

# Where the stars still shine: Some effects of star-performers-turned-managers on organizational performance

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## Abstract

**Research summary:** Do former star performers become superior managers? If so, why? Using performance data from a professional sports league, this study finds that organizational performance is greater under star-performers-turned-managers (SPTMs) than other managers. We develop a typology of six causal mechanisms by which SPTMs might affect organizational performance, and we indirectly test for each of them using data from a professional sports league. Our results indicate that SPTMs outperform other managers, and that this benefit is due to their role modeling and their superior ability to train and incentivize subordinates.

**Managerial summary:** Organizations are often, but not always, led by managers who previously achieved outstanding performance in an individual contributor role. Do such star-performers-turned-managers (SPTMs) benefit an organization's performance more than other managers? If so, why? Our statistical analysis finds that National Basketball Association (NBA) teams managed by head coaches who had previously been All-Star NBA players win games more often than other NBA teams, and also that this effect is due to a combination of SPTMs serving as a role model for their players, as well as training and incentivizing their players better.

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## KEY WORDS

incentivizing, role modeling, star-performer-turned-manager (SPTM), strategic human capital, training

## 1 | INTRODUCTION

Some employees are more valuable than others, with those at the top of the performance distribution often creating many times more value than their colleagues (Groysberg, Lee, & Nanda, 2008; Hess & Rothaermel, 2011). Star performers may help an organization build competitive advantage through human capital, especially when their contribution cannot easily be replaced by alternative options, such as hiring a larger number of non-star employees or substituting nonhuman resources (Barney & Wright, 1998). Many organizations also fill management positions with employees who have previously demonstrated star-level performance in an individual contributor role, at either the same organization or a competitor, resulting in the phenomenon of the star-performer-turned-manager (SPTM). Although these practices are so common as to be taken for granted, little research has studied their effectiveness. Do organizations managed by SPTMs enjoy greater success? If so, why? By what specific mechanisms would SPTMs achieve this performance advantage? Do they improve performance by enhancing employees' motivation (e.g., superior inspiration or role modeling) or by enhancing employees' abilities (e.g., superior training or organizing)? Do these mechanisms operate at the individual level, the interpersonal level, or the organizational level?

These questions about whether, how, and why SPTMs outperform other managers are important to answer because having a star performer as a manager may incur higher costs, or may incur higher risks in situations where organizations face a trade-off between hiring an SPTM with no experience in management versus hiring an experienced manager who was not a star performer but has established a proven track record of success in management. So, organizations may benefit from predicting whether, and under what circumstances, the uncertain benefits of hiring an SPTM will outweigh these costs or risks. Also, for an organization that wants to hire an SPTM, answering these research questions may help inform its decisions about what skills to look for in a potential SPTM and what behaviors to reward from the SPTM.

Although the prevalence of SPTMs makes practitioners interested in the answers to these research questions (Adler, 1996; McKee, 2015), and although research on the role of star performers as *employees* has grown dramatically, rigorous research on SPTMs has been scarce, perhaps due to the challenge of finding an empirical context with the right characteristics. An ideal empirical setting for this topic would allow the researcher to identify SPTMs, measure their organizations' relative performance versus those of other managers, and then decompose this performance difference into distinct components that are due to each of the different mechanisms by which SPTMs might influence performance. One type of real-world organization that offers these features is a professional sports team managed by a team coach. This empirical context is well-suited for three reasons: First, it is easy to identify which coaches were previously stars in their sport. Second, it is easy to measure each team's performance, since the goal of winning games is universally shared, unambiguous, and objectively measured. Third, some of the relevant mechanisms are at least indirectly measurable via proxy. So, for reasons to be explained in detail later, we specifically use data from the National Basketball Association (NBA). Building on prior work by Goodall et al. (2011) which demonstrates, all else equal, that teams managed by former NBA stars perform better than teams managed by coaches who never

played basketball (a finding consistent with our baseline-proposition test), we develop indirect proxy measures for several mechanisms by which SPTMs might affect organizational performance—which we label as role modeling, morale building, incentivizing, training, collaborative learning environment, and organizing—and we organize these six mechanisms into a typology adapted from Grenny, Maxfield, and Shimberg (2008).

The remainder of this article proceeds as follows: First, we present our typology of six possible SPTM performance effects, with a hypothesis for each one. Next, we discuss the NBA empirical context and data collection. Then we explain how we tested our hypotheses. We then present our results. The final section discusses those results, considers both the implications and limitations of this study, and concludes.

## 2 | THEORY: A TYPOLOGY OF SPTM PERFORMANCE EFFECTS

Starting with the most basic question of whether SPTMs outperform other managers, we propose:

*Baseline Proposition: Ceteris paribus, an organization managed by a star performer turned manager experiences greater organization performance than organizations managed by other managers.*

The question of whether SPTMs outperform other managers is easier to answer than the questions of *why* or *how* SPTMs might outperform other managers. For the latter questions, the range of possible mechanisms via which an SPTM might influence organizational performance are too numerous to inventory exhaustively here. So, rather than trying to provide an exhaustive list of every possible specific way for SPTMs to affect performance, we simply provide a broad typology that catalogs, in a general way, some of the most obvious mechanisms, while recognizing that any such typology is necessarily incomplete. Specifically, relying on survey results from Grenny et al. (2008), we borrow their established typology of six categories of mechanisms used by leaders to influence subordinates, and we adapt it to the question of how an SPTM might be more (or possibly less) effective than other managers at implementing each of these influence mechanisms, as shown in Table 1. Their typology is two-dimensional: On the first dimension, Grenny et al. (2008) posit that leaders' influence mechanisms can operate at either a personal, social, or structural level, with these levels reflected as the rows of Table 1. Personal-level influence directly targets each subordinate as an individual, while social-level influence targets subordinates indirectly through shaping their interpersonal interactions with each other, and structural-level influence targets subordinates indirectly by defining the parameters of the organizational environment within which they work. The second dimension is whether the influence mechanism targets either the motivation or the ability of subordinates, as reflected in the two columns of Table 1. The three rows and two columns in Table 1 yield a total of six mechanisms for our typology (which, again, is necessarily incomplete). Let us consider each mechanism in turn, by first going down the left-hand column and then going down the right-hand column.

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[Correction added on 9 September 2022, after first online publication: Changes have been made to the Introduction of the article text to improve clarity in this version.]

**TABLE 1** Typology of possible star-performers-turned-manager (SPTM) influences on subordinate performance

SPTM influence operates at the:		SPTM influence affects the:	
		Motivation of subordinates	Ability of subordinates
SPTM influence	Personal level (individual)	<i>Role modeling (H1)</i> SPTM is more effective than other managers at eliciting strong effort from each subordinate, by virtue of subordinates' respect/admiration for star-level performance.	<i>Training (H4)</i> SPTM is more effective than other managers at improving the skills of less experienced subordinates.
	Social level (interpersonal)	<i>Morale building (H2)</i> SPTM is more effective than other managers at fostering a supportive work environment that encourages strong effort from subordinates.	<i>Collaborative learning environment (H5)</i> SPTM is more effective than other managers at catalyzing skill-building interactions among group members.
	Structural level (organizational)	<i>Incentivizing (H3)</i> SPTM is more effective than other managers at applying rewards and punishments in ways that drive strong effort from subordinates.	<i>Organizing (H6)</i> SPTM is more effective than other managers at designing the division of labor among subordinates in a way that best combines their skills.

Note: Table adapted from Grenny et al. (2008).

## 2.1 | Personal-level influence on motivation: Role modeling

Hollander (1978: 154) notes that “competence is still the most important single factor in the leader’s effectiveness. A growing body of [observational] evidence suggests that a leader’s perceived competence accounts for a great deal of his or her success” because followers are more likely to accept and comply with leaders who have demonstrated their expertise. This observational evidence has been strongly confirmed through controlled laboratory studies (e.g., Price & Garland, 1981). So, even without doing anything different than other managers, an SPTM may still elicit greater motivation from subordinates than other managers, simply by virtue of their personal respect or admiration for star-level task skills. This high esteem, especially from those subordinates with an ambition to achieve star-level performance themselves, may cause them to view an SPTM as a role model in a way that they would not view other managers, and thereby motivate them to achieve higher levels of performance for the sake of pleasing, impressing, or emulating their role model. So, we label this personal-level motivation-influencing mechanism as role modeling.

Since the term “role model” was coined by Merton (1949), its colloquial meaning expanded beyond its original definition of someone serving as behavioral exemplar in a particular role. It now also has a motivational meaning, referring to someone who demonstrates that some achievement is possible for a particular category of person and thereby influences others in that category to raise their aspirations to accomplish similar achievements. For example, when commenting on the election of the first black president of the United States, sociologist Florence Bonner from historically black Howard University said:

When our young men see the president and Mrs. Obama stepping from Air Force One, they are wonderful role models for Blacks and for the country... that elevates the spirit and attitudes about what you can do... young people can pick that up... the impact will be tremendous on Black families. (Chappell, 2009).

It is this motivational interpretation of a role model, rather than the purely behavioral interpretation, that we use here. For example, role models have been defined as “individuals who provide an example of the kind of success that one may achieve, and often also provide a template of the behaviors that are needed to achieve such success” (Lockwood, 2006, p. 36; i.e., the behavioral aspect is secondary and incidental), as “successful members of one’s own group” from whom one can derive “reassurance and inspiration” (McIntyre, Paulson, Taylor, Morin, & Lord, 2011, p. 301), as “someone to look up to and base your character, values and aspirations on” (Gauntlett, 2002, p. 211) who “will always inspire, teach by example, and excite admiration and emulation” (Paice, Heard, & Moss, 2002, p. 707; here again, the behavioral aspect of teaching is secondary to the motivational aspect).

In order to capture this motivational effect, Morgenroth, Ryan, and Peters (2015) use the expectancy-value framework (Atkinson, 1957; Vroom, 1964, 1966) to develop a theory of role modeling in which the role model influences a role aspirant in multiple ways—shaping the aspirant’s goals and perceptions of the attainability of those goals (i.e., the “expectancy” part) while also boosting the desirability of those goals to the aspirant by inciting his/her admiration, identification, and internalization (i.e., the “value” part). Their theory integrates notions of goal-setting (Bandura, 1997), possible selves (Markus & Nurius, 1986), self-concept (Shamir, House, & Arthur, 1993), and identity matching (Ibarra, 1999) to conclude that:

Role modeling cannot be understood without an examination of role aspirants themselves and the motivational processes taking place within them. We certainly believe that role models have great potential in making a difference on role aspirants’ lives... However, on the basis of the Motivational Theory of Role Modeling, we do not believe in a one-size-fits-all approach when it comes to role modeling. Role aspirants all have different goals, belong to different groups, and find different attributes desirable and attainable. (Morgenroth et al., 2015, p. 479).

Hence, the personal-level motivational effect of an SPTM depends upon whether subordinates actually view the SPTM as a role model. In answering this question, two important criteria are similarity and relevance: Identification theory suggests that individuals may feel an emotional and cognitive connection if they identify with role models they perceive to be similar to themselves (e.g., Kohlberg, 1963; Slater, 1961). In particular, Kulik and Ambrose (1992) argue that both demographic and social characteristics enhance the role-model selection if these characteristics are relevant with the individuals. Collins (1996) argues that individuals who are

motivated to self-improve may select a social referent who exhibits the desired roles or qualities, who is relevant to their own needs and goals, and whose position or expertise is potentially attainable. Other research suggests that individuals tend to select significant people in organization such as supervisors, teachers, and mentors as their role models (e.g., Gibson, 2003; Kram, 1985). Accordingly, to the extent that subordinates desire to achieve star-level performance for themselves, SPTMs exemplify their subordinates' career goals, so we posit that an SPTM can serve as a motivational role model.

Of course, the efficacy of this role modeling mechanism depends critically upon subordinates having an accurate *perception* of their manager's expertise (Wheeler & Koestner, 1984). If subordinates do not recognize their manager's actual expertise, then that expertise cannot have this role-modeling motivational effect. By its very nature as a process of social comparison, the role modeling of SPTMs would naturally be more effective when the SPTM's prior stardom is highly salient in the minds of subordinates. The salience of an SPTMs prior stardom is stronger in the minds of subordinates who had the opportunity to directly observe that past star performance for themselves, by virtue of being in the right place at the right time. Such visibility is important because inspirational motivation depends upon the subordinate having observed the role model's past performance (Lockwood & Kunda, 1997). So, a subordinate who has been carefully following a person's career for a long time is more likely to consider that person as a role model.<sup>1</sup>

Visibility of the potential role model's career performance is greater when both people have been in the same place at the same time. As an example, in our professional sports league context, if a player has lived in a location where the SPTM previously played, then that player may experience greater connection due to the coach's greater past visibility in that area's local media as a hometown hero. For example, 12-time NBA All-Star Jason Kidd, who played 8 years of his career at two teams in the New York City area before coaching one of those teams, was asked in an interview, "Do you ever get used to players come up to you and saying, 'You were my idol growing up?'" and he responded, "It hurts... They put you right in your spot real quickly saying, 'Hey, I patterned my game after you.' Or, 'You know, you were my idol growing up'... because that makes you old."<sup>2</sup> Accordingly, we propose:

**Hypothesis (H1).** (*Role modeling interaction effect*): *The greater the accuracy of subordinates' perceptions of their manager's level of expertise (e.g., due to greater visibility or salience to the subordinates), the more that the organization's performance will benefit from being managed by a former star performer.*

<sup>1</sup>Indeed, since role modeling is an act of imagination, it is impossible without visibility. For it to work, one must imagine becoming more like the role model, which requires observing a role model that one can imagine oneself emulating. If nobody similar to oneself can be observed in a given role, then it is more difficult to imagine oneself in that same role. For instance, in a randomized natural experiment, Beaman, Duflo, Pande, and Topalova (2012) show that visibility of female leadership influences adolescent girls' career aspirations and educational attainment. In this regard, similarity may enhance visibility, since employees may simply disregard a potential role model who is so different from themselves that they cannot imagine becoming like that person (e.g., Marx, Ko, & Friedman, 2009). So, people tend to identify with, and be influenced by, others who share backgrounds, such as a common hometown, education, or nationality (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), which reduces the "social chasm" between them (Tzabar & Vestal, 2015). For example, the first Canadian female LPGA champion, Brooke Henderson, initiated a youth golf boom by providing a role model for Canada's golfers and encouraging other Canadians to follow in her footsteps (K. Anderson, 2018). Likewise, Tjas, Nelsen, and Taylor (1996) show that students are more positively influenced by successful alumni of their own school.

<sup>2</sup><https://www.nba.com/2013/news/10/17/kidd-aldrige-interview/>.

While **Hypothesis (H1)** proposes an interaction effect between the accuracy of subordinates' perceptions of their manager's expertise and their manager being an SPTM, note that we avoid hypothesizing a main effect for the accuracy of subordinates' perceptions. Our logic for this omission is that, just as accurate perceptions of *strong* expertise (as in the case of an SPTM) may *increase* subordinates' motivation, so too accurate perceptions of *weak* expertise may correspondingly *decrease* their motivation.

## 2.2 | Social-level influence on motivation: Morale building

At the social level, a supportive work environment can encourage subordinates to achieve high performance. Research on charismatic leadership demonstrates that leaders can foster such positive *esprit de corps* through communications "that reflect an emphasis on the collective identity of the group or unit and its superiority to other units," which give subordinates a "heightened motivation and willingness to sacrifice for the unit, identification with the unit, and attachment to the unit" as well as being "associated with the strength of unit culture... and with unit discipline" (Shamir, Zakay, Breinin, & Popper, 1998, p. 404). Experiments have demonstrated that a leader's inspirational oratory benefits both the motivation and task performance of followers (e.g., Johnson & Dipboye, 2008; Towler, 2003). The impact of such inspirational group-affirming communications may be greater when coming from an SPTM than from other managers. Numerous laboratory experiments also demonstrate that, under many circumstances, oratory is more persuasive when it comes from sources that are perceived as more credible (for a review, see Sternthal, Phillips, & Dholakia, 1978). Since subordinates may view an SPTM as a more trustworthy and reliable source of communication than other managers, the SPTM's words may have a greater impact and thereby inspire higher levels of motivation (Cowen, 2000; Whitener, Brodt, Korsgaard, & Werner, 1998). Labeling this social-level motivation-influencing mechanism as morale building, we propose:

**Hypothesis (H2).** (*Morale building*): *The greater a manager's use of inspirational group-affirming communications to motivate subordinates: (a) the more that the organization's performance will benefit, and (b) the more that the organization's performance will benefit from being managed by a former star performer.*

## 2.3 | Structural-level influence on motivation: Incentivizing

The idea that the motivation, behavior, and performance of people responds to the promise of rewards and the threat of punishments is widespread across the social sciences. In psychology, this idea is the central tenet of behaviorism and especially the theory of operant conditioning (Skinner, 1938; Thorndike, 1898), which has formed the basis for numerous practices in both therapy (Wolpe & Reyna, 1976) and education (Boyanton, 2014). In economics, incentives are central to both price theory (Jaffe, Minton, Mulligan, & Murphy, 2019) and agency theory (Bamberg & Spremann, 2012). In sociology, the prospect of rewards and especially the coercion of punishments are understood as an important means by which norms, customs, traditions, institutions, classes, and other social structures are perpetuated (Martin, 2009). The design and structure of incentive and compensation systems for organizations is pursued by practitioners and researchers in both human resource management (Koss, 2008) and managerial accounting (Merchant & Van der Stede, 2007).

However, incentives can only be a useful motivational tool for a manager to the extent that he or she can either exercise discretion to allocate rewards and punishments to subordinates, or at least influence the incentive schemes that perform those allocations. There is wide variation across organizations, and even across managers within an organization, in how much of this discretion or influence they can exercise. In some cases, managers may have complete freedom to raise or lower pay, or to promote, demote, or even fire subordinates. In other cases, the limitations imposed by company policy, labor laws, union contracts, labor market scarcity, formal or informal organizational structure, corporate governance practices, taxation rules, or even relationships with third parties in the organization may curtail or even eliminate a manager's influence over subordinates' incentives (Belcher & Atchison, 1987).

Our question with regard to incentives is whether SPTMs are more effective than other managers at using them to increase a subordinate's motivation. Based on extensive psychological research about the conditions that can increase or decrease the effectiveness of rewards and punishments, there is at least one reason to believe that the answer might be yes: A central tenet of operant conditioning is that rewards and punishments are more effective at influencing behavior when they are precisely targeted in a way that reinforces desired behaviors and extinguishes unwanted behaviors. So, effective conditioning requires carefully monitoring an agent's behavior in order to recognize exactly when desired and undesired behaviors occur, in order to deliver rewards and punishments consistently and precisely at the right times and in the right proportions—that is, in order to make the consequences contingent upon the behavior (Miltenberger, 1997).<sup>3</sup> Inconsistent rewards that are not always delivered whenever a desired behavior occurs are less effective at reinforcing that behavior. Likewise, inconsistent punishments that are not always delivered when an unwanted behavior occurs are also less effective at extinguishing that behavior. Inaccurate or inattentive monitoring of behavior can therefore undermine the effectiveness of rewards and punishments by making them inconsistent. The extreme case of completely indiscriminate rewards may dilute unwanted behavior, but fails to encourage any particular desired behavior (Tucker, Sigafoos, & Bushell, 1998). The opposite extreme of completely indiscriminate punishments produces only "learned helplessness" rather than any productive behavior (Seligman, 1972). So, the effectiveness of rewards, punishments, and other disciplinary interventions is inherently dependent upon the accuracy and skill of the monitoring that triggers their use.

So, the important question is whether SPTMs might be more skilled at monitoring subordinates' behaviors than other managers. Some empirical evidence suggests that star performers may have such superior monitoring skills. For example, Groysberg, Abrahams, and Lee (2010) argue that providing helpful feedback to colleagues is one of the four most important factors that distinguish star performers, enabling them to "function as valuable sounding boards and astute critics of a colleague's work." Likewise, Oettl (2012) shows that feedback and criticism are the most important mechanisms by which star scientists improve their colleagues' performance—that is, that "scientists who are helpful with conceptual feedback (critique and advice) have a larger impact on the performance of their coauthors than scientists who provide help with material access, scientific tools, or technical work." Assuming that star performers retain this skill at recognizing the superiority or inferiority of others' work even after becoming a manager, it would seem plausible that SPTMs may have superior monitoring abilities relative to other managers and may therefore be more effective at targeting rewards, punishments, and other disciplinary interventions. Accordingly, we propose:

<sup>3</sup>We thank an anonymous reviewer for suggesting this specific mechanism.

**Hypothesis (H3).** (*Incentivizing*): *The greater a manager's influence over the rewards and punishments allocated to subordinates: (a) the more that the organization's performance will benefit, and (b) the more that the organization's performance will benefit from being managed by a former star performer.*

## 2.4 | Personal-level influence on ability: Training

Because training is one of the most common ways for organizations to improve the abilities of their employees, it has played a central role in human capital theory (Schultz, 1960). Here at the personal level, we focus on training conducted by the manager himself or herself. Such direct efforts by a manager to improve subordinates' skills is often structured as on-the-job training held in the workplace during work hours, rather than structured as off-site classroom training or pursued outside of regular work hours. Relative to other forms of training, such manager-led on-the-job training has the benefit of producing learning that is both more immediately applicable (Wexley & Latham, 2002) and more organization-specific (Becker, 1994).

Our question with regard to this on-the-job training is whether former stars are more effective than other managers at using it to improve a subordinate's skills. There are at least three possible reasons why this might be so: First, the SPTM, having star-level task skills, might more effectively demonstrate to subordinates the optimal performance of these task skills than other managers could (Grossman, Salas, Pavlas, & Rosen, 2013; Taylor, Russ-Eft, & Chan, 2005). Second, an SPTM, by virtue of understanding the optimal ways to perform a skill, might be better than other managers at diagnosing precisely what a subordinate is doing wrong when performing a skill sub-optimally (Oettl, 2012), and therefore more likely to prescribe the best remediation to correct that particular problem. A third possibility is that an SPTM, by virtue of having already endured the learning process to develop star-level skills, is more capable than other managers at teaching those skills by leading a subordinate through the same learning process (Goodall, Kahn, & Oswald, 2011). On the other hand, it is certainly also possible that the reverse might be true: Managers who became star performers by virtue of some extraordinary innate talent or tacit skill may actually be *less* able to articulate and transfer their idiosyncratic skills to subordinates than managers with more ordinary talents whose skills are more broadly transferable.

However, on-the-job training efforts are more relevant, and likely to produce larger skill improvements, when applied to less experienced learners than when applied to highly experienced learners, since skill development exhibits diminishing marginal returns (Green, Ashton, & Felstead, 2001). After all, for any given skill, there is an inherent upper limit to how well it can be performed: No matter how well trained they may be, a litigator cannot win more than 100% of cases in court, a roofer cannot nail thousands of shingles per minute, and a surgeon cannot operate on hundreds of patients per day. The closer a learner is to the upper limit of performance, the less possible it is for training to further improve his or her skills. Thus, for manager-led training to be most effective, the gap between the manager's experience level and the subordinates' experience level must be sufficiently large. Also, less experienced subordinates, in addition to having more to learn, may also have an attitude that is more open to learning—that is, more teachable. By contrast, more experienced subordinates likely have already established habits and behavioral patterns that may have to be overcome or unlearned in order for new learning to happen, which may make them more resistant to learning. For example, Price and Garland (1981) find that subordinates who perceive themselves to be less competent are more likely to follow a leader's instructions, and this effect is even stronger when

they perceive the leader to be highly competent (i.e., negative interaction between subordinates' perceptions of their own skill and perceptions of the leader's skill). Accordingly, we propose:

**Hypothesis (H4).** (*Training*): *The greater the experience level of subordinates, the less that the organization's performance will benefit from being managed by a former star performer.*

While Hypothesis (H4) proposes an interaction effect between the experience level of subordinates and having a former star as a manager, note that we avoid hypothesizing a main effect for the subordinates' experience level because, just as the opportunity for learning is high when there is a large gap between the experience levels of manager and subordinates, the opportunity for learning is low when that experience gap is small.

## 2.5 | Social-level influence on ability: Collaborative learning environment

Of course, a direct manager is usually not the only person in the organization from whom a subordinate can learn skills. This is especially true in situations where the manager does not have all of the skills that the subordinates need. For example, a general manager (GM) overseeing functional specialists (e.g., in a cross-functional product development team) is unlikely to have skills in all of those functional areas. It may also be especially true in situations where the manager has too many subordinates to train each one of them personally, or has too many other responsibilities to engage in much training effort at all. In any case, for whatever reason, a subordinate may learn skills from many other members of an organization. In some cases, these others may be formally designated as trainers, mentors, or coaches, or they may simply be the subordinate's peers. For example, the Chief Learning Officer at Nike Inc. commented in an interview:

The biggest trend I see (continuing) is the democratization of learning—social technology is disaggregating ownership of knowledge. What that means for learning functions is that rather than being the font of all knowledge (the hub (instructor) and spoke (learners) model), we need to become brokers and matchmakers—connecting teachers with learners by providing virtual and real platforms where we maximize the value of interactions between the two. At Nike, we're betting on this right now by building peer to peer learning in to several of our programs... (Strange, 2012).

Some organizations focus on fostering a collaborative learning environment. For example, the total quality management (TQM) movement emphasized the importance of learning from peers as Hackman and Wageman (1995, p. 331) note, “the group-process techniques teams use increase the chances that, over time, members will actively teach and learn from one another, thereby increasing the total pool of knowledge and skill available for the team's work. In all, TQM receives excellent marks for the ways and the extent to which it fosters interpersonal learning” (see also J. Anderson, Rungtusanatham, & Schroeder, 1994). In an interview, Deloitte consultant and popular management author John Hagel III highlights a company called LiveOps as a recent exemplar:

What LiveOps did was, they actually invited workers to ask for help, and they created an online digital discussion forum where workers could come in and say, for

example, “I’m having trouble handling this kind of customer call. Anybody have any ideas?” Then they started to watch, recognize, and reward the workers who were emerging as helpers and advice givers. So they’ve created a powerful peer-to-peer learning environment for their workers. (Kane, 2016).

As collaborative learning has grown more popular in organizations, researchers have begun to study it (see Hagen, Bialek, & Peterson, 2017). However, a necessary condition for such a collaborative environment to generate learning is that there must be others in the organization for subordinates to learn from. For example, recounting an episode from his early career, pastor and popular leadership author John C. Maxwell writes:

In my late twenties, I was already being considered to lead the premier church in the denomination... and by their grooming me for that position... I felt like they were saying that I was at the top of the class. What’s the problem with that? If you’re always at the head of the class, then you’re in the wrong class. The best place to learn is always where others are ahead of you. (Maxwell, 2014, p. 85).

Jackson and Bruegmann (2009) empirically confirm this idea by showing that teachers exhibit greater improvement in teaching skills when surrounded by more skilled colleagues. So, organizations may, either officially or unofficially, designate their most experienced employees—that is, those who are, in Maxwell’s words, “ahead of” others—to serve as trainers, mentors, or coaches for their coworkers. A manager can only enlist the help of such trainers, mentors, or coworkers for collaborative group learning if the organization actually has highly experienced employees available to serve in those roles. The more employees an organization has in such roles, the more benefit a manager can gain by fostering a collaborative learning environment.

Our question is whether former stars are better than other managers at fostering such a collaborative learning environment. We suspect that the answer is likely to be situation-specific: If achieving star performance in the organization requires extensive collaboration with others (e.g., under TQM), then former star performers might be particularly well suited to fostering a collaborative learning environment after becoming a manager. However, if one can become a star performer in an organization without engaging in much collaboration, then there is no reason to expect SPTMs to be more effective than other managers at engaging others in the organization to improve their coworkers’ skills. In our specific empirical setting, success in basketball requires more teamwork than in more individual-focused sports like baseball, so a former NBA star might have stronger than average skills in fostering collaboration. Thus, we propose:

**Hypothesis (H5).** (*Collaborative learning environment*): *The greater the quantity and/or quality of employees in the role of trainer, mentor, or coach: (a) the more that the organization’s performance will benefit, and (b) the more that the organization’s performance will benefit from being managed by a former star performer.*

## 2.6 | Structural-Level influence on ability: Organizing

While the tools of training and mentoring may improve the individual abilities of each subordinate, organizing is the main tool to improve their collective ability as a unit. There are at least

three ways that organizing can generate such collective improvements, and SPTMs may have advantages in any of the three:

First, perhaps the most fundamental and consequential way that managers organize subordinates is through their strategic choices about what activities the organization will perform in a given situation. While a bureaucrat may obsess over doing all things right, a strategist focuses more on doing all the right things—for example, delivering the right product for the right market at the right time in the right way. By virtue of their skills and experiences, SPTMs may have a clearer perception than other managers about what the right things are in each situation, thereby possibly making them more effective at this kind of strategizing (Whittington, 2003). Indeed, recent research suggests that one factor making star performers so successful is their ability to strategize. For example, Kehoe and Tzabbar (2015) show that a star performer increases organizational innovation performance by facilitating management of tangible and intangible resources. Likewise, studies also indicate that star performers have superior abilities to recognize opportunities to identify, evaluate, and pursue successful business projects (Goodall et al., 2011; Paruchuri, 2010). Assuming that stars still retain these special strategic skills after becoming a manager, it seems plausible to suggest that SPTMs may strategize more effectively than other managers. In other words, while many managers may choose to pursue unique or idiosyncratic strategies in hope of choosing the right activities for the organization to pursue in any given situation, SPTMs may do so more effectively than other managers.

Second, after defining the set of activities to be performed, managers also decide which of these activities to assign to each subordinate. The superior task skills of SPTMs may give them better judgment about how to make these delegation decisions in the most effective way, thereby positioning the right skills in the right place at the right time to provide the greatest benefit for the organization (Leana, 1987).

Third, after making such “division of labor” decisions, managers orchestrate subordinates’ efforts so their activities integrate with each other effectively. SPTMs may perform this coordinating function better than other managers, especially if such coordination had enabled their own stardom (Morse & Wagner, 1978). Although any method of organizing may create value, it does not necessarily create a defensible competitive advantage vis-à-vis rival organizations. Barney (1986) suggests that it is only the most unique, proprietary, and difficult to replicate methods of organizing, such as organizational culture, that are likely to yield lasting advantages. By contrast, standard well-known methods of organizing that are widely understood and easy to replicate—no matter how well executed they may be—are much less likely to provide a durable advantage. Accordingly, we focus on proprietary organizing methods, and therefore propose:

**Hypothesis (H6).** (*Organizing*): *The greater the use of proprietary methods of organizing: (a) the more that the organization's performance will benefit, and (b) the more that the organization's performance will benefit from being managed by a former performer.*

## 2.7 | Caveats about the typology

As noted earlier, this typology cannot offer an exhaustive inventory of all possible ways that an SPTM may influence an organization's performance. It may omit some mechanisms inadvertently, but three omissions are intentional. First, many organizations have either a formal policy, or at least an informal pattern, of promoting star performers into management positions, and this practice may motivate some employees to exert extra effort due to their ambition to be

promoted to manager someday. We omit this motivational effect from our typology because it is not an effect of the SPTM per se, but rather an effect of the organizational practice of promoting stars into management. Here we are interested in how effectively former stars perform as managers, not how effective it is for an organization to have a practice of promoting stars into management.

Because we are interested in how well a former star performs as a *manager*, our typology's second intentional omission is due to distinguishing the role of managing employees from the role of recruiting employees. While it is true that these two roles get blended in organizations where managers themselves are given primary responsibility for recruiting the employees that they will supervise, it is also evident that many organizations do not operate this way, but rather primarily rely either on internal human-resource departments or on external head-hunters to recruit employees instead.<sup>4</sup> So, recruiting is not an essential component of managing. It seems likely that in organizations where managers also serve in the role of recruiters, SPTMs may have advantages in terms of leveraging their social networks to find talent, their perceptual skills to recognize talent, and their star reputation to attract talent (e.g., Call, Nyberg, & Thatcher, 2015).<sup>5</sup> Nevertheless, because we are interested in the role of SPTMs as managers, rather than as recruiters, we omit these recruiting-based mechanisms from our typology.

Likewise, our typology's third intentional omission is also due to our exclusive focus on the former star's role as a *manager*. In some organizations, especially professional service firms, managing is only part of a manager's job. In addition to managing other attorneys, the managing partner of a law firm (especially a firm of modest size) may also continue to work on cases for clients and/or market the firm's services to potential clients, neither of which are management roles. Such nonmanagerial roles may also pertain for the managing partner of an accounting firm or a consulting firm. Similarly, a college professor who becomes a dean manages a faculty, but may also continue to conduct some (probably reduced) set of research projects, and may even occasionally teach a course. In such situations, an SPTM may benefit the organization's performance through both the managerial and nonmanagerial roles. Because we are interested in a former star's effectiveness as a manager, we exclude any such nonmanagerial performance benefits from our typology.<sup>6</sup> Fortunately, this phenomenon has not occurred in the NBA since the 1981 start of our sample period. The NBA has historically had 40 coaches who simultaneously served as players (i.e., player-coaches), but the last one quit in 1979, and this practice has been prohibited by the NBA since 1985 because it could be used as a way to circumvent team salary caps imposed by the league.

### 3 | METHODS

#### 3.1 | Data and sample

We test the hypotheses on a sample of managers (head coaches), middle managers (assistant coaches), subordinate employees (players), and organizations (teams) in the NBA, one of four

<sup>4</sup>NBA teams lie somewhere between these two extremes. Head coaches may influence their teams' recruiting efforts and goals, but due to high player salaries, final authority for hiring decisions resides with upper managers who control the team's finances.

<sup>5</sup>Star performers are known to have superior social capital (e.g., Oldroyd & Morris, 2012), so others are likely to seek relationships with them, which may give SPTMs an advantage in recruiting.

<sup>6</sup>We thank an anonymous referee for prompting us to clarify this boundary on our typology.

major sports leagues in North America. Several features make the empirical context of professional sports teams, and especially the NBA, well-suited for testing these hypotheses. For professional sports in general, availability of individual-level performance data facilitates studies of strategic human capital (e.g., Chen & Garg, 2018; Hill, Aime, & Ridge, 2016). Objective performance measures, observed at both individual and team levels, allow both coaches and players to be tracked through their entire careers, so it is straightforward to identify SPTMs and to control for the relative quality of each coach's players. Another advantage of the professional sports team empirical context is that, by collecting additional biographical and media data to supplement the standard archival game records, we can measure indirect proxies for several different mechanisms by which an SPTM might affect performance. For example, consider the mechanism of role modeling. An employee's admiration of the role model is an essential ingredient of this mechanism, and admiration of sports stars is highly geographically specific, which provides a natural proxy for the role modeling mechanism. Thus, an athlete who shares a geographic connection with a coach—for example, growing up in the same city where the coach had played on a professional team, or attending the same university where the coach had played on a collegiate team—is more likely to have admired that coach as a role model.

Within professional sports, basketball has specific features that are helpful in answering our research questions about SPTMs. First, compared to other professional team sports like football or baseball, basketball has a relatively smaller numbers of players and coaches on each team, which may allow a head coach to affect each player more directly, so that an SPTM's effect on performance may be less noisy. Second, since basketball players necessarily play a more generalist role than players in other professional sports, basketball players may more easily identify with SPTMs. In baseball, for example, it may be more difficult for a pitcher to identify with an SPTM whose playing career was spent as an outfielder than it would be for him to identify with another pitcher.<sup>7</sup> Due to the more generalist nature of a basketball player's role, such role-specific barriers to a player identifying with an SPTM are largely absent. The third reason why basketball is well suited for capturing SPTM effects is that basketball teams have the smallest and flattest hierarchy of coaches. Obviously, the smaller and flatter a coaching staff is, the less hierarchical distance separates the players from their head coach, and therefore the closer their relationship can be. NBA head coaches typically oversee only about five or six assistant coaches, with league rules limiting teams to only three assistant coaches on the bench during games. By contrast, in 2014, every NFL team had at least 16 assistant coaches, with some teams having as many as 25 in a four-level hierarchy, and with a league average of 21. Between the two extremes of NBA and NFL, the coaching staffs of MLB teams range from 9 to 13. One would naturally expect this feature to make any SPTM effects easier to observe in the NBA.

Our sample consists of every NBA game played from the 1981–1982 season to the 2014–2015 season, for a total of 37,780 unique games.<sup>8</sup> Each NBA team plays 82 regular games in a season, after which the top 16 teams have playoff games for the league championship.<sup>9</sup> Here we

<sup>7</sup>Indeed, Ted Williams, a former star outfielder turned manager who once said, "Pitchers are the dumbest people in the world," was known to have strained relationships with pitchers he managed.

<sup>8</sup>In each game's observation, we take the home team as the focal team in order to avoid having the same game appear twice in the data set. So, a team's away games only appear in the data set as the opponent's home games. In addition to avoiding duplication, this choice to focus on the home games has the benefit of eliminating any potential for location-specific effects due to the focal team playing in different venues (e.g., Berger & Pope, 2011; Courneya & Carron, 1992).

<sup>9</sup>During the sample period, two seasons were shortened due to lockouts, in 1998–1999 (50 games) and 2011–2012 seasons (66 games). Also, one game (Indiana at Boston) was canceled after the Boston Marathon bombing during the 2012–2013 season.

consider only regular-season games, since most teams change their game strategies and rosters in the postseason.<sup>10</sup>

### 3.2 | Dependent variable: Winning a game

In some prior studies of professional sports leagues, performance has been measured by each team's winning percentage at the end of a season (e.g., Berman, Down, & Hill, 2002; Moliterno & Wiersema, 2007). However, we use individual games, rather than entire seasons, as our unit of observation for several reasons: First, the main argument in this article is that specific characteristics of managers might affect organizational performance, but in the NBA, head coaches are often fired in the middle of the regular season, usually replaced by interim head coaches who lead the team for part or all of the remainder of the season. In our sample, 94 out of 195 managers held positions as interim head coaches at some point. So, if we used season-level data, virtually every season would have at least one team with a coaching change, and it would be unclear how to decide which coach would get credit for the season's performance.<sup>11</sup> Also, different teams face opponents of different quality because of the way that games are scheduled. Specifically, NBA teams are organized into regional divisions, and play against an opponent within their own division more often than an opponent from a different division. Some divisions have stronger teams than others, so teams in a strong division play challenging opponents more often than teams in a weak division. Therefore, by using game-level data, we can precisely control for the opponent teams' quality in a fine-grained way. Finally, season-level data are also inferior because a team's roster of players can change quite a bit during the course of an entire season, due to injuries, suspensions, and trades. After all, even the most outstanding player cannot help his team win if he is unavailable to play. So, the player roster for each specific game provides most precise and accurate way to control for within-season changes in both the quality level and experience level of both a focal team and each of its opponents, on a game-by-game basis. The *Winning Game* dependent variable takes a value of one if the focal team wins, and zero otherwise.

### 3.3 | Independent variable

The main independent variable in the model is *Star Performer-Turned-Manager*, or *SPTM*. We define an *SPTM* as a manager who had previously played in an NBA All-Star Game.<sup>12</sup> Of the

<sup>10</sup>Data for the sample period includes 195 managers. From the league's very first season (1946–1947) to the final sample season in this study (2014–2015), the NBA has had 309 managers. Thus, our sample includes 63% of the NBA's entire history of managers.

<sup>11</sup>As a robustness check shown in Online Appendix Table A4, we also tested our hypotheses at the "sub-season" level by splitting a team's season into two sub-seasons at the point where the team changed its head coach, but keeping full seasons intact for teams that did not have such a mid-season coaching change. For example, two head coaches managed the Boston Celtics in the 2003–2004 season, with Jim O'Brien coaching the first 46 games and Jim Carroll coaching the remaining 36 games. We split this case into two sub-seasons, as if the Celtics had played two different 2003–2004 seasons, and measured the dependent variable as the winning percentage during each of those sub-seasons. This robustness check yielded results that were consistent with our Hypotheses 1 and 4. We do not present these results as our main analyses because this "sub-season" compromise is, at best, an imperfect solution because the observations represent different numbers of games, and therefore are not directly comparable to each other. A coach's winning percentage in a full 82-game season means something different than the winning percentage for an interim coach who serves as caretaker for the final 10 games at the end of a season.

<sup>12</sup>During our sample period, starting players for the All-Star Game were chosen by vote of the fans, and reserve players were chosen by vote of each division's coaches, who were prohibited from voting for players on their own team.

195 managers in the sample, 37 (19%) had prior stardom.<sup>13</sup> The SPTM variable takes a value of one if a head coach had been selected in an All-Star Game when he was an NBA player, and zero otherwise.<sup>14</sup>

### 3.4 | Mechanism-testing variables

We construct six variables to test the hypothesized mechanisms for SPTM effects on performance.

**Role Modeling:** To capture role-modeling effects, we measure the degree of *geographic connection* between a team and its coach. We count the number of players in a game's roster who were born in the same state or attended the same college as their coach. For example, in his first game of the 1997–1998 season, SPTM head coach Larry Brown of the Philadelphia 76ers had three players who graduated from his alma mater University of North Carolina (Eric Montross, Jerry Stackhouse, and Scott Williams), and one who was born in his home state of New York (Kebu Stewart). As discussed earlier, the logic behind this measure is that role-modeling requires visibility, and visibility is stronger when it is local (i.e., a hometown hero). We use a log-transformed version of this variable, called *Geographic Connection*, since the number of geographically connected players is skewed. (We added one before logging to avoid taking the log of zero).<sup>15</sup>

**Morale Building:** To capture the morale-building mechanism, we measure each head coach's use and effectiveness in inspirational oratory. Using the Factiva database, a reliable source of published media for content analyses, we collected textual data in the form of published news articles, player interviews, commentary, and sports magazines, and searched for any positive comments about NBA coaches' speeches to their teams. By using preset keywords for morale-building with each head coach's name (e.g., speech, oratory, rah-rah, locker\*, encourage\*, speak\*, inspir\*, passion\*, motiv\*, and pep, talk\*), one of authors and one research assistant independently scraped all the quotations from the Factiva results. Once the same process was executed for every head coach, they combined all of their search results and cross-checked whether each result was relevant to the coach's oratorical skills/expertise or motivational speech. For example, Randy Wittman, who had been a head coach of three teams during 10 seasons, was introduced in one of the news articles in this way: "Bradley Beal started Game 1 against the Toronto Raptors nearly reduced to tears by an inspiring pregame speech from

<sup>13</sup>For complete list of SPTMs, see Online Appendix Table A1.

<sup>14</sup>Every SPTM was a former player in the NBA, but many non-SPTMs were not players in the NBA. In our sample period, 104 out of 195 head coaches were former NBA players and 91 were not. As a robustness check shown in Online Appendix Table A6, we also consider the possibility that extreme outliers might bias the results. The most extreme outlier SPTM is longtime NBA manager Jerry Sloan, who was also a two-time NBA All-Star player, won 1,221 out of 2,024 games (60.3% career winning percentage) in his coaching career. In addition, second extreme outlier SPTM is Larry Brown, who was a three-time NBA All-Star player, won 1,327 out of 2,002 games (54.8% career winning percentage). Such extreme performance as a player and as a manager might produce upward bias to the empirical results. So, we test our all hypotheses without games involving the two legendary SPTMs. These subsample analyses were largely consistent with our reported results.

<sup>15</sup>Although NBA player recruiting is primarily the responsibility of a team's general manager, coaches often have a voice in the process, and a coach's preferences for players might have a geographic component, raising the possibility of an endogeneity problem. So, as a robustness check shown in the left-side column of Online Appendix Table A7, we adjust the *Geographic Connection* variable by limiting it to players who were hired before the coach. The result is consistent with our presented result.

Washington Wizards coach Randy Wittman. ‘I almost cried,’ Beal said. ‘Witt almost had me teary-eyed before the game. He said make sure you cherish each moment.’” (Ohm, 2015). Another player said, “He’s doing everything and giving us motivational speeches and all that...” (Lee, 2015). So, we construct the dummy variable *Manager Oratory*, with a value of one if we find any such comments for the coach (a total of 19 coaches), and zero otherwise.<sup>16</sup>

**Incentivizing:** To capture the incentivizing mechanism, we construct a variable that measures the degree to which the manager can influence the rewards and punishments given to his subordinates. In the NBA, authority to determine the biggest rewards and punishments for players is reserved for the GM, rather than the head coach. On the reward side, the GM is responsible for negotiating player salaries and other contractual terms. On the punishment side, final authority for firing a player rests with the GM. The GM is also responsible for supervising the behavior of players off the court (Wong & Deubert, 2011). Although all head coaches have a voice in influencing the GM’s decisions on these matters, some head coaches may have more influence than others. As an extreme case, some head coaches also simultaneously serve as the team’s GM (GM-duality), in which case the coach has perfect control over the GM’s decisions about players’ rewards and punishments. In less extreme cases, some head coaches have close, longstanding social relationships with their GMs, which may give these coaches relatively greater influence over the GM’s decisions about players’ rewards and punishments. Combining these two cases, we construct a dummy variable called *Manager’s GM Influence*, which takes the value of one if the head coach either is simultaneously serving as GM himself or had previously served as a colleague of the GM (i.e., player-coach; head coach-assistant coach; former colleague as a team staff), or zero otherwise.

**Training:** To test our hypotheses about the training mechanism, we count the number of novice players who were drafted before starting a new season, assuming that the skillset and experience that the new players have are more likely to be inferior compared to incumbent players. We define novices as players who debuted their first season in the NBA, and we count the number of novices in a game’s roster. However, we excluded drafted players from international professional leagues (such as Yao Ming who was drafted by the Rockets in 2002 season from the Chinese professional league), since they are not novice players in terms of skills or experience on the court. We take logarithm of the variable in order to adjust for skewness.

**Collaborative Learning:** To test the collaborative learning mechanism, we focus on interaction between a head coach and assistant coaches—that is, middle managers. Every NBA team has several assistant coaches who help to train the players and prepare them for games (e.g., conditioning, practice, or opponent analysis). Taking experience as a proxy for their effectiveness or skill, we calculate the average tenure of the team’s assistant coaches in NBA assistant coaching jobs as *Middle Manager Average Tenure*.

**Organizing:** With regard to the organizing mechanism, some NBA coaches, as mentioned earlier, are known to coach their teams to play an idiosyncratic style of basketball, a practice known as “system coaching.” Similar to our process for collecting data about inspirational oratory, one of the authors and one research assistant searched media reports for any indications that a head coach is known for specific strategy or floor plan. By using keywords for system coaching (e.g., system, floor plan, mov\*, plan\*, style, signature, strategy, offens\*, defens\*, zone, man-to-man, line, stack, box plays, and press), they searched news articles and interviews from Factiva, as well as coaching books published by the NBA, books written by NBA coaches about their methods, and books written by commentators who study the NBA and its players

<sup>16</sup>For a complete list of these superior oratory managers, see Online Appendix Table A2.

(e.g., National Basketball Coaches Association, 2018). After combining and cross-checking all of their search results, we identified 44 system coaches.<sup>17</sup> For example, Eddie Jordan, who had been a head coach of three NBA teams for nine seasons, is well known for his “Princeton offense,” an offensive system predicated on passing, backdoor cuts, finding the open player, and most importantly, patience and discipline (Dunleavy, 2010). Likewise, Tom Thibodeau, who has been an active head coach from 2010 season, is well known for his unique defensive scheme, “strong side” (e.g., Hulbert, 2018). So, the variable *Manager System* takes a value of one if we find some evidence for system coaching by the head coach, or zero otherwise.

### 3.5 | Control variables

In our context, there are three types of managers regarding a focal manager's prior career, which are (1) SPTM, (2) FNSM (Former Non-Star Player Manager), and (3) NFPM (Non-Former-Player Manager, a manager without any NBA playing experience).<sup>18</sup> In order to properly benchmark the pure effects of SPTMs over other types of managers, we control for the FNSM, which is a manager who was a professional player in the NBA league, but who had not previously played in an NBA All-Star Game. Among our sample, there are 67 FNSMs (34%). So, the dummy variable *FNSM* takes a value of one if a manager is a former NBA player but not a SPTM (a prior star NBA player), or zero otherwise.

To control for alternative explanations, we include various control variables at different levels of analysis, including the team, coach, and player levels. At the team level, we control for both the focal team's and the opposing team's levels of player talent, denoted as *Team Quality* and *Opponent Quality*, respectively, by using each player's Player Efficiency Rating (PER) from the prior season, which has proven useful in prior strategic human capital research (e.g., Fonti & Maoret, 2016).<sup>19</sup> In order to capture player quality in a fine-grained way for each game, our Team Quality (and Opponent Quality) measures are averages of the PER numbers for only the specific players available to the team (or opponent team) at the beginning of each game, as indicated on the game roster.<sup>20</sup> To control for teams' experience levels, we include the average ages of players on both teams' game rosters, denoted as *Team Age* and *Opponent Age*.

<sup>17</sup>For a complete list of these superior system managers, see Online Appendix Table A2.

<sup>18</sup>In order to observe the pure effects of SPTMs (i.e., a true SPTM with no coaching experience), as a robustness check, we limit our sample to only games involving debriefed head coaches in the league. From this subsample analyses, we find that debriefed SPTMs showed approximately 7.1% greater winning probability than other managers, and in the first season, the role-modeling mechanism was more effective than other mechanisms. Ideally, performing additional analyses with SPTMs without any type of coaching experience (e.g., NBA assistant coaching or experience with another professional league) and NSPTM (including FPTM and NFPTM) without any type of coaching experience would be more effective. While there were 10 SPTMs without any type of coaching experience, there were five FPTMs and zero NFPTMs. We present the results in Online Appendix Table A5.

<sup>19</sup>PER was developed by John Hollinger, vice president of Basketball Operations for the NBA's Memphis Grizzlies and a former analyst and writer for ESPN and Sports Illustrated, PER provides an all-in-one weighted rating of a player's overall contributions per minute, adjusting for the pace of the game and taking into account both successes (e.g., rebounds, assists, blocks, steals, and various types of scoring) and failures (e.g., missed shots, turnovers, and fouls). The fact that a single overall performance metric like PER can be meaningfully applied to basketball players regardless of position supports our earlier point that basketball players take more fluid, generalist roles than players in other sports. Such a universal metric would be impossible in sports with more rigidly specialized roles, such as pitchers, quarterbacks, or goalies.

<sup>20</sup>Rookie players in their first NBA season have no prior NBA performance, so we exclude them from this average.

At the manager level, we control for the manager's NBA tenure and tenure in other leagues, which reflect each head coach's managerial experience. We measure league tenure by counting the years that a manager served as a head coach in the NBA, and other league tenures by counting the years that a manager served as a head coach in foreign or amateur leagues (e.g., Spanish league, NCAA). We also control for the status of each head coach, denoted as the dummy variable *Manager Status*, by measuring whether he had ever previously been named the NBA Coach of the Year. Moreover, in order to control for each head coach's other managerial capabilities, we observe whether each head coach assumed the duty of GM before taking a head coach role in a team. Reflecting the fact that NBA head coaches are frequently fired and hired during the season, we include a dummy variable to indicate whether the head coach was designated with the title of *Interim Manager*. Since we use media coverage to measure two test variables, we also include the total number of media mentions to control for the propensity of media to cover a particular team or coach.<sup>21</sup> Using Factiva, we searched for the head coach's name and the team name, dropped any irrelevant results, and counted the number of remaining articles as our *Media Coverage* control variable.

We also control for a team's idiosyncratic aspiration level that could affect a current head coach's likelihood of being fired. Different teams' owners may have a different levels of tolerance for an underperforming head coach.<sup>22</sup> So, we measure the *GM's Number of Prior In-Season Head Coach Firings*—where “firing” means a truly involuntary separation, not a resignation or retirement.<sup>23</sup> We construct this variable determining whether a GM fired the head coach during the actual playing season itself (in-season firing), under the assumption that GMs who fire head coaches during the season are less tolerant of poor performance. We count every in-season firing for the GM's entire prior career. Kevin McHale, longtime GM for the Minnesota Timberwolves, fired the most coaches in-season, for a total of five. Finally, following previous research on game-level performance in the same context (e.g., Chen & Garg, 2018), we include dummies for season, team, and game number (e.g., 1–82nd game during a regular season) fixed effects.

### 3.6 | Estimation: Multiple empirical methods

To ensure robust results, we use four methods to test our hypotheses. The first two are linear probability model (LPM) and nonlinear model (Probit) since (1) our dependent variable (*winning a game*) is a discrete variable, and (2) to better interpret our coefficients on interaction terms and ensure robustness (e.g., Carnahan, 2017; Wiersema & Bowen, 2009). Additionally, in order to reflect unobservable mutual hiring decisions between SPTMs and teams, our last two methods use a two-stage instrumental variable approaches to correct for any potential biases from such endogeneity, and since our empirical model includes discrete dependent variable and discrete independent variable (SPTM), we adopt two common instrumental variable strategies to estimating causal effects (Angrist & Pischke, 2008; Lambert, 2019): The third method computes maximum-likelihood estimates (MLEs) of a bivariate probit model (Biprobit-MLE) (e.g., Eisensee & Strömberg, 2007; Lambert, 2019; Park & Steensma, 2012). The fourth method

<sup>21</sup>We thank an anonymous reviewer for bringing this point to our attention.

<sup>22</sup>We thank an anonymous reviewer for bringing this point to our attention.

<sup>23</sup>This variable is always set to zero for “duality” cases where the GM is also the head coach, since a GM's “firing” of the coach would then, in effect, be just a voluntary resignation.

disregards the binary structure of our data and presents two-stage least squares (IV-LPM) estimates of a linear model.<sup>24</sup>

So, we develop a first-stage regression with instruments to capture factors on both the demand side and the supply side of the NBA head coach labor market that make an SPTM hiring more likely, with an emphasis on factors that may indicate some complementarity between SPTMs and the teams that hire them. A possible demand-side endogeneity issue is a team's idiosyncratic propensity to hire SPTMs. Some teams may prefer SPTMs more than others, perhaps due to some unobserved complementarity with SPTMs, and this preference may be reflected in a team's history of prior SPTM hiring. For example, the Philadelphia 76ers hired six SPTMs during our sample period, while the Atlanta Hawks hired only one. So, our first instrumental variable is the cumulative number of seasons that SPTMs previously coached the team, and we standardize this variable because older teams have had more prior seasons. We expect that the longer a team has been managed by SPTMs, the more likely it is to hire a new SPTM when replacing its coach.

On the supply side of the labor market, one might assume that working as an NBA head coach is so lucrative and prestigious that any candidate would gladly take the job if it were offered by any team anywhere. However, this assumption is not necessarily valid for SPTM candidates. After all, retired NBA all-stars already have an abundance of wealth and fame, and may therefore be less attracted to the money and prestige of a coaching job. Indeed, many retired NBA all-stars actually spend much of their time giving away their money as philanthropists. For such wealthy men who have already spent years in the limelight, family may be a higher priority than career, which may limit the range of coaching opportunities that they would be willing to accept. Specifically, retired NBA all-stars may be less likely to accept head coach jobs that would require them to relocate away from their families—that is, a geographic complementarity between teams and SPTM candidates with nearby family ties. For example, consider Indiana native Larry Bird, a retired NBA all-star who spent his entire playing career with the Boston Celtics before buying a car dealership in Indiana:

“I left basketball and thought I'd just enjoy helping raise the kids,” he said. “And that was fine. I was a kind of consultant for the Celtics, but they didn't seek me out too much and, frankly, I didn't do them a lot of good, since I was up in Boston only about six days a month... Bird said that the [Indianapolis] Pacers' coaching job was the only one that interested him. He would return to his home state [Indiana], and to a veteran team. Red Auerbach, the crusty old Celtic, said he “can't understand” why Bird took the coaching job, adding: “It's a 15-hour day and travel and responsibility and aggravation and emotional ups and downs. Holy God Almighty, what would he want that for?” (Berkow, 1997).

So, the market for SPTMs may be more geographically constrained than the market for other head coach candidates. Our second instrumental variable measures each team's local supply of potential SPTMs as the number of living retired NBA all-stars who were born in the state

<sup>24</sup>IV-Probit model is proper only when an endogenous independent variable is a continuous variable (see pp. 17–19, Baum, 2013; Baum, Dong, Lewbel, & Yang, 2012; Lambert, 2019). As a robustness check, we additionally perform special regression estimation, which is an alternative empirical strategy to deal with a discrete dependent variable and an endogenous discrete variable (e.g., Baum, 2013; Baum et al., 2012; Dong & Lewbel, 2015), and the result is presented in Online Appendix Table A10, and the result is consistent as shown in Tables 3 and 4, except for Hypothesis (H3).

where the team plays. We expect a positive relationship between this state-level available supply and hiring of SPTMs.<sup>25</sup> Robust standard errors clustered at the team level account for heteroscedasticity and nonindependence of observations in our LPM, Probit, and IV-LPM models, while bootstrapped standard errors are used in bivariate probit models.

## 4 | RESULTS

Table 2 presents the descriptive summary statistics and correlation matrix for the data. We begin our analyses by examining whether an organization managed by a SPTM experiences better performance than organizations managed by other managers. Table 3 presents the results from multiple empirical strategies. The general pattern of results confirms that SPTMs are more likely to experience better winning probability than other managers, under both an LPM specification in Model 1 and a probit specification in Model 2. On average, after controlling for all of the other factors discussed earlier, an organization managed by an SPTM has a 2.6–2.7 percentage point higher winning probability than an organization managed by other managers, supporting the baseline proposition ( $b = 0.026$ ,  $p = .001$  in Model 1;  $b = 0.027$ ,  $p = .001$  in Model 2).<sup>26</sup>

In Table 3, Models 3 and 5 present the first-stage results from bivariate probit model and from IV-LPM. The results indicate that our instrumental variables are meaningful in explaining the presence of SPTMs with a team. As expected, both instruments, the state-level available supply of SPTM candidates and the prior number of seasons managed by SPTMs, are positive ( $b = 0.015$ ,  $p = .014$ ;  $b = 0.051$ ,  $p = .000$  in Model 3;  $b = 0.003$ ,  $p = .005$ ;  $b = 0.132$ ,  $p = .000$  in Model 4).<sup>27</sup> Models 4 and 6 in Table 3 report the second-stage results for bivariate probit model and IV-LPM, respectively. The coefficients on SPTMs are all positive ( $b = 0.031$ ,  $p = .000$  in Model 4;  $b = 0.077$ ,  $p = .008$  in Model 6), indicating that a team managed by an SPTM has a 3.1–7.7 percentage point higher winning probability than an organization managed by other managers. Since bivariate probit models are usually more robust when treatment probabilities approach zero or one than IV-LPM (Basu, Coe, & Chapman, 2017; Chiburis, Das, & Lokshin, 2011), and since the coefficient from bivariate probit is similar to the LPM and probit regression model, we take the average of the three magnitude of coefficients, which is 2.8%.

<sup>25</sup>Note that the type of geographic connection captured by this instrument is different from the geographic connection captured by our test variable for the role-modeling hypothesis. This instrument captures a current connection between the team and a pool of potential SPTMs who have not yet been hired. Our role-modeling test variable captures a past geographic connection between an already-hired coach (who may or may not be a SPTM) and the players on the team, and that past geographic connection may be in a location that is totally different from the city where their team plays. Due to these differences, there is no reason to expect any correlation between these two variables, and indeed this correlation is  $-0.01$ , without any statistical power.

<sup>26</sup>In Model 2 and Table 3, the outcome variable is the result of the nonhierarchical regression model (i.e., probit, bivariate probit), so we take the coefficient in calculating its marginal effects to interpret its economic impact (Hoetker, 2007).

<sup>27</sup>To ensure the validity of the instruments, based on IV-LPM specification, we test for under-identification, weak-identification, and exogeneity of the instruments. The under-identification statistic, Kleibergen-Paap rk LM, results in a  $p$ -value of less than .01, indicating that the instruments have sufficient correlations with the endogenous variable. The Kleibergen-Paap Wald  $F$  statistics for the weak identification test are greater than the 5% maximal IV size Stock-Yogo critical values, confirming the relevance of the instruments (Stock & Yogo, 2005). In addition, the two instrumental variables are found to be exogenous and valid because the Sargan test of overidentifying restriction cannot reject the null hypothesis of instrument exogeneity ( $p = .375$ ).

To put the magnitude of this result into perspective, out of the 24 NBA teams that did not finish the 2015–2016 season as their division's leader, 6 of those teams (25%) would have gained at least one position in the division's rankings (e.g., from fourth place to second place) if they had raised their winning percentage by 2.8 percentage points, and 3 of them (12.5%) would have gained two positions in rank (e.g., from third place to first place). So, although 2.8% may sound relatively small in the context of a single game, nevertheless, in aggregate over an entire season, it is enough to have a substantial effect on a team's overall final standing.<sup>28</sup>

Next, consider the main effects for each proposed mechanism. Hypothesis (H2a) predicts that morale building has a direct effect on organizational performance. In Models 1, 2, 4, and 6, the main-effect coefficients on *Manager Oratory* are positive ( $b = 0.012, p = .086$  in Model 1;  $b = 0.012, p = .096$  in Model 2;  $b = 0.002, p = .007$  in Model 4;  $b = 0.027, p = .000$  in Model 6), indicating that superior morale-building capability positively affects organizational performance. Hypothesis 3a predicts that incentivizing has a direct effect on organizational performance. In Models 1, 2, 4, and 6, the main-effect coefficients of *Manager's GM Influence* cannot be statistically distinguished from zero, indicating that the effectiveness of incentivizing may depend upon each manager's individual characteristics. Hypothesis 5a predicts that collaborative learning environment positively affects organizational performance. In Models 1, 2, 4, and 6, the main-effect coefficients on *Middle Manager Average Tenure* cannot be statistically distinguished from zero, so Hypothesis (H5a) is not supported. Hypothesis (H6a) predicts that idiosyncratic organizing positively affects organizational performance. In Models 1, 2, 4, and 6 all main-effect coefficients of *Manager System* are positive ( $b = 0.040, p = .000$  in Model 1;  $b = 0.042, p = .000$  in Model 2;  $b = 0.004, p = .000$  in Model 4;  $b = 0.032, p = .000$  in Model 6), supporting Hypothesis (H6a).

Table 4 presents the result of LPM and bivariate probit regression with MLE to test our mechanism variables.<sup>29</sup> Models 1 and 7 in Table 4 test the role modeling mechanism of **Hypothesis (H1)**, which predicts that NBA SPTMs improve organizational performance more when they have more players with whom they are geographically connected. The coefficients of the interaction between SPTM and *Geographic Connection* are positive ( $b = 0.021, p = .034$  in Model 1;  $b = 0.002, p = .001$  in Model 7). To better understand interaction effects, we plot the interactions for both SPTMs and other managers, and calculate their marginal effects at the means of all variables, as shown in Table 5. These effects show a very small difference of winning percentage between SPTM and other managers when they are geographically connected to a

<sup>28</sup>Although we controlled for former non-star player managers (FNSM), we additionally checked the possibility that these reported results could be driven by the former player experiences, rather than prior stardom (SPTMs), since merely becoming a player in the NBA is an exceptional achievement that many NBA head coaches lack. So, as shown in Online Appendix Table A8, we conducted additional robustness check to test our hypotheses whether FNSMs are more effective managers than NFPMs, while controlling for SPTMs in the model. Considering that former players would be more attractive than non-former players, we conducted both LPM and bivariate probit specifications with applying two instrumental variables, (1) team's cumulative seasons that managed by FNSMs and (2) seasonal number of FNSMs in the league at the first stage. We replaced our SPTM variable with FNSM and tested the corresponding hypotheses. The results show the main effects disappeared, with no evidence of any performance difference between FNSMs and NFPMs. However, the results show that FNSMs, unlike SPTMs, are more effective in using oratory skills but less effective with more novice employees. Moreover, we conduct subsample analyses by separating into three types of managers (i.e., SPTM vs. FNSM vs. NFPM), respectively. The results are presented in Online Appendix Table A9, and the results show that SPTMs are more effective with geographic connection, manager-GM influence, and more novice employees, while FNSMs are more effective with superior oratory and organizing skills.

<sup>29</sup>Due to page limits, we present the mechanism testing results from probit and IV-LPM in Online Appendix Table A3, and the results are consistent with the results as shown in Tables 3 and 4.

TABLE 2 Descriptive statistics and correlation matrix

Variables	Mean	SD	Min.	Max.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
1. Org. Performance	0.61	0.49	0	1	1																						
2. SPTM	0.22	0.41	0	1	.03	1																					
3. FNSM	0.38	0.49	0	1	-.01	-.42	1																				
4. Employee Quality	13.12	0.97	10.94	15.42	.15	-.01	.05	1																			
5. Employee Age	26.91	1.37	24.24	30.40	.14	.02	.03	.20	1																		
6. Opponent Quality	13.14	0.97	10.94	15.46	-.12	.00	.00	.01	-.02	1																	
7. Opponent Age	26.93	1.39	24.24	30.64	-.16	.03	.00	-.02	.08	.20	1																
8. Manager Tenure	7.74	6.47	1	32	.05	.14	.01	.13	.04	-.01	.00	1															
9. Manager Other Lg Tn	4.86	6.40	0	31	-.01	-.24	-.27	.04	.00	.00	.00	-.02	1														
10. Manager Status	0.24	0.43	0	1	.03	-.05	.05	.07	.09	-.02	-.02	.52	-.08	1													
11. Manager GM Exp.	1.02	3.03	0	23	.02	-.07	.06	.11	-.01	.00	.00	.36	.00	.33	1												
12. Interim Manager	0.06	0.23	0	1	-.07	-.04	-.02	-.09	-.05	.00	.03	-.16	-.03	-.09	.01	1											
13. In-season Firing	0.62	0.94	0	5	-.05	.02	.01	-.06	-.05	-.02	.04	-.06	.00	.02	.10	.22	1										
14. Media Coverage	569	590	0	4,042	.09	.09	.08	.07	.38	-.05	.10	.22	-.05	.27	.04	-.07	.07	1									
15. Geo. Connection	0.81	0.62	0	1.94	-.01	.22	.15	-.02	.04	.00	.04	.03	-.14	-.06	.01	-.05	-.02	.07	1								
16. Oratory Manager	0.17	0.37	0	1	.04	-.08	.16	.02	.11	.00	-.01	.16	-.05	-.03	-.13	-.03	-.08	.05	-.04	1							
17. Manager-GM Inf.	0.27	0.44	0	1	.03	.07	-.03	.09	.09	-.01	.01	-.01	.02	-.03	.30	-.01	.03	.04	.07	-.17	1						
18. Num. of Rookies	0.91	0.55	0	2.19	-.14	.04	-.06	-.22	-.53	.03	-.07	-.11	-.01	-.07	.00	.04	-.06	-.35	-.01	-.10	-.07	1					
19. Mid. Manager Ten.	6.10	2.85	0	18.67	.05	.04	.12	.08	.22	-.04	.03	.18	-.15	.13	-.06	-.05	.03	.43	-.01	-.05	.05	-.24	1				
20. System Manager	0.48	0.50	0	1	.09	-.01	.00	.16	.17	-.02	.00	.38	.15	.23	.18	-.12	-.01	.20	.00	.04	.05	-.22	.21	1			

Note: Observations = 37,780.

Abbreviations: 1. Org. Performance, organizational performance; 2. SPTM, star performer turned manager; 3. FNSM, former non-star player manager; 9. Manager Other Exp., manager other league experiences; 11. Manager GM Exp., manager prior general manager experiences; 15. Geo. Connection, geographic connection; 17. Manager-GM Inf., manager toward general manager influence; 18. Num. of Rookies, number of rookies; 19. Mid. Manager Ten., middle manager tenure.

TABLE 3 Testing baseline hypotheses

Dependent variable	Organizational performance (winning a game)					
	LPM	Probit	Bivariate probit with MLE		IV-LPM	
			1st stage	2nd stage	1st stage	2nd stage
Estimations Specifications Models	1	2	3	4	5	6
Retired Star-Performer at the State-Level			0.015 (.014)		0.003 (.005)	
Team's Cumulative Seasons that Managed by SPTMs			0.051 (.000)		0.132 (.000)	
Employee Quality	0.049 (.000)	0.053 (.000)	0.015 (.207)	0.005 (.000)	0.011 (.000)	0.043 (.000)
Employee Age	0.019 (.000)	0.019 (.000)	-0.025 (.010)	0.002 (.000)	0.005 (.000)	0.025 (.000)
Opponent Quality	-0.044 (.000)	-0.046 (.000)	0.004 (.671)	-0.006 (.000)	-0.000 (.852)	-0.043 (.000)
Opponent Age	-0.050 (.000)	-0.053 (.000)	-0.008 (.269)	-0.006 (.000)	-0.001 (.597)	-0.051 (.000)
Manager League Tenure	-0.000 (.369)	-0.000 (.297)	0.101 (.000)	-0.000 (.624)	0.013 (.000)	-0.001 (.105)
Manager Other League Tenure	-0.002 (.000)	-0.002 (.000)	-0.134 (.000)	-0.000 (.002)	-0.023 (.000)	0.001 (.525)
Manager Status	-0.035 (.000)	-0.037 (.000)	-0.677 (.000)	-0.004 (.001)	-0.089 (.000)	-0.008 (.338)
Manager Prior GM Experience	0.003 (.001)	0.003 (.001)	-0.089 (.000)	0.000 (.003)	-0.018 (.000)	0.004 (.002)
Interim Manager	-0.061 (.000)	-0.061 (.000)	-0.073 (.083)	-0.007 (.000)	-0.053 (.000)	-0.071 (.000)
In-Season Firing	-0.013 (.000)	-0.014 (.000)	0.237 (.000)	-0.001 (.069)	0.038 (.000)	-0.015 (.000)
Media Coverage	0.000 (.000)	0.000 (.000)	0.000 (.000)	0.000 (.000)	0.001 (.000)	0.000 (.001)
Geographic Connection	-0.010 (.017)	-0.012 (.009)	0.604 (.209)	-0.001 (.029)	0.147 (.158)	-0.018 (.020)
Manager Oratory	0.012 (.086)	0.012 (.096)	-0.598 (.000)	0.002 (.007)	-0.138 (.004)	0.027 (.000)
Manager-GM Influence	0.009 (.115)	0.009 (.136)	0.190 (.000)	0.002 (.121)	0.059 (.000)	0.010 (.141)
Novice Employees	-0.087 (.000)	-0.091 (.000)	0.216 (.000)	-0.011 (.000)	0.064 (.000)	-0.070 (.000)
Middle Manager Average Tenure	0.001 (.373)	0.001 (.305)	-0.064 (.000)	-0.001 (.537)	-0.004 (.000)	-0.005 (.273)

TABLE 3 (Continued)

Dependent variable	Organizational performance (winning a game)					
	LPM	Probit	Bivariate probit with MLE		IV-LPM	
			1st stage	2nd stage	1st stage	2nd stage
Estimations Specifications Models	1	2	3	4	5	6
Manager System	0.040 (.000)	0.042 (.000)	-0.048 (.065)	0.004 (.000)	-0.007 (.051)	0.032 (.000)
Former Non-Star Player Manager (FNSM)	-0.016 (.016)	-0.014 (.032)	-13.089 (.000)	-0.002 (.018)	-0.423 (.000)	0.019 (.329)
Star Performer Turned Manager (SPTM)	0.026 (.001)	0.027 (.001)		0.031 (.000)		0.077 (.008)
Season/Team/Game Number FE	Included	Included	Included	Included	Included	Included
Constant	1.404 (.000)	2.389 (.000)	-1.485 (.000)	-0.846 (.000)	-0.103 (.077)	1.377 (.000)
Observations	37,780	37,780	37,780	37,780	37,780	37,780
R <sup>2</sup>  Log-likelihood	0.089	0.071		-40,253.1		0.084
Kleibergen-Paap LM Stat.						F = 42.998***
Weak Identification Test						21.7 > 19.9
Sargan Test (p-value)						.3750

Note: p-value in the parentheses. Robust standard errors clustered at the team level in Model 1, 2, 5, and 6. Bootstrapped standard errors in Models 3 and 4. In nonlinear specifications (Models 2 and 4), coefficients for discrete variables are marginal coefficients. Adjusted R<sup>2</sup> in Models 1 and 6, Pseudo R<sup>2</sup> in Model 2. \*\*\*p < 0.001.

Abbreviations: FE, fixed effects dummies; LPM, linear probability model.

smaller number of players (0.619 for SPTMs vs. 0.627 for others), but a much bigger difference when they are geographically connected to a larger number of players (0.631 for SPTMs vs. 0.595 for others). Figure 1 illustrates that when the number of geographically connected players increases from 1 standard deviation (SD) below the mean to 1 SD above the mean, SPTMs experience a 0.63% *improvement* in organizational performance while other managers experience a 3.87% *reduction* in organizational performance.<sup>30</sup>

<sup>30</sup>Determining whether SPTMs have any effect on geographically unconnected players—that is, whether their effect is purely on geographically connected players—would require analysis of the performance of individual players. Ideally, it would require comparing the performances of geographically connected and unconnected players on the same team in the same game, which would be complicated in a sport like basketball where coordinated teamwork is so essential to success (as opposed, say, to baseball, where teamwork plays a relatively less important role). In any case, we do not conduct a player-level performance analysis because our focus is on team performance. Nevertheless, as a substitute, we conducted a subsample analysis in which we re-test our Hypothesis 1 on a subsample that includes only teams with zero geographic connections between the coach and his players, which eliminated roughly two-thirds of the observations from the full sample. The results of this subsample analysis, shown in the right-side column of Online Appendix Table A7, still show a positive coefficient for the SPTM dummy but with slightly reduced statistical power (p = .061). It is difficult to interpret this reduction in statistical power because part of it is simply a result of losing statistical power due to eliminating two-thirds of the observations from the sample, so we cannot easily say how much would be due to a change in the coefficient value itself.

TABLE 4 Testing hypotheses 1–6

Dependent variable	Organizational performance (winning a game)													
	Linear probability model													
	Estimations						Bivariate probit with MLE							
Hypotheses Models	<b>H1</b> 1	<b>H2</b> 2	<b>H3</b> 3	<b>H4</b> 4	<b>H5</b> 5	<b>H6</b> 6	Full 7	<b>H1</b> 8	<b>H2</b> 9	<b>H3</b> 10	<b>H4</b> 11	<b>H5</b> 12	<b>H6</b> 13	Full 14
Employee Quality	0.042 (.000)	0.041 (.000)	0.041 (.000)	0.041 (.000)	0.041 (.000)	0.041 (.000)	0.125 (.000)	0.118 (.000)	0.118 (.000)	0.118 (.000)	0.118 (.000)	0.117 (.000)	0.126 (.000)	
Employee Age	0.025 (.000)	0.020 (.000)	0.019 (.000)	0.020 (.000)	0.020 (.000)	0.020 (.000)	0.072 (.000)	0.056 (.000)	0.055 (.000)	0.056 (.000)	0.056 (.000)	0.056 (.000)	0.072 (.000)	
Opponent Quality	-0.042 (.000)	-0.045 (.000)	-0.045 (.000)	-0.045 (.000)	-0.045 (.000)	-0.045 (.000)	-0.120 (.000)	-0.126 (.000)	-0.126 (.000)	-0.126 (.000)	-0.126 (.000)	-0.126 (.000)	-0.120 (.000)	
Opponent Age	-0.052 (.000)	-0.049 (.000)	-0.049 (.000)	-0.049 (.000)	-0.049 (.000)	-0.049 (.000)	-0.142 (.000)	-0.138 (.000)	-0.138 (.000)	-0.138 (.000)	-0.138 (.000)	-0.138 (.000)	-0.141 (.000)	
Manager League Tenure	-0.000 (.463)	0.000 (.675)	0.000 (.910)	0.000 (.867)	0.000 (.909)	0.000 (.707)	-0.004 (.014)	-0.002 (.182)	-0.002 (.152)	-0.003 (.168)	-0.003 (.194)	-0.003 (.203)	-0.004 (.031)	
Manager Other League Tenure	-0.002 (.000)	-0.002 (.000)	-0.002 (.000)	-0.002 (.000)	-0.002 (.000)	-0.002 (.000)	0.001 (.676)	-0.002 (.178)	-0.002 (.147)	-0.002 (.213)	-0.002 (.120)	-0.002 (.167)	-0.002 (.602)	
Manager Status	-0.021 (.004)	-0.031 (.000)	-0.031 (.000)	-0.031 (.000)	-0.031 (.000)	-0.031 (.000)	-0.026 (.321)	-0.025 (.006)	-0.025 (.003)	-0.025 (.003)	-0.025 (.005)	-0.025 (.009)	-0.025 (.276)	
Manager Prior GM Experience	0.003 (.007)	0.003 (.008)	0.003 (.005)	0.003 (.014)	0.003 (.011)	0.003 (.020)	0.012 (.004)	0.012 (.001)	0.011 (.001)	0.011 (.001)	0.010 (.001)	0.010 (.004)	0.015 (.004)	
Interim Manager	-0.074 (.000)	-0.063 (.000)	-0.066 (.000)	-0.063 (.000)	-0.064 (.000)	-0.063 (.000)	-0.065 (.321)	-0.013 (.006)	-0.013 (.006)	-0.022 (.003)	-0.022 (.005)	-0.022 (.009)	-0.189 (.000)	
In-Season Firing	-0.020 (.000)	-0.005 (.004)	-0.004 (.115)	-0.005 (.178)	-0.005 (.099)	-0.004 (.196)	-0.025 (.006)	-0.022 (.021)	-0.022 (.029)	-0.022 (.020)	-0.022 (.008)	-0.023 (.008)	-0.041 (.000)	

TABLE 4 (Continued)

Dependent variable	Organizational performance (winning a game)													
	Linear probability model													
Estimations	H1	H2	H3	H4	H5	H6	Full	H1	H2	H3	H4	H5	H6	Full
Hypotheses Models	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Media Coverage	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Geographic Connection	-0.019	0.000	-0.000	-0.001	0.000	0.000	-0.005	-0.029	-0.001	-0.003	-0.005	-0.003	-0.002	-0.029
	(.000)	(.956)	(.962)	(.820)	(.998)	(.977)	(.374)	(.018)	(.913)	(.768)	(.685)	(.848)	(.873)	(.035)
Manager Oratory	0.021	0.025	0.019	0.018	0.018	0.019	0.023	0.063	0.071	0.049	0.046	0.048	0.050	0.081
	(.003)	(.003)	(.016)	(.024)	(.020)	(.017)	(.006)	(.006)	(.002)	(.060)	(.038)	(.041)	(.019)	(.000)
Manager-GM Influence	0.011	0.015	0.007	0.016	0.016	0.016	0.007	0.001	0.001	0.000	0.001	0.001	0.001	0.006
	(.167)	(.121)	(.331)	(.111)	(.111)	(.113)	(.362)	(.160)	(.138)	(.440)	(.117)	(.115)	(.159)	(.754)
Novice Employees	-0.063	-0.087	-0.087	-0.095	-0.087	-0.087	-0.097	-0.190	-0.245	-0.245	-0.268	-0.244	-0.244	-0.221
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Middle Manager Average Tenure	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.015	-0.003	-0.002	-0.003	-0.003	-0.003	-0.014
	(.502)	(.535)	(.620)	(.531)	(.455)	(.485)	(.354)	(.524)	(.365)	(.534)	(.395)	(.480)	(.440)	(.000)
Manager System	0.036	0.039	0.037	0.036	0.037	-0.015	0.036	0.087	0.108	0.104	0.099	0.103	0.113	0.072
	(.000)	(.000)	(.000)	(.000)	(.000)	(.303)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.081)
Former Non-Star Player Manager (FNSM)	-0.020	-0.018	-0.017	-0.017	-0.016	-0.016	-0.017	-0.001	-0.001	-0.002	-0.002	-0.002	-0.002	-0.056
	(.002)	(.009)	(.011)	(.013)	(.017)	(.017)	(.011)	(.018)	(.008)	(.033)	(.061)	(.068)	(.048)	(.003)
Star Performer Turned Manager (SPTM)	0.004	0.020	0.005	0.023	0.009	0.022	0.062	0.006	0.009	0.010	0.008	0.012	0.011	0.135
	(.729)	(.018)	(.555)	(.077)	(.584)	(.040)	(.017)	(.004)	(.000)	(.021)	(.143)	(.025)	(.002)	(.224)

TABLE 4 (Continued)

Dependent variable	Estimations	Organizational performance (winning a game)												
		Linear probability model						Bivariate probit with MLE						
Hypotheses Models	H1	H2	H3	H4	H5	H6	Full	H1	H2	H3	H4	H5	H6	Full
SPTM × Geographic Connection	0.021 (.034)						0.020 (.042)	0.002 (.011)					0.068 (.035)	
SPTM × Manager Oratory		-0.052 (.013)					-0.006 (.076)		-0.004 (.001)				-0.167 (.003)	
SPTM × Manager-GM Influence			0.033 (.020)				0.008 (.021)			0.003 (.017)			0.096 (.011)	
SPTM × Novice Employees				0.040 (.000)			0.020 (.000)			0.004 (.000)			0.138 (.000)	
SPTM × Middle Manager Avg. Tenure					0.001 (.644)		0.007 (.317)				-0.001 (.846)		-0.000 (.956)	
SPTM × Manager System						-0.015 (.303)	0.001 (.771)					0.001 (.282)	0.073 (.181)	
Season/Team/Game	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	
FE														
Constant	1.279 (.000)	1.533 (.000)	1.537 (.000)	1.537 (.000)	1.527 (.000)	1.529 (.000)	1.571 (.000)	2.139 (.000)	2.400 (.000)	2.451 (.000)	2.422 (.000)	2.435 (.000)	2.427 (.000)	
Observations	37,780	37,780	37,780	37,780	37,780	37,780	37,780	37,780	37,780	37,780	37,780	37,780	37,780	
Adj. $R^2$  log likelihood	0.096	0.096	0.096	0.096	0.096	0.096	0.100	-36,462.6	-36,462.2	-37,350.4	-37,344.4	-37,353.1	-37,352.9	
													-36,446.6	

Note:  $p$ -value in the parentheses. Robust standard errors clustered at the team-level in Models 1–6. Bootstrapped standard errors in Models 7–12.

Abbreviations: FE, fixed effects dummies; GM, general manager.

TABLE 5 Summary of marginal effects for hypotheses

<b>Direct effects (baseline proposition)</b>		<b>Margins</b>	<b>Delta-method SE</b>	<b>95% confidence interval</b>	
SPTMs		0.625	0.007	0.611	
Other managers		0.609	0.003	0.604	
<i>Marginal effects</i>		2.63%			
<b>Hypothesis (H1)</b>	<b>Geographic connection (GEO)</b>	<b>Margins</b>	<b>Delta-method SE</b>	<b>95% confidence interval</b>	
Fewer GEO with SPTM		0.627	0.010	0.601	0.647
More GEO with SPTM		0.631	0.007	0.616	0.644
Fewer GEO with other managers		0.619	0.004	0.612	0.626
More GEO with other managers		0.595	0.004	0.586	0.604
<i>Marginal effects for each SPTM and other manager (from fewer GEO to more GEO)</i>					
ΔSPTMs			0.63%		
Δother managers			−3.87%		
<b>Hypothesis (H2)</b>	<b>Manager oratory</b>	<b>Margins</b>	<b>Delta-method SE</b>	<b>95% confidence interval</b>	
Inferior oratory skills with SPTM		0.622	0.009	0.603	0.641
Superior oratory skills with SPTM		0.627	0.027	0.609	0.646
Inferior oratory skills with other managers		0.588	0.004	0.580	0.596
Superior oratory skills with other managers		0.618	0.008	0.610	0.626
<i>Marginal effects for each SPTM and other manager (from inferior to superior oratory skills)</i>					
ΔSPTMs			0.80%		
Δother managers			5.10%		
<b>Hypothesis (H3)</b>	<b>GM influence</b>	<b>Margins</b>	<b>Delta-method SE</b>	<b>95% confidence interval</b>	
Absence GM influence with SPTM		0.614	0.004	0.602	0.627
Presence GM influence with SPTM		0.653	0.008	0.632	0.674
Absence GM influence with other managers		0.608	0.006	0.600	0.614
Presence GM influence with other managers		0.613	0.007	0.597	0.629
<i>Marginal effects for each SPTM and other manager (from absence to presence GM influence)</i>					
ΔSPTMs			6.35%		
Δother managers			0.82%		
<b>Hypothesis (H4)</b>	<b>Number of rookies</b>	<b>Margins</b>	<b>Delta-method SE</b>	<b>95% confidence interval</b>	
Fewer rookies with SPTM		0.643	0.010	0.622	0.662
More rookies with SPTM		0.585	0.010	0.564	0.606
Fewer rookies with other managers		0.637	0.004	0.628	0.646
More rookies with other managers		0.532	0.005	0.521	0.543
<i>Marginal effects for each SPTM and other manager (from fewer to more rookies)</i>					
ΔSPTM			−9.02%		
Δother managers			−19.73%		

Note: All margins are calculated at the means of every variable with robust standard errors clustered at the team level.

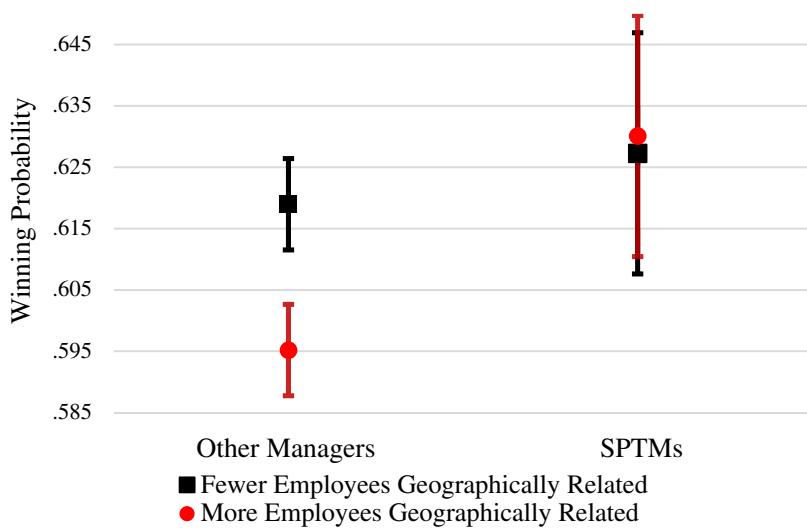


FIGURE 1 Interaction effect of star-performers-turned-manager (SPTM) with geographic connection

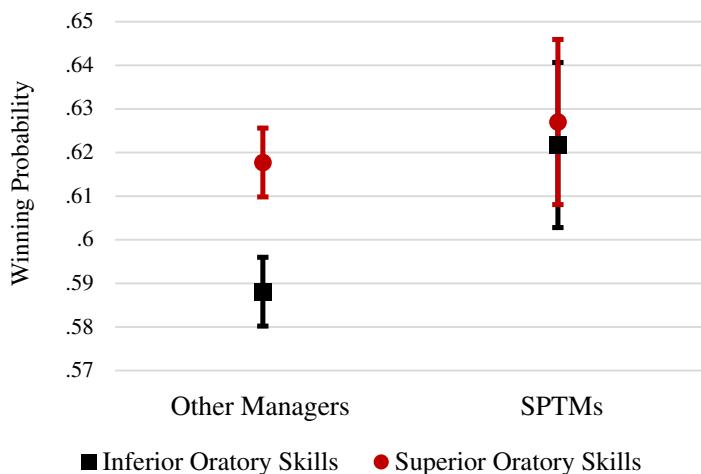
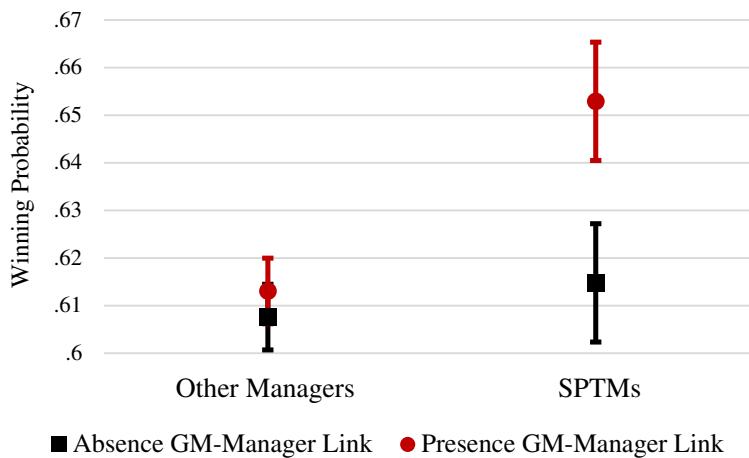
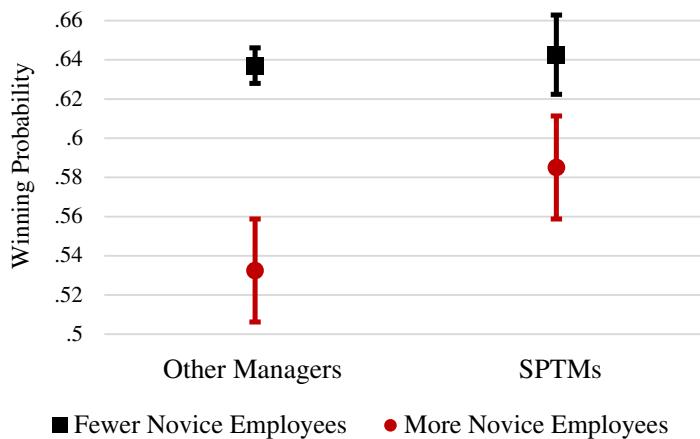


FIGURE 2 Interaction effect of star-performers-turned-manager (SPTM) with manager oratory

Hypothesis (H2b) predicts that SPTMs may be more effective at morale building, as measured by the interaction between *SPTM* and *Manager Oratory*. The coefficients of the interaction effects in Models 2 and 8 are negative ( $b = -0.052$ ,  $p = .013$  in Model 2;  $b = -0.004$ ,  $p = .001$  in Model 8). As a possible interpretation of this unexpected contrary result, we conjecture that an SPTM's prior stardom may already be such a strong motivation for subordinates to do their best that oratory cannot motivate them to do any better (i.e., substitution), or that non-SPTMs do their best to develop the managerial skills in order to compensate their lack of stardom. The marginal effects regarding Hypothesis (H2b) in Table 5 and Figure 2 show that superior oratory skills improve performance by only 0.8% for SPTMs, but by 5.1% for other managers.



**FIGURE 3** Interaction effect of star-performers-turned-manager (SPTM) with manager's general manager (GM) influence



**FIGURE 4** Interaction effect of star-performers-turned-manager (SPTM) with novice employees

Hypothesis (H3b) predicts that SPTMs may be more effective at incentivizing than other managers, as measured by the interaction between *SPTM* and *GM Influence*, whose coefficient is positive in Models 3 and 8 ( $b = 0.033, p = .020$  in Model 3;  $b = 0.003, p = .017$  in Model 8). Marginal effects in Table 5 and Figure 3 show that GM influence improves performance by 6.35% for SPTMs, but by only 0.82% for other managers.

Hypothesis (H4) predicts that SPTMs may improve organizational performance via training as measured by the interaction between the SPTM and number of novice subordinates, since their skills are initially inferior to experienced subordinates. The coefficients of the interaction effects in Models 4 and 10 are positive ( $b = 0.040, p = .000$  in Model 4;  $b = 0.004, p = .000$  in Model 10), supporting Hypothesis (H4). The marginal effects in Table 5 show that increasing the number of rookie players reduces performance by 19.73% for other managers, but only reduces performance by 9.02% for SPTMs. Figure 4 shows almost no difference between SPTMs and other managers when they have only a few rookie players (0.643 for SPTM vs. 0.637 for

other managers), but a much larger difference when they have a larger number of rookie players.

Hypothesis (H5b) predicts that SPTMs may improve performance via shaping collaborative learning environment, as measured by the interaction between the SPTM and middle manager experience variables. In Models 5 and 11, we find no evidence supporting Hypothesis (H5b). A possible NBA-specific interpretation of this nonresult is that SPTMs may not understand the role of an assistant coach because SPTMs are less likely than other head coaches to have previously held assistant coach jobs themselves; the average length of assistant coaching career is 2.8 seasons for SPTMs but 5.2 seasons for other managers.

Hypothesis (H6b) predicts that SPTMs may be better than other managers at idiosyncratic organizing, as measured by the interaction between *SPTM* and *Manager System*. In Models 6 and 12, we find no evidence supporting Hypothesis (H6b). As a possible interpretation of this result, if skill at idiosyncratic organizing is developed through experience, it may depend upon having prior experience as a head coach, and the average length of prior head coaching career in other leagues (e.g., international leagues) upon debuting as an NBA head coach is 5.8 seasons for non-SPTMs, but less than one season (0.69) for SPTMs.

## 5 | DISCUSSION AND CONCLUSION

In this article, we introduce the concept of a star-performer turned manager (SPTM) as a new concept for strategic human capital research, and as a phenomenon that merits further study because it is already known to be of substantial interest and practical relevance to managers (Adler, 1996; McKee, 2015). Specifically, we consider how a manager's prior performance as a subordinate can affect overall organizational performance by developing a six-category typology of different causal mechanisms via which an SPTM may generate a competitive advantage. We test all of these mechanisms in the empirical context of NBA head coaches, using multiple empirical strategies to control for endogeneity while accommodating the discrete nature of our measures. Our statistical results indicate that SPTMs in the NBA have a positive effect on team performance that is large enough to have real practical relevance. In addition, the empirical analysis supports the hypotheses that parts of this SPTM effect occur via the causal mechanisms of role modeling, incentivizing, and training, but finds no evidence that the mechanisms of morale building, collaborative learning environment, and organizing play a role in explaining the success of SPTMs. So, this study contributes to understanding the effects of stars on organizational performance by highlighting ongoing roles that they can continue to play even after becoming managers.

The results have practical managerial implications for human capital recruitment by beginning to answer questions like: What kinds of former star employees are most effective as managers? What kinds of employees should be hired to work under SPTMs versus other managers? What kinds of organizations benefit the most from hiring SPTMs versus other managers? For example, our results suggest that SPTMs can be more effective as managers of employees who have themselves directly witnessed the manager's prior star-level performance. Likewise, the results indicate that SPTMs are more effective in organizations where managers have authority to fire subordinates—and conversely, that giving a manager the authority to fire subordinates is more beneficial when that manager is a former star. Also, SPTMs can be more effective than other managers when supervising novice employees. Our results also have implications for non-SPTMs as well, since even non-SPTMs can be more effective than SPTMs in terms of

performance benefits from morale-building and from organizing. Thus, oratorical and strategizing skills may be more relevant for non-SPTMs to develop, and more important selection criteria for organizations hiring non-SPTMs.

Our study addresses the question of whether SPTMs perform better than other managers, which is distinct from the question (which we do not address) of whether organizations with a practice of promoting their own star performers into management positions perform better than other organizations.<sup>31</sup> Nevertheless, our study can still suggest some potential implications for tournament theory, which deals with such performance-based promotion practices (e.g., Connelly, Tihanyi, Crook, & Gangloff, 2014; Lazear & Rosen, 1981). For example, our role modeling results indicate that the SPTM's stellar past performance has little impact on organizational performance if it was not visible to subordinates, which suggests that performance-based promotion practices can be more effective when accompanied by practices to ensure that subordinates fully understand and appreciate their manager's past performance. Our results also suggest that organizations with performance-based promotion practices may benefit from giving new managers extra preparation for the roles they will play in training inexperienced subordinates and in setting incentives.

## 5.1 | Caveats, limitations, and future research opportunities

Like all studies, the limitations of this study can offer opportunities for future research. Perhaps the most obvious limitation of this study is the generalizability of its results. In this regard, the professional sports context is a double-edged sword. While this context provides data at a level of transparency and specificity that is generally unavailable elsewhere, professional sports teams also clearly differ from other organizations in numerous ways that may severely limit the relevance of our results to other industries. For example, with a total of fewer than 25 players and coaches combined, an NBA team is a fairly small and simple organization, with a single purpose and no diversification. Also, the zero-sum, winner-take-it-all nature of sports competition (e.g., Yanadori & Cui, 2013) is different from many industries. Furthermore, the fact that NBA players and coaches do much of their work in public and are subject to intense press scrutiny is also quite unusual. In addition, unlike many industries, NBA teams do not promote players to coach simply to provide a motivational career ladder. For these reasons, it will be valuable to compare our findings to future research in other settings.

This study highlights the importance of role modeling as a mechanism by which SPTMs affect organizational performance, but its measurement of this effect is indirect and coarse-grained, based on geographic connections between employees and their manager. It would be useful for future research to measure role model effects in a more direct and fine-grained way, perhaps through interviews or surveys of employees, in order to capture their actual thoughts and feelings about their manager, and thereby measure the degree to which they view their manager as a role model. Similarly, although our results indicate the importance of the incentivizing mechanism, our proxy for this effect is also indirect and coarse-grained, so better measures of incentivizing would also be an improvement for future research. In addition, although

<sup>31</sup>In part, this distinction is by necessity, since NBA teams do not have a policy of promoting their own star players directly into head coach jobs—at least not during the time period of our study. During our sample period, about half of the SPTMs coached one of the teams that they had played for, but in all of these cases, their hiring as coach was at least a year after the last game they played for that team, and usually after they had retired from playing.

morale-building and organizing mechanisms do not support our hypotheses, we acknowledge that searching media reports may not be the ideal way to measure these mechanisms. In order to better and more fully answer our research questions, it would be important for future studies to find more precise measures for all of the mechanisms in Table 1, and perhaps others as well, so that their relative strengths could be compared and so that any interactions between them could be captured.

Finally, although this study has focused on organizational performance as its dependent variable, it would also be useful to understand the effects of SPTMs on other outcomes as well. For example: Are SPTMs more susceptible to the kind of hubris or overconfidence that has been shown to affect organizational risk-taking and other strategic actions (e.g., Hayward & Hambrick, 1997; Malmendier & Tate, 2005; Malmendier & Tate, 2008)? What is the relationship between SPTMs and phenomena like charisma, narcissism, and further transformational leadership (e.g., Chatterjee & Hambrick, 2007; Dvir, Eden, Avolio, & Shamir, 2002)? A fuller understanding of the SPTM phenomenon would have to consider all of its effects.

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## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the first author upon reasonable request.

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