

Where do We Go From Here? New Perspectives on the Black Box in Strategic Human Resource Management Research

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ABSTRACT The main objective of the present research is to briefly review the strategic human resource management (HRM) literature from multilevel theoretical perspectives to summarize what we know about mediating mechanisms in the HR–performance relationship. By doing so, we highlight future research needs to advance theoretical understanding of the ‘black box’ in strategic HRM research. Furthermore, by offering additional theoretical perspectives that can be used to understand the mediating mechanisms at different levels, we suggest future research directions that capture the complexities associated with strategic HRM through a multilevel theoretical lens. Implications of the model are discussed.

Keywords: black box, mediating mechanisms, multilevel perspective, narrative review, strategic HRM

INTRODUCTION

As exemplified by the considerable attention paid to human capital as a critical resource within organizations (e.g., Nyberg et al., 2013), the research focus on employee contributions as a source for firm survival and success has increased substantially over the past couple of decades. This also coincides with the increased focus on the resource-based view of the firm (e.g., Barney, 1991; Wernerfelt, 1984) and the establishment of strategic human resource management (HRM) as a distinct field of study.

Empirical research in strategic HRM has made considerable progress in linking bundles of human resource (HR) practices, variously termed as high-performance work systems (Becker and Huselid, 1998; Huselid, 1995), commitment-based HR systems (Arthur, 1994), high-involvement HR systems (Batt, 2002; Guthrie, 2001), or innovative employment practices (Ichniowski et al., 1997), and firm performance at the plant (e.g.,

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Arthur, 1994; Ichniowski et al., 1997; Youndt et al., 1996), business-unit (e.g., Koch and McGrath, 1996), and firm-level of analysis (e.g., Becker and Huselid, 1998; Huselid, 1995). Despite this progress, one of the critical substantive issues that has not received as much attention historically is an understanding of the mediating mechanisms or processes through which HR practices influence firm performance (Batt, 2002). Recently, an increasing number of studies have started to investigate such mechanisms (e.g., Gong et al., 2009; Sun et al., 2007; Takeuchi et al., 2007). These studies have demonstrated that there are various mediating variables that may play roles in the HR systems–performance relationship.

Several dominant perspectives have been used to explain the black box at the firm- or unit-level of analysis in the strategic HRM literature. One particularly influential perspective has been the behavioural perspective advanced by Schuler and Jackson (Jackson et al., 1989; Schuler and Jackson, 1987). As noted by Jackson et al. (1989, p. 728), ‘A behavioral perspective assumes that employers use personnel practices as a means for eliciting and controlling employee attitudes and behaviors’, although these attitudes and behaviours are not always well specified. In addition, the resource-based view of the firm (Barney, 1991) and human capital theory have been used as theoretical perspectives in strategic HRM (e.g., McMahan et al., 1999; Takeuchi et al., 2007; Wright and McMahan, 1992) to focus on the potential value of collective human capital within organizations. Social exchange (e.g., Sun et al., 2007) and human capital theoretical perspectives have also been used (cf. Takeuchi et al., 2007) to explore individual and collective factors mediating the firm-level HR systems–performance relationship. Similarly, researchers have turned to climate as an important potential collective mediator (e.g., Chuang and Liao, 2010; Takeuchi et al., 2009). As can be seen, there is a wide range of disparate theoretical perspectives being used to advance our knowledge of mediating mechanisms within strategic HRM.

Closely related, researchers have also recognized that a system of HR practices can influence firm performance through its influence on mediators that reside at different levels of analysis (e.g., Liao et al., 2009; Takeuchi et al., 2009). Related, Jiang et al. (2012b) shifted their focus from level to type of mediating path and conducting meta-analysis using the ability, motivation, and opportunity (AMO) framework. They found that different types of HR practices influence important outcomes through different paths – suggesting that the components of HR systems are not perfectly interchangeable with one another in terms of the mechanisms of their impact on the workforce.

These streams of research provide valuable insights into aspects of the mediating mechanisms of the HR systems–performance relationship and establish the basis for advancing strategic HRM research in the future. The primary objective of the present review is to explicate these mediating mechanisms by adopting a multilevel theoretical perspective. We first summarize the existing research to highlight what we know thus far regarding these mediating mechanisms, and second, encourage future research by identifying gaps in the literature. The primary contribution of the research is not necessarily in comprehensively reviewing the existing theories and research in strategic HRM, but to provide a more process-oriented explication of the mechanisms through which the HR systems impact ‘organizational’ outcomes.

BRIEF REVIEW OF THE 'BLACK BOX'

Strategic HRM is defined as 'the pattern of planned human resource deployments and activities intended to enable an organization to achieve its goals' (Wright and McMahan, 1992, p. 298). As such, strategic HRM adopts a systems view to examine the effects of a bundle of HR practices (Wright and McMahan, 1992), which differentiates strategic HRM studies from more traditional functional views of HRM. Much of the earlier strategic HRM research adopted a unit level of analysis to examine the relationship between a bundle or a system of HR practices and various indicators of organizational performance (e.g., Huselid, 1995). More recently, studies have started examining the mediating mechanisms through which a bundle of HR practices affect organizational performance (e.g., Gong et al., 2009; Sun et al., 2007; Takeuchi et al., 2007). Perhaps one of the most recent trends in strategic HRM research is the examination of mediating mechanisms through a multilevel theoretical perspective (e.g., Liao et al., 2009; Takeuchi et al., 2009). At this juncture, a synthesis of what we know about these mediating mechanisms at different levels of analysis would be helpful in identifying important questions that can be addressed in future strategic HRM research. The subsequent sections provide a brief overview of some of these studies.

Unit-Level of Analysis

One of the major theoretical perspectives that strategic HRM researchers have adopted at the unit-level of analysis is the resource-based view of the firm (cf. Barney, 1991). 'The resource-based view of competitive advantage differs from the traditional strategy paradigm in that the emphasis of the resource-based view of competitive advantage is on the link between strategy and the internal resources of the firm' (Wright and McMahan, 1992, p. 300). A key essence of this perspective is that internal assets of organizations, such as human capital, have the potential to prove value in setting firms apart from their competitors and have the potential to serve as a barrier to imitation if managed appropriately.

In the context of strategic HRM, the main emphasis of the resource-based view of the firm (Barney, 1991) is how the human capital that firms possess or can acquire can generate above average rent in terms of improved firm performance. For instance, Snell and Dean (1992) noted that human capital adds value to the firm because of enhanced potential for productivity provided by higher levels of relevant knowledge and skills. In other words, the higher the level of knowledge, skills, and abilities of employees, the more potential human capital has for impacting firm performance.

Researchers adopting a resource-based view perspective suggest that the level of human capital is directly influenced by HR practices that are aimed towards selecting/recruiting and training/developing employees (McMahan et al., 1999; Wright and McMahan, 1992). Thus, it is not surprising that some studies have considered the level of human capital a mediator of the relationship between the system of HR practices and organizational performance. With a sample of Japanese establishments, Takeuchi et al. (2007) found that manager-rated collective human capital of employees mediated the positive relationship between high performance work systems and establishment

performance. Youndt and Snell (2004) found that human capital mediated the relationships between several HR configurations and firm performance. Several other researchers examined the influence of individual HR practices rather than HR systems on firm performance and found similar results of the mediating role of human capital (Cabello-Medina et al., 2011; Hsu et al., 2007). Viewed together, this research highlights an important role of human capital as a mediating mechanism between HR systems and performance metrics.

Another perspective, the behavioural perspective in strategic HRM (Jackson et al., 1989; Schuler and Jackson, 1987), posits that different role behaviours are required for different strategies that firms pursue. 'The theory focuses on employee behavior as the mediator between strategy and firm performance' (Wright and McMahan, 1992, p. 303), or 'between HR practices and sustainable competitive advantage' (McMahan et al., 1999, p. 106). The general logic of this perspective is that HR practices are deployed as needed to make sure that employees in certain contexts display the appropriate role behaviours to help the unit achieve its objectives. As suggested by the behavioural perspective of strategic HRM, employees' favourable work attitudes and behaviours required by strategic objectives are expected as a result of employers' investment in HR systems.

Somewhat related, other researchers have incorporated organizational climate literature and social exchange theory as relevant perspectives for factors mediating the HR–performance relationship. Drawing from the organizational climate literature, researchers have suggested that individuals can develop a shared perception of organizations' formal and informal policies, practices, and procedures (Reichers and Schneider, 1990). The shared perception can indicate what behaviour is appropriate in a given work environment and how employees are expected to perform towards organizational objectives (Schneider, 1983). HR systems have been suggested as an important antecedent to organizational climate which can further influence employee attitudes and behaviours and subsequent firm performance (Lepak et al., 2006; Ostroff and Bowen, 2000). Rogg et al. (2001) focused on the general climate of coordination, customer orientation, employee commitment, and managerial competence and found that the relationship between HR systems and customer satisfaction was fully mediated by general climate. Similarly, Collins and Smith (2006) found that commitment-based HR systems facilitated organizational social climate of trust, coordination, and shared codes and language which further related to knowledge exchange and combination as well as relevant firm performance. Researchers have also examined the mediating role of specific organizational climate with similar results. Chuang and Liao (2010), as an example, found that high performance work systems facilitated two types of strategically targeted organizational climate – concern for customers and concern for employees, which in turn promoted employees' service performance and helping behaviour as well as retail stores' marketing performance.

When examining employees' attitudes and behaviours and their effects on firm performance at the unit-level of analysis, researchers have also used social exchange theory to explicate the mediating mechanisms. Social exchange theory focuses on the motivational component of employee–organization relationships and provides insights regarding the implications of the fit between the provided inducements and expected

contributions in an employee–organization relationship (Tsui et al., 1997). According to the norm of reciprocity (Gouldner, 1960) and social exchange perspective (Blau, 1964), when organizations value employees' contribution and care about their well-being via investment in HR systems, employees are expected to reciprocate by exerting positive work attitudes and behaviours towards organizations. In line with this rationale, Takeuchi et al. (2007) found that social exchange quality between employees and organizations mediated the relationship between high performance work systems and organizational performance in addition to the mediating role of collective human capital. Other scholars have also found that HR systems fostered aggregate perceived organizational support and affective commitment which further related to in-role and extra-role behaviours and organizational outcomes (e.g., Chuang and Liao, 2010; Gong et al., 2009; Guest, 2001; Messersmith et al., 2011; Sun et al., 2007; Wright et al., 2003).

Several recent studies have also used the AMO framework to examine the mediation process between HR systems and firm performance. As a variation of several of these perspectives, the AMO model suggests that employees' ability, motivation, and opportunity to perform are three elements of employee performance and HR systems can be associated with firm performance through its influence on these three elements (Appelbaum et al., 2000; Becker and Huselid, 1998; Delery and Shaw, 2001; Gerhart, 2007; Guest, 1997; Jiang et al., 2012a; Lepak et al., 2006). In a recent meta-analytic review, Jiang et al. (2012b) drew upon the AMO model to classify HR practices into three dimensions corresponding to the three elements of employee performance and found that human capital and employee motivation partially mediated the impact of three HR dimensions on operational and financial performance. They did not include employees' opportunity to contribute as a mediator due to the scant research on the mediating role of this variable.

In addition to the mediating mechanisms through employee outcomes, researchers have also explored the mediating role of organizational capabilities. A specific type of organizational capability that has recently attracted researchers' attention is the dynamic capability of organizations. Dynamic capabilities refer to a set of capabilities which enable the firm to 'integrate, build, and reconfigure internal and external competences to address rapidly changing environments' (Teece et al., 1997, p. 516). As an extension of the resource-based view, the dynamic capabilities view emphasizes how an organization adapts to environmental change by developing and exploiting its capabilities (Leiblein, 2011). Strategic HRM research has examined the mediating role of several dynamic capabilities, such as knowledge integration (Collins and Smith, 2006), adaptive capability (Wei and Lau, 2010), absorptive capacity (Chang et al., 2013), organizational ambidexterity (Patel et al., 2013), and HR flexibility (Beltrán-Martín et al., 2008).

Combined, unit-level strategic HRM research has heavily relied on the resource-based view of the firm (Barney, 1991) and the behavioural perspective of HRM (Jackson et al., 1989; Schuler and Jackson, 1987) to understand 'why' and 'how' a bundle of HR practices or HR systems can be related to organizational performance. Consistent with these two perspectives, researchers on the mediating mechanisms of the HR systems–performance relationship at the unit-level analysis have explored the mediating role of both organizational capability and collective employee outcomes (e.g., human capital, employee attitudes and behaviours). When examining the mediating effect through

employee outcomes, several theoretical perspectives derived from organizational behaviour and industrial and organizational psychology research (e.g., organizational climate literature, social exchange theory, and the AMO model) have been integrated into strategic HRM research to elaborate why HR systems can influence employees and how employees react to HR systems (Lepak et al., 2012). These micro-theoretical perspectives have been more frequently adopted to explain the mediating mechanisms of HR systems at the individual-level or cross-level analysis.

Individual-Level of Analysis

While strategic HRM research has disproportionately focused on the unit-level of analysis, there is a growing research interest in understanding employees' perceptions of and reactions to HR systems (e.g., Nishii and Wright, 2008; Wright and Boswell, 2002). Theoretically, strategic HRM scholars have reached an agreement that employee outcomes serve as one of the important mediators of the relationship between HR systems and firm performance. However, previous empirical research has typically adopted a managerial perspective to ask managers' opinions of the use of HR systems in organizations and implicitly assumed that what is reported by managers would be consistent with employees' perceptions. Interestingly, recent research challenges this managerial perspective and shows that employees may have different experiences of HR systems from what is reported by their managers (Liao et al., 2009) as well as from other employees exposed to the same HR systems (Nishii et al., 2008). These findings highlight the potentially critical influence of employee perceptions on their own attitudes and behaviours, and focuses researchers' attention to examining HR systems from the employees' perspective.

Different from traditional micro-HR research, strategic HRM research at the individual level focuses on the influence of HR systems rather than a single HR practice on individual outcomes. In particular, researchers explore the psychological and motivational mechanisms through which employees' perceptions of a bundle of HR practices are related to their attitudes and behaviours. For example, based on social exchange perspective (Blau, 1964), several studies examined employee attitudes (e.g., job satisfaction, affective commitment) as the mediators between perceived HR systems and individual outcomes (e.g., Barling et al., 2003; Boxall et al., 2011; Kuvaas, 2008). Drawing upon empowerment literature, some scholars identified psychological empowerment as a mediator of the relationships between perceived HR systems and employee attitudes (e.g., job satisfaction, affective commitment) and behaviours (e.g., customer-oriented behaviours, creative employee performance) (e.g., Boxall et al., 2011; Butts et al., 2009; Ehrnrooth and Bjorkman, 2012). Zacharatos et al. (2005) reported that trust in management and psychological safety climate mediated the relationship between employee-perceived high performance work systems and safety performance measured in terms of personal-safety orientation and safety incidents. In addition, Boon et al. (2011) integrated strategic HRM and person-environment fit literature by examining person-organization fit and person-job fit as mediators in the relationship between employee-perceived HR systems and employee attitudes and behaviours. As this stream of research

is quickly demonstrating, the individual employee plays an important role in understanding how HR systems relate to relevant outcomes of interest.

Multilevel/Cross-Level of Analysis

Several strategic HRM scholars have suggested that the influence of HR systems on firm performance is fundamentally a multilevel phenomenon in nature (e.g., Lepak et al., 2006; Ostroff and Bowen, 2000). The basic logic behind this idea suggests that HR systems designed at the unit level need to be first experienced by individual employees in order to influence their knowledge, skills, abilities, and others characteristics (KSAOs) as well as their work efforts and motivation. Individual employee outcomes, in turn, are aggregated through emergence processes to impact unit-level outcomes (e.g., Nishii and Wright, 2008; Nishii et al., 2008).

Building on these arguments, researchers have begun to integrate macro- and micro-level HRM research to examine the influence of HR systems on individual attitudes and behaviours (e.g., Liao et al., 2009; Nishii et al., 2008; Takeuchi et al., 2009). Within this multilevel perspective, much of the strategic HRM research has taken a top-down approach (cf. Kozlowski and Klein, 2000) to examine cross-level influences and consider how high performance work systems at the unit level (e.g., branch or establishment) of analysis influence individual employees' attitudes and behaviours. For example, Takeuchi et al. (2009) examined the mediating role of organizational climate (concern for employee climate) in the cross-level relationship between establishment-level high performance work systems and individual-level job satisfaction and affective commitment. Liao et al. (2009) examined the cross-level relationship between management-rated high performance work systems (branch level) and employee-rated high performance work systems (individual level) as well as the mediating roles of human capital, psychological empowerment, and perceived organizational support on the relationship between employee-rated high performance work systems and employee service performance (at the individual level of analysis).

Similar approaches have been adopted in other recent studies (e.g., Aryee et al., 2012; Den Hartog et al., 2013; Jensen et al., 2013). While the specifics vary, a common theme of these multilevel HRM studies is that they tend to examine individual outcomes as dependent variables and consider two main mediation processes – employees' perceptions of HR systems (e.g., Aryee et al., 2012; Den Hartog et al., 2013; Jensen et al., 2013; Liao et al., 2009) and shared organizational climate (e.g., Aryee et al., 2012; Takeuchi et al., 2009) – as key processes in the relationship. Even though several other studies did not examine the cross-level effects through employees' perceptions of HR systems or shared organizational climate but test the cross-level influence through individual-level psychological or motivational mechanism directly (e.g., Bal et al., 2013; Snape and Redman, 2010; Wu and Chaturvedi, 2009), these studies implicitly assumed that HR systems designed and rated at the unit level are perceived or experienced by individual employees.

While the top-down approach has received more attention, researchers are increasingly adopting a bottom-up approach to examine cross-level influences of individual attitudes and behaviours on unit-level outcomes. One of the primary ways this is done is

by examining how aggregate individual outcomes relate to unit-level outcomes. For instance, Nishii et al. (2008) examined the particular attributions employee make of the HR systems in place and how these attributions impact their attitudes (in terms of job satisfaction and affective commitment) at the individual level of analysis. These aggregate employee attitudes were linked to aggregate organizational citizenship behaviours and customer satisfaction at the unit level of analysis. Similarly, Aryee et al. (2012) found a positive relationship between aggregate individual service performance and unit-level market performance after examining the cross-level influence of high performance work systems on individual service performance through individuals' experiences of HR systems and shared service climate. By using another approach, Wood et al. (2012) examined job satisfaction (individual-level) as a mediator in the relationships between HR systems and organizational outcomes (unit-level). This mediation test, referred to as a 2-1-2 multilevel mediation model (Preacher et al., 2010), provides a rigorous examination of both the top-down effect of HR systems on individual outcomes and the bottom-up effect of individual mediators on organizational-level outcomes. The essential of this approach is to examine the extent to which HR systems can influence organizational outcomes by affecting the between-group variance of individual outcomes, which is consistent with earlier theoretical models of the mediating role of employee outcomes (e.g., Becker and Huselid, 1998; Delery and Shaw, 2001; Guest, 1997).

Up to this point, we have summarized previous efforts in examining the mediating mechanisms between HR systems and outcomes at different levels of analysis. In Table I we list many of the relevant, existing studies that have contributed to our understanding of this topic. As this brief review illustrates, our understanding of the mediating mechanisms through which HR systems influence performance outcomes has improved substantially over the past decade. Nonetheless, there are additional areas that need to be investigated to enrich our understanding of the influence process of HR systems on employee and organizational outcomes.

An Updated Multilevel Framework of Strategic HRM

As previous strategic HRM research has highlighted, HR systems do not merely function at a single level of analysis; research is needed that builds on the emerging research suggesting a multilevel perspective that considers the influences of HR systems on various outcomes at multiple levels (e.g., Lepak et al., 2006; Nishii and Wright, 2008; Ostroff and Bowen, 2000). Building on these theoretical frameworks, we propose an updated multilevel model that might be useful to help guide future efforts to further understand the mediating mechanisms through which HR systems impact outcomes at different levels of analysis.

Several researchers have advanced multilevel models for strategic HRM. As a starting point, Ostroff and Bowen (2000) proposed a multilevel model of strategic HRM in which HR systems influence organizational performance through organizational and psychological climates. Specifically, they suggested that organizational-level HR systems affect individual psychological climate which, in turn, can be aggregated to represent organizational climate when HR systems are strong. The psychological and

Table I. Summary of the studies examining the mediation process of the relationships between HR systems and outcomes

<i>Study</i>	<i>Level</i>	<i>HR systems</i>	<i>Mediators</i>	<i>Outcomes</i>
Barling et al. (2003) Boon et al. (2011)	Individual Individual	High-quality work HPWS	Job satisfaction Person-organization fit Person-job fit	Occupational injuries Organizational commitment Intention to show OCB Job satisfaction Intention to leave Employee performance
Boxall et al. (2011)	Individual	HPWS	Psychological empowerment Compliance behaviour Customer-oriented behaviour Affective commitment Psychological empowerment	Job satisfaction Organizational commitment Job performance Job stress Creativity Work load Core job performance Employee effort Perceived organizational performance
Butts et al. (2009)	Individual	High involvement work processes	Psychological empowerment	Work performance Turnover intentions
Ehnrrooth and Bjorkman (2012)	Individual	HRM process	Trust Job satisfaction Commitment POS Affective commitment Procedural justice Interactional justice Job satisfaction Trust in management Trust in management Psychological safety climate Involvement Quit rate Quit rates Dismissal rates	Work performance Turnover intentions
Gould-Williams (2003)	Individual	Combined HR practices	HR flexibility	Customer service effectiveness
Kuvaas (2008)	Individual	Developmental human resource practices		
Macky and Boxall (2007)	Individual	HPWS		
Zacharatos et al. (2005)	Individual	HPWS		
Allen et al. (2013)	Unit	High commitment HR system		
Batt (2002) Batt and Colvin (2011)	Unit Unit	High involvement HR practices High involvement organization Investments and inducements Performance-enhancing practices HPWS		
Beltrán-Martín et al. (2008)	Unit			

Bhattacharya et al. (2005)	Unit	HPWS	HR flexibility	Profit per employee Sales per employee Return on sale Cost of sales Firm innovation Market responsiveness New product performance Service performance Helping behaviour Market performance Sales growth Stock returns Sale growth Revenue from new products/services Labour productivity Voluntary turnover
Chang et al. (2013)	Unit	Flexibility-oriented HR practices	Absorptive capacity	
Chiang et al. (2013)	Unit	High commitment work system	Transactive memory system	
Chuang and Liao (2010)	Unit	HPWS	Climate of concern for customers Climate of concern for employees	
Collins and Clark (2003)	Unit	Network-building HR practices	Top management teams' social network	
Collins and Smith (2006)	Unit	Commitment-based HR practices	Social climate	
Frenkel and Orlitzky (2005)	Unit	Supportive employment practices	Knowledge exchange and combination	
Gardner et al. (2011)	Unit	Skill-enhancing practices	Trust	
		Motivation-enhancing practices	Collective organizational commitment	
		Empowerment-enhancing practices		
Gong et al. (2010)	Unit	HPWS	Collective affective commitment	Collective OCB
Gong et al. (2009)	Unit	Performance-oriented HR systems	Managers' affective and continuance commitment	Global firm performance
Guerero and Barraud-Didier (2004)	Unit	Maintenance-oriented HR systems High involvement practices	Quality of products and services Employee productivity Work climate	Economic profitability
Guest (2001)	Unit	HR system	Employee attendance Employee satisfaction	
Guthrie (2001)	Unit	High involvement HR practices	Turnover	Productivity Quality Innovation
Harmon et al. (2003)	Unit	High involvement work system	Employee satisfaction	Financial performance
Harris and Ogbonna (2001)	Unit	Strategic HRM	Market orientation	Productivity Productivity Organizational performance
Hsu et al. (2007)	Unit	HPWS	Human capital	Profitability Return on asset
Jiménez-Jiménez and Sanz-Valle (2008)	Unit	HRM system	Innovation	Overall performance
Katou and Budhwar (2006)	Unit	HRM system	HR outcomes	Organizational outcomes

Table I. Continued

<i>Study</i>	<i>Level</i>	<i>HR systems</i>	<i>Mediators</i>	<i>Outcomes</i>
Kizilos et al. (2013) Lopez-Cabrates et al. (2009)	Unit	High involvement HR practices	OCB Valuable knowledge Unique knowledge Proactive environmental strategy Collective effort Collective job satisfaction Collective commitment, Collective OCB	Sales performance Innovation activity Financial performance Financial performance Perceived firm performance Firm performance
	Unit	Knowledge-based HRM practices Collaborative HR systems		
Martinez-del-Rio et al. (2012) McClean and Collins (2011) Messersmith et al. (2011)	Unit	High involvement HR system	Work intensification Job strain Job satisfaction Communication Trust Employee relations climate Numerical flexibility Employee skills Employee attitudes Employee motivation Retention Organizational ambidexterity Climates of coordination, customer orientation, employee commitment, and managerial competence Voluntary turnover Productivity Service-oriented citizenship behaviours	Labour productivity
	Unit	High commitment HR practices		
	Unit	HPWS		
	Unit	HPWS		
Orlitzky and Frenkel (2005)	Unit	HPWS		Labour productivity
Park et al. (2003)	Unit	Synergistic system of HR practices		Firm performance
Patel and Conklin (2012) Patel et al. (2013) Rogg et al. (2001)	Unit	HPWS	Employee relations climate Numerical flexibility Employee skills Employee attitudes Employee motivation Retention Organizational ambidexterity Climates of coordination, customer orientation, employee commitment, and managerial competence Voluntary turnover Productivity Service-oriented citizenship behaviours	Labour productivity Firm growth Customer satisfaction
	Unit	HPWS		
	Unit	HPWS		
Sels et al. (2006)	Unit	HR intensity		Financial performance
Sam et al. (2007)	Unit	HPWS		Turnover Productivity Relative establishment performance
Takeuchi et al. (2007)	Unit	HPWS		Productivity Relative establishment performance
Teo et al. (2011) Vandenberg et al. (1999)	Unit	Human capital-enhancing HR practices	Collective human capital Establishment social exchange Perceived employee outcomes Involvement Morale Organizational climate Organizational commitment	Perceived operational performance Organizational effectiveness
	Unit	High involvement work processes		
Veld et al. (2010) Wright et al. (2003)	Unit	HR system	Organizational climate Organizational commitment	Employee commitment Operational performance Expense Profits
	Unit	Combined HR practices		

Wei and Lau (2010)	Unit	HPWS	Adaptive capability	Financial performance
Zhang and Jia (2010)	Unit	HPWS	Perceived organizational support	Corporate entrepreneurship
Zhou et al. (2013)	Unit	High commitment HR system	Innovation	Financial performance
Aryee et al. (2012)	Multilevel	HPWS	Unit-level empowerment climate	Individual service performance
			Individual HPWS perceptions	
			Psychological climate	
Bal et al. (2013)	Multilevel	Developmental and accommodative HR systems	Individual-level psychological contract	Individual engagement and commitment
Chang and Chen (2011)	Multilevel	HPWS	Individual-level commitment	Individual job performance
Den Hartog et al. (2013)	Multilevel	HPWS	Individual-level human capital	Individual perceived unit performance
Gittell et al. (2010)	Multilevel	HPWS	Individual HPWS perceptions	Individual employee satisfaction
Jensen et al. (2013)	Multilevel	HPWS	Unit-level relational coordination	Patient-perceived quality and efficiency of care
Kehoie and Wright (2013)	Multilevel	HPWS	Individual HPWS perceptions	Individual turnover intentions
			Individual-level anxiety	
			Individual role overload	Individual OCB
			Individual-level affective commitment	Intent to remain
Kroon et al. (2009)	Multilevel	HPWS	Individual procedural justice	Absenteeism
			Job demands	Individual emotional exhaustion
Liao et al. (2009)	Multilevel	HPWS	Individual HPWS perceptions	Individual service performance
			Individual-level employee human capital	
			Individual-level psychological empowerment	
Snape and Redman (2010)	Multilevel	HPWS	Individual-level POS	Individual OCB
			Individual-level POS	Individual in-role performance
Takeuchi et al. (2009)	Multilevel	HPWS	Individual-level job influence	Individual affective commitment
			Unit-level concern for employees climate	Individual job satisfaction
Uen et al. (2009)	Multilevel	Commitment-based HR system measured	Individual-level psychological contract	Individual in-role
			Individual-level job satisfaction	Individual OCB
Wood et al. (2012)	Multilevel	High involvement HR practices, enriched job design	Individual-level procedural justice	Organizational performance
Wu and Chaturvedi (2009)	Multilevel	HPWS	Individual-level procedural justice	Individual affective commitment
				Individual job satisfaction

HPWS, high performance work systems; OCB, organizational citizenship behaviour; POS, perceived organizational support.

organizational climate will impact employees' individual and collective human capital, attitudes, and behaviours, which further affect individual performance and organizational performance.

Lepak et al. (2006) extended Ostroff and Bowen's (2000) model by arguing that climate perceptions serve as an important mediator in the relationship between HR systems and organizational outcomes but argue for additional mediating mechanisms as well as distinct paths of mediation. In particular, climate perceptions were argued to mediate the influence of HR systems on employees' motivation but not necessarily on employees' abilities and opportunities to perform on the job. In addition, Lepak et al.'s (2006) model emphasized the bottom-up emergence of collective employee performance as well as its impact on organizational performance. Related, Nishii and Wright (2008) also described the HR systems–performance relationship across levels of analysis. They focused on the gaps between organizational-level intended and actual HR systems and individual employees' perceived HR systems. They also underlined the role of employees' perceptions of and reactions to HR systems in mediating the relationship between HR systems and organizational performance.

Taken together, these multilevel models of strategic HRM place an emphasis on the role of employees in the mediation processes between HR systems and organizational outcomes. In line with this emphasis, our proposed framework focuses on the mediating role of employee outcomes at different levels of analysis even though we acknowledge that HR systems can affect organizational performance through other mechanisms such as organizational capabilities. In the following, we discuss the updated framework and identify the critical gaps and future directions in strategic HRM literature with regard to these mediating mechanisms.

We propose a three-level mediation framework to explicate the influence process of HR systems on organizational outcomes in Figure 1. First, the mediating mechanisms of the HR systems–performance relationship are expected to operate at three levels of analysis – organizational level, team level, and individual level. Second, there is a top-down effect of higher-level HR systems on lower-level HR systems, such that HR systems designed at the organizational level determine how HR systems are implemented at the team level, which may further influence how HR systems are perceived and interpreted at the individual level. Third, this model draws attention to bottom-up processes in which lower-level mediators and outcomes emerge to form higher-level mediators and outcomes.

While the proposed framework builds on existing research, it is distinctive in that it explicitly considers the possibility of mediation processes at the team level of analysis. Even though multilevel theories and methods have recently been integrated into strategic HRM research, almost all endeavours have been directed towards HR systems conceptualized and operationalized at the individual and organizational levels. Very little effort has been exerted to incorporating the team level of analysis, which is a broad and flourishing area in organizational research (Mathieu et al., 2008), into strategic HRM research. However, inclusion of the team level of analysis in strategic HRM research is important for both team and strategic HRM literatures due to increasing use of work teams in contemporary organizations (Ilgen et al., 2005). First, teams serve as important work contexts for individual employees (Kozlowski and Bell, 2003). Organizations may

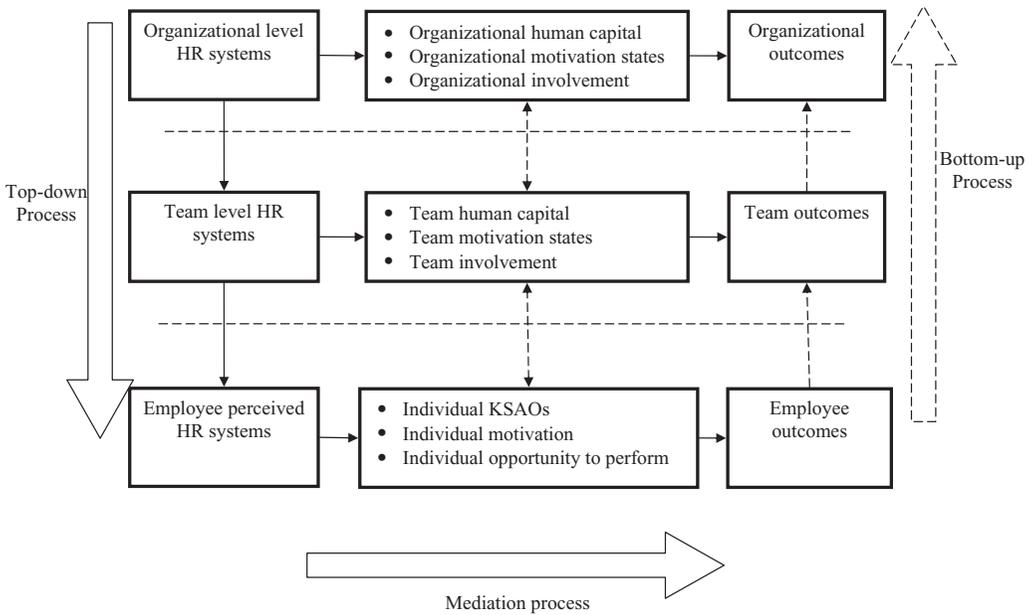


Figure 1. Multilevel model of strategic HRM

not directly influence individual employees without affecting the team contexts. Indeed, compared with organizations, teams are more proximal to individual employees and thus have greater influence on individual-level outcomes (Mathieu and Chen, 2011). In this case, work teams may play an important role in mediating the influence of HR systems on individual outcomes.

Second, although examining the influence of HR systems on individual outcomes is important, relatively little is known about how the individual outcomes link with organizational outcomes (Ployhart and Moliterno, 2011). Given the bridging position of work teams between organizations and individuals, individual outcomes may first form team performance, which in turn is translated into organizational performance through emergent processes. Therefore, considering teams in strategic HRM research can help understand how the individual outcomes resulting from the investment or inducement of HR systems can contribute to organizational effectiveness.

Third, as a desirable management goal, team effectiveness has been widely examined in the team literature. Team scholars have endeavoured to explore the impact of team leadership and team characteristics (e.g., task interdependence, team structure) on team effectiveness. However, more attention has been called for by the recent review of team literature to investigate the impact of contextual factors such as organizational-level HR systems on team processes and team performance (Mathieu et al., 2008). Fourth, both strategic HRM research and team research have yet made enough effort to explore the nature and function of HR systems at the team level. We have limited knowledge about what HR practices should be used to facilitate team processes and team effectiveness or how to effectively implement HR practices in work teams. In essence, it is necessary to

investigate how HR systems operate at the team level to affect outcomes at multiple levels.

Drawing upon the AMO framework, we propose a three-level mediation framework in which HR systems are related to performance outcomes through their impact on employee KSAOs, motivation and efforts, and opportunity to contribute in a homologous pattern at the three levels of analysis. According to Chen et al. (2005), a homologous multilevel model has two assumptions. First, it assumes that the constructs at different levels have similar functions, although they need not be psychometrically equivalent. Second, it assumes that the relationships among the constructs at one level of analysis are comparable to those at different levels of analysis. The multilevel model of strategic HRM meets both assumptions as discussed below.

Variables at Different Levels

HR systems at different levels. HR systems at the organizational level represent a pattern of HR practices that are designed to achieve organizational objectives (Wright and McMahan, 1992). They can be applied to all employees working in the same job group in an organization. Similar to the definition of organizational-level HR systems, team-level HR systems are considered as a bundle of HR practices that are implemented to enable a team to achieve its goals. Team-level HR systems are specific to employees working in a work team. These higher-level HR systems originate at the organizational level or team level rather than emerging from the aggregation of the individual-level factors. At the individual level, HR systems refer to employees' perceptions or experiences of a bundle of HR practices implemented at the team or organization level. Even though HR systems at the three levels are conceptually different, they perform the same theoretical function in terms of enhancing performance outcomes across levels (Kozlowski and Klein, 2000).

Mediators at different levels. Based on the AMO model, three categories of mediators are considered in the relationship between HR systems and performance across the three levels. The *A* dimension indicates employees' ability to complete their work. At the individual level, human capital refers to KSAOs possessed by individual employees. At the team level and organizational level, individual KSAOs may be viewed as collective human capital resources through emergence processes (Ployhart and Moliterno, 2011). Higher-level human capital resources originate in individual employees' KSAOs but do not rest on assumptions of isomorphism and coalescing processes of composition (Kozlowski and Klein, 2000). In other words, higher-level human capital emerges from individual KSAOs through a compilation process (Chan, 1998; Chen et al., 2005; Kozlowski and Klein, 2000), which means individual-level KSAOs and higher-level human capital are qualitatively different and individuals are not expected to have equal levels of KSAOs to form collective human capital.

The *M* dimension involves employee attitudes, affects, and motivation towards their work. Although these factors are defined in subtly different ways by scholars of organizational behaviour and industrial and organizational psychology domains, they generally reflect employees' willingness to exert efforts at work. At the team level, Marks

et al. (2001, p. 357) defined these types of variables 'emergent states'. Different from the relationships among individual KSAOs and collective human capital, employee attitudes, affects, and motivation are essentially the same as they emerge upward across levels, which is called a composition model in multilevel research (Kozlowski and Klein, 2000). In this case, it is expected that there are agreement and consensus in these characteristics among employees of a team or an organization to some degree. For example, perceived organizational support indicates the extent to which an individual employee feels that the organization values his or her contribution and cares about his or her well-being (Eisenberger et al., 1986). When measured using the referent-shift composition model (Chan, 1998), higher-level perceived organizational support represents a climate concern for employees' contribution and well-being (e.g., Chuang and Liao, 2010; Takeuchi et al., 2009). In this case, concern for employees' climate is conceptually and functionally similar to individual perceived organizational support.

The *O* dimension reflects the means through which employees' abilities and efforts can be converted to outcomes. At the individual level, employees' opportunity to perform is related to the literature of job design (Hackman and Oldham, 1976) and focuses on how the work is organized and structured to express employees' talents in their individual work. For example, deriving from the job characteristics literature, psychological empowerment is considered as an important construct to reflect job attributes providing employees with feelings of meaning, competence, autonomy, and impact at work (Spreitzer, 1995). It enables employees to determine the way they complete their work and thus endues them with opportunities and responsibilities to exploit their KSAOs and efforts (Butts et al., 2009; Liao et al., 2009). At the team level and organizational level, the *O* dimension refers to employees' involvement in decision-making, problem-solving, and information-sharing activities as well as their coordination and collaboration to achieve collective objectives (Boxall and Macky, 2009; Gerhart, 2007). Employees' opportunities to perform their individual tasks cannot be directly aggregated to represent team involvement and organizational involvement because involvement at higher levels of analysis emphasizes the interactions among individuals. Similar to collective motivation, team involvement and organizational involvement can be aggregated from individual perceptions of these processes. Because employees of a team are exposed to the same teams or organizations, it is likely that employees have a shared understanding of how team members or co-workers engage in decision-making and coordination.

Performance at different levels. According to Borman and Motowidlo (1997) and others (e.g., Campbell et al., 1993), there are two types of individual performance: task performance and contextual performance. Task performance involves activities related to the execution and maintenance of core technical processes in an organization, whereas contextual performance maintains the broader organizational, social, and psychological environment in which the technical core functions. At the team level, team performance includes both performance behaviours and performance outcomes (Mathieu et al., 2008). Whereas behaviours are actions that are relevant to achieving goals, outcomes are the consequences or results of performance behaviours.

Organizational performance is more complex. Based on Dyer and Reeves (1995), organizational performance can be categorized into HR outcomes (e.g., absenteeism,

turnover, and employee performance), operational outcomes (e.g., productivity, quality, and service), financial or accounting outcomes (e.g., return on invested capital or return on assets), and market performance. Team performance and organizational performance originate from the lower-level performance. However, the simple addition of lower-level outcomes cannot represent higher-level performance due to the interdependent relationships among lower-level entities (e.g., individuals, teams). Also, individual members may not necessarily make equal contribution to team performance, and teams may not equally contribute to organizational performance.

Mediation Process at Different Levels

To construct a homologous multilevel framework of strategic HRM, we need to ensure that the relationship between HR systems and performance mediated by AMO mechanisms holds up conceptually and empirically across the three levels of analysis (Chen et al., 2005). The AMO model was first developed at the individual level of analysis. It suggests that the more KSAOs, motivation, and opportunities are affected by employee perceived HR systems, the better performance employees will achieve. Liao et al. (2009) provided evidence for the individual-level mediation process and showed that the positive relationship between employee-experienced high performance work systems was mediated by individual employees' human capital, perceived organizational support, and psychological empowerment.

Comparable to individuals, teams and organizations can also use HR systems to generate collective human capital, motivation, and work process to accomplish collective objectives. As discussed earlier, researchers operating at the organizational level have increasingly used the AMO model to explain the influence of HR systems on relevant outcomes (e.g., Jiang et al., 2012b). Although the effects of HR systems on teams have not been extensively studied in strategic HRM research, previous work on team literature suggests that HR systems at the team level can influence team performance by affecting team motivational and interactional processes (Mathieu et al., 2006). Recent research in strategic HRM also indicates that HR systems can influence knowledge acquisition and knowledge sharing at the team level of analysis (Chuang et al., 2013). All these findings suggest that HR systems at the team level can also influence the whole team's human capital, motivation, and involvement to achieve team performance.

Cross-Level Relationships

While the relationship between HR systems and performance mediated by AMO may be viewed as homologous across the three levels of analysis, researchers have demonstrated that it is important to acknowledge the possibility of cross-level relationships among variables at different levels of analysis. As shown in Figure 1, we anticipate and model top-down influences of higher-level HR systems on lower-level HR systems, concurrent top-down effect and bottom-up effect of mediating variables, and bottom-up effect of lower-level performance on higher-level performance.

Multilevel researchers suggest that the influence of higher-level variables on lower-level variables (i.e., top-down effect) is more pervasive, powerful, and immediate than

the effect of lower-level variables on higher-level variables (i.e., bottom-up effect) (Kozlowski and Klein, 2000). This is consistent with the trends within strategic HRM research which emphasize the cross-level effects of higher-level HR systems on lower-level HR systems. HR systems are often determined at the organizational level to support business strategy. Conceptually, this makes logical sense as the HR systems policies and philosophies at the organizational level constitute a basis of implementation of HR systems in lower-level units (e.g., departments and work teams). HR systems are then implemented at the department or work team level by managers and perceived by employees through their cognition and interpretation processes (Nishii and Wright, 2008). Even though employees can take an active role in seeking information about HR systems, it is unlikely that their perceptions change how HR systems are implemented at the team level and designed at the organizational level. Similarly, although HR systems implemented at the team level may not be perfectly consistent with organizations' intentions regarding HR systems, it is less likely that how HR systems are implemented can influence the design of HR systems at the organizational level. Therefore, higher-level HR systems have a relatively clear top-down impact on lower-level HR systems.

The cross-level relationships of the three mediators are more complicated. First, we posit bottom-up effects of individual-level KSAOs on higher levels of human capital. According to Ployhart and Moliterno (2011, p. 128), human capital is 'a unit-level resource that is created from the emergence of individuals' knowledge, skills, abilities, and other characteristics (KSAOs)'. They emphasized that human capital is a unit-level construct with origins at the individual level and identified the emergence process through which unit-level human capital is created from individual KSAOs. In this case, it is likely that individual KSAOs are combined and transferred to create human capital at higher levels of analysis rather than vice versa (higher-level human capital influences the individual KSAOs it comprises).

Different from the emergence process of human capital, collective motivation states influence individual motivation in a top-down approach. As Chen and Kanfer (2006) suggest, unit-level emergent motivational states should have a positive top-down influence on individual-level motivational states. According to social learning theory (Bandura, 1997), motivation can be contagious such that individual employees may be more motivated to perform their own tasks when they perceive their team members or organizational members are enthusiastic at work. For example, individuals may feel more committed to their organizations when others in their teams or organizations have similar feelings.

Similarly, we expect a top-down influence of higher-level involvement on lower-level involvement. Multilevel studies have suggested that a climate of employee involvement (e.g., empowerment climate) at the team level or organizational level can help create a supportive work environment in which individual employees can interact with others to collect information about how to complete their own tasks. For example, these studies have shown that unit-level empowerment climate can make employees believe that they have a sense of meaning in their work role, possess competence to take their task responsibilities, and have discretion to determine how to complete their work (Aryee et al., 2012; Chen et al., 2007). In this case, it is likely that employee interaction and

involvement at the higher levels can have a top-down impact on how employees perceive their opportunities to complete their own tasks.

Finally, we propose that performance outcomes at the lower level of analysis have a bottom-up emergence effect on higher-level outcomes. Strategic HRM research has traditionally assumed that HR systems contribute to organizational performance by affecting employee outcomes (e.g., behavioural perspective and resource-based view). It is employees who make a contribution to team-level outcomes by employing their KSAOs and efforts in certain situations; team-level outcomes are further combined to influence organizational effectiveness. Recent studies have provided preliminary evidences for the bottom-up emergence process by associating aggregate employee performance (e.g., task performance and organizational citizenship behaviours) with unit-level outcomes (e.g., market performance in Aryee et al., 2012; customer satisfaction in Nishii et al., 2008).

In summary, integrating the AMO model and previous multilevel models of strategic HRM, we propose a three-level mediation framework by considering employee ability, motivation, and opportunity as mediators of the relationship between HR systems and performance outcomes at the individual level, team level, and organizational level of analyses. In addition to the homologous multilevel mediating relationships, our framework also considers cross-level relationships in strategic HRM research from both top-down and bottom-up approaches. On the one hand, organizational-level HR systems can influence individual outcomes by affecting employees' perceptions of HR systems and forming a climate of employee motivation and employee involvement. On the other hand, individual KSAOs and performance can be aggregated to influence collective human capital and unit-level outcomes through emergence processes.

DISCUSSION AND FUTURE RESEARCH IMPLICATIONS

Wright and Gardner (2003, p. 312) noted that 'theoretically, no consensus exists regarding the mechanisms by which HR practices might impact on firm outcomes. This lack of theoretical development has resulted in few empirical studies that explore the processes through which this impact takes place.' At about the same time, strategic HRM scholars started to theorize mediation models of the relationship between HR systems and organizational performance (e.g., Becker and Huselid, 1998; Delery and Shaw, 2001; Ostroff and Bowen, 2000). Guided by these theoretical frameworks, substantial empirical efforts have been made in exploring the mediating mechanisms of HR systems–performance relationship over the past decade, as illustrated in Figure 2. More notably, strategic HRM researchers have recently adopted a multilevel perspective to understand the influence of HR systems on organizational outcomes by affecting employee outcomes. With little doubt, these research efforts have greatly enriched our understanding of the 'black box' between HR systems and organizational performance.

However, while we see these gratifying accomplishments, we should also be aware of potential issues raised by or possible directions implied by these previous studies. As strategic HRM scholars, we may want to question ourselves: Do we have sufficient knowledge about the relationships between HR systems and various types of outcomes? Are there any fundamental problems in prior research on this topic? If scholars want to

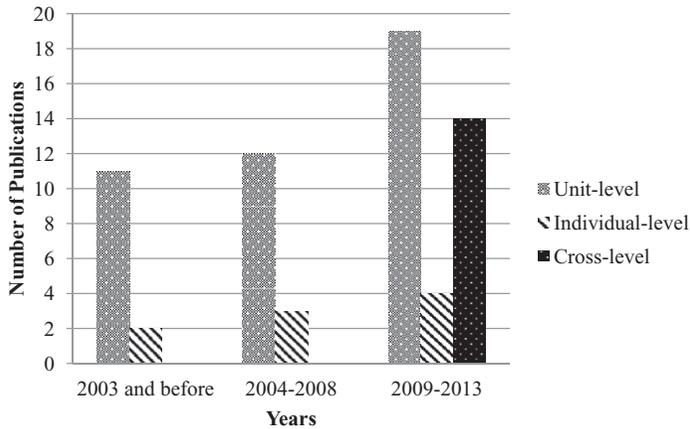


Figure 2. Statistics of the studies examining the mediation process of the relationships between HR systems and outcomes

Note: The graph indicates the numbers of studies published in different time periods about the mediating mechanisms of the relationship between HR systems and outcomes.

continue research in this area, what is needed and can be done for future advancements? Many review papers tried to answer these critical questions by commenting on previous research from different aspects, such as measurement issues (e.g., Lepak et al., 2006; Paauwe, 2009; Posthuma et al., 2013), fit issues (e.g., Delery, 1998; Gerhart, 2007; Jiang et al., 2012a), informant issues (e.g., Gerhart et al., 2000; Huselid and Becker, 2000), and causality issues (e.g., Guest, 2011; Paauwe and Boselie, 2005). In this paper, we complement prior reviews by focusing on the underlying mechanisms through which a system of HR practices relates to (multiple indicators of) organizational performance (via different mediators). In particular, we adopt a multilevel theoretical perspective to review the literature and highlight different sets of mediators at the different levels (unit-, individual-, and cross-levels) of analysis with different types of processes (horizontal, top-down, and bottom-up). With this updated multilevel model of the effects of HR systems, we believe that the issue of mediating mechanisms in strategic HRM is still a young and fruitful research area. Despite such progress, however, many important, unanswered questions remain. In this final section, we draw on the multilevel framework to discuss some ongoing arguments about the mediation process between HR systems and outcomes and outline possible directions for further studies.

Continuing Arguments

Single-level analysis or multilevel analysis. The first question we want to discuss here is whether strategic HRM scholars should shift their attention from sole firm-level analysis to multilevel analysis. Since Huselid’s (1995) seminal study, most of the research has focused on the impact of HR systems from the standpoint of the firm. While understandable, one criticism is that there has been an exclusive concern with the relationship between HR systems and performance at the firm-level analysis (Paauwe, 2009). The

demonstrated effects of HR systems on firm performance distinguish strategic HRM research from traditional micro-HRM research and offer the legitimacy to strategic HRM as an important research field (Wright and Boswell, 2002). However, this pure macro-level perspective has been recently criticized for neglecting employees' perceptions and interpretations of HR systems as well as their reactions to HR systems (e.g., Nishii and Wright, 2008; Purcell and Hutchinson, 2007). Failing to incorporate an employee perspective in strategic HRM research might be problematic given the important role of employee outcomes in mediating HR systems' effect on firm performance (e.g., Lepak and Boswell, 2012). Without examining employees' experiences of HR systems, the mediating role of employee outcomes in the link between HR systems and firm performance is at most abstract.

To address this research concern, multilevel research focusing on individual perceptions of and reactions to HR systems has sprung up in the past five years (i.e., after 2009 as shown in Figure 2). Undoubtedly, multilevel research offers insightful understanding of the psychological mechanisms underlying the impact of HR systems on individual-level outcomes. But, if researchers limit their attention to the cross-level influence of firm-level HR systems on individual-level variables and consider individual attitudes and behaviours as the final outcomes, this multilevel perspective may deviate from the original purpose of strategic HRM research, which is concerned with HR systems' impact on firm performance. And strategic HRM research may lose its *raison d'être* if individual employees' outcomes influenced by HR systems cannot be related to firm-level outcomes.

Considering the limitations of single-level analysis, neither firm- nor individual-level analysis is sufficient to explicate the relationship between HR systems and firm performance mediated by employee outcomes. As we discussed in the multilevel model, future researchers are encouraged to not only examine the top-down influence of HR systems on individual-level variables but also test the bottom-up effect of aggregate individual outcomes on firm performance in order to show a complete mediation process through employee outcomes. This suggested focus does not mean that there is no value in conducting pure firm-level research in the mediating mechanisms of the HR systems–performance relationship. Employee outcomes are not the only mediator through which HR systems can be associated with firm performance. HR systems may also influence firm performance by affecting the more 'objective' features of organizations (e.g., organizational capabilities) that are not dependent on employees' perceptions and experiences. In this case, single firm-level analysis will be appropriate to examine such mediation processes.

Mediating role of HR systems versus finding fit. Most previous research of strategic HRM has focused on the impact of HR systems on firm performance as well as the mediating mechanisms between these two. The exclusive focus on the effects of HR systems may make scholars neglect another important issue that is the connecting role of HR systems between organizational internal and external contexts and firm performance. By focusing extensively on the consequences of HR systems, we have limited knowledge about the extent to which HR systems can translate the demands of business environment and organizational characteristics into a bundle of HR practices which can further align

employees' attitudes and behaviours with the demands of organizations and eventually help improve firm performance. In other words, we miss the link between organizational characteristics and HR systems and assume employee outcomes influenced by HR systems are consistent with the demands of organizations. At some point, we need to be sure to continue to embrace one of the key issues within strategic HRM research – the importance of fit and contingencies.

Scholars have recognized this issue and started to conceptualize HR systems towards a specific organizational goal, such as customer service (e.g., Chuang and Liao, 2010), occupational safety (Zacharatos et al., 2005), network-building (Collins and Clark, 2003), human-capital-enhancing (Youndt et al., 1996), and knowledge-intensive teamwork (Chuang et al., 2013). These targeted HR systems reflect the fit of HR systems with organizational demands and thus are more likely to elicit and reinforce employee outcomes required by these demands. To further understand the extent to which HR systems can help achieve organizational objectives by affecting employee outcomes, we encourage future researchers to explore a more complete mediation model in which HR systems can mediate the influence of organizational characteristics, including business strategy, on employee outcomes which may further lead to firm performance. This avenue of research can tell a full story of the contribution of HR systems to organizations.

Dimensions of HR systems. Another issue related to the mediation process of HR systems involves different functions of the components of HR systems. Even though strategic HRM scholars study HR practices as a system, some researchers have proposed differential effects of HR systems' components. For example, Delery and Shaw (2001) proposed a mediation model of the relationship between HR systems and firm performance. They suggested that staffing, training, and compensation have primary impact on employee knowledge, skills, abilities, and motivation but not employee empowerment. In contrast, performance appraisal and job design are expected to influence employee motivation and empowerment but not employee knowledge, skills, and abilities. Drawing upon the AMO model, other scholars also divided HR systems into three dimensions: skill-enhancing, motivation-enhancing, and opportunity-enhancing HR practices (e.g., Jiang et al., 2012a; Lepak et al., 2006; Subramony, 2009). Researchers have also identified that the three dimensions of HR systems have different effects on employee outcomes (Gardner et al., 2011; Jiang et al., 2012b).

The employee–organization relationship framework (Tsui et al., 1997) has also been used to theorize different dimensions of HR systems. For example, Shaw and colleagues (e.g., Shaw et al., 1998, 2009) categorized HR practices into two dimensions: HRM inducements and investments, and expectation-enhancing practices. The former is designed to enhance employees' well-being while the latter is intended to increase employees' contribution to organizations. Using a similar framework, Gong et al. (2009) found that performance-oriented HR practices and maintenance-oriented HR practices had significant relationships with affective and continuance commitments, respectively, and only affective commitment mediated the influence of performance-oriented HR practices on firm performance.

Previous strategic HRM research on the mediation process has primarily examined how the mediators translate the effect of a unidimensional HR system on firm

performance. But the research on sub-dimensions of HR systems suggests that not all components of HR systems influence employee and firm outcomes in the same way (Jiang et al., 2012b). Similarly, different components of HR systems may influence the mediators or firm performance in more complex ways. In this case, future research is needed that incorporates the findings of the components of HR systems and mediating mechanisms of HR systems to explore whether different components of HR systems influence firm performance through different mechanisms/effects. By doing so, we can have a deeper understanding of the complexity of the relationship between HR systems and firm performance.

A related point is that there might be multiple HR systems with different goals within an organization. For instance, both Kang et al. (2007) and Kehoe and Collins (2008) proposed that two different types of HR systems will be used to facilitate knowledge exploitation and exploration in an organization and the two HR systems will contribute to firm performance through the two mediating mechanisms. This suggests that future research may examine how different HR systems work together to influence firm performance by affecting different mediators. This stream of research can also enrich our understanding of the relationship between HR systems and firm performance.

Looking Forward

The three issues we discussed above are relevant to the mediation test at all three levels of analysis. In the following, we build on the multilevel framework to discuss some specific directions researchers can pursue in the future mediation examination of HR systems.

Single-level examination. The mediation process of the HR systems–performance relationship has been most studied at the organizational level in the past decade. Although researchers have acknowledged that HR systems are related to firm performance by affecting employee human capital, motivation, and opportunity to perform, most empirical studies considered only one aspect of employee outcomes as the mediator in the relationship. In a meta-analytic review of 120 independent studies, Jiang et al. (2012b) found that only a few studies examined both human capital and employee motivation simultaneously as mediators in the relationship between HR systems and firm performance (e.g., Takeuchi et al., 2007). They also noted the paucity of research examining the mediating role of the opportunity component of employee outcomes (e.g., employee involvement, interaction, cooperation, and coordination). While isolating the impact of different mediators is important, it is critical for future research to investigate multiple mediators simultaneously in a single study. By doing so, researchers and managers can obtain more insightful understanding of the unique role different mediators play in connecting HR systems and firm performance. In addition, it is conceivable that the mediators also operate in interdependent manners, a possibility that is important to explore.

Team-level research has been largely neglected throughout the development of strategic HRM research. It is meaningful to study the impact of HR systems on team performance and explore the mechanism through which HR systems help promote team

effectiveness. As the first step of this stream of research, scholars need to carefully consider the conceptual meaning of team-level HR systems. Does this construct indicate HR systems implemented at the team level (e.g., training activities at the team level) or HR systems designed to facilitate teamwork (e.g., selecting, training, and compensating employees for team work)? Both approaches can be appropriate depending on specific research questions. For example, Chuang et al. (2013) developed a measure of HR systems for knowledge-intensive teamwork. All practices included in this HR system are intended to facilitate effective knowledge behaviours and activities in knowledge-intensive work teams. Future research can follow Chuang et al.'s approach to design HR systems with the target of team effectiveness. Researchers may also consider what practices originally designed at the organizational level (e.g., training, performance management, compensation) are commonly implemented at the team or subunit (e.g., department) level. How these practices are implemented at the team level may be most relevant to team-level outcomes. In addition, future research may integrate more team theory and research into strategic HRM research and explore how HR systems influence team process and subsequent team effectiveness. Team scholars have also noted the research need of examining the impact of HR systems as an organizational contextual feature on team outcomes (Mathieu et al., 2008).

At the individual analysis, recent attention has been paid to examining the influence of perceived HR systems on motivation-related variables (e.g., job satisfaction, affective commitment, perceived organizational support) which are further related to individual behaviours and performance. Even though the AMO model was initially developed to explain the influence of HR systems on individual performance, relatively fewer studies have been conducted to examine HR systems' impact on individual KSAOs and opportunity to perform. We encourage more efforts in examining the mediating role of all three elements of employee performance in the future. In addition, research at the individual level has been focusing on the positive impact of HR systems on individual outcomes (e.g., enhanced satisfaction and commitment, increased task performance and organizational citizenship behaviour). But recent research suggests that HR systems may also have a negative impact on employees' healthy well-being, such as job anxiety, work load, and job stress (Ehrnrooth and Bjorkman, 2012; Jensen et al., 2013; Wood et al., 2012). Future research can also examine the potential negative effects of HR systems and how these negative outcomes relate to firm performance.

Multilevel/cross-level examination. In terms of the mediating mechanisms at multiple levels of analysis, research is needed that examines the viability of the homologous multilevel model proposed in this review. Researchers can explore whether HR systems at different levels function similarly to influence performance outcomes through the three elements of employee performance. Theoretically, this line of research can help us to understand whether it is appropriate to use a general theoretical perspective (e.g., the AMO model) to explain the influence of HR systems across different levels.

Research is also needed that delves into the cross-level relationships of strategic HRM research. First, it is necessary to explore how HR systems designed at the organizational level are transferred into employees' perceptions of HR systems. Many recent studies have suggested a weak relationship between what is reported by managers and what is

experienced by employees regarding how organizations manage certain types of employees (e.g., Aryee et al., 2012; Liao et al., 2009; Nishii and Wright, 2008). The gap between managers' and employees' ratings of HR systems may be problematic given the direct influence of perceived HR systems on employee outcomes. We thus encourage more efforts to understand the causes of the discrepancy between HR systems operationalized at different levels of analysis. For example, it might be the case that network structures influence the contagion or spread of climate perceptions regarding perceptions of the HR systems in place. Similarly, how employees have been treated over time might influence their interpretation, and reactions to HR initiatives by managers. It is also likely that the relationship between the managers and the employees (LMX) as well as the relationship among the employees or in teams (TMX or co-worker support) might foster similarity or disparity in perceptions of HR practices. Nishii and Wright (2008) have suggested a series of potential factors that may explain the difference in managers' and employees' evaluations of HR systems. More empirical evidence is obviously needed to delve into this issue.

We also encourage future research to explore how team-level variables mediate the influence of organizational-level HR systems on individual-level outcomes. The limited cross-level research of strategic HRM to date has focused predominantly on two levels of analyses and examined the top-down influence of organizational-level HR systems on individual outcomes. Given the critical connecting role of teams in organizational structure, it is necessary to understand how distal organizational context and proximal team context together influence individual employees' performance outcomes and whether team contextual features such as team-level HR systems and team climate have more direct impact on individual outcomes compared with organizational-level variables.

Our theoretical model also implies the importance of examining the bottom-up influence of individual-level human capital and performance on both team-level and organizational-level variables. Scholars on human capital have noted the necessity of examining how unit-level human capital develops from individual KSAOs through emergence processes (e.g., Nyberg et al., 2013; Ployhart and Moliterno, 2011). We echo these calls for more efforts on this stream of research. Moreover, in order to fully understand the mediating role of employees in the relationship between HR systems and organizational performance, research is needed to examine the top-down influence of organizational-level HR systems on individual-level mediators as well as bottom-up impact of individual variables on organizational outcomes simultaneously. To date we have identified only one study testing a cross-level mediation model like this (Wood et al., 2012). Obviously, strategic HRM research will benefit more from such kinds of examination in the future.

Boundary conditions of mediating mechanisms. From our review, we note that most investigations of mediation process did not consider boundary conditions for the effects studied, which implies another fertile area for future research. According to the contingency perspective, the impact of HR systems is likely to be affected by a variety of contextual conditions at different levels of analyses. For example, at the organizational-level of analysis, researchers have shown that business strategy can moderate the influence of high performance work systems on labour productivity (Chadwick et al., 2013) and

market performance (Zhang and Li, 2009). At the team level of analysis, previous research has indicated that team leadership may interact with HR systems to influence team outcomes (e.g., Chuang et al., 2013).

At the individual-level of analysis, it has been shown that employees' communication with line managers may influence how they obtain HR information from their managers and their perceptions may be further related to their individual outcomes (e.g., Den Hartog et al., 2013). Employee individual characteristics and job characteristics have also been found to influence how individuals react to their experience of HR systems in previous research (e.g., Aryee et al., 2012; Jensen et al., 2013). Given the accumulating evidence concerning boundary conditions of HR systems' effect, it is critical to explore how those individual and contextual factors affect the generalizability of our multilevel mediation model and examine the extent to which employees can mediate the influence of HR systems on performance outcomes under different conditions. It is conceivable, for example, that some mediators have a strong or weaker effect in some contexts. The relative influence of a host of mediators, when considered simultaneously, might vary depending on the organization, the industry, or some other contextual consideration.

Methodological issues. Our multilevel model also has implications for methodological issues regarding mediating mechanisms in strategic HRM research. First, our model suggests that measuring HR systems by only asking managers may not precisely capture the effect of HR systems at different levels of analyses. Given the gap between manager-reported HR systems and employee-experienced HR systems, it is necessary for a multilevel or cross-level research to measure HR systems by collecting information from both managers and individual employees. Related to the measurement of HR systems at different levels, it is also critical to consider how to capture higher-level constructs that develop from individual-level phenomena. Multilevel researchers have provided several approaches for the aggregation processes (e.g., Chan, 1998; Chen et al., 2005; Kozlowski and Klein, 2000), and others have started to apply those approaches to explain the emergent processes of management phenomena related to strategic HRM, such as human capital (e.g., Nyberg et al., 2013; Ployhart and Moliterno, 2011) and employee motivation (e.g., Chen and Kanfer, 2006). As suggested by these scholars, aggregate constructs may not necessarily be equal to the sum of their counterparts at the individual level. For example, in an R&D team, its collective human capital may be largely dependent on its star members' KSAOs rather than the average KSAOs of all team members. In a medical emergency team, its safety performance may be determined by the failure of any one team member. Therefore, researchers need to provide theoretical explanation for their conceptualization and operationalization of higher-level constructs in multilevel mediation tests.

Another methodology implication is related to time issues in mediation tests in strategic HRM research. Even though researchers have attempted to explain how HR systems contribute to organizational performance by examining the mediation process, the cross-sectional design in most previous research cannot ensure causality of those mediating relationships. The causality issue becomes even more serious in multilevel research due to the fact that cross-level phenomena take a longer time to unfold. But even embracing the importance of time does not provide insights into how much time is

needed. Do HR systems take a week, a month, or a year to operate? What are their lasting effects? How long does investment in employees last as a motivating force? To fully capture the mediating mechanisms that we have delineated, researchers need to conduct longitudinal studies that allow us to account for the effects of HR systems over time.

CONCLUSION

The main objective of this review was to take a step back to evaluate where the field of strategic HRM is in terms of mediating mechanisms linking HR systems and important outcomes. Adopting a multilevel perspective we reviewed existing research from different perspectives, different levels, and different processes (i.e. top-down, bottom-up, and cross-level). Based on this review and identification of important gaps in the literature we have proposed a three-level mediation model that we believe builds up and extends existing research to more explicitly incorporate teams into the strategic HRM dialogue. While we recognize that this review has likely generated more questions than it has answered, we are hopeful that it proves useful as we strive to better understand the mediating mechanisms between organizational investments in different types of HR systems, the individuals and teams exposed to them, and the organizational outcomes that result from those investments.

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