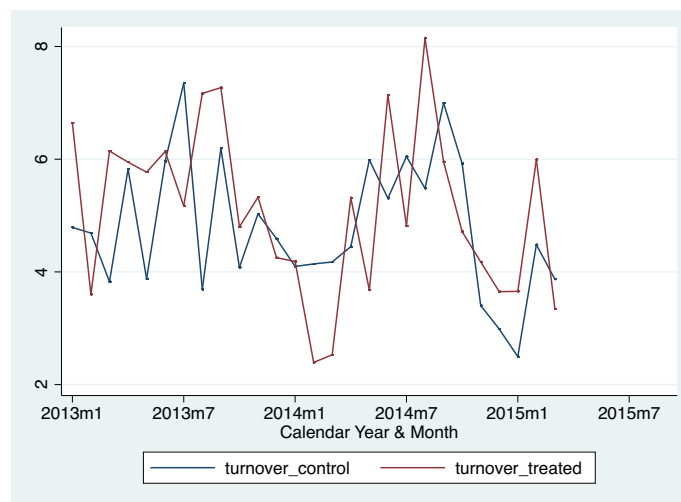
[82] We include months in the pre-period where the number of stores in each of the treatment and control groups is greater than five.
[83] Note that this test is not perfect in the case of monthly employee turnover, since there are many instances where monthly employee turnover is equal to zero. Thus, if the denominator (i.e. last month's employee turnover) was zero, the percentage change variable is set to missing and excluded from this test. Our test comprised approximately a third of the observations used in the monthly sales test.

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Figure 3.2b: Mean of monthly log sales
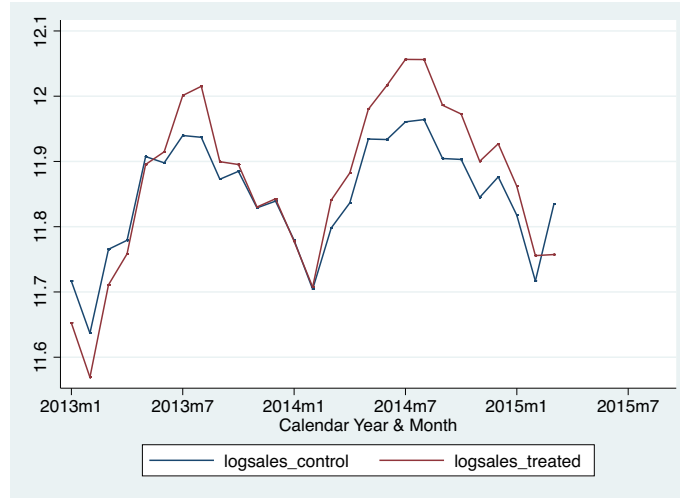
3.4.2.3 Effects of the switch from decentralized to centralized hiring

Table 3.4 tests our first hypothesis (H1). Consistent with our prediction of no main effect, our results in Columns (1) through (4) show that the stores' switch from decentralized to centralized hiring was not associated with newly hired employee departures,[84] store employee turnover, or with store sales.[85] To explore the possibility that centralized hiring did not have an immediate effect but had effects over time (e.g. as new employees learned to do their jobs and stayed longer with the firm), we conducted untabulated analyses where we add additional variables interacting *Treated × Post* with different numbers of months (6 months, 12 months, 18 months and 24 months) after the switch took place. Our results suggest an effect does not appear with the passing of time.

To assess the robustness of our propensity-score matched sample results, we rerun our analyses using two alternative samples: 1) all 154 treatment stores and 86 control stores (i.e. not just those in the propensity

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[84] A hazard ratio greater than one (or a positive coefficient) indicates that the variable is associated with shorter time to employee departure, whereas a hazard ratio less than 1 (or a negative coefficient) suggests the variable is associated with longer time to employee departure. The hazard ratios and (coefficients) on our interactions of Treated and Post are insignificant.

[85] Company executives believed that centralized hiring had resulted in hiring higher quality candidates, but that this had not translated into longer organizational tenure because these candidates subsequently left for better opportunities. While company executives hoped that these higher quality candidates would result in improved store performance, we do not find evidence that they did (at least with respect to store sales).

score matched sample), and 2) all stores (treatment stores, control stores, and all other stores).[86] Note that in these analyses we do not assign a "Post" period to any of the decentralized stores (thus *Post*=0 for all of those observations). The results for these alternative samples are the same as for the propensity-scored matched sample.

As an additional robustness test, we re-calculate *Time to Employee Departure* as the number of days between the employee's hire date and the date the store began centralized hiring, for any employee hired under the decentralized regime at a treatment store who is still employed at the time the store switched to the centralized regime. These employee observations are marked as "censored" as of the centralization date. We do so to account for the possibility that employees hired under the decentralized regime may react negatively to, or dislike colleagues hired under, the centralized regime. Our findings (or lack thereof, in the case of Table 3.4) in Table 3.4 and in Tables 3.5 and 3.6 (discussed below) are robust to this re-calculation.[87]

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[86] Here *Treated*=1 if the store switched to centralized hiring prior to our sample period or during our sample period, and = 0 if the store remained decentralized through to the end of our sample period. *Post*=1 if the store is a treated store and the employee hire / store-month occurred at or after the time when the store switched to centralized hiring, and = 0 otherwise.

[87] We thank an anonymous reviewer for the suggestion to censor these employee observations in this way.

**Table 3.4: Effect of centralized hiring (treated) on time to employee departures,
store employee turnover, and monthly sales**

n = 2,239 employee hires in columns (1) and (2); *n*= 3,944 store-months in columns (3) and (4). Columns 1 and 2 present hazard ratios and coefficients of a Cox's proportional hazards model. A hazard ratio greater than 1 (or a positive coefficient) indicates that the variable is associated with shorter time to employee departure, whereas a hazard ratio less than 1 (or a negative coefficient) suggests the variable is associated with longer time to employee departure. Columns 3 and 4 report OLS coefficients. Z -statistics and t-statistics in parenthesis are based on robust standard errors clustered by store. Month-year and store fixed effects are included in all regressions. *, **, *** denote significance at a 0.10, a 0.05 and a 0.01 level respectively. *Treated* is an indicator equal to 1 if the store switched from decentralized hiring to centralized hiring anytime during the sample period. *Post* is an indicator equal to 1 if the employee was hired after the "treated store" or corresponding "treated store" (in the case of matched control stores) had made the switch from decentralized hiring to centralized hiring. *Busier* is an indicator equal to 1 if monthly store sales divided by monthly labor hours (*Busyness*) is above median relative to the sample stores. *Team Size* is the number of month-end non-managerial employees working at the hiring store at the time of hire. *Promotion Opportunities* is the percentage of employees hired in the same store's ZIP code area and year that were promoted during our sample period. This percentage excludes the employee analyzed in our hazard rate regressions. *% Full-Time Employees* is the percent of month-end non-managerial employees that are working full-time at the hiring store at the time of hire. *Full-time* is an indicator equal to 1 if the employee has a full-time position.

| VARIABLES | Time to Employee Departure | | Monthly Employee Turnover | Ln(Monthly Sales) |
| | Hazard Ratio | Coefficients | | |
	(1)	(2)	(3)	(4)
Constant	-	-	20.042***	11.479***
			(9.822)	(322.120)
Post (Indicator)	1.132	0.124	-0.125	-0.011
	(1.057)	(1.057)	(-0.216)	(-1.102)
Treated (Indicator) x Post	0.889	-0.117	-0.272	0.004
	(-0.858)	(-0.858)	(-0.387)	(0.320)
Busier (Indicator)	1.033	0.033	-0.423	0.051***
	(0.316)	(0.316)	(-0.917)	(6.306)
Team Size	1.032	0.032	-1.120***	0.009***
	(1.268)	(1.267)	(-8.241)	(3.360)
Promotion Opportunities	0.993	-0.007	-2.589*	-0.034
	(-0.020)	(-0.020)	(-1.817)	(-1.334)
% Full-Time Employees	0.860	-0.150	-9.459***	0.020
	(-0.439)	(-0.439)	(-5.475)	(1.155)
Full-time (Indicator)	0.246***	-1.401***	-	-
	(-16.817)	(-16.817)		
Month-Year FE?	Yes	Yes	Yes	Yes
Store FE?	Yes	Yes	Yes	Yes
R^2	-	-	0.165	0.965

3.4.2.4 Factors moderating the effects that the switch from decentralized to centralized hiring had on stores

Tables 3.5 and 3.6 explore circumstances where centralization could have had a more or less favorable effect. They present the results of the regressions specified in equations (3) and (4). Figure 3.3 summarizes these results. Our findings partially support hypotheses 2 and 3.

Figure 3.3: Summary of results reported in Tables 3.5 and 3.6

The figure below provides a summary of the findings in Tables 3.5 and 3.6. We assign the following meaning to the symbols summarizing our results:
- Results were insignificant.
- ✓ Results were significant in the direction predicted (based on a one-tailed test).

Hypotheses Tested	Time to Employee Departure	Monthly Employee Turnover	Ln(Monthly Sales)
Hypothesis 2: Centralized hiring will lead to *relatively* lower employee turnover and higher financial performance, the more likely it is that the headquarters has a hiring advantage relative to the business unit.	✓	✓	-
Specifically, centralized hiring will lead to *relatively* lower employee turnover and higher financial performance in business units...			
Hypothesis 2a: ...that are busier,	✓	-	-
Hypothesis 2b: ...with more complex operations.	-	-	-
Hypothesis 3:			
Centralized hiring will lead to *relatively* higher employee turnover and lower financial performance, the more likely it is that the business unit manager has a local information advantage relative to headquarters.	✓	-	-
Specifically, centralized hiring will lead to *relatively* higher employee turnover and lower financial performance in business units ...			
Hypothesis 3a: ...that are located further from headquarters.	-	-	-
Hypothesis 3b: ...serving markets that differ more from the markets that are typically served by the organization.	✓	✓	-
Hypothesis 3c: ... more likely to serve repeat customers.	✓	✓	-

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3.4.2.4.1 Moderating effects of factors leading headquarters to have a hiring advantage

Hypothesis 2 predicts a more favorable effect of centralized hiring (i.e. relatively lower employee turnover and higher financial performance) the more likely it is headquarters has a hiring advantage relative to the business unit. Consistent with H2, Table 3.5, Columns 1 and 2, shows that the switch from decentralized to centralized hiring resulted in rates of employee departure that were 42 percent lower for stores where headquarters had a hiring advantage (i.e. busier stores with complex operations), relative to stores where no such advantage exists. Also consistent with H2, Column 3 in Table 3.5 highlights a more favorable effect of centralization on the stores' employee turnover (employee turnover was 1.96 percentage points lower) if the headquarters had a hiring advantage than if it did not. This is a significant figure when compared with the average monthly employee turnover of 6% documented in Table 3.3, Panel A. This suggests that centralized hiring was probably welcomed (or at least more likely to be accepted) by store employees when their managers did not have the time to hire staff. By hiring employees on behalf of the store, the head office may have alleviated work overload and distractions at these stores, and recruited employees that better matched the company. The moderating effect of HQ Hiring Advantage on the association between centralization and sales was however insignificant; this latter result did not support H2.

Table 3.6 enables us to take a closer look at the sources of the headquarters' hiring advantage one by one (namely, the moderating effects of the stores' busyness and complexity of operations).

Our results suggest that the more favorable effects of centralization due to a headquarters' hiring advantage were mainly driven by the busyness of the store. Specifically, the rate of new employee departures was 38.3 percent less under centralized hiring for busier stores relative to less busy stores, which supports H2a. However, we did not find significant results for monthly employee turnover or store performance.

The moderating effect of complex operations on the association between centralized hiring and employee departures, turnover, and store sales, was insignificant, failing to support H2b.

3.4.2.4.2 Moderating effects of factors giving the unit manager an information advantage vis-à-vis headquarters

Hypothesis 3 predicts a less favorable effect of centralized hiring (i.e. relatively higher employee turnover and lower financial performance) the more likely it is the unit manager has a relevant local information advantage relative to headquarters. The results in Table 3.5 partially support H3. Consistent with H3, Table 3.5, Columns (1) and (2) show that the introduction of centralized hiring was associated with rates of employee departure that were more than twice as high for stores that had a local information advantage (i.e., stores that had two of the following three characteristics: they were far from headquarters, operating in divergent markets, and/or had repeat customers) than for stores that did not. Table 3.5, Columns (3) and (4), however did not provide support for H3 as we found no significant relation for monthly employee turnover or store sales.

Table 3.5: Moderating effects of hiring advantage of headquarters and information advantage of store managers on the association between centralized hiring (treated) and time to employee departure, store employee turnover, and monthly sales

n = 2,239 employee hires in columns (1) and (2); *n* = 3,944 store-months in columns (3) and (4). Columns 1 and 2 present hazard ratios and coefficients of a Cox's proportional hazards model. A hazard ratio greater than 1 (or a positive coefficient) indicates that the variable is associated with shorter time to employee departure, whereas a hazard ratio less than 1 (or a negative coefficient) suggests the variable is associated with longer time to employee departure. Columns 3 and 4 report OLS coefficients. Z-statistics and t-statistics in parenthesis are based on robust standard errors clustered by store. Month-year and store fixed effects are included in all regressions. *, **, *** denote significance at a 0.10, a 0.05 and a 0.01 level respectively (one-tailed for directional predictions and two-tailed otherwise). *Treated* is an indicator equal to 1 if the store switched from decentralized hiring to centralized hiring during the sample period. *Post* is an indicator equal to 1 if the employee was hired after the "treated store" or corresponding "treated store" (in the case of matched control stores) had made the switch from decentralized hiring to centralized hiring. *HQ Hiring Advantage* is an indicator equal to 1 if headquarters has a hiring advantage relative to the store manager. This is, if the store's monthly store sales divided by monthly labor hours (*Busyness*) is above median relative to the sample stores and if the store has *Complex Operations* (where *Complex Operations* is an indicator equal to 1 if the store is operating under the organization's new format). *BU Local Advantage* is a dummy equal to 1 if the store manager had an informational advantage over the headquarters. This is, if 2 of the following 3 conditions were met: the store's distance to headquarters was above median relative to the sample stores, the store's market divergence was above median among the sample stores, and/or the store served repeat customers. *Team Size* is the number of month-end non-managerial employees working at the hiring store at the time of hire. *Promotion Opportunities* is the percentage of employees hired in the same store's ZIP code area and year that were promoted during our sample period. This percentage excludes the employee analyzed in our hazard rate regressions. *% Full-Time Employees* is the percent of month-end non-managerial employees that are working full-time at the hiring store at the time of hire. *Full-time* is an indicator equal to 1 if the employee has a full-time position.

| VARIABLES | Pred. | Time to Employee Departure | | Monthly Employee Turnover | Pred. | Ln (Monthly Sales) |
| | | Hazard Ratio | Coefficients | | | |
		(1)	(2)	(3)		(4)
Constant		-	-	20.350***		11.485***
				(10.048)		(314.985)
Post (Indicator)		1.246*	0.220*	-0.778		-0.016
		(1.705)	(1.705)	(-1.109)		(-1.393)
HQ Hiring Advantage (Indicator)		0.839	-0.176	-1.179		0.010
		(-0.791)	(-0.791)	(-0.993)		(0.671)
Treated (Indicator) x Post		0.764	-0.269	-0.891		0.003
		(-1.307)	(-1.307)	(-0.862)		(0.164)
Treated x HQ Hiring Advantage		1.608	0.475	1.600		0.019
		(1.581)	(1.581)	(0.986)		(1.125)
Post x HQ Hiring Advantage		1.122	0.115	1.509		0.020
		(0.427)	(0.427)	(1.398)		(1.117)
Post x BU Local Advantage (Indicator)		0.609**	-0.495**	1.104		0.006
		(-2.197)	(-2.197)	(0.969)		(0.299)
Treated x Post x HQ Hiring Advantage	-	0.583**	-0.539**	-1.964*	+	-0.022
		(-1.715)	(-1.715)	(-1.435)		(-1.060)
Treated x Post x BU Local Advantage	+	2.218***	0.797***	1.383	-	0.011
		(2.706)	(2.706)	(0.938)		(0.434)
Team Size		1.035	0.035	-1.122***		0.008***
		(1.351)	(1.351)	(-8.154)		(2.922)

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Table 3.5: Moderating effects of hiring advantage of headquarters and information advantage of store managers on the association between centralized hiring (treated) and time to employee departure, store employee turnover, and monthly sales (Continued)

Promotion Opportunities	1.024	0.023	-2.817*	-0.038
	(0.066)	(0.066)	(-1.948)	(-1.502)
% Full-time Employees	0.905	-0.100	-9.174***	0.021
	(-0.287)	(-0.287)	(-5.274)	(1.186)
Full-time (Indicator)	0.247***	-1.400***	-	-
	(-16.704)	(-16.704)		
Month-Year FE?	Yes	Yes	Yes	Yes
Store FE?	Yes	Yes	Yes	Yes
R^2	-	-	0.168	0.963

A more detailed analysis is presented in Table 3.6. Our results show partial support for H3b and H3c, whereby the main information asymmetries driving our results are the presence of repeat customers and the market divergence of the store. Specifically, the rate of new employee departures following the shift to centralization was 80.3 percent higher if the store had higher market divergence (i.e. above median), and a staggering 154 percent higher if the store served repeat customers. In terms of monthly employee turnover, stores with higher market divergence exhibited monthly turnover 3.9 percentage points higher after the store shifted to a centralized hiring system relative to stores with lower market divergence, and stores serving repeat customers exhibited turnover 1.9 percentage points higher compared to stores not serving repeat customers. We found no evidence in support of H3a—a moderating effect of distance from headquarters—in the disaggregated analyses. It is possible that the costs and benefits of centralized hiring may have offset each other in stores that were far from headquarters. For instance, while store managers in distant stores may have had a hiring advantage due to their superior understanding of local circumstances, they may have also benefitted from the greater exposure that new employees had to the organization and its values under centralized hiring.

Table 3.6: Moderating effects of factors affecting the association between centralized hiring (treated) and time to employee departure, store employee turnover, and monthly sales

n = 2,239 employee hires in columns (1) and (2); *n* = 3,944 store-months in columns (3) and (4). Columns 1 and 2 present hazard ratios and coefficients of a Cox's proportional hazards model. A hazard ratio greater than 1 (or a positive coefficient) indicates that the variable is associated with shorter time to employee departure, whereas a hazard ratio less than 1 (or a negative coefficient) suggests the variable is associated with longer time to employee departure. Columns 3 and 4 report OLS coefficients. Z-statistics and t-statistics in parenthesis are based on robust standard errors clustered by store. Month-year and store fixed effects are included in all regressions. *, **, *** denote significance at a 0.10, a 0.05 and a 0.01 level respectively (one-tailed for directional predictions and two-tailed otherwise). Variables are defined in the appendix. *Treated* is an indicator equal to 1 if the store switched from decentralized hiring to centralized hiring during the sample period. *Post* is an indicator equal to 1 if the employee was hired after the "treated store" or corresponding "treated store" (in the case of matched control stores) had made the switch from decentralized hiring to centralized hiring. *Busier* is an indicator equal to 1 if monthly store sales divided by monthly labor hours (*Busyness*) is above median relative to the sample stores. *Complex Operations* is an indicator equal to 1 if the store is operating under the organization's new format. *Further from Headquarters* is an indicator equal to 1 if the distance from the hiring store to company headquarters in miles (*Distance to Headquarters)* is above median relative to the sample stores. *Higher Market Divergence* is an indicator equal to 1 if *Market Divergence*, measured as the sum of the absolute values of normalized differences on each location characteristic (population, income, age, ethnicity, household size) between the hiring store and the average value of the location characteristic for the chain, is above median among the sample stores. *Serves Repeat Customers* is an indicator equal to 1 if the hiring store is located in a Census block with a population of less than 1000 people per square mile and is not located within 2 miles of an Interstate Highway exit or U.S. Highway exit. *Team Size* is the number of month-end non-managerial employees working at the hiring store at the time of hire. *Promotion Opportunities* is the percentage of employees hired in the same store's ZIP code area and year that were promoted during our sample period. This percentage excludes the employee analyzed in our hazard rate regressions. *% Full-Time Employees* is the percent of month-end non-managerial employees that are working full-time at the hiring store at the time of hire. *Full-time* is an indicator equal to 1 if the employee has a full-time position.

VARIABLES	Pred.	Time to Employee Departure Hazard Ratio (1)	Coefficients (2)	Monthly Employee Turnover (3)	Pred.	Ln (Monthly Sales) (4)
Constant		-	-	20.339***		11.480***
				(9.834)		(314.695)
Post		1.363	0.309	-0.457		-0.039**
		(1.632)	(1.632)	(-0.329)		(-2.100)
Busier		0.842	-0.172	-1.091		0.019
		(-0.961)	(-0.961)	(-1.341)		(1.592)
Treated x Post		0.715	-0.335	-0.796		0.018
		(-1.072)	(-1.072)	(-0.473)		(0.683)
Treated x Busier		1.324	0.280	0.894		0.048**
		(1.160)	(1.160)	(0.757)		(2.495)
Post x …						
…Busier		1.361	0.308	0.841		0.031**
		(1.474)	(1.474)	(0.741)		(2.037)
…Complex Operations		0.919	-0.084	0.590		0.019
		(-0.332)	(-0.332)	(0.566)		(1.047)
…Further from Headquarters		1.134	0.126	0.311		-0.018
		(0.511)	(0.511)	(0.268)		(-1.037)
…Higher Market Divergence		0.655*	-0.423*	-0.314		0.016
		(-1.795)	(-1.795)	(-0.308)		(0.988)
…Serves Repeat Customers		0.530**	-0.634**	-1.621*		-0.007
		(-2.352)	(-2.352)	(-1.670)		(-0.344)

Table 3.6: Moderating effects of factors affecting the association between centralized hiring (treated) and time to employee departure, store employee turnover, and monthly sales (Continued)

Treated x Post x …

…Busier	-	0.617*	-0.482*	-1.047	+	-0.030
		(-1.475)	(-1.475)	(-0.725)		(-1.332)
…Complex Operations	-	1.020	0.019	-1.054	+	-0.020
		(0.064)	(0.064)	(-0.764)		(-0.888)
…Further from Headquarters	+	0.824	-0.193	-1.688	-	0.029
		(-0.574)	(-0.574)	(-1.089)		(1.253)
…Higher Market Divergence	+	1.803**	0.590**	3.866***	-	-0.014
		(1.899)	(1.899)	(2.830)		(-0.653)
…Serves Repeat Customers	+	2.540***	0.932***	1.928*	-	0.015
		(2.804)	(2.804)	(1.427)		(0.607)
Team Size		1.032	0.032	-1.142***		0.008***
		(1.152)	(1.152)	(-8.141)		(3.154)
Promotion Opportunities		0.953	-0.048	-3.121**		-0.034
		(-0.138)	(-0.138)	(-2.129)		(-1.398)
% Full-time Employees		0.926	-0.077	-9.105***		0.019
		(-0.211)	(-0.211)	(-5.222)		(1.119)
Full-time (Indicator)		0.244***	-1.413***	-		-
		(-16.803)	(-16.803)			
Month-Year FE?		Yes	Yes	Yes		Yes
Store FE?		Yes	Yes	Yes		Yes
R^2		-	-	0.170		0.965

3.4.2.4.3 Robustness tests for the factors moderating the effects that the switch from decentralized to centralized hiring had on stores

We use a few alternative measures and specifications to validate our results. We construct our aggregate measures in Table 3.5 requiring our continuous variables to be above mean instead of above median in the definition of aggregate variables. Our results remain the same as those reported in Figure 3.3, except that the moderating effect of the aggregate headquarters' hiring advantage measure on monthly employee turnover becomes insignificant. We also re-run our analyses from Table 3.5 including *Unemployment Rate*, *Per Capita Income*, *Store Count* and *Competition* as control variables (noting however that these variables have high VIFs, which is problematic), and our conclusions are the same as those reported in Figure 3.3. Additionally, we re-run our analyses after dropping employee hires and store-months corresponding to treatment stores where the treatment store had only one decentralized or only one centralized hire during our sample period (and we also excluded the corresponding control stores) – we continue to find significant

results for the moderating effects of headquarters' hiring advantage and store managers' local advantage in the survival analyses, but we lose significance for the moderating effect of headquarters' hiring advantage on monthly employee turnover (perhaps due to the lower power resulting from dropping these observations). Finally, we run the analyses in Table 3.5 using hires and store-months corresponding to all 154 treatment stores and 86 control stores. In this specification, we don't assign a "Post" period to any of our control observations. Thus, our interactions of interest become *Post x HQ Hiring Advantage* and *Post x BU Local Advantage.* Notice that these analyses have the caveat that our interactions capture both the effect of centralized hiring and any other "post-period" time effects related to our moderator variables. We find significant results for both moderating effects in our survival analyses, though in our monthly employee turnover analyses we find a significant moderating effect of store managers' local advantage (a positive coefficient as predicted), but not for the effect of headquarters' hiring advantage.

Turning to Table 3.6, we re-run our analyses in the following ways: 1) including *Unemployment Rate*, *Per Capita Income*, *Store Count* and *Competition* as control variables; 2) after dropping employee hires and store-months corresponding to treatment stores where the treatment store had only one decentralized or only one centralized hire during our sample period (and also excluding the corresponding control stores); 3) multiplying the normalized differences on the location characteristics rather than summing them when calculating market divergence (Campbell et al. 2009 used both measures in their study, though they warned that the multiplication measure was more volatile and sensitive to extreme dispersion values of individual location characteristics); and 4) replacing the above median variables (*Busier, Further from Headquarters,* and *Higher Market Divergence*) with the underlying continuous variables. In the time to employee departure analyses: the moderating effect of *Busier* remains significant under 1) and 3), but not 2) and 4); the moderating effect of *Higher Market Divergence* remains significant under 1) and 2), but not 3) and 4); and the moderating effect of *Serves Repeat Customers* remains significant in all cases. In the monthly employee turnover analyses, the moderating effect of *Higher Market Divergence* remains significant under all specifications except 4), and the moderating effect of *Serves Repeat Customers* remains significant under all specifications except 3), where the p-value for a one-sided test becomes 0.12. Lastly, we run the analyses

in Table 3.6 using hires and store-months corresponding to all 154 treatment stores and 86 control stores. Again, we don't assign a "Post" period to any of our control observations in this specification, so our findings have the same caveat as those for Table 3.5 (i.e., that our interactions capture both the effect of centralized hiring and any other "post-period" effects related to our moderator variables). In the employee departure analyses we find a significant moderating effect only for *Serves Repeat Customers*, and in the monthly employee turnover analyses a significant moderating effect only for *Higher Market Divergence*.[88]

As a final robustness test for both Tables 3.5 and 3.6, columns (1) and (2), we conducted placebo tests as a way to examine whether our results could be artifacts of the data structure (Bertrand, Duflo, and Mullainathan 2004). Following a methodology similar to that used by others (e.g. Pierce, Snow, and McAfee 2015; Song, Tucker, Murrell, and Vinson 2017), we randomly assigned our treatment dates to each treatment-control pair, randomly assigned "treatment" within each treatment-control pair (ensuring that in half of the cases "treatment" was assigned to an actual treatment store and in the other half to a control store), and then re-ran our hazard rate analyses. We repeated this process 100 times. Using a one-tailed test (to be consistent with our tables) and a 5% level, we found that the coefficient on *Treated × Post × HQ Hiring Advantage* was significant seven times, while the coefficient on *Treated × Post × BU Local Advantage* was never significant. Turning to our disaggregated variables, *Treated × Post × Busier* was significant 18 times*, Treated × Post × Complex Operations* was never significant, *Treated × Post × Further From Headquarters* was significant 8 times*, Treated × Post × Higher Market Divergence* was significant twice*,* and *Treated × Post × Serves Repeat Customers* was never significant. The results of these placebo tests are reasonable, although the number of instances of a significant coefficient on *Treated × Post × Busier* is higher than expected.

In summary, Tables 3.5 and 3.6 suggest that the wisdom of centralizing versus decentralizing hiring rights depends on each store's circumstances. Our results show (some) evidence that allocating hiring rights at the headquarters can be beneficial when the head office is supporting busy stores. Yet, our results also

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[88] Note that using all of these stores, we find positive moderating effects of *Complex Operations* and *Further from Headquarters* in our monthly sales analyses.

provide (stronger) evidence that the centralization of hiring rights can be less beneficial / more detrimental (with respect to the rate of employee departures) in stores where the manager is likely to have a relevant information advantage relative to headquarters, arising via (a) a divergence in the demographic characteristics of the markets they serve relative to the markets typically served by the chain's stores (bearing in mind that some of our results are sensitive to how market divergence is measured), or (b) being more likely to serve repeat customers.

3.5 Conclusion

For the many retail organizations that rely on their employees to provide superior customer service, employee selection is a critical management control mechanism. Recruiting employees who are naturally aligned with the organization's goals and values, and those of their local team, can potentially foster both productivity and customer loyalty.

In this study, we examine whether a company's decision to centralize versus decentralize hiring can improve employee retention and store performance. Our results suggest that the effect of centralizing hiring rights is contingent on whether headquarters or the local unit manager possesses a relevant hiring advantage relative to the other. We used the busyness of the store and the complexity of operations as indicators of headquarters' hiring advantage since in these instances headquarters is more likely to have the necessary time to devote to hiring new store personnel. In contrast, we expected the unit manager to have a relative hiring advantage where there existed information asymmetries between headquarters and the store (we used distance to headquarters, market divergence, and the presence of repeat customers as three types of information asymmetry, though we found support only for the latter two).

While we found results generally consistent with our predictions for employee turnover, we did not find any effects on business unit performance. It may be that the effects on performance take a longer time period to manifest than our sample period allowed for, or improvements/ deteriorations in match quality at a store may not be sufficient to change unit performance in a tangible way.

Our results provide some of the first evidence on the importance of decision rights allocation in the employee selection process. Furthermore, our findings have practical implications, with the results suggesting that chain organizations should carefully consider whether a uniform allocation of hiring rights is preferable or if the allocation should be contingent on the specific circumstances of each unit.

Being based on a single retail company, and because we examine only the switch from a decentralized model of employee selection to a centralized model (and not the reverse), our findings should be interpreted with caution and may not be generalizable to all settings. However, working with one large, multi-unit organization allowed us to isolate the effects of centralized and decentralized hiring for two reasons. First, the company gradually transitioned to centralized hiring, naturally generating treatment and control samples. Second, using data from a single firm let us control for unobservable firm characteristics that might explain centralization or decentralization decisions across firms.

CHAPTER 4

Field Studies in Management Accounting

4.1 Background

Accounting doctoral students at Harvard Business School, particularly those with interests in management accounting, have a long history of conducing field-based dissertation research. Notable examples in recent history who have gone on to publish their dissertations in top accounting outlets include Sofia Lourenço ("Monetary Incentives, Feedback, and Recognition – Complements or Substitutes? Evidence from a Field Experiment in a Retail Services Company." *The Accounting Review*, 2016), Tatiana Sandino ("Introducing the First Management Control Systems: Evidence from the Retail Sector." *The Accounting Review*, 2007), and Antonio (Tony) Dávila ("An Empirical Study on the Drivers of Management Control Systems' Design in New Product Development." *Accounting, Organizations and Society*, 2000). More recent examples include Shelley Xin Li ("Management Control and Employee-driven Innovation", 2016 dissertation), Henry Eyring ("Private and Public Performance Reports as Drivers of Performance and Determinants of Performance Measure Information Content", 2017 dissertation), and myself (this dissertation). Illustrative of the variety of field-based approaches, the data utilized in the abovementioned dissertations includes interviews, surveys, and archival company data.

Like any research method, field research has its weaknesses, but it also has many unparalleled strengths. In particular, field research enables researchers the opportunity to engage with real organizations, which can deepen our understanding of the phenomenon that we wish to study, spark new research ideas related to real business problems, and (ideally) enable us to make a meaningful contribution to practice. There is a wealth of research questions that have both theoretical and practical importance, but that cannot be addressed using the available, large-scale datasets that are so often used by accounting researchers. By going to the field, we can collect our own data via surveys and/or interviews, and obtain archival company data pertaining to organizational practices that are opaque to outsiders. Yet, navigating a field-based research project is not an easy task.

Below I provide an overview of the main stages involved in a field-based project, drawing on my own experiences (primarily from the studies in chapters two and three), and informal interactions with others. In this particular piece, I focus on field-based projects pertaining to *archival company data*. My hope is this document will be helpful for future doctoral students considering, and pursuing, field-based research.

4.2 Stages of a field-based research project using archival company data

In this section, I outline the seven major stages in a field-based research project.

Stage 1: Identifying a suitable research site and research question

Often, field-based research using archival company data presents a classic chicken-and-egg problem: Which comes first, the research question or the research site? Typically, it is some combination of the two. Beginning with a broad research question or research area of interest is ideal, since this can then be adapted to suit a specific research setting. For instance, leading into the project that is the focus of Chapter Three, Tatiana Sandino and I were interested, at a high level, in management control mechanisms (e.g. compensation, performance evaluations) used by chain organizations to create and sustain high levels of employee engagement, particularly as the organization scaled up or reached maximum scale. More specifically, based on conversations with a managing director that we met at a retailing conference bringing together practitioners and academics (note that such a conference could be an ideal place to find research sites), we had become interested in studying the role of middle managers in empowering and supporting store employees (and thus, driving employee engagement). While the managing director's organization did not present a suitable research site given its relatively small scale, I recalled that a senior professor at Harvard Business School had previously mentioned in passing that he knew well the CEO of a sizeable retail chain located in the United States. Recognizing that this could well be a suitable research site, Tatiana and I asked whether he would be happy to connect us with the CEO. From there, our first meeting was arranged.

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In our first meeting with the CEO of the retail chain, it became apparent that he was not so interested in studying the role of middle managers. However, the organization had recently undertaken, and was considering implementing, a number of initiatives designed to drive higher levels of employee engagement. These initiatives included changing the compensation plan for store managers, increasing the hourly wage for store employees, and centralizing the hiring of store employees. While not the initial project we had in mind, studying any one of these initiatives was of great interest to Tatiana and me as they fit very well with our broad research agenda, and had the potential to make an important contribution to the academic literature.

In some instances (as was the case for the study in Chapter Three), the nature (and feasibility) of the research project is contingent on preliminary conversations with the research site. In other cases, the researcher may already possess sufficient knowledge about the organization (for instance due to press releases about new initiatives) such that a specific research project can be proposed to the organization at the outset. For instance, turning to the study that is the focus of Chapter Two, I knew that the organization had implemented in recent years a "performance and potential system". Reviewing the academic and practitioner literature, I discovered that despite the widespread use of similar systems in practice, archival data from an organization using such a system was almost non-existent in the academic literature. Thus, I was confident that whatever the specific research question, the research site would prove fruitful (if they agreed to partner with me) given our limited knowledge as to the use and effects of such systems.

Stage 2: Making contact

In my experience, and based on informal conversations with others, it seems there are generally two avenues through which a doctoral-student led project with a company comes about. One avenue is where a doctoral student has a well-defined research interest (for instance, in Shelley Xin Li's case, employee-driven innovation; in Henry Eyring's case, healthcare) and then personal connections and/or Harvard connections are used to narrow in on possible research sites and to find a site willing and able to address a specific research question. This approach seems to be particularly helpful where students have a specific

interest early on in their doctoral program, enabling them the opportunity to begin conversations with professors, colleagues and friends well before the dissertation phase begins.

A second avenue occurs where a doctoral student more or less stumbles upon a specific organization where say, due to the introduction of a new management control system, the organizational context appears very promising for a research study (as was the case for my study in Chapter Two). Here, you may need to "cold call" the organization, or if you're lucky (as in my case), an HBS professor may have a connection at the organization and be able to introduce you. Appendix B includes the "research proposal" I wrote, and that one such HBS professor shared with the organization on my behalf (the organization's name has been replaced with [company name] to preserve the organization's confidentiality). Note that the research proposal included the following:

- What I was interested in studying, including possible research questions

- The anticipated outputs from the research collaboration

- Steps to be taken to ensure confidentiality and data protection

- Examples of the data required

- My details

Fortunately, the company was very receptive to the research proposal and agreed to collaborate with me.

Stage 3: Visiting the company

Once a research site has agreed to partner with you, a company visit is usually arranged. Visiting the company is a great opportunity to "get the ball rolling" with respect to the compilation of the data necessary for the research project, and to increase your understanding of the organizational setting (many questions on the setting will arise when you present your research, so it's critical to have an in-depth understanding of your specific organizational context). In this section, I discuss my visit to the company that forms the

basis of Chapter Two. Prior to my visit to the company, I had an initial conversation with the VP of Human Resources (to ensure the research site would be suitable and to talk about the available data, etc.), and a conversation with members of the HR team. I also provided the company with a description of the data I would need for the study, and the company scheduled several one-on-one interviews with employees for my weeklong visit.

Archival company data is generally confidential and often contains identifiable information about individual employees; hence (if required) it is critical to obtain human subjects approval before the company provides you with any data. Similarly, (if needed) you must obtain approval before conducting interviews. Appendix C includes the human subjects application I prepared for this research project. The interview information sheet and interview consent form referred to in the human subjects application are included in Appendix D and E, respectively. Since a research project is likely to evolve over time, given data availability, feedback from your committee, etc., it can be helpful to make the human subjects application sufficiently broad that it covers the various avenues the research project may take.

Good preparation is critical to ensure you get the most out of a company visit. I prepared a number of interview guides to aid my interviews with various types of employees (e.g. employees involved in the initial implementation of the new system, senior executives, managers), and I include one such interview guide in Appendix F. While this interview guide may appear overly long, the intention is not to ask all of the questions in a single interview but rather to be prepared for the different directions an interview may take. I certainly didn't ask all of the questions in a single interview, but taken together, my interviews answered most, if not all, of my questions. Asking some of the same questions to multiple people is important to ensure that the answers are consistent where they should be (and if not, you can then ask a company representative to clarify any ambiguities) and to capture the diversity of responses on matters where employees' opinions differ.

Provided the interviewees grant permission, recording the interviews is ideal. This enables you to participate fully in the interviews without worrying about taking detailed notes, and once transcribed, you can "code" the interview transcripts (using software such as Nvivo) for particular themes, etc., making them

easier to navigate. Furthermore, the interview transcripts can enable you to include select verbatim quotes in your dissertation.

During my company visit I sought to interview "as many people as possible", and thus my interviews were scheduled back-to-back. On reflection, having one or two short intervals each day would have enabled me the opportunity to digest what I had heard and to make any necessary updates to my interview guide as I moved forward. There is a delicate balance to be struck between maximizing the number of interview participants and allowing yourself the opportunity to process what you are hearing. Furthermore, it's important to be very specific with the company regarding the pool of interview participants. For my visit, the company arranged for various managers to participate in the interviews (sending a short blurb about the project that I had prepared) and while I asked that the managers chosen have a mix of performance and potential ratings, I discovered too late (since I left it up to the participants whether or not they were happy to disclose their ratings to me in the interview) that the vast majority were what the company referred to as "Hi-Pos" (managers with both high performance and high potential). Thus, while the interviews I conducted allowed me to hear from various managers, the views expressed by the subset of managers identified as Hi-Pos may not necessarily be representative of the views of other managers in the company. Luckily, this was not so problematic in my case since I did not use the interviews as a main source of data for my project (only to aid my understanding of the context), but nonetheless I would have liked to hear the views from managers with lower performance and/or poorer promotion prospects.

In addition to my interviews, during my visit I also met with the HR representative responsible for compiling the data for the study. We discussed the variables that she was collecting and I was able to ask various clarification questions. At the time of my visit, the HR representative had begun collecting data for the final year (2015) in my sample period.

Stage 4: Receiving the data

You should be prepared for a significant lag between your company visit and receiving the data for the project. Company personnel responsible for compiling the data have their regular work to perform, and

understandably, compiling data for a research project is not of utmost priority. It is helpful to discuss the expected timing upfront and to follow-up via email as necessary to ensure the data is received in a timely manner. However, unexpected delays often occur due to personal reasons, unexpected events at the company, etc. Below I show the timeline of the project contained in Chapter Two:

April 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016
Initial contact with company	Initial meeting with VP of Human Resources		Phone call with HR managers; received company documents	Company visit		Received 2015 data			Received 2008-2014 data

As the timeline shows, there was a two-month period between my visit to the company and when I first received data, and the data received at that time pertained only to the last year (2015) in my sample period. Then it was another three months before I received data for the years 2008 through 2014. Since I visited the company in early August 2015 and did not receive the data for all years until late January 2016, it was almost six months between my visit to the company and when I received all of the data necessary for my research project. In my experience with other field-based research projects, this project progressed relatively quickly. Hence, I would recommend identifying and engaging with possible field sites as early as possible.

Stage 5: Processing the data

The data provided by a company will typically come from various sources within the organization and you'll often receive multiple spreadsheets. Thus, the next step is to compile the data, check its validity, create the variables of interest, and to make reasonable assumptions where needed when dealing with "messy" data. While the specifics are likely to vary from research project to research project, below I provide some "data best practices" (much of which applies to all research projects, not just field-based projects).
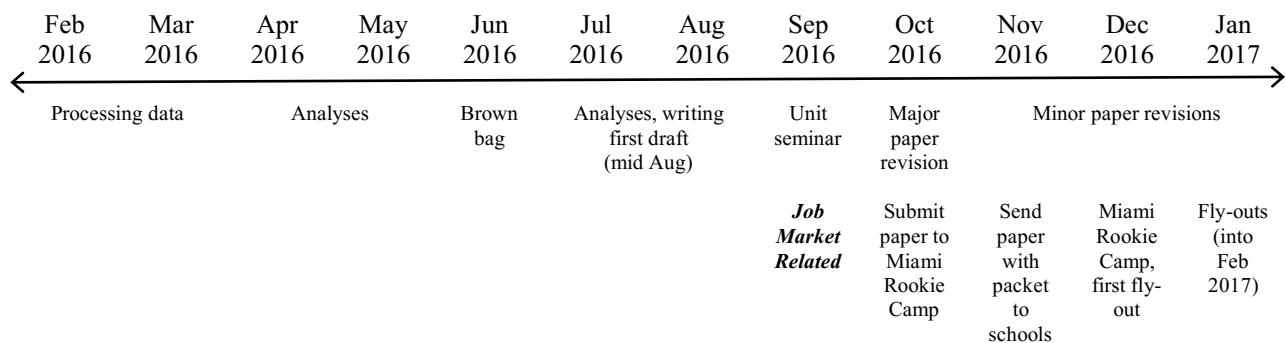
Data best practices:

- Be meticulous in annotating your data programs. For example, give each program a number and descriptive name (e.g. 'Program 1: Prepare 2008 Data'), number and describe each step in the program (e.g. '1.1. Import excel spreadsheet and save as data file') and at the beginning of the program, list the input files, steps in the program, and the output files. Annotating programs is time-consuming but will make your life much easier when you (inevitably) return to your programs again and again.

- Ensure consistent names are used for the same variables across data files and that variables are formatted as appropriate (be sure to correctly format date variables in particular) before combining files.

- Always check for duplicate observations (e.g. more than one observation for an employee-year), and in the case of duplicates, apply reasonable decision rules (that are carefully annotated) when choosing which observations to retain.

- Investigate instances where variables are incomplete for particular observations (you may need to go back to the company to understand the cause and/or to obtain the missing data).

- Inspect the values that variables take on in the dataset and ensure all are appropriate (for instance, the company may use a particular character for missing or not-applicable data, and you should replace this with the appropriate value for missing in the statistical software you are using).

- When merging datasets, make sure you understand why issues of non-merging would have arisen, and if they are unexplained, investigate further.

- If you receive data for the same variables from two sources (e.g. two different spreadsheets, two different people within the company), check that the data is consistent across the two sources (so you can be confident in the reliability of the data),

- If you receive data for different time periods for the same unit of analysis (e.g. employee) pertaining to variables that should be time-invariant (e.g. year of birth, gender), check that these variables do

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not take on different values in different data sources. If they do, apply reasonable decision rules to deal with these cases (so long as they represent only a small percentage of observations, otherwise it suggests there are issues with the data and you should go back to the company).

Stage 6: Completing the Research Project

This stage involves analyzing the data and writing up the research paper. Since this phase is not specific to field-based research projects, I don't elaborate further. However, to give a sense of how my research project progressed once I received the data, as well as the key job market milestones (since Chapter Two was my job market paper), below I extend the timeline (included under 'Stage Four') from January 2016 onwards.

Feb 2016	Mar 2016	Apr 2016	May 2016	Jun 2016	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017
Processing data		Analyses		Brown bag	Analyses, writing first draft (mid Aug)		Unit seminar	Major paper revision	Minor paper revisions		
							Job Market Related	Submit paper to Miami Rookie Camp	Send paper with packet to schools	Miami Rookie Camp, first fly-out	Fly-outs (into Feb 2017)

Stage 7: Reporting back to the company

In addition to providing periodic updates to the company on your progress (perhaps sharing preliminary findings and/or early paper drafts), at the conclusion of the research project you should plan to report back to the company (and at the same time, resolve any remaining clarification questions that you have). For instance, you could share the final academic paper, provide a one- or two-page summary of the main findings, and summarize the insights you gained from any interviews if you believe these may be of interest to the company. The company may be particularly interested in any recommendations that you have for them going forward. Here HBS faculty members who are experts in the area may be particularly helpful.

In the case of the research project that forms the basis of Chapter Two, the company was very interested in hearing any recommendations that I had for the performance and potential system going forward. While the findings of my research project provided insights at a high level, HR managers were particularly interested in how they could improve specific elements of the system. Thus, I set up a meeting with Emeritus Professor Michael Beer, an expert in high commitment, high performance organizations, and human resource management (I had previously met with him on two occasions with Tatiana Sandino in relation to one of our co-authored projects). Professor Beer had a number of very insightful suggestions for the organization, which I was able to summarize and elaborate on in a document that I subsequently shared and discussed with the company.

4.3 Conclusion

While not without their challenges, I have found field-based research projects to be incredibly interesting and rewarding, and I believe they are a critical mechanism to help bridge the gap between academic research and practice. I hope the sharing of my experiences helps future doctoral students navigate their own field-based research, and I wish them the best of luck.

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Appendix A: Potential rating definitions by year (2011-2014)

Potential rating – Level 1

Year	Rating	Definition
2014	Vertical Potential (2 levels)	• The employee clearly demonstrates potential to advance by two management levels • The employee confirms geographical mobility within the next 12 months • Management level 2 and management level 3 employees must have accomplished an assignment abroad of at least 12 months to be rated on potential level 1
2013	Top Potential (2 levels)	• The employee demonstrates **clear potential** to advance by two management levels • The employee confirms geographical mobility within next 12 months • Management level 2 and management level 3 employees must have accomplished an international assignment to be rated on potential level 1
2012	Clearly Above	• The employee demonstrates potential to advance by more than one management level within the next six to ten years • The employee shows extremely high learning agility • The employee needs to have flexibility (BU/functions and/or job) and mobility (geographical)
2011	Clearly Above (2 management levels within 6-10 years)	• The employee demonstrates potential to advance by more than one management level within the next six to ten years • The employee shows extremely high learning agility • The employee needs to have flexibility (BU/functions and/or job) and mobility (geographical)

Potential rating – Level 2

Year	Rating	Definition
2014	Vertical Potential (1 level)	• The employee clearly demonstrates potential to advance to the next management level
2013	Vertical Potential (1 level)	• The employee demonstrates **clear potential** to advance to the next management level
2012	Next Level	• The employee demonstrates the clear potential for advancement to the next management level within the next five years • Ability to progress by two or more management levels is not yet clear • The employee has high learning agility
2011	Next Level (1 MC level within 5 years)	• The employee demonstrates the clear potential for advancement to the next management level within the next five years • Ability to progress by two or more management levels is not yet clear • The employee has high learning agility

Potential rating – Level 3

Year	Rating	Definition
2014	Horizontal Potential	• The employee demonstrates potential to handle other jobs on the same management level
2013	Horizontal Potential	• The employee demonstrates **potential** to take over another job on the same management level
2012	Enrichment / Enlargement	• The employee has potential to handle additional responsibilities/other jobs on the same management level, such as: ○ Increased scope of management control (employees/functions) ○ Leading special projects and/or major tasks/initiatives ○ Covering additional / different areas of expertise
2011	Enrichment/Enlargement	• The employee has potential to handle additional responsibilities/other jobs on the same management level, such as: ○ Increased scope of management control (employees/functions) ○ Leading special projects and/or major tasks/initiatives ○ Covering additional / different areas of expertise

Potential rating – Level 4

Year	Rating	Definition
2014	Well Placed	• The employee demonstrates potential to handle additional tasks within the current job on the same management level
2013	Well placed	• The employee demonstrates **potential** to take over additional tasks/projects • The employee is currently placed in the correct job on the right management level
2012	Right Level	• The employee is currently placed in the correct position / job; correctly placed in his/her area of responsibility • Currently unlikely to advance within the same or higher management level
2011	Right level	• The employee is currently placed in the correct position / job; correctly placed in his/her area of responsibility • Currently unlikely to advance within the same or higher management level

Proposed research project

I am very interested in exploring the possibility of collaborating with [company name] to study the effects of the company's performance management system, specifically the "evaluation grid", which was introduced at the managerial level in 2009.

Possible questions that could be explored include:
  ➢ How do "performance" and "potential" ratings affect employees' career outcomes in the organization?
  ➢ How often do employees' "performance" and "potential" ratings diverge from each other, and what is the impact of divergences on subsequent employee career outcomes?
  ➢ How well does "potential" predict which employees will perform better in more senior roles?
  ➢ Are there systematic traits of "high potentials" that are related to particular characteristics or the past performance of employees?

Opportunity

The objective of the research project would be to simultaneously provide insights of interest to [company name] (summarized in a report and presentation to the company) and to generate an academic article providing insights on management theory to be published at a top academic journal. There could also be potential to disseminate this knowledge through a Harvard Business School case for classroom discussion and/or a practitioner article published at Harvard Business School Working Knowledge or Harvard Business Review. Confidentiality would be assured and a case and/or practitioner article would be subject to company approval.

Data requirements and protection

A research project would involve analysis of the company's archival data, with the possibility of supplementing the quantitative analyses with qualitative interviews. To ensure data protection, I would request that data supplied by [company name] for the purposes of any research project be transferred using the Harvard Business School (HBS) secure file transfer site. The data would be stored securely on the HBS research server, and would be accessible only by me. My research findings would be based on aggregate analyses of the data and would not single out any specific individuals. The Harvard Institutional Review Board would review any planned research project in advance of any data transmission to make sure the rights of individuals at the company are protected. Furthermore, I would be happy to sign a confidentiality agreement to provide further assurance.

I would employ economic theories and statistical methods to analyze the company data, drawing on my academic and research training (as well as support and feedback from my dissertation committee). The specific data used for a research study would depend on the data maintained by [company name] and the availability of the data, but ideally would include data prior to the introduction of the new performance management system, and data for all subsequent years.

Examples of the type of data I would need for my analyzes include:

➢ Employee-level HR data (e.g. current and past position title/s, hire and promotion dates)
➢ Employee-level performance data (e.g. current and historical performance and promotion ratings, current and historical performance on individual KPIs, current and historical performance on other measures of employee performance)
➢ Employee-level demographic data (e.g. age, gender, education)
➢ Team-level performance data (e.g. current and historical performance on team-level KPIs)

About Me

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I am a doctoral candidate in the Accounting & Management Unit at HBS. My research interests are in management accounting, with a particular focus on the mechanisms (incentives, allocation of decision rights, feedback, etc.) used to enhance the motivation and ability of employees to reach their full potential.
Full Profile: http://www.hbs.edu/cdeller

Instructions: Complete all of the sections below (type an x in a Yes/No box or provide an answer). The wording of the questions includes some explanatory material designed for typical CUHS research; more detailed instructions may be found in the Template Guide. If your study is more than minimal risk, you **must** consult the Template Guide for definitions and additional required material.

GENERAL INFORMATION	
Protocol # (if assigned):	**Version Number or Date:** 7/25/2015
Principal Investigator Name: Carolyn Deller	
☐**Faculty** ☒**Graduate student** ☐**Post-doc** ☐**Undergraduate** ☐**Extension school student** ☐**Junior Fellow** ☐**Staff** ☐**Visiting Scholar** ☐**Other** (specify)**:**	
Faculty Sponsor (if Principal Investigator is not faculty)**:** Professor Tatiana Sandino (Dissertation advisor)	
Other Advisor Name (if applicable)**:** Professor Dennis Campbell; Professor Robert Simons	
☐**Supervising lecturer** ☐**Instructor** ☐**Graduate student** ☒**Thesis advisor** ☐**Other** (specify)**:**	
Protocol Title: A field study of a talent management system	

- Note: In this study, I use the terms "talent management system" and "performance management system" interchangeably.

1. **Background**
   1.1. **Provide the scientific background, rationale for the study, and importance in adding to existing knowledge.**

   Interest Area 1:

   In today's increasingly competitive environment, a challenge faced by many companies is identifying, motivating, developing, and retaining their high-potential employees. One response to this challenge is to separately evaluate each employee's "potential", in addition to assessing his/her current performance. By separately evaluating performance and potential, companies are acknowledging that current job performance alone is not necessarily a good predictor of future success as one moves up the corporate ladder. Arriving at these two different evaluations through an explicit performance management system can play a crucial role not only in identifying top talent ("A" players), but also in communicating company culture and performance expectations to employees. Despite growing interest in "talent management" amongst both practitioners and academics in recent years, there is limited empirical research, particularly longitudinal research using archival company data, on the effects of identifying high-potential employees on employee outcomes (such as future performance and turnover). Of particular interest are the resulting employee outcomes not just for "A" players, but also for "B" players (who may in many cases comprise the majority of the organization's employees).

   Questions of interest include:
   - How do performance and potential ratings affect employees' career outcomes in the organization?
   - How often do employees' performance and potential ratings diverge from each other, and what is the impact of divergences on subsequent employee outcomes?
   - How well does "potential" predict which employees will perform better in more senior roles?
   - Are there systematic traits of "high potentials" that are related to particular characteristics or the past performance of employees?

In addition to studying employee outcomes associated with these performance and potential ratings, another avenue of interest is how managers subjectively weigh various factors when arriving at these ratings. A stream of literature studies subjectivity in performance evaluations, though little attention has been paid to the use of subjectivity, or the choice of performance measures, in assessing "potential" or in promotion decisions. I aim to examine the *implicit* weights placed on various performance measures when managers provide performance and potential ratings, and to predict and test circumstances under which these weights are likely to differ (for instance, depending on the employee's tenure with the organization).

Interest Area 2:

Forced distribution performance appraisal systems (where companies mandate a set % of employees as top/middle/bottom performers) have been the topic of much controversy, with opinions spanning the spectrum of both avid proponents of these systems, and avid opponents. While recent research in the literature has examined the effects of these systems using both simulation approaches and laboratory experiments, field evidence is lacking. I wish to contribute to the literature on forced distribution systems by studying the effects of the implementation of such a system using archival data from a company that implemented this system. I am particularly interested in examining the effects of the system on employee turnover (both involuntary and voluntary turnover) and future employee performance, and how the effects differ amongst employees (depending on, for example, gender, age, tenure with the organization, country of employment, etc.).

2. Study Design
2.1. Provide a thorough description of all study procedures.

For the purposes of this study, I will be collaborating with a global company, headquartered in [company location]. This company introduced a new talent management system (for its managerial employees and high potential non-managerial employees) in 2009, and this system will be the focus of my study. *[The performance management system comprised both a "performance" rating for employees, following a forced distribution, and a "potential" rating for employees, enabling me to study both "Interest Area 1" and "Interest Area 2" from above.]* My primary focus will be the analysis of archival data from the company, supplemented with interviews with senior executives and managers most familiar with the talent management system (primarily from the Human Resources function), company personnel involved in the initial adoption/design/implementation of the talent management system, and a small number of managers (and high potential non-managerial employees).

I will be visiting the company headquarters, August 3rd – August 7th, 2015, in order to obtain the requested archival data from the company and to conduct my interviews. I have provided the company with a document that outlines the data that I would like to obtain and the interviewees that I would like to interview.

I will use the archival data and interview data to compile a proprietary dataset. I will employ qualitative analyses as well as econometric techniques to analyze the data.

["Data and Interview Requests" attached in this application]

2.2. Indicate the duration of a participant's involvement.

I previously met very briefly with the CEO of the company to describe the project, and he is very happy for me to work with the company on this project. The CEO connected me with the Executive Vice President Human Resources (hereafter, "HR VP") and I met with her on the HBS campus for a one-hour meeting in May 2015. I am now working with the HR VP's assistant as I make the preparations for my visit in August.

I believe a handful of employees in the organization will be helping me to compile data during my visit. The data compilation process will continue after my visit if it is not completed during my time there. I anticipate the data requests may take a few days to be completed (depending on to what extent the data is centralized and readily accessible). I also plan to interview several executives and managers, and expect each interview to last anywhere from 30 minutes – upwards of 2 hours.

2.3. Indicate the estimated number of participants, by subgroup if applicable.

The archival data I am requesting will include data about all of the company's managerial employees (approximately 9,000 employees at the current time) for at least the past six years. I anticipate interviewing 20-30 executives and managers during my visit to the company headquarters.

2.4. List inclusion and exclusion criteria and describe any screening process.

I would like to obtain archival data on all of the company's managerial employees (and high potential non-managerial employees) as far back as the company is willing and able to provide the data.

Regarding the executives and managers who will be participating in the interviews, I have asked the HR VP's assistant to work with the HR VP to identify a set of interviewees for me to interview during my visit to the company headquarters. I am asking that the set of interviewees include key HR executives and managers, any managers/executives who played a key role in the initial adoption, design and/or implementation of the talent management system, and a "representative sample" of managers (and high potential non-managerial employees) so I can capture a diversity of perspectives about the system (i.e. from different management levels, different management positions, and a mix of performance/potential ratings). Regarding the sample of managers, I asked the HR VP's assistant to ensure both high performance/low potential and low performance/high potential managers are included in the interviewee list [since I'm very interested in hearing from these managers with a mismatch between their performance and potential]. To respect the participants' privacy, I noted that I don't need to be told the performance/potential ratings of the managers I interview; instead, I'll ask them during the interview if they are willing to tell me their most recent ratings. I also stated that, while I don't know how easy or difficult this will be, it would be great to include managers who are both very favorable towards the talent management system, and those who are less enthusiastic about the talent management system. Finally, since some managers are "people managers" (evaluate others under the talent management system, and are also themselves evaluated) and some are not (only evaluated under the system), I noted that it would be great to have a mix of both.

2.5. Does the study involve (a) deception (providing false information) or (b) incomplete disclosure (withholding information about some or all aspect of the research purpose or procedures in order to maintain the scientific integrity of the study)?
[X] No [ ] Yes: If yes, explain the rationale and plans for protecting participants (e.g., debriefing).

Be sure to attach any debriefing materials to the "Supporting Documents" webpage.

3. **Recruitment Methods**
    3.1. **Will potential participants be provided with information about the study?**
    ☐ **No: If no, skip to 4.1.**
    ☒ **Yes: If yes, indicate how, when, where, and by whom participants will be recruited.**
    If you are recruiting from a study pool, describe how you meet their requirements (see
    Template Guide).

    I have asked the HR VP's assistant to work with the HR VP to identify the set of executives and managers that I should interview during my visit to the company headquarters (executives/managers meeting the criteria outlined above in 2.4), and to coordinate the meetings on my behalf. I provided the HR VP's assistant with a short blurb about my study that she can share with the executives/managers identified for interview if she wishes (though I will leave it up to her discretion to decide how best to "recruit" the interview participants).

    3.2. **Are there any materials that will be used to recruit participants (e.g., emails, posters, oral scripts)?**
    ☐ **No** ☒ **Yes: If yes, list the materials by document name here, and be sure to attach final copies to the "Supporting Documents" webpage.**

    This is the blurb that I provided to the HR VP's assistant (see 3.1 above for more details on this):
    "Hello. My name is Carolyn Deller and I am a doctoral student at Harvard Business School. I study performance management systems, and [name of HR VP], together with the leadership team, has kindly agreed to support me in conducting a research project at [company name]. [Company name]'s performance management system is fascinating, and I am very interested in understanding the origins of this system, how managers evaluate performance and potential, and the impact of the system on employee attitudes and behaviors. If you have availability and are willing, I would really appreciate the opportunity to speak with you about your unique perspective on this system. I will be travelling to [company location] specifically for this project and during my time there, the week of August 3rd, I would love to interview several managers in order to capture a range of perspectives. Thanks in advance for considering my request."

    3.3. **Will participants receive reimbursement or compensation in the form of money, gifts, incentives, or raffles?**
    ☒ **No** ☐ **Yes: If yes, specify the amount, method and timing of disbursement.**
    See Template Guide for specific information on payments and a link to the Harvard University Financial Policy on Human Subject Payments.

4. **Study Setting**
    4.1. **Is any of the research conducted outside the United States?**
    ☐ **No** ☒ **Yes: If yes, describe how you are ensuring that the research is appropriate considering local laws, regulations, and customs.**
    This should be either a formal review by a local ethics board, Ministry of Health, etc., or a statement that a formal review is not required along with your source of information that the proposed research is in accordance with local laws, regulations, and customs.

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Analyses will be conducted in the United Sates using data collected by the company (in various countries as the company operates globally) for company purposes.

I anticipate interviewing 20-30 executives/managers at the company headquarters in [company location], during my visit. Given the company's support of this project, I am confident the research is appropriate considering local laws, regulations, and customs. Furthermore, interviews will be conducted on a voluntary basis.

4.2. Are there any permissions that must be obtained from cooperating institutions, community leaders, government officials, or other individuals, including approval from an IRB or research ethics committee?
[X] No [ ] Yes: If yes, list the permission(s) by document name and be sure to attach copies to the "Supporting Documents" webpage.

5. Available Resources

5.1. Describe the experience of the investigator with the proposed research procedures and population.

I am currently working on several research projects with Professor Tatiana Sandino, utilizing archival data (including employee-level data) from two companies (one located in the United States and another located in Delhi, India).

With respect to interviewing company employees, I completed an interview-based research study of the adoption and implementation of a Balanced Scorecard in a not-for-profit organization in Melbourne, Australia, when I was an honors student at the University of Melbourne. The research project was overseen by my honors thesis supervisor, Professor Jennifer Grafton (of the University of Melbourne).

5.2. Are there any additional study team members whose role in the research require special qualifications in addition to ethics training (e.g., licensed clinical psychologist)?
[X] No [ ] Yes: If yes, describe.

5.3. Are provisions needed for medical and/or psychosocial support resources (e.g., in the event of research-related distress or incidental findings)?
[X] No [ ] Yes: If yes, describe the provisions and their availability.

6. Vulnerable Populations

6.1. Are there any potentially vulnerable populations or individuals (minors, pregnant women, human fetuses, neonates, prisoners, economically disadvantaged, employees or students of the investigator, cognitively impaired, etc.) proposed for involvement in the research?
[X] No [ ] Yes: If yes, identify all vulnerable populations and describe proposed safeguards to protect their rights and welfare.

7. Consent Process

7.1. Will participants be asked to agree to be in the study?
[ ] No: If no, explain why not, then skip to 8.1.
[X] Yes: If yes, describe the consenting process.

If the study includes minors or others who cannot consent for themselves, describe how you will obtain their assent and the permission of their parent or guardian. Be sure to attach copies of appropriate documents to the "Consent, Assent and HIPAA Authorization Materials" webpage.

Before starting any of the interviews, I will:
- Provide the interviewee with the interview information sheet;
- Highlight the key elements of the interview information sheet and ask the interviewee to read the document;
- Answer any questions that the interviewee has;
- Obtain written consent (on the "interview consent form" document) from the interviewee to participate and be recorded in the interview.

["Interview Consent Form" and "Interview Information Sheet" attached in this application]

The archival data requested includes data collected by the company for the company's own purposes, and includes employee-level data. I want to waive the individuals' consent for the archival data since the data requested pertains to data already collected/generated by the company and is owned by the company. It would not be feasible to get consent from all of the employees.

7.2. Will the consenting process involve obtaining a signature?
☒ Yes ☐ No: If no, explain why not.
The requirement to obtain a participant's signature can usually be waived by CUHS for minimal risk research, see Template Guide.

7.3. Will participants be offered a copy of the consenting information?
☒ Yes ☐ No: If no, explain why not.

I will ask each interviewee if they would like to be provided with a copy of the signed consent form. Once I return to HBS from my visit to the company headquarters, I will scan and send the signed consent form to those interviewees who requested a copy of the form. All interviewees will be given a copy of the "interview information sheet" document prior to beginning the interview.

7.4. Are you recruiting any participants who are not fluent in English?
☒ No ☐ Yes: If yes, describe provisions for communicating information needed for consent.

While the interviews will be conducted in [country of company headquarters], my understanding is that all of the interviewees will be fluent in English.

8. Risks
8.1. Are there any <u>reasonably foreseeable</u> risks or discomforts to participants and/or groups/communities?
☐ No ☒ Yes: If yes, describe the risks and outline proposed provisions to minimize risk.
Risks may be physical, psychological, social, legal, and/or economic. If risks are more than minimal, there are additional questions you must answer, see Template Guide.

I don't believe my statistical analysis of the data poses any incremental risks to the employees, given that the company already has access to this data, and the results I will present to the

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company will be based on aggregate analyses of the data and will not single out any specific individuals.

In the interviews, managers will be asked to provide sensitive information about how they conduct performance assessments of their direct reports (if applicable), how they respond to assessments of their own performance, and how they view different aspects (e.g. culture) of the company. If revealed, this information could result in a strained or damaged relationship with their colleagues/firm. I am taking careful precautions to protect the confidentiality of the interview data (as outlined in Section 7.1 and Sections 9.1-9.2) such that I expect this risk to be minimal.

9. **Data Confidentiality**
   9.1. **Which category of information best describes the data you will be recording?**
   Refer to Template Guide for additional information.

   ☐ **The data will contain no direct or indirect individual identifiers (Level 1). Explain.**

   ☐ **Participants will be told that their data will be made public (Level 1). Explain.**

   ☐ **The data will be identifiable but not sensitive (sensitive information could be damaging to the participants if revealed), and participants will be told that their data will not be shared outside the research team (Level 2). Explain.**

   ☒ **The data will be identifiable and sensitive (Level 3, 4, or 5, depending on the degree of sensitivity). Describe how sensitive the information is and the protections you have developed in consultation with the appropriate IT resource.**

   Level 3: Sensitive information about individually identifiable people.

   The HBS research grid on which I will work with the data meets the requirements for this level of data security.

   9.2. **Describe i) plans for any transmission of identifiable data; ii) how long and with what protections identifiable data will be stored; and iii) plans for the data at the end of the storage period (how it will be destroyed, or if it will be returned to the data provider).**

   I will store all electronic documents and data provided by the company in my personal research space on the Harvard Business School research grid. Only I will have access to the folder. Any data shared with me during my visit to the company headquarters will be sent to my HBS email address using the HBS secure file transfer site. Once I return to HBS, I will download the data directly to the research grid. Similarly, for data or confidential documents sent to me before or after my visit to the company, I will ask the company employees responsible for maintaining the documents and/or data to send files to me using the HBS secure file transfer site, which I will then download directly to the research grid.

   If I am provided with paper copies of any documents during my visit to the company, I will seek to have these documents scanned and emailed to my HBS email address using the HBS secure file transfer site. If this is not possible, I will black out the names of any employees referred to in the documents if the information is sensitive, and replace the names with the corresponding 5-digit codes (see discussion of these codes below). I will then photocopy the blacked-out version and destroy the original (taking the photocopy with me). Paper copies of documents will be kept in a locked cabinet at my office space.

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I will also save the audio recordings (where the interviewee permits me to record the interview) of my interviews, interview transcripts, and any interview notes, in my personal research space on the HBS research grid once I return to HBS. During my visit to the company, I will keep the audio recorder on me at all times, and each night I will save the day's interview files to my computer and delete them from the audio recorder.

For the archival data, I plan to assign a 5-digit numerical code to each individual employee. I will create a separate password-protected excel spreadsheet for my records, where I will specify the identity of the individuals associated with each code. I will save this spreadsheet in a different folder in my personal space on the research grid than the folder where I am keeping the data. Once I merge the various sources of data, I will replace the individual employees' names with the corresponding numerical codes. For the interview data, I will save the recordings and transcripts of the interviews referring to the interviewees' 5-digit numerical codes (corresponding to the codes used for the archival data) instead of the name/position of the person. Furthermore, I will ask the interviewees to try to refrain from mentioning specific employee names when discussing sensitive information (e.g. performance ratings).

I will store the data in my personal research space on the HBS research grid. The data will be stored in this way until 5 years after any resulting research paper is published. Beyond that point, I may only preserve the main dataset(s) that I employed to conduct my analysis. As noted above, the main dataset will exclude individual employee names, instead referring to them by code.

["Data and Interview Requests" attached in this application]

9.3. Indicate how research team members, other collaborators, or other researchers are permitted access to information about study participants.

Only I will have access to my personal research space on the HBS research grid.

10. Benefits
10.1. Describe any potential benefits to study participants and to society.

The study aims to examine the effects of the company's implementation and ongoing use of a performance management system that comprises both a performance assessment (with a forced distribution) and a potential assessment for the managers evaluated under the system. I will be assessing the impact of the system on a range of outcome variables of interest to the company, such as manager performance, turnover, and promotions. I will also be examining to what extent the assessment a manager receives for performance and/or potential changes year to year. The company is very interested in seeing the results of these analyses. I will provide detailed feedback to the company regarding the effects of the system.

The broader academic community will potentially learn valuable insights about the effects of a forced distribution system; how managers subjectively evaluate performance and potential (and how they weigh various factors to arrive at the final assessments); and how employees' career outcomes vary as a function of performance and potential assessments.

11. Participant Privacy
11.1. Describe provisions to protect participants' privacy (their ability to control access to information about themselves or their person, e.g., the use of a private interview room) and to minimize the intrusiveness of study questions or procedures.

I will protect the participants' privacy by ensuring that the transmission and storage of data is secure and accessible exclusively by me, as explained in Section 9.

I will conduct the interviews in private, either in the interviewee's office or in a meeting room.

12. **Sharing Study Results**
    12.1. **Is there a plan to share study results with individual participants and/or the participant community?**
    ☐ No ☒ Yes: **If yes, describe the plan.**

    I will share the results of my analyses with the HR VP and other members of the executive team (as appropriate) at the company. These executives will be responsible for deciding whether or not to disseminate the results more widely within the company.

13. **Multi-site Study Management**
    13.1. **Are one or more sites conducting this study in addition to sites overseen by the Harvard PI?**
    ☒ No ☐ Yes: **If yes, indicate whether there is a coordinating research site and describe plans for communication among sites regarding unanticipated problems involving risks to subjects or other individuals, interim results, protocol modifications, monitoring of data, etc.**

14. **Devices**
    14.1. **Does this study involve the use of a device subject to FDA regulations?**
    ☒ **No: If no, skip to 15.1**
    ☐ **Yes, and the device is being used according to its labeled indication: Skip to 15.1**
    ☐ **Yes, and the device is an Investigational Device: Describe why this is a non-significant risk device study and why it qualifies either for an abbreviated IDE determination or for exemption from the IDE requirements.**

15. **HIPAA Privacy Protections**
    15.1. **Are HIPAA privacy protections required? Mark Yes only if the investigator is at Harvard University Health Services or data will be obtained from a hospital, health center, or health insurance plan (see [Template Guide](#)).**
    ☒ No ☐ Yes: **If yes, either describe plans for obtaining authorization to access protected health information <u>or</u> provide the scientific or logistical rationale for a waiver of authorization or limited waiver of authorization request.**

16. **Establishing a Data or Specimen Bank**
    16.1. **Does the study include establishing a repository for sharing data or specimens with other researchers?** *This does not include contributing de-identified data to an existing repository.*
    ☒ **No: If no, then there are no more questions.**
    ☐ **Yes: If yes, identify what data or specimens will be collected and stored, and what information will be associated with the specimens.**

    16.2. **Describe where and how long the data/specimens will be stored and whether participants' permission will be obtained to use the data/specimens in other future research projects.**

16.3. **Identify who may access and use data/specimens and how.**

16.4. **Will specimens and/or data be sent <u>to</u> research collaborators outside of Harvard?**
☐ **No** ☐ **Yes: If yes, describe the plan, and be sure to attach copies of any agreements to the "Supporting Documents" webpage.**

16.5. **Will specimens and/or data be received <u>from</u> collaborators outside of Harvard?**
☐ **No** ☐ **Yes: If yes, describe the plan, and be sure to attach copies of any agreements to the "Supporting Documents" webpage.**

Study Title: A Field Study of a Talent Management System
Investigator: Carolyn Deller

Participation is voluntary

It is your choice whether or not to participate in an interview for the purposes of this research project. You may choose, without any penalty, to skip any questions, to discontinue the interview at any time, or to exclude use of your responses. If you decide not to participate, or to discontinue your participation, I will not reveal this to anyone and it will in no way impact your standing or role in the company.

What is the purpose of this research?

I am conducting a research project examining your company's talent management system (for managerial employees). In my research, I am particularly interested in understanding the features and origins of this system, how managers evaluate performance and potential, and the impact of the system on employee attitudes and behaviors.

What can I expect if I take part in this research?

You will be asked to participate in one interview. You will be asked questions about your company's talent management system; I am very interested in hearing about your unique experience and perspective regarding the system. With your permission, I will make an audio recording of the interview.

How long will I take part in this research?

The interview will take approximately one hour (your time permitting).

I may be interested in re-contacting you for additional information or clarifications after the interview. If I do, your participation would be completely up to you.

If I take part in this research, how will my privacy be protected? What happens to the information you collect?

My research will aim at describing general patterns in responses and while I may employ quotes, I won't use your name or any information that would identify you in any publications or presentations. Your firm will only be provided with aggregated data at the conclusion of the research project, and no one within your firm, and no one except me, will ever have access to your raw interview data.

Your data will remain completely confidential and will not be released in any way that can be linked to you. Your name will be stored separately from your responses to the interview questions, and the data will be stored on a secure server space at Harvard Business School, accessible via a password-protected computer.

To protect the privacy of others within the organization, please try to refrain from mentioning specific individuals during the interview if you are referring to sensitive information (e.g. performance ratings).

What are the risks and possible discomforts?
While there is always a small risk that someone in your organization might be able to identify your responses, I am taking careful precautions to protect your confidentiality (per the above) such that I expect this risk to be minimal.

If I have any questions, concerns or complaints about this research study, who can I talk to?
The researcher for this study is Carolyn Deller who can be reached at +1 617-233-0970, cdeller@hbs.edu. The faculty sponsor is Professor Tatiana Sandino who can be reached at
+ 1 617-495-0625, tsandino@hbs.edu.
- If you have questions, concerns, or complaints,
- If you would like to talk to the research team,
- If you think the research has harmed you, or
- If you wish to withdraw from the study.

This research has been reviewed by the Committee on the Use of Human Subjects in Research at Harvard University. They can be reached at 617-496-2847, 1414 Massachusetts Avenue, Second Floor, Cambridge, MA 02138, or cuhs@fas.harvard.edu for any of the following:
- If your questions, concerns, or complaints are not being answered by the research team,
- If you cannot reach the research team,
- If you want to talk to someone besides the research team, or
- If you have questions about your rights as a research participant.

A FIELD STUDY OF A TALENT MANAGEMENT SYSTEM

Carolyn Deller, Harvard Business School, cdeller@hbs.edu

Participation is voluntary

It is your choice whether or not to participate in an interview for the purposes of this research project. You may choose, without any penalty, to skip any questions, to discontinue the interview at any time, or to exclude use of your responses. If you decide not to participate, or to discontinue your participation, I will not reveal this to anyone and it will in no way impact your standing or role in the company.

What is the purpose of this research?

I am conducting a research project examining your company's talent management system (for managerial employees). In my research, I am particularly interested in understanding the features and origins of this system, how managers evaluate performance and potential, and the impact of the system on employee attitudes and behaviors.

What can I expect if I take part in this research?

You will be asked to participate in one interview. You will be asked questions about your company's talent management system; I am very interested in hearing about your unique experience and perspective regarding the system. With your permission, I will make an audio recording of the interview.

How long will I take part in this research?

The interview will take approximately one hour (your time permitting).

I may be interested in re-contacting you for additional information or clarifications after the interview. If I do, your participation would be completely up to you. If you would prefer that I refrain from re-contacting you, please intital below:

> *Please do not re-contact me following the study:* _____

If I take part in this research, how will my privacy be protected? What happens to the information you collect?

My research will aim at describing general patterns in responses and while I may employ quotes, I won't use your name or any information that would identify you in any publications or presentations. Your firm will only be provided with aggregated data at the conclusion of the research project, and no one within your firm, and no one except me, will ever have access to your raw interview data.

While there is always a small risk that someone in your organization might be able to identify your responses, I am taking careful precautions to protect your confidentiality (per the above) such that I expect this risk to be minimal.

Your data will remain completely confidential and will not be released in any way that can be linked to you. Your name will be stored separately from your responses to the interview questions, and the data will be stored on a secure server space at Harvard Business School, accessible via a password-protected computer.

To protect the privacy of others within the organization, please try to refrain from mentioning specific individuals during the interview if you are referring to sensitive information (e.g. performance ratings).

If I have any questions, concerns or complaints about this research study, who can I talk to?
The researcher for this study is Carolyn Deller who can be reached at:
+1 617-233-0970, cdeller@hbs.edu.
The faculty sponsor is Professor Tatiana Sandino who can be reached at:
+ 1 617-495-0625, tsandino@hbs.edu.
- If you have questions, concerns, or complaints,
- If you would like to talk to the research team,
- If you think the research has harmed you, or
- If you wish to withdraw from the study.

This research has been reviewed by the Committee on the Use of Human Subjects in Research at Harvard University. They can be reached at 617-496-2847, 1414 Massachusetts Avenue, Second Floor, Cambridge, MA 02138, or cuhs@fas.harvard.edu for any of the following:
- If your questions, concerns, or complaints are not being answered by the research team,
- If you cannot reach the research team,
- If you want to talk to someone besides the research team, or
- If you have questions about your rights as a research participant.

Statement of Consent
I have read the information in this consent form. All my questions about the research have been answered to my satisfaction.

SIGNATURE
Your signature below indicates your permission to take part in this research. If requested, you will be provided with a copy of this consent form.

_____
　　　　Printed name of participant

_____ _____
　　Signature of participant　　　　　　　　　　　　　　　　Date

Appendix F: Example interview guide

INTERVIEW GUIDE #3
MANAGERS

Introduction: Thank you for taking the time to meet with me. I would like to ask you questions about the talent management system at [company name], related to both your role as a people manager, and as a manager evaluated under this system. For the purposes of this interview, I am referring specifically to the talent management system used for managerial employees and high potential non-managerial employees, comprising the performance & potential assessments; development round table; performance & development dialogue; and ongoing development actions.

This interview should take no more than one hour.

[Provide the participant with the interview information sheet.]

This document provides a series of questions and answers related to my research and your participation in this interview. Participation in this interview is voluntary. With your consent, I would like to take notes and record the conversation. The notes and recordings are only for my use. Your answers will be compiled across multiple interview participants, and I will report only aggregated results in any presentations or publications arising from my research. If I use quotes, they will be in a de-identified form.

You are welcome to skip any questions that you would prefer not to answer, and you may stop the interview at any time. I ask that you try to refrain from referring to any specific individual names or any other identifying information when answering questions that may be sensitive.

Please take a moment to review the document I provided to you. Are you happy to proceed? If yes, could you please sign the consent form? Would you like to receive a copy of the signed consent form?

<u>OPENING QUESTIONS</u>

Before we begin, I'd like to ask you a few general questions.

1) Could you tell me how long you've been in your current role? With the company?

2) Could you tell me a little about the nature of your role, including the extent to which you need to interact with your colleagues in order to complete your work?

3) How would you characterize the organization's culture?

TALENT MANAGEMENT SYSTEM AND CULTURE

Now I would like to ask some general questions about the talent management system and organizational culture. In the questions that follow, by "talent management system", I'm referring to the entire system, including all of the separate phases (performance & potential assessment; development round table; performance & development dialogue; development actions).

[Show the diagram of the talent management cycle]

4) What role does the talent management system play in shaping or sustaining the organization's culture?

5) What purpose does the talent management system fulfill? (Note that there may be more than one)

6) What element(s) of the talent management system are you most proud of or do you most like? Why?

7) What element(s) of the talent management system do you like the least or find the most challenging? Why?

8) How do the company's values feature in the talent management system?

[Show company values]

** Talent Management Cycle – People Manager **
[Skip to Talent Management Cycle – Employee if not a People Manager]

I would like to turn now to your role as a people manager for the purposes of the talent management system.

Before we begin,
9) Could you tell me how many direct reports you will be evaluating in the upcoming cycle of the talent management system?

10) Could you tell me how your direct reports are assigned to you?

[Show the diagram of the talent management cycle and the evaluation grid]

PERFORMANCE & POTENTIAL ASSESSMENTS

The next set of questions will focus on how you arrive at your performance and potential assessments for your direct reports.

11) Can you think of one of your direct reports that you will be evaluating in the upcoming cycle of the talent management system and describe to me the process you will follow to assess his/her performance and potential (and the underlying criteria or competencies) from beginning to end?
      o *What sources of information will you use for making the assessments? Do you keep track of relevant performance / potential events, outcomes, etc., during the year? Will you consider last year's assessments?*
      o *How do your expectations regarding how this specific employee should be able to perform during the period factor into your assessments? Where do these expectations come from? Are your expectations discussed and/or agreed to with the individual employee at the beginning of the talent management cycle?*
      o *How prescriptive is the assessment process?*
      o *To what extent will you focus on absolute performance vis-à-vis relative performance when arriving at your initial performance and potential assessments?*
      o *How much time does this process take you?*

12) What role do the initial self-evaluations provided by your direct reports play in your performance and potential assessments?
      o *How much onus is on your direct reports to bring to your attention relevant performance / potential information?*
      o *Are the self-evaluations typically consistent with the assessments you give? Why or why not?*
      o *Are there particular employees who typically over-estimate or under-estimate their own performance/potential? Do these employees have anything in common?*

13) How do you weight the 4 performance criteria to arrive at the final performance ratings for your direct reports? How well do these 4 criteria capture performance? Is anything missing?
      o *In many ways the performance criteria include fairly broad measures (such as the customer criterion) and there is an emphasis on teamwork; at the same time, the assessments are focused on individual performance. Could you speak to this?*

14) How do you weight the 6 potential competencies to arrive at the final potential ratings for your direct reports? How well do these 6 potential competencies capture potential? Is anything missing?
      o *When arriving at the final potential rating, to what extent do you take into account both an employee's capacity and his/her willingness to perform at higher-level roles within the company?*
      o *When arriving at the final potential rating, how much do you consider an employee's ability to progress in this company specifically vis-à-vis his/her ability to progress in his/her career in general (either inside or outside this company). I.e. how company specific is the potential rating?*

o *To what extent do you take into account available promotion opportunities when arriving at the potential rating for a specific direct report?*

15) To what extent do you distinguish between performance and potential when making your assessments?
   o *How easy or difficult is it for you to separately evaluate performance and potential? (i.e. to what extent do you see them as distinct?)*
   o *Are there particular circumstances that make it easier or more difficult for you to separately evaluate performance and potential? Are there particular characteristics of employees that make it easier or more difficult for you to separately evaluate performance and potential? What do you do in these cases?*
      o *For instance, new hires, more or less familiar with a particular direct report (for instance, due to time as his/her people manager)*
   o *Assuming you could be completely accurate in your assessment of performance and potential, are there particular circumstances that make it more likely for performance and potential to be similar? To be different? Assuming you could be completely accurate in your assessment of performance and potential, are there particular characteristics of employees that make it more likely for performance and potential to be similar? To be different?*
      o *For instance, similar / different jobs across hierarchical levels; employee demographics (gender, age, company tenure, country of employment, etc.)*
   o *How meaningful or useful do you find it to evaluate employees along these two dimensions?*
   o *How often do you rate an employee as high performance/low potential? When does this rating combination arise?*
   o *How often do you rate an employee as low performance/high potential? When does this rating combination arise?*
   o *Are there any particular employee attitudes, traits or behaviors that you consider positively for performance purposes but negatively for potential purposes, or vice versa?*

16) Has the way in which you assess the performance or potential of your direct reports changed at all during the time you've been using this talent management system? If yes, in what ways?
   o *Prompt for whether the change was due to a change in company policy or a change initiated by him/herself*

17) Are there particular characteristics that "high potential" employees share? Could you describe them?

18) What role does the Frame of Orientation / Development Round Table process play in your initial assessments?
   o Do you try hard to differentiate between your direct reports when evaluating their performance / potential?
   o Do you consider the outcomes of last year's Frame of Orientation / Development Round Table process when making this year's assessments? (For instance, to correct for an "unfair" rating that resulted from the process last year)

*I know there are multiple phases of the talent management system, but for now I'd like to skip over the other phases (we can discuss these if we have sufficient time later in the interview) *

OUTCOMES

[*Show the evaluation grid*]

In the next set of questions, I'd like to understand your perspective on the resulting employee outcomes as a function of the performance and potential ratings they receive, and the saliency of the ratings within the organization.

19) Looking at this evaluation grid, for a few of the boxes, can you think of one of your direct reports whose performance and potential would place him/her in that box, and briefly characterize this employee's performance and potential?

20) I understand that there is a forced distribution of ratings for performance, but not for potential. What are your thoughts on the forced distribution for performance ratings? What % of employees do you expect to fall within each potential rating in a typical year?

21) How salient / important are the performance and potential ratings that an employee receives?

22) What are your expectations regarding the future employee career outcomes (e.g. future performance, promotions, turnover) for the various combinations of performance and potential?
   o *In particular, what are your expectations regarding career outcomes for high performance, low potential employees? And for low performance, high potential employees?*
   o *Also, for which combination of performance/potential do you expect to see more employees leaving the company?*

   [*Show evaluation grid, point to specific boxes*]

23) What are the typical more immediate employee responses, in terms of attitudes and behaviors (e.g. motivation, morale), exhibited by high performance, low potential employees? Low performance, high potential employees?
   o Is it difficult to explain to a direct report why they are high performance but low potential? What about low performance but high potential?

24) To what extent do you expect an employee's performance rating to vary from year to year? What about potential?

25) How much scope do you believe there is for an employee to improve his/her performance rating? How could an employee improve his/her performance rating?
   o *Prompt for specific attitudes, traits, behaviors, activities, etc.*

   o *Prompt for the role of the development actions identified as part of the talent management cycle*

   [Show evaluation grid, point to specific boxes]

26) How much scope do you believe there is for an employee to improve his/her potential rating? How could an employee improve his/her potential rating?
   o Prompt for specific attitudes, traits, behaviors, activities, etc.
   o *Prompt for the role of the development actions identified as part of the talent management cycle*

   [Show evaluation grid, point to specific boxes]

27) How should an employee allocate his/her time, effort, etc. between improving performance and improving potential? Are there particular circumstances under which he/she should focus more on one or the other?

28) How predictive do you think an employee's performance rating vis-à-vis his/her potential rating is of subsequent performance in a more senior role? Are any other factors good predictors of an employee's subsequent performance in a more senior role?

29) Who knows the final performance / potential assessment that an individual employee receives?
   o How do they come to know of the assessment?
   o To what extent do your direct reports discuss their assessments with each other?

30) How do the assessments you give to your direct reports impact your relationships with the individual employees?

31) How do the assessments impact the interactions between your direct reports?
   o To what extent do the assessments lead to encouragement or animosity amongst your direct reports?
   o To what extent do the assessments lead to productive (e.g. giving each other feedback) versus counterproductive (e.g. competitiveness) behaviors amongst your direct reports?

32) Do you take into consideration the likely response that a direct report will have based on his/her performance or potential ratings when making your assessments? How so?

 [Time permitting, otherwise skip to Talent Management Cycle - Employee]

[Again, show the diagram of the talent management cycle and the evaluation grid]

* Let's return now to the talent management cycle and briefly discuss the other phases *

DEVELOPMENT ROUND TABLE

33) Do you or any other people managers use particular strategies to lower the likelihood that your direct reports will have their assessments adjusted during a DRT?

34) What are your views on the final assessments that result from the combination of the initial Performance & Potential Assessments and the Development Round Table process?
    o How accurate do you think the final assessments are?

PERFORMANCE & DEVELOPMENT DIALOGUE MEETINGS

35) Could you describe to me how you conduct your Performance & Development Dialogue meetings?
    o What do you focus on in the meeting?
    o How do you frame the delivery of the performance and potential ratings?
    o How do you deliver negative feedback?
    o To what extent do you refer to the DRT meeting vis-à-vis your own initial assessments?
    o How do you come up with the development actions?

*** Talent Management Cycle – Employee ***

The final set of questions focuses on you as a manager evaluated under the talent management system.

36) Would you mind telling me the ratings you received for performance and potential in the latest round of the talent management cycle?
    o *To what extent were your ratings in line with your expectations?*
    o *Did you take the opportunity to provide self-assessment examples/comments? Why or why not? How do you think this impacted the final assessments you received?*
    o *To what extent have these ratings influenced your attitudes towards your peers / your manager / the company?*
    o *To what extent have these ratings influenced your behavior?*
    o *How much scope do you believe there is for you to improve your performance? Your potential? How could you improve your performance? Your potential?*
    o *Are you most focused on improving your performance or your potential? Why?*
    o *To what extent have these ratings shaped your views on your career trajectory at the company (e.g. expected promotions, likelihood of leaving, etc.)?*

37) How well do you believe the 4 performance criteria capture what is relevant to your performance in your role? Is anything missing?
    o *In many ways the performance criteria include fairly broad measures (such as the customer criterion) and there is an emphasis on teamwork; at the same time, the assessments are focused on individual performance. Could you speak to this?*

38) How well do you believe the 6 potential competencies reflect what is relevant regarding your ability to progress in the company? To progress in your career in general (either at this company or elsewhere)? Is anything missing?

39) To what extent do you see performance and potential as distinct? How helpful is it to receive separate assessments of your performance and potential?

40) Are there any particular attitudes, traits or behaviors of yours that you believe your people manager considers positively for performance purposes but negatively for potential purposes, or vice versa? How do you deal with this?

41) Would you mind describing the performance & development dialogue meeting that you had with your people manager?

42) What were the consequences associated with the ratings you received (e.g. new opportunities, greater coaching by managers, reactions from peers, etc.)?
   o What are your thoughts on the development activities you've undertaken since your most recent performance evaluation?

43) What are your expectations for your performance and potential ratings in the next round of the talent management system?
   o *Will you take the opportunity to provide self-assessment examples or comments? Why or why not?*

44) Do any performance or potential ratings that you received in the past stand out (perhaps because the rating surprised you)? Why?

45) How does the talent management cycle (your assessments, meeting with your people manager) impact your relationship with your people manager? Your peers?

PREVIOUS TALENT MANAGEMENT SYSTEM *[Time permitting; If with the company > 6 years]*

I'd like to ask a couple of questions about the previous talent management system.

46) Could you share your thoughts on how the current talent management system compares to the previous performance management / talent management system?

47) What was your reaction when the new system was first introduced? Have your thoughts changed over time? Why or why not?

CLOSING

48) Is there anything else about the talent management system that you would like to add?