How Executive SHRM System Links to Firm Performance: The Perspectives of Upper Echelon and Competitive Dynamics†

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This study adopts the upper echelon and competitive dynamics perspectives to investigate the mechanisms by which strategic human resource management (SHRM) can create a competitive advantage for a firm. Top management team (TMT) social integration and action aggressiveness are identified as internal-oriented and external-oriented capabilities, respectively, for a teamwork-oriented executive SHRM system to support in enhancing firm performance. Structural equation modeling is performed to test hypothesized relationships. Statistical results demonstrate TMT social integration and action aggressiveness in sequence partially mediate the relationship of an executive SHRM system and firm performance. Action aggressiveness partially mediates the relationship of TMT social integration and firm performance. This study provides further insights into the SHRM, upper echelon, and competitive dynamics perspectives. The research findings also serve to remind top executives to remain alert in developing a set of teamwork-focused executive SHRM practices, building an integrated team, and proactively shaping competitive actions to outperform rivals.

Keywords: *strategic human resource management; top management team; competitive dynamics; social integration*

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Introduction

Strategic human resource management (SHRM) is considered to be a source of competitive advantage for a firm (Wright, Dunford, & Snell, 2001). However, few studies have investigated how and why SHRM may create an advantage in a competitive environment. Identifying the capabilities or mechanisms by which SHRM promotes firm performance is worthwhile (Becker & Huselid, 2006; Wright et al., 2001).

Furthermore, extant literature tends to examine rank-and-file SHRM systems and ignore the significant effects that an executive-focused SHRM system may exert on firm outcomes (cf. Lepak & Snell, 1999). In contrast to organization-wide SHRM systems, executive SHRM systems are directly related to strategic decision makers and thus may produce relatively extensive effects on firm strategic and financial results (Collins & Clark, 2003; Martell & Carroll, 1995). The investigation of an executive SHRM system therefore becomes imperative.

The upper echelon perspective argues that an organization's strategic choices and subsequent outcomes are reflections of the characteristics of its top executives, and especially its top management team (TMT; Hambrick & Mason, 1984). Because TMT social integration is a critical organizational capability (Barney, 1991) and has the essential elements of a strategic asset (Michalisin, Karau, & Tangpang, 2004; Smith et al., 1994), TMT social integration may be a crucial mechanism through which an executive SHRM system advances a firm's competitive benefits.

Moreover, the core theme of the upper echelon perspective focuses on "the portrayal of upper echelon characteristics as determinants of strategic choice, and through these choices, of organizational performance" (Hambrick & Mason, 1984, p. 197). Investigation into the role of strategic choice in the relationship between TMT characteristics and firm performance, a neglected issue in research, may identify insightful implications. In this study, the competitive dynamics perspective (Chen, Smith, & Grimm, 1992) is utilized to elucidate the role of action aggressiveness—a critical strategic choice—in the relationship between TMT social integration and firm performance.

In summary, this study employs the upper echelon perspective (Hambrick & Mason, 1984) and the competitive dynamics perspective (Chen et al., 1992; Smith, Grimm, & Gannon, 1992) to peer into the "black box" (Collins & Clark, 2003) between an executive SHRM system and organizational outcome. TMT social integration and action aggressiveness are, respectively, identified as inward-focused and outward-oriented organizational capabilities (cf. Teece, Pisano, & Shuen, 1997). A specific executive SHRM system is shown to advance firm performance by sequentially facilitating TMT social integration and then enhancing action aggressiveness. Little literature is focused on the effects of SHRM on top executives (Collins & Clark, 2003) and strategic competitive behavior (Gardner, 2005), despite the fact that these issues are central to real-world competition. The linkage between TMT characteristics and strategic competitive behavior also leaves much to be examined. Findings in this study therefore advance the SHRM perspective as well as the well-recognized upper echelon and competitive dynamics perspectives and provide significant insights for business executives.

Theoretical Background and Hypotheses

The Executive SHRM System as a Source of Competitive Advantage

Resource-based theory (Barney, 1991) argues that a firm with valuable, rare, inimitable, and nonsubstitutable resources can gain a competitive advantage. Because a well-established SHRM system has the characteristics of causal ambiguity and social complexity (Becker & Gerhart, 1996), it can enhance a firm's likelihood of being successful in competition (Wright & Boswell, 2002; Wright et al., 2001). Empirical studies have provided promising evidence with respect to the positive effects of SHRM on the performance of manufacturing firms (Huselid, Jackson, & Schuler, 1997), service firms (Huselid, 1995), nonprofit organizations (Delaney & Huselid, 1996), and state-owned enterprises (Harel & Tzafrir, 1999). Thus, SHRM indeed plays a central role in promoting a firm's competitive advantage.

However, the direct relationship between SHRM and firm performance has encountered significant criticism (e.g., Wright et al., 2001) and has been considered untenable in business practice (cf. Baldwin & Danielson, 2002). Scholars suggest that SHRM should develop generic organizational capabilities that support strategic initiatives to outperform competitors (Wright & Snell, 1998). Specifically, SHRM should first seek to elicit employee behaviors and capabilities so as to benefit a firm's competitive advantage (Collins & Clark, 2003). A number of studies thereby endeavor to open the black box between SHRM and firm performance (see Becker & Huselid, 2006, for a summary). Identifying the intervening capabilities through which SHRM fosters firm benefits can increase the theoretical contributions of the SHRM perspective and improve its applicability to real-world practices (Wright et al., 2001).

Furthermore, a firm's TMT is responsible for business decisions and actions (Hambrick, 1995); TMT members interact to shape strategies that improve firm efficiency and effectiveness and thus reveal their value and uniqueness to a particular firm (Lepak & Snell, 1999). Identifying an executive SHRM system for top management thus becomes valuable for motivating the TMT to cultivate organization-focused involvements and translate such relationships into exceptional performance (Lepak & Snell, 1999, 2002). Nonetheless, research has seldom differentiated between different types of human capital in a firm, and the "dominant coalition" in a firm is generally not the focus of SHRM literature (Flood, Smith, & Derfus, 1996).

Of the few studies investigating executive SHRM, most focus on the design of incentive-based compensation and governance mechanisms in resolving "might-be" agency problems (Eisenhardt, 1989a). Few studies have analyzed the effects of a set of executive SHRM practices (i.e., executive SHRM system) that encompassed compensation, recruitment and selection, training, performance appraisal, and climate building (Collins & Clark, 2003). However, as compared to a single SHRM practice such as compensation, an SHRM system is relatively hard to imitate (Lado & Wilson, 1994; Wright, McMahan, & McWilliams, 1994). SHRM systems also support the organizational capabilities and employee behavior required to advance the firm's competitiveness (Wright et al., 2001). Therefore, this study investigates how a specific executive SHRM system facilitates firm TMT social integration.

Unlike some studies that were concerned with the interplay between strategy and SHRM (Wright & Snell, 1998), this study highlights how an executive SHRM system directly

supports TMT behavior/capability, regardless of the content/type of firm strategy (Collins & Clark, 2003). The focus on the unqualified relationship of SHRM and TMT characteristics is critical as an executive SHRM system directly impacts strategy initiators (Collins & Clark, 2003) and thus shapes the navigation of the competitive landscape (Ferrier, 2001; Hambrick, Cho, & Chen, 1996).

Executive SHRM System and TMT Social Integration

Social integration assesses the degree of psychological attachments among team members (O'Reilly, Caldwell, & Barnett, 1989). Social integration is a team-level (O'Reilly et al., 1989) and multidimensional global construct (Simsek, Veiga, Lubatkin, & Dino, 2005) and has been identified as critical when predicting team behavior (Ensley & Pearce, 2001) and team outcomes (Smith et al., 1994). Studies show that a socially integrated team reduces turnover (O'Reilly et al., 1989) and promotes focus on task-oriented issues (Cyert & March, 1963). TMT social integration can also be considered a strategic asset and thereby foster firm competitiveness (Smith et al., 1994). Thus, in line with the behavioral perspective (Wright & McMahan, 1992), which asserted the role of SHRM in eliciting employees' required role behavior, and the contention that "HR practices can create value for a firm when the individual practices are aligned to develop critical resources or competencies" (Collins & Clark, 2003, p. 742), establishing a set of specific executive SHRM practices that support TMT social integration is warranted (Snell, Youndt, & Wright, 1996). Indeed, research has argued that HR practices are the primary means for promoting social relationships among employees (Leana & Van Buren, 1999).

Team composition affects team interactions (Smith et al., 1994). Thus, the selection of executives may underline candidates' communication skills (Finkelstein & Hambrick, 1996), teamwork ability (Klismoski & Jones, 1995; Stevens & Campion, 1999), broad experiences, and global vision (Jones & George, 1998). Adopting "make" rather than "buy" promotion practices also increases team members' interpersonal attachments (Quarles, 1994).

Compensation packages have been an important issue in corporate governance research. Incentive pay promotes principal-agent compatibility and thus reduces agency problems (Eisenhardt, 1989a). Variable pay enhances executive motivation and goals, which in turn influence individual and team behavior (Gomez-Mejia & Balkin, 1992; Locke & Latham, 1990). Rewards based on both team and individual performance rather than solely on individual performance can facilitate team cooperation (Wageman & Baker, 1997). High pay levels motivate executives to remain at a firm (Huang, Lin, & Chuang, 2006), thereby increasing mutual understanding. Higher pay also attracts superior human capital, which in turn advances team capability (Carpenter & Sanders, 2004). Conversely, perceived pay unfairness destroys team cohesiveness (Offstein & Gnyawali, 2005).

Performance appraisal is essential in an executive SHRM system (Martell & Carroll, 1995). Clearly specified evaluation criteria (Poon, 2004) that highlight cross-functional support (Lepak & Snell, 2002) can reduce team disputes and enhance team integration (Eisenhardt & Bourgeois, 1988). Constructive appraisal feedback promotes positive employee attitudes and commitment (Bannister & Balkin, 1990).

Trainings typically promote the knowledge, skill, and ability (KSA) required for effective teamwork (Stevens & Campion, 1994) and thereby avoid depreciation of human capital (Lepak & Snell, 1999). Communication and problem-solving trainings help facilitate the internal networking of TMT members (Collins & Clark, 2003). Off-the-job informal activities improve TMT social interactions (Smith et al., 1994). Cross-professional trainings increase the breadth of individual cognitive bases and facilitate team trust and effectiveness (Marks, Sabella, Burke, & Zaccaro, 2002). The development of cross-functional projects also increases the frequency of interactions and the degree of task interdependence, enhancing TMT's collaboration (Van der Vegt, Emans, & Vliert, 2001).

Team climate affects team interactions and team performance (Pirola-Merlo, Hartel, Mann, & Hirst, 2002). A climate of learning advances member adaptive behavior and thereby promotes mutual adaptability (Bunderson & Sutcliffe, 2003). A positive orientation toward open dialogue increases interaction frequency, producing true consensus (Smith et al., 1994). Shared vision leads members to focus on team tasks and reduces non-task conflicts (Pearce & Ensley, 2004).

Consequently, bundled executive SHRM practices can be developed to enhance TMT social integration. In line with the logics of Snell et al. (1996) and Collins and Clark (2003), we propose the set of SHRM practices as a teamwork-oriented executive SHRM system that will exhibit a positive relationship with TMT social integration.

Hypothesis 1: A teamwork-oriented executive SHRM system is positively related to TMT social integration.

TMT Social Integration and Action Aggressiveness

The upper echelon perspective proposes that TMT characteristics affect a firm's strategic choices, which in turn produce various organizational outcomes. However, relatively few attentions had been directed to the relationship of TMT and strategic choices, considerably less than those addressing the direct impact of TMT on firm performance (Carpenter, Geletkanycz, & Sanders, 2004).

Conversely, according to the competitive dynamics perspective (Chen et al., 1992), a firm's competitive behavior can be characterized by strategic choices. Because action propensity and action speed, namely, action aggressiveness, are the most significant competitive behaviors when predicting firm performance (Ferrier, 2001; Smith, Ferrier, & Ndofor, 2001), an investigation into whether TMT social integration exerts an effect on action aggressiveness would prove valuable (Flood et al., 1996).

Literature proposed that socially interactive groups tend to promote action flexibility and intellectual imagination (Leana & Van Buren, 1999) and thereby facilitate group initiatives (Oh, Chung, & Labianca, 2004). Thus, TMT social integration is likely to benefit competitive initiatives. Indeed, previous studies had largely utilized a variety of TMT demographics (e.g., average tenure) as proxies of social integration to elucidate research findings associated with competitive behavior (Eisenhardt & Schoonhoven, 1990; Hambrick et al., 1996). For example, Bergh (2001) addressed the close social relationships of TMT members to

explain the positive relationship between retention of tenured executives of acquired firms and acquisition success. Hambrick et al. (1996) employed social interaction effects to elucidate the relationship of TMT tenure and firm response propensity. Nevertheless, few studies, if any, investigated the relationship between TMT social integration and competitive behavior directly. This ignorance is particularly irregular in the Chinese context where team harmony and social interaction are often the basis of taking initiatives (Westwood, 1997).

A firm with aggressive action is typically characterized by substantial action propensity and quick action speed (Chen et al., 1992; Smith et al., 2001). A firm's propensity to act depends primarily on its "creative initiative" and ability to accommodate uncertainty and risk (Hambrick et al., 1996). To generate an action thus requires extensive breadth of perspectives and extended networks (Hambrick et al., 1996). As a clan-like TMT can promote mutual trust and information sharing (Eisenhardt, 1989b; Smith et al., 1994), maintain teamwork processes (O'Reilly et al., 1989), and increase team communication (Roberts & O'Reilly, 1979), TMT social integration is expected to expand a firm's cognitive resources to improve action propensity.

Conversely, action initiatives may generate substantial conflict because of the high stakes and lack of established rules (Hambrick et al., 1996). Research has shown that integrated TMTs were more likely to resolve team conflicts under uncertain (e.g., action undertaking) context (Eisenhardt & Bourgeois, 1988). Indeed, socially integrated TMTs were found to be positively related to cognitive conflict and negatively related to affective conflict (Ensley, Pearson, & Amason, 2002). Therefore, TMT social integration may promote constructive dialogues to advance firm proactiveness (Amason, 1996).

Moreover, speedy action requires coordinating various resources and collaboration among TMT members (Galbraith & Kazanjian, 1986). A socially integrated TMT typically has an efficiency advantage because members generally focus more on task-oriented behavior than on political issues (Eisenhardt & Bourgeois, 1988), thus motivating cooperation and team identity (Guth & MacMillan, 1986). Social integration also reduces the necessity of institutional monitoring and thereby can quickly achieve consensus and expedite action execution (Ensley & Pearce, 2001). In addition, TMT social integration can advance a firm's information-processing capabilities and facilitate consistent interpretations and decoding of environmental signals so as to further action speed (Smith, Grimm, Gannon, & Chen, 1991). Empirical research found TMT social integration indeed can promote strategic decision-making speed (Eisenhardt, 1989b).

Because TMT social integration can foster action aggressiveness by promoting action propensity and action speed, we propose the following hypothesis:

Hypothesis 2: TMT social integration is positively related to a firm's action aggressiveness.

Action Aggressiveness and Firm Performance

The competitive dynamics perspective assumes that a firm gains competitive advantage by constantly launching competitive actions (Smith et al., 1992). Thus, firm performance is considered "an outcome of a series of competitive actions that may be rapidly nullified by opponents' incessant competitive challenges" (Hambrick et al., 1996, p. 661).

Previous research showed that a firm's ability to capitalize on business opportunities and proactively conduct competitive actions can impede a competitor's efforts (Hambrick et al., 1996) and obtain the first mover advantage (Schumpeter, 1934). Indeed, action propensity is found to be positively associated with firm profitability (Young, Smith, & Grimm, 1996) and market share (Chen & MacMillan, 1992; Ferrier, Smith, & Grimm, 1999).

Conversely, speedy actions compel rivals to adopt defensive positions and seize their ongoing market share (Eisenhardt, 1989b). Studies have shown that action timing explains significant variances in competitive outcomes (Lee, Smith, Grimm, & Schumborg, 2000; Smith et al., 1991). The speed at which strategic decisions are made is related to sales growth and profitability (Bourgeois & Eisenhardt, 1988). Action speed is also positively correlated with financial performance in the airline industry (Chen & Hambrick, 1995).

Consequently, active market participants may generate a competitive advantage and further firm performance. Therefore, we propose the following hypothesis:

Hypothesis 3: Action aggressiveness is positively related to firm performance.

TMT Social Integration, Action Aggressiveness, and Firm Performance

The upper echelon literature has not yet paid significant attention to the sequential relationships among TMT social/psychological characteristics, strategic choices, and firm performance. Most prior examinations focused on the direct links of TMT demographics and strategic outcomes such as innovation (Bantel & Jackson, 1989) or performance outcomes such as sales growth rate (Eisenhardt & Schoonhoven, 1990). The few studies that examined TMT process variables such as social network (Collins & Clark, 2003) also simply focused on their unqualified relationship with firm performance. The mediating roles of strategic choices in the relationship of TMT characteristics and performance were typically missing (Smith et al., 1994).

As for the link between social integration and firm performance, although some earlier research applied TMT demographics (e.g., team tenure) as a proxy for social integration to explain their implications on firm performance (e.g., Eisenhardt & Schoonhoven, 1990), other studies indeed found a positively unqualified relationship between the process variable, TMT social integration, and firm performance (Ensley et al., 2002; Smith et al., 1994). For example, Smith et al. (1994) employed control theory (Ouchi, 1980) and ascertained the performance benefits of processing synergy in socially integrated TMTs.

Nonetheless, these studies based their theoretical arguments on various unexamined mediators, such as decision-making speed (Smith et al., 1994) and conflict resolution (Ensley et al., 2002), to assume the integration-performance relationship. Thus, in line with the original upper echelon paradigm, which explicitly claims upper echelon characteristics as the determinants and firm performance as the consequences of strategic choices (Hambrick & Mason, 1984), investigating the mediating role of action aggressiveness in the relationship between TMT social integration and firm performance becomes worthwhile.

Hypothesis 4: A firm's action aggressiveness fully mediates the relationship between TMT social integration and firm performance.

Identifying the Black Box Between an Executive SHRM System and Firm Performance: The Roles of TMT Social Integration and Action Aggressiveness

As mentioned earlier, previous studies showed SHRM systems as sources of competitive advantage by investigating their direct relationships with firm performance. However, the direct relationships have been critiqued as lacking in theoretical foundations and practical implications (Wright et al., 2001). Scholars thus called for uncovering the black box by identifying critical employee-based capabilities between SHRM and firm performance (Wright et al., 2001). Wright et al. (2001) argued that the effects of SHRM are "more encompassing in that they help weave those skills and behavior within the broader fabric of organizational processes, systems, and, ultimately, competences" (p. 710). Research has identified some intervening mechanisms in the SHRM–firm performance relationship, such as employee turnover rate and productivity (Huselid, 1995), learning by doing (Hatch & Dyer, 2004), intellectual capital (Youndt & Snell, 2004), internal social structures (Evans & Davis, 2005), social climate, and knowledge transfer (Collins & Smith, 2006). TMT social network also played a mediating role between a set of networking-building HR practices and firm performance (Collins & Clark, 2003). However, numerous other capabilities or resources need to be identified to reveal the black box through which SHRM may create a competitive advantage for a firm (Becker & Huselid, 2006).

Scholars proclaimed that when addressing the black box in SHRM research, it is especially critical to identify those capabilities that can facilitate strategy implementation (Becker & Huselid, 2006). In this study, TMT social integration as an inward-focused capability can promote action aggressiveness, an outward-oriented capability, to advance firms' strategy execution and thus gain a competitive advantage (Teece et al., 1997). Therefore, together with our previous propositions, we expect a teamwork-oriented executive SHRM system will promote TMT social integration, which in turn furthers action aggressiveness in creating a competitive advantage for a firm. Accordingly, we propose the following hypothesis:

Hypothesis 5: TMT social integration and action aggressiveness in sequence fully mediate the relationship between a teamwork-oriented executive SHRM system and firm performance.

Method

Data Collection and Sample

The unit of analysis is at the firm level. The top management team is "a group of senior managers that generally makes decisions that are important to the firm's future" (Simsek et al., 2005, p. 74). Consistent with previous research (Hambrick, 1995) and the interview with seven executives, TMT members in this study are identified as CEO and executives who report directly to the CEO.

The study sample was taken from the 2003 top 5,000 companies in Taiwan. To mitigate a low response rate in collecting firm-level data (Hambrick, 1995), this study enrolled managers at 750 large and 250 medium-sized firms to maximize sample size. We first sent letters to the

Table 1
Characteristics of Research Sample

Items		N	Percentage
Firm information			
Industry	Manufacturing	144	71.6%
	Service	57	28.4%
Sources of Capital	Foreign	27	13.4%
	Joint venture	22	10.9%
	Local family owned	71	35.3%
	Local non-family owned	81	40.4%
Average firm size		1,065 persons	
Average firm capital		5,022.67 million	
Average firm age		22.08 years	
TMT information			
Average TMT size		9.5 persons	
Average TMT age/ Average TMT tenure		45.76 years / 12.17 years	
Respondents information			
Average number of respondents per TMT		2.60 persons	
Respondents' average age/average tenure		44.62 years / 12.01 years	

CEOs or general managers of the 1,000 selected firms and invited at least three of TMT members in each firm to complete the survey. Anonymous questionnaires were then mailed to a total of 3,036 senior executives. Then, 2 weeks after the surveys were mailed, potential respondents received follow-up telephone calls and a second questionnaire was mailed when necessary. Finally, 1 month later, questionnaires were mailed a third time.

In total, 627 executives at 254 firms returned the survey, a 25.40% firm-level response rate and a 20.69% individual-level response rate. To reduce single-respondent bias (Wright & Boswell, 2002), only those firms with 2 or more respondents remained in our study sample. Aside from apparently invalid or incomplete responses, we excluded 28 single-response firms and those questionnaires reporting TMT and firm demographics different from other team members. The final sample included 522 executives at 201 firms/TMTs, in which 53.2% teams had 2 respondents, 39.80% had 3 respondents, and 7% had 4 to 6 respondents, with an average of 2.60 respondents per firm. The average firm size was 1,065 persons, with an average firm age of 22 years. The average TMT size is 9.5, with an average TMT age of 45.76 and average TMT tenure of 12.17 years. Table 1 lists the characteristics of our research sample.

The response rates of the final sample were 20.10% for valid firm-level and 17.19% for valid individual-level data. These response rates are not surprising as firm-level responses are often very low. However, they are higher than those obtained by previous studies

(Hambrick, 1995). Literature has shown that samples in survey-based TMT research have generally been less than 100 teams (e.g., Simons, Pelled, & Smith, 1999), whereas those who obtained a sample of more than 100 teams included only one executive in a firm (e.g., Simsek et al., 2005). Thus, data from both multiple informants and sufficiently different TMTs increase applicable insights and statistical power for structural equation modeling (SEM) analyses (Ding, Velicer, & Harlow, 1995).

We checked for response bias in two ways. First, we performed a *t* test for the four key variables, SHRM system, TMT social integration, action aggressiveness, and firm performance, between early and late respondents. Results showed these variables were all indifferent in the two sets of respondents ($p > .05$) (Datta, Guthrie, & Wright, 2005). Next, we analyzed the sample representativeness. The chi-square test between our studied sample and the research population revealed that firm characteristics including firm employee numbers ($\chi^2 = 8.34$, $df = 5$, $p = .14$) and public listings in the stock market (listed/unlisted) ($\chi^2 = .33$, $df = 1$, $p = .56$) were indifferent. These findings suggest that our sample can stand for the population and response bias may not be a significant issue.

Variable Definitions and Measurements

Teamwork-oriented executive SHRM system. This study first developed a scale based on the SHRM studies of Martell and Carroll (1995), Lepak and Snell (2002), and Collins and Clark (2003). Next, six executives and four SHRM researchers helped assess construct validity and three executives and three managerial scholars in various disciplines helped evaluate face validity. These processes resulted in six items for HR selection ($\alpha = .89$), four items for HR compensation ($\alpha = .77$), four items for HR training ($\alpha = .88$), four items for HR performance appraisal ($\alpha = .76$), and four items for developing teamwork climate ($\alpha = .93$). The overall scale had good reliability ($\alpha = .92$). The measured items are shown in the appendix.

Confirmatory factor analysis (CFA) was applied to assess construct validity. This study utilized a five-factor CFA model to determine whether each item adequately represented its respective factor. Results of the primary CFA indicated that each indicator had significant and substantive loading ($p < .001$, all ts > 6), and the model had an adequate model fit, $\chi^2 = 518.21$, $df = 198$, $p < .001$; Goodness-of-Fit Index (GFI) = .81, Non-Normed Fit Index (NNFI) = .90, Comparative Fit Index (CFI) = .91, Root Mean Square Error of Approximation (RMSEA) = .09, Standardized Root Mean Square Residual (SRMR) = .06. The study further modeled executive SHRM practices as a single-factor model, represented by five-related SHRM practices. This model was superior to the previous model and each indicator had significant and substantive loading ($p < .001$, all ts > 12). Construct reliability (CR) was .92 and average variance extracted (AVE) was .71; both exceeded recommended levels. The CFA indices were also adequate ($\chi^2 = 15.17$, $df = 5$, $p < .01$; GFI = .97, NNFI = .97, CFI = .99, RMSEA = .11, SRMR = .02).

TMT social integration. There are various measures of TMT social integration. This study interviewed six executives and determined that they provided definitions similar to those proposed by O'Reilly et al. (1989) and Smith et al. (1994) in which TMT social integration was reflected in

TMT member cohesion, team satisfaction, and social interaction. Thus, this study adapted Seashore's (1979) four-item team cohesion scale and Van der Vegt et al.'s (2001) three-item team satisfaction scale. For TMT social interaction, one item from Smith et al. (1994) was used; interviews with executives resulted in an additional two items: Members in the top management team of the company have good personal relationships and Members in the top management team of the company are willing to share their personal resources.

Accordingly, a 10-item, 7-point TMT social integration scale was utilized. Fit indexes for the three-factor CFA model showed $\chi^2 = 40.30$ ($df = 32$, $p = .149$), GFI = .96, NNFI = .99, CFI = .99, RMSEA = .04, and SRMR = .028. Cronbach's α indicated good reliability for the scale and subscales ($\alpha = .92, .74, .92, .89$ for overall scale, team cohesion, team satisfaction, and social interaction, respectively). Correlation coefficients between the three subscales were .73, .85, and .91, providing evidence for social integration as a metaconstruct (Simsek et al., 2005).

Action aggressiveness. Action aggressiveness reflects the relative number of actions and action speed as compared with a firm's direct competitors that were initiated over the previous 3-year period. Previous research typically measured competitive behavior with archival data (Smith et al., 2001). As collecting top executive responses on competitive issues increased the reliability and accuracy of research data (Chen, Farh, & MacMillan, 1993), this study created a self-report scale to measure action aggressiveness. First, a preliminary scale was developed based on the studies of Smith et al. (2001), Chen et al. (1992), and Ferrier et al. (1999). Although literature demonstrated that new product introduction, service change, marketing, pricing, capacity expansion, and signaling actions are the most frequently undertaken actions (Smith et al., 2001), capacity expansion and signaling actions were not assessed in this study as the interviewed executives considered these two are not regular business practices. Second, the executives and professors who helped validate the SHRM scale and another three strategy scholars validated the action aggressiveness scale. Finally, the measure of action propensity and action speed each included a five-item, 7-point Likert-type scale. The two-factor CFA model's revised fit indexes showed an adequate model fit ($\chi^2 = 130.18$, $df = 30$, $p < .001$; GFI = .89, NNFI = .91, CFI = .94, RMSEA = .13, SRMR = .06). Cronbach's α demonstrated good reliability for action propensity ($\alpha = .81$), action speed ($\alpha = .88$), and the overall scale ($\alpha = .91$). The correlation coefficient between the two subscales was .80.

Firm performance. Firm performance was defined as a firm's relative performance compared with its direct competitors over the previous 3-year period (Garg, Walters, & Priem, 2003). A comparable measure can control industry effects and strategic group effects (Garg et al., 2003). The five-item, 7-point perceptual measure was adapted from Garg et al. (2003) ($\alpha = .97$). Previous studies demonstrated perceptual performance measures were significantly related to objective measures (Delaney & Huselid, 1996).

Control variables. To decrease the likelihood of spurious results, a few control variables were added to the model. TMT demographics can influence TMT social integration (Finkelstein & Hambrick, 1996). Thus, this study controlled for average team tenure and

team education and gender heterogeneity. A variation of the Herfindal-Hirschman index, $H = 1 - \sum_{i=1}^{n} p_i^2$ (H is the heterogeneity measure, p is the percentage of TMT members in each of the three educational and two gender categories, and $n = 3$ or 2), was applied to assess education and gender heterogeneity (Hambrick et al., 1996). Firm age and firm size are significant predictors of firm performance (Huselid, 1995). Firm age captures the founding values (Miller & Chen, 1994), whereas firm size, measured with a logarithm of full-time employees, captures the effects of slack resources (Chen & Hambrick, 1995). Environmental dynamism and munificence were also determinants of firm performance in industrial/organizational (I/O) economics (Porter, 1980). Dynamism was assessed using a four-item, 7-point measure adapted from Miller and Droge (1986) ($\alpha = .84$). Conversely, the three-item, 7-point environmental munificence measure was adapted from Hambrick and Finkelstein (1987) ($\alpha = .77$).

Back-Translation

As some scales were initially developed in English, four SHRM researchers were invited to help confirm the accuracy of the Chinese versions. Compatibility of the original and translated versions of scale was confirmed by back-translations performed by two translation professionals.

Data Analysis

As individual TMT member responses from the same firm were aggregated into firm-level data, this study assessed interrater reliability prior to aggregating the responses for further analysis (Chan, 1998). The approaches used to evaluate interrater reliability were ICC(1) and ICC(2), which determine whether responses of the same team are consistent and team-level means are stable (Bliese, 2000; Shrout & Fleiss, 1979); Rwg, which assesses interrater agreement and reflects the degree of interchangeability of raters' ratings (James, Demaree, & Wolf, 1984); and ANOVA analysis (Kirkman, Rosen, Tesluk, & Gibson, 2004).

This study utilized LISREL 8.3 to perform maximum likelihood (ML) structural equation modeling. Following the two-step approach proposed by Anderson and Gerbing (1988), this study applied CFA to confirm the full measurement model before the structural model was employed to test the hypotheses. Nested modes were applied to assess alternative models and thereby produce the final model.

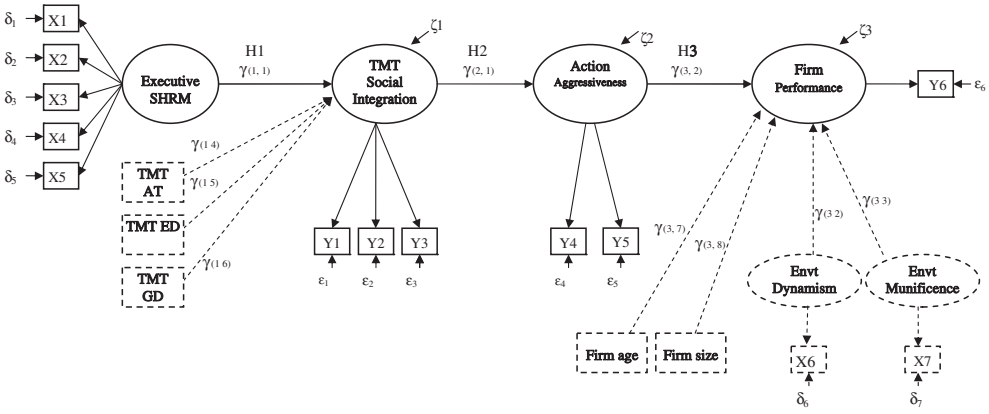
To assess overall model fit, we used the chi-square test and additional five fit indices: CFI, GFI, NNFI, RMSEA, and SRMR (Hu & Bentler, 1998). Figure 1 presents the proposed model.

Results

Data Aggregation

Table 2 presents values for evaluating the quality of data aggregation and the AVE and CR of constructs under study. As demonstrated, Rwg, ICC(1), ICC(2), and ANOVA for all scales

Figure 1
Estimated Hypothesized Model



Note: SHRM = strategic human resource management; TMT = top management team; AT = average tenure; ED = education diversity; GD = gender diversity; Envt = environmental. Control variables are depicted with dashes.

Table 2
Evaluation of Data Aggregation, AVE, and CR

Constructs/Indicators	Rwg	ICC(1)	ICC(2)	ANOVA	AVE	CR
Executive SHRM system	.97	.52	.74	3.78	.66	.91
Selection	.94	.41	.64	2.79		
Compensation	.91	.47	.70	3.33		
Training	.90	.49	.71	3.45		
Performance appraisal	.90	.44	.67	3.06		
Climate	.91	.50	.72	3.62		
Action aggressiveness	.95	.48	.70	3.36	.83	.89
Action speed	.93	.41	.65	2.84		
Action propensity	.92	.51	.73	3.68		
TMT social integration	.96	.44	.67	3.05	.71	.88
Team cohesion	.91	.40	.63	2.72		
Team satisfaction	.90	.43	.66	2.94		
Social interaction	.88	.32	.55	2.22		
Firm performance	.93	.66	.83	6.01	.98	—
Environmental dynamism	.87	.44	.68	3.08	.89	—
Environmental munificence	.87	.49	.71	3.51	.80	—

Note: AVE = average variance extracted; CR = composite reliability; SHRM = strategic human resource management; TMT = top management team. CR and AVE are calculated based on values obtained in the full measurement model using split data. CR is not provided for the single-indicator constructs.

and their subscales exceed recommended thresholds, indicating that interrater reliabilities are acceptable and allow for progress to statistical examinations.

Assessment of Common Method Variance

As raters in this study were invited to assess all measured items, the issue of common method variance (CMV) must be addressed (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003). A few preliminary conditions suggest that the concerns for CMV in this study might be restrained to a degree: (a) research questions were collective-level rather than individual-level issues; (b) top executives, as survey participants, were very familiar with TMT processes; (c) potentially influential factors were also controlled in the proposed model; (d) scale validations were performed to assure the reliability and validity of the measures (Podsakoff et al., 2003).

Moreover, we conducted a post hoc test to identify the CMV problem. Harman's one-factor test was used to determine whether one general factor would emerge to account for most of the covariance among constructs (Schriesheim, 1979). We performed a principal components factor analysis on measured items of the SHRM system, TMT social integration, action aggressiveness, and firm performance. Seven factors were extracted and one general factor in the unrotated factor structure accounting for 45% of the variances was found, indicating that CMV should be further scrutinized to affirm our research findings.

Dealing With Common Method Variance: Split-Data Approach

Given that CMV principally results from the same sources rating all (or most) of the measures, we thus tested our model by employing a split-data approach, in which ratings for adjacent variables were from different sources within a firm, as with those widely used in seminal articles (e.g., Amason, 1996; Datta et al., 2005). As the indices of interrater reliabilities were all acceptable, randomly choosing any of individual executive's responses in the same firm as the values of the target constructs could be fairly representative. In doing so, we randomly coded TMT members of each firm and sequentially assigned their responses by codes as the values of SHRM system, TMT social integration, action aggressiveness, and firm performance. As to values of the control variables, we chose data from specific respondents whose responses were not assigned to TMT social integration and firm performance. Finally, the reassigned data were used in later statistical analysis.

Phase I: Validity Assessment and Measurement Model

To assure construct validity, CFA was applied to test convergent and discriminant validities of the four main latent constructs. We specified the model by using composite scores of subscales, instead of item-level data, as the manifest indicators because theoretically, SHRM system, TMT social integration, and action aggressiveness were metaconstructs, and statistically, this approach diminished potential statistical power problems with small and medium

samples. Composite subscales provide more reliable indicators than item-level data as the distribution of aggregation variables tends toward normal distribution (Bentler & Chou, 1987; Loehlin, 1992). As to firm performance, a single composite indicator was applied, where the error variance was fixed to one minus the value of Cronbach's alpha multiplied by the variance of the indicator and the latent-to-manifest parameter was fixed to the square root of alpha. The parcel approach was extensively used in previous studies (e.g., Cortina, Chen, & Dunlap, 2001; Scott & Bruce, 1994).

Results of the CFA demonstrated a good fit for the four-factor model. The model fit indices, NNFI = .99, CFI = .99, RMSEA = .04, SRMR = .03, and GFI = .95, were all within acceptable thresholds, except for the chi-square value ($\chi^2 = 53.90$, $df = 39$, $p < .001$), which was sensitive to sample size and thus comparatively unreliable. Convergent validity among constructs was confirmed given that each composite indicator had a statistically and substantively significant factor loading on its respective construct and CR and AVE of constructs were all above recommended levels (see Table 2). Discriminant validity was confirmed by several criteria. The significant chi-square difference between the four-factor and one-factor model, in which the constructs were perfectly correlated, affirmed the primary conditions ($\Delta\chi^2 = 110.59$, $\Delta df = 6$, $p < .001$). Furthermore, constrained models, in which the correlation coefficient for each pair of constructs was sequentially constrained to 1.0, gained significantly greater chi-square values than the unconstrained model ($\Delta\chi^2$ ranging from 24.14 to 169.36, $\Delta df = 1$, $p < .001$). Finally, confident intervals (± two standard errors) around the correlation estimates between any of two constructs did not include 1.0 (Anderson & Gerbing, 1988) (see Table 3). These results confirmed the four main constructs were valid and distinct measures, albeit the potential inflation effects of common method variance still cannot be completely ruled out.

Finally, we tested the full measurement model in which control variables were incorporated into the model. For TMT demographics, firm age, and firm size, their residuals and lambda coefficients were fixed at zero and one, respectively. As to environmental dynamism and munificence, their residuals and lambda coefficients were fixed by the procedure identical to that of firm performance. The full measurement model gained a chi-square of 118.66 ($df = 88$, $p < .001$) and displayed a good model fit: CFI = .99, GFI = .94, NNFI = .98, RMSEA = .04, and SRMR = .03. These results lend psychometric supports for the measurement model and allow for further testing of structural relationships. Table 3 presents the means, standard deviations, and intercorrelations for the variables in the study.[1]

Phase II: Hypotheses Testing and Nested Models

This study employed nested models to determine the final model that best accounted for the covariance observed between latent constructs. This process was implemented by assessing the chi-square difference between nested models, wherein relationships between constructs were sequentially added to the model. Thus, significant differences in chi-square values indicated that the proposed new model fits the data better than the original model.

Table 4 presents the value of fit indices for the nested models. The significant difference ($\Delta\chi^2 = 300.17$, $\Delta df = 38$, $p < .001$) between the hypothesized model (Model 2) and null structural model (Model 1) provided the basis for further examination of various nested models.

Table 3
Means, Standard Deviations, and Correlations

Variables	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11
1. Executive SHRM system	5.09	0.80	—										
2. Action aggressiveness	4.44	0.84	.45 (.05)	—									
3. TMT social integration	5.21	0.79	.42 (.04)	.29 (.05)	—								
4. Firm performance	4.78	1.19	.41 (.06)	.39 (.09)	.39 (.07)	—							
5. Environmental dynamism	3.33	1.08	.00	.05	–.11	–.13	—						
6. Environmental munificence	4.17	1.09	.35	.29	.14	.30	–.01	—					
7. Firm size	2.47	0.64	–.01	.01	–.02	.09	–.01	.10	—				
8. Firm age	22.77	14.02	–.05	–.10	.09	.01	–.06	–.16	.26	—			
9. TMT education diversity	0.37	0.19	.08	.05	.08	.13	–.01	.09	.07	.04	—		
10. TMT gender diversity	0.20	0.17	–.13	–.07	.01	–.22	–.07	–.20	–.21	–.07	.20	—	
11. TMT average tenure	12.17	6.96	.16	.04	.12	.15	–.12	–.01	.12	.59	.01	–.33	—

Note: SHRM = strategic human resource management; TMT = top management team. Correlations are based on estimates gained in the full measurement model. Standard errors for main constructs are reported in parentheses. Standardized correlation coefficients ≥ .15 in the table were significant at $p < .05$.

Table 4
Comparisons of Nested Structural Models

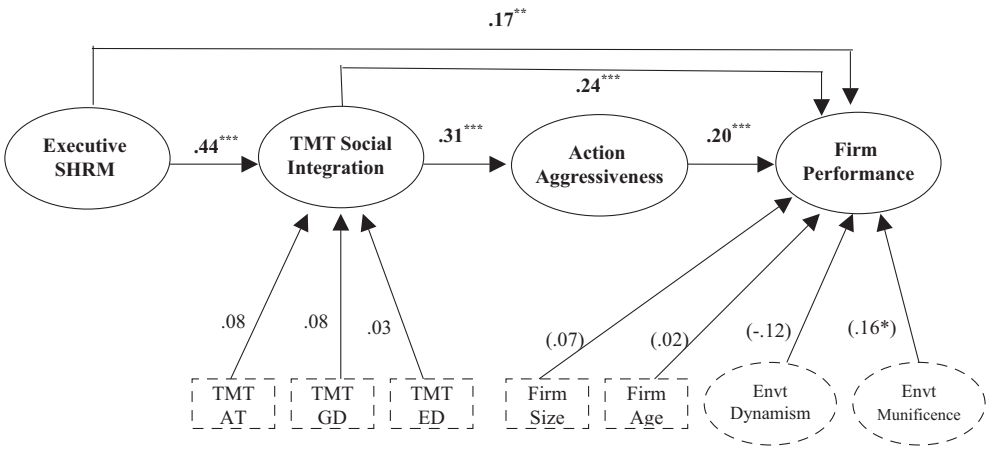
Models	χ^2	*df*	CFI	GFI	NNFI	SRMR	RMSEA
1. Null structural model	485.83***	143	.85	.78	.84	.18	.11
2. Hypothesized model	185.66***	105	.96	.91	.95	.09	.06
3. SHRM → Performance	174.68***	104	.97	.92	.95	.08	.05
4. TMT → Performance	169.78***	104	.97	.92	.96	.07	.08
5. SHRM → Performance TMT → Performance	165.68***	103	.97	.92	.96	.07	.05

Note: CFI = Comparative Fit Index; GFI = Goodness-of-Fit Index; NNFI = Non-Normed Fit Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation; SHRM = strategic human resource management; TMT = top management team. Model 3: adding SHRM–performance path into Model 2. Model 4: adding TMT–performance path into Model 2. Model 5: adding SHRM–performance and TMT–performance paths into Model 2; the final model.***$p < .001$.

To determine whether the executive SHRM system and TMT social integration individually presented a direct relationship with firm performance, two rival models were tested by separately adding SHRM–performance relationship (Model 3) and TMT integration-performance relationship (Model 4) to the hypothesized fully mediated model. Significant differences between Model 2 and Model 3 ($\Delta\chi^2 = 10.98$, $\Delta df = 1$, $p < .001$) and between Model 2 and Model 4 ($\Delta\chi^2 = 15.88$, $\Delta df = 1$, $p < .001$) suggested that separately adding SHRM–performance and TMT integration-performance relationships into the hypothesized model indeed improved model fit. Thus, we further conducted Model 5, wherein SHRM–performance and integration-performance relationships were assessed simultaneously. Findings showed that Model 5 fitted the data better than Model 3 ($\Delta\chi^2 = 9.00$, $\Delta df = 1$, $p < .01$) and Model 4 ($\Delta\chi^2 = 4.90$, $\Delta df = 1$, $p < .01$). The results revealed the fact that SHRM–performance relationship exhibited a significantly incremental contribution to Model 4, as did the TMT integration-performance relationship to Model 3. Taken together, we obtained Model 5 as the final model ($\chi^2 = 165.68$, $df = 103$, $p < .001$; CFI = .97, GFI = .92, NNFI = .96, RMSEA = .05, SRMR = .07).[2]

Figure 2 presents the completely standardized path estimates for the examined relationships. Consistent with expectations, Hypothesis 1, which proposed a positive association between teamwork-oriented executive SHRM system and TMT social integration, was supported ($\beta = .44$, $t = 5.32$, $p < .001$). Hypothesis 2 and Hypothesis 3 were also confirmed as TMT social integration was significantly and positively associated with action aggressiveness ($\beta = .31$, $t = 4.33$, $p < .001$), and action aggressiveness was positively associated with firm performance ($\beta = .20$, $t = 2.82$, $p < .01$). However, TMT social integration was both directly ($\beta = .24$, $t = 2.95$, $p < .01$) and indirectly ($\beta = .06$, $t = 3.81$, $p < .001$) correlated with firm performance; thus, action aggressiveness only partially mediates the relationship between TMT social integration and firm performance, lending partial support for Hypothesis 4. Likewise, the executive SHRM system simultaneously exhibited both direct ($\beta = .17$, $t = 2.10$, $p < .01$) and indirect ($\beta = .13$, $t = 3.19$, $p < .01$) associations with firm performance, lending partial

Figure 2
Completely Standardized Estimates of the Final Model



Note: SHRM = strategic humn resource management; TMT = top management team; AT = average tenure; ED = education diversity; GD = gender diversity; Envt = environmental.
*$p < .05$. **$p < 01$. ***$p < .001$

support for Hypothesis 5. The explained variances for TMT social integration, action aggressiveness, and firm performance were .21, .09, and .27, respectively.

Discussion

In response to a need to identify the mechanisms through which SHRM promotes firm competitive advantage, this study utilized upper echelon and competitive dynamics literature to analyze the mediating roles of TMT social integration and action aggressiveness in the relationship of an executive SHRM system and firm performance. Research findings show that a teamwork-oriented executive SHRM system indeed demonstrated a significantly positive relationship with TMT social integration. TMT social integration also was positively associated with action aggressiveness that in turn advanced firm performance. However, contrary to our prediction, action aggressiveness partially mediated the relationship of TMT social integration and firm performance.

Moreover, our results indicated that TMT social integration and action aggressiveness in sequence partially mediated the relationship of executive SHRM system and firm performance. Although the finding is somewhat different from the other TMT–based SHRM research (Collins & Clark, 2003), which exhibited the fully mediated effects of TMT characteristics, these studies together highlight the needs to examine the roles of top executives and their resulting consequences in future SHRM studies. Nonetheless, the partially mediated results of SHRM–performance and TMT integration-performance relationships reveal the fact that other critical intervening variables need to be further identified (Becker &

Huselid, 2006). Based on these findings, this study indeed has provided evidence, grounded in multidisciplinary perspectives, to add interesting insights to the SHRM field.

Academic Implications

This study contributes to various academic disciplines. In light of the SHRM research, the examinations of mediating mechanisms assist in identifying how an executive SHRM system can truly impact firm performance. Grounded in resource-based theory (Barney, 1991), this study conceptualizes TMT social integration as an internal-oriented capability and action aggressiveness as an external-oriented capability (Teece et al., 1997) and demonstrates how a bundle of teamwork-oriented executive SHRM practices can support the inwardly based TMT social integration to promote outwardly based action aggressiveness, thereby fostering firm advantage in competitive rivalry. This study thus furthers SHRM research by subtly investigating critical firm capabilities existing in the black box between SHRM and financial outcome (Becker & Huselid, 2006). Conversely, the partial mediating finding of SHRM–performance relationship indicates that other critical mediators are very likely to be ignored. Further evaluations of some TMT characteristics such as social capital and strategic characteristics such as strategic change may present additional insights (Carpenter et al., 2004).

Moreover, the examination of a supportive executive SHRM system extends SHRM research from general lower echelon employees to upper echelon executives, a group of valuable and unique human capital (Lepak & Snell, 1999). Indeed, Collins and Clark (2003) were among the first that examined TMT issues in SHRM research. However, their arguments were principally based on "information-processing" and "boundary-spanning" literature and did not highlight the upper echelon perspective; their model also ignored the role of strategic choices, the fundamental building blocks in TMT studies (Hambrick, 2007). Moreover, their sample size was relatively small (73 firms) and thus did not allow for conducting SEM analysis to build a more comprehensive model. Therefore, our study will become a leading example that applies the robust SEM analytical approach and integrates the upper echelon as well as the competitive dynamics perspectives into the SHRM field.

In addition, this study reveals that a teamwork-oriented executive SHRM system may directly support TMT social integration in the harmony-focused Chinese context (Westwood, 1997). As cultural context underlines the behavior and capability that SHRM needs to sustain, further studies may focus on how the effectiveness of an executive SHRM system is contingent on the context in which firms are operating (cf. Aycan, 2005).

This study also contributes to the upper echelon perspective. Unlike literature typically using TMT demographics as proxies (Lawrence, 1997), the examination of social integration helps uncover unknown mechanisms in TMT interactions. Significant results concerning the associations among TMT social integration, action aggressiveness, and firm performance also respond to the nuts and bolts of the upper echelon perspective. Conversely, the partially mediated relationship of TMT social integration and firm performance shows that action aggressiveness may not fully capture the essential elements of strategic choices. Thus, simultaneous considerations of action and response characteristics (Smith et al., 2001), as well as other strategic variables, become warranted.

Finally, this study also advances the competitive dynamics perspective by using a self-report measure rather than typical archival data to assess competitive characteristics (Chen, Su, & Tsai, 2007).

Practical Implications

These findings also provide practical implications for business practices. Because psychological attachments among TMT members are positively associated with strategic action and firm performance, interactions among TMT members should best be considered a strategic issue rather than merely a private issue. Notably, the so-called social integration or cohesion among TMT members is often ignored, albeit well recognized, as interpersonal interactions seem distant from goal accomplishments. However, under disintegration, executives may waste time on group politics and overlook such task-oriented issues as decision quality and cognitive comprehensiveness. As such, top executives should be aware of cultivating deep-seated mutual trust and person-to-person relationships to avoid team fragmentation (Hambrick, 1995).

When TMT social relationships are highlighted, the "might-be" groupthink phenomena should be diminished (Janis, 1972). Because groupthink will make personal relationships override task needs and thus increase the likelihood of irrational and dehumanizing decisions, a moderate level of constructive dialogue becomes imperative. Specifically, top executives should consider cognitive conflict as a "necessary evil" that is essential to effective action rather than a negative team process.

To facilitate team integration, SHRM practices can be useful in several ways. For instance, the selection of TMT members can underline agreeable and open-minded personalities, teamwork abilities, as well as broad business perspectives. An internal labor market can be established to promote lower echelon employees. An incentive-based pay scheme and performance appraisal indicators can simultaneously consider individual and collective performance. Criteria for evaluating executive performance can take account of the degree of mutual support and be in accordance with procedural and distributive justice. Training programs can highlight communication, problem-solving, and cross-functional courses. Informal social activities and cross-departmental projects can be held to facilitate social interactions. A variety of communication channels can be established to facilitate information exchange. Finally, shared vision, a learning climate, and supportive culture help integrate TMT members. CEOs can strive to build such organizational atmosphere.

On the other hand, as action aggressiveness significantly affects firm performance, firms should endeavor to continuously and rapidly promote competitive actions for success in turbulent environments. In addition, because only proactive firms can gain first mover advantage, firms should develop effective information-processing mechanisms and extensive external networks to scan, monitor, forecast, and interpret market changes and customer needs (Smith et al., 1991).

Limitations and Future Directions

Although this study provides evidences that advance SHRM research, a few relevant issues can be further addressed. For instance, the generalizability of research findings can be improved by randomly selecting research samples and by implementing cross-cultural comparisons. Most respondents in this study represent only part of TMT members in each firm;

thus, the response bias cannot be excluded. Future studies can attempt to gather data from all TMT members (Carpenter et al., 2004). Conversely, although this study made considerable efforts to mitigate the CMV problem and employed a split-data approach to test the hypothesized relationships, inflation or confounding effects still cannot be completely ruled out. Closer examinations can attempt to collect data for each variable from completely different sources per firm and simultaneously utilize perceptual and objective measures in a model (Podsakoff et al., 2003).

Moreover, other TMT process variables such as risk-taking behavior (Hambrick, 2007) may be relatively crucial in non–Chinese cultural contexts. Under such circumstances, it is important to identify another set of executive SHRM practices to facilitate these promising TMT behavior/capabilities (Wright et al., 2001). Conversely, consistent with reviewers' concerns, it is very likely that the effects of competitive characteristics on firm performance are contingent on TMT characteristics. The relationship between SHRM system and firm performance may also depend on various contextual (e.g., cultural boundary) factors. Indeed, in a unifying SHRM framework, the primary role of SHRM should be "to ensure fit among a subset of strategically relevant variables while simultaneously seeking to build generic capabilities that can be applied toward both discovering and implementing a variety of strategic initiatives" (Wright & Snell, 1998, p. 767). A simultaneous examination of the moderating and mediating relationships can present more comprehensive implications for the SHRM field (Datta et al., 2005).

Naturally, causality could be a limitation as we used cross-sectional data. It may be that executives in high-performing firms perceive themselves as implementing teamwork-oriented SHRM system, socially integrated teams, and aggressiveness in competition. Previous longitudinal research has suggested "the proposition that HR practices cause higher organizational performance should be, at least, tentative" (Wright, Gardner, Moynihan, & Allen, 2005, p. 432). Future studies can examine the interrelationships among key constructs using a longitudinal design to reassure the causal relationship between SHRM and firm performance (Collins & Smith, 2006).

In summary, the examination of SHRM as a source of competitive advantage using the upper echelon and competitive dynamics perspectives has shed light on the SHRM research. A specific executive SHRM system can facilitate the social integration of top executives, which in turn enhances a firm's proactiveness in its efforts to succeed in a competitive environment.

APPENDIX

All the measurements used in this study are presented in the following.

Teamwork-Oriented Executive Strategic Human Resource Management (SHRM) System

The teamwork-oriented executive SHRM system was measured with the 7-point Likert scale; 1 represents *strongly disagree*, and 7 represents *strongly agree*.

Selection

1. The selection of top management team members in my company reflects the applicant's propensity for teamwork.
2. The selection of top management team members in my company emphasizes the applicant's communication skills.
3. My company tends to select top management team members from current staff.
4. The selection of top management team members in my company emphasizes the applicant's breadth of perspective.
5. The selection of top management team members in my company emphasizes the applicant's industry-relevant knowledge and experience.
6. The selection of top management team members in my company emphasizes the applicant's experience in various job fields.

Compensation

1. As compared with individual performance, pay level among top management team members in my company is relatively fair.
2. The pay raises for top management team members in my company are based on both merit and company tenure.
3. The bonus and reward decisions for top management team member in my company are based on both the company's overall performance and his or her department's performance.
4. As compared with the industry, the pay level of top management team members in my company is relatively high.

Training

1. My company provides communication and problem-solving training programs for top management team members.
2. My company establishes rules or programs to help top management team members understand each other's operation processes and job duties.
3. My company frequently holds informal social activities for top management team members.
4. My company provides opportunities for top management team members to participate in cross-functional projects.

Performance Appraisal

1. The performance appraisal criteria for top management team members in my company put high weight on mutual support.
2. The performance appraisal procedure for top management team members in my company is specific.
3. Performance appraisal for top management team members in my company is fair and just.
4. Relative performance among departments has a decisive influence on the performance appraisal results of top management team members.

Developing Teamwork Climate

1. My company emphasizes a culture of cooperation and collaboration.
2. My company has a clear developmental vision to guide the actions of top management team members.
3. There is a mutual learning climate among top management team members in my company.
4. There are a number of formal or informal communication channels among top management team members in my company.

Top Management Team (TMT) Social Integration

TMT social integration is measured with the 7-point Likert scale; 1 represents *extremely inconsistent*, and 7 represents *extremely consistent*.

Cohesion

1. When facing critiques from outside the company, the members in the top management team of the company will promptly defend each other.
2. Successful experiences by other members in the top management team help me to achieve my goal.
3. Members in the top management team of the company get along very well.
4. Members in the top management team of the company indeed hold together.

Satisfaction With Coworkers

1. I like the current operation mode used by the top management team.
2. The top management team of the company performs well.
3. I am satisfied with my colleagues in the top management team.

Social Interaction

1. Members in the top management team of the company interact socially outside of work.
2. Members in the top management team of the company have good personal relationships.
3. Members in the top management team of the company love to share their personal resources with each other.

Action Aggressiveness

A firm's action aggressiveness was reflected in its action propensity and action speed. Five types of the most frequently undertaken actions were assessed: new product introductions, new market expansion, new service provided, new marketing programs, and price change. The 7-point Likert scale was utilized.

Action propensity measures the relative number of actions as compared with a firm's direct competitors that a firm initiated over the previous 3-year period; 1 represents *far less than competitors*, and 7 represents *far more than competitors*. Conversely, action speed measures the relative rapidity of action that a firm initiated over the previous 3-year period; 1 represents *far slower than competitors*, 7 represents *far faster than competitors*.

Firm Performance

Firm performance was measured against the relative performance of direct rivals over the past 3-year period. The five 7-point Likert-type items include profitability, sales growth rate, market share growth rate, return on investment, and overall firm performance; 1 represents *far worse than competitors*, and 7 represents *far better than competitors*.

Environmental Dynamism

Environmental dynamism was measured with the 7-point Likert scale; 1 represents *strongly disagree*, and 7 represents *strongly agree*.

1. The products or services provided by this industry will soon be obsolete.
2. The actions of competitors in this industry are hard to predict.
3. The demands and customers in this industry are hard to predict.
4. The methods of production/service in this industry often change drastically.

Environmental Munificence

Environmental munificence was measured with the 7-point Likert scale; 1 represents *strongly disagree*, and 7 represents *strongly agree*.

1. Our markets are abundant with profitable opportunities.
2. Our markets are abundant with investment capital.
3. The public sectors offer sufficient support for our industry.

Notes

1. In addition, we collected objective performance information of 86 identifiable firms from public sources as a check of construct validity of the perceptual performance measure (Delaney & Huselid, 1996).The results of bivariate correlation analysis showed our perceptual performance measure was significantly ($p < .001$) associated with return on equity ($r = .49$) and return on asset ($r = .45$). Thus, the validity of perceptual performance measure was confirmed.

2. We also employed original aggregated data to test nested models but found that Model 3 is the final model. Statistical findings based on aggregated data showed correlation coefficients among variables were much larger than those obtained by the split-data approach. In particular, the executive strategic human resource management (SHRM) system and top management team (TMT) social integration exhibited extraordinarily high correlation ($r = .90$), and both were significantly associated with firm performance. However, while testing Model 5, the relationship between TMT social integration and firm performance became insignificant, negative, and very small. These findings indicate that common method variance was very likely to confound the relationships among constructs if the relationships were tested simply by the aggregated data collected from the same sources.

References

Amason, A. C. 1996. Distinguishing the effects of functional and dysfunctional conflict on strategic decision-making: Resolving a paradox for top management teams. *Academy of Management Journal*, 39: 123-148.

Anderson, J. C., & Gerbing, D. W. 1988. Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103: 411-423.

Aycan, Z. 2005. The interplay between cultural and institutional/structural contingencies in human resource management practices. *International Journal of Human Resource Management*, 16: 1083-1119.

Baldwin, T. T., & Danielson, C. C. 2002. Invited reaction: Linking learning with financial performance. *Human Resource Development Quarterly*, 13: 23-29.

Bannister, B. D., & Balkin, D. B. 1990. Performance evaluation and compensation feedback messages: An integrated model. *Journal of Occupational Psychology*, 63: 97-111.

Bantel, K., & Jackson, S. 1989. Top management and innovations in banking: Does the composition of the top team make a difference? *Strategic Management Journal*, 10: 107-124.

Barney, J. B. 1991. Firm resources and sustained competitive advantage. *Journal of Management*, 17: 99-120.

Becker, B., & Gerhart, B. 1996. The impact of human resource management on organizational performance: Progress and prospects. *Academy of Management Journal*, 39: 779-801.

Becker, B. E., & Huselid, M. A. 2006. Strategic human resources management: Where do we go from here? *Journal of Management*, 32: 898-925.

Bentler, P. M., & Chou, C. P. 1987. Practical issues in structural modeling. *Sociological Methods & Research*, 16: 78-117.

Bergh, D. D. 2001. Executive retention and acquisition outcomes: A test of opposing views on the influence of organizational tenure. *Journal of Management*, 27: 603-622.

Bliese, P. D. 2000. Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. J. Klein & S. W. Kozlowski (Eds.), *Multilevel theory, research and methods in organizations*: 349-381. San Francisco: Jossey-Bass.

Bourgeois, L. J., & Eisenhardt, K. M. 1988. Strategic decision processes in high velocity environments. *Management Science*, 34: 816-835.

Bunderson, J., & Sutcliffe, K. A. 2003. Management team learning orientation and business unit performance. *Journal of Applied Psychology*, 88: 552-560.

Carpenter, M. A., Geletkanycz, M. A., & Sanders, W. G. 2004. Upper echelons revisited: Antecedents, elements, and consequences of top management team composition. *Journal of Management*, 30: 749-778.

Carpenter, M. A., & Sanders, W. G. 2004. The effects of top management team pay and firm internationalization on MNC performance. *Journal of Management*, 30: 509-528.

Chan, D. 1998. Functional relations among constructs in the same content domain at different levels of analysis: A typology of composition models. *Journal of Applied Psychology*, 83: 234-246.

Chen, M. J., & Hambrick, D. C. 1995. Speed, stealth, and selective attack: How small firms differ from large firms in competitive behavior. *Academy of Management Journal*, 38: 453-482.

Chen, M. J., Farh, J. L., & MacMillan, I. C. 1993. An exploration of the expertness of outside informants. *Academy of Management Journal*, 36: 1614-1632.

Chen, M. J., & MacMillan, I. C. 1992. Non-response and delayed response to competitive moves: The roles of competitor dependence and action irreversibility. *Academy of Management Journal*, 35: 539-570.

Chen, M. J., Smith, K. G., & Grimm, C. M. 1992. Action characteristics as predictors of competitive responses. *Management Science*, 38: 439-455.

Chen, M. J., Su, K. S., & Tsai, W. P. 2007. Competitive tension: The awareness-motivation- capability perspective. *Academy of Management Journal*, 50: 101-118.

Collins, C. J., & Clark, K. D. 2003. Strategic human resource practices, top management team social network, and firm performance: The role of human resource practices in creating organizational competitive advantage. *Academy of Management Journal*, 46: 740-751.

Collins, C. J., & Smith, K. G. 2006. Knowledge exchange and combination: The role of human resource practices in the performance of high-technology firms. *Academy of Management Journal*, 49: 544-560.

Cortina, J. M., Chen, G., & Dunlap, W. P. 2001. Testing interaction effects in LISREL: Examination and illustration of available procedures. *Organizational Research Methods*, 4: 324-360.

Cyert, R. M., & March, J. G. 1963. *A behavioral theory of the firm*. Upper Saddle River, NJ: Prentice Hall.

Datta, D. K., Guthrie, J. P., & Wright, P. M. 2005. Human resource management and labor productivity: Does industry matter? *Academy of Management Journal*, 48: 135-145.

Delaney, J. T., & Huselid, M. A. 1996. The impact of human resource management practices on perceptions of organizational performance. *Academy of Management Journal*, 39: 949-969.

Ding, L., Velicer, W. F. W., & Harlow, L. L. 1995. Effects of estimation methods, number of indicators per factor and improper solutions on structural equation modeling fit indices. *Structural Equation Modeling*, 2: 119-143.

Eisenhardt, K. M. 1989a. Agency theory: An assessment and review. *Academy of Management Review*, 14: 57-74.

Eisenhardt, K. M. 1989b. Making fast strategic decisions in high-velocity environment. *Academy of Management Journal*, 32: 543-576.

Eisenhardt, K., & Bourgeois, L. J. 1988. Politics of strategic decision making in high-velocity environments: Toward a midrange theory. *Academy of Management Journal*, 31: 737-770.

Eisenhardt, K. M., & Schoonhoven, C. B. 1990. Organizational growth: Linking founding team, strategy, environment, and growth among U.S. semi-conductor ventures, 1978-1988. *Administrative Science Quarterly*, 35: 504-529.

Ensley, M. D., & Pearce, C. L. 2001. Shared cognition in top management teams: Implications for new venture performance. *Journal of Organizational Behavior*, 22: 145-160.

Ensley, M. D., Pearson, A. W., & Amason, A. C. 2002. Understanding the dynamics of new venture top management teams: Cohesion, conflict, and new venture performance. *Journal of Business Venturing*, 17: 365-386.

Evans, W. R., & Davis, W. D. 2005. High-performance work systems and organizational performance: The mediating role of internal social structure. *Journal of Management*, 31: 758-775.

Ferrier, W. J. 2001. Navigating the competitive landscape: The drivers and consequences of competitive aggressiveness. *Academy of Management Journal*, 44: 858-877.

Ferrier, W. J., Smith, K. G., & Grimm, C. M. 1999. The role of competitive action in market share erosion and industry dethronement: A study of industry leaders and challengers. *Academy of Management Journal*, 42: 372-388.

Finkelstein, S., & Hambrick, D. 1996. *Strategic leadership: Top executives and their effects on organizations*. St. Paul, MN: West.

Flood, P. C., Smith, K. A., & Derfus, P. 1996. Top management teams: A neglected topic in strategic human resource management. *Irish Journal of Management*, 17: 1-17.

Galbraith, J. R., & Kazanjian, R. K. 1986. Organizing to implement strategies of diversity and globalization: The role of matrix designs. *Human Resource Management*, 25: 37-54.

Gardner, T. M. 2005. Interfirm competition for human resources: Evidence from the software industry. *Academy of Management Journal*, 48: 237-256.

Garg, V. K., Walters, B. A., & Priem, R. L. 2003. Chief executive scanning emphases, environmental dynamism, and manufacturing firm performance. *Strategic Management Journal*, 24: 725-744.

Gomez-Mejia, L. R., & Balkin, D. B. 1992. *Compensation, organizational strategy, and firm performance*. Cincinnati, OH: South-Western.

Guth, W. D., & MacMillan, I. C. 1986. Strategy implementation versus middle management self-interest. *Strategic Management Journal*, 7: 313-327.

Hambrick, D. C. 1995. Fragmentation and the other problems CEOs have with their top management teams. *California Management Review*, 37: 110-127.

Hambrick, D. C. 2007. Upper echelons theory: An update. *Academy of Management Review*, 32: 334-343.

Hambrick, D. C., Cho, T. S., & Chen, M. J. 1996. The influence of top management team heterogeneity on firms' competitive moves. *Administrative Science Quarterly*, 41: 659-684.

Hambrick, D. C., & Finkelstein, S. 1987. Managerial discretion: A bridge between polar views of organizational outcomes. *Research in Organizational Behavior*, 9: 369-406.

Hambrick, D. C., & Mason, P. A. 1984. Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9: 193-206.

Harel, G. H., & Tzafrir, S. S. 1999. The effect of human resource management practices on the perception of organizational and market performance of the firm. *Human Resource Management*, 38: 185-199.

Hatch, N. W., & Dyer, J. H. 2004. Human capital and learning as a source of sustainable competitive advantage. *Strategic Management Journal*, 25: 1155-1178.

Hu, L. T., & Bentler, P. M. 1998. Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods*, 3: 424-453.

Huang, I. C., Lin, H. C., & Chuang, C. H. 2006. Constructing factors related to worker retention. *International Journal of Manpower*, 27: 491-508.

Huselid, M. A. 1995. The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal*, 38: 635-672.

Huselid, M. A., Jackson, S. E., & Schuler, R. S. 1997. Technical and strategic human resource management effectiveness as determinants of firm performance. *Academy of Management Journal*, 40: 171-188.

James, L. R., Demaree, R. G., & Wolf, G. 1984. Estimating within-group interrater reliability with and without response bias. *Journal of Applied Psychology*, 69: 85-98.

Janis, I. 1972. *Groupthink* (2nd ed.). Boston: Houghton Mifflin.

Jones, G. R., & George, J. M. 1998. The experience and evolution of trust: Implications for cooperation and teamwork. *Academy of Management Review*, 23: 531-545.

Kirkman, B. L., Rosen, B., Tesluk, P. L., & Gibson, C. B. 2004. The impact of team empowerment on virtual team performance: The moderating role of face-to-face interaction. *Academy of Management Journal*, 47: 175-192.

Klismoski, R. J., & Jones, R. G. 1995. Staffing for effective group decision making: Key issues in matching people and teams. In R. A. Guzzo, E. Salas, & Associates (Eds.), *Team effectiveness and decision making in organizations*: 291-232. San Francisco: Jossey-Bass.

Lado, A. A., & Wilson, M. C. 1994. Human resource systems and sustained competitive advantage: A competency-based perspective. *Academy of Management Review*, 19: 699-727.

Lawrence, B. S. 1997. The black box of organizational demography. *Organization Science*, 8: 1-22.

Leana, C. R., & Van Buren, H. J. 1999. Organizational social capital and employment practices. *Academy of Management Review*, 24: 538-556.

Lee, H., Smith, K. G., Grimm, C. M., & Schumborg, A. 2000. Timing, order and durability of new product advantages with imitation. *Strategic Management Journal*, 21: 23-30.

Lepak, D. P., & Snell, S. A. 1999. The human resource architecture: Toward a theory of human capital allocation and development. *Academy of Management Review*, 24: 31-48.

Lepak, D. P., & Snell, S. A. 2002. Examining the human resource architecture: The relationships among human capital, employment, and human resource configurations. *Journal of Management*, 28: 517-543.

Locke, E. A., & Latham, G. P. 1990. *A theory of goal-setting and task performance*. Upper Saddle River, NJ: Prentice Hall.

Loehlin, J. C. 1992. *Latent variable models*. Hillsdale, NJ: Lawrence Erlbaum.

Marks, M. A., Sabella, M. J., Burke, C. S., & Zaccaro, S. J. 2002. The impact of cross-training on team effectiveness. *Journal of Applied Psychology*, 87: 3-13.

Martell, K., & Carroll, S. J. 1995. Which executive human resource management practices for the top management team are associated with higher firm performance? *Human Resource Management*, 34: 497-512.

Michalisin, M. D., Karau, S. J., & Tangpang, C. 2004. Top management team cohesion and superior industry returns: An empirical study of the resource-based view. *Group & Organization Management*, 29: 125-140.

Miller, D., & Chen, M. J. 1994. Sources and consequences of competitive inertia: A study of the U.S. airline industry. *Administrative Science Quarterly*, 39: 1-23.

Miller, D., & Droge, C. 1986. Psychological and traditional determinants of structure. *Administrative Science Quarterly*, 31: 539-560.

Offstein, E. H., & Gnyawali, D. R. 2005. CEO compensation and firm competitive behavior: Empirical evidence from the US pharmaceutical industry. *Journal of Engineering and Technology Management*, 22: 201-225.

Oh, H., Chung, M. H., & Labianca, G. 2004. Group social capital and group effectiveness: The role of informal socializing ties. *Academy of Management Journal*, 47: 860-875.

O'Reilly, C. A., Caldwell, D. F., & Barnett, W. P. 1989. Work group demography, social integration, and turnover. *Administrative Science Quarterly*, 34: 21-37.

Ouchi, W. G. 1980. Markets, bureaucracies, and clans. *Administrative Science Quarterly*, 34: 21-37.

Pearce, C. L., & Ensley, M. D. 2004. A reciprocal and longitudinal investigation of the innovation process: The central role of shared vision in product and process innovation teams. *Journal of Organizational Behavior*, 25: 259-278.

Pirola-Merlo, A., Hartel, C., Mann, L., & Hirst, G. 2002. How leaders influence the impact of affective events on team climate and performance in R&D teams. *Leadership Quarterly*, 13: 561-581.

Podsakoff, P. M., Mackenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. 2003. Common method biases in organizational research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88: 879-903.

Poon, J. M. L. 2004. Effects of performance appraisal politics on job satisfaction and turnover intention. *Personnel Review*, 33: 322-334.

Porter, M. E. 1980. *Competitive strategy: Techniques for analyzing industries and competitors*. New York: Free Press.

Quarles, R. 1994. An examination of promotion opportunities and evaluation criteria as mechanisms for affecting internal auditor commitment, job satisfaction and turnover intentions. *Journal of Managerial Issues*, 6: 176-194.

Roberts, K. H., & O'Reilly, C. A. 1979. Some correlations of communication roles in organizations. *Academy of Management Journal*, 22: 42-57.

Schriesheim, C. 1979. The similarity of individual directed and group directed leader behavior descriptions. *Academy of Management Journal*, 22: 345-355.

Schumpeter, J. A. 1934. *The theory of economic development*. Cambridge, MA: Harvard University Press.

Scott, S. G., & Bruce, R. A. 1994. Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of Management Journal*, 37: 580-607.

Seashore, S. E. 1979. *Group cohesiveness in the industrial work group*. Ann Arbor: University of Michigan Press.

Shrout, P. E., & Fleiss, J. L. 1979. Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin*, 2: 420-428.

Simons, T., Pelled, L. H., & Smith, K. A. 1999. Making use of difference: Diversity, debate, and decision comprehensiveness in top management teams. *Academy of Management Journal*, 42: 662-673.

Simsek, Z., Veiga, J. F., Lubatkin, M. H., & Dino, R. N. 2005. Modeling the multilevel determinants of top management team behavioral integration. *Academy of Management Journal*, 48: 69-84.

Smith, K. G., Ferrier, W. J., & Ndofor, H. 2001. Competitive dynamics research: Critique and future directions. In M. Hitt, R. E. Freeman, & J. Harrison (Eds.), *Handbook of strategic management*: 315-361. Cambridge, MA: Blackwell.

Smith, K. G., Grimm, C. M., & Gannon, M. J. 1992. *Dynamics of competitive strategy*. Newbury Park, CA: Sage.

Smith, K. G., Grimm, C. M., Gannon, M. J., & Chen, M. J. 1991. Organizational information processing, competitive responses, and performance in the U.S. domestic airline industry. *Academy of Management Journal*, 34: 60-85.

Smith, K. G., Smith, K. A., Olian, J. D., Sims, H. P., O'Bannon, D. P., & Scully, J. A. 1994. Top management team demography and process: The role of social integration and communication. *Administrative Science Quarterly*, 93: 412-438.

Snell, S. A., Youndt, M. A., & Wright, P. M. 1996. Establishing a framework for research in strategic human resource management: Merging resource theory and organizational learning. In G. P. R. Ferris (Eds.), *Research in personnel and human resource management*: 61-90. Greenwich, CT: JAI.

Stevens, M. J., & Campion, M. A. 1994. The knowledge, skill, and ability requirements for teamwork: Implications for human resource management. *Journal of Management*, 20: 503-530.

Stevens, M. J., & Campion, M. A. 1999. Staffing work teams: Development and validation of a selection test for teamwork settings. *Journal of Management*, 25: 207-228.

Teece, D. J., Pisano, G., & Shuen, A. 1997. Dynamic capabilities and strategic management. *Strategic Management Journal*, 18: 509-533.

Van der Vegt, G. S., Emans, B. J. M., & Vliert, E. V. D. 2001. Patterns of interdependence in work teams: A two-level investigation of the relationships with job and team satisfaction. *Personnel Psychology*, 54: 51-69.

Wageman, R., & Baker, G. 1997. Incentives and cooperation: The joint effects of task and reward interdependence on group performance. *Journal of Organizational Behavior*, 18: 139-158.

Westwood, R. 1997. Harmony and patriarchy: The cultural basis for "paternalistic headship" among the overseas Chinese. *Organization Studies*, 18: 445-480.

Wright, P. M., & Boswell, W. R. 2002. Desegregating HRM: A review and synthesis of micro and macro human resource management. *Journal of Management*, 28: 247-276.

Wright, P. M., Dunford, B. B., & Snell, S. A. 2001. Human resources and the resource based view of the firm. *Journal of Management*, 27: 701-721.

Wright, P. M., Gardner, T. M., Moynihan, L. M., & Allen, M. R. 2005. The relationship between HR practices and firm performance: Examining causal order. *Personnel Psychology*, 58: 409-446.

Wright, P. M., & McMahan, G. C. 1992. Theoretical perspectives for strategic human resource management. *Journal of Management*, 18: 295-320.

Wright, P. M., McMahan, G. C., & McWilliams, A. 1994. Human resources and sustainable competitive advantage: A resource based perspective. *International Journal of Human Resource Management*, 5: 301-326.

Wright, P. M., & Snell, S. A. 1998. Toward a unifying framework for exploring fit and flexibility in strategic human resource management. *Academy of Management Review*, 23: 756-772.

Youndt, M. A., & Snell, S. A., 2004. Human resource configurations, intellectual capital, and organizational performance. *Journal of Management Issues*, 16: 337-360.

Young, G., Smith, K. G., & Grimm, C. M. 1996. "Austrian" and industrial organization perspectives on firm-level competitive activity and performance. *Organization Science*, 7: 243-254.

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