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# Beginning to Unlock the Black Box in the HR Firm Performance Relationship: The Impact of HR Practices on Employee Attitudes and Employee Outcomes

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Theoretical models in strategic human resource management research commonly include employee attitudes and behaviors as key mediating links between human resource practices and firm performance. However, almost all empirical SHRM work to date has ignored the mediating hypothesis and merely examined the direct relationship between HR practices and firm outcomes. The purpose of this study is to test the relationship between HR practices and employee attitudes and behaviors. Using a sample of 174 independent work groups, we examined the relationship between HR practices and collective behaviors (turnover and absenteeism) mediated by collective attitudes (job satisfaction and commitment). Results indicate attitudes partially mediate the relationship between HR practices and employee behaviors. The direct and indirect relationships identified in this study support the notion that attitudes and behaviors play a mediating role between HR practices and firm outcomes. These findings illustrate the varying impacts of HR practices and the importance of utilizing multilevel theory and methods.

## **Keywords**

model, employee, attitude, behavior, human resource, practices, firm, performance, SHRM, HR, work

## **Disciplines**

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## **Comments**

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## WORKING PAPER SERIES

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Working Paper 01 - 12



**Beginning to Unlock the Black Box  
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**The Impact of HR Practices on Employee Attitudes  
and Employee Outcomes**

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**Abstract**

Theoretical models in strategic human resource management research commonly include employee attitudes and behaviors as key mediating links between human resource practices and firm performance. However, almost all empirical SHRM work to date has ignored the mediating hypothesis and merely examined the direct relationship between HR practices and firm outcomes. The purpose of this study is to test the relationship between HR practices and employee attitudes and behaviors. Using a sample of 174 independent work groups, we examined the relationship between HR practices and collective behaviors (turnover and absenteeism) mediated by collective attitudes (job satisfaction and commitment). Results indicate attitudes partially mediate the relationship between HR practices and employee behaviors. The direct and indirect relationships identified in this study support the notion that attitudes and behaviors play a mediating role between HR practices and firm outcomes. These findings illustrate the varying impacts of HR practices and the importance of utilizing multilevel theory and methods.

**Beginning to Unlock the Black Box in  
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Strategic human resource management has been defined as “the pattern of planned human resource deployments and activities intended to enable an organization to achieve its goals” (Wright & McMahan 1992: 298). Because firm performance stands out as one major organizational goal, many of the SHRM research efforts have been directed at understanding the relationship between HR practices and firm performance (Delery & Doty, 1996; Huselid, 1995). There have been a number of reviews of the empirical literature including Becker and Gerhart (1996) (7 studies); Dyer and Reeves (1995) (4 studies); and Paauwe and Richardson (1997) (9 studies). The reviews consistently conclude that past research has demonstrated varying degrees of positive association between HR practices and firm financial performance.

While evidence mounts that HR practices are at least weakly related to firm performance, little empirical attention has been paid to exploring the processes through which this impact takes place. A number of conceptual models, however, have attempted to depict the processes through which HR practices ultimately impact firm financial performance (Becker, Huselid, Pickus, & Spratt, 1997; Wright & Snell, 1998). For example, Becker et al.’s (1997) model suggests that HR practices most proximally impact employee skills, employee motivation, and work design which consequently influence employees’ creativity, productivity, and discretionary behavior. These variables, in turn, result in improved operational performance, which relates to profitability and growth, ultimately determining firm market values.

While conceptual models may abound, empirical research on these models does not currently exist. SHRM research has been criticized by numerous authors for its lack of empirical work specifying the mediating processes by which HR policies and practices lead to firm outcomes (Delery, 1998; Dyer & Reeves, 1995). The purpose of this study is to examine the impact of HR practices on employee-level variables, specifically employee attitudes and

employee outcomes. Our model proposes that HR practices are related to group absenteeism and turnover as mediated by employee attitudes. While this study does not test the subsequent impact on organizational performance indicators, we propose that these indicators are at least, in part, influenced by employees who are satisfied and committed, and who show up for work and stay with the organization.

To our knowledge, no other research has examined the link between HR practices and collective attitudes nor have researchers tested a model linking HR practices to employee behaviors mediated by attitudes. The measures of our dependent variables are an improvement over previous research as they are measured at the individual level and appropriately aggregated to the collective level. Furthermore, we utilized both subject matter experts (business unit HR managers) and multiple employees per work group to measure HR practices thus overcoming many of the serious methodological problems of past SHRM research (Gerhart, Wright, McMahan, & Snell, 2000). Lastly, we used a theoretical framework to guide the measurement and categorization of systems of HR practices. This study may allow us to begin to open the “black box” between HR practices and firm outcomes, contribute to organizational theory, and inform managers of appropriate policy levers to achieve desired outcomes.

## **THEORETICAL FOUNDATIONS AND HYPOTHESES**

### **Outcomes in SHRM Research**

Dyer and Reeves (1995) reviewed a number of studies linking HR practices to different performance measures. They proposed four categories of performance outcomes. Employee outcomes consisted of variables such as absenteeism and turnover. Organizational outcomes dealt with more operational performance measures such as productivity and quality. Financial outcomes entailed measures of profitability. Finally, market outcomes consisted of market based measures of performance such as stock price or Tobin’s Q. These authors suggested a necessary causal chain such that HR practices must impact employee outcomes before we could expect to see an impact on organizational, financial, and market outcomes.

Rogers and Wright (1999) discussed the dearth of studies examining the causal chain through which HR practices might impact firm performance. They reviewed 29 studies and discovered 80 distinct observations of an empirically tested link between HRM and some performance outcome variable. Consistent with Dyer and Reeves (1995), they categorized the performance outcomes used into human resource outcomes (turnover being the only employee measure they found used), organizational outcomes (e.g., productivity, quality, customer satisfaction), financial accounting outcomes (e.g., return on assets), and financial market outcomes (e.g., shareholder return or Tobin's Q). They found that only 3 effect sizes were reported relating HR practices to human resource outcomes (turnover), 34 relating to organizational, 24 to accounting, and 19 to financial market outcomes.

This is particularly problematic because research has failed to examine the impact of HR practices on the most proximal variables in conceptual models such as employee attitudes and employee outcomes. Thus, again, this paper should begin to tease out these causal processes through exploring how HR practices can impact proximal employee variables such as employee attitudes and employee outcomes such as absenteeism and turnover.

#### Human Resource Management Systems

Reviews of the SHRM literature reveal a schizophrenic tendency to develop typologies of HRM systems that simultaneously overlap and contradict the theoretical and empirical work of other research in the field. There is no agreement as to the dimensions of the typologies nor the policies and practices that make up these systems (Becker & Gerhart, 1996; Dyer & Reeves, 1995). SHRM and other researchers have been gradually moving toward classifying HR practices according to their primary impact on workforce characteristics resulting in a similar classification of HR systems.

Theoretical and empirical work from the fields of Industrial Relations (Appelbaum, Bailey, Berg, & Kalleberg, 2000), Total Quality Management (Hackman & Wageman, 1995), and SHRM (Delery, Gupta, & Shaw, 1997; Huselid & Becker, 1996; MacDuffie, 1995) suggest three



independent work system components shape individual and aggregate employee characteristics and contributions to organizational success. These include (1) mechanisms to ensure the workforce has the appropriate skills and abilities, (2) mechanisms to energize and motivate the workforce to engage in desired behaviors, apply discretionary effort, and prevent and resolve process exceptions, and (3) work systems that empower employees to contribute their individual and collective efforts toward organizational outcomes. We do not subscribe to the notion that one characteristic is more important than another nor do we speculate the ideal combination of the three dimensions (Delery et al, 1997). For this paper we merely assume that these characteristics adequately describe the dimensions of a large number of work systems that independently and in combination create optimal conditions for linking employee activities to organizational outcomes.

Furthermore, this research does not attempt to resolve the debate between those who theorize about the synergistic effects of a “fit” between HR practices and business-unit strategy (Wright & Snell, 1998) and those who assert there are a set of best practices that universally, positively affect firm outcomes (Delery & Doty, 1996). It is our assertion that we must better understand the mechanism by which HR practices affect firm performance before we can explore the contingencies that maximize the benefits of these policies and practices.

#### The Impact of HRM Systems on Employee Attitudes

The underlying assumption of our model is that employee cognitions and attitudes are a key antecedent to behavior. Thus, we propose that one of the processes by which human resource practices are converted to behaviors and effort is through employee attitudes. Most of the research we review, however, has been based on the individual level of analysis. Because strategic HRM focuses on the impact of HR practices on the workforce, we borrow from these findings to hypothesize group-level relationships. The following sections describe the linkage between HR practices and two key employee behaviors, absenteeism and turnover, mediated by job satisfaction and organizational commitment.

**Job Satisfaction.** Years of research have failed to establish a strong link between individual job satisfaction and individual productivity (Wright & Staw, 1999), however more recent research has suggested a positive relationship between collective job satisfaction and organizational performance (Ostroff, 1992). Due to multilevel effects, there may be a different process that operates between attitudes and performance at the group level than at the individual level (Ostroff, 1993). For example, shared attitudes at the group level of analysis may capture interdependencies that exist more strongly at that level of analysis (Glick & Roberts, 1984). Ostroff's (1992) study demonstrating stronger correlations between job satisfaction and performance at the organizational level than at the individual level may have reflected the synergy of cooperation, collaboration, enhanced communication and support, and so produced a stronger effect at that level. Thus an organization of individuals with shared positive job attitudes may engage in more frequent cooperative actions and OCBs resulting in a positive impact on firm performance. The theoretical and empirical relationships between group job satisfaction and organizational outcomes make understanding how HRM practices can influence these collective attitudes an important area of inquiry.

There are two main theories of the antecedents of individual job satisfaction likely to also suggest mechanisms for HR practices to affect group level job satisfaction. They include individual disposition/personality (Staw & Ross, 1985) and job characteristics (Hackman & Oldham, 1980). The dispositional theory of job satisfaction holds that such attitudes are a function of a person's long-term disposition or personality rather than a fluctuating mood-state influenced by work circumstances (Wright & Staw, 1999). Thus an HRM system with systematic procedures to identify the best talent may select employees with positive dispositions and thus higher job satisfaction. The Job Characteristics model of job satisfaction holds that the skill variety, task identity, task significance, autonomy, and feedback of the work process affect job satisfaction. These characteristics closely overlap the skill, motivation, and empowerment components of HRM systems (Appelbaum et al, 2000). Neither the theoretical nor empirical

literature suggest differing effects from skill, motivation, and empowerment enhancing HR practices on attitudes, particularly at the group level, thus we will hypothesize similar relationships for all three.

Hypothesis 1: There will be a positive relationship between the use of (a) skill enhancing, (b) motivation enhancing, and (c) empowerment enhancing human resource management practices and collective job satisfaction.

**Commitment.** Organizational commitment represents identification with and affective attachment to the organization (Porter, Steers, Mowday, & Boulin, 1974). When commitment is high, employees' values are aligned with the organization and he or she wants to do what is necessary for firm survival and success (Mowday, Porter, & Steers, 1982).

A large body of literature supports the notion that the work practices of an organization are an important antecedent to individual perceptions of commitment. Key among these are practices consistent with procedural justice; open communication; employee specific investments in training, decision-making and empowerment; promotion opportunities; and the use of performance contingent rewards (Meyer & Allen, 1997). However, all studies demonstrating these relationships measured work practices and commitment perceptions at the individual level. We argue that, through an isomorphic process, work place practices have an influence on commitment at the aggregate level as well (Kozlowski & Klein, 2000).

Hypothesis 2: There will be a positive relationship between the use of (a) skill enhancing, (b) motivation enhancing, and (c) empowerment enhancing human resource management practices and collective organizational commitment.

#### HRM Practices, Employee Attitudes, and Voluntary Turnover

Understanding the determinants of voluntarily turnover is important from the perspective of the cost of replacement and loss of intellectual capital (Cascio, 1991). Central to all theoretical models of voluntary turnover is the notion that poor attitudes provide the initial stimulation for the termination process. Job dissatisfaction prompts turnover cognitions and the

desire to escape the job environment (Mobley, 1982). However, commitment to company values and goals can weaken thoughts of withdrawal (Mowday et al, 1982). Commitment scholars also contend that both constructs have a stronger impact than job satisfaction alone because resignation implies rejection of the company, rather than the job (Hom & Hulin, 1981). Contemporary turnover models include both satisfaction and commitment as affective states involved in the turnover process (Hom & Griffeth, 1995).

The empirical support of the theorized relationship between employee attitudes and turnover is strong. A number of reviews of this literature find consistent negative relationships between commitment and both employee intention to leave and actual turnover (Allen & Meyer, 1996; Mathieu & Zajac, 1990; Tett & Meyer, 1993). Consistent evidence has also been found linking job dissatisfaction to turnover (e.g. Hulin, Roznowski, & Hachiya, 1985). As above, we assume an isomorphic process whereby the relationship between individual job satisfaction and commitment and turnover will hold at the work-group level.

Hypothesizing a relationship among group-level HR practices, collective attitudes, and collective turnover rates is not a straightforward task. To the best of our knowledge, no one study has examined all three constructs simultaneously. At the individual level, empirical research strongly suggests the impact of workplace practices on turnover is mediated by cognitions and attitudes (Hom & Griffeth, 1995). Thus we would expect, through an isomorphic process, that this mediating relationship would hold at the aggregate level. There are a number of studies that have examined the direct relationship between HR practices and collective turnover. Studies by Shaw et al (1998) and Guthrie (In Press) find a negative relationship between a set of high involvement work practices and turnover. Furthermore, we consistently find organizational turnover rates negatively associated with such practices as voice mechanisms (Spencer, 1986), employee participation (Wilson & Peel, 1991), skill based pay (Guthrie, 2000), job enrichment, and realistic job previews (McEvoy & Cascio, 1987). The authors of these studies use these findings to support a variety of theoretical frameworks including job characteristics theory

(Hackman & Oldham, 1980), exit-voice models (Spencer, 1986), and human capital theory (Guthrie, 2000). Although we believe collective work attitudes play an important mediating role between HR practices and turnover, it is likely unmeasured variables consistent with the above theories also mediate this relationship. Thus we expect attitudes will only partially mediate the relationship between HR practices and turnover.

Hypothesis 3: There will be a negative relationship between (a) skill enhancing, (b) motivation enhancing, and (c) empowerment enhancing HRM practices and turnover. However, this relationship will be partially mediated by collective (d) job satisfaction and (e) commitment.

HRM Practices, Employee Attitudes, and Absenteeism

Absenteeism costs individual companies and the US economy billions of dollars a year in lost productivity (Cascio, 1991). Although numerous studies have documented the relationship between absenteeism and specific absence reduction programs (Rhodes & Steers, 1990) and individual HR practices (Arthur & Jelf, 1999; Wilson & Peel, 1991), to our knowledge, no previous study has examined the relationship between bundles of HR practices and individual or collective absenteeism.

As with previous research on turnover, there is evidence that individuals' work attitudes are important antecedents to absenteeism (Farrell & Stamm, 1988). Theoretical work suggests employees who are not satisfied with their work or working conditions can be expected to avoid coming to work. Similarly, employees with feelings of commitment to the organization would be expected to consistently show up for work, all things being equal, more frequently than employees lacking in feelings of commitment (Rhodes & Steers, 1990). Meta-analytic evidence suggests individual job satisfaction has only a small, possibly insignificant, negative relationship with absenteeism behavior (Farrell & Stamm, 1988). However, a study relying on structural equation modeling (SEM) techniques found job satisfaction was negatively related to absenteeism (Brooke & Price, 1989). Less research has been conducted, however meta-

analysis suggests a negative relationship between affective commitment and absenteeism (Mathieu & Zajac, 1990).

Absenteeism is most commonly considered an individual phenomenon but a small number of researchers have examined it as a group-level phenomenon. One stream of research treats absenteeism as a function of shared norms or 'absenteeism culture.' (Johns & Nicholson, 1982). A second stream of research examines the impact of organizational policies on absenteeism rates. Empirical evidence strongly suggests organizational policies can reduce the absenteeism behavior of groups and individuals (Farrell & Stramm, 1988).

As with turnover, no one study has examined the interrelationships between HR practices, group-level work attitudes, and absenteeism. Although the relationship between individual attitudes and absenteeism behavior is weak, we expect there to be a stronger relationship at the aggregate level. As people interact day-to-day, collective work attitudes and absence norms simultaneously develop and evolve among individuals in job groups. Work groups with more negative work attitudes may increase members' propensity to avoid work through absenteeism thus reinforcing absence norms (Johns & Nicholson, 1982). A stronger relationship between work attitudes and absenteeism suggests the relationship between HR practices and group-level absenteeism will be mediated by group-level job satisfaction and commitment.

We also find direct relationships between individual HR practices and collective absenteeism. Two studies suggest group-based reward programs (profit-sharing, gainsharing) are associated with reduced absenteeism (Arthur & Jelf, 1999; Wilson & Peel, 1991) while participation programs are associated with increased absenteeism (Wilson & Peel, 1991). As with turnover, the authors of these studies use these findings to support theories involving mediating relationships that do not include work attitudes. In recognition of the number of other variables that affect absenteeism distinct from satisfaction/commitment, we propose the relationship between HR practices will only be partially mediated by work attitudes.

Hypothesis 4: There will be a negative relationship between (a) skill enhancing, (b) motivation enhancing, and (c) empowerment enhancing HRM practices and absenteeism. However, this relationship will be partially mediated by collective (d) job satisfaction and (e) organizational commitment.

## **METHODS**

### **Setting**

A study such as this requires a sufficient number of individuals consistently employed in a large number of discrete work groups to provide moderate statistical power for testing relationships; all work groups being in the same industry to minimize industry-specific error; and common measures of HRM practices, attitudes, and behaviors. For this reason, we chose to search for one company with a large number of autonomous business-units performing essentially the same function. We identified a company in the food service industry that met these requirements.

The company under investigation is one of the largest food service distributors in the United States. Marketing and distribution of its food and food related products are handled through its stand-alone business units in metropolitan areas across the country. The local management team is entirely responsible in the local marketplace for the development and execution of their strategy. With the exception of health care and retirement savings/pensions managed from the corporate headquarters, business-unit presidents are free to develop customized HRM programs. Furthermore, all business-units employ approximately 500 employees. If a unit grows too large to serve one market, it is divided into two separate companies to maintain an entrepreneurial spirit and customized service. Thus each operating unit is highly similar in terms of size, structure, technology, physical assets, and services provided but differs in management practices including human resource management practices.

Across the set of business units, there are six common job groups. These include outside sales employees, warehouse employees, merchandising employees, delivery drivers,

administrative staff, and front-line supervisors. Interviews with corporate executives confirmed that each job has its own HR policies such that these policies are consistent within one job, but vary across jobs. Thus these discrete work groups in the 33 participating business units represent the unit of analysis in this study.

### **Data Collection**

The data for this study was collected in the first wave of a long term study of management practices, employee attitudes, and performance among the business-units of the corporation. Employee surveys were developed by the authors in cooperation with corporate HR staff. HR manager surveys were developed by the researchers. Corporate HR marketed the study to the business-unit presidents, 33 chose to participate; 17 in winter 1999 and 16 in spring 2000 for a business-unit participation rate of 53%. Participation in the winter or spring survey explained no significant differences in key variables.

Business-unit human resource managers were instructed by the corporate office to randomly select 20% or more of the employees from each of the six occupational groups for survey participation. Employees met in groups on company time with the HR managers who explained the purpose of the meeting, the survey process, and a timeline for results. HR managers distributed the surveys to employees, gave them time to complete them, and had the employees place the surveys into one large sealable envelope per meeting. This process was repeated at each business-unit until all selected employees were surveyed. The business-unit HR managers sent the unopened envelopes directly to the researchers. HR managers were instructed to complete and return a survey of HR practices directly to the researchers. The response rate for employees in these groups was 100%<sup>1</sup>. We received a total of 3, 446 employee surveys. Thirty-one of the 33 HR managers completed and returned their surveys for a response rate of 94%.

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<sup>1</sup> A total of 5 surveys were returned by employees entirely incomplete.



The survey covered 10.4% of the population of business-unit employees of the entire food service division and 19.6% of total number of employees in the 33 participating business units. Although business-unit HR staff were instructed to survey 20% or more of the employees from each occupational groups, the average work-group participation rate was 28% (sd = 18%; range 0% to 100%) This variance was due to decisions by the HR manager to survey fewer or more employees rather than employee participation decisions. We determined through conversations with HR managers that this variation was due to operating constraints that prevented pulling employees off their jobs. An average of 102 employee surveys were collected from each business unit. Sixty-five employees refused to identify their occupation or identified more than one occupation. Surveys with unidentifiable occupations and work groups with no employee participation were dropped from further analysis.

Limited data was available to compare participating with non-participating business units. There were no differences in unionization status between participating and non-participating business units. The authors had access to results of a customer satisfaction survey of over 3000 customers of 30 of the company's business units. Seventeen of these companies were participants in the current study and 13 were not. The difference in the aggregated customer satisfaction ratings between the participating and non-participating companies was non-significant.

## Measures

**Job Satisfaction.** Due to constraints imposed by the company, we were unable to use a previously validated measure of job satisfaction. According to Spector (1997), the most important subdimensions of job satisfaction used in academic research are satisfaction with pay, satisfaction with supervision, satisfaction with co-workers, and nature of work. We used 13 job satisfaction questions that we felt represented these dimensions. Two questions were directly borrowed from the Job Satisfaction Survey (Spector, 1997) and the remainder were modified versions of questions from this scale. To confirm the questions represented the four

dimensions of job satisfaction, they were subject to a factor analysis with varimax rotation. A table with factor analytic results is available upon request from the first author. Although most of the questions were developed for this specific research setting, the factor analysis revealed the expected four subdimensions of job satisfaction. The coefficient alpha for the entire set of questions was .87, well above the minimally acceptable reliability threshold. The questions were averaged to represent one measure of overall job satisfaction for each individual. The list of questions can be found in Table 1.

After a scale measure of job satisfaction was constructed for each individual, we evaluated whether the job satisfaction scale could be aggregated to represent the collective attitudes of each work-group. First, agreement and reliability tests were used to determine if within-group agreement exceeded between-group agreement for each item of the scale and the scale itself. This involved calculating intraclass correlation coefficients (ICC). This procedure involves calculating a one-way random effects ANOVA where the variable (job satisfaction scale) is the dependent variable and the group membership indicator is the independent variable. ICC(1) represents the likelihood that a single rating from an individual provides a stable estimate of the group mean while ICC(2) provides an estimate of the reliability of the group mean. Table 1 lists the individual ICC(1) and ICC(2) values for each question and the entire scale. The average item ICC(1) was .15 while the ICC(1) for the scale was .26. Multilevel scholars generally agree that a statistically significant ANOVA is sufficient evidence that aggregation is an acceptable procedure (Klein et al, 2000). Our ANOVAs were significant at the .01 level. Bliese (2000) notes that the ICC(1) value represents the percentage of variance in the item/scale explained by the collectivity. ICC(1) values of .15 and .26 suggest moderately strong work-group effects. The average ICC(2) for the items was .72 while the ICC(2) for the scale was .86. Currently, scholars suggest that ICC(2) values greater than .70 are acceptable indicating the work-group mean of job satisfaction is reliable (Klein et al, 2000). The acceptable ICC(1) and ICC(2) values suggest there is adequate agreement and reliability of job satisfaction between work-group members to

aggregate individual job satisfaction into a measure of work-group job satisfaction. Work-group job satisfaction was constructed by calculating the mean job satisfaction of the employees in the work-groups.

**Organizational Commitment.** As with job satisfaction, field setting restrictions prevented the use of validated measures of organizational commitment and instead we used questions from two different scales (Meyer & Allen, 1997; Porter et al, 1974). The list of questions can be found in Table 1. The items exhibited a coefficient alpha of .83 suggesting the items hold together as a unified scale. As a step toward construct validity of our scale, we tested its relationship with another variable not included in the empirical model. Previous research has suggested organizational commitment, at the individual level, is negatively related to turnover intentions. Tett and Meyer's (1993) meta analysis reported a mean correlation of -.46 between organizational commitment and turnover intentions. Our measure of organizational commitment exhibited a correlation of -.64 with turnover intentions suggesting the scale represents an acceptable measure of the construct. Thus the six questions were aggregated into a scale measure of organizational commitment by calculating a mean for each individual.

Next, we evaluated the ICC(1) and ICC(2) for each question and the entire scale. Table 1 lists these values. The average item ICC(1) was .17 while the average item ICC(2) was .77. Scale ICC(1) was .17 and scale ICC(2) was .76. This level of agreement and reliability suggests it is appropriate to aggregate the individual organizational commitment variable to the work-group level by calculating the mean organizational commitment of the employees in each work group.

**TABLE 1**  
**Scale and Item ICC(1) and ICC(2) for Job Satisfaction and Organizational Commitment**

| Scale/Item  | ICC(1) | ICC(2) |
|---|--------|--------|
| Job Satisfaction Scale  | .26    | .86    |
| I feel I am being paid a fair amount for the work I do.   | .16    | .77    |
| Doing my job well leads to monetary rewards.  | .30    | .88    |
| My pay and benefits are the same or better than other companies in our market.                  | .19    | .80    |
| I like the people I work with.  | .06    | .54    |
| This is a fun place to work.  | .20    | .81    |
| My coworkers and I work together to solve problems.   | .08    | .61    |
| My supervisor treats me with dignity and respect.   | .15    | .76    |
| My supervisor cares about me as a person.   | .20    | .81    |
| My supervisor helps me whenever I need help.  | .13    | .72    |
| My supervisor does his/her best to make [company name] a good place to work.                    | .20    | .81    |
| I know what is expected of me at work.  | .05    | .50    |
| I have a reasonable workload to do my job well.   | .11    | .68    |
| At work, I have the opportunity to do what I do best.   | .09    | .65    |
| Average of Job Satisfaction Items   | .15    | .72    |
| Organizational Commitment Scale   | .17    | .76    |
| I feel a strong sense of belonging to this organization.  | .16    | .77    |
| I am willing to work harder than I have to in order to help this company succeed.               | .12    | .70    |
| I am proud to be working for this company.  | .18    | .79    |
| I frequently gather information on competitors and share it with other members of this company. | .25    | .85    |
| I find that my values and this company's values are similar.                                    | .14    | .75    |
| I would turn down a job with more pay in order to stay with this company.                       | .16    | .77    |
| Average of Organizational Commitment Items  | .17    | .77    |

**Absenteeism.** We relied on employee self-reports to measure absence from work. On the survey, each employee was asked “How many days did you miss from work in the last 12 months (excluding vacation)?” Such an open ended question allows the employee to aggregate days missed due to illness, avoidance of work, disability, and on or off the job injury. Although there are problems using one self report question to measure the construct of absence from work over a 12 month period of time, previous research has shown that the measure has adequate reliability and validity (Johns, 1994). A histogram and normal probability plot showed the distribution of this response was positively skewed as a large number of respondents reported zero or few absences from work. Thus, the variable was transformed by adding 1 (to remove the zeros) and taking the natural logarithm. The distribution was then much closer to normal. The ICC(1) for this (transformed) item was .18 and the ICC(2) was .79 suggesting similar absence patterns at the level of the work-group. Work-group absenteeism was constructed by calculating the mean absenteeism for employees in each work-group.

The validity of this measure was assessed by correlating this variable with a variable constructed from the same information provided by the HR managers. Each business-unit HR manager answered the following question for each of the six work-groups: “In the past 12 months, what is the average number of days missed by the typical employee, not including vacation days?” The correlation between the absence variable provided by the HR managers and the average response per work group provided by the employees was .50 ( $p < .001$ ) suggesting the one question measure of absence behavior represented a moderately accurate measure of behavior of the work-groups<sup>2</sup>.

**Voluntary Turnover.** A measure of voluntary turnover was constructed from information provided by the HR managers and the corporate office. For each occupational group, the business-unit HR manager was asked: “In the past 12 months how many employees in each job category quit or left [company name] voluntarily?” This number was then divided by

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<sup>2</sup> Data from the HR managers was not used in the analysis due to excessive missing data.

the average number of employees in the job category over the last 12 months (provided by the corporate office). The histogram and normal probability plot were skewed thus the variable was transformed by adding .10 and taking the natural logarithm. The transformation made the distribution closer to normal.

**Human Resource Management Practices.** Information about the human resource management practices was collected with surveys from both the employees and the HR managers. To avoid the mono-method bias associated with using employee perceptions of HR practices to predict employee attitudes and behaviors, only information collected from the HR managers was used in the empirical model.

The authors reviewed a list of the HR practices measured in previous, published SHRM research and the questions used to measure them. There are at least three streams of thought regarding the best way to measure HR practices using organizational informants. Huselid (1995) asked informants the percentage of employees covered by the list of HR practices. Ichniowski et al (1997) and others (MacDuffie, 1995) primarily used questions that objectively assessed the presence or absence of the HR practice or policy. This method is most commonly used when information is being collected at the job level. Finally, some scholars have used questions with a Likert-type scale to assess the extent of usage or importance of the practice (Delery & Doty, 1996).

We chose to ask respondents specific, objective questions about the use of HR practices for three reasons. First, since our informants were able to provide information at the job level within each organization, if an HR practice was present, it covered the entire occupational group. Second, there is active debate in the literature regarding the extent of random and systematic error in measures of HR practices. Recent research suggests respondents may be biased by the perceived performance of their firm when providing evaluative information about HR practices. Asking objective information is likely to reduce these biases (Gerhart et al, 2000; Huselid, 1995; Huselid & Becker, 2000). Third, since the theoretic model

specifically excludes questions relating to the maximization of the effectiveness of HR practices (i.e. fit, implementation, effectiveness) we needed only collect information about the practices' presence or absence.

The HR managers provided separate responses for each HR practice question for each of the six occupational groups in their business-units. The questions focusing on the presence or absence of specific HR practices allowed the respondents to indicate "Yes," "No," or "I don't know." The list of questions can be found in Table 2.

The HR practice questions listed in Table 2 are organized by their classification into skill enhancing, motivation enhancing, and empowerment enhancing practices. Practices classified as skill enhancing were those that function to improve the knowledge, skills, and abilities of the collective work group through pre-hire selection and post-hire training. Motivation enhancing HR practices were those designed to affect the motivational forces that energize, sustain, direct, and stop work behavior. These practices include performance evaluation, pay for performance, and promotion programs. Empowerment enhancing HR practices are those designed to encourage employees to effectively contribute their knowledge and abilities to work-group and organizational success. This includes participation, dispute resolution, and communication (Appelbaum et al, 2000).

The classification of the practices into the three categories was conducted by the four authors, with disagreements resolved through discussion. This method was identified as superior to such methods as factor analysis or cluster analysis. These statistical techniques assume HR practices are systematically developed and implemented by HR and top management executives and seek to identify these underlying trends (Delery, 1998). Johns (1993) noted a large variety of political and other pressures, not systematic planning, that affect the use of HR practices. Similarly, in a survey of 14 large organizations, Wright et al (1998) found that individual HR practices were, in most companies, working at cross purposes rather than systematically aligned. Lacking empirical evidence to assume underlying constructs,

grouping the practices by their theoretical, functional outcomes and adding them together in an index seemed the most appropriate course (Delery, 1998).

**TABLE 2**  
**Human Resource Management Practice Questions<sup>a</sup>**

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| <b>Skill Enhancing HR Practices</b>   |
|---|
| 1. Applicants undergo structured interviews (job related questions, same questions asked of all applicants, rating scales) before being hired.                                      |
| 2. Applicants for this job take formal tests (paper and pencil or work sample) before being hired.  |
| 3. On average how many hours of formal training do employees in this job receive each year? <sup>b</sup>  |
| 4. The results of the performance evaluation process are used to determine the training needs for employees in this job.  |
| 5. Employees in this job have the opportunity to receive tuition reimbursement for completing college classes.  |
| <b>Motivation Enhancing HR Practices</b>  |
| 6. Employees in this job regularly (at least once a year) receive a formal evaluation of their performance.   |
| 7. Pay raises for employees in this job are based on job performance.   |
| 8. Employees in this job have the opportunity to earn individual bonuses (or commissions) for productivity, performance, or other individual performance outcomes.                  |
| 9. Employees in this job have the opportunity to earn group bonuses (or commissions) for productivity, performance, or other group performance outcomes.                            |
| 10. Employees in this job have the opportunity to earn company-wide bonuses (or commissions) for productivity, performance, or other operating company performance outcomes.        |
| 11. Qualified employees have the opportunity to be promoted to positions of greater pay and/or responsibility within the company.   |
| <b>Empowerment Enhancing HR Practices</b>   |
| 12. Employees in this job have a reasonable and fair complaint process.   |
| 13. Employees in this job are involved in formal participation processes such as quality improvement groups, problem solving groups, roundtable discussions, or suggestion systems. |
| 14. Employees in this job communicate with people in other departments to solve problems and meet deadlines.  |
| <b>How often do employees in this job receive formal company communication regarding:<sup>c</sup></b>   |
| 15. Company goals (objectives, actions, etc)?   |
| 16. Operating performance (productivity, quality, customer satisfaction, etc.)?   |
| 17. Financial Performance (profitability, stock price, etc.)?   |
| 18. Competitive performance (market share, competitor strategies, etc.)?  |

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<sup>a</sup> With the exception of those marked, the response option for these questions was “Yes, No, I don’t know.”

<sup>b</sup> Response option was “Hours \_\_\_\_\_”

<sup>c</sup> Response options for these questions were: “Never, Annually, Quarterly, Monthly, Weekly, Daily.”



The presence of an HR practice was scored a one and the absence was scored a zero. One question asking about the number of hours of training per year was scored one for 24 or more hours of training per year and zero for fewer than 24 hours<sup>3</sup>. Questions about the frequency of communication were scored as one for quarterly or more frequently and zero for annually or never. The indicator scores were combined into an additive index for each of the three HR subdimensions. “I don’t know” responses were scored as not having the practice. This may seem an inappropriate use of missing data. However each business-unit employs approximately 500 employees. If the top HR manager does not know about the existence of an HR practice in such a small facility it is prudent to conclude the practice does not exist. The first author contacted the corporate HR staff and several business-unit HR managers to confirm this hypothesis. The consensus was that circling “I don’t know” meant “not to my knowledge” an alternative answer for “No.”

To validate the measure of the three types of HR practices, the data provided by the HR managers was compared to HR practice data provided by employees. Due to restrictions imposed by the company, several questions on the HR managers’ survey were not included in the employee survey (questions 4, 5, 9, and 10 on Table 2). However, with regard to the employee reports of HR practices, the average ICC(1) for the remaining of HR practice items was .17; the average ICC(2) was .76. This (a) suggests an adequate degree of agreement among employees in the distinct work-groups regarding the presence or absence of the individual HR practices and (b) provides strong evidence that the configuration of HR practices is unique for each work group in each company. The correlation between the measures of skill, motivation, and empowerment HR practices measured with employee and HR manager data was .34, .64, and .48 ( $p < .001$ ) respectively<sup>4</sup>. The correlation between the employees’ and HR

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<sup>3</sup> According to a comprehensive study conducted by the Bureau of Labor Statistics, employers with 500 or more employees report providing an average of 24 hours of formal training per year per employee (Frazis, Gittleman, Harrigan, & Joyce, 1998).

<sup>4</sup> We calculated a correlation between the skill, motivation, and empowerment indices using employee and HR manager data. The indices calculated using HR manager data were calculated as above less the practices missing from the employee survey. For the employee data, the percentage of employees in each work group indicating the existence of the practice was

managers' responses for a complete index of HR practices was .63 ( $p < .001$ ). These correlations suggest the data collected from the HR managers reasonably represents the state of HR practice in the business units.

Complete data for the 7 variables was available for 175 of the possible 198 work groups. We immediately lost data on 12 work groups when two business-unit HR managers failed to return the HR practice survey. Three business units chose not to survey any of the employees in one occupational group. This was due to lack of compliance on the part of the HR manager or operational constraints preventing the surveying of entire work groups. Four work-groups included data from only one or two employees; an insufficient number for an accurate estimate of work group attitudes and behaviors. Four work groups were missing data from the HR manager regarding turnover. An analysis of the 175 work groups revealed one was an outlier and was not included in the study<sup>5</sup>. Comparative analyses revealed no statistically significant differences between the business units with and without missing data for all seven variables.

**Control Variables.** We know from previous theoretical and empirical work that due to different work processes, technology, and other factors HR practices should and do differ across different occupational groups (Osterman, 1994). Additionally, previous work has suggested that different occupational groups have different levels of job satisfaction (Spector, 1997), commitment (Lee, Carswell, & Allen, 2000), turnover (Cohen & Hudecek, 1993), and absenteeism (Farrell & Stamm, 1988). Thus, the 6 occupational groups were used as control variables. Research has also demonstrated that unionized employees have different levels of commitment (Bamberger, Kluger, & Suchard, 1999), job satisfaction (Pfeffer & Davis-Blake, 1990), turnover (Freeman, 1980), and absenteeism (Deery, Erwin, & Iverson, 1999) than non-union employees. Of the 174 work groups used in the final analysis 24 (13.8%) were unionized. Thus union status was also used as a control variable. No other controls were deemed

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calculated for each practice. The skill, motivation, and empowerment indices were then constructed by calculating the mean of the appropriate practices for each dimension.

<sup>5</sup> Details about how the outlier was identified and verified are available from the first author.

necessary as size, technology, structure, mission, and industry of the business units were the same or very similar.

## **RESULTS**

### **Control Variables**

Table 3 reports means, standard deviations, and correlations between all variables used in the study. As can be seen on this table, there is a broad degree of intercorrelation between the control and study variables and intercorrelations among the study variables. Path analysis, a form of structural equation modeling, was used to analyze the data. The input matrix for a SEM based path analysis is the variance-covariance matrix of the independent and dependent variables. Thus degrees of freedom are a function of the number of variables included in the analysis less the number of estimated parameters in the empirical model. This means there are insufficient degrees-of-freedom to include the seven control variables (union status and 6 occupational groups) in the analysis. It is clear from the correlation table these variables impact the analysis and cannot be ignored.

To remove the variance associated with union status and occupational grouping from the seven variables, we separately regressed each of 7 variables under investigation on the set of seven control variables. The residual for each equation was saved and used in the path analysis for all seven variables. The residuals represented the portion of the variables not explained by the control variables. Output for the individual regression equations and the correlation table of the residualized variables is available from the first author.

TABLE 3

Descriptive Statistics and Zero-Order Correlations<sup>a</sup>

| Variables                               | Mean | s.d. | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13  |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|
| 1. Union Status <sup>b</sup>            | .14  | .35  |      |      |      |      |      |      |      |      |      |      |      |      |     |
| 2. Supervisory Employee <sup>b</sup>    | .15  | .36  | -.17 |      |      |      |      |      |      |      |      |      |      |      |     |
| 3. Driver Employee <sup>b</sup>         | .18  | .38  | .34  | -.19 |      |      |      |      |      |      |      |      |      |      |     |
| 4. Warehouse Employee <sup>b</sup>      | .17  | .38  | .35  | -.19 | -.21 |      |      |      |      |      |      |      |      |      |     |
| 5. Sales Employee <sup>b</sup>          | .17  | .38  | -.18 | -.19 | -.21 | -.21 |      |      |      |      |      |      |      |      |     |
| 6. Merchandising Employee <sup>b</sup>  | .16  | .37  | -.18 | -.19 | -.21 | -.20 | -.20 |      |      |      |      |      |      |      |     |
| 7. Administrative Employee <sup>b</sup> | .16  | .37  | -.18 | -.18 | -.20 | -.20 | -.20 | -.20 |      |      |      |      |      |      |     |
| 8. Skill Enhancing Practices            | 2.63 | 1.20 | -.21 | -.07 | -.03 | .01  | .29  | -.04 | -.15 |      |      |      |      |      |     |
| 9. Motivation Enhancing Practices       | 3.62 | 1.47 | -.64 | .26  | -.36 | -.25 | .17  | .28  | -.06 | .22  |      |      |      |      |     |
| 10. Empowerment Enhancing Practices     | 4.82 | 2.05 | -.27 | .09  | -.13 | -.29 | .30  | .17  | -.15 | .24  | .42  |      |      |      |     |
| 11. Job Satisfaction                    | 3.69 | .35  | -.51 | .01  | -.17 | -.28 | .45  | .05  | -.05 | .19  | .42  | .38  |      |      |     |
| 12. Commitment                          | 3.53 | .39  | -.54 | .13  | -.14 | -.42 | .46  | .16  | -.17 | .24  | .49  | .42  | .84  |      |     |
| 13. Absenteeism                         | 1.38 | .64  | .39  | -.21 | .04  | .33  | -.52 | .01  | .27  | -.24 | -.38 | -.42 | -.48 | -.57 |     |
| 14. Turnover                            | .19  | .19  | .13  | -.30 | .01  | .38  | -.02 | -.20 | .08  | .12  | -.28 | -.23 | -.19 | -.23 | .21 |

<sup>a</sup>N = 174. Correlations calculated before removing the effects of the control variables.

<sup>b</sup>Dummy variable, 1 = The variable describes the work-group, 0 = The variable does not describe the work group.

<sup>c</sup>Mean and standard deviation were calculated by aggregating the raw individual level data to the work group level. The correlations and path analyses were calculated using data transformed at the individual level then aggregated to the work group level (see text of paper).

Correlations greater than .15 are significant at the .05 level (two tailed tests).

Correlations greater than .20 are significant at the .01 level (two tailed tests).

Table 3 reveals an exceptionally high correlation of .84 between job satisfaction and commitment. The same degree of correlation exists between the residualized variables. The degree of correlation between these variables prior to aggregation at the individual level is .70 ( $p < .001$ ). Tett and Meyer's (1993) meta-analysis demonstrated the upper bound of the 95% confidence interval of the uncorrected correlation between the two variables is .61. Preliminary OLS regression and path analyses<sup>6</sup> indicated the collinearity resulted in destabilization of beta coefficients necessary for hypothesis testing. Rather than delete one variable or another, the 13 questions measuring job satisfaction and 6 questions measuring organizational commitment were aggregated into one variable. The items have a coefficient alpha of .89 suggesting they adequately represent an underlying satisfaction-commitment construct.

#### Path Analysis Results

As opposed to a true structural equation model, a path analysis assumes all variables are manifest variables or indicators of the latent constructs they represent. Our theoretical model suggests the relationship between HR practices and employee behavior, specifically turnover and absenteeism, is partially mediated by job satisfaction/organizational commitment. In the first stage of the analysis we compared the theoretical (partially mediated) model to a fully mediated model where the relationship between skill, motivation, and empowerment enhancing HR practices and turnover and absenteeism is fully mediated by satisfaction/commitment. Parameters were estimated with AMOS version 3.61.

The result of the sequential chi-square difference test between the theoretical (partially mediated) and alternative model indicated model fit was significantly better for the theoretical model ( $\Delta\chi^2 = 17.17, 6 \text{ df}, p < .01$ ). The path coefficients and fit indices for these models can be seen in Table 4. As expected, this suggests the relationship between HR practices and absenteeism and turnover is not fully mediated by attitudes.

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<sup>6</sup> Available from the first author upon request.

**TABLE 4**  
**Results of Hypothesis Tests: Theoretical Model Compared to the Final Model**

| Hypotheses             | Hypothesis Summary  | Hypothesized Direction | Theoretical Model     |                | Final Model           |                |
|------------------------|---|------------------------|-----------------------|----------------|-----------------------|----------------|
|                        |   |                        | Std. Path Coefficient | Critical Ratio | Std. Path Coefficient | Critical Ratio |
| 1a/2a                  | Skill enhancing HR practices → Job Satisfaction/Org. Commitment       | +                      | -.04                  | -.54           |                       |                |
| 1b/2b                  | Motivation enhancing HR practices → Job Satisfaction/Org. Commitment  | +                      | .10                   | 1.30           |                       |                |
| 1c/2c                  | Empowerment enhancing HR practices → Job Satisfaction/Org. Commitment | +                      | .17                   | 2.13*          | .19                   | 2.49*          |
| 3a                     | Skill enhancing HR practices → Turnover                               | -                      | .16                   | 2.17*          | .15                   | 2.07*          |
| 3b                     | Motivation enhancing HR practices → Turnover                          | -                      | -.17                  | -2.17*         | -.20                  | -2.67**        |
| 3c                     | Empowerment enhancing HR practices → Turnover                         | -                      | -.07                  | -.97           |                       |                |
| 3d/3e                  | Job Satisfaction/Org. Commitment → Turnover                           | -                      | -.09                  | -1.24          |                       |                |
| 4a                     | Skill enhancing HR practices → Absenteeism                            | -                      | -.02                  | -.23           |                       |                |
| 4b                     | Motivation enhancing HR practices → Absenteeism                       | -                      | -.04                  | -.56           |                       |                |
| 4c                     | Empowerment enhancing HR practices → Absenteeism                      | -                      | -.17                  | -2.14*         | -.18                  | -2.41*         |
| 4d/4e                  | Job Satisfaction/Org. Commitment → Absenteeism                        | -                      | -.16                  | -2.13*         | -.16                  | -2.19*         |
| Model fit <sup>a</sup> |   |                        |                       |                |                       |                |
|                        | $\chi^2$  |                        | .10                   |                | 5.27                  |                |
|                        | df  |                        | 1                     |                | 7                     |                |
|                        | $\chi^2$ Probability  |                        |                       | .76            |                       | .63            |
|                        | CFI   |                        |                       | 1.00           |                       | 1.00           |
|                        | AGFI  |                        |                       | 1.00           |                       | .97            |
|                        | RMR   |                        |                       | .001           |                       | .02            |
|                        | RMSEA   |                        |                       | .00            |                       | .00            |

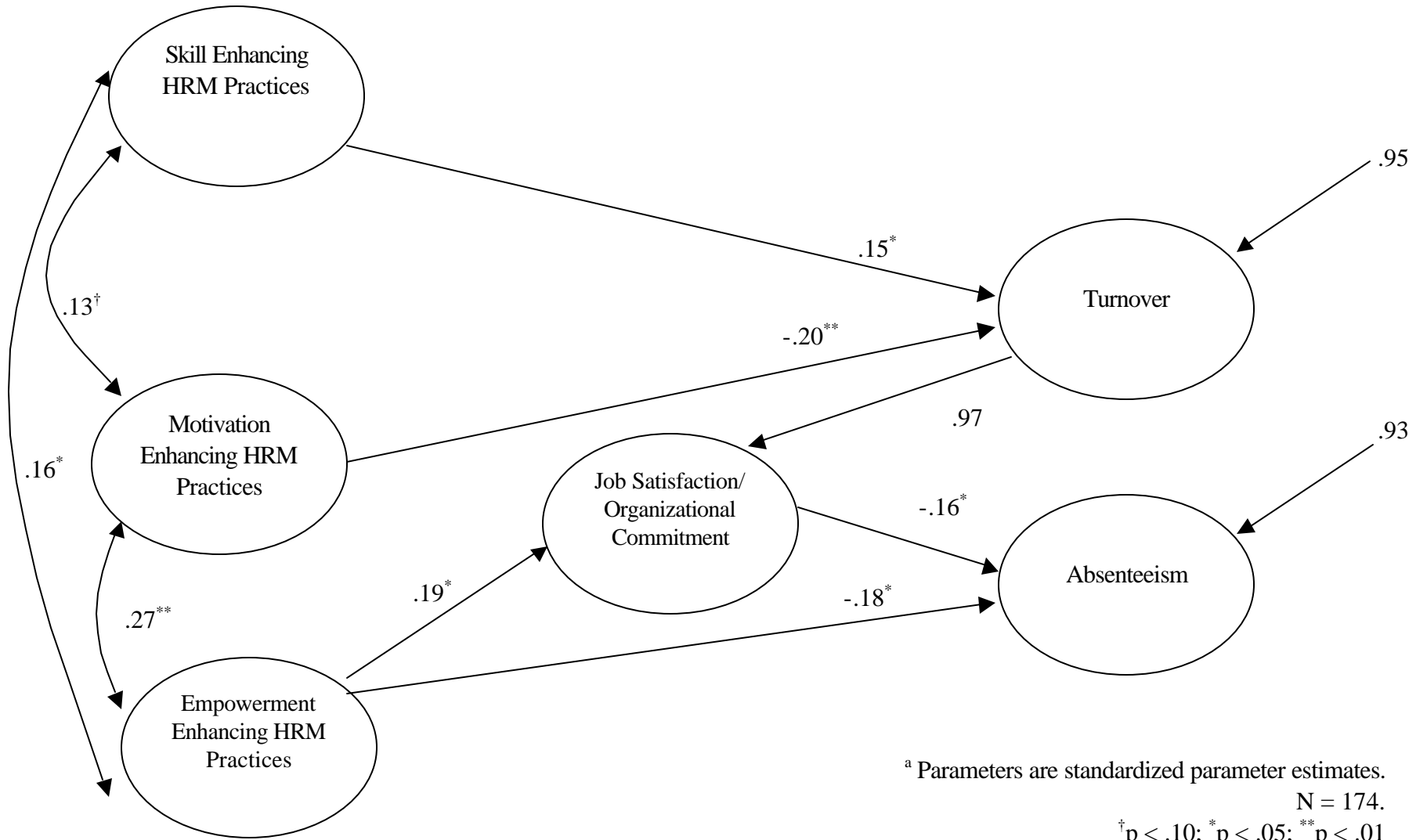
<sup>a</sup>The measurement model statistics for the fully mediated model are as follows:  $\chi^2 = 17.269$ ,  $df = 7$ ,  $\chi^2$  probability = .02, CFI = .73, AGFI = .90, RMR = .036, RMSEA = .092.

\*p < .05, \*\*p < .01

In the next stage, we removed the non-significant paths from the theoretical model and tested the resulting final model against the theoretical model. The chi-square difference test

indicates the final model is not significantly different from the original theoretical model ( $\Delta\chi^2 = 5.179, 6 \text{ df}, p < .52$ ) which suggests it should be accepted as it is more parsimonious (Anderson & Gerbing, 1988). Fit indices strongly suggest the final model is a good representation of the data. The path coefficients and fit indices can be found in Table 4 and Figure 1.

**FIGURE 1**  
**Path Analysis Results Illustrating the Relationships Among HR Practices, Employee Attitudes, and Employee Behaviors<sup>a</sup>**





## Hypothesis Test Results

Prior to combining job satisfaction and organizational commitment into one variable, there were 16 separate hypothesized relationships. Following aggregation into one variable there are 11. Five of the 11 hypotheses were supported at the .05 or better significance level.

**HR Practices' Impact on Collective Attitudes.** Consistent with hypotheses 1c/2c, the final model suggests empowerment enhancing HR practices have a positive relationship with collective job satisfaction/organizational commitment at the .05 level of significance. Hypotheses 1a/2a and 1b/2b were not supported. Neither skill enhancing HR practices nor motivation enhancing HR practices were related to collective job satisfaction/organizational commitment.

**Turnover.** Hypothesis 3 was partially supported. We expected to see direct negative relationships between the three types of HR practices and turnover and a direct negative relationship between job satisfaction/organizational commitment and turnover implying (along with the results from hypothesis 1/2) attitudes partially mediate the relationship between HR practices and turnover (H3d/3e). Instead we found only direct relationships between turnover and skill enhancing (H3a) and motivation enhancing (H3b) HR practices. There was no evidence of a direct or indirect relationship between empowerment enhancing HR practices and turnover (H3c). The relationship between motivation enhancing HR practices and turnover was negative as expected ( $p < .01$ ). Increased use of motivation enhancing practices is associated with decreased turnover. Unexpectedly, we found a positive relationship between skill enhancing HR practices and turnover ( $p < .05$ ). Practices such as training, selection, and educational reimbursement are associated with increased turnover. The implications of this finding will be reviewed in the discussion. Finally, we found no relationship between job satisfaction/organizational commitment and turnover. This contradicts the partial mediation hypothesis and supports the notion that HR practices are related to collective turnover without impacting work attitudes.

**Absenteeism.** Hypothesis 4 was partially supported. As with turnover, we expected to see direct negative relationships between the three types of HR practices and absenteeism and a direct negative relationship between job satisfaction/organizational commitment and absenteeism implying (along the results from hypothesis 1/2) attitudes partially mediate the relationship between HR practices and absenteeism. Instead, we found that neither skill nor motivation enhancing HR practices were directly or indirectly related to absenteeism (H4a/4b). As predicted, both empowerment enhancing HR practices (H4c) and work attitudes (H4d/4e) are directly related to absenteeism ( $p < .05$ ). Results reviewed above suggested empowerment enhancing practices are related to work attitudes. Path analytic results indicate the relationship between empowerment enhancing HR practices and absenteeism are partially mediated by job satisfaction/commitment.

**Variance Explained.** The numbers to the right side of the satisfaction/commitment, turnover, and absenteeism icons in Figure 2 represent the standard estimate of disturbance for turnover and absenteeism. These numbers represent the percent of variance in the variables not explained by the HR practices and attitudes. Thus one minus the standard estimate of disturbance represents the percent of variance explained by the model, similar to R-squared. As can be seen, the model explains 3% of the variance of satisfaction/commitment, 5% of the variance in turnover, and 7% of the variance in absenteeism.

## DISCUSSION

Fundamentally, individuals and groups of employees can only impact organizational performance by increasing efficiency (i.e. changing the output to input ratio) or inducing growth in firm revenues. Either way, employees must engage in role specific or discretionary behaviors to contribute to firm performance. Human resource management practices comprise the primary set of tools available to the organization for influencing how employees think and behave and therefore can only impact firm financial performance through the behaviors and attitudes of

employees (Becker & Gerhart, 1996). Previous researchers have included attitudes and behaviors in their theoretical models but empirically have only examined the relationship between HR practices and firm outcomes leaving the mediating hypothesis untested. (Delery & Doty, 1996; Huselid, 1995; MacDuffie, 1995).

The purpose of this study was to propose and empirically test a theory of the mediating links between HRM practices and firm performance. We tested a portion of the overall theoretical model by investigating the link between HR practices and employee behaviors mediated by attitudes. Our empirical results suggest that HR practices are both directly and indirectly related to collective employee behaviors. Although these results were not entirely consistent with our theoretical model, they do suggest that HR practices can have an impact on attitudes and behaviors. While we cannot test it here, these attitudes and behaviors may be important mediators between HR practices and firm performance.

Our results suggest the relationship among empowerment enhancing HR practices, work attitudes, and turnover were most consistent with the theoretical model. The relationship between empowerment HR practices and turnover was partially mediated by job satisfaction/organizational commitment. The empowerment index consisted of grievance procedures, participation practices, and communication regarding company goals and performance. The practices that comprise this index closely map the components of the Job Characteristics model of work motivation. This individual-level theory suggests that work situations with a certain amount of skill variety, task identity, task significance, autonomy, and feedback induce certain psychological states. These psychological states are theorized to impact both attitudes (motivation, satisfaction, and organizational commitment) as well as behaviors (performance, absenteeism, and turnover) (Hackman & Oldham, 1980). Clearly, our study does not adequately test the Job Characteristics model at the group level. However, it is intriguing that HR practices consistent with this model were directly related to group attitudes as

well as directly and indirectly related to group turnover. Future research of the effects of HR practices on attitudes and behaviors may want to formally include constructs from this model.

It is also noteworthy that the three dimensions of HR practices behaved differently with respect to the other constructs in the model. Specifically, skill and motivation practices were related (differently) to turnover but not to attitudes or absenteeism; while empowerment, as described above, was related to attitudes and behaviors. This differentiation among the dimensions may have been due to the more theoretical grouping of HR practices. We chose to group practices based on their theoretical functionality as opposed to managerial philosophies (Arthur, 1992; Ichniowski et al, 1997), functional divisions in the HR department (Delaney & Huselid, 1996; Delery & Doty, 1996; MacDuffie, 1995; Shaw et al, 1998), or statistical algorithm (Arthur, 1992; Huselid, 1995). Grouping practices by underlying managerial philosophy or by the patterns identified by statistical algorithms may tap into unmeasured variables such as managerial mental models or dominant logic of the role of people in an organization and thus represent a large variety of managerial practices outside the domain of HR practices (Prahalad & Hamel, 1990). For example, the effects of a "Control" based employment system might be confounded by its association with a strict accounting-based monitoring and control system. Grouping by HR functional division ignores the fact that different functional areas have overlapping missions. Future research will need to refine the methodology and grouping of HR practices into common functional categories.

The motivation index consisted of practices related to performance management, pay for performance, and promotion opportunities. Unexpectedly, it was negatively related to turnover in a way not mediated by attitudes. There are at least two possible explanations for this finding. First, work groups managed using more motivational practices may have been affected by some of the factors described in the Job Characteristics model of work motivation. These practices may have increased the intrinsic value of the work thus decreasing turnover (Hackman &

Oldham, 1980). Another possibility is that the that motivation index, which included practices related to group and organizational performance, facilitates the development of work climates or group psychological contracts that encourage staying with the organization (Ostroff & Bowen, 2000). Future research should explore the impact of HR practices on collective attitudes other than satisfaction and commitment as potential mediating variables.

It is important to note the positive relationship between skill enhancing HR practices and turnover. Although this finding is inconsistent the normative HR literature ("More HR is good. Turnover is bad"), this finding is entirely consistent with human capital theory (Becker, 1964). Becker posited that productivity enhancements associated with the enhancements of general skills will be equivalent across all firms. For example, leadership training is valuable across all managerial positions. Improvements in productivity will result in increases in trained employees' market value. If the firm does not compensate employees in accordance with their increased value in the market, outside firms will lure (poach) them away with offers of a market based wage. This finding also suggests the value of applying the Resource Based View of the firm to SHRM research to better understand how the rents associated with enhancement in the human capital pool can be retained by the organization.

#### Strengths and Weaknesses of the Study

Methodologically, this study provided several advancements over previous SHRM work. First, this study explicitly recognized the multilevel nature of organizations and used appropriate multilevel theory to develop and test our model. Previous SHRM research has almost ignored the multilevel issues inherent in this line of research. For example, Delery and Doty (1996), Ichniowski et al (1997), and MacDuffie (1995) measured HR practices for one occupational group but used plant or business unit measures of firm performance. Tsui et al (1997) measured HRM practices at the job level but used individual-level performance and attitude measures. Huselid (1995) measured HR practices at the level of exempt/non-exempt

employees and used a firm level performance measure (Delery, 1998). This study measured HR practices at the level of the work-group and used individual attitude and behavioral outcome measures appropriately aggregated to the same level. Furthermore, unlike previous studies, we made appropriate use of ICC(1) and ICC(2) to demonstrate the necessary level of agreement that allowed us to aggregate to the proper level.

Consistent with previous SHRM research, we took steps to control for mono-method bias. HR practices were measured using subject matter experts: the HR managers of the respective business units. Attitudinal data was collected from the employees in the individual work groups. Finally, turnover data was collected from both the HR manager and archival records and absenteeism was collected from the employees in the work groups. Although there is the small possibility of mono-method bias in the linkages between HR practices and turnover and between employee attitudes and absenteeism, the overall bias in the model is reduced.

Third, the data used to test our theory was exceptionally free of the effects of omitted variables. By using data from autonomous but similar business units of the same company, we were able to control for industry and company specific error. Furthermore, all business units had the same or very similar structure, size, and technology reducing other major sources of unmeasured variance. Thirdly, we were able, at the level of the work group, to control for occupational and union differences in attitudes, behaviors, and HR practices in the set of work-groups. These methodological and statistical controls give us a high degree of confidence in the internal validity of our results.

Finally, collapsing the HR practices into the theoretically derived classifications of skill enhancing, motivation enhancing, and empowerment enhancing HR practices allows consistent replication by other researchers and easier communication with practitioners. For example, researchers or practitioners seeking to improve job satisfaction can readily understand and agree upon what does and does not constitute empowerment enhancing practices unlike the

conflicting typologies and classifications that have been developed in the past (Becker & Gerhart, 1996; Dyer & Reeves, 1995).

A primary weakness of the study is the cross sectional nature of the data. This methodology allowed us to identify trends and explore relationships between variables, however we could not draw firm conclusions about causation. It is also important to note the asynchronous nature of the HR practice, attitude, and behavioral variables. The attitudinal variable represented employees' current affective state ( $t_0$ ). Turnover and absenteeism data represented collective behavior in the 12 months preceding data collection ( $t_{-1}$ ). HR practices, while measured at  $t_0$ , may have been implemented any time in the distant or recent past ( $t_{-x}$  to  $t_0$ ). This confound may explain why the relationship between skill and motivation enhancing HR practices and turnover was not mediated by attitudes. Longitudinal research will be necessary to better tease out causal effects.

A second weaknesses is the measure of absenteeism. Total absenteeism can be decomposed into total absence occurrences and average absence duration. Researchers consider absence occurrences under the control of the employee but consider average absence duration less so (Rhodes & Steers, 1990). Thus our measure of total absenteeism is contaminated by variance not under the control of employees and thus unlikely to be influenced by HR practices. Future research should attempt to collect data on both phenomena.

Finally, while the use of autonomous business units within one company allows us to control a number of external variables to increase the study's internal validity, it limits the study's external validity. We believe that given the embryonic nature of this line of research, our design sheds interesting light on the focal phenomena, but certainly call for future research with other kind of organizations, or even cross-organization research.

## **Future Research**

In addition to the areas of future research mentioned above, this study suggests new lines of SHRM research. The most important next step is to include measures of organizational performance as an outcome of the mediating model. We agree with Dyer and Reeves (1995) and suggest using organizational performance measures most affected by employee behavior. These include productivity measures and customer satisfaction. Inclusion of accounting and financial market outcomes are worthy goals, however theoretical development should proceed through the most theoretically appropriate variables.

A second important step is to examine mediators other than commitment and job satisfaction. Two possibilities suggested above are climate and the psychological states associated with the Job Characteristics model. Other possibilities include the individual facets of job satisfaction and commitment. Additional behavioral measures including OCBs, supervisory behavior, and others would also be important additions to the model.

An obvious exclusion in our study was human capital. Attitudes and behaviors are only effective in producing firm outcomes if they are the right behaviors. If and how HR practices impact individual and collective human capital will further clarify the importance of systematic HRM.

Methodologically, we suggest a continuation of the multilevel approach and continuation of using independent business units within a single organization. The multilevel approach provides the researcher with the ability to model the impact of HR practices on individuals, groups, and firms more accurately than studying one occupation among many in a set of similar firms or overall HR practices in a set of diverse firms. Study of the autonomous business unit allows the researcher to reduce various sources of error variance while maintaining an adequate degree of realism in the unit of analysis.



Lastly, as noted above, this study empirically demonstrated that HR practices differ within specific business units and across the same occupation across different business units. It is likely antecedent variables related to the competitive environment of the firm, business strategy, human capital and others will explain this variation. Future research should examine these determinants.

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