

THE EFFECTS OF PERCEPTIONS OF SITUATIONAL STRENGTH IN HR
PRACTICES ON JOB ATTITUDES AND BUSINESS UNIT PERFORMANCE

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PRACTICES ON JOB ATTITUDES AND BUSINESS UNIT PERFORMANCE

By

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ABSTRACT

Building on the work of Ostroff and Bowen (2000; 2004) and using situational strength theory (Mischel, 1976) and the Attraction-Selection-Attrition model (Schneider, 1987), this study measures the degree to which employees perceive HR practices to contribute to situational strength around strategic organizational goals (HR Strength). The effect of these HR practice perceptions is examined on individual-level job satisfaction, affective commitment, organizational citizenship behaviour (OCB), turnover intentions, and business-unit service climate and performance. Data were collected from 274 full-time managers at 82 work sites within an assisted-living organization. Hierarchical linear modeling (HLM) was used to assess individual effects of HR Strength on attitudes and OCB as well as group level effects of HR Strength on individual attitudes. OLS regression was used to test the group level effects of HR Strength on group climate, financial performance, and lost hours due to injury. Results show that perceptions of HR Strength at the individual level associate positively with job satisfaction, affective commitment, OCB, and turnover intentions (negatively) and positively at the group level with global service climate and financial performance, and negatively (marginal, $p < .1$) with lost hours due to injury. These findings contribute to an emerging body of literature on the effects of group homogeneity in organizations. They demonstrate that organization structures contribute to the emergence of human capital at the group level. They also show that HR practices contribute to organizational performance and service climate when employees are in agreement in perceiving them as reinforcing situational strength around organizational goals.

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Introduction

A primary focus of the Strategic Human Resource (SHRM) literature over the last 15 years has been the study of the relationship between human resource (HR) practices and organizational performance. From the early work of Lewin (1958) and Arthur (1992), which looked at strategic systems of HR management (for example, a low-cost strategy versus a high commitment strategy) and firm performance, to the work of Huselid (1995), Lazear (2000), and MacDuffie (1995), among many others, which examined individual HR practices or bundles of HR practices, the area has evolved to a point where it is possible to state some conclusions about the nature of the HRM and firm performance relationship. Combs, Liu, Hall, and Ketchen (2006) reported a meta-analytically derived mean correlation between HR best practices and firm performance of .20. They combine this information with prior work by Huselid (1995) to demonstrate that a one standard deviation increase in the implementation of HR practices associates with .2 standard deviations in firm-level outcomes such as return-on-assets (ROA). In Huselid's (1995) sample of 2,000 US firms, moving two standard deviations above the mean in terms of HR practices associates with a change in ROA from 5% to roughly 13%, suggesting a meaningful relationship between HR practices and firm performance.

While the link between bundles of HR practices and organizational performance has been clearly established, there are fundamental questions that remain unanswered. For example, the research on the strategic bundling of HR practices to complement a particular organization strategy is too sparse to offer meta-analytically derived conclusions about the potential relationship (Combs et al., 2006), and there are

inconsistent results regarding the relationship between overall HR strategic orientations (such as a commitment strategy versus a high-involvement strategy) and organizational performance (Wood, and Wall, 2007). It is unknown why the set of HR practices identified by Combs et al. (2006) associates with firm performance. Essentially, the HR system remains a “black-box”, with little known about the mechanisms through which an HR system contributes to bottom-line performance. One reason for this, as noted by both Wood and Wall (2007) and Combs et al. (2006), is that the SHRM literature has been constructed around the premise that HR practices contribute to organizational effectiveness through three primary means; increasing employee knowledge, skills, and abilities; empowering employees through participative decision-making; and by motivating employees. These three influences are directed at increasing performance at the individual level. However, the literature on organization climate suggests that group-level phenomena, such as climate, are also impacted by organizational policies and practices, such as HR practices (Denison, 1996). Furthermore, there is an increasing body of literature that shows a meaningful association between organizational climates and firm performance. Generally, however, group-level influences of HR practices on performance have received scant attention.

Mischel’s (1977) Theory of Situational Strength proposes that individual behaviour in group settings can be constrained when group members share a similar understanding of a situation. Situational strength may help explain why organization climate is associated with individual-level as well as group-level performance outcomes (Ostroff, Kinicki, & Tamkins, 2003). For example, climate perceptions are shaped by the

organizational context (Schneider, 1983), and when this context provides strong situational cues as to the behaviours that are relevant to strategic goals, a strategic climate emerges (Liao & Chuang, 2007). Employee perceptions of climate strength have been associated with individual attitudes (Jackofsky & Slocum, 1988), group-level attitudes (Pritchard & Karasick, 1973), and organizational performance (Liao & Chuang, 2007). Situational strength around important strategic goals may be the mechanism through which climate relates to performance (Schneider, Salvaggio, & Subirats, 2002). The salience of organizational values and goals to employees is central to the concepts of organizational climate (Schneider et al., 2002), organizational culture (Denison, 1996), strategic HR management (Sanchez & Levine, 2008), and organizational identification (Ashforth & Mael, 1989). HR systems that are able to create strong situations around organizational values and goals may therefore be making these values and goals more salient and readily apparent to employees, thereby increasing the likelihood that they will behave in ways that are consistent with these values and goals.

In this study, I explore cross-level links between individual and aggregated employee perceptions of the degree to which HR practices contribute to the emergence of situational strength around strategic organizational goals, and business-unit group-level performance. As part of my study, I develop a measure of employee perceptions of the degree to which HR practices are effective in *fostering* situational strength around organizational goals. I propose that the stronger these perceptions at the individual and group level, the more positive will be employee work related attitudes (job satisfaction, commitment, and intent to remain with the organization) and behaviours (organizational

citizenship behaviours). Furthermore, I propose that these perceptions of the effectiveness of HR practices at fostering situational strength will associate positively with group-level performance, and that this relationship will be mediated by work related attitudes. This model (Figure 1) as a whole shows how perceptions of situationally strong HR practices influence group-level attitudes, behaviours, and performance.

The proposed link between perceptions of HR practices, attitudes and behaviours, and performance stems from Mischel's (1977) situational framework. Mischel's main point is that individual behaviour is a function of the situation when situational cues are strong, and a function of the individual when situational cues are weak. A strong organizational climate is characterized by strong situational cues and would induce collectively held attitudes and behaviours among group members (Ostroff et al., 2003).

Schneider's (1987) Attraction-Selection-Attrition (ASA) framework suggests that groups sharing common attitudes do so because they experience similar work conditions. Schneider (1987) further suggests that people who are similar (in terms of attitudes and behaviours) will be interpersonally attracted to one another. In short, Mischel's situational framework is drawn upon to develop the measure of how HR practices contribute to strong situations; Schneider's ASA theory provides the basis to suggest that HR practices that create situational strength can influence work related attitudes and behaviours of individuals and groups. Groups in which members are quite uniform in their attitudes can influence individual attitudes further through people experiencing a sense of belonging and interpersonal attraction to other members of the group. For example, when employees' perceptions converge around a goal-focused group climate,

attitudes and business unit performance should benefit (Carr, Schmidt, Ford, & DeShon, 2003; Schneider & Bowen, 1985).

Thus, as a primary building block of organizational climate, the HR system can play an important role in organizational performance by generating and sustaining a strong organizational climate (Denison, 1996). The contribution that HR practices make to climate is not a function of the mere presence of certain HR practices (Ostroff et al., 2003), but a function of how those practices contribute to strong situational cues that are focused on organizational goals. This is an area of the climate literature and of the SHRM literature that has not yet been investigated. Unfortunately, there are also very few studies that investigate the effects of situational strength in organization settings (Cooper & Withey, 2009). To address these gaps, I use Mischel's (1977) four constituent features of situational strength (i.e. a shared construal, uniform expectancies, adequate behavioural incentives, and skills to perform the necessary behaviours) as the basis for developing HR system dimensions associated positively with situational strength around organizational goals. I then test the popularly-held assertion that HR practices can contribute to building a strong organizational climate (Ostroff, Klimoski, & Tamkin, 2003), as well as the influence of HR practices on employee attitudes, behaviours, and business unit performance through situational strength.

I refer to employee perceptions of the degree to which these indicators of situational strength are present in HR practices as HR Strength. These indicators, or dimensions (i.e. goal relevance, situational framing in the context of organizational success, management support, fostering uniformity in attitudes and behaviours,

facilitating/supporting performance, and fairness) are assessed for each HR practice. The purpose of the measure is to capture the degree to which each practice contributes to developing within-unit shared perceptions and understanding of situations. HR Strength differs from a climate measure in that a measure of climate generally focuses on policies, practices, and procedures; HR Strength focuses on *attributes* of HR practices that enhance situational strength. I propose that HR practices which demonstrate high levels of (and convergence around) perceptions on these six dimensions will contribute to individual and group-level attitudes and intentions (job satisfaction, commitment, lower turnover intent, and citizenship behaviours). Such convergence should also contribute to the presence of a strategic climate (e.g. a global service climate), and organizational outcomes (financial performance and lower employee injury rates). Should HR practices contribute to organizational performance by creating, enhancing and sustaining an organizational climate focused on organizational goals, this would provide insights into the means by which HR systems benefit organizations.

Thus, this study has 3 primary research objectives, and 2 primary practical benefits.

1. To assess whether a key means by which an HR system impacts organizational performance is through building shared perceptions of a strong situation that is focused on organizational goals;
2. To demonstrate how HR practices contribute to organizational performance. I propose that an HR system that is internally consistent in delivering messages which contribute to a climate focused on organizational goals, will enhance

business-unit performance both directly and indirectly (i.e. through enhancing climate perceptions, group-level job satisfaction, organizational commitment and retention intentions);

3. To investigate the degree to which a strong situation (i.e. shared perceptions of HR practices) influences individual attitudes (i.e. job satisfaction, organizational commitment, and retention intentions) and behaviours (citizenship behaviours).

The potential practical applications of this research are:

4. To measure the effectiveness of HR practices and the HR system as a whole. If the HR system affects organizational performance by building a climate around strategic goals, then effectiveness can be gauged by the degree to which each HR practice contributes to reinforcing the dimensions of HR Strength;
5. To provide the HR practitioner with a means of assessing the effectiveness of HR practices. The measure of HR Strength is intended to capture complementarities between individual HR practices. Thus, the measure can be used to assess which HR practices contribute to reinforcing a goals-focused climate, and which do not. The measure can also be used longitudinally to assess whether a change to an individual practice (for example, a change in benefits) results in an increase or decrease in reinforcing the climate.

I now turn to reviewing the methods commonly used to conceptualize and assess HR practices in the SHRM literature and summarize their key shortcomings. I then derive a measure of HR Strength that is intended to overcome many of these weaknesses.

Challenges Assessing the Organizational Impact of HR Practices

Challenges often noted in this field of research pertain to choice of variables and their level of measurement, measurement error, inconclusive causation, and a lack of theory. This section outlines these challenges, and discusses how the measure of HR Strength addresses these potential pitfalls.

Bundling HR practices: best practices or synergistic dependencies?

The contribution of HR practices to firm performance has been examined mostly through the theoretical lens of universal, contingent, and configural modes of bundling HR practices. Essentially, the assertion under the universal paradigm is that firm performance relates positively to some universally applicable set of HR practices (Delery & Doty, 1996). The *universal paradigm* connotes the idea of best practices. The *contingency paradigm* is more complex in that it posits that the relation between HR practices and firm performance is contingent on firm strategy. For any particular strategic orientation (e.g., prospector, analyzer, or defender, as per Miles & Snow's (1978)) typology, there is a particular best set of HR practices. The contingency paradigm presents research challenges in the number of assumptions and simplifications that must be made in categorizing any particular organization or business unit into a strategic type.

The *configural paradigm* takes the proposed relation between HR practices and firm performance one step further to suggest that the organization should adopt the one ideal type of HR system that most complements its organizational strategy and resources (Delery & Doty, 1996). Under the configural paradigm, HR practices are viewed as a

system rather than a set of parts, and it is the *interaction* of this system with other organizational attributes that determines performance. The configural mode of bundling HR practices requires that the HR practices be complementary with one another (vertical fit) as well as with the other organizational resources and requirements (horizontal fit), and thus must fit with organizational needs. This paradigm most reflects the aspects of causal ambiguity, rareness, and inimitability that are fundamental to the Resource Based View (Barney, 1991), and is therefore used as a basis for the formulation of the measure of HR Strength. The configural paradigm has at its core the concept of complementarity, which is captured in the measure of HR Strength in employee perceptions of the degree to which each HR practice is consistent with other HR practices, and whether each HR practice contributes to fostering a goal-focused environment.

Levels of abstraction of HR practices.

In addition to HR practices influencing organizational outcomes, they can be influenced by other organizational attributes. For example, choices of HR practices may be influenced by financial resources, or by deeply held values. Furthermore, HR practices can exist at different levels of implementation or abstraction (Becker & Gerhart, 1996; Colbert, 2004). These levels of abstraction include the individual practice level (e.g., specific forms of performance pay such as profit sharing or gain sharing), the policy level (e.g., the adoption of performance pay), and the principle level (e.g., superior employee performance is valued and rewarded). The distinction between universal, contingency, and configural HR system views is confounded by these levels of abstraction, posing a problem for both researchers and practitioners. While studies often adopt a universal

perspective (e.g. Gerhart & Milkovich, 1990; Huselid, 1995; Terpstra & Rozell, 1993) or a contingency perspective (e.g. MacDuffie, 1995; Youndt et al., 1996), the lines between the two can blur, as studies do not differentiate level of abstraction. For example, does adopting a policy level HR practice imply a single (best) practice, or a set of practices that are carefully matched? Studies that theorize or test best practices or high-performance work systems often overlap on the practices investigated, but rarely do they agree completely on specific practices or with respect to levels of abstraction.

There are several examples from the literature where levels of abstraction can lead to confusion in understanding and interpretation. For example, Delery and Doty (1996) theorize that seven practices form the critical characteristics of work systems. These include employment security, which can be interpreted as a principle level characteristic; formal training systems, which could have a policy level characteristic interpretation; and profit sharing, which may be interpreted as an individual practice. Pfeffer (1998) also mixes levels of abstraction by including employment security (a principle level characteristic) among his seven practices of successful organizations.

A basic problem in confusing levels of abstraction lies in the concept of equifinality; the policy and principle levels of abstraction allow for several different approaches to attaining the same result, whereas the practice level does not. For example, an HR principle of having a highly trained workforce could be achieved in many ways, including selection, training, performance feedback and incentives, and succession planning. Moreover, at higher levels of abstraction the HR system may not be the sole or even primary contributor to the intended effect of the HR policy or principle. For

example, the intended effects of a principle-level abstraction of providing employment security with an intended purpose of fostering employee trust through low involuntary turnover, may be more attributable to other organizational characteristics like rapid growth and product success (leading to an internal labour shortage), or even organization size, than to a set of HR practices. The consequence of this confusion around which practices to consider, which modes of interactions of practices to study, and from which levels of abstraction is that seemingly little progress has been made in determining what the relevant inputs and expected outcomes of the HR system should be when examining a relationship with organization-level measures of performance.

Recent meta-analytic studies are beginning to demonstrate differences in effect sizes of the impact of HR practices on firm performance when taken from different levels of abstraction. For example, the literature on high performance work practices (HPWP) can be considered a ‘practice-level’ abstraction, whereas the meta-analysis by Subramony (2009) takes a ‘policy-level’ abstraction. Subramony (2009) views HR practices as bundles that relate to the three primary objectives of HR practices as identified by Wood and Wall (2007), and shows that ‘motivation’ bundles, ‘empowerment’ bundles, and ‘skill-enhancing’ bundles associate to a stronger degree with performance than do HPWP. This finding supports the idea that effective HR practices are those that are strategically embedded in the organization.

My measure of HR Strength gathers employee perceptions of HR implementations at the practice level to capture attributes of the HR system with which employees experience firsthand and with which they are most familiar. The measure of

HR strength should thereby minimize the effect of organizational attributes other than the HR practices on these perceptions, and is intended to address a configural model by capturing the degree to which employees perceive that the system of HR practices is effectively communicating the values and behaviours that are strategically relevant.

Effectiveness of HR practices.

Scant research has assessed the effectiveness of systems of HR practices. Tsui (1990) examined overall HR effectiveness by asking different employee groups about their perceptions of the effectiveness of the HR department, using a three item scale consisting of questions such as “Overall, to what extent do you feel your human resource department is performing its job the way you would like it performed?”, and “If you had your way, to what extent would you change the manner in which this department is doing its job?”. Executives gave the highest effectiveness ratings, managers gave the next highest, and employees gave the lowest ratings. Effectiveness assessments of HR practices typically come from executive or managerial constituents (Delaney & Huselid, 1996; Huselid, Jackson, & Schuler, 1997; MacDuffie, 1995; Michie, & Sheehan, 2005, Sun, Aryee, & Law, 2007; Wright, McMahon, McCormick, & Sherman, 1998; Youndt et al, 1996; Zacharatos, Barling, & Iverson, 2005), casting doubt on their accuracy (e.g. how likely are executives to report that the HR practices for which they have responsibility are ineffective?) and representativeness.

Huselid et al. (1997) studied the effectiveness of the HR system in terms of its technical and strategic capabilities. Whereas technical capabilities refer to the functional aspects of HR (i.e. recruitment, selection, performance measurement, training, and the

administration of compensation and benefits), strategic HR capabilities refer to designing and implementing a set of internally consistent policies and practices that create alignment between an organization's human capital capabilities and its business objectives. Huselid (2007) measured HR effectiveness by surveying senior executives in HR and line functions, asking them to provide ratings across a range of HR practices and items having to do with the capabilities of a firm's HR staff members. Rynes, Colbert, and Brown (2002) raised a critical issue regarding this approach -- that there is considerable variability in the degree to which managers beliefs about HR practices are consistent with the facts. This suggests that reliance on such ratings for evaluating the effectiveness of HR practices could be flawed.

The literature on intellectual capital takes a quantitative approach to capturing human capital effectiveness. One common method espoused by the Saratoga Institute is the Human Capital ROI (Bontis & Fitz-enz, 2002). Essentially, this is a measure of profit divided by compensation expense. While sales, revenue, and profit measures that are divided by employee count (or FTE) or compensation costs have merit as a within-organization gauge to show productivity changes over time, these measures are limited in their usefulness to researchers in the absence of firm-specific knowledge and carefully selected control measures, as they function as indicators of structure and strategy as much as anything else. For example, a highly automated manufacturing firm that minimizes the use of people in the manufacturing process would have lower compensation expense costs (and subsequently a higher measure of Human Capital ROI, *ceteris paribus*) than a manufacturing firm that places highly skilled labourers at the centre of the manufacturing

process. Clearly the firm utilizing highly skilled labour would have a greater investment in human capital, and yet the highly automated firm would yield a higher measure of Human Capital ROI.

The measure of HR Strength is based on the assertion that HR system effectiveness is a function of its ability to develop HR practices that achieve both vertical and horizontal fit in the effort to build uniformity in employee perceptions of the degree to which HR practices support organizational goals. Thus, rather than allowing the definition of effectiveness to change depending on the assumptions of the survey respondent, or on a general conception of organizational effectiveness, HR Strength casts the HR system in a specific role, and applies a definition of effectiveness within that role.

Measurement error in assessing HR practices.

Measurement error represents another challenge in developing a measure of HR practices. Using a set of three studies, Wright, Gardner, Moynihan, Park, et al. (2001) demonstrated that individual raters provide highly unreliable measures of HR practices. Their recommendations for overcoming many of these measurement issues include increasing the number of raters, ensuring that the most knowledgeable raters are used, and to develop better measures of HR practices. These recommendations are incorporated into my measure of HR Strength, which include as respondents job incumbents within each of several business units (the highest unit of measurement in the study), by surveying their perceptions of HR practices with which they are likely to have direct knowledge and contact, and by using the within-unit variability in their responses as an indicator of the success of the HR system.

Causation: HR practices lead to performance, or performance leads to HR practices?

Some of the more recent research in this field has questioned the causal order of the relationship between HR practices and firm performance (den Hartog, Boselie, Paauwe, 2004; Schneider, Hanges, Smith, & Salvaggio, 2003; Wright, Gardner, Moynihan, & Allen, 2005). Without a convincing rationale for concluding that certain HR practices lead to higher firm performance, a plausible case can be made that higher levels of firm performance leave slack resources available to the firm to invest in ‘nice-to-haves’, including a variety of HR practices. Furthermore, firm performance can be viewed as a reasonable antecedent to employee attitudes towards their job and the organization. While longitudinal studies are difficult, given the depth of data often required in this type of research, studies that have attempted to examine causal order suggest that firm performance measures are better predictors of attitudes such as overall job satisfaction and satisfaction with security than the reverse (Schneider et al., 2003), and that the relationship between HR practices and firm performance could be reciprocal, with performance leading to greater investments in HR practices, which lead to higher performance (den Hartog et al., 2004; Wright et al., 2005).

One of the goals of the current study is to demonstrate that HR Strength (a measure of HR system effectiveness) relates to positive organizational attitudes as well as to organizational performance. Theoretical premises from goal setting research, Situational Strength (Mischel, 1977), and from the Attraction-Selection-Attrition framework (Schneider, 1987) suggest that HR system effectiveness positively predicts

work attitudes and individual and unit performance. Effectiveness here is measured as the degree to which employees perceive and agree that the HR practices contribute to situational strength around organizational goals. Though the plausibility of organizational performance leading to satisfied employees cannot be dismissed, there is little theoretical reason to expect organizational performance to result in HR Strength.

The application of theory in the SHRM literature.

The issues of measurement, measurement error, and causal order can all be addressed to varying degrees by the choice of theoretical model. Theory is a statement of relations among concepts within a set of boundary assumptions and constraints, where the boundaries and constraints set the limits to application of the theory (Bacharach, 1989). The Resource Based View of organizations (RBV) (Barney, 1991) is used predominantly to draw the link between HR practices and firm performance. According to Barney's (1991) perspective on the RBV, resources that are rare, valuable, inimitable, and nonsubstitutable can provide sources of sustainable competitive advantage. Despite the widespread reference to the RBV in this field, it has been characterized by some as being tautological, and possibly not a theory (Wright, Dunford, and Snell, 2001). A drawback of the RBV in examining the HR practices and firm performance relationship is that it has not yet helped researchers to determine many of the boundary assumptions or constraints referred to by Bacharach, which could help explain why HR practices should lead to firm performance. For example, the RBV provides minimal framework for determining whether the source of competitive advantage is derived from individual HR practices, sets of practices, the outcomes of HR practices, the sum of the human capital within the

individual employees (or a configural aggregation of employee human capital), the social networks developed by employees, or a combination of these and many other HR system-related factors. Wright, McMahan, and McWilliams (1994) argue that people rather than practices are the more likely contributors to a competitive advantage, since people who are highly skilled and motivated to apply those skills have a greater potential to constitute a source of advantage. Practices, on the other hand, can easily be replicated by competing firms.

According to the RBV, competitive advantage is protected by the interrelated conditions of causal ambiguity and complexity (Colbert, 2004). Colbert (2004) further points out that the interactions of people with organizational HR practices is a complex system that becomes irreducible; once blended, it cannot be broken down into its constituent parts. Thus, the complexity perspective suggests that in the context of the HR system architecture, HR implementations at the principles level of abstraction will lead to policy and practice level implementations that are idiosyncratic to the firm (Colbert, 2004). Viewed in this manner, a universal set of best practices could attain industry standards, but not a competitive advantage. Another implication is that the complexity perspective in the RBV supports the notion of equifinality; a variety of practice level or policy level HR practice implementations should be able to achieve the same desired principle level results. It is therefore not surprising that research to date has been unable to arrive at a universal set of superior HR practices or HR practice and firm strategy combinations. While a recent meta-analysis (Combs et. al., 2006) provides a point estimate of the effect of HR practices on group-level performance, it leaves many

questions unanswered. For example, the meta-analysis yielded no significant relationships between unit level performance and performance appraisal ($k=8$). This is contrary to the important role of appraisal in such practices as performance pay, a theoretically well grounded relationship (Heneman, 1992; Lawler, 2000) with much empirical support (Miceli, Jung, Near, and Greenberger, 1991). Combs et al. (2006) recommend capturing contextual elements, such as differences in HR practice implementations and effectiveness, and the role of strategy. My study contributes to the literature by defining a role for the HR system (i.e., to reinforce situational strength around organizational goals), and tests whether HR systems fulfilling that role result in superior business-unit performance. By providing a definition of effectiveness to the HR system (rather than leaving the meaning of effectiveness open to the rater), and by examining the HR system at the practice level, boundary conditions as to the role of HR practices and the level at which the HR practices are abstracted are put into place to describe how HR practices relate to organizational performance.

The HR System

HR system outcomes such as attitudes and perceptions are more proximal to firm performance than HR system inputs (practices), and allow for differentiation between organizational groups based on the quality or effectiveness of outcomes. There should be a significant amount of variance in the effectiveness with which organizations manage and integrate HR systems given the difficulty in implementing and maintaining its various parts, including, for example, sound selection programs, fairly administered and job relevant performance appraisal systems, compensation packages that clearly reward

performance, adequate and consistent managerial support and goals that align with corporate strategy. However, a close consideration of such variance has gone largely ignored in the literature on HR practice and firm performance.

The purpose of the HR system at the individual level is to foster and encourage desired attitudes, behaviours, skills, motivation, commitment, satisfaction, and capabilities of employees, which may result at the organizational level in reduced absence, turnover, and increased productivity (Boselie, Paauwe, Jansen, 2001; Conference Board of Canada, 2004; Ferris, Arthur, Berkson, Kaplan, Harrell-Cook, Frink, 1998; Huselid, 1995). In addition to directly influencing employees, the HR system is theorized to impact organization performance through job design and work structures (Becker, Huselid, Pickus, Spratt, 1997). Ostroff and Bowen (2000) identified three primary means by which HR practices influence the firm:

- 1) shaping the skills, attitudes and behaviours of its workforce (i.e. the development of Human Capital);
- 2) creating structural and operational efficiencies, HR practices can increase performance; and
- 3) signalling and messaging employees about attitudes and behaviours that are valued by the firm.

The importance of employee attitudes in work performance has been demonstrated at both the individual level (Judge, Bono, Thoreson, & Patton, 2001) and group level (Ostroff, 1992). Attitudes, and in particular, aligning these attitudes to complement organizational objectives, can be considered a primary objective of any HR system. The

current study assesses whether work units showing higher levels of HR Strength also hold uniformly high attitudes and higher unit performance. Empirical support for these relationships would suggest HR Strength is a means by which HR systems positively impact firm performance.

Attitudes and Firm Performance

Meta-analyses of the relationship between individual attitudes and work performance suggest a correlation of $r = .30$ (Judge et al., 2001). Studies of the relationship between aggregated attitudes and firm performance have also shown a positive relationship (Denison, 1990; Harter et al., 2002; Ostroff, 1992; Schneider et al., 2003). At the business unit level, the meta-analytic mean correlation between work related attitudes and performance is $.37$ (Harter, Schmidt, & Hayes, 2002). Ostroff (1992) suggests that perhaps the slightly higher correlation at the unit level over the individual level is that with the former, satisfied employees work collaboratively to achieve shared organizational goals. In the same way that group performance can be more than the sum of the abilities of each group member (Tziner & Eden, 1984), perhaps a group characteristic, such as aggregated perceptions of HR practices, affect employee attitudes. I examine whether aggregated perceptions of HR practices (a group-level characteristic) affects employee attitudes at the level of both group and individual.

Behaviour and Firm Performance

HR practices contributing to the emergence of a strategic organizational climate likely affect organizational performance partly through their impact on employee attitudes and behaviours. Organizational citizenship behaviours (OCB) comprise

behaviours that benefit the organization in general, are discretionary, and not formally recognized by the organization's reward systems (Podsakoff, MacKenzie, Paine, & Bachrach, 2000; Organ, 1988). Predictors of OCBs include job satisfaction, organizational commitment, fairness, trait conscientiousness, and leader support (LePine, Erez, & Johnson, 2002), and more recently, aspects of organizational climate (Duff, 2008; Steffensmeier, 2008). In a service sector setting, where it is difficult to anticipate all customer demands, front line employees offering OCBs can make significant contributions to organizational goal attainment (Suazo, 2009). When aggregated to the group level, OCBs associate positively with organizational performance (Podsakoff et al., 2000). An HR system that builds situational strength around a strategic organizational climate thereby has the potential to impact organizational performance through employee attitudes and behaviours at the group level.

HR System and Climate

Consistency theory has been used to explain the role of culture in organizations. It posits that a strong culture is characterized as having a shared system of beliefs, values, and symbols that are widely understood by employees. Such a culture has a positive impact on organizational members' ability to reach consensus and carry out coordinated actions (Denison, 1990). Whereas organizational culture is a more enduring and pervasive phenomenon, organizational climate pertains more to the impact that organizations have on groups and individuals (Denison, 1996). Denison (1996) refers to organizational climate as "an outgrowth of the more basic value systems of organizations", and as being "relatively temporary, subject to direct control, and largely

limited to those aspects of the social environment that are consciously perceived by organizational members” (p.624). A strong climate is also reflected in individuals’ common reaction to a situation (Denison, 1990). As it relates to HR practices, climate can be construed as those portions of the organization’s value system (i.e., HR principles) that are communicated and acted upon through the HR system. Furthermore, the term climate is often used to refer to a set of conditions that promote a particular strategic stance; for example, a climate for excellence (West, 1990), trust (Collins, & Smith, 2006), employee involvement (Riordan, Vandenberg, & Richardson, 2005), or safety (Katz-Navon, Naveh, & Stern, 2005)). Bowen and Ostroff (2004) borrowed from Mischel’s (1977) work on situational strength to propose the concept of HR system strength to refer to a system of beliefs and values that are widely understood and that facilitate consensus. Accordingly, the HR system is likely to strongly influence organization climate perceptions (Bowen & Ostroff, 2004); and a strong HR system delivers consistent messages to employees about the types of attitudes and behaviours that are valued and rewarded.

In his discussion of situational strength, Mischel (1977) proposed that behaviour is determined more by personal characteristics in weak situations and more by situational characteristics in strong situations. Strong situations induce uniform expectancies about the most suitable response to any given situation, as well as a shared construal of situational events. Strong situations can develop where organizational members are equipped with adequate skills and incentive to demonstrate the most suitable response (Mischel, 1977). Beaty, Cleveland, and Murphy (2001) showed that the relationship

between personality and intentions to make contextual performance contributions (e.g. OCBs) was higher in weak versus strong situations, with the latter characterized by a shared employee understanding of what constituted valued work behaviours. Their results suggest that situational strength may help explain the variability in personality-job performance correlations.

Organization climate, as a representation of the commonality of individuals' perceptions of the organization's environment, practices, and policies, has been referred to as a form of situational strength (Schneider, Salvaggio, et al., 2002), and has been considered an intervening variable (i.e., mediator or a moderator) in the relationship between an HR system and its outcomes (Bowen & Ostroff, 2004; Ferris et al., 1998). By creating a condition of situational strength around relevant organizational goals, organizational climate is likely to contribute to organization-level performance outcomes (Schneider et al., 2002). Thus organizational culture and climate are representations of situational strength, and have been associated with strategic organizational (or business-unit level) outcomes.

Combining the literature on HR practices as a predictor of individual and unit performance with the literature on climate and firm performance, I propose that HR practices influence firm performance primarily through employees perceiving a climate that is aligned with the organization's strategic goals. However, rather than attempting to isolate a particular climate orientation, or a particular combination of climate orientations and strategic typologies, I assess the factors that help develop a strong climate. This approach is founded in the assumption of equifinality; both climate and HR

practices develop in ways unique to each firm or business unit. Therefore, assessing the contributing factors to climate strength (i.e., HR Strength) constitutes a configural model of fit, since the array of HR practices and the firm's climate and strategic objectives are free to vary within any such assessment.

Situational Strength

The importance of climate in determining behavioural outcomes is demonstrated in the research on person-situation interactions. The notion that behaviour is a function of the confluence of the person and the situation proceeds from the work of Lewin (1935), Kantor (1924), and Murray (1938). Lewin's (1935) basic premise is that the social situational context acts on the individual to shape behaviour. The power of the situational context has also been referred to as situational strength (Mischel, 1977). In determining an individual's behaviour, therefore, there are personal considerations and there are normative considerations (Fishbein, 1967). The "predictability ceiling" of an individual's behaviour based on a trait dimension across situations is .30 (i.e., the correlation "between measured individual differences on a given trait dimension and behaviours in a novel situation"), suggesting that considerable variance remains which may be attributable to situational influences (Ross & Nisbett, 1991:3). Mischel (1977) uses the example of the traffic light to illustrate a strong situation, to which all individuals interpret and respond in the same way. Here, situational strength leads to uniformity of understanding, and almost total conformity.

Considerable empirical research has demonstrated the normative power of the situation. One of the earliest and most demonstrative studies is that of Solomon Asch

(1951), who showed that individuals conform to the situational strength of a unanimous majority group assessment, even when that assessment initially appears to be obviously incorrect. More recently, the Strategic HR literature has begun to look at how climate orientation can strengthen the relationship between relational models of management practices and organizational performance (Deutsch-Salamon, 2008; Liao & Chuang, 2007; Zacharatos, Barling, & Iverson, 2005). Other research has studied direct relationships between climate and performance (Griffith, 2006; Katz-Navon et al., 2005). Together these studies show the performance-enhancing effects of shared employee perceptions of important organizational goals. Zacharatos et al. (2005) found that a safety climate mediated the relationship between high performance work practices and safety performance; Liao and Chuang (2007) showed that service climate moderated the relationship between individual-level transformational leadership and employee service performance, wherein the relationship was stronger when there was a positive store-level service climate. Creating conditions that engender a uniform understanding of any particular situation across individuals is a very challenging undertaking. According to the Ecological Theory of Social Perception (Zebrowitz, McArthur, & Baron, 1983), perception is based partly on the degree to which perceivers are attuned to those aspects of the situation which are relevant to their personal actions or goals. That is, the perceiver categorizes people and things in any given situation in terms of their instrumentality for achieving personal goals. Barsalou (1987) showed that how people categorize situational information varies considerably. Thus, the challenge in making organizational goals salient and similarly meaningful across individuals, situations, and

groups lies not in merely exposing individuals to the same situation, but in ensuring that everyone construes aspects of the situation in the same way.

Model Development and Hypotheses

Developing HR Strength

“HR Strength” denotes the properties of an HR system that foster a strategic organizational climate. Perceptions of climate held individually reflect “psychological climate” (Parker, Baltes, Young, Huff, Altmann, et al., 2003), and the aggregate of these perceptions to the group level reflect “organizational climate”. The process through which psychological climate and organizational climate represent different constructs has been referred to as emergence (Kozlowski & Klein, 2000), which is a bottom-up process whereby lower-level phenomena aggregate to become a unique phenomenon at the higher level (Kozlowski & Klein, 2000). Emergent phenomena, such as organizational climate, are characterized as having elemental properties, which comprise individual level characteristics (e.g., cognition, behaviour, or other characteristics of individuals), and interactional properties, which comprise the social processes within the group (e.g., cooperation, participation, information sharing, and social rewards) (Kozlowski & Klein, 2000). Because HR practices impact individual employee behaviours and cognition (i.e., elemental properties), as well as workplace social interactions (i.e., interactional properties), they are likely contributors to organizational climate. My proposed measure of HR Strength is intended to capture the degree to which HR practices contribute to an intended organizational climate.

Organization Climate and HR Strength

Climate can be examined at either a molar level or a specific level of abstraction (Carr, Schmidt, Ford, & DeShon, 2003), and so it is important to place the measure of

HR Strength in the context of these two views. Molar climate refers to a higher level conceptualization in which climate is typified by a set of descriptive dimensions (such as reward orientation, the degrees of structure imposed on a situation, and consideration, warmth, and support) (Campbell, Dunnette, Lawler, & Weick, 1976). An expansive list of molar climate dimensions produced over several decades of research has recently been categorized and synthesized within Ostroff's (1993) framework of three primary facets of molar climate (Carr et al., 2003). These three primary facets include an affective facet (e.g., interpersonal or social relations), a cognitive facet (e.g., self-knowledge and development), and an instrumental facet (e.g., task involvement and work processes). In the context of Ostroff's (1993) molar climate facets and Kozlowski and Klein's (2000) representation of emergence, it becomes apparent that HR practices are central to the emergence and development of organizational climate.

Specific climate is typically paired with a particular outcome associated with that climate. Carr et al. (2003) summarize the differences in research focus between specific and molar abstractions in stating:

“...That individuals interested in predicting a specific outcome (e.g. safe behavior) are best served by focusing on measuring perceptions of a specific climate (e.g., climate for safety). Conversely, individuals interested in predicting broader outcomes (e.g., job performance and withdrawal) are best served by the broader taxonomy of molar climate construct.” (p.605)

In an effort to capture the attributes contributing to the emergence of the most strategically relevant organizational climate, the measure of HR Strength focuses on the

degree to which employees perceive the climate to be focused on group goals. Although group level climate bears the term organizational climate, an organization may wish to develop climates with differing foci among its constituent groups. Focusing on perceptions of group goals rather than of specific outcomes (e.g. fewer accidents) places my proposed measure of HR Strength at the molar level.

Whether at the molar or specific climate level, climate represents an aggregated perception of situational aspects of the environment, such as policies, practices, and procedures (Reichers & Schneider, 1990). The relevant attribute that defines organizational climate, both from a theoretical and a statistical perspective, is agreement (James, 1984; Chan, 1998). In order to study the emergence of climate through the HR system, therefore, the attributes that I am studying are not the HR practices, but how those practices contribute to bringing about *agreement* (i.e., shared perceptions).

In order for an HR system to influence individuals' behaviours and attitudes towards strategically relevant organizational goals, the situational strength framework would suggest that the HR system must consistently reinforce organizational goals. By providing employees with a frame of reference applicable across situations, the HR system attempts to build consistency of behaviour. This is the concept of HR Strength. For example, Lord (1982) established that individuals construe different situations similarly and behave similarly when important goals are seen as relevant across situations. Asch (1951) demonstrated the normative power of the situation, but also pointed out that behavioural choice can differ depending on the way the individual construes a situation (1940). This implies that situational strength is a function of the

uniformity of construal (i.e., agreement) of a situation, and a shared perception of the relevancy of goals within that situation.

Dimensions of HR Strength

Consistent with the above, then, HR Strength exists at the molar level of climate abstraction, and is intended to capture the degree to which employees within work groups agree that HR practices contribute to building situational strength (i.e. provide clarity with respect to expected attitudes and behaviours). In the section that follows I introduce 6 dimensions of HR Strength based on a review of the literatures on situational strength, group norms, and group influence. To ensure that the six dimensions of HR Strength to be examined in the current study adequately represent the full breadth of the situational strength domain, they are mapped against the dimensions of two other conceptualizations of situational strength: namely Mischel's (1976) four aspects of situational strength, and the four attributes Hattrup and Jackson (1996) use to define and categorize differences among situations (see Appendix B). The rationale for each of the six dimensions accompanies their introduction below and appendix A provides the items developed to assess each dimension.

Shared relevant goals.

Individuals are most likely to behave consistently when they perceive clear and important goals to be relevant across different situations (Lord, 1982). Thus, goals can enhance performance and reduce behavioural variance for both individuals and groups. Group cohesiveness and performance are positively related, provided that group norms are performance relevant (Kerr & Tindale, 2004), or collectively set (Wegge, 2000).

Moreover, a close-knit group often facilitates learning and adaptation to new stimuli; such groups are able to make sense of, and sound judgments on, new situations (Kerr & Tindale, 2000). Information imparted by one group member to others is more relevant to the group when the former holds preferences for desired end states in common with the latter (Davis, 1996). Thus, shared goals, norms, and preferences are important contributors to group performance. However, group homogeneity in member attributes and norms can also be detrimental to group performance, as it often creates a bias toward conformity (Tindale, 1993). Highly salient group norms can lead to “Groupthink”, adversely affecting group decisions and outcomes (Janis, 1982). Yet, group norms that are positive and focused on relevant organizational goals also create conditions favourable to achieving group outcomes that are beneficial to the organization (Kozlowski & Ilgen, 2006). Outcomes relevant to the HR system (i.e. job satisfaction, turnover intentions, commitment, and loyalty) are favourably influenced by organizational members’ understanding of the strategic objectives of their organization and their role in achieving these objectives (Boswell & Boudreau, 2001). Thus, HR systems that create the climate which fosters these conditions are likely to positively impact organizational members’ attitudes, behaviors and performance.

Framing individual effectiveness in the context of organizational success.

Situational influence on individual judgment and behaviour is dependent partly on the manner in which a problem is framed, and on the way a situation is construed (Ross & Nisbett, 1991). For example, individuals show inconsistencies in their behavioural choices when using different reference points for framing situations (Tversky and

Kahneman, 1981). When framed in a way that leads individuals to view a potential outcome in terms of expected gains, people make different choices than when outcomes are framed in terms of expected losses. Organizational members are more likely to frame a situation in terms of potential gains when they understand how their actions can impact organizational success. In ambiguous situations, even physical objects can affect construal, by representing norms that lead people to construe situations within the boundaries of those norms (Kay, Wheeler, Bargh, & Ross, 2004). For example, Kay et al. (2004) showed that a briefcase influenced individuals to construe an ambiguous situation as competitive, consistent with the norms of a business environment. The *level* of construal is also an important consideration. Fujita, Trope, Liberman, and Levin-Sagi (2006) differentiate high-level and low-level construals by suggesting that:

“high level construals... capture the superordinate, central features of an object or event, and abstracting these high-level, immutable features conveys the general meaning of the event. Low-level construals, alternatively, consist of subordinate, incidental features.” (p. 352).

High-level construals promote general and abstract thinking (Fujita et al., 2006) and organizations that are able to frame employee activities (such as job tasks) in the context of organizational success may thereby help employees understand how task-related goals harmonize with higher-level, organizational goals. In developing construals, people mentally edit information using heuristics to simplify information in the process of generating an internal representation of the situation (Maule & Villejoubert, 2007). Thus, framing can influence coding and editing of situational information, and consequent

decisions (Maule & Villejoubert, 2007). The HR system is likely to influence employees' development and use of heuristics in as much as it provides cues that frame important organizational level goals. Where these “framing cues” are consistent for all unit/organizational members, variability in attitudes and behaviours is likely reduced. Accordingly, an organization's HR practices can influence the framing of organizational goals of its members in ways that advance organizational goal attainment where HR practices connect individual-level tasks with organizational success. Members so equipped are likely to frame work challenges positively, and in the context of strategic organizational goals.

Salience of management support.

The literatures on marketing and social psychology have examined the relationship between the credibility of the information source and the attitudes and behaviours of information recipients. The more the provider of information is seen as credible (i.e., expert, trustworthy; Kelman & Hovland, 1953), the more effective the information is likely to be in changing the attitudes of the information recipients (Hovland & Weiss, 1951; Pornpitakpan, 2004). This suggests that competent, respected and trustworthy managers who control valued resources are well positioned to foster group-level norms favourable to achieving organizational goals; and underscores the importance of clear vocal upper management support for HR initiatives.

Fostering uniformity in values, attitudes, and behaviours.

Conformity, as used here, refers to uniformity and alignment of attitudes and behaviour with group norms and expectations (Sorrel & Kelley, 1984). While Asch

(1951) demonstrated the power of group norms to induce conformity, conformity facilitates formation of group norms (McCord, 1948). For example when individuals are exposed to a consistent group bias, they tend to adopt the bias (Sheehan, 1979). Accordingly, conformity can contribute to, and be an outcome of, a strong situation. This is why group norms can persist following turnover within the group, underscoring the importance of shared member perceptions of organizational attributes. Thus, organizational benefits are likely to be realized when the HR system fosters uniformity of goal oriented attitudes and behaviour among its members.

Freeing situational constraints.

There are several reasons why organizationally desired behaviours may not result from situational interventions aimed at eliciting them. Firstly, such interventions may be strong enough to elicit attitudinal conformity, but not behavioural conformity (Tedeschi, 1981). In such instances, motives or goals internal to the individual predominate over the situational influence (Gottlieb & Ickes, 1978; Lord, Brown, & Freiberg, 1999).

Alternatively, though organizational members may prefer to behave consistently with organizational goals, they may lack the resources (e.g. time, ability, tools) to do so (Tedeschi, 1981). Such resource constraints, when they are beyond employees' control, relate to job dissatisfaction, frustration, and lowered job performance (O'Connor, Peters, Rudolf, and Pooyan, 1982). This suggests that in order to provide favourable conditions for a situational influence to be effective, HR practices must be perceived by employees as providing and enabling necessary resources.

Fairness.

Equity Theory suggests that employees' motivation and job satisfaction are contingent upon their perceptions of the ratio of their inputs (i.e. efforts, contributions) to outputs (i.e. rewards) compared to those of other members within their work group (Adams, 1965). Meta-analytic evidence demonstrates that fairness perceptions relate to employee perceptions of organizational support (Rhoades, & Eisenberger, 2002), and that for HR practices, fairness perceptions partially mediate the relationship between perceptions of effective HR practices and organizational commitment (Chang, 2005). Consequently, HR practices that are not perceived as fair are unlikely to facilitate the emergence of a strategic organizational climate.

HR Practices and HR Strength

HR Strength is essentially a measure of HR system effectiveness that is based on employee perceptions of the firm's HR practices (see Appendix C). The HR system's contribution to building situational strength is assessed along two axes: columns represent HR practices, and the rows represent the items comprising the 6 dimensions of HR Strength. The HR practices are adapted from the thirteen most commonly examined practices in the strategic HR management literature identified by Combs et al. (2006), including: (a) training; (b) pay for performance and total pay (collapsed to form a single component called Pay System/Structure); (c) employee participation in decision making; (d) appraisal and feedback; (e) benefits; (f) teamwork; (g) internal promotion programs; and (h) information sharing. I assess each along the aforementioned 6 dimensions of HR Strength. The practices are adapted to a level of abstraction that reduces the possibility that any single practice would be unduly influenced by organizational attributes not

directly associated with the HR system. For example, employment security was not used, as there are multiple ways in which an organization can provide employment security.

Other adaptations include dropping HR planning, and incorporating Flextime within the “benefits” category. HR planning was omitted because it is unlikely that employees would be very familiar with this particular practice. Finally, an interview with the senior corporate HR executive at the participant organization responsible for these groups verified that all the HR practices identified in the measure should be relevant to all employee groups.

My measure of HR Strength is not a *specific climate* measure; it is intended to assess the presence of the building blocks of climate. As with a measure of climate, however, HR strength has meaning at the individual level (similar to the notion of psychological climate) in that it represents individual perceptions of these aspects of the HR system. I expect employees who perceive the HR system as strong to show high levels of commitment, job satisfaction, OCB, and low turnover intent, because such perceptions effectively transmit clear signals of core organizational values, preferences, goals, and the organization’s support for them.

Like a climate measure, HR Strength also bears meaning at the group level. At the individual level, individual perceptions of the HR system are captured. Groups within business units that show high agreement on high HR Strength scores reflect an HR system that is effective in fostering situational strength around achieving organizationally strategic goals. Groups within business units that do not show such agreement (i.e. where there is much within-group variance) reflect weak situational strength.

HR Strength and Employee Attitudes and Behaviour

Schneider's (1987) development of the Attraction-Selection-Attrition (ASA) framework builds primarily on Lewin's (1951) research on the relationships between the environment, the person, and behaviour. Schneider turned Lewin's formula from behaviour being a function of the situation and the person ($B = f(S, P)$) to the situation being a function of the person and the behaviour ($S = f(P, B)$) (Schneider, 1987). According to Schneider's (1987) perspective, the environment does not give rise to behaviour; rather, people create an environment over time. According to an interactionist perspective, the situation and the individual are interdependent; each one can change the other. According to the ASA framework, employees are drawn to an organization and determine their fit to it. Specifically, employees who select, thrive and remain within an organization typically express pro organizational attitudes, intentions and behaviours. On the other hand, employees who do not consider themselves a good fit do the opposite, and turnover. Those who perceive high levels of HR Strength consider the HR practices to be reinforcing organizational goals and norms and as indicators of a strong goals-focused organizational environment. Organizations or business units that provide clear and consistent messages about the organization's goals and norms would be expected to offer better guidance for applicants and employees to make comparisons of "fit" than organizations or business units that provide ambiguous messages about goals and norms. In the context of HR Strength, employees who perceive higher levels of HR Strength recognize those values and goals, and are members of that organization or work group because they identify with those values and goals.

Hence:

Hypothesis 1: Individual perceptions of HR Strength positively predict job satisfaction (H1a), organizational commitment (H1b), lower turnover intentions (H1c), and OCB (H1d).

At the group level, differences in HR practices across units, and differences in the way the same practices are implemented across units, can lead to higher mean levels of HR Strength for some groups than for others. The ASA framework suggests that in time, homogeneity develops among organizational members with respect to perceptions, values, attitudes, intentions, and behaviours, as people contribute to creating the environment. According to this causal interdependency, group members influence one another, and group-level perceptions of the environment influence individual attitudes.

As group members influence one another, Schneider's ASA theory suggests that the people ultimately determine the environment. Schneider (1987) asserts that the two (persons and situations) are causally interdependent by suggesting that people create and change the situation. Consistent with Schneider, it is likely that employees who hold perceptions of high HR Strength see clearly how their daily work promotes organizational goals and are thereby likely to exemplify for others what it is to be a strong contributing organizational member. People acting as exemplars for their coworkers help shape the organizational environment. The mean within-unit value of HR Strength represents the influence of the majority of unit members, influenced by the positive or negative exemplars (i.e., outliers). In units with higher mean HR Strength scores, there may be a few, or many members who perceive a greater connection between HR practices and organizational goals. These individuals help other unit members

recognize the kinds of behaviours and attitudes that the organization values.

Accordingly, the behaviours and attitudes of unit members with high (low) HR Strength scores will influence the attitudes and behaviours of their unit cohorts scoring lower (higher) in HR strength. Holding constant individual HR Strength scores, individuals in groups with higher (lower) mean HR Strength scores should demonstrate more (less) organizationally beneficial attitudes and behaviours than individuals in groups with lower (higher) HR Strength scores.

Hypothesis 2: After controlling for individual perceptions of mean HR Strength, group level HR Strength will positively predict individual level job satisfaction (H2a), organizational commitment (H2b), turnover intentions (H2c), and OCB (H2d).

Ideally, a work unit will develop similar perceptions of HR Strength. In keeping with Lewin's framework in which behaviour is a function of the person and situation, Mischel's situational strength theorizes that strong situations constrain behaviour. Since a strong situation is indicated by group-level agreement around HR Strength, agreement represents the impact of the situational constraint on individual attitudes and behaviours. An important aspect of HR Strength is the ability of HR practices to orient employees to organizational goals. Affective organizational commitment typically reflects a belief in and acceptance of organizational goals (Hackett, LaPierre, & Hausdorf, 2001), and therefore should associate *positively* with HR Strength. Using similar logic, HR strength should also associate positively with intentions to remain an organizational member. Accordingly, higher within group agreement on HR Strength reflects higher levels of situational strength, which creates conditions wherein group processes are driven more by

HR system cues than by individual differences, leading to more efficient and effective group processes. Where hypothesis 2 suggests that organizations with people who perceive high HR Strength influence group-level attitudes and behaviours through the ASA process, situational strength theory suggests that overall group level agreement on HR Strength (the situational influence) should also predict individual attitudes and behaviours.

At the group level, high overall mean HR Strength scores indicate that employees perceive their employer's HR practices as advancing organizational goals (i.e. as goal relevant). High within-group agreement (low variance) on HR Strength scores indicates the degree to which perceptions are shared. Thus, the mean and the variance of within group ratings represent two separate constructs. HR Strength measured at the group/unit level is likely to moderate the relationship between HR Strength and work related outcomes at the individual level of analysis (Figures 1 & 2). When group level HR Strength (i.e. mean of unit members' HR strength scores) is high and the within unit HR Strength scores are homogeneous (i.e. low variance/high agreement), the relationship between individual perceptions of HR Strength and individual attitudes should be strongest (Scenario 1; Figure 2). In other words, when unit agreement is high, perceptions of the effectiveness of the HR practices is shared, exerting a normative influence on individuals (high situational strength). A high overall within unit mean rating indicates that this shared perception is also positive. This is the ideal situation, in which HR Strength perceptions are both high and shared. Where the unit mean HR Strength score is high but within unit agreement is low (Scenario 2; Figure 2), the relationship between

individual measures of HR Strength and work attitudes is likely to be weaker than in Scenario 1 (Figure 2). Where there is a low mean unit HR Strength score and low agreement (Scenario 3; Figure 2), the relationship between HR Strength and work attitudes as measured at the individual level should be weaker still. The condition in which the relationship between individual perceptions of HR Strength and individual attitudes is likely to be weakest is when the unit mean of HR Strength is low and agreement is high (Scenario 4; Figure 2). If HR Strength is strong (i.e., high agreement), but the level (mean) is low, the interpretation is that the HR system is very effectively propagating a climate that is not focused on organizational goals. When group agreement is low, perceptions of the effectiveness of the HR practices is not shared. And so, the third hypothesis tests the situational strength component ($B=f(P, S)$):

Hypothesis 3: The interaction of group-level perceptions of HR Strength and group-level agreement moderates the relationship between individual-level HR Strength and individual-level attitudes and OCB such that this relationship is strongest when both level and agreement are high, and weakest when level is low but agreement is high (The direction of the moderations predicted is shown in Figure 2).

The dimensions of HR Strength are constructed around established facets of situational strength and are intended to capture the degree to which HR practices contribute to the emergence of situational strength around strategic goals. Because organization climate measures assess shared perceptions of the work environment with respect to a particular climate (Zacharatos, Barling, & Iverson, 2005), where events are perceived the same way and where behavioural expectations are clear, shared climate perceptions are conceptually synonymous with a condition of situational strength

(Schneider, Solvaggio, & Subirats, 2002). However, where the climate measure reflects situational strength, HR Strength reflects the properties of HR practices that induce situational strength (e.g. goal relevance, managerial support). Unit-level perceptions of HR Strength should associate with unit-level climate perceptions, where unit level climate is relevant to organizational goals. An example of a strategic organizational climate that the senior corporate executives at the participating organization have deemed strategically relevant is Global Service Climate, which represents employee perceptions of the practices, procedures, and behaviours that get rewarded, supported, and expected with regard to customer service (Schneider, White, and Paul, 1998). Accordingly, units with high HR Strength scores should also score high on Global Service Climate perceptions, and so I hypothesize that:

Hypothesis 4: Group/unit level perceptions of HR Strength associate positively with group/unit level scores of Global Service Climate.

Using Mischel's (1977) concept of situational strength to assert that a primary role of the HR system from a performance perspective is to orient employees towards organizational goals and objectives, I extend goal-setting theory (Locke, & Latham, 1990) from the individual level to the group level to propose that an awareness of relevant (i.e., strategic) goals across work situations will positively predict overall unit performance. Group level performance outcomes associated with group goals have been established for assigned group goals (Mulvey & Ribbons, 1999), group goal setting (Wegge & Haslam, 2005), goal commitment (Aube & Rousseau, 2005), and meta-analytically ($k=10$) for group goals in general (O'Leary, Martocchio, & Frink, 1994).

Similar theoretical perspectives include those of Werbel and DeMarie (2005), and Sanchez and Levine (2008), who proposed that effective HR practices communicate clearly to employees strategic organizational competencies. Furthermore, there is an established relationship between climate and organizational performance (for example, Salanova et al., 2005; Schneider et al., 2005; Liao & Chuang, 2007; Zacharatos et al., 2005; Griffith, 2006; Katz-Navon et al., 2005). Accordingly, HR Strength agreement (i.e., low variance) should associate more strongly with work unit performance (lower reported lost hours due to injury; higher accounting returns) when mean perceptions are high than when mean perceptions are low (Figure 3).

Hypothesis 5: Within unit mean HR Strength will moderate the relationship between a unit level measure of HR Strength agreement and business unit performance (accounting returns) and lower reported injury rates (H5b), such that the relationship will be stronger when the mean is high.

I propose that HR Strength is associated with business unit outcomes (lower injury rates and higher accounting returns) both directly (by influencing shared perceptions of important organizational goals and values) and indirectly (by influencing attitudes) (Figure 1). I propose that HR systems can build shared awareness of, and orientation towards, strategic organizational goals. That is, the influence of unit level HR Strength on unit performance is partially mediated by unit level measures of work attitudes and turnover intentions (Figure 1).

Ostroff (1992) found significant relationships between aggregated measures of commitment, job satisfaction, and turnover intent and organization-level performance. As noted previously, a meta-analysis shows that job satisfaction correlates more strongly

with performance at the group level than at the individual level (Harter et al., 2002). Ostroff (1992) suggests that these differences may be due to the interdependencies involved in work. The ASA framework suggests, and empirical results corroborate, (Boone, & Van Witteloostuijn, A. 2005; George, 1990), that groups comprised of individuals who are similar in personality or affect are more likely to share similar attitudes and behaviours. The situational strength framework suggests that behaviours are likely to be constrained when situational strength is high, and research shows that aggregated OCB contributes to organizational performance (Podsakoff, et al., 2000). For these reasons, higher levels of (and agreement on) HR Strength should positively predict unit level attitudes and performance.

Hypothesis 6: The partial mediation of the relationship between HR Strength and unit-level performance by unit-level job satisfaction (H6a), commitment (H6b), turnover intentions (H6c), and OCB (H6d) is moderated by Agreement around HR Strength.

The purpose of HR Strength is to capture the degree to which the system of HR practices fulfil Ostroff and Bowen's (2000) definition of HR practices as a means of communicating those behaviours and values that are strategically important in a consistent and unambiguous manner. An HR system that performs this function well is essentially and effectively communicating the organization's strategy, and is fashioning an organizational climate that is strategy-congruent. This idea is formalized in the climate literature by Denison (1996), who postulates that climate is formed through organizational structures such as HR practices. To the extent that Service Climate is a strategic climate in the study organization's sample, this Service Climate should be attributable to HR Strength. While the

literature is thin on the number of strategy-relevant climates that may be present in a work-group, I view HR Strength as a primary source of strategic climates, and therefore propose that the effect of HR Strength on Financial Performance and Lost Hours Due to Injury is partly mediated by Service Climate:

Hypothesis 7: The relationship between HR Strength agreement and unit-level performance (Financial H7a, and Injury H7b) is mediated by Service Climate. The direct relationship between HR strength agreement and performance as well as the relationship between HR Strength agreement and Service Climate will be moderated by mean HR Strength such that the relationship between HR Strength and performance will be greatest when mean HR Strength is high, and lowest when mean HR Strength is low.

Methods

Participants

The sample comprises managers at roughly 200 nursing homes, retirement homes, and long-term care homes throughout Canada that are part of an assisted living company headquartered in Canada. Mair (2005) demonstrated that middle managers have a positive and significant effect of business unit profitability. Homes employ one to twenty ($M = 6.86$, $SD = 3$) management staff working full-time to oversee the operation of the home and the care of the residents. Additional support is provided by unionized part-time and contingent support staff helping with tasks required in resident care, such as food preparation and attending to personal client needs. The ratio of managers to support staff at homes is approximately 1:5. HR practices are not coordinated between all homes. For example, there are currently over 60 benefits plans for the 200 homes, and there is no formal compensation policy at the corporate level.

Procedure

A web-based survey was distributed by the researcher via company e-mail to all work-site management employees ($N = 1,096$). All management employees have access to a computer at work, and the company allowed employees to complete the survey during office hours. Two reminders were issued during the collection period; the first reminder after two weeks, and the second reminder after the third week.

Individual Level Dependent Measures

Job satisfaction.

The measure of job satisfaction is taken using the shortened (6-item) version of Overall Job Satisfaction (Brayfield & Rothe, 1951). The original version of the OJS uses 18 items. The shortened version shows coefficient alphas that range from $\alpha=.83$ to $\alpha=.90$ (Fields, 2002). Items are rated on a Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Organizational commitment.

The 8 item Affective Commitment scale by Allen and Meyer (1990) was used. This scale has demonstrated reliabilities ranging from $\alpha=.74$ to $\alpha=.90$ (Allen & Meyer, 1996). The response scale consists of seven points ranging from *strongly disagree* to *strongly agree*.

Turnover intentions.

Turnover intentions was gathered using the four-item measure developed by Kelloway, Gottlieb, and Barham (1999). This measure has demonstrated a coefficient alpha of .93, and the items are rated along a five-point scale ranging from *strongly disagree* to *strongly agree*.

OCB.

OCBs were captured using a self-report measure of service-oriented OCB (Bettencourt, Meuter, & Gwinner, 2001). This 16-item measure comprises dimensions of loyalty ($\alpha=.87$), service delivery ($\alpha=.80$), and participation ($\alpha=.82$). The 5 items comprising the service delivery dimension are used for this study. It is appropriate for the sample, given the service-oriented nature of the work in assisted living facilities. Examples of items include “Generates favourable goodwill for the company” (loyalty

dimension), “Follows customer service guidelines with extreme care” (service delivery dimension), and “Makes constructive suggestions for service improvement” (participation dimension). Bettencourt, Meuter, et al. (2001) defend the use of this self-report measure by suggesting that many of the activities associated with customer-focused OCBs may not be directly observable by the employees’ supervisors. A recent meta-analysis of OCB showed no significant differences in results when subgroups were formed based on ‘self’ (k=10) or ‘other’ (k=40) ratings of OCBs (Fassina, Jones, & Uggerslev, 2008).

Independent Variable: HR Strength.

HR Strength assesses six dimensions of strong situations for each of the eight HR practices (Appendix C). The HR practices used in the measure were chosen from among the ten HR practices established as contributing to organizational effectiveness (Combs et al., 2006) and which are used by the participating firm as confirmed by its senior corporate leaders. Participants were asked to indicate the degree to which they agree/disagree with the statement aligned with each cell in the measure’s matrix, designating a number ranging from 1 to 7, as in a Likert-type scale. Where participants do not consider a particular HR practice as relevant to their group, they were asked to denote “N/A” (not applicable). Items were averaged to derive an overall mean HR strength score for each participant.

The HR Strength measure has two relevant features at the group level: the group mean, and the variance. While the mean represents the overall level of HR Strength, the variance connotes the strength of the measure in contributing to organizational climate (i.e., agreement). Using the mean to reflect level and the variance to reflect agreement

(Chan, 1998 refers to agreement as strength) represents two different processes by which climate emerges through the HR system. Chan (1998) describes this type of model as a dispersion model, where the variability of within-group agreement is an important component of the model. Where a direct consensus model requires a certain level of within-group agreement to warrant aggregation into a higher order construct, a dispersion model treats within-group variance “as an operationalization of a focal construct” (p.239, Chan, 1998). Multilevel models using the mean and variance as separate constructs are not widespread, but recent examples of this type of analysis may be found in organization climate research (Gonzalez-Roma, et. al., 2002; Schneider, Salvagio, & Subirats, 2002), and in selection research (Ployhart, Weekley, & Baughman, 2006).

Agreement around HR Strength was assessed simply using the standard deviation of HR Strength at the group level. A group with perfect agreement would score zero on such a measure. Roberson, Sturman, and Simons (2007) recommend standard deviation as a practical measure of dispersion.

The measure of HR Strength was developed by first deriving the dimensions of HR Strength through the prior literature review. I settled on definitions of these dimensions, and developed some items for each dimension. I then gathered a group of 6 subject matter experts (Human Resources and Organizational Behavior faculty members and PhD students) to discuss the definitions and further develop items. A total of 60 items were developed by this group for the 6 dimensions. Two documents were then given to a different group of 5 subject matter experts (3 professionals in the HR field, and 2 PhD students in Human Resources and Organization Behavior); one document

contained the dimension definitions and the other document contained the 60 unsorted items. This group (the 5 members of this group never met or interacted with one another) were then asked to sort the items into their respective dimensions. Any items that did not survive this translation stage at an agreement level of 80% or higher (4 or 5 out of 5 raters agree on the sorting) were discarded. Of the 60 initial items, 41 survived the sorting at a minimum of 80% agreement. Finally, these 41 items were pilot tested on a sample of 80 undergraduate students who had experience working part-time or full-time in an organization. Reliability tests were performed in SPSS v17 to reduce the items for each dimension to a practical number (i.e., 3 or 4 items per dimension) while retaining the highest possible coefficient alpha for each dimension. The resulting 21 items are shown in Appendix A.

From the practitioner's point of view, the HR Strength scale may also be used to assess the relative contribution of each HR practice to forming a cohesive system. For example, a firm may have a low aggregate mean score, which might imply that employees uniformly perceive the HR *system* (i.e., all practices combined) to be less effective than it could be. Examination of the mean scores by functional area (i.e., columns on the measure, or individual HR practices) might reveal that the benefits score is dragging down the overall mean. Closer examination of the benefits scores might reveal that the 'goal relevance' dimension is particularly low. The implication here could be that employees perceive the benefits to be in some way incongruent with organizational goals (perhaps the organization claims to foster a casual work environment but does not offer flexible work schedules).

A benefit of this measure is its wide applicability, on both an inter-organizational and intra-organizational basis. Rather than constructing a measure specific to each organization or business unit strategy and its set of HR practices, the measure should not be meaningfully affected by organizations or business units that do not use a particular HR practice within the measure (e.g., pay for performance); this is the primary reason for using the overall mean score as an overall measure rather than the total score. The measure can also be distributed across groups within the organization that do not share the same sets of HR practices. A problem with asking single informants, such as senior HR staff about HR practices across several groups of employees within the organization is the difficulty determining the degree of implementation of a particular HR practice across groups (Wright et al., 2001). Employees can use the relevant portions of the measure to reflect their perceptions of the HR system, thereby avoiding the problems associated with differences in the usage of HR practices across employee groups.

Control Variables.

Organization and work-group tenure were used as control variables for the level 1 analyses. A count of the actual number of full-time employees was used as a control variable at the group level.

Service climate.

Schneider et al. (1998) developed the 7-item measure of Global Service Climate. Coefficient alpha for this measure ranged in their use from $\alpha = .88$ to $\alpha = .91$ (Schneider et al., 1998).

Group Level: Dependent variables.

A recent meta-analysis of the Strategic HR literature suggests that the relationship between Human Resource practices and firm performance can be assessed equally across an array of performance dimensions, including accounting returns, productivity measures, retention, and market returns (Combs et al., 2006). For my study, the most recent accounting measures (a ratio of actual Net Operating Income (NOI) against a target value; this measure can range in value from 0% to over 100%) from each work-site was used along with a measure of Lost Hours Due to Employee Injury (a measure that companies are legislated to report to the provincial government based on lost hours attributable to a workplace-related injury or illness). The use of NOI over target is consistent with firm or business-unit financial outcome measures used in the literature (e.g. Huselid, 1995), and the use of the most recently reported financial data implies that the relevant time period for business-unit performance is the recent past. For example, ROA, ROE, and profit-per-employee are all revenues-based measures. As a representation of performance, the time-period over which those revenues were collected is the period of interest, and so the use of these measures implies a focus on performance from the recent past. Because the HR Strength scale captures shared employee perceptions of organizational practices, which develop over time, the measure also captures an assessment of the recent past. Thus, the measures of business unit performance and HR Strength overlap in time.

Group Level: Mediators.

The measures of commitment, job satisfaction, and turnover intent that are taken at the individual level were tested for suitability for aggregating to the group level using

ICC1 (Ostroff, 1992). Commitment and satisfaction are typically represented at higher levels as the average of individual values, provided that ICC1 falls within an acceptable range (Campion, Medsker, & Higgs, 1993; Denison, 1990; George, & Bettenhausen, 1990; Ostroff, 1992; Schneider et. al., 2003). ICC1 provides an assessment of the reliability of the group mean (Bliese, 2000), and essentially answers the question of how much variance in the overall mean is attributable to membership in that group. James (1982) recommends using an ICC1 value of .12 as the cut-off for establishing sufficient group-level homogeneity in an aggregated variable to identify it as a group-level construct. Turnover intentions have also been aggregated to the group level based on the exchange model of turnover, which implies that turnover rates at the group level may be related to the ratio of rewards to costs of group membership (George, & Bettenhausen, 1990).

High and homogeneous ratings on the HR Strength scale would suggest that the HR system is contributing to a strong business unit climate. Because the sample being used has a known firm-level strategic stance partly focused on customer/client service, I measured global service climate using the 7-item measure developed by Schneider et al. (1998). The mean of HR Strength is expected to correlate positively with the mean of Global Service Climate as outlined in Hypothesis 4.

Analyses

Cross-level.

The row items of the HR strength scale are comprised of six dimensions (Appendix A). The first set of hypotheses was analyzed using individual-level mean HR

Strength as the independent variable and running separate regressions for each attitude as a dependent variable. While this analysis is at the individual level, the assumption of independence among perceptions of HR Strength cannot be made, as individuals are nested within groups; therefore this set of analyses took the form of a level 1 analysis (in HLM), or a mixed models analysis (Raudenbush & Bryk, 2002). This retains the grouping structure, and the conclusions made at this level indicate the nature of the relationship between HR Strength and attitudes for an individual within their respective work group (Gavin & Hofmann, 2002). At this individual level, the sample consists of all employees, but is dependent on organizational grouping (i.e., N = number of Work-sites).

Because these hypotheses imply between-group differences, evidence of significant within-and-between group variance in attitudes should be demonstrated prior to hypothesis testing (Hofmann, 1997). The following equation, which uses no level 1 or level 2 independent variables forces all the within-group variance onto the level 1 error term and all the between group variance onto the level 2 error term:

Level 1 model: $\text{attitude}_{ij} = b_{0j} + e_{ij}$

Level 2 model: $b_{0j} = \gamma_{00} + u_{0j}$

Where:

attitude_{ij} represents one of the relevant attitudes (job satisfaction, commitment, turnover intent) at the individual level.

γ_{00} represents the group-level intercept for the attitude being regressed;

γ_{10} represents the group-level intercept for the slope where no predictors are specified;

e_{ij} represents an error term that is specific to the individual;

u_{0j} represents an error term that is specific to the group;

The variance (σ^2) associated with the level-one residual e_{ij} and the variance (τ_{00}) associated with the level-two residual u_{0j} may then be used to calculate ICC1, which essentially explains the amount of total variance that can be attributable to group membership. The significance of the between-group variance is estimated using the chi-square test.

The first set of hypotheses implies that within a given work-group, HR Strength associates with attitudes. These hypotheses can be tested using the following model:

Level 1 model: $\text{attitude}_{ij} = b_{0j} + b_{1j}(\text{IHRS}_{ij}) + e_{ij}$

Level 2 model: $b_{0j} = \gamma_{00} + u_{0j}$ and $b_{1j} = \gamma_{10} + u_{1j}$

Where IHRS_{ij} = the mean of individual-level HR strength.

attitude_{ij} represents one of the relevant attitudes (job satisfaction, commitment, turnover intent) at the individual level.

γ_{00} represents the group-level intercept for the attitude being regressed;

γ_{10} represents the group-level intercept for the slope where no predictors are specified;

e_{ij} represents an error term that is specific to the individual;

u_{0j} represents the effect of group j on mean HR Strength; and

u_{1j} represents the effect of group j on the HR Strength-Attitude slope

A t -test of γ_{10} provides a test of hypothesis 1 (that individual-level HR Strength associates with attitudes). The chi-square test of variance in u_{0j} (i.e., τ_{00}) would suggest that there may be differences in intercepts across groups (i.e., a main effect), which could suggest

that group-level influences may be present. The chi-square test of the variance in u_{1j} (i.e., τ_{11}) would suggest that there may be differences in slopes across groups, which could indicate that the mean HR Strength may not necessarily be representative of the relationship in any given group. This would suggest that one or more moderators of the relationship between HR Strength and attitudes may be present at the group level.

The set of second hypotheses were tested using a series of random coefficient regressions (i.e., one regression for each of the level 1 outcome variables: job satisfaction, commitment, and turnover intent). The model for hypothesis 2a, which proposes that group-level HR Strength explains variance in individual-level attitudes, after controlling for individual-level HR Strength (i.e., a main effect of Group-level HR Strength), takes the following form:

Level 1 model: $\text{attitude}_{ij} = b_{0j} + b_{1j}(\text{IHRS}_{ij}) + e_{ij}$

Level 2 model: $b_{0j} = \gamma_{00} + \gamma_{01}(\text{GHRS}_j) + u_{0j}$, and $b_{1j} = \gamma_{10} + u_{1j}$

Where IHRS_{ij} = the mean of individual-level HR strength;

GHRS_j = the mean of aggregated (i.e., group-level) HR strength;

attitude_{ij} represents one of the relevant attitudes (job satisfaction, commitment, turnover intent) at the individual level;

γ_{00} represents the intercept for the group-level attitude being regressed;

γ_{01} represents the effect of group-level HR Strength;

γ_{10} represents the group-level slope where no predictor is specified;

e_{ij} represents an error term that is specific to the individual;

u_{0j} represents the effect of group j on mean HR Strength; and

u_{1j} represents the effect of group j on the HR Strength-Attitude slope

Supporting evidence for the hypothesis that group-level HR Strength associates with individual-level attitudes, after controlling for individual-level HR Strength would be indicated by significance in the estimate of γ_{01} .

The third set of hypotheses examines the effect of the interaction of group-level HR Strength and agreement on individual-level attitudes. In other words, the interaction of group-level HR Strength and agreement are expected to account for a significant portion of the between-group variance in the relationship between individual-level HR Strength and attitudes. Again, separate regressions would be run for each attitude.

Level 1 model: $\text{attitude}_{ij} = b_{0j} + b_{1j}(\text{IHRS}_{ij}) + e_{ij}$

Level 2 model: $b_{0j} = \gamma_{00} + \gamma_{01}(\text{GHRS}_j) + u_{0j}$, and

$$b_{1j} = \gamma_{10} + \gamma_{11}(\text{GHRS}_j)x(\text{Agree}_j) + u_{1j}$$

Where IHRS_{ij} = the mean of individual-level HR strength;

$(\text{GHRS}_j)x(\text{Agree}_{ij})$ = the product of the mean of aggregated (i.e., group-level) HR strength and agreement (variance); this is the cross-level interaction term.

attitude_{ij} represents one of the relevant attitudes (job satisfaction, commitment, turnover intent) at the individual level;

γ_{00} represents the intercept for the group-level attitude being regressed;

γ_{01} represents the effect of group-level HR Strength;

γ_{10} represents the average group-level slope for the level 2 predictors;

γ_{11} , represents the effect of the group-level moderator.

Supporting evidence for the group-level moderating effect of HR Strength-by-agreement would be indicated by significance in the estimate of γ_{11} .

Centering.

The purpose of scaling the independent variables is primarily to assist in the interpretation of the intercept. Hofmann and Gavin (1998) discuss three possible strategies; using the raw metric scaling (i.e., no centering); grand mean centering, where the grand mean of the individual-level independent variable is subtracted from each individual case; and group mean centering, where the mean for the group is subtracted from the individual case within that group. While the raw metric and grand mean centering strategies are considered equivalent for the purpose of analysis, group mean centering produces results that differ from the other two strategies in the interpretation of the intercept term, the variance in the intercept term across groups, and in the covariance of the intercept term with other parameters (Hofman & Gavin, 1998). Essentially, raw metric scaling and grand mean centering may be used to demonstrate the contextual effect of the level 2 variables (i.e. the difference in attitude between two employees with the same individual-level HR Strength score, who work in groups that differ by 1 unit in group-level HR Strength), while group mean centering is used to assess the compositional effect, or the combined effect of the level 1 predictor *and* the level 2 predictor on the dependent variable (i.e., the difference in attitude between employees that differ by 1 unit in individual *and* group level HR Strength). Because the hypotheses in this study relate to the contextual effect of group-level HR Strength, the raw metric (equivalent to grand-mean centering) was used.

Group-level moderated mediation.

At the group level, I hypothesize that the interaction of HR Strength and group agreement contribute to organizational outcomes partly through a mediating effect of organizational attitudes (i.e., job satisfaction, commitment, and turnover intentions) or climate. This hypothesis implies a form of conditional indirect effect known as moderated mediation (Muller, Judd, & Yzerbyt, 2005). According to Muller et al. (2005):

“Moderated mediation happens if the mediating process that is responsible for producing the effect of the treatment on the outcome depends on the value of the moderator variable” (p.854).

H4, which propose that mean HR Strength moderates the mediating influence of employee attitudes in the relationship between HR Strength agreement and unit performance, is therefore tested through moderated mediation analysis. Stated in terms of the model outlined in Figure 1, the pathway between HR Strength agreement and the proposed mediating attitude or climate variable is moderated by mean HR Strength. Specifically, direct effects and first stage moderation regressions, as described by Edwards and Lambert (2007), were undertaken.

Results

Data Verification

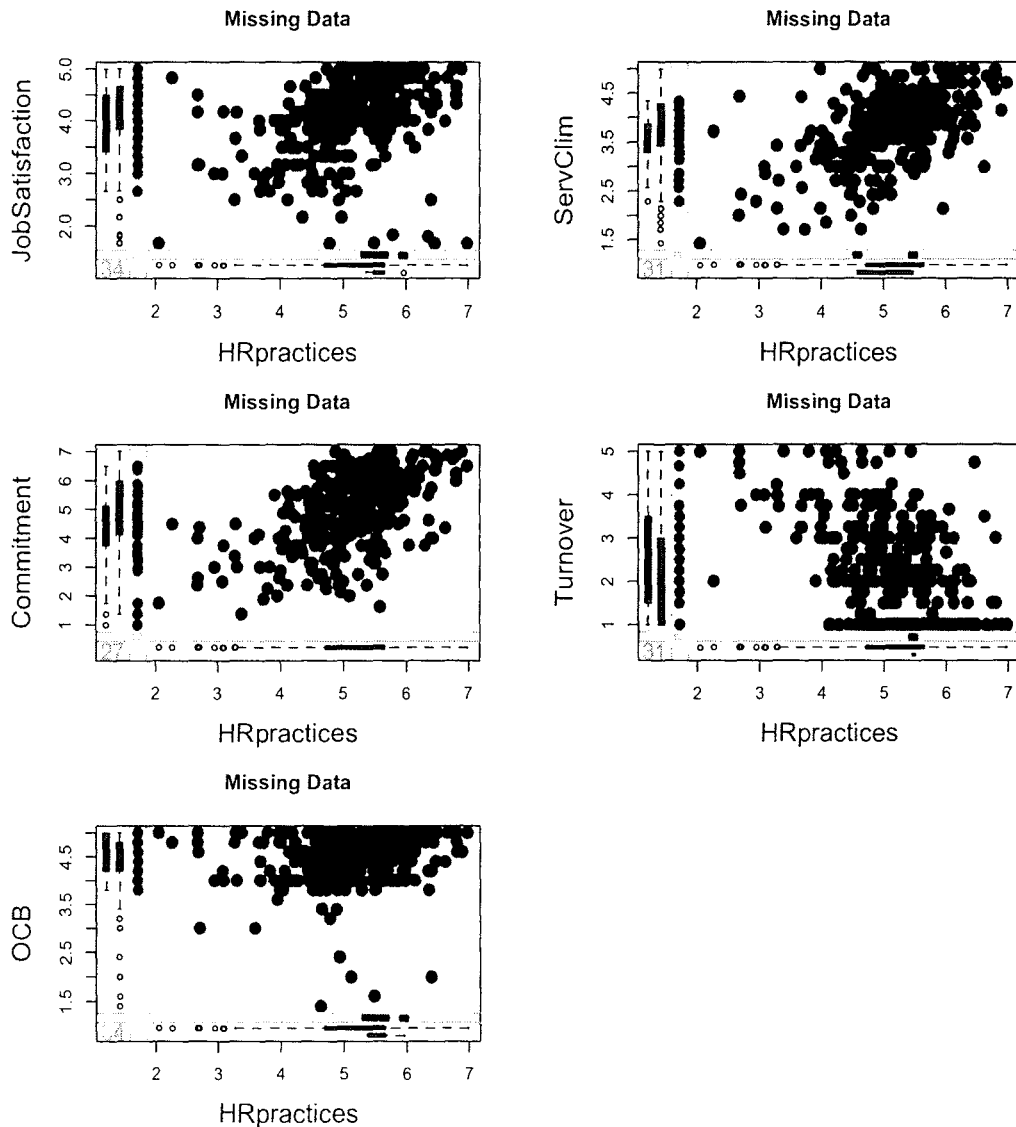
E-mail invitations with a link to the electronic survey instrument were sent to all 1,094 full-time employees involved in managing 180 work-sites. Two reminder messages were issued over the 1-month period during which the survey was available. Responses were received from 394 employees in 129 sites, representing an overall response rate of 36%, which according to Baruch and Holtom (2008) is in line with the average organizational survey response rate of 35%. Sixty-one of the 394 cases contained missing data where more than 5% of the HR Strength measure (the primary variable of interest in the analyses) was not completed. Usable responses were received from at least one employee at 71.6% of sites (i.e., 128 sites), and the mean response rate within sites was 36.5% (SD = 22.6%).

Missing data.

A visual inspection of the data suggested that missing data along the HR Strength variable could be attributable to the length of the measure (168 items in matrix form). Missing data appear increasingly toward the end of the measure, as if some subjects abandoned the measure. While this appears to be a systematic reason for missing data, plots of missing data against the other variables in the survey (Figure 3.1) suggest that the missing data are random. The figures show values of mean HR Strength (on the x axis as HRpractices) and other attitudes variables, including turnover intentions and OCB on the y-axis in black. The left-hand columns of the figures show missing values of HR Strength in grey along the values of the y-axis over which they occur. The marginal

distribution of missing values of HR Strength is shown on the left in grey, and the marginal distribution of the y-axis variable is shown in black. Data missing at random should show a distribution (in grey) that aligns with the distribution of the y-axis variable (in black), which would demonstrate that missing values are randomly distributed across the values of the y-axis variables (van Buuren & Groothuis-Oudshoorn, in press). For example, Figure 3.1 shows that the distribution of missing values of HR Strength over the other surveyed attitudes. Missing values of HR Strength for each attitude aligns closely with the distribution of each attitude. Taken together, the figures are not inconsistent with an assumption that missing values of HR Strength are missing at random.

Figure 3.1
Distribution of Missing Values of HR Strength



Further investigation into the effects of missing data along the measure of HR Strength was conducted in the form of t-tests of the differences in means for each surveyed attitude grouped by missing and non-missing values of HR Strength. These tests showed no significant differences between values of job satisfaction, OCB, or service climate across non-missing and missing values of HR Strength, but significant

differences in means for Commitment ($p < .05$) and Turnover ($p < .05$). These results suggest that to some degree, the data are not *missing completely at random* (Little & Rubin, 1987). However, the means for Commitment are higher and for Turnover are lower in the non-missing data sample, which follows the direction of general patterns of missing data observed by Rogelberg et al. (2000), who note that organizational survey respondents show higher satisfaction, agreeableness, and conscientiousness than non-respondents. Subsequent regression analyses at both the individual level and cross-levels using Commitment and Turnover as dependent variables showed trivial and non-significant differences in regression weights, p-values, and standard errors of the variables (Table 3.1). Finally, logistic regression was conducted using a categorical variable to describe the presence/absence of the HR Strength measure as the dependent variable and all other attitudes variables as independent variables (Service Climate, Job Satisfaction, Turnover intent, and OCB). None of the predictor variables emerged as significant predictors of missing HR Strength data. Overall, these four different methods of examining missing data indicate that the missing data may be considered to be *missing-at-random*.

Table 3.1
Logistic Regression Analysis of Effects of Missing Data For HR Strength

	Including cases where HR Strength is missing			Excluding cases		
<u>Individual Level</u>						
	Coefficient	Std error	p-value	Coefficient	Std error	p-value
Dependent = Commitment						
Intercept	-0.26	0.37	0.469	-0.13	0.38	0.739
Service Climate	0.59	0.083	<.001	0.57	0.085	<.001
Org Tenure	-0.006	0.008	0.421	-0.007	0.008	0.371
Job Satisfaction	0.74	0.08	<.001	0.73	0.08	<.001
Model R ²	0.37		<.001	0.36		<.001
Adjusted R ²	0.37			0.36		
Observations	347			323		
Dependent = Turnover						
Intercept	6.68	0.359	<.001	6.6	0.37	<.001
Service Climate	-0.45	0.08	<.001	-0.44	0.08	<.001
Org Tenure	0	0.01	0.91	0	0.01	0.67
Job Satisfaction	-0.66	0.08	<.001	-0.66	0.08	<.001
Model R ²	0.31		<.001	0.31		<.001
Adjusted R ²	0.31			0.3		
Observations	347			323		
<u>Cross-level</u>						
Dependent = Commitment						
Intercept	2.28	0.59	<.001	2.48	0.59	<.001
Service Climate	1.11	0.12	<.001	1.07	0.12	<.001
Org Tenure	-0.01	0.01	0.51	-0.01	0.01	0.43
Group Size	0.01	0.02	0.6	0.01	0.02	0.62
Group Service Climate	-0.4	0.18	<.05	-0.4	0.19	<.05
Groups	125			121		
Observations	293			276		
Dependent = Turnover						
Intercept	4.55	0.54	<.001	4.42	0.54	<.001
Service Climate	-0.83	0.12	<.001	-0.8	0.12	<.001
Org Tenure	-0.01	0.01	0.9	0	0.01	0.95
Group Size	0	0.01	0.93	0	0.02	0.89
Group Service Climate	0.22	0.18	0.21	0.23	0.18	0.2
Groups	125			121		
Observations	293			276		

Screening for normality.

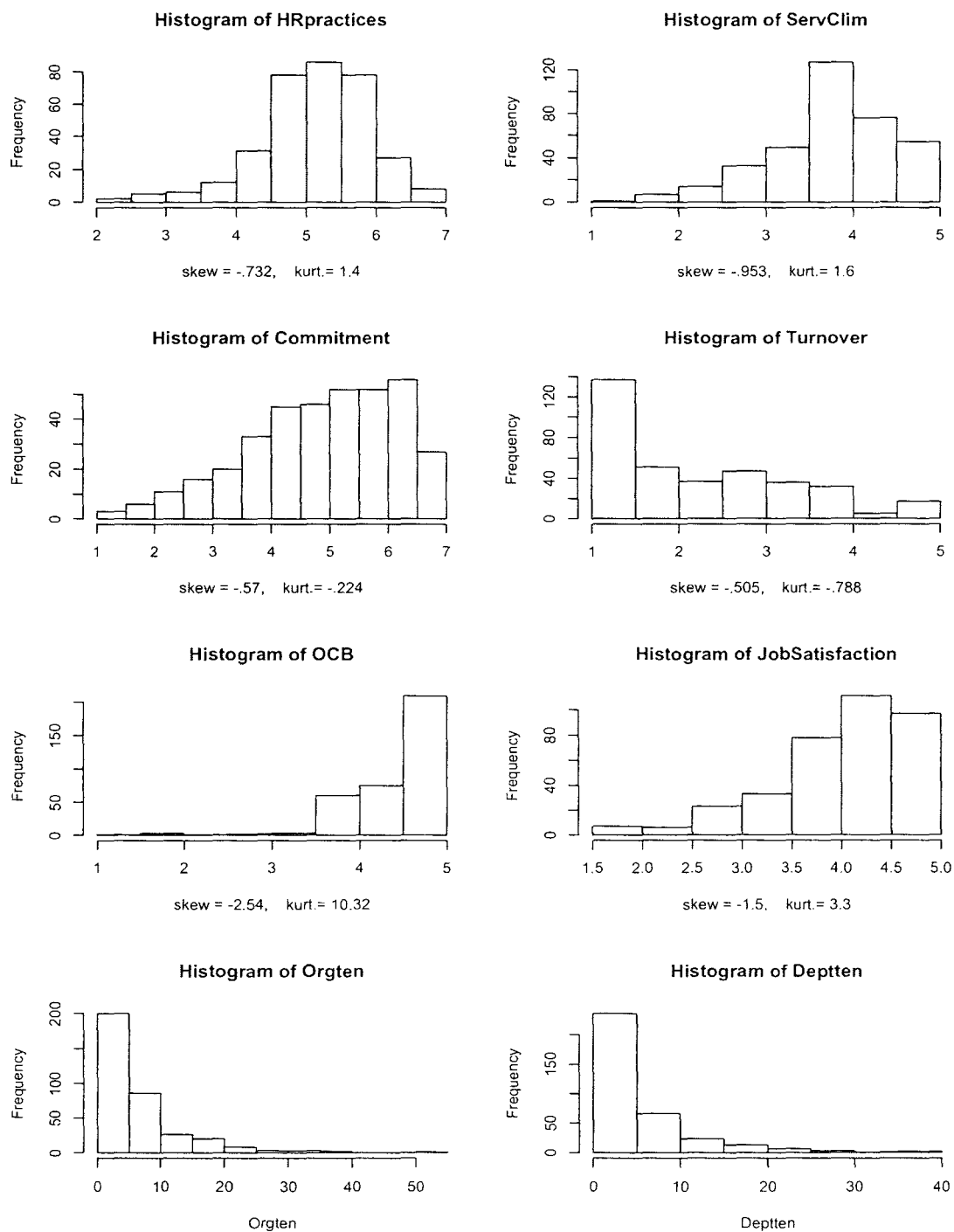
The study participants are grouped into work sites, which makes the sample for this study inherently multilevel. Employees were grouped by their response to a survey question asking them to input the name of their work-site. A total of 304 respondents included their work-site name; all other responses were omitted from the analyses using listwise deletion.

Individual level data were screened for normality first through examination for potential univariate outliers. The values for all attitudes variables (HR Strength, Job Satisfaction, OCB, Commitment, Service Climate, and Turnover Intent) fell within the range of the attitudes scales. There were 4 unusually high values for organization tenure and 4 for department tenure, with z-scores greater than 3.29 (Tabachnik & Fidell, 2001, p.67). Because organization and department tenure were used only as control variables, because they were plausible values, and because the other responses within these cases were also plausible, these cases were retained.

Normality of the variables was examined through histograms (Figure 3.2), which show evidence of both skewness and kurtosis for all variables; however, Tabachnik and Fidell (2001, p.74) point out that under/over-inflation of variance estimates due to skewness and kurtosis are reduced with samples larger than 200. The histograms show that HR Strength, Service Climate, and Commitment show reasonable bunching around the mean with relatively normal scatter from the mean. Job satisfaction shows some bunching of the data at the upper end of the response scale; turnover intent shows a strong leaning toward the low end of its scale; and OCB shows the largest departure from

normality, with apparent range restriction at the top of its scale, and few values at the opposite end of its scale. Vigoda-Gadot and Grimland (2008) show that citizenship behaviours positively associate with values-based or vocational careers, lending some support to the notion that the observed result for OCB may be reasonable given that the participant organization's business is assisted living. However, the histogram for OCB shows that the range restriction on this variable might limit the variance shared with other variables in the analyses, thereby potentially attenuating correlations. In order to estimate the impact of range restriction on OCB, I calculated the magnitude of the relationship between job satisfaction and OCB using an estimate of the standard deviation of OCB from a non-restricted sample (Bettencourt et al.) and the method outlined in Tabachnik and Fidell (2001, p.58). The corrected correlation between job satisfaction and OCB ($r = 0.235$) was equal to the uncorrected correlation in my sample, suggesting minimal impact of potential range restriction on OCB in my sample.

Figure 3.2
Histograms – Individual Level



Individual level means, standard deviations, reliabilities, and correlations between all lower-level variables are shown in Table 3.2, with an accompanying graphical representation of individual correlations (Figure 3.3). All significant correlations are in the expected directions, and with the exceptions of Service Climate and OCB, all reliabilities fall within previously reported ranges. The reported reliability for the measure of OCB is $\alpha = .80$ and the coefficient alpha in this study was $\alpha = .82$; previously reported coefficients alpha for service climate are $\alpha = .88$ to $\alpha = .91$, and for this study the coefficient alpha was $\alpha = .85$. The coefficient alpha for all variables was above the level of $\alpha = .80$. Thus, the correlations, standard deviations, and reliabilities are all at or very close to expected directions and values.

Table 3.2

Individual Level Means, Standard Deviations, and Correlations

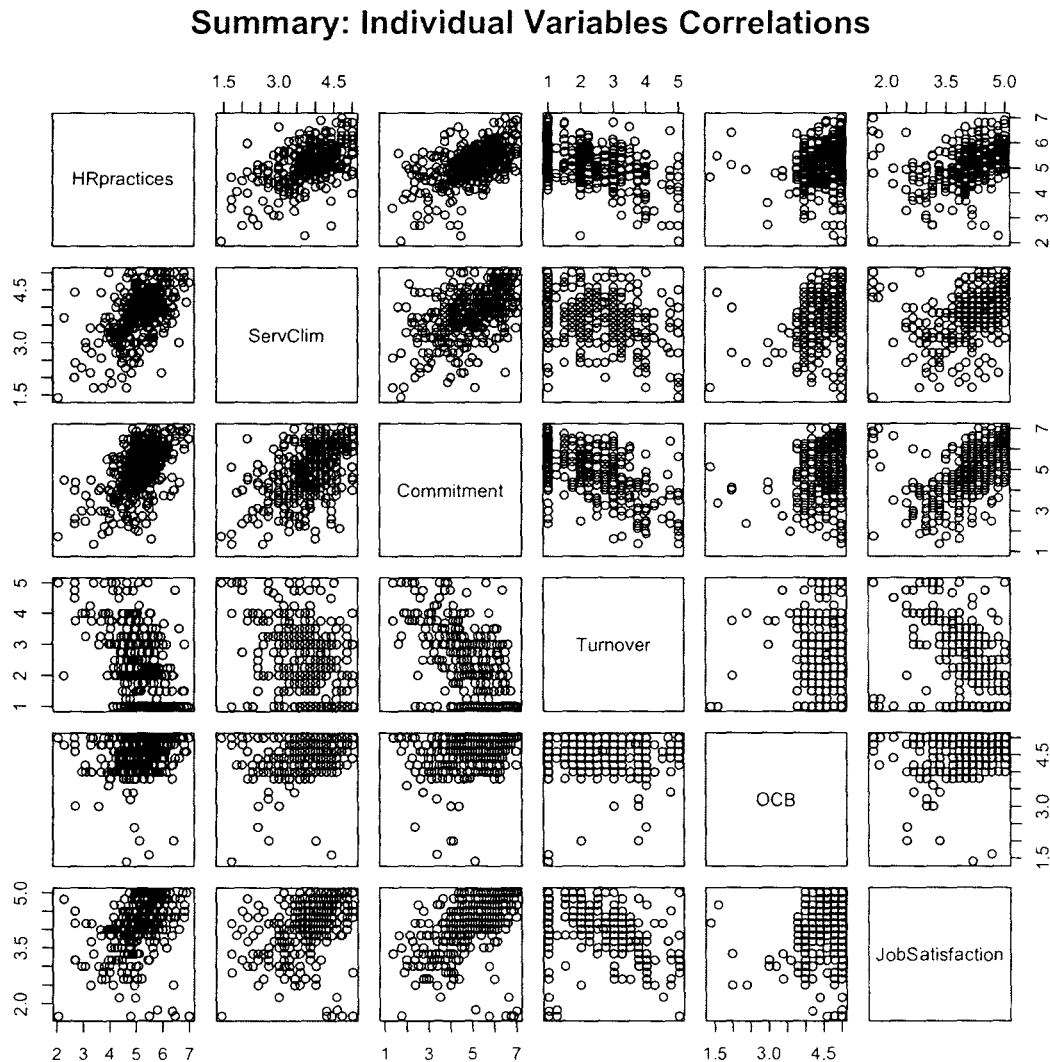
Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. HR practices	5.13	0.8							
2. Job Satisfaction	4.11	0.73	.33**	(.83)					
3. Commitment	5	1.27	.59**	.46**	(.87)				
4. Service Climate	3.79	0.72	.56**	.35**	.51**	(.85)			
5. Turnover	2.25	1.19	-.51**	-.46**	-.64**	-.44**	(.94)		
6. OCB	4.5	0.52	.14*	.24**	.23**	.29**	-.09	(.82)	
7. Org. Tenure	7.07	7.47	-.27	.08	-.01	.07	-.04	.06	
8. Dept Tenure	5.72	6.4	-.22	.04	-.05	.06	.01	.04	.83**

Note. $N = 279-298$

Coefficient alpha is indicated in brackets along the diagonal

* $p < .05$ ** $p < .01$.

Figure 3.3



When aggregated by work-site, the means, standard deviations, and correlations of the grouped data are presented in Table 3.3. All correlations at the group level are also in the expected directions. Higher level means for job attitudes (Job Satisfaction, Commitment, Turnover Intent and OCB), HR Strength, and Service Climate were created by aggregating individual average scores within each work-site. Both the mean and

standard deviation of HR Strength are proposed as group-level variables, and were moderately correlated at -.45. Ployhart et al. (2006) use the standard deviation and mean of higher level variables in a similar dispersion study, and report a surprisingly similar correlation between grouped mean and the standard deviation of the group mean of -.46. In conclusion, the means, standard deviations, and correlations of measures at the group level are in the expected directions and fall within expected values.

Table 3.3

Group Means, Standard Deviations, and Correlations

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Financial	0.92	0.27										
2. HR practices	5.14	0.59	.11									
3. HR practices SD	0.65	0.47	-.29**	-.45**								
4. Service Climate	3.79	0.53	.24**	.54**	-.26*							
5. Job Satisfaction	4.15	0.55	.16	.30**	-.33**	.31**						
6. Commitment	5.08	0.97	.07	.60**	-.20	.44**	.47**					
7. Turnover	2.22	0.89	-.19*	-.54**	.42**	-.40**	-.50**	-.66**				
8. OCB	4.51	0.39	.06	.18*	-.20	.32**	.32**	.25**	-.24**			
9. Injury	0.05	0.86	-.09	-.08	.14	-.19*	.17	.18*	.18*	-.15		
10. Site Size	7.09	3.37	.12	.08	.10	-.19*	.04	-.04	.03	.11	.24**	
11. SubjCount	2.37	1.37	.06	-.02	.06	.02	-.11	-.12	.03	-.08	.12	.08

Note. *N* = 123-128

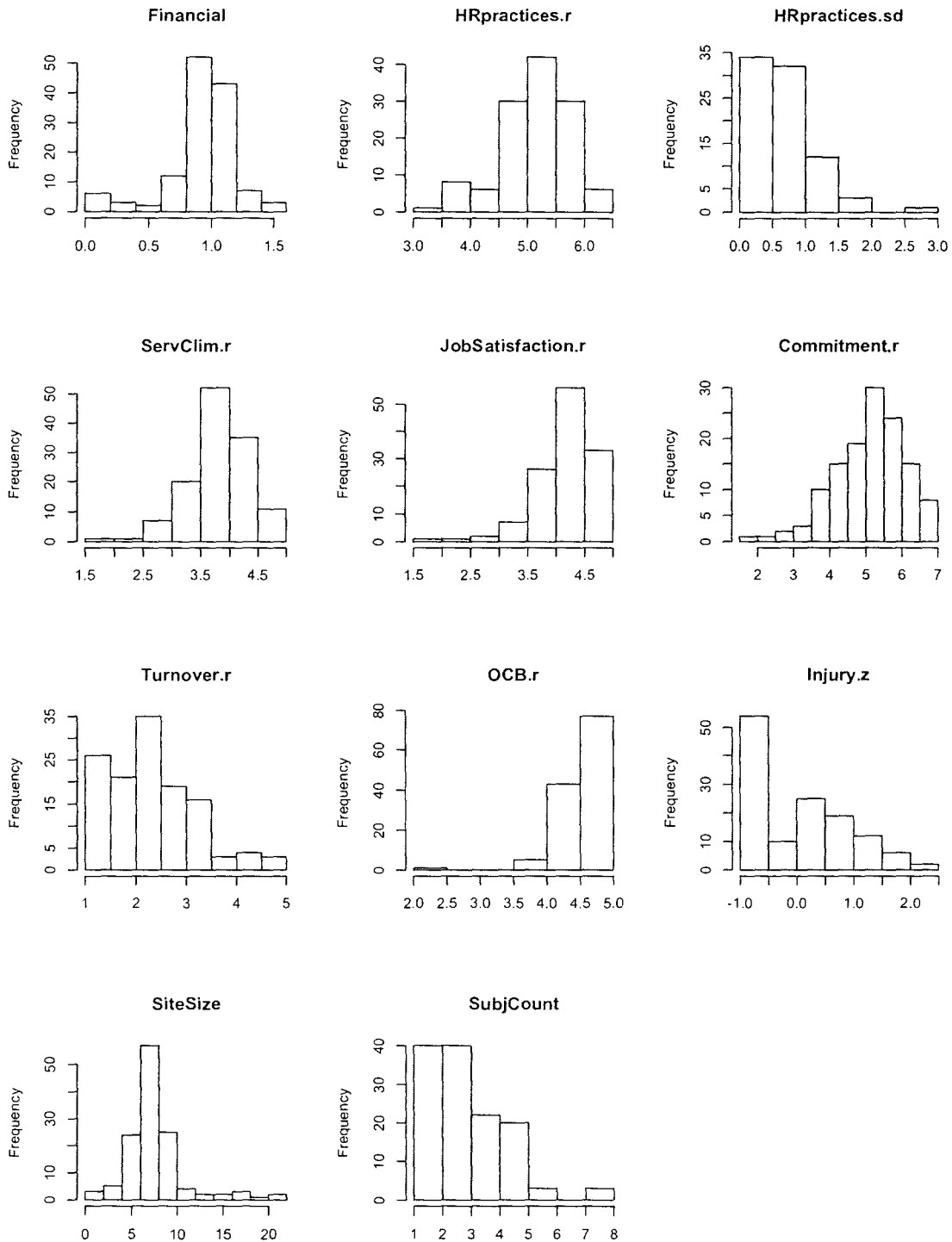
for HR practices SD, *N*=82

Coefficient alpha is indicated in brackets along the diagonal

p* < .05 *p* < .01.

The measure of Total Work Hours Lost Due to Reported Work Injury (a criterion measure) covers a wide range, and includes zero. A logarithmic transformation is possible if 0.5 or 1 is added to each case value (to remove the zero values for transformation), but a rank transformation rendered a more normal representation. A rank transformation replaces the actual data values with the rank of the value (Conover & Iman, 1982). Histograms of the grouped data are presented in Figure 3.4.

Figure 3.4
Histograms – Group Level



Multivariate outliers were examined at this point using the Mahalanobis distance, calculated by regressing site number on all variables (Tabachnick & Fidell, 2001, p.68). This analysis suggested that sites with Mahalanobis values greater than 30 may be suspect multivariate outliers. The only site with a value greater than 30 (Mahalanobis value = 33) was examined and showed a standard deviation value for HR Strength that was the highest value in the sample. The study of multivariate outliers is continued in greater detail in the discussion of Hypothesis 5 (for example, Cook's distance was tested for the group-level regression as a measure of leverage).

Reliability and Structure of HR Strength

The measure of HR Strength was administered in the survey in a matrix format and consisted of 168 items. The items were grouped into 6 dimensions of HR practice effectiveness (Manager Support, Goal Relevance, Uniformity, Framing, Performance, and Fairness) which were assessed for each HR practice outlined in Combs et al (2006) (Training, Pay, Appraisal, Benefits, Teamwork, Promotion Opportunities, Information Sharing, and Participation in Decision-Making). The coefficient alpha for the complete scale is very high ($\alpha = .98$), which is expected given that the measure comprises 168 items. The component means and reliabilities of the measure are broken down in Figure 3.5.

Figure 3.5
HR Strength Reliability

HR practices								
Coefficient Alpha for Complete Scale = .98 (168 items)								
Dimensions	Training	Appraisal	Pay	Benefits	Participation	Teamwork	Promotion	Info Sharing
Manager Support (items=4)	$\alpha = .89$	$\alpha = .91$	$\alpha = .81$	$\alpha = .82$	$\alpha = .93$	$\alpha = .92$	$\alpha = .91$	$\alpha = .93$
Uniformity (items=4)	$\alpha = .85$	$\alpha = .84$	$\alpha = .81$	$\alpha = .80$	$\alpha = .87$	$\alpha = .88$	$\alpha = .85$	$\alpha = .86$
Goals (items=4)	$\alpha = .84$	$\alpha = .84$	$\alpha = .82$	$\alpha = .82$	$\alpha = .82$	$\alpha = .87$	$\alpha = .85$	$\alpha = .83$
Framing (items=3)	$\alpha = .81$	$\alpha = .86$	$\alpha = .79$	$\alpha = .82$	$\alpha = .79$	$\alpha = .82$	$\alpha = .80$	$\alpha = .76$
Performance (items=3)	$\alpha = .81$	$\alpha = .84$	$\alpha = .73$	$\alpha = .79$	$\alpha = .84$	$\alpha = .82$	$\alpha = .80$	$\alpha = .82$
Fairness (items=3)	$\alpha = .80$	$\alpha = .83$	$\alpha = .84$	$\alpha = .82$	$\alpha = .84$	$\alpha = .85$	$\alpha = .88$	$\alpha = .83$
α	0.94	0.94	0.91	0.91	0.94	0.95	0.94	0.94
mean	5.52	5.4	4.32	4.51	5.2	5.57	4.82	5.62

$\alpha = .97$
 $m = 5.13$
items = 32

$\alpha = .96$
 $m = 5.23$
items = 32

$\alpha = .9$
 $m = 5.16$
items = 32

$\alpha = .94$
 $m = 5.04$
items = 24

$\alpha = .95$
 $m = 5.44$
items = 24

$\alpha = .95$
 $m = 4.8$
items = 24

Confirmatory factor analysis was used to affirm the factor structure of the proposed 6-dimension measure. Using the SEM package (version 0.9-19) in v.2.10.1 of R, I combined all HR practice indicators for each dimension item into a single item (for example, I averaged the Training, Pay, Benefits, Appraisal, Participation, Promotion, Teamwork, and Information Sharing responses for each of the 4 items for Management Support to get 4 Management Support items rather than 32 items, to work with 21 overall observed variables rather than 128), and compared a 1-factor model to two 6-factor models with a higher-order HR effectiveness factor. The single factor model is compared to the 6-factor models in order to investigate whether the HR Strength measure better comprises 6 sub-dimensions which load onto a single higher-order factor, or whether the 21 items simply fit a single dimension. Table 3.4 illustrates that while the single-factor model does not show adequate fit, both the 6-factor orthogonal and the 6-factor oblique models show adequate fit through the Root Mean Square Error of Approximation (RMSEA) index (RMSEA orthog. = .08, RMSEA obl = .07), the Standardized Root Mean Square Residual (SRMR orthog. = .06, SRMR obl. = .05), and the Nonnormed fit index (NNFI orthog. = .91, NNFI obl. = .92), with the 6-factor oblique model showing slightly better fit than the orthogonal model (Kelloway, 1998). The 6-factor model represents the theorized model of the measure of HR practices, with 6 dimensions.

Table 3.4
CFA – Results

	Model 1 1-factor	Model 2 6-factor Orthogonal higher order factor	Model 3 6-factor Oblique higher order factor
N= 272			
	Fit Indices	Fit Indices	Fit Indices
Chi-square	4217.8	4217.8	456.22
df	210	210	180
GFI	0.67	0.86	0.87
AGFI	0.59	0.82	0.83
RMSEA	0.14	0.08	0.07
SRMR	0.1	0.06	0.05
NNFI	0.68	0.91	0.92
	Standardized Loadings	Standardized Loadings	Standardized Loadings
Mgr Support		0.62	0.74
MS1	0.76	0.78	0.78
MS4	0.88	0.76	0.76
MS5	0.88	0.88	0.87
MS7	0.76	0.85	0.87
Uniformity		0.89	0.79
U1	0.72	0.61	0.61
U3	0.94	0.77	0.77
U5	1.02	0.89	0.89
U6	0.9	0.77	0.77
Goals		0.98	0.79
G1	0.86	0.67	0.67
G3	0.85	0.72	0.72
G5	0.98	0.82	0.81
G7	0.97	0.78	0.78
Framing		0.97	0.78
FR1	0.85	0.69	0.7
FR3	1.1	0.83	0.83
FR5	1	0.81	0.81
Performance		0.29	0.3
P2	0.4	0.78	0.78
P3	0.36	0.83	0.83
P5	0.48	0.69	0.69
Fairness		0.82	0.97
F1	1.16	0.74	0.73
F3	1.05	0.79	0.78
F5	0.95	0.79	0.81

Note: all loadings are significant at $p < .01$

The single-factor model shows some high loadings in the Uniformity, Goal, Framing, and Fairness dimensions, and the 6-factor orthogonal model shows very high factor loadings for Uniformity, Goals, and Framing on the higher-order latent factor. While not necessarily indicative of a problem in CFA (Joreskog, 1999), these high loadings suggest potentially high intercorrelations among these variables. The zero-order correlations among Framing, Goals, and Uniformity include some correlations greater than .75 (the highest zero-order correlations between items belonging to different dimensions is 0.83), which has been suggested as a guideline value beyond which multicollinearity may pose a problem (Tsui, Ashford, St. Clair, & Xin, 1995). By allowing Uniformity, Goals, and Framing to covary, the 6-factor oblique model shows slightly better fit than the 6-factor orthogonal model. For this study, the HR practices measure was used as a single overall representation of perceptions of the HR system.

Tests of Hypotheses

The SPIDA package (v 0.1) (Monette, 2010) for the analysis of mixed models in R (v. 2.10.1) (R Development Core Team, 2010), which is based on NLME (v3.1) (Pinheiro, Bates, Debroy, Sarkar et al., 2009) was used to test all the multi-level models. The first hypothesis tests the relationships between perceptions of HR Strength (HR practices) and job satisfaction, commitment, turnover intentions, and OCB. Because individuals are grouped by work-site, a multi-level model is employed to test these individual-level relationships. Gavin and Hofmann (2002) suggest a first step in the analysis of a multi-level model is to demonstrate whether the individual-level criterion shows variance at both the individual (within) and group (between groups) levels. The

purpose of this test, which uses a null model (Gavin & Hofmann, 2002), also known as a test of an unconditional model (Raudenbush & Bryck, 2002), is to gauge the degree of variation that lies between groups along the focal construct. The test of the unconditional model regresses the dependent variable on no level-one predictors, and the grouping variable as the only level-two predictor. Thus, the test uses the estimate of the between group variance (τ_{00}) in an unconditional model in which the response is regressed only on a constant term and a random effect for groups. The null hypothesis of this test is that $(\tau_{00}) = 0$.

$$\text{Job Satisfaction}_{ij} = \beta_{0j} + r_{ij}$$

β_{0j} = the (jth) site intercept

r_{ij} = the level 1 residual

The resulting intercept represents the grand mean for the dependent variable, and the variance around the intercept term (τ_{00}) represents the level-two (group level) variance in the dependent variable and the variance in the residual term (σ^2) represents the level-one variance. The intra-class correlation (ICC1) in the dependent variable can then be calculated as

$$\frac{\tau_{00}}{(\tau_{00} + \sigma^2)}$$

The output for separate regression analyses of unconditional models for job satisfaction, commitment, OCB, turnover intent, and service climate are shown in Table 3.5. These

analyses suggest that the amount of between group (that is, work-site level) variance for all attitude variables except Service Climate is too small to justify meaningful cross-level effects using job satisfaction, commitment, OCB, or turnover intent as outcomes. These analyses also show job attitudes variables with ICC1 values below 0.12, the cut-off limit which James (1984) suggests as a minimum requirement to justify aggregation as a group-level construct. Thus, the interpretation implied by these analyses is that job satisfaction, OCB, commitment, and turnover intent are individual-level constructs in this sample, and that they do not support a theoretical assumption implicit in a compositional model that the mean of these attitudes represents a group-level construct. The HR Strength variable was not included in these analyses as it is theorized to act according to a dispersion model (Chan, 1998).

Table 3.5
Results For Unconditional Models

	Job Satisfaction	Commitment	Turnover Intent
Intercept	4.11	5.01	2.25
τ_{00}	5.8217E-09	5.2900E-08	1.4400E-08
σ^2	0.001764	1.625625	1.44
Number of Observations	295	298	297
Number of Groups	126	128	127
ICC1	3.3003E-06	3.2541E-08	1.0000E-08

	OCB	Service Climate
Intercept	4.5	3.79
τ_{00}	6.4000E-03	7.2900E-02
σ^2	0.26780625	0.4356
Number of Observations	294	298
Number of Groups	126	128
ICC1	0.02	0.14

The unconditional model therefore suggests that the first series of hypotheses (that relates HR Strength to job satisfaction, commitment, turnover intent, and OCB) should render the same results whether tested using multi-level regression, ordinary least squares regression, or MANOVA. The results of hypotheses 1a through 1d are shown in Table 3.6. All three analysis methods demonstrate support for hypotheses 1a through 1d; that is, that after controlling for organization and work-site tenure, (individual-level) HR Strength is positively related to job satisfaction ($\beta = .32, p < .001$), organization commitment ($\beta = .94, p < .001$), OCB ($\beta = .1, p < .01$), and negatively associated with turnover intentions ($\beta = -.74, p < .001$). Table 3.7 shows the results for the complete models using OLS regression.

Table 3.6
Hypothesis Tests – Models 1a – 1d

Results for HR Strength (IV), controlling for Organization Tenure, and Department Tenure				
Dependent Variable	Job Satisfaction	Commitment	Turnover Intent	OCB
	N = 273	N = 274	N = 274	N = 272
MANOVA				
Partial Eta Squared	0.099	0.34	0.24	0.02
significance	p < .05	p < .001	p < .001	p < .05
OLS				
coefficient (HR Strength)	0.32	0.94	-0.74	0.1
significance of coefficient	p < .001	p < .001	p < .001	p < .01
Adjusted R-squared (model)	0.12	0.34	0.24	0.02
HLM				
coefficient (HR Strength)	0.32	0.94	-0.74	0.1
significance of coefficient	p < .001	p < .001	p < .001	p < .001

Table 3.7
OLS Regression – Hypotheses 1a-1d

Results of Linear Regression Analysis of HR Strength and Job Attitudes								
Variables	Job Satisfaction N=273		Commitment N=274		Turnover Intent N=274		OCB N=272	
	Coefficient	Std Error	Coefficient	Std Error	Coefficient	Std Error	Coefficient	Std Error
HR Strength	0.32***	0.05	0.94***	0.08	-0.74***	0.08	0.1**	.04
Org tenure	0.02	0.01	0.02	0.02	-0.02	0.02	0.01	0.01
Site tenure	-0.01	0.01	-0.02	0.02	0.01	0.02	0.01	0.01
Intercept	2.44***	0.27	0.24	0.41	6.04***	.41	3.91***	
R ²	0.13***		0.35***		0.25***		0.03*	
Adj. R2	0.12***		0.34***		0.24***		0.02*	

* p < .05
 ** p < .01
 *** p < .001

The second hypothesis states that after controlling for individual-level HR Strength, group HR Strength will incrementally predict job attitudes. Because none of the job attitudes included as outcome variables demonstrate sufficient between-group variance, hypothesis two is largely redundant. The multi-level regression shows that group-level HR Strength is not significant in the relationship between individual-level HR Strength and job attitudes (Table 3.8). Thus, hypothesis 2 is not supported.

Table 3.8
HLM Results – Hypotheses 2a – 2d

Results of HLM Analysis of Group & Individual HR Strength and Job Attitudes									
Variables	Job Satisfaction		Commitment		Turnover Intent		OCB		
	Coefficient	Std Error	Coefficient	Std Error	Coefficient	Std Error	Coefficient	Std Error	
HR Strength	0.33***	0.07	0.95***	0.1	-0.7***	0.1	0.1**	.05	
Grp HR Strength	-0.03	0.1	-0.03	0.16	-.07	.16	0.08	0.08	
Org tenure	0.02	0.01	0.02	0.02	-0.02	0.02	0.01	0.01	
Site tenure	-0.01	0.01	-0.02	0.02	0.01	0.02	0.01	0.01	
Intercept	2.5***	0.4	0.32	0.6	6.25***	.6	3.7***		
Number of Observations	273		274		274		272		
Number of Groups	121		121		121		121		

* p < .05
 ** p < .01
 *** p < .001

Hypothesis three examines the moderating effect of the group-level standard deviation of HR practices and group-level HR practices on individual-level job attitudes. Table 3.9 shows that while the coefficient for individual-level mean HR Strength is significant for job satisfaction ($\beta=.33, p < .001$), affective commitment ($\beta=.93, p < .001$), turnover intent ($\beta= -.71, p < .001$), and OCB ($\beta= .06, p < .001$), the group-level coefficients are not significant. Thus, hypothesis three is not supported.

Table 3.9**HLM Results – Hypotheses 3a – 3d**

	Ind HR Strength	Grp HR Strength	HR Strength Agreement	HR Strength Mean x Agreement
Job Satisfaction				
coefficient	0.33***	-0.02	0.79	-0.22
std error	0.07	0.18	0.87	0.18
#obs	237			
# groups	82			
Commitment				
coefficient	0.93***	-0.02	0.23	-0.04
std error	0.1	0.27	1.31	0.27
#obs	238			
# groups	82			
Turnover				
coefficient	-0.71***	0.07	0.35	0.01
std error	0.1	0.27	1.29	0.26
#obs	238			
# groups	82			
OCB				
coefficient	0.06***	0.07	-0.11	0.02
std error	0.05	0.14	0.69	0.14
#obs	236			
# groups	82			

*** $p < .001$

The fourth hypothesis proposes that since the measure of HR Strength captures employee perceptions of the degree to which HR practices are effective in bringing about agreement around organizational values and goals, HR Strength should associate with Service Climate. Hypothesis 4 is also intended to demonstrate some aspects of validity of the HR Strength measure. At the individual level, the zero-order correlations between HR Strength and Service Climate are $r = .56$ ($p < .01$), demonstrating a strong correlation, but with unique variance. HR Strength also shows strong zero-order correlations with job satisfaction ($r = .33$, $p < .01$), commitment ($r = .59$, $p < .01$), turnover intent ($r = -.51$, $p < .01$), and OCB ($r = .14$, $p < .05$). These correlations all suggest that HR Strength demonstrates convergent and discriminant validity to some degree by correlating highly, but not too highly (Anastasi & Urbina, 1997, p.129) with Service Climate, Commitment, and Job Satisfaction, and not significantly with organization tenure or job tenure.

Group-level correlations show a very similar pattern to the individual correlations. A regression at the group level of Service Climate on HR Strength shows a strong relationship ($p < .001$) between these two variables at the group level (Table 3.10), supporting hypothesis 4.

Table 3.10**Regression Analysis of Service Climate on HR Strength**

	Service Climate	N=123
	Coefficient	Std Error
Variables		
HR Strength	0.48***	0.07
Intercept	1.32***	0.36
R ²	.29***	
Adj. R2	.28***	

* p < .05

** p < .01

*** p < .001

Hypotheses 5a and 5b relate HR Strength to group-level measures of performance (financial target achievement (H5a) and reported injury rates (H5b)). A moderation test was conducted using an interaction term created by multiplying the mean of HR Strength by the standard deviation of HR Strength (agreement). All independent variables were centered, as recommended in Aiken and West (1991), and Actual Site Size (the number of full-time employees) and Service Climate were used as control variables.

The data for the regression of Financial performance on the predictor variables were examined at the multivariate level by plotting the regression residuals against fitted values (Figure 3.6), and by plotting leverage against standardized residuals (Figure 3.7). Leverage, as measured using Cook's distance, is an indicator of multivariate outliers which captures the influence of single cases on the regression (Tabachnick & Fidell, 2001, p.68). Cook's distance is a useful measure of leverage, as it shows cases that may be influential as outliers on both the dependent and the independent variables (Stevens, 1984).

Figure 3.6
Plot of Fitted Values Against Regression Residuals For Hypothesis 5a

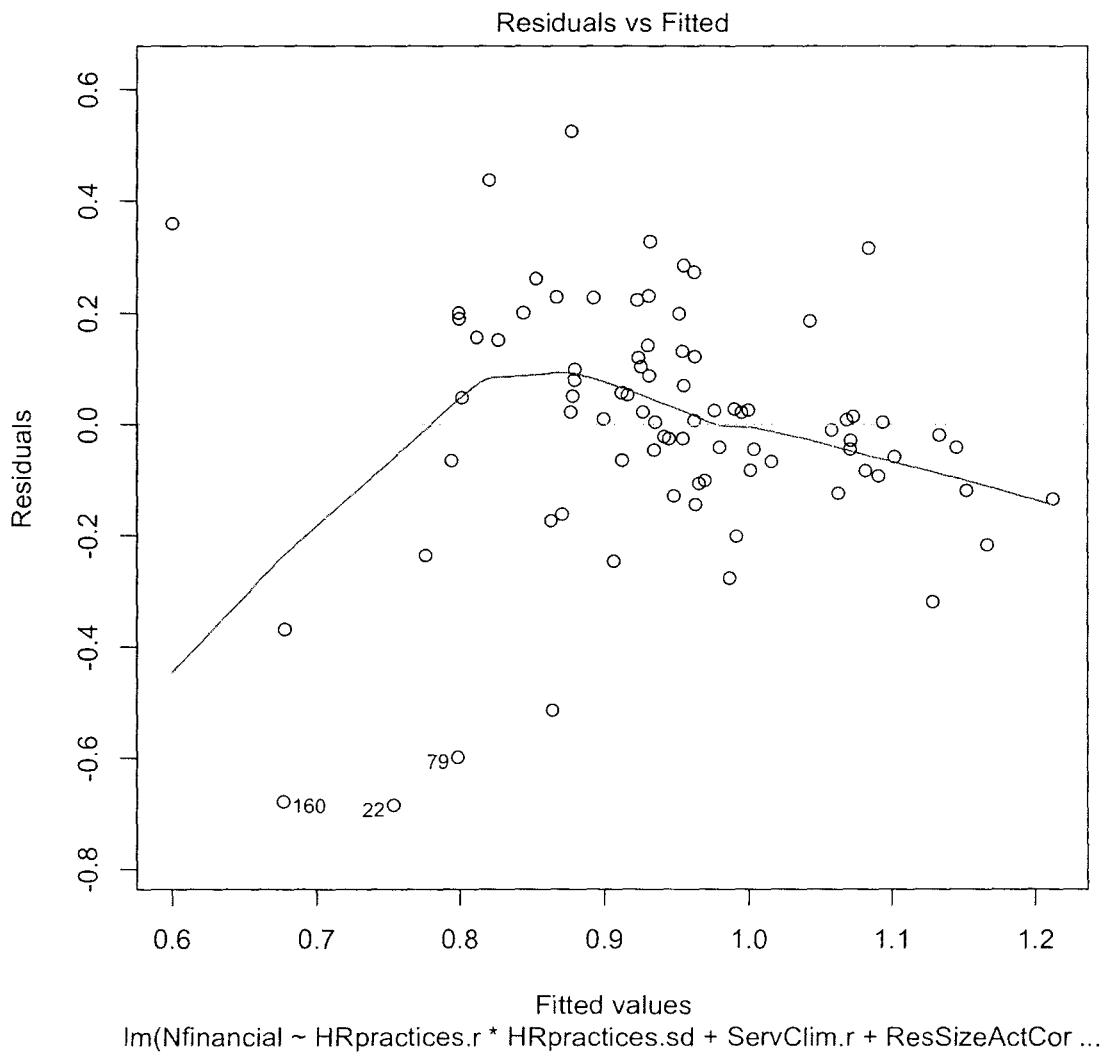
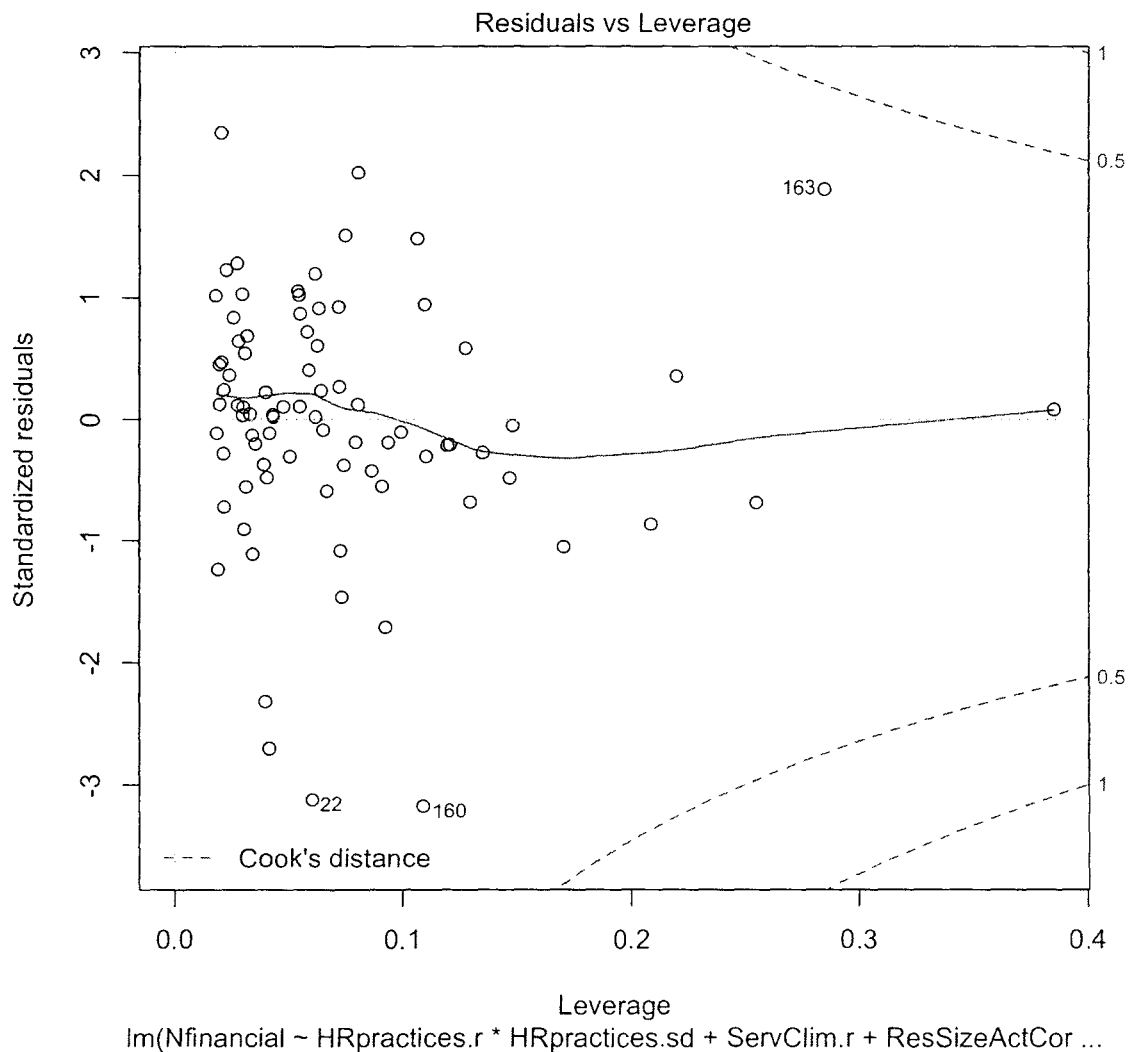


Figure 3.7
Plot of Leverage Against Standardized Residuals For Hypothesis 5a

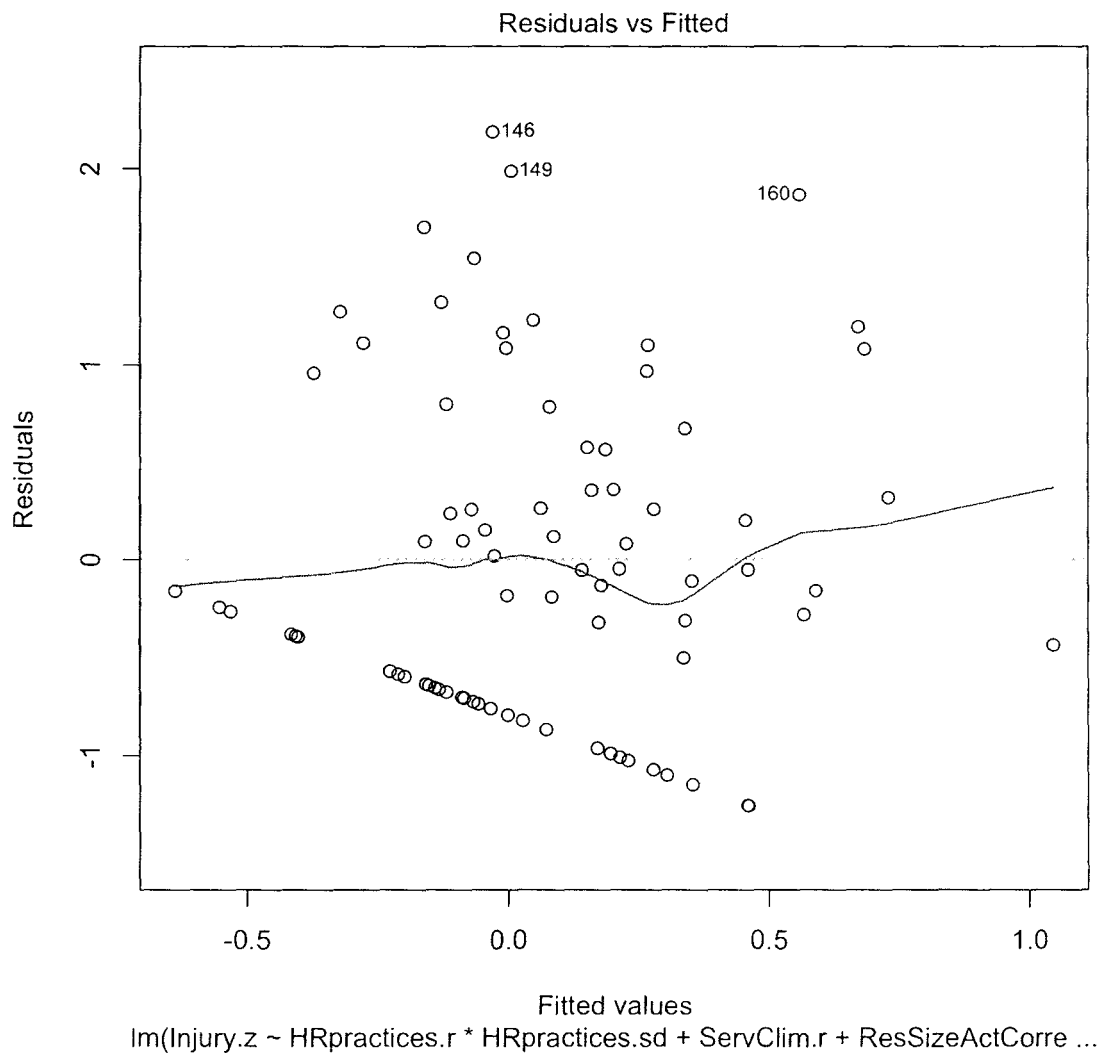


While none of the cases meet Cook's and Weisberg's suggested value of 1 as an outlier (Stevens, 1984), cases 22, 79, 160 and 163 (as identified in the plots) were examined visually in detail. It appears that case 163 is an outlier most likely due to the amount of group-level HR Strength agreement (i.e. standard deviation of HR Strength), and cases

22, 79, and 160 scored very low in financial performance. Because these cases contain reasonable and useful information, and because they did not meet the accepted value for omission using Cook's distance, all data were retained in the analysis.

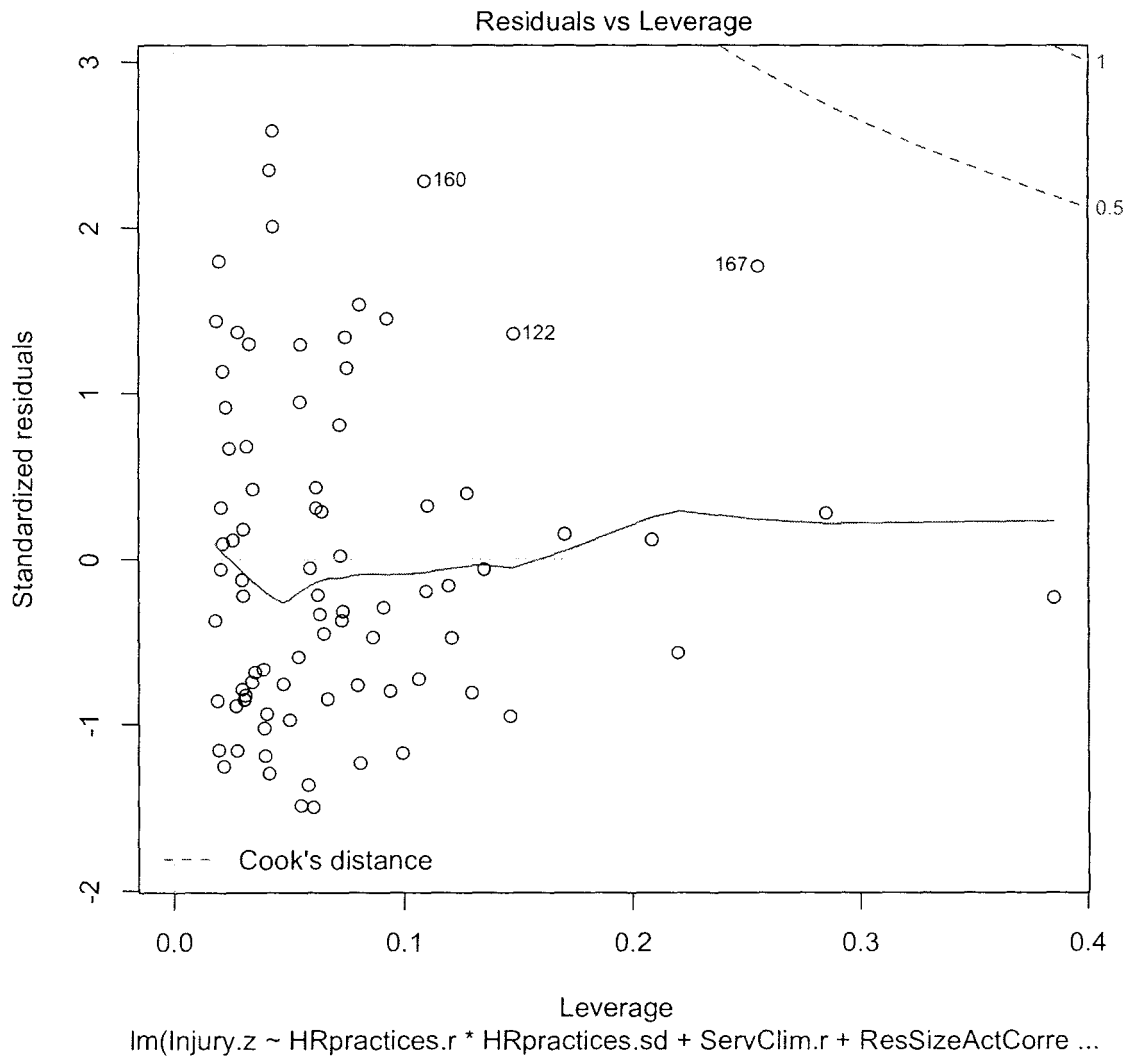
Performing similar analyses using Injury Rates as the dependent variable (H5b) shows the effect of the number of work-sites with zero values for injuries in the diagonal trend in the residuals plot (Figure 3.8).

Figure 3.8
Plot of Fitted Values Against Regression Residuals For Hypothesis 5b



The plot of leverage using Cook's distance in Figure 3.9 reveals no suspect outliers.

Figure 3.9
Plot of Leverage Against Standardized Residuals For Hypothesis 5b



The model for Financial performance (Hyp. 5a) is significant ($R^2 = .22$, $R^2_{adj} = .16$, $p < .01$) with Service Climate ($\beta = .12$, $p < .05$), the standard deviation of HR

Strength ($\beta = -.25$, $p < .001$), and the interaction term of the mean and standard deviation of HR Strength ($\beta = -.21$, $p < .05$) as significant predictors (Table 3.11).

Table 3.11
Results of Regression Analysis of Financial
Performance/Injury Hours on HR Strength Interaction
(H5a)

	Financial Performance N=82		Injury Hours N=82	
	Coefficient	Std Error	Coefficient	Std Error
Variables				
HR Strength Mean	-0.09	0.027	0.1	0.21
HR Strength SD	-.25***	.07	.48 ^t	.25
Service Climate	.12*	.06	-.16	.22
Site Size	.01	.01	.05 ^t	.03
HR Str meanxSD	-.21*	.09	.64 ^t	.34
Intercept	.91***	.03	.15	.1
R ²	.22**		.12 ^t	
Adj. R2	.16**		.06 ^t	

t < .1

* p < .05

** p < .01

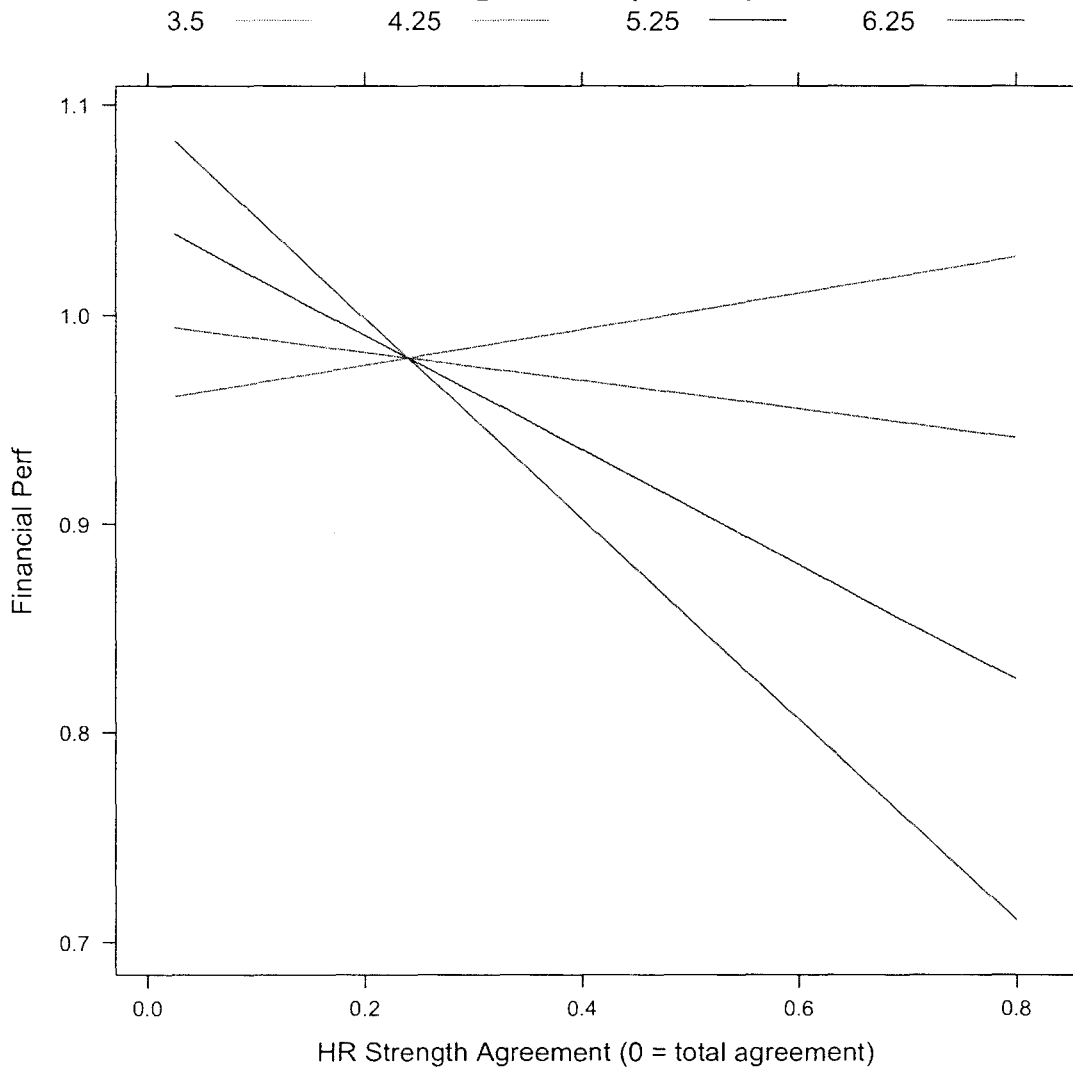
*** p < .001

The independent variables in Table 3.10 have been mean-centered, which implies that the interpretation of the significant lower order terms (HR Strength SD, and Service Climate) is that these values represent the conditional effect of Service Climate and HR Strength SD at the mean values of these variables (Aiken & West, 1991, p.102). The interaction term suggests that the relationship between HR Strength agreement and financial performance is moderated by HR Strength mean, thus supporting hypothesis 5a. Cohen and Cohen (1983) recommend probing interactions by plotting the regression line

at different values of the moderator variable (for example, -1sd, the mean, and +1sd), while holding all other independent variable values constant. A variant of this method was used to probe the interaction at varying levels of both components of the interaction term (i.e., varying both the mean and standard deviation of HR Strength). Thus, Figure 3.10 shows the nature of the interaction by plotting the relationship between HR Strength agreement and financial performance over realistic values of agreement (the values of standard deviation used were the minimum, 25th percentile, the mean, and 75th percentile) and realistic values of the mean of HR Strength (the values used were the minimum (3.5), 25th percentile (4.25), the mean (5.25), and a value slightly below the maximum (6.25)), while holding Service Climate and Site Size at their mean values. Figure 3.10 shows that, as hypothesized in the moderation hypothesis, at low values of the mean of HR Strength, the relationship between agreement around HR Strength and financial performance is negative (i.e., as agreement increases at low mean values, performance declines) and shifts to a positive relationship at higher values of mean HR Strength (i.e., as agreement increases at high mean values, performance increases). Wald tests in Table 3.12 show that while holding other variable values constant, the coefficient for HR Strength is not significant for low values of HR Strength, and becomes significant at a value of 4.56 for HR Strength (approximately 1 SD below the grand mean value of HR Strength). In other words, when the group perceives HR Strength to be low, agreement is negatively associated with performance; whereas when the group perceives high mean HR Strength, the association between agreement and performance is both positive and significant.

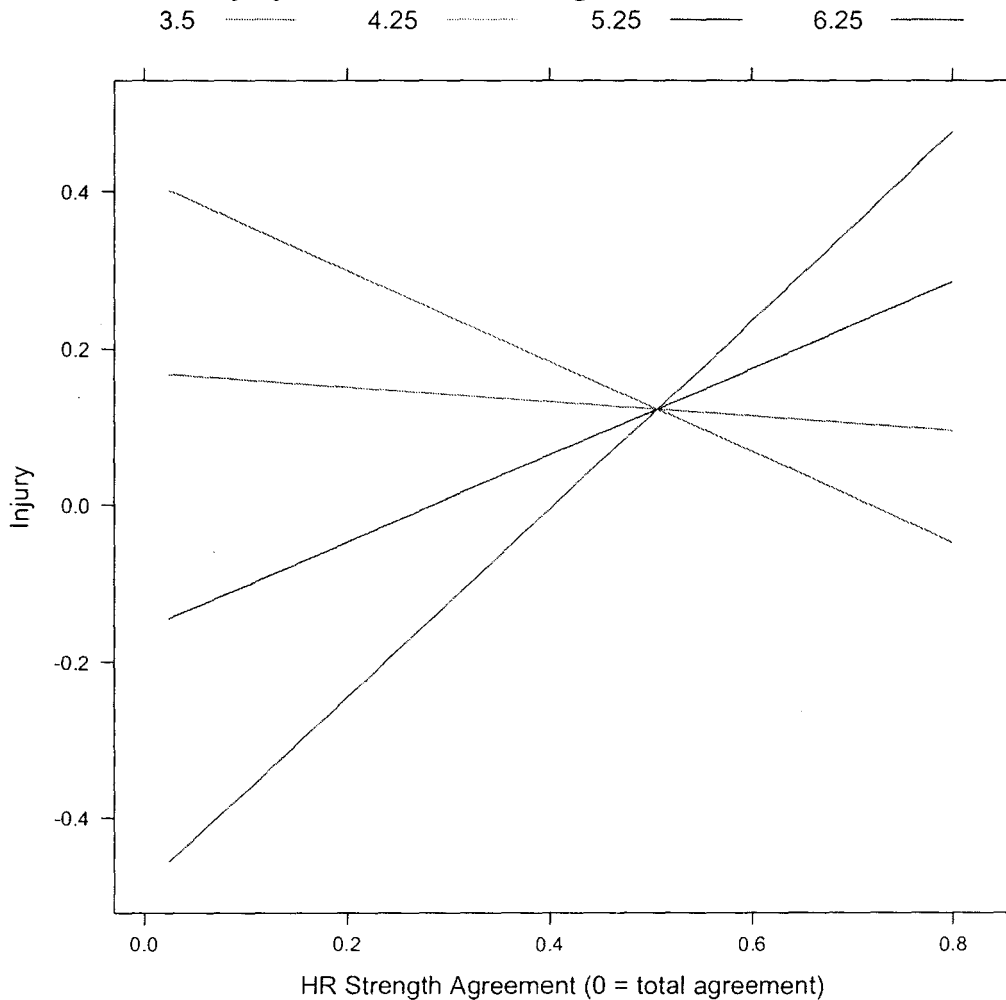
Table 3.12**Wald Tests of HR Strength Significance**

HR Strength Value	t-statistic	p-value	lower 0.95	upper 0.95
3.5	0.65	0.52	-0.17	0.35
4.25	-0.86	0.39	-0.22	0.09
4.56	-0.203	0.05	-0.26	-0.003
6.25	-3.42	0.001	-0.76	-0.2

Figure 3.10**Interaction: Fin. on HR Strength Mean (lo to hi) & Standard Deviation**

Hypothesis 5b predicts a similar effect using Reported Lost Hours Due to Injury, a different measure of group performance. The zero-order correlation between Lost Hours Due to Injury and Financial Performance was not significant, which suggests that these two measures of performance assess different aspects of performance. The regression results were marginal for the model and for the interaction term; however, the results were included in this analysis, as they are in the direction hypothesized and

demonstrate very similar patterns across the interaction. For example, Figure 3.11 plots the interaction of the mean and standard deviation of HR Strength for Lost Hours Due to Injury. Similar to the plot of the interaction using Financial Performance as the dependent variable, this plot demonstrates that for low values of the mean of HR Strength, agreement around HR Strength is associated with increasing rates of injury, whereas for high mean values of HR Strength, agreement around HR Strength associates with decreasing injury rates (note that these results are marginal ($p < .1$)).

Figure 3.11**Interaction: Injury Rates on HR Strength Mean & Standard Deviation**

Thus, hypothesis 5a is supported, and hypothesis 5b is marginally supported.

Hypotheses 6a through 6d relate HR Strength to group-level job attitudes. The ICC1 measure of job attitudes is typically used to justify aggregation in a consensus-based model (Chan, 1998), and the suggested cut-off level of ICC1 to justify aggregation that is most commonly used is .12 (James, 1984). None of the job attitudes achieved this cut-off level, and so hypotheses 6a through 6d were not tested. However, Service

Climate demonstrated adequate group-level agreement to justify aggregation, and so hypothesis 7 was tested.

Hypothesis 7 proposes that Service Climate partially mediates the relationship between mean HR Strength and Financial Performance and Injury Rates, and is moderated by agreement around HR Strength. This model falls into a category of model referred to by Edwards and Lambert (2008) as a “Direct Effect and First Stage Moderation Model” (p.4). Models that involve taking the product of regression coefficients, such as a direct effect and first stage moderation model, require bootstrapping techniques to overcome the violation of the assumption of normality imposed by the non-normal distribution of a term formed by the products of regression coefficients (Edwards & Lambert, 2008). Following the methods laid out in Edwards and Lambert (2008), 1000 bootstrapped samples were generated from each of two regression equations; the first equation is used to model the first stage mediation effect:

$$M = a_{05} + a_{x5}X + a_{z5}Z + a_{xz5}XZ + e_{m5}$$

The next equation is used to model the second stage mediation effect and the direct moderation effect:

$$Y = b_{020} + b_{x20}X + b_{M20}M + b_{z20}Z + b_{XZ20}XZ + b_{MZ20}MZ + e_{Y20}$$

The coefficients for the equations involving the products of regression coefficients were tested using the *t*-statistic derived by dividing the estimated coefficient (produced by the original regression) by the variance of the estimates generated from the bootstrap sample.

The estimates and significance test of these estimates for the following (Figure 3.12) direct effects and first stage moderation model are shown in Table 3.13.

Figure 3.12
Coefficients of Interest For Direct Effects and First Stage Moderation

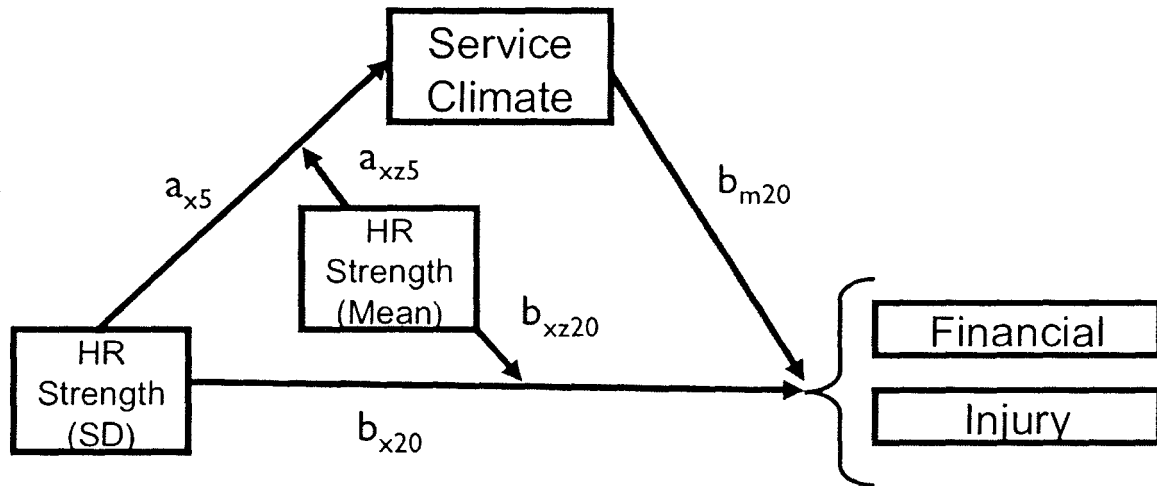


Table 3.13 Coefficient Estimates For Direct Effects and First Stage Moderation

Moderator = HR Strength Mean									
	a_{x5}	a_{z5}	a_{xz5}	R^2	b_{x20}	b_{m20}	b_{z20}	b_{xz20}	R^2
Dependent = Financial	-.05	.50**	-0.06	.28**	-.23**	.11	-.08	-.23*	.20**
Dependent = Injury	-.05	.50**	-0.06	.28**	.57*	-.48	-.20	.52	.09

Note: N= 82. Coefficients beginning with 'a' are from the first equation for mediation, which has Service Climate as the dependent variable. Coefficients beginning with 'b' are from the second equation, which has Financial Performance (or Injury) as the dependent variable.

* $p < .05$

** $p < .01$

To assess the degree of moderation, the effects are then modeled at relevant levels of the moderator variable (such as +/- 1 SD of the moderator, as suggested in Cohen and Cohen (1983)). The t -value associated with the differences between the effects at these

levels of the moderator determines the significance of the effect (Edwards & Lambert, 2008).

Table 3.14 Significance of Differences Between Effects +/- 1SD of the Moderator

Financial	First Stage	Direct Effect	Injury	First Stage	Direct Effect
HR Strength			HR Strength		
+1 SD	-.10	-.52*	+1 SD	-.10	.31
-1 SD	-.05	-.28*	-1 SD	-.05	-.2
Difference	.05	.23*	Difference	-.06	.5

* $p < .05$

** $p < .01$

Thus, as shown in Table 3.14, the first stage mediation effects (the relationship between mean HR Strength and Service Climate) are not significant at each level of the moderator (plus 1 and minus 1 standard deviation of agreement), and the difference between these effects is not significant, which shows that there is no moderation of this relationship. However, the direct effect of the moderation by HR Strength mean of the relationship between HR Strength agreement and Financial Performance is supported ($p < .05$). The conclusion from this analysis is that hypothesis 7 is partially supported (and confirms the results reported for Hypothesis 5a) in that the relationship between mean HR Strength and Financial performance (but not Lost Hours Due to Injury (H5b)) is moderated by agreement around HR Strength ($p < .05$); partial mediation is not supported.

Discussion

This study makes several unique contributions to the research literature on the impact of HR practices on employees and firm performance. First, the findings reported here add to our knowledge of *how* HR practices contribute to individual attitudes and group performance. Specifically, they suggest that HR practices impact individual

attitudes and group performance when they communicate messages to employees in ways that contribute to perceptions of consistency and clarity around those messages. HR practices relate to individual job attitudes when messages are perceived to be focused on strategic objectives and are consistent across practices. Moreover, HR practices relate to group performance when there is agreement around the perceptions of those practices. This role of HR practices is founded in Bowen and Ostroff's (2000) explanation of the purpose of HR practices, and the current study is the first to test their assertion.

Second, the current study expands conceptions of the role of HR practices from a focus on the individual to a broader focus that includes the group. To a large degree, theoretical models of HR system effectiveness are based at the individual level. For example, motivation-based theories such as the Hackman and Oldham job characteristics model (1976) and social exchange theory (Homans, 1958) have been used to explain HR practice effects on individual motivation, empowerment, and skills-enhancement (Subramony, 2009). The assessment of situational strength within an organizational context is rare. The current study has shown that situational strength theory (Mischel, 1976) can help explain the influence of HR practices at the group level, and contributes to an emerging body of research¹ showing how management practices directed at the group level can impact group performance.

Third, the results suggest that HR practices play a role in priming the ASA process at the individual level. Those who perceive higher levels of situational strength

¹ For example, Takeuchi, Chen, and Lepak (2009) show that management concern for employee climate (an organization-level variable) mediates the relationship between HPWS and individual attitudes, and Wu, Tsui, and Kinicki (2010) show how group-focused leadership is an important contributor to group performance.

around HR practices also report higher levels of job attitudes, most notably affective commitment. Nishii and Wright (2008) point out that the effects of employee perceptions of HR practices on attitudes is an under-researched area in the SHRM literature. The current study addresses this recent call for research. Furthermore, this study helps to build upon the ASA framework by showing one situational context (strategic goals) around which homogeneity associates linearly with performance. Results show that performance increases as HR Strength agreement approaches an absolute level. A recent review of the ASA framework (Billsberry, Talbot, Nelson, Edwards, & Goderich, 2010) points out that after two decades of research into the ASA framework little is known about the effects of homogeneity in organizations. The findings reported in the current study provide insight into this issue by showing that the effects of homogeneity may be contingent on the situational factors that are the target of agreement.

No support was found for a cross-level influence of group-level HR Strength on individual attitudes, despite emerging evidence that group-level attributes of the HR system impact individual attitudes (Takeuchi, Chen, and Lepak, 2009). This may be attributable to the homogeneity of job attitudes in the sample studied. The multilevel intra-class correlations (ICC1), and the multi-level regression models for the second and third set of hypotheses involving job satisfaction, commitment, OCB, and turnover intention (as individual-level outcomes) suggest that although the model is multi-level (employees working interdependently within distinct groups), the employee attitudes in the sample are not multi-level. Job satisfaction has been shown elsewhere to aggregate as a compositional variable (e.g Ostroff, 1992). Perhaps organizational structures and

attributes such as culture, senior corporate leadership, corporate communications, selection methods, and corporate management practices attenuated the amount of between-group variance in job attitudes at the work-site level. The ICC1 statistic for service climate ($ICC1 = .14$) suggests that service climate represents a group-level construct within this sample -- employees within work-sites apparently are more similar than employees between work-sites on some attributes.

There was no support for organizational climate as mediator of the influence of HR practices on firm performance, contrary to expectations (Denison, 2006; Bowen & Ostroff, 2004). It is possible that while HR Strength associates positively with global service climate, this particular climate measure may not be as goal-relevant to the sampled employees as some other (unmeasured) climate. In other words, service climate may not be strategically central to the sample organization, and thus does not associate as strongly with performance as some other climate might. Furthermore, Preacher, Rucker, and Hayes (2007) show that the current methods used to test indirect and meditational effects require large samples in order to detect small ($\beta = .14$) effects sizes. Perhaps there was insufficient power with the current data set ($N=89$) to demonstrate the hypothesized effect with service climate.

Theoretical Implications

Whereas Schneider (1987) proposes that homogeneity is attributable to a process where people are drawn to similar others, HR Strength shows that homogeneity in employee perceptions of the effectiveness of an organizational structure (i.e., the HR system) relates to individual attitudes, group level climate perceptions, and group

performance. Thus, this study reinforces Ployhart et al.'s (2006) observation that conceptualizations of homogeneity using group-level variance rather than group-level mean (or for that matter, using a function of both the group mean and variance as an indication of homogeneity) might require a "change in the framing and testing of the ASA model" (p. 673). As an example of a change in the framing of the ASA model, ASA suggests that similarity might over time be a negative outcome, as groups become less able to adapt to external changes; however, similarity derived from situational strength around an understanding of strategic goals could actually facilitate change, provided that organizational structures maintain clarity around changing goals. Thus, this study establishes that context provides a potential boundary on the performance-related effects of homogeneity within the ASA framework.

The current study also offers a unique observation regarding the effect of situational strength (through organizational structure, such as the HR system) on the development and impact of human capital. The findings provide empirical support for Ostroff et al.'s proposition (2003) that HR practices are a likely source of situational strength around organization climate. Furthermore, it was shown that uniformity in employee perceptions of organizational goals and strategic objectives is relevant at the individual level in the form of associations with work attitudes as well as at the group level in the form of performance. Schneider and Snyder (1975) initiated the movement of the study of organizational climates away from a molar perspective (i.e., a generalized climate) and toward *specific* climates ("...a climate for something" p. 327), spurring the conceptualization of climate in terms of safety, service, trust, etc. My study implies that

there may be merit to a meta-level of climate abstraction; that is, a climate for organizational strategy. I refer to this as a meta-level of abstraction since a business unit with a focused strategy could subsume more than a single climate. For example, a quality focused strategy could include climates for safety, service, *and* trust (as well as others). The association between business unit performance and agreement around perceptions of HR Strength provides some evidence that aggregated perceptions of strategic objectives and organizational goals indicate the presence of a strategically relevant climate. Given the rapidly expanding number of organizational climates emerging in the literature, a higher-level abstraction that comprises *all* strategically relevant climates within an organization or business unit captures a resource-based view of climate in that it allows for a causally abstract and inimitable conceptualization of climate. This would permit greater aggregation and generalization of findings in climate research, and open new opportunities in research on the antecedents and consequences of climate.

This study also offers additional insight into the nature of the emergence of human capital. Human capital has been typified as the individual experience, judgment, intelligence (Wright et al., 1994), and the knowledge, skills, and abilities of organization members (Ployhart, Weekley, & Ramsey, 2009). Aggregation of human capital to the group level presumably emerges as a mean of individual human capital, and can be leveraged by combining group members with unique and complementary sets of human capital. I have shown how organizational structures such as the HR system can influence the emergence of human capital at the group level by contributing to situational strength around strategic objectives. Situational strength at the group level leverages human

capital such that human capital can be more (or less) than the sum (or mean) of its individual components at the group level, depending on the amount of agreement. Thus, I have provided evidence that the HR system can influence the aggregation of human capital from the individual to the group level.

The influence of the HR system on the emergence of human capital at the group level (through agreement in employee perceptions) suggests an extension to the meaning of complementarity among HR practices. In the context of this study, HR practices are effective as a system when employees agree that the information delivered through HR practices is *consistent* across practices and people. Rather than understanding consistency of HR practices in terms of the *functional* role of each HR practice, findings here suggest that consistency can also be achieved through the degree to which each HR practice is successful in communicating its strategic relevance. In other words, in keeping with a configural perspective, a system of HR practices is achieved not only through bundling HR practices to maximize individual-level motivation, or empowerment, or skills, but also through ensuring that the information communicated through each component of that bundle contributes to shared employee perceptions.

Finally, this study sheds light on the research findings that manufacturing organizations show stronger associations with High Performance Work Practices than do service-oriented firms (Combs et al., 2006; Subramony, 2009). Subramony (2009) suggests that the differences may be attributable to increased managerial attention and financial resources poured into HR practices (through TQM and structures like autonomous work groups) in manufacturing companies. Combs et al. (2006) reflect that

manufacturing requires greater adaptation to changes in equipment and processes than service firms, and that outcomes in manufacturing are less influenced by external sources such as customers. My study shows that HR practices are more effective when employees share an understanding of the organization's goals that are communicated through those HR practices. Both Combs et al. (2006) and Subramony (2009) allude to the tendency of manufacturing as an industry to show greater situational strength around jobs, goals, and outcomes than service organizations, through the development of work processes that are focused around a tangible and consistent product. Thus, the manufacturing process likely lends itself by nature to greater situational strength around organizational goals than do the processes around tailoring customer satisfaction to the individual (customer) that involve service firms.

Implications for Practice

Researchers are becoming increasingly aware of a gap between research findings and the practice of management in organizations.² Saari (2007) points out that as the role of HR practitioners moves more toward the strategic, HR managers are being pushed to demonstrate the value of HR practices. An objective of this study was to build on the findings *that* HR practices contribute to business unit and firm performance to not only investigate *how* HR practices are made effective, but to also put a tool in the hands of practitioners that can be used to benchmark HR practice effectiveness in a way that allows for prescriptive conclusions.

² For example, an entire issue of the *Academy of Management Journal* (2007, 5) was devoted to exploring this gap.

HR Strength significantly predicted business unit performance ($R^2 = .22, p < .01$ for financial performance regressed solely on the interaction of mean HR Strength and HR Strength agreement). This suggests that HR leaders should be concerned with the degree to which each HR practice contributes to situational strength around important outcomes. This further implies that HR practice effectiveness can be conceptualized not only at the individual level, but also at the group level, by bringing about shared construal of organizational goals and uniform expectancies around appropriate employee behaviours. Questions HR practitioners should ask when considering the effectiveness of a single HR practice include ‘Does this practice clearly communicate our strategic intent?’, ‘Does this practice align the efforts of coworkers?’, ‘Is this practice consistent with all other practices in communicating our strategic goals?’, and ‘Do we support this practice to the extent that employees understand that it is important to us?’. According to the findings in this study, HR practices are least effective when groups perceive a low mean level of effectiveness, but that as the mean level of effectiveness perceptions increases, agreement around HR practices associates positively with performance. Thus, managers should be concerned with the extent to which HR practices are clear and consistent in their purpose. The measure of HR Strength expands the reach of HR practices beyond the individual (i.e., building KSAOs, motivating, and empowering) to the group, by providing evidence of the extent to which HR practices are effective through the creation of situational strength.

HR practitioners can use the measure of HR Strength to assess all or any of the HR practices that are relevant to their organization; each of these practices can then be

assessed for effectiveness along the 6 dimensions of HR Strength (i.e., manager support, goal relevance, uniformity, performance orientation, fairness, and framing). In this study sample, paired-sample *t*-tests of the means of the 8 HR practices at the group level showed significant differences ($p < .05$) for all HR practices (with the exception of the differences between means of training and teamwork, and teamwork and information sharing), and significant differences between means of all 6 dimensions of HR Strength ($p < .05$, with the exception of the differences between means of management support and uniformity, management support and goals, uniformity and goals, and uniformity and performance). Because groups differ along most of the practices and dimensions, managers can use the measure of HR Strength to benchmark HR practices, and to diagnose what dimensions of individual or collective HR practices are stronger than others. Therefore, unlike many popular survey assessments of employee engagement which provide only a benchmark, successive measures of HR Strength can show whether a change made to a single HR practice strengthens the effectiveness of that practice, and the impact of that change on the *system* of HR practices.

Furthermore, the dimensions of HR Strength can provide managers with some guidance as to what could be changed about an HR practice to make it more effective. For example, the measure of HR Strength for the sample organization showed that perceptions of pay were significantly lower ($p < .05$) than those of other HR practices at the individual level. Within pay perceptions, the dimension means for framing and fairness were significantly lower ($p < .01$) than the means of the other dimensions, and the standard deviations of perceptions were higher for framing and for fairness than for

the other dimensions. The implication is that organizationally, pay is contributing less to effectiveness, and the aspects of pay that are pulling this practice down are the degree to which pay frames individual contributions in the context of organizational performance, and in fairness around the pay process. To put these findings in the organization's context, this organization does not provide incentive pay. Such findings could be used by the organization to either overhaul compensation plans to include performance-based pay incentives, or to better communicate why the current pay plans are deemed most appropriate.

Continuing with the example of performance-based pay, one might question why agreement would be important around a practice that is intended to differentiate employees (based on performance)? Agreement around HR Strength would indicate that employees perceive an incentive plan in much the same way. The results of my study suggest that low levels of agreement, where some group members perceive high levels of fairness, management support, or goal relevance of incentive plans, while other members perceive low levels of these attributes would associate with lower overall group-level outcomes. These findings are reinforced through motivation theories associated with incentive pay, such as Expectancy theory (Vroom, 1964), and Equity theory (Adams, 1965); these theories suggest that for an incentive plan to be motivating, the individual must perceive the link between behaviour and reward (Expectancy theory) or perceive that the incentive pay system is fair (Equity theory). An incentive pay plan that is perceived by all to be fair and to have clear behaviour-reward contingencies should then

be motivating to all employees who can be motivated by such a plan. In this way, HR Strength agreement reinforces the benefit of a performance pay plan.

Limitations and directions for future research

HR Strength is a new measure, and as such the validity of the measure cannot be fully explored through a single study. I have attempted to establish a degree of content validity through likening the dimensions of HR Strength to both Mischel's (1976) and Hattrup and Jackson's (1996) conceptualizations of the dimensions of situational strength. I have compared HR Strength to indicators of climate, and elements of HR Strength are similar to some aspects of job satisfaction. Convergent validity with the climate construct was demonstrated through sizable individual ($r = .56, p < .01$) and group level ($r = .54, p < .01$) correlations between HR Strength and Global service climate.

Divergent validity was examined through several measures. Some popular measures of job satisfaction, such as the Job Perception Scale (Hatfield, Robinson, & Huseman, 1985) and the job satisfaction survey (Spector, 1985) have sub-dimensions of satisfaction with pay, promotion, supervision, and coworkers in common with HR Strength. The correlations between individual ($r = .33, p < .01$) and group level ($r = .30, p < .01$) measures of job satisfaction and HR Strength show that these two constructs are reasonably different from one another. Furthermore, HR Strength did not correlate significantly with organization tenure or department tenure at the individual level. This result is meaningful in that individuals who have long tenure with their department or organization might have a deep understanding of the organization's goals, but would not

be expected to perceive that HR practices contribute to their understanding of those goals any more than an organization member with only a few months of tenure. Group level correlations also show that HR Strength agreement (the standard deviation of HR Strength) was not significantly correlated with either the number of employees working at the work-site, or the number of employees (within-site) who responded to the survey. This suggests that HR Strength agreement is not a vestige of site size or number of respondents.

While the group level model uses criterion measures that are unrelated to the measurement of the independent variables, the individual-level model uses both independent and dependent variables that were collected from the same source at the same time. This raises the issue of common method variance (CMV) (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) at the individual level. There is some debate around the impact of the effects of common method variance (see Spector, 2006), but it can lead to inflated correlations between measures (Podsakoff, MacKenzie, et al., 2003). The individual level relationships were not the central focus of this research, and even interpretations of reduced levels of the significant correlations between the individual level constructs, as indicated by Podsakoff et al. (2003) would not substantively change the conclusions from this study. Thus, the effects of CMV on the study outcomes are expected to be of little impact.

This study is cross-sectional, which does not permit conclusions around causality. Studies within the SHRM area have questioned the direction of causality in the practices-to-performance relationship. For example, Schneider, Hanges, et al. (2003) found

reciprocal relationships for several job attitudes and performance, indicating that firm performance may lead to slack resources and further investments in HR practices, which then leads to higher attitudes. My study further explains the nature of HR practice effectiveness, and as such places conditions on the nature of HR practices and their effects on business unit performance. This study goes beyond the presence of HR practices, to attributes of those practices and how those attributes affect performance. Thus, the nature of the interaction of HR Strength agreement and mean HR Strength on business-unit performance carries with it a suggestion that HR practices relate to performance when certain conditions are met, and not when those conditions are absent. While not a direct test of causality, this implies a causal relationship in the direction of the HR practices to performance relationship. From a theoretical perspective, situational strength theory suggests that agreement around mean HR Strength should lead to higher performance; however, what theory might suggest that higher performance would lead to greater agreement around employee perceptions of the situational strength of HR practices (i.e. HR Strength)? In this case, the common explanation in the literature of higher performance leading to slack resources and greater investments in HR practices does not explain why greater investments would induce agreement.

Finally, the homogeneity of responses to some of the measures (such as OCB) could be a function of two possible sources of error; subjects may have responded in a way that is consistent with what they believed the organization would want or value; or that the use of business units within a single organization could lead to range restriction. The assisted living industry may be a vocational industry which selects for those with

higher levels of citizenship behaviours (Vigoda-Gadot & Grimland, 2008). This might explain why the measure of OCB in this study demonstrates a lack of variance and a normal distribution, thereby attenuating the strength of the relationships involving OCB.

Future studies could further investigate the construct validity of HR Strength by exploring its relationship within other industrial and organizational settings and with other antecedent and consequent attributes. For example, construct validity could be further developed by capturing the measure of HR Strength in a manufacturing setting; it could be explored through relationships with different types of organizational climate perceptions, with personality attributes, and with outcomes like actual turnover rates. A multi-trait multi-method matrix could be used to assess the convergent and divergent validity of HR Strength by capturing HR Strength using other forms of measurement. Different ways to measure HR Strength could include an interview method in which group members individually provide global assessments of the HR system as a whole (rather than each individual practice) along each dimension of HR, or using a survey to capture global assessments. From an internal validity perspective, HR Strength could benefit from a laboratory study that manipulates perceptions of the dimensions of HR Strength using groups, and relate those group-level perceptions to group performance.

This study was limited to business units within a single organization. Although the business units were subject to different forms of HR practices, the differences in these practices may have been small enough to restrict the amount of between group variance in job attitudes. Taking the study of HR Strength to the organizational level would broaden the variety of HR practices that groups are exposed to, and might provide

sufficient between-group context to permit cross-level analyses of the effects of group perceptions of HR Strength on individual attitudes.

The concept of situational strength has received little attention in the organizational context to date. More research on the sources of, antecedents of, and consequences of situational strength would be useful in providing insight into the understanding of organizational climate and HR practice effectiveness. One interesting avenue of exploration could be the role of leadership in fostering situational strength. HR Strength may also prove relevant in explaining the mixed findings on the relationship of team diversity to group performance. For example, HR Strength may moderate the relationship between diversity and group-performance (Wegge, Roth, Neubach, Schmidt, & Kanfer, 2008) by providing a unifying frame of reference and goal focus for group members.

This study suggests that the HR system can contribute to situational strength around employee perceptions of organizational goals, and that this form of situational strength is performance-relevant at the level of the business unit. While there is a dearth of research that examines situational strength around strategic goals, it is clear that practitioners are interested in understanding how to achieve it. Towers Perrin makes clear the salience of this point by stating that a primary focus for organizations to influence employee engagement lies in

“Customizing and shaping a work environment and culture to match their unique basis for competitive advantage, tangibly aligning work-force strategies with business priorities” (p.3., Towers Perrin, 2008).

The conceptualization of HR Strength as a dispersion model, where agreement and the mean level of the construct interact with one another, may be a fruitful way in which to operationalize some forms of climate. Schneider et al. (2002) showed that climate strength, as measured by the group agreement in climate perceptions, moderated the relationship between mean climate perceptions and customer satisfaction, and the current study adds further support to the use of the interaction of the mean and agreement as a way to study situational phenomena. Although this concept is quickly gaining traction, few studies to date utilize variability in climate perceptions as part of the assessment of climate.³

Conclusion

The primary purpose of this study was to test whether situational strength theory could provide insight into *how* HR practices are effective in associating with business unit performance. In order to test this, I developed a measure of the effectiveness of the system of HR practices which captured employee perceptions of the extent to which each HR practice reinforced 6 dimensions of situational strength. Using this measure of HR Strength, I found that mean HR Strength at the business-unit level moderates the relationship between HR Strength agreement and financial performance such that the relationship between HR Strength agreement and performance is significant when the mean is high, but not significant when it is low. This result suggests that as Bowen and Ostroff (2000) propose, the HR system plays an important role in creating situational

³ There have been 4 articles in major publications that focus on climate strength (variability) since Schneider et al. (2002); two of those articles were published since 2009.

strength around organization goals. It also suggests that this role is another means through which the HR system contributes to organizational effectiveness.

I had also theorized that HR Strength associates with job attitudes at the individual level, and that group-level HR Strength has a contextual effect on individual attitudes. While the individual-level hypotheses were significant, I did not find cross-level effects for group HR Strength on individual attitudes. A possible explanation for this result is that the organization may have a culture or management practices that are strong enough to bring homogeneity among employees across business units with regard to job satisfaction, commitment, OCB, and turnover intentions.

HR Strength was shown to predict individual attitudes, group-level service climate, and financial performance. Taken together, these results imply that HR Strength is an indicator of the importance of the HR system in bringing about situational strength around strategic goals, and is a useful diagnostic tool for individual HR practices as well as HR system integration of those practices. Moreover, HR Strength shows that HR practices relate to performance in a way not widely demonstrated to date: by enhancing group-level agreement around the degree to which organizational goals are supported and reinforced by HR practices. This finding offers insight into one of the means through which HR practices are performance enhancing, shows the importance of creating situational strength around employee perceptions of strategic organizational goals, and opens the door to new ways of conceptualizing HR management at the group level.

References

- Adams, J. S. 1965. Inequity in social exchange. In L. Berkowitz (Ed.), *Advances in experimental social psychology*: 267–299. New York: Academic Press.
- Aiken, L.S., & West, S.G. (1991). *Multiple Regression: Testing and Interpreting Interactions*. Thousand Oaks, CA: Sage.
- Allen, N.J., & Meyer, J.P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology*, 63, 1-18.
- Allen, N.J., & Meyer, J.P. (1997). Affective, continuance, and normative commitment to the organization: An examination of construct validity. *Journal of Vocational Behavior*, 49, 252-276.
- Anastasi, A., & Urbina, S. (1997). *Psychological Testing*. Upper Saddle River, NJ: Prentice-Hall.
- Arthur, J.B. (1992). The link between business strategy and industrial relations. *Industrial and Labor Relations Review*, 45, 488-507.
- Asch, S. E. (1940). Studies in the principles of judgments and attitudes II: Determination of judgments by group and by ego standards. *Journal of Social Psychology*, 12, 433-465.
- Asch, S. E. (1951). Effects of group pressures upon the modification and distortion of judgment. In H. Guetzkow (Ed.), *Groups, Leadership, and Men*. Pittsburgh: Carnegie Press.
- Ashforth, B.E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review*, 14, 20-39.
- Aube, C., & Rousseau, V. (2005). Team goal commitment and team effectiveness: The role of task interdependence and supportive behaviors. *Group Dynamics: Theory, Research, and Practice*, 9, 189-204.
- Bacharach, S.B. (1989). Organizational theories: Some criteria for evaluation. *Academy of Management Review*, 14, 496-515.
- Bandura, A., & Cervone, D. (1986). Differential engagement of self-reactive influences in cognitive motivation. *Organizational Behavior and Human Decision Processes*,

38, 92-113.

- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17, 99-120.
- Barsalou, L.W. (1987). The instability of graded structure: Implications for the nature of concepts. In U. Neisser (Ed.), *Concepts and conceptual development: Ecological and intellectual factors in categorization*. New York: Cambridge.
- Baruch, Y., & Holtom, B.C. (2008). Survey response rate levels and trends in organizational research. *Human Relations*, 61, 1139-1160.
- Beaty, J.C., Clevelan, J.N., & Murphy, K.R. (2001). The relation between personality and contextual performance in “strong” versus “weak” situations. *Human Performance*, 14, 125-148.
- Beatty, R.W., Huselid, M., & Schneier, C.E. (2003). New HR metrics: Scoring on the business scorecard. *Organizational Dynamics*, 32, 107-121.
- Becker, B.E., & 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., Pickus, P.S. & Spratt, M.F. (1997). HR as a source of shareholder value: Research and recommendations. *Human Resource Management*, 36, 39-47.
- Bettencourt, L.A., Gwinner, K.P., & Meuter, M.L. (2001). A comparison of attitude, personality, and knowledge predictors of service-oriented organizational citizenship behaviors. *Journal of Applied Psychology*, 86, 29-41.
- Bliese, P.D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K.J. Klein & S.W.J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations*. San Francisco: Jossey Bass.
- Boone, C., Van Olffen, W., & Van Witteloostuijn, A. 2005. Team locus-of-control composition, leadership structure, information acquisition, and financial performance: A business simulation study. *Academy of Management Journal*, 48, 889-909.
- Bontis, N., & Fitz-enz, J. (2002). Intellectual capital ROI: a causal map of human capital antecedents and consequents. *Journal of Intellectual Capital*, 3, 223-247

- Boselie, P., Paauwe, J., & Jansen, P. (2001). Human resource management and performance: Lessons from the Netherlands. *International Journal of Human Resource Management*, 12, 1107-1125.
- Boswell, W.R., & Boudreau, J.W. (2001). How leading companies create, measure and achieve strategic results through “line of sight”. *Management Decision*, 39, 851-859.
- Bowen, D.E., & Ostroff, C. (2004). Understanding HRM-Firm performance linkages: The role of the “strength” of the HRM system. *Academy of Management Review*, 29, 203-221.
- Brayfield, A.H., & Rothe, H.F. (1951). An index of job satisfaction. *Journal of Applied Psychology*, 35, 307-311.
- Breaugh, J. A., & Colihan, J. P. (1994). Measuring facets of job ambiguity: Construct validity evidence. *Journal of Applied Psychology*, 79, 191 - 202.
- Campbell, J.J., Dunnette, M.D., Lawler, E.E., Weick, K.E. (1970). *Managerial Behavior, Performance, and Effectiveness*. New York, NY: McGraw-Hill.
- Campion, M.A., Medsker, G.J., & Higgs, A.C. (1993). Relations between work group characteristics and effectiveness: Implications for designing effective work groups. *Personnel Psychology*, 46, 823-850.
- Carr, J.Z., Schmidt, A.M., Ford, K., & DeShon, R.P. (2003). Climate perceptions matter: A meta-analytic path analysis relating molar climate, cognitive and affective states, and individual level work outcomes. *Journal of Applied Psychology*, 88, 605-623.
- Chan, D. (1998). Functional levels among constructs in the same content domain at different levels of analysis: A typology of composition models. *Journal of Applied Psychology*, 83, 234-246.
- Chang, E. (2005). Employees’ overall perception of HRM effectiveness. *Human Relations*, 58, 523-544.
- Cohen, J., & Cohen, P. (1983). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.
- Colbert, B.A. (2004). The complex resource-based view: Implications for theory and practice in strategic human resource management. *Academy of Management Review*, 29, 341-358.

- 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.
- Combs, J., Liu, Y., Hall, A., & Ketchen, D. (2006). How much do high-performance work practices matter? A meta-analysis of their effects on organizational performance. *Personnel Psychology*, 59, 501-528.
- Conference Board of Canada, (2004). Measuring what matters: People drive value. *Insights you can count on*.
- Conover, W.J., & Iman, R.L. (1982). Analysis of covariance using the rank transformation. *Biometrics*, 38, 715-724.
- Cooper, W.H., & Withey, M.J. (2009). The strong situation hypothesis. *Personality and Social Psychology Review*, 13, 62-72.
- Davis, J.H. (1996). Group decision making and quantitative judgments: a consensus model. In E. Witte (Ed.), *Understanding group behavior: Consensual action by small groups*, (pp.35-59). Mahwah, NJ: Erlbaum.
- 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.
- Delery, J.E., & Doty, D.H. (1996). Modes of theorizing in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of Management Journal*, 39, 802-835.
- Denison, D.R. (1990). *Corporate Culture and Organizational Effectiveness*. New York: Wiley.
- Denison, D.R. (1996). What is the difference between organizational culture and organizational climate? A native's point of view on a decade of paradigm wars. *Academy of Management Review*, 21, 619-654.
- Denison, D.R., (1996). What is the difference between organizational culture and organizational climate? A native's point of view on a decade of paradigm wars. *Academy of Management Review*, 21, 619-654.
- den Hartog, D.N., Boselie, P., & Paauwe, J. (2004). Performance Management: A model and research agenda. *Applied Psychology: An international review*, 53, 556-569.

- Deutsch-Salamon, S., & Robinson, S.L. (2008). Trust that binds: The impact of collective felt trust on organizational performance. *Journal of Applied Psychology, 93*, 593-601.
- Dickson, M.W., Resick, C.J., & Goldstein, H. (2008). Seeking Explanations in people, not in the results of their behavior: Twenty-plus years of the attraction-selection-attrition model. In D. Brent Smith (Ed.), *The People Make the Place: Dynamic Linkages Between Individuals and Organizations*, (pp.5-36). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Edwards, J.R., & Lambert, L.S. (2007). Methods for integrating moderation and mediation: A general analytical framework using moderated path analysis. *Psychological Methods, 12*, 1-22.
- Fassina, N.E., Jones, D.A., & Uggerslev, K.L. (2008). Meta-analytic tests of relationships between organizational justice and citizenship behavior: Testing agent-system and shared-variance models. *Journal of Organizational Behavior, 29*, 805-828.
- Fields, D.L. (2002). *Taking the Measure of Work: A Guide to Validated Scales for Organizational Research and Diagnosis*. Thousand Oaks, CA: Sage.
- Fishbein, M. (1967). Attitude and the Prediction of Behavior.. In M. Fishbein (Ed.), *Readings in Attitude Theory and Measurement*, (pp.442-492). New York: Wiley.
- Ferris, G.R., Arthur, M.M., Berkson, H.M., Kaplan, D.M., Harrell-Cook, G., & Frink, D.D. (1998). Toward a social context theory of the human resource management-organization effectiveness relationship. *Human Resource Management Review, 8*, 235-264.
- Fujita, K., Trope, Y., Liberman, N., & Levin-Sagi, M. (2006). Construal levels and self-control. *Journal of Personality and Social Psychology, 90*, 351-367.
- Gavin, M.B., & Hofmann, D.A. (2002). Using Hierarchical linear modeling to investigate the moderating influence of leadership climate. *The Leadership Quarterly, 13*, 15-33.
- George, J.M. (1990). Personality, affect, and behavior in groups. *Journal of Applied Psychology, 75*, 107-116.
- George, J.M., & Bettenhausen, K. (1990). Understanding prosocial behavior, sales performance, and turnover: A group-level analysis in a service context. *Journal of Applied Psychology, 75*, 698-709.

- Gerhart, B., & Milkovich, G.T. (1990). Organizational differences in managerial compensation and financial performance. *Academy of Management Journal*, 33, 663-691.
- Gonzalez-Roma, V., Peiro, J.M., & Tordera, N. (2002). An examination of the antecedents and moderator influences of climate strength. *Journal of Applied Psychology*, 87, 465-473.
- Gottlieb, A., & Ickes, W. (1978). Attributional strategies of social influence. In J. H. Harvey, W. Ickes, & R. F. Kidd (Eds.), *New directions in attribution research* (pp. 261-296). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Griffith, J. (2006). A compositional analysis of the organizational climate-performance relation: Public schools as organizations. *Journal of Applied Social Psychology*, 36, 1848-1880.
- Hackett, R.D., Lapierre, L.M., & Hausdorf, P.A. (2001). Understanding the links between work commitment constructs. *Journal of Vocational Behavior*, 58, 392-413.
- Hackman, J.R., & Oldham, G.R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, 16, 250-279.
- Harter, J.K., Schmidt, F.L., & Hayes, T.L. (2002). Business-unit level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology*, 87, 268-279.
- Hatfield, J.D., Robinson, R.B., & Huseman, R.C. (1985). An empirical evaluation of a test for assessing job satisfaction. *Psychological Reports*, 56, 39-45.
- Heneman, R.L. (1992). *Linking Pay Increases to Performance Ratings*. Addison Wesley: Reading, M.A.
- Hofmann, D.A. (1997). An overview of the logic and rationale of hierarchical linear models. *Journal of Management Special Issue: Focus on Hierarchical Linear Modeling*, 23, 723-744.
- Hofmann, D.A., & Gavin, M.B. (1998). Centering decisions in hierarchical linear models: Implications for research in organizations. *Journal of Management*, 24, 623-641.
- Homans, G.C., (1958). Social behavior as exchange. *American Journal of Sociology*, 63, 597-606.

- Hovland, C., & Weiss, W. (1951). The influence of source credibility on communication effectiveness. *Public Opinion Quarterly*, 15, 635-650.
- 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.
- Iaffaldano, M.T., & Muchinsky, P.M. (1985). Job satisfaction and job performance: A meta-analysis. *Psychological Bulletin*, 97, 251-273.
- Ickes, W., Snyder, M., & Garcia, S. (1997). Personality influences on the choice of situations. In R. Hogan, J. A. Johnson, & S. R. Briggs (Eds.), *Handbook of personality psychology*, (pp. 165-195). San Diego, CA: Academic Press.
- Jackofsky, E.J., & Slocum, J.W. (1988). A longitudinal study of climates. *Journal of Organizational Behavior*, 9, 319-334.
- James, L.R. (1982). Aggregation bias estimates of perceptual agreement. *Journal of Applied Psychology*, 67, 219-229.
- Janis, I. (1982). *Groupthink: Psychological Studies of Policy Decision and Fiascoes*. Boston, MA: Houghton Mifflin.
- Joreskog, K. (1999). How large can a standard coefficient be? Lisrel Techdocs. Retrieved April 21, 2010 from ssicentral website
<http://www.ssicentral.com/lisrel/techdocs/HowLargeCanaStandardizedCoefficientbe.pdf>
- Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin*, 127, 376-407.
- Katz-Navon, T., Naveh, E., & Stern, Z. (2005). Safety climate in health care organizations: A multidimensional approach. *Academy of Management Journal*, 48, 1075-1089.
- Kantor, J.R. (1924). *Principles of Psychology (vol. 1)*. Chicago: Principia Press.
- Kay, A.C., Wheeler, S.C., Bargh, J.A. & Ross, L. (2004). Material priming: The influence of mundane physical objects on situational construal and competitive

- behavioural choice. *Organizational Behavior and Human Decision Processes*, 95, 83-96.
- Kelley, H.H. (1973). The processes of causal attribution. *American Psychologist*, 28, 107-128.
- Kelloway, E.K. (1998). *Using LISREL for Structural Equation Modeling: A Researcher's Guide*. Thousand Oaks, CA: Sage.
- Kelloway, E.K., Gottlieb, B.H. & Barham, L. (1999). The source, nature, and direction of work and family conflict: A longitudinal investigation. *Journal of Occupational Health Psychology*, 4, 337-346.
- Kelman, H., & Hovland, C. (1953). Reinstatement of the communicator in delayed measurement opinion. *Journal of Abnormal and Social Psychology*, 48, 547-549.
- Kerr, N. L., & Tindale, R.S. (2004). Group performance and decision making. *Annual Review of Psychology*, 55, 623-655.
- Kozlowski, S.W.J., & Ilgen, D.R. (2006). Enhancing the effectiveness of work groups and teams. *Psychological Science in the Public Interest*, 7, 77-124.
- Kozlowski, S.W.J., & Klein, K.J. (2000). A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes. In K.J. Klein & S.W.J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations*. San Francisco: Jossey Bass.
- Lazear, E.P. (2000). Performance pay and productivity. *The American Economic Review*, 90, 1346-1361.
- Lawler, E.E., III. (2000). *Rewarding Excellence*. San Francisco: Jossey Bass.
- Lewin, K. (1935). *Dynamic Theory of Personality*. New York: McGraw-Hill.
- Lewin, K. (1951). *Field Theory in Social Science*. New York: Harper
- Liao, H., & Chuang, A. (2007). Transforming service employees and climate: A multilevel, multisource examination of transformational leadership in building long-term service relationships. *Journal of Applied Psychology*, 92, 1006-1019.
- Little, R.J.A., & Rubin, D.B. (1987). *Statistical analysis with missing data*. New York: Wiley.

- Locke, E. A., & Latham, G.P. (1990). A theory of goal setting and task performance. Engelwood Cliffs, NJ: Prentice Hall.
- Lord, C.G. (1982). Behavioral consistency and situational similarity. *Journal of Personality and Social Psychology*, 42, 1076-1088.
- Lord, C.G., Brown, D.J., & Freiberg, S.J. (1999). Understanding the dynamics of leadership: The role of follower self-concepts in the leader/follower relationship. *Organizational Behavior and Human Decision Processes*, 78, 167-203.
- MacDuffie, J.P. (1995). Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. *Industrial and Labor Relations Review*, 48, 197-221.
- Mair, J. (2005). Exploring the determinants of unit performance: the role of middle managers in stimulating profit growth. *Group and Organization Management*, 30, 263-288.
- Maule, J., & Villejoubert, G. (2007). What lies beneath: reframing framing effects. *Thinking and Reasoning*, 13, 25-44.
- McArthur, L.Z., & Baron, R.M. (1983). Toward an ecological theory of social perception. *Psychological Review*, 90, 215-238.
- McCord, F. (1948). The formation of group norms in waking suggestion. *Journal of Social Psychology*, 27, 3-15.
- Miceli, M.P., Jung, I., Near, J.P., & Greenberger, D.B. (1991). Predictors and outcomes of reactions to pay-for-performance plans. *Journal of Applied Psychology*, 76, 508-521.
- Michie, J., Sheehan, M. (2005). Business strategy, human resources, labour market flexibility and competitive advantage. *International Journal of Human Resource Management*, 16, 445-464.
- Miles, R.E., & Snow, C.C. (1978). Organizational strategy, structure, and process. New York, NY: McGraw-Hill.
- Mischel, W. (1977). The interaction of person and situation. In D. Magnusson & N.S. Endler (Eds.), *Personality at the Crossroads*. (pp. 333-352). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Mischel, W., Ebbesen, E.B., & Zeiss, A.M. (1976). Determinants of selective memory and the self. *Journal of Consulting and Clinical Psychology*, 44, 92-103.

- Monette, G. (2010). Spida: Collection of miscellaneous functions for mixed models etc. Prepared for SPIDA 2009. R package version 0.1-1/r17. <http://R-Forge.R-project.org/projects/spida>
- Muller, D., Judd, C.M., & Yzerbyt, V.Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology*, 89, 852-863.
- Mulvey, P.W., & Ribbens, B.A. (1999). The effects of intergroup competition and assigned group goals on group efficacy and group effectiveness. *Small Group Research*, 30, 651-678.
- Murray, H.A. (1938). *Explorations in Personality*. New York: Oxford Press.
- Nishii, L.H., & Wright, P.M. (2008). Variability within organizations: Implications for strategic human resources management. In D. Brent Smith (Ed.), *The People Make the Place: Dynamic Linkages Between Individuals and Organizations*, (pp.5-36). Hillsdale, NJ: Lawrence Erlbaum Associates.
- O'Connor, E.J., Peters, L.H., Rudolf, C.J., & Pooyan, A. (1982). Situational constraints and employee affective reactions: A partial field replication. *Group and Organization Studies*, 7, 418-428.
- O'Leary, K.A.M., Martocchio, J.J., & Frink, D.D. (1994). A review of the influence of group goals on group performance. *Academy of Management Journal*, 37, 1285-1301.
- Ostroff, C. (1992). The relationship between satisfaction, attitudes, and performance: An organizational level analysis. *Journal of Applied Psychology*, 77, 963-974.
- Ostroff, C. (1993). The effects of climate and personal influences on individual behavior and attitudes in organizations. *Organizational Behavior and Human Decision Processes*, 56, 56-90.
- Ostroff, C., & Bowen, E.E. (2000). Moving HR to a higher level: HR practices and organizational effectiveness. In K.J. Klein & S.W.J. Koslowski (Eds.), *Multilevel theory, research and methods in organizations*. (pp. 211-265). San Francisco, CA: Jossey-Bass.
- Ostroff, C., Kinicki, A. J., & Tamkins, M. M. (2003). Organizational culture and climate. In I. B. Weiner (Series Ed.) & W. C. Borman, D. R. Ilgen, & R. J. Klimoski (Vol. Eds.) *Handbook of Psychology: Vol. 12. Industrial and Organizational Psychology* (pp. 565-594). Hoboken, NJ: John Wiley & Sons.

- Parker, C.P., Baltes, B.B., Young, S.A., Huff, J.W., Altmann, R.A., Lacost, H.A., and Roberts, J.E. (2003) Relationships between psychological climate perceptions and work outcomes: a meta-analytic review. *Journal of Organizational Behavior*, 24, 389-416.
- Pfeffer, J. (1998). Seven practices of successful organizations. *California Management Review*, 40, 96-124.
- Pinheiro, J., Bates, D., Debroy, S., Sarkar, D., & the R Core team, (2009). Nlme: Linear and Nonlinear Mixed Effects Models. R package version 3.1-96.
- Preacher, K.J., & Hayes, A.F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40, 879-891.
- Preacher, K.J., Rucker, D.D., & Hayes, A.F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, 42, 185-227.
- Pritchard, R.D., & Karasick, B.W. (1973). The effect of organizational climate on managerial job performance and job satisfaction. *Organizational Behavior and Human Performance*, 9, 126-146.
- Ployhart, R.E., Weekley, J.A., & Baughman, K. (2006). The structure and function of human capital emergence: a multilevel examination of the attraction-selection-attrition model. *Academy of Management Journal*, 49, 661-677.
- Ployhart, R.E., Weekley, J.A., & Ramsey, J. (2009). The consequences of human resource stocks and flows: A longitudinal examination of unit service orientation and unit effectiveness. *Academy of Management Journal*, 52, 996-1015.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., & Podsakoff, N.P. (2003). Common method biases in behavioural research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88, 879-903.
- Podsakoff, P.M., MacKenzie, S.B.B., Paine, J.B., & Bachrach, D.G. (2000). Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management*, 26, 513-563.
- Pornpitakpan, C. (2004). The persuasiveness of source credibility: A critical review of five decades' evidence. *Journal of Applied Social Psychology*, 34, 243-281.

- R Development Core Team (2010). R: A language and environment for statistical computing. R foundation for Statistical Computing, Vienna, Austria.
<http://www.R-project.org>.
- Raudenbush, S.W., & Bryk, A.S. (2002) *Hierarchical Linear Models: Applications and Data Analysis Methods*. Thousand Oaks, CA: Sage.
- Reichers, A.E., & Schneider, B. (1990). Climate and culture: An evolution of constructs. In B. Schneider (Ed.) *Organizational Climate and Culture* (pp.5-39). San Fransisco: Jossey-Bass.
- Rhoades, L. & Eisenberger, R. (2002). Perceived organizational support: A review of the literature. *Journal of Applied Psychology*, 87, 698-714.
- Riordan, C.M., Vandenberg, R.J., & Richardson, H.A. (2005). Employee Involvement climate and organizational effectiveness. *Human Resource Managmeent*, 44, 471-488.
- Robertson, Q.M., Sturman, M.C., & Simons, T.L. (2007). Does the measure of dispersion matter in multilevel research? A comparison of the relative performance of dispersion indexes. *Organizational Research Methods*, 10, 564-588.
- Rogelberg, S.G., Luong, A., Sederburg, M.E., & Critstol, D.S. (2000). Employee attitude surveys: Examining the attitudes of noncompliant employees. *Journal of Applied Psychology*, 85, 284-293.
- Ross, L., & Nisbett, R.E. (1991). *The Person and the Situation – Perspectives of Social Psychology*. Philadelphia: Temple University Press.
- Rynes, S.L., Colbert, A.E., & Brown, K.G. (2002). HR Professionals' beliefs about effective human resources practices: Correspondence between research and practice. *Human Resources Management*, 41, 149-174.
- Saari, L. (2007). Bridging the worlds. *Academy of Management Journal*, 50, 1043-1045.
- Salanova, M., Agut, S., & Peiro, J.M. (2005). Linking organizational resources and work engagement to employee performance and customer loyalty: The mediation of service climate. *Journal of Applied Psychology*, 90, 1217-1227.
- Sanchez, L.S., & Levine, E.L. (2009). What is (or should be) the difference between competency modeling and traditional job analysis? *Human Resource Management Review*, 19, 53-63.

- Schneider, B. (1983). Interactional psychology and organizational behavior. In L.L. Cummings & B.M. Staw (Eds.), *Research in Organizational Behavior*, Vol. 5, Greenwich, CT: JAI Press.
- Schneider, B. & Bowen, D.E. (1985). Employee and customer perceptions of service in banks: Replication and extension. *Journal of Applied Psychology*, 70, 423-433.
- Schneider, B. (1987). The people make the place. *Personnel Psychology*, 40, 437-453.
- Schneider, B., Ehrhart, M.G., Mayer, D.M., Saltz, J.L., Niles-Jolly, K. (2005). Understanding organization-customer links in service settings. *Academy of Management Journal*, 48, 1017-1032.
- Schneider, B., Hanges, P.J., Smith, D.B., & Salvaggio, A.N. (2003). Which comes first: Employee attitudes or organizational financial and market performance? *Journal of Applied Psychology*, 88, 836-851.
- Schneider, B. Salvaggio, A.N. & Subirats, M. (2002). Climate strength: A new direction for climate research. *Journal of Applied Psychology*, 87, 220-229.
- Schneider, B., & Snyder, R.A. (1975). Some relationships between job satisfaction and organization climate. *Journal of Applied Psychology*, 60, 318-328.
- Schneider, B., White, S.S., & Paul, M.C. (1998). Linking service climate and customer perceptions of service quality: Test of a causal model. *Journal of Applied Psychology*, 83, 150-163.
- Sheehan, J.J. (1979). Conformity prior to the emergence of a group norm. *Journal of Psychology*, 103, 121-127.
- Sorrels, J.P., & Kelley, J. (1984). Conformity by omission. *Personality and Social Psychology Bulletin*, 10, 302-305.
- Spector, P.E. (1985). Measurement of human service staff satisfaction: Development of the job satisfaction survey. *American Journal of Community Psychology*, 13, 693-713.
- Spector, P.E. (2006). Method variance in organizational research: Truth or urban legend? *Organizational Research Methods*, 9, 221-232.
- Stevens, J.P. (1984). Outliers and influential data points in regression analysis. *Psychological Bulletin*, 95, 334-344.

- Subramony, M. (2009). A meta-analytic investigation of the relationship between HRM bundles and firm performance. *Human Resource Management*, 48, 745-768.
- Sun, L.Y, Aryee, S., & Law, K.S. (2007). High-performance human resource practices, citizenship behavior, and organizational performance: A relational perspective. *Academy of Management Journal*, 50, 558-577.
- Tabachnik, B.G., & Fidell, L.S. (2001). *Using Multivariate Statistics*. Needham Heights, MA: Allyn & Bacon.
- Takeuchi, R., Chen, G. and Lepak, D. (2009). Through the looking glass of a social system: Cross-level effects of high-performance work systems on employees' attitudes. *Personnel Psychology*, 62, 1-29.
- Tedeschi, J.T. (1981). *Impression Management: Theory and Social Psychological Research*. New York, NY: Academic Press.
- Terpstra, D.E., & Rozell, E.J. (1993). The relationship of staffing practices to organizational level measures of performance. *Personnel Psychology*, 46, 27-48.
- Tindale, R.S. (1993). Decision errors made by individuals and groups. In N. Castellan Jr. (Ed.), *Individual and group decision making: Current issues*. (pp.109-124). Hillsdale, NJ: Erlbaum.
- Towers Perrin, (2008). *Closing the engagement gap: A road map for driving superior business performance*. Retrieved from http://www.biworldwide.com/info/pdf/Towers_Perrin_Global_Workforce_Study.pdf
- Tsui, A.S. (1990). A multiple-constituency model of effectiveness: An empirical examination at the human resource subunit level. *Administrative Science Quarterly*, 35, 458-483.
- Tsui, A.S., Ashford, S.J., St. Clair, L., & Xin, K.R. (1995). Dealing with discrepant expectations: Response strategies and managerial effectiveness. *Academy of Management Journal*, 38, 1515-1543.
- Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, 211, 453-458.
- Tziner, A., & Eden, D. (2006). Effects of crew composition on crew performance: Does the whole equal the sum of its parts? In L. J. Levine, & R.L. Moreland (Eds.), *Small Groups. Key Readings in Social Psychology* (pp.55-64). New York, NY: Psychology Press.

- Wegge, J. (2000). Participation in group goal setting: Some novel findings and a comprehensive model as a new ending to an old story. *Applied Psychology: An International Review*, 49, 498-516.
- Vigoda-Gadot, E. & Grimland, S. (2008). Values and career choice at the beginning of the MBA educational process. *Career Development International*, 13, 333-345.
- Vroom, V. (1964). *Work and motivation*. New York: Wiley.
- Wegge, J. (2000). Participation in group goal setting: Some novel findings and a comprehensive model as a new ending to an old story. *Applied Psychology: An International review*, 49, 498-517.
- Wegge, J., & Haslam, S.A. (2005). Improving work motivation and performance in brainstorming groups: The effects of three group goal-setting strategies. *European Journal of Work and Organizational Psychology*, 14, 400-430.
- Wegge, J., Roth, C., Neubach, B., Schmidt, K.H., & Kanfer, R. (2008). Age and gender diversity as determinants of performance and health in a public organization: The role of task complexity and group size. *Journal of Applied Psychology*, 93, 1301-1313.
- Werbel, J.D., & DeMarie, S.M. (2005). Aligning strategic human resource management and person-environment fit. *Human Resource Management Review*, 15, 247-262.
- West, M.A. (1990). The social psychology of innovation in groups. In M.A. West, & J.L. Farr (Eds.) *Innovation and Creativity at Work: Psychological and Organizational Strategies* (pp. 309-333). Oxford, England: John Wiley & Sons.
- West, M.A., & Farr, J.L. (1990). *Innovation and Creativity at Work: Psychological and Organizational Strategies*. Oxford: Wiley & Sons.
- Wood, S.J., & Wall, T.D. (2007). Work enrichment and employee voice in human resource management performance studies. *International Journal of Human Resource Management*, 18, 1335-1372.
- 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., Gardner, T.M., Moynihan, L.M., Park, H.J., Gerhart, B., & Delery, J.R. (2001). Measurement error in research on human resources and firm performance: Additional data and suggestions for future research. *Personnel Psychology*, 54, 875-901.
- Wright, P.M., McMahan, G.C., McCormick, B., & Sherman, W.S. (1998). Strategy, core competence, and HR involvement as determinants of HR effectiveness and refinery performance. *Human Resource Management*, 37, 17-29.
- Wright, P.M., McMahan, G.C., & McWilliams, A. (1994). Human resources and sustained 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 Managerial Issues*, 16, 337-360.
- Youndt, M.A., Snell, S.A., Dean, J.W., & Lepak, D.P. (1996). Human resource management, manufacturing strategy, and firm performance. *Academy of Management Journal*, 39, 836-866.
- Zacharatos, A., Barling, J., & Iverson, R.D. (2005). High-performance work systems and occupational safety. *Journal of Applied Psychology*, 90, 77-93.

Appendix A

The Dimensions of HR Strength and Related Items:

Shared Goals. (The degree to which HR practices communicate, clarify and reinforce the goals of the organization).

clarifies the organization's strategic objectives.
communicates the relevance of organizational goals.
reinforces organizational goals.
reflects what's important to the organization.

Framing. (The degree to which HR practices contribute to framing/conceptualizing where my job fits in terms of its contribution to the organization's overall mission).

clarifies links between individual, team, and organizational goals.
clarifies the organization's expectations of me.
helps link individual efforts to the organization's purpose.

Management Support. (The degree to which supervisors/managers support HR practices).

is/are valued by my supervisor.
is/are reinforced by my supervisor's behaviours.
is/are clearly important to my supervisor.
is/are supported by my supervisor.

Fostering Uniformity of Values, Attitudes, and Behaviours. (The degree to which HR practices contribute to the alignment/sharing of attitudes and behaviours with group norms and expectations).

helps to unify employee behaviour.
helps me to align my efforts with coworkers.
supports team cohesiveness and uniformity.
fosters consistency in my coworkers' behaviour.

Facilitates/Supports Performance. (The degree to which HR practices provide the resources, tools, and support necessary to perform one's job).

diverts my attention from getting the job done.
detracts from my ability to do my job.
gets in the way of what ought to be done.

Fairness (the degree to which HR practices are fair)

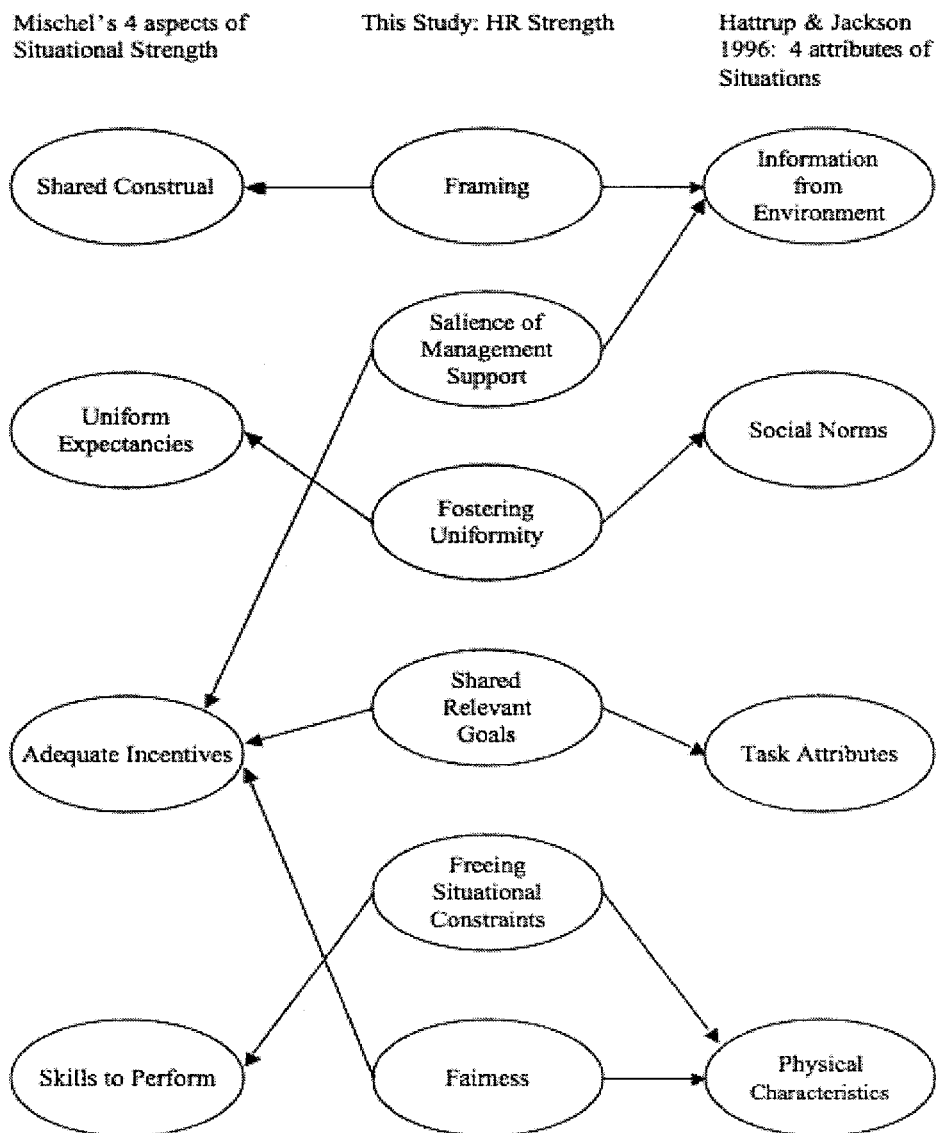
treats all employees equitably.

is administered without bias.

is administered fairly.

Appendix B

How HR Strength Relates to Situational Strength



Appendix C

The Measure of HR Strength

With regard to your personal experiences within your store in your current position at _____ please put the corresponding number (based on the scale below) in the corresponding box. For example, for the top left-hand box in the matrix, rate the degree to which you agree/disagree with the statement about the HR practice of training: "training is valued by my supervisor". If you agree strongly with this statement, write a "7" in the box; if you strongly disagree, write a "1" in the box, etc. Do this for all the boxes below, preferably moving from top to bottom. If you do not know, write "NA" in the box.



NA = Not Applicable

Training - Any employer-sponsored education that is job related.

Appraisal and Feedback - Communication with your supervisor that relates specifically to your performance.

Pay System/Structure - The proportion of variable (performance-based) to fixed (salary) pay; performance pay (a lump sum payment such as a performance bonus, or an amount added to your salary (merit pay) based on your performance on the job, and your total pay.

Benefits - may be defined as any of the following: stock purchase assistance plans, pension plans, medical/dental benefits, flexible work arrangements, paid and unpaid leave policies.

Teamwork - refers to formally established groups that are either permanent work teams or teams assembled to accomplish a specific goal within a specified timeframe.

	Training	Appraisal and Feedback	Pay System/Structure	Benefits	Employee participation in management decisions	Teamwork	Internal promotion programs	Information sharing
is/are valued by my supervisor								
helps to unify employee behavior								
clarifies the organization's strategic objectives								
diverts my attention from getting the job done								
detracts from my ability to perform my job								
communicates the relevance of organizational goals								
clarifies links between individual, team, and organizational goals								
treats all employees equitably								
is/are reinforced by my supervisor's behaviors								
is/are clearly important to my supervisor								
helps me to align my efforts with coworkers								
reinforces organizational goals								
is/are administered without bias								
is/are supported by my supervisor								
supports team cohesiveness and uniformity								
fosters consistency in my coworkers' behavior								
is/are administered fairly								
gets in the way of what ought to be done								
clarifies the organization's expectations of me								
helps link individual efforts to the organization's purpose								
reflects what's important to the organization								

3

Appendix D

Affective Commitment Scale

With respect to your own feelings at _____, please indicate the degree of your agreement or disagreement with each statement by selecting one of the following 7 alternatives next to each statement:

1 = strongly disagree; 2 = moderately disagree; 3 = slightly disagree; 4 = neither disagree nor agree; 5 = slightly agree; 6 = moderately agree; 7 = strongly agree.

I would be very happy to spend the rest of my career with this organization.

I enjoy discussing my organization with people outside it.

I really feel as if this organization's problems are my own.

I think that I could easily become as attached to another organization as I am to this one.

I do not feel like 'part of the family' at my organization.

This organization has a great deal of personal meaning for me.

I do not feel a strong sense of belonging to my organization.

Appendix E

Turnover Intentions Scale

Listed below are a series of statements that represent possible feelings that individuals might have about the organization for which they work. With respect to your feelings about _____, please indicate the degree of your agreement or disagreement with each statement by circling one of the following five alternatives next to each statement:

1 = strongly disagree; 3 = neither disagree nor agree; 5 = strongly agree

I am thinking about leaving this organization.

I am planning to look for a new job.

I intend to ask people about new job opportunities.

I don't plan to be in this organization much longer.

Appendix F

Global Service Climate Scale

Listed below are a series of statements that represent possible feelings that individuals might have about the 'work site' in which they work. With respect to your feelings about your 'work site', please indicate the degree of your agreement or disagreement with each statement by circling one of the following five alternatives next to each statement:

1 = very low; 3 = neither low nor high; 5 = very high

How would you rate the job knowledge and skills of the management team in your site to deliver superior quality work and services?

How would you rate efforts to measure and track the quality of work and service in your site?

How would you rate the recognition and rewards the management team receives for the delivery of superior work and service?

How would you rate the overall quality of service provided by your site?

How would you rate the leadership shown by the management team in your site in supporting the service quality effort?

How would you rate the effectiveness of communications efforts to both employees and customers?

How would you rate the tools, technology, and other resources provided to the management team to support the delivery of superior quality work and service?

Appendix G

OCB Scale

Listed below are a series of statements that represent possible feelings that individuals might have about the organization for which they work. With respect to your feelings about _____, please indicate the degree of your agreement or disagreement with each statement by circling one of the following five alternatives next to each statement:

1 = strongly disagree; 3 = neither disagree nor agree; 5 = strongly agree

I follow customer-service guidelines with extreme care.

I follow up in a timely manner to customer requests and problems.

I perform my duties with unusually few mistakes.

I always have a positive work attitude.

Regardless of the circumstances, I am exceptionally courteous and respectful to customers.

Appendix H

Job Satisfaction Scale

Listed below are a series of statements that represent possible feelings that individuals might have about the organization for which they work. With respect to your feelings about _____, please indicate the degree of your agreement or disagreement with each statement by circling one of the following five alternatives next to each statement:

1 = strongly disagree; 3 = neither disagree nor agree; 5 = strongly agree

I am often bored with my job.

I feel fairly well satisfied with my present job.

I am satisfied with my job for the time being.

Most days I am enthusiastic about my work.

I like my job better than the average worker does.

I find real enjoyment in my work.

Figure 1. Overall representation of the hypothesized relationships.

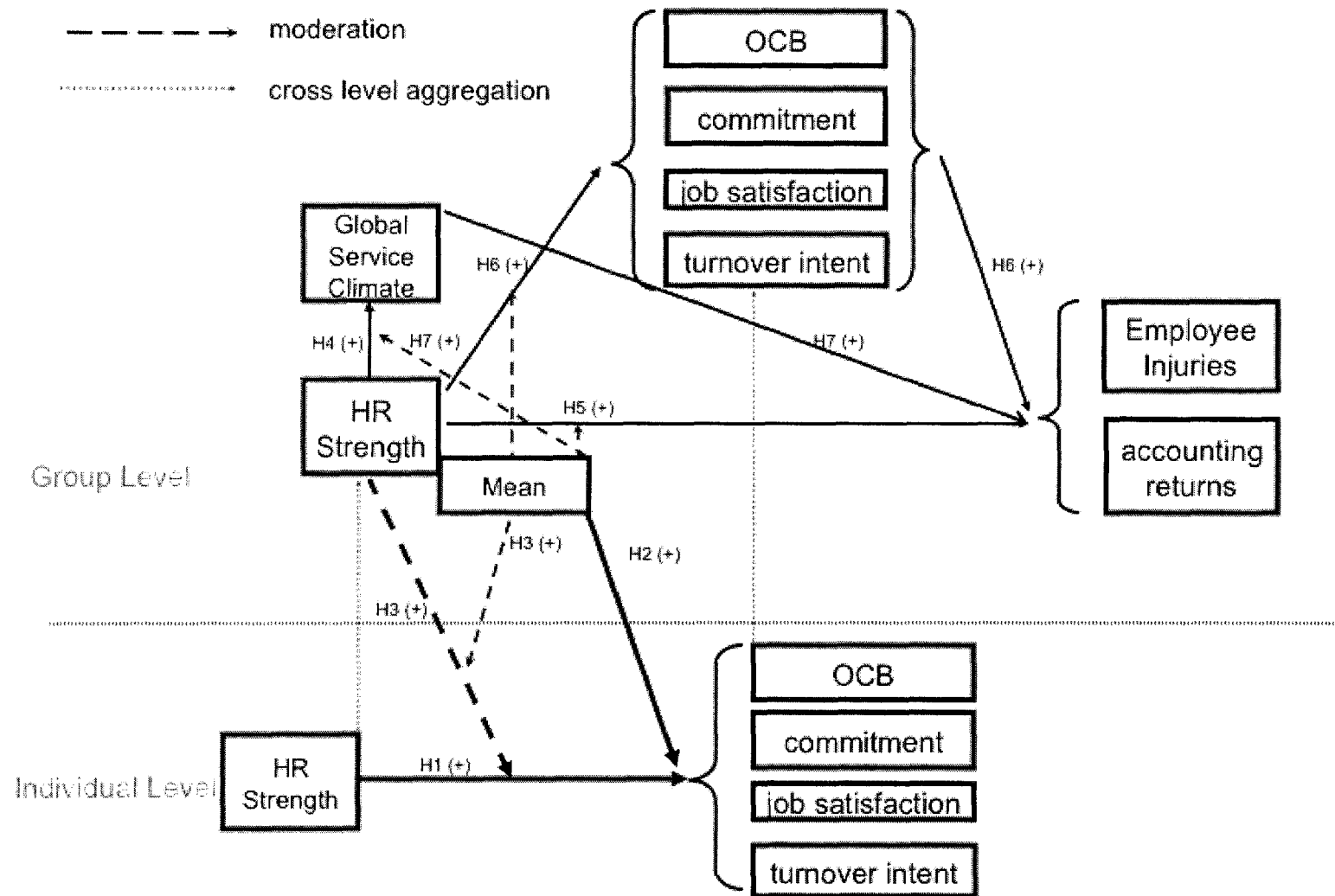


Figure 2

Proposed Moderation of Group HR Strength and Agreement on Individual HR Strength and Attitudes

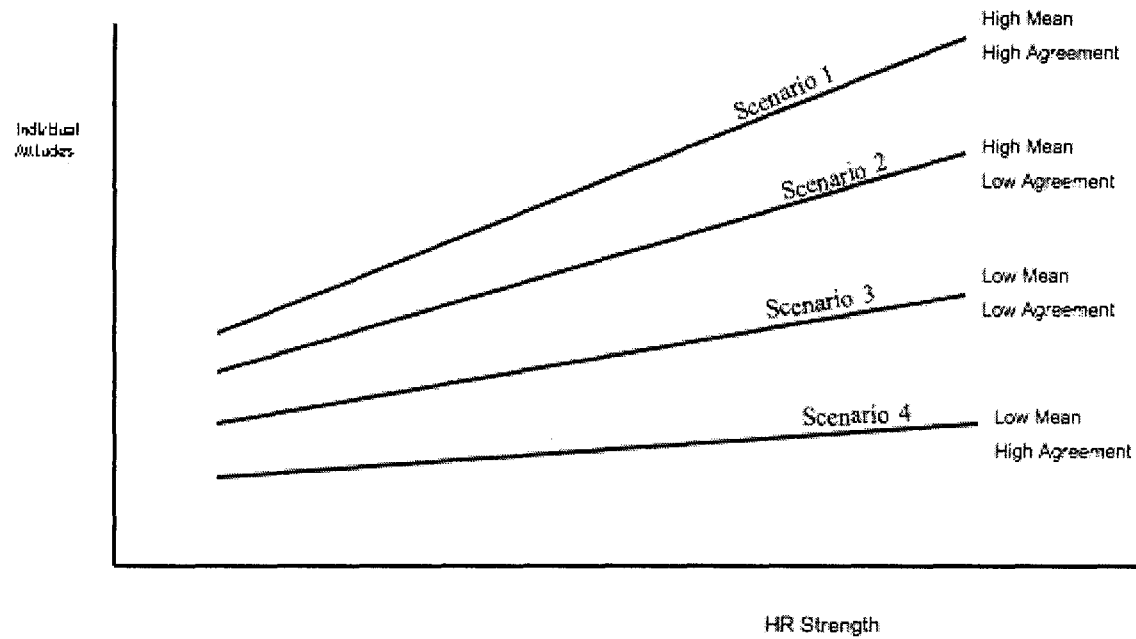


Figure 3

The Proposed Moderating Role of Mean HR Strength on HR Strength Agreement and Performance

