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Abstract¹

Organizational health was conceptualized as consisting of positive outcomes accruing to both firm shareholders and to employees. Research was conducted in several phases to test predictions based on this conceptual model and our report is presented in three volumes. Volume I summarizes the results of phase I which was an exploratory analysis using an existing database of organizational practices in firms located in the State of Minnesota. One hundred and thirteen firms had data on a variety of financial indicators as well as employee well-being measures. Based on four measures of financial health (Return-on-Assets, Return on Equity, after-tax economic return, and total shareholder return) and two measures of employee well-being (average wage for the firm, injury rate for the firm), firms were placed into relatively “healthy” or “unhealthy” classes along with two classes that represented different “mixtures” of firm and employee health. Further analyses revealed that relatively healthy firms differed from unhealthy firms on a number of human resource and management practices. Thus, this first phase proved to be illuminating in terms of the possibility of developing a multi-dimensional conceptualization and definition of “organizational health” and its possible correlates.

Volume I also presents the results of phases II and III of this project. Phase II presented the development of a conceptual model that added more specificity and detail to the definition of and conceptualization of “organizational health” based on related and recent research. In addition, a model was

¹ We acknowledge the enormous amount of effort and work on this project that was contributed by Deborrah Morse-Kahn, Fanmin Kong, Hui Liao, Devasheesh Bhawe, Tracey Leaf, and other graduate students.

developed spelling out our ideas (based on previous research) concerning the process by which human resource and management practices might impact the development of various organizational programs that are health oriented (i.e., physical and safety oriented, psychologically oriented, socially oriented, and financially oriented). These programs, in turn, are expected to be related to a variety of firm and employee outcomes.

Phase III involved an empirical study designed to again provide data to help test our ideas concerning the definition of “organizational health” as well as to test the associations between the human resources/management practices, organizational programs, and outcomes presented in our model. To this end, data was gathered on 819 firms in the State of Minnesota consisting of information derived from a survey of human resource managers of each firm on the various human resource/management practices (e.g., decision-making, communication emphases, TQM, etc.), and organizational programs (e.g., physical work environment, psychological, social, and financial programs, etc.). Wage data were collected from the Minnesota State Department of Economic Security and merged with the survey information for each firm. In addition, injury data for each firm was collected from the Minnesota Department of Labor and Industry, plus financial data on the firm was derived from Dunn and Bradstreet and Standard and Poor data sources and merged with the other information for each firm. Four measures of “employee health” or worker well-being were developed and used for analytical purposes: Employee Satisfaction, Employee Stress (developed from the human resource management survey), average

wage, and injury incident rate). Two measures were used as indicators of firm health: Sales Volume and a Financial Well-being score (derived from the Dunn & Bradstreet data source). These measures demonstrated relatively low correlations amongst themselves. Firms were subsequently cluster analyzed resulting in four reasonably coherent clusters of firms. Cluster 1 represented relatively healthy firms exhibiting relatively high levels of satisfaction, low stress, low injury rates, high wages, high sales, and high levels of financial well-being. In contrast, Cluster 3 was represented by firms that had relatively low satisfaction, below average wages, higher than average injury rates, and low financial well-being scores—the relatively “unhealthy” firms. The two other clusters consisted of firms showing a “mixture” of relatively high and low scores on the firm and worker well-being measures. Further analyses were employed to determine the variables that differentiated between these clusters of firms. Results showed that the clusters differed significantly on a number of firm characteristics (i.e. size and years in business). Analyses also revealed that the clusters differed on a two variables: A variable representing the relatively modernity and cleanliness of the physical environment (i.e. sanitation, ventilation, air quality)—an “Infrastructure and Environment factor, and a variable representing the relative amount of “face-to-face contact” individuals have with other employees and customers—a “Face-to-face” factor. Another set of analyses examined whether the clusters differed on a variety of human resource/management practices. Results were somewhat disappointing in that the various human resource and management failed to show consistent and

significant relationships to the various firm and employee well-being measures once controls were made for unionization, firm size, and firm age, although several of them demonstrated significant zero-order correlations. Little evidence was shown that the organizational programs mediated any relationships between human resource and management practices and the various firm and employee well-being measures. In summary, for this phase of the research, fairly good evidence is developed for a coherent conceptualization of organizational health and affirmed through empirical and analytical methods. There is also evidence for organizational practices---particularly the infrastructure and environments of firms and the amount of face-to-face contact amongst employees—impacting the firm and employee well-being measures. Only limited evidence is provided that the human resource and management practices—either directly or indirectly—impact the various well-being measures of the firm and employees.

Volume II describes the next phase of our research based on additional data provided by employees working in 42 different firms in the State of Minnesota. 42 Firms agreed to participate in a more in-dept study where we examined individual employees responses to a survey that included items concerning their psychological and physical health symptoms as well as reacting to a variety of firm and management practices. We provide an abstract of this phase of our research in Volume II.

Volume III presents the case study write-ups of the firms that agreed to participate in our study by allowing us to interview human resource representatives and survey both employees and supervisors. The analytic work

conducted on the employee survey responses is reported in Volume II. Volume III contains specific firm information including financial data drawn from public sources, abstracts of information drawn from interviews with the human resource manager of each firm, and a review of the relative standing of each of these firms on other quantitative information (e.g., percentile ranking of how the firms stands relative to all firms in the database on such things as number of health and safety plans offered, financial health of the firm, relative injury rate, etc.). Thirty-four of the firms could be classified into one of the four cluster types identified in the earlier stage of research (Volume I) and various themes were abstracted that appeared to represent how firms within these different clusters were described in terms of their cultures, their emphasis on safety, social, and financial programs for employees, how various organizational programs “came into existence”, and so forth. It appears as if there are distinctly different types of programs and cultures that characterize the different clusters of firms.

Introduction

This report summarizes the results of a three-year research effort to help define what is meant by the term “healthy work organizations” (HWO), to discover the antecedents or determinants of organizational health, and to also discover the consequences of organizational health on a number of individual and firm related variables. The research is a natural extension of the former and ongoing work conducted by Dr. Avner Ben-Ner and his colleagues at the Industrial Relations Center (IRC) in the Carlson School of Management at the University of Minnesota. The IRC had assembled a longitudinal database of firms

for the period of 1980 to 1995 covering approximately 850 Minnesota firms in manufacturing, services, and commerce industries using primary and secondary data sources. This data set contained a broad range of measures including those related to the organization of work, firm profitability, healthcare costs, and worker safety. It seemed a natural outgrowth of this former research to extend the database and to investigate more formally and precisely the issue of organizational health.

Interest in organizational health has grown in recent years (Rosen, 1991; Cooper and Williams, 1994); however, the concept of HWOs is still in an early stage of theoretical development. While there has been a small number of case studies (e.g., Cooper and Williams, 1994; Swanson and Murphy, 1991; Jaffe, 1995), there has been little systematic research about HWOs. A number of studies have evaluated workplace stress-management interventions, but the health effects of these intervention programs have been difficult to assess (Murphy, 1996). Little effort has been made to establish any linkages between worker well-being and other measures of organizational performance (Sauter, Lim, and Murphy, 1996). Previously, research has generally focused on worker well-being (e.g., worker stress, injury rates, etc.) with little attention paid to the idea that healthy organizations may also be thought of as those that are profitable and create favorable financial returns to various firm stakeholders (including workers). Thus, a major objective of our research effort was to conceptualize and define organizational health as being comprised of both organizational performance financial indices as well as worker well-being

variables. That is, HWOs are conceptualized as those that maximize and/or trade-off both organizational performance and worker well-being. In the current research, we report on both a quantitative examination of organizational health, and a qualitative study that helps us understand some “best” and “worst” practices, and provide a more richer understanding of what organizational health is and how it is defined.

In addition to providing definitional structure to the term “healthy work organizations”, this research provides insight into the determinants of health--both organizational performance and worker well-being. While other researchers have been working to develop models of workplace practices (e.g., in terms of technology, human resource practices, management practices, etc.) and their impact on firm performance, this research has focused almost exclusively on organizational performance rather than worker well-being (Ichniowski, Shaw, & Prennushi, 1997, Osterman, 1994, 1995; Ben-Ner and Jones, 1995). Thus, another objective of the research project reported here is to expand on this literature by building a theoretical model of organizational health that includes management, human resource, and other organizational practices thought to impact organizational health, and to empirically test parts of this model. This research attempt is made in response to the challenges presented by Sauter, Lim, and Murphy (1996) “to establish, in a statistical fashion, 1) the relationship between the two dimensions of organizational health (organizational performance and worker well-being) and 2) the relationship between organizational characteristics and organizational health”. (p. 251).

A final objective of the present research is to evaluate the consequences of healthy and unhealthy organizations. That is, after building our theoretical model, we make predictions concerning the effects of organizational health, as we define it, on various firm and employee well-being measures, and test them empirically.

Research phases

Our research took several different phases, roughly equivalent to one-year per phase.

Phase I Research

Phase I involved an exploratory analysis stage where we used the existing IRC dataset. This study is described in detail and is contained in Appendix A; here we provide a shortened description of the study.

The main questions in this research phase to be answered were:

- To determine if we could find direct or proxy measures of organizational health in a rich dataset that included several hundred companies. Specifically, we wanted to isolate and examine individual measures of organizational performance as well as measures of worker well-being.
- To examine the relationships between these organizational performance measures and worker well-being measures.

- To examine on a preliminary basis whether any of the work, organizational, and human resource practices related significantly to the key variables of organizational health.

Phase I: Method

Data Set and Sample: The data set used in this exploratory study was constructed from several sources—the primary source was the survey of organizational practices conducted by Dr. Avner Ben-Ner of firms in Minnesota over the years 1993 to 1997 (MHRMPS—or the Minnesota Human Resource Management Practices Survey). This survey was sent to 2,021 firms and 874 firms responded (a 43% response rate). These data were conjoined with several other data sources: Wage and employment data from the Minnesota State Department of Economic Security (DES), workplace-safety data from the Minnesota Department of Labor and Industry (DOLI), and financial data from the publicly available COMPUSTAT. This sample of 874 firms was reduced to 680 by the application of several elimination criteria: Firms were eliminated if wage and salary data were unavailable, if they had fewer than 20 employees at the time of the survey, if more than half of their employment was located outside of Minnesota, or if they had submitted duplicate responses. Of these 680 firms, 167 (or 24.6%) were public firms (i.e., their stock is traded publicly), whereas 513 (or 75.4%) were private. However, only 113 firms (all public) had financial data that was publicly available—and therefore the analyses were largely based on these 113 firms.

Proxy Measures of Organizational and Employee Well-Being: There is a wide variety of potential indicators of firm performance, including measures of productivity, profitability, share prices, company growth, and so forth. Based on work by Abowd (1989) and others, we elected to explore measures typically used by financial analysts and researchers: Return-on-Assets (ROA), Return-on-Equity (ROE), after-tax economic return (ERET), and total shareholder return (TSR) as four broad alternative measures of the well-being of a company's shareholders. For each company, we also created relative measures of shareholder returns by dividing each company's return measures by the average of the measures in the industry of their primary operation, where industry was defined at the two-digit SIC code level. Details concerning the definitions of these variables and the sources from which they were derived can be found in the paper describing this research phase by Ben-Ner, Kong, and Arvey (in preparation) in Table 3 of Appendix A. Also shown in Appendix A are the correlations between these financial variables, indicating that they are moderately correlated with one another—thus, we elected to examine each one of these as potential indicators of the financial health of the firm.

For employees, there is also a wide variety of potential indicators of well-being: Total compensation, job satisfaction, workplace safety, stability and security of employment, opportunities for involvement in decision-making, and more. Because this first phase involved an already developed database, we could only use measures that were included. Thus, we used the following variables as key indicators of employee well-being: The average wage level in

the firm, and the incidence rate of injuries (how many injuries of any severity were sustained per 100 employees) to capture how prone an organization is to injuries. Two other injury variables were examined: severity, and a composite of rate and severity. These are discussed in Appendix A—they were eventually dismissed as accurate indicators because of their low correlations with other variables. Relative measures of these two wage and injury variables were also created in the same fashion as with the firm performance variables. Further analyses indicate that wages were positively correlated with injury rates (.20—for the absolute measures, .23 for the relative measures)—a finding that is commonly observed in the literature. Firms compensate high risk jobs and occupations by paying higher wage rates (compensating differentials).

Thus, for this first investigation using an existing database, four measures of financial performance were available (in both relative and absolute terms), and two measures of employee well-being were available (again in both relative and absolute terms). One question concerns whether measures of organizational performance are correlated with measures of worker well-being. Table 3 of Appendix A indicates that these measures demonstrate very low, if any correlational properties. For example, absolute ROA correlates -.08 with wages, and .08 with injury rate. TSR correlates .09 and .06 with wages and injury rates, respectively. To answer, at least on a preliminary basis, the question posed earlier for this study as to whether there are strong relationships between the variables associated with a firm's financial well-being and variables associated

with employee well-being—the answer appears to be essentially no. These represent essentially independent variables and should be treated as such.

Based on these four measures of financial performance and the two measures of worker well-being, each firm was classified as “belonging” to one of four types depending on whether they were assigned as being relatively “good” or “bad” on the financial or employee well-being variables: GG (or Good on Financial Performance and Good on Employee Well-being), GB, BG, and BB. Whether a firm was assigned as a “Good” or a “Bad” was based on dividing firms at the median of each variable and simply counting the number of times a firm was assigned into a particular classification over 16 possible assignments (4 measures of financial performance x 2 measures of employee well-being x absolute or relative measures)—see Appendix A for more details. Further analyses showed that indeed firms that classified into the four cell scheme differed significantly on each of the 16 variables—an expected finding because these were the variables used to classify each firm (see Tables 8, 9, and 10 of Appendix A). And as expected, employees do much better in firms classified as being “good” on the employee well-being measures, and firms do much better if classified as “good” on the financial indicators. We designate firms that are “good” on both dimensions (GG) as relatively “healthy companies”, and those that are “bad” on both dimensions (BB) as relatively “unhealthy companies”.

To answer the question of whether healthy companies differ from unhealthy companies on firm attributes, analyses were conducted comparing the firms across the four cells of our classification matrix on variables of firm size,

firm age, employee average age, employee average tenure, employee average education, and union status. Tables 11 and 12 of Appendix A present these results that indicate indeed there are differences: Healthy firms and BG firms (bad for financial performance, and good for employee well-being) in our sample are much larger than unhealthy and GB firms. Firm size has long been positively associated with higher wages for employees, greater compensation for executives, and higher returns for shareholders (although explanations for these phenomenon vary widely). If “lean” translates into “small” then the expression “leaner is meaner” gets some confirmation in our sample. In addition, healthy firms and BG firms are relatively older than unhealthy firms. A substantially larger proportion of GG and BG—both good to employees—were unionized than of BB and GB firms. The data also show that employees in unhealthy firms have employees who are, on average, younger, have shorter tenure, and have less education than their counterparts in healthy firms (as well as in GB and BG firms).

Thus, the data show that healthy and unhealthy firms tended to differ on several demographic and firm level elements. Another question revolves around whether healthy and unhealthy firms differ in terms of a variety of management and human resource practices as well as the way in which work is organized and completed. The database permitted some examination of this question. The Ben-Ner survey (MHRMPS) included a number of items ascertaining the kinds of task characteristics carried out by core employees in the firm (Task Complexity, Task Variability, Work Skills Transferability, Activity Interdependence, Work Skills

Requirements) as well as a number of HR practices. The practices were divided into several categories: 1). Those that foster employee participation in decision-making at the individual level (Individual Decision-Making Discretion); 2) Those that foster involvement at the group level (Use of Quality Circles, Self-Managed Work Teams, Joint Labor-Management Committee); and 3) Those that foster involvement at the firm level (employee representation on the board of directors). There were also item questions about employee participation in the financial performance of the firm, again at the individual, group, and firm level involvement (Individual Incentives Offered, Group Bonus, Gain Sharing, Stock Purchase, Cash Profit-Sharing, Deferred Profit Sharing, and Employee Stock Ownership Plan). Finally, there were a number of questions concerning supporting Practices (Training in Statistical Analysis, Skill-based Pay, Job Rotation, Job Redesign, Training in Team Building Skills, Employment Security).

Analyses of the database indicated that there is a variety of HR and management practices that significantly distinguish between healthy and unhealthy companies. Again, details of these analyses are reported in Appendix A (see Tables 11-14 and text), but a short summary of the findings is as follows:

- The tasks of core employees in healthy firms are substantially and significantly more complex than tasks of employees in unhealthy firms.
- Worker skill requirements are substantially higher in healthy firms than in unhealthy firms.
- Task variability is slightly higher in healthy organizations.

- Healthy firms tend to rely on technologies associated with high task uncertainty and high task interdependence or relatively advanced technologies, whereas only a small proportion of unhealthy companies had an advanced technology.
- Collective decision-making is practiced in healthy firms more than in other types of firms.
- Healthy firms appear more likely to employ combinations of human resource practices that involve employees in both decision-making and in financial returns.

The results of this first phase of research were illuminating in a number of ways. First, it appears that there are some useful indicators of both financial performance and employee well-being that can be derived and used to form a more precise picture of healthy and unhealthy firms. Second, it appears that the classification scheme developed here, although somewhat crude, could be useful in terms of organizing firms into a taxonomic structure based on relative organizational health. Third, it appears as that there are several features that distinguish between healthy and unhealthy firms, although we are not able to provide any conclusions regarding causality or predictability based on these features.

On the other hand, this study, based on a previously formed database, was somewhat teasing regarding a number of elements.

- We needed a more theoretically guided model to lend some concrete definition to organizational health. The study provided

only a limited number of basically “outcome” variables that were associated with health, but more intermediate and process variables needed to be identified.

- We needed additional and more comprehensive measures of variables that might be considered direct indicators of organizational health as identified in the literature as well as those suggested by the study in Phase I.

Thus, Phase II was carried out, as specified in the proposal.

Phase II: Conceptual Development

Step 1. We conducted a comprehensive literature review to determine existing views on the attributes of healthy organizations. As mentioned earlier, existing literature is sparse². One of the first authors to articulate the concept was Rosen (1991) where he suggests that a healthy company has “shared humanistic values at the core of the company” (p. 9) and that employees in healthy companies add value to the bottom line—thus making the connection between employee well-being and firm performance. He outlines eight attributes of healthy organizations: Respect, Empowering Leadership, Managing Change, Lifetime Learning, Physically and Mentally Healthy Employees, Well Designed Jobs, Celebrating Diversity, and Balancing Work and Family Demands. Similarly, Cooper and Williams (1994) edited a book entitled “Creating Healthy Work Organizations” including chapters dealing with the following topics: Corporate Wellness Programs, Mental and Physical Health Screening, Company Alcohol

² However, it is growing. It is interesting to observe that there is somewhat of a proliferation of ideas concerning what elements comprise healthy organizations. For example, spirituality has lately made its way into the taxonomic structure (e.g., “Chicken Soup for the Soul at Work” [Cranfield, et al.]).

Policies, Stress at Work, and Employee Assistance Programs, among others.

The chapter by Stephen Williams (1994) in this book was particularly insightful in that he identified four central elements of organizational health: Environmental Factors, Physical Health, Mental (Psychological) Health, and Social Health.

More recently, Williams and Cooper (1999) called attention to the need to consider both the economic health of employees and that of the firm:

“There is a strong link between the financial success of the organization and the well-being of the employee. It could be argued that the economic prosperity of an organization might also be a predictor of employee health. It presupposes that, in order to promote well-being at work, the organization has to prosper. Our experience shows that economically healthy organizations are the ones most able to provide a working environment that promotes the physical, psychological and social health of their employees. We also believe that this investment in well-being is repaid, as healthy employees will produce greater economic prosperity for their employer.” (p. 6).

While we are not aware of any scholarly literature on the organizational factors that may affect the health of organizations from the joint perspective of both employees and stakeholders, there is some research literature suggesting that firm performance and thus the financial status of the firm are influenced by a number of managerial and organizational practices, policies, and structures. It has been suggested that systems of human resource management practices will affect firm performance and productivity (Ben-Ner and Jones, 1995; Huselid, 1995; Becker and Huselid, 1998, and others). Becker and Gerhart (1996) summarized the research evidence indicating that a number of human resource work practices (e.g., self-directed work teams, job design, and pay systems) can translate into more effective firm performance. Ichnowski, Shaw, & Prennushi

(1997) showed that production lines with relatively innovative work practices, which include incentive pay, teams, flexible job assignments, employment security, and training, achieve substantially higher levels of productivity than do lines with a more traditional approach. Appelbaum, Bailey, & Berg (2000) also detail the positive productivity and performance impact of innovative practices on the firm.

Economic Perspectives on Organizational Health

There are two relationships that help to characterize organizational health. First, there is the relationship between outcomes for employees and outcomes for shareholders and whether the fortunes of these two parties move together, for better or worse, or whether they are locked in a zero-sum game. Second, there is the relationship between various factors at the firm level and firm outcomes. We want to understand what makes for productive firms, and what makes for fair firms; healthy organizations are both productive and fair.

Productivity is the result of two broad factors: good management practices regarding strategies and deployment of non-human resources, and good work effort by employees. In this study we are focusing on the factors that elicit employees' effort only³.

Employees' effort depends on the opportunities they have to do good work and exercise good judgment (when delegation is useful), and the incentives they have to do the right thing. In addition to their response to economic incentives where the quid pro quo is visible, employees are likely to resonate with other

³ Empirically, other management practices will be treated as missing variables. However, their quality is likely to be highly correlated with the quality of human resources management practices

factors. They are likely to work better if the working conditions are better; if they are treated well, they are likely to reciprocate (beyond the quid pro quo) (Akerlof; Fehr and Gächter).

Being treated well means that 'fairness' is respected by the company, perhaps in the sense that the well-being of the company is shared with employees. This may be done directly through profit sharing plans and ESOPs, or by setting compensation that is linked to company productivity. This creates a sense of a shared fate that the literature on profit sharing and ESOPs suggests is good for productivity. The same may apply to informal arrangements that effectively linked the returns to employees and shareholders, as may be the case in healthy and unhealthy companies. With unhealthy companies, poor outcomes may be just a result of poor productivity and inability to pay because of poor management and the lack of a sense of shared fate. For healthy companies, however, if this status persists over a few years then the mutual gains may generate a virtuous cycle. Where employees care about the fate of the companies for which they work, they will also engage in mutual monitoring and will seek to impose work standards that promote productivity (Kendel and Lazear, 1992; Ben-Ner and Jones, 1995). Companies in which the work is structured so that employees have opportunities to see each other frequently allow for both mutual monitoring and the exercise of social pressure for the benefit of greater productivity.

In sum, what is likely to distinguish a healthy company is good management practices, good human resource practices, good working

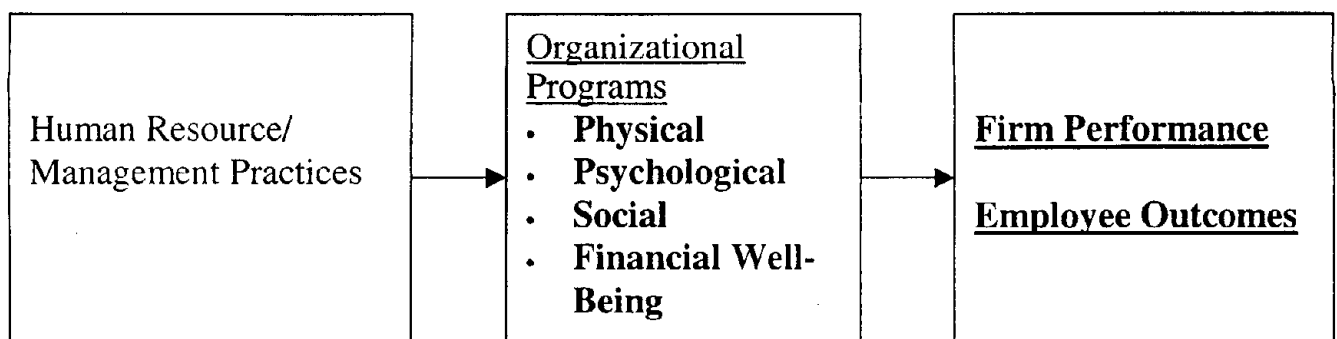
conditions, fairness-reciprocity practices, and the employees' ability to observe each other.

There are various contingencies that make certain managerial and organizational strategies more or less useful. For example, in situations where the production process is transparent and employees' actions are observable at a low cost, incentives are unnecessary. While they may work, their cost is likely to exceed the benefit they generate.

Organizational Health Model

Given the extant research literature, it was useful to formulate a working model to drive the second phase of our research. Figure 1 below presents the elements of this model. Essentially, the idea is that management and human resource practices, whether intentional or not, will create formal or informal organizational programs for employees. Following the lead provided by Williams (1994), these programs may be organized around several basic health “factors”: Physical, Psychological, Social, and Financial Well-being. These factors will lead to or be associated with several basic “criteria” or outcomes for both the firm and the employee.

Figure 1
A Process Model of Organizational Health



Description of Terms/Factors:

1. **Human Resources Management Practices:** These include practices that guide and direct the work of employees by affording them various degrees of *decision-making* (latitude for individual discretion, quality circles, self-managed work teams, and joint labor-management committees, representation on the company board of directors), by providing them with *individual or group incentives* that tie employees' compensation to some measure of performance (commissions and performance-based pay, group bonuses and gain-sharing programs, stock purchases, cash profit sharing, deferred profit sharing, and employee stock ownership plans), and *supporting practices* are that complement the first two categories (training in team-building skills, skill-based pay, employment security, and training in statistical analysis, job rotation, job redesign, and training in team-building skills).
2. **Physical Programs:** These programs include constructing a favorable physical environment around work (e.g., Lighting, Ventilation, and Air Quality), as well as programs directed toward maintaining or encouraging physical health (e.g., Smoking Cessation programs, On-site Health Clinic, Health Screening, etc.).
3. **Psychological Programs:** Programs that are directed toward making work (jobs and careers) more satisfying, enriching, and less stressful (e.g. Flextime, Tuition Reimbursement, Diversity, Childcare programs, etc.)

4. **Social Programs:** Activities and programs designed to create a sense of social belonging or networking (e.g., Company Picnics, Company Sport Teams, etc.).
5. **Financial Well-being Programs:** Programs that are designed to enhance the financial well-being of employees (e.g., Medical and Dental plans, Disability plans, etc.).
6. **Firm Performance:** The set of criteria that represent the financial well-being of shareholders (Return-on-Assets and Returns-on-Equity).
7. **Employee Outcomes:** The set of criteria that represent employee health outcomes such as job satisfaction, wages, and injuries.

The implications of this model are that organizational health is:

- Multidimensional and multi-faceted in scope.
- Involves practice, program, and psychological elements.

The literature from the organizational health domain as well as from the organizational practices help to support the component parts of the model.

Phase III of our research was designed to test this model (or parts of it).

Phase III: Primary Data Collection to Test Model

This phase of the research involved re-sampling the firms included in the original MHRMPS study (870 firms) as well as to extend the sample to include additional firms in the State of Minnesota. Several new datasets were collected for each firm sampled: A new survey that included more direct questions regarding “health” practices (Survey II), wage and employment data

from the Minnesota State Department of Economic Security (DES), workplace-safety data from the Minnesota Department of Labor and Industry (DOLI), and financial data from Dunn and Bradstreet and Standard and Poor.

Survey II: A new survey was developed based on the elements of the model described above. The survey was designed to be completed by the most senior human resource manager in the firm sampled. Appendix B presents the survey that was developed. There were several sections of the survey:

- I. Background information: Questions about the number of employees in the firm, their average age and education, the proportion of the workforce that was unionized, etc.
- II. Descriptions of Work and Family Programs: Questions about the presence or absence of job programs, workplace programs, educational programs, job transition programs, physical, psychological, and health-related programs, social programs, etc.
- III. Descriptions of Security, Safety, and Environmental factors: Questions about the presence or absence of various security measures, health and safety practices, lighting and ventilation conditions, etc.
- IV. Descriptions of Human Resource Practices in the firm: Questions about the presence or absence of such programs as TQM, job redesign, compensation, training, etc.

- V. Descriptions of the kinds of tasks performed by employees and the impact of technology on employee skills.
- VI. Description of the Communication practices in the firm.
- VII. Descriptions of employee morale and satisfaction: Questions about whether the employees of the firm are recognized, highly committed, under stress, satisfied, etc.

Wage and Employment. Data on wages, salaries, and employment for approximately 650 firms in the sample were acquired from the Minnesota Department of Economic Security (DES). These data were integrated with the survey using the federal employer identification number and company name, address, and SIC code. The data were available at the establishment level and have been aggregated by us to the firm level.

Injury Data. Data based on workplace injuries, including the number of indemnity claims and the number of lost workdays for each claim in our sampled firms was acquired from the Minnesota Department of Labor and Industry (DOLI). In Minnesota, the employer files a copy of the First Report of Injury Form with DOLI if indemnity benefits are to be paid to compensate for lost wages or functional impairment due to injury, illness, or death on the job. The DOLI data files are records created from these First Reports, updated with subsequent information and actions taken. The data were integrated with the survey and other data using the state employer identification number and company name, address, and SIC code information.

Firm Financial Data. Two sources of information were obtained that provided information regarding the financial performance of the firms in our sample. First, Standard and Poor information drawn off Compustat was obtained; unfortunately, such data were only available public firms (whose stock is traded publicly)--a small number of the firms in our sample (around 60). Second, a database was acquired from Dunn and Bradstreet that provided much more financial information on each firm, including commercial credit worthiness and financial stress scores based on their own algorithms and calculations.

Pension benefits, Deferred Compensation, and Welfare Benefits Data. Detailed information of financial returns participation in tax-qualified deferred compensation plans was extracted from the U.S. Department of Labor/Internal Revenue Service Form 5500 data files. These data include the number of active participants for each plan and the total plan asset value, along with other financial data and descriptions of the type of plan. Information about employee stock ownership plans and deferred profit sharing, as well as various pension plans were included. Employers are required to report on these plans under the Employee Retirement Income Security Act of 1974 by filing a Form 5500.

Sampling Strategy and Returns.

We originally intended to reach approximately 2,700 firms (both privately held and publicly traded) with at least 20 employees in diverse industries outside agriculture [SIC: 1000-8999], headquartered and operating in the State of Minnesota. Based on our earlier 1994 and 1996 survey efforts, we expected

about a similar return rate (38%). The population and number of firms sampled contained five groups of firms:

1. **Private Firms with Employee stock ownership plans:** The names of these firms were retrieved from three independent sources: The National Center for Employee Ownership data set (1998), the Minnesota ESOP Association membership list (1998), and the Form 5500 of 1997 (the federal tax form filed under ERISA). There were 246 of these firms.
2. **Public Firms:** All publicly traded firms that appeared on the 1998 CompuStat database (as described below), not included in 1 above. There were 379 firms identified using this method.
3. **Private Retail Food Firms:** All firms in the retail and wholesale food industry [SIC: 5140-5149, 5400-5499, 5810-5813] with 20 or more employees, not included in the 1 and 2 above. These firms were identified in the 1999 Dunn and Bradstreet database. The sample size for this group was 1191.
4. **Survivors of other private firms from earlier survey:** All firms that were still operational who had previously responded to our 1994 or 1996 survey of HR practices (MHRMP I) not already in 1, 2, or 3 above. The number of firms represented in this category was 609.
5. **Randomly Selected Private Firms:** A random sample of private firms with 20 or more employees in all industries [SIC: 1000-8999] not included in 4 above. These firms were identified using the 1999 Dunn and Bradstreet database. There were 268 firms identified in this manner.

Two methods of data collection were involved. Surveys were first mailed to the population of firms identified using the procedures spelled out above. The surveys were mailed out in November of 1999. Follow-up postcards and a second mailing were completed in January of 2000. The response rate was somewhat disappointing; as of June 2000 only 478 (or 19.5%) firms had responded with valid questionnaires. Thus, a telephone survey was planned to increase the number of firms responding (the retail food industry was particularly targeted via the additional funding effort provided by The Retail Food Industry Center to concentrate on this sample of firms). Based on both the mail and telephone methods, a total 2,693 firms were surveyed either by direct mailing or telephone procedures. Table 1 presents information about the number of firms included in the survey, the number of firms that could have responded (i.e., the post office did not return the survey indicating that it could not be delivered), and the number of returned surveys.

Table 1. Firms Surveyed and Response Rates

Sampling Group	Number of firms surveyed	Valid candidates	Valid returns	Response rate
1. ESOP firms	246	226	76	33.63%
2. Public firms	379	336	81	24.11%
3. Food firms	1,191	1,100	296	26.91%
4. 1994-96 survey survivors	609	561	275	49.02%
5. Randomly selected firms	268	231	91	39.39%
Total	2,693	2,454	819	33.37%

This sampling strategy, closely emulating our previous survey efforts, was based on our desire to include large numbers of different types of for-profit firms from diverse industries. We also wanted to over-sample ESOP firms, and firms in the retail food industry because of our special interest in these organizations—largely because our previous survey efforts had emphasized these firms and we wished to continue with the longitudinal aspects of the database. By including these firms, we will be able to track patterns of HR practices and their relationships to organizational health over time. Thus, the sample is certainly not totally random (although it is in part). However, there is reason to expect a panoply of workplace programs and practices found amongst U.S. firms among the firms sampled as well as to find a wide range of technologies and other factors that are likely to influence the organization of work and its impact on organizational health.

Sample Returns

Data collection efforts stopped in November 2000. After restricting the sample to include firms that employed 20 or more employees and to have 50 percent of their employees working within the State of Minnesota, the total number of survey returns was 819, which represents a response rate of 33.37%. The representation of the sample across industry types is shown in Table 2 below:

Table 2. Sample Across Industry Types

<i>Industry</i>	<i>Frequency: Whole sample^a</i>	<i>Frequency: Respondents^b</i>	<i>Response rate (%)</i>
Construction	76 (3.10%)	35 (4.27%)	46.05
Manufacturing	467 (19.03%)	220 (26.86%)	47.11
Transportation and Public Utilities	55 (2.24%)	22 (2.69%)	40.00
Wholesale Trade	212 (8.64%)	80 (9.77%)	37.74
Retail Trade	1,113 (45.35%)	294 (35.90%)	26.42
Finance, Insurance, and Real Estate	104 (4.24%)	46 (5.62%)	44.23
Services	240 (9.78%)	122 (14.90%)	50.83
Firms with SIC codes Missing	187 (7.64%)	0 (0.00%)	0.00
Total	2,454 (100.0%)	819 (100.0%)	33.37

Notes: a. Figures in parentheses represent proportion to the whole sample.

b. Figures in parentheses represent proportion to all respondents.

The response rates differed by industry, with the Construction, Manufacturing, and Service firms demonstrating a higher response rate (46.05%, 47.11%, and 50.83%, respectively) where as the retail trade firms showed a relatively low rate (26.42%).

Preliminary Statistics and Analyses.

Appendix C presents a data dictionary of six major databases used for our preliminary analyses: Survey II instruments, the Dunn & Bradstreet data, DES data, DOLI data, S&P COMPUSTAT, and Form 5500 Series.

Because the survey instrument was lengthy, we factor analyzed various parts of the survey to reduce the number of variables into a more manageable set. Appendix D presents the result of these factor analyses. There are several other variables that were constructed largely on rational and theoretical bases. Table 3 below presents a more thorough description of these variables.

Note that Survey II data, the Dunn & Bradstreet data, and S&P COMPUSTAT are firm level databases, whereas DES data and Form 5500 series are establishment level databases, and DOLI data are individual level databases. Before we could merge these different databases together by Company Identification numbers, we had to integrate DES data, DOLI data and Form 5500 Series into firm level datasets. In addition to the factor analyses based on Survey II information and data merging process, we also calculated various well-being measures for employees as well as for shareholders based on the merged data set. As a result, we created a cross-sectional working data file.

Working Data File.

Based on the above preliminary analyses, we constructed a working data file that contained the variables we believed were most central to our healthy work organization model and from which we could begin our analyses and tests of the model. Table 3 below presents the variable list and definitions of this file. Included in this file are data from

Survey II, the Dunn and Bradstreet, the DES and DOLI databases for 819 firms.

Table 3. Working Data Profile

<i>Variable</i>	<i>Definition/Description</i>	<i>Data Source</i>
<i>1. Background Information</i>		
Fsize	Total number of employees in MN	Survey II
Fage	Years in business since establishment	Survey II
Union	Percentage of unionized workforce in MN	Survey II
Public	Public firm indicator	COMPUSTAT
Eage	Average age of Minnesota employees	Survey II
Eeduc	Average education of Minnesota employees (years in school)	Survey II
Tenure	Average tenure of Minnesota employees (in years)	Survey II
Female	Percentage of female workforce in Minnesota	Survey II
Industry	One-digit SIC code industry dummies	D&B, DES
Oneind1	1 = Mining	D&B, DES
Oneind2	2 = Construction	D&B, DES
Oneind3	3 = Manufacturing	D&B, DES
Onind4	4 = Transportation and Public Utilities	D&B, DES
Oneind5	5 = Wholesale Trade	D&B, DES
Oneind6	6 = Retail Trade	D&B, DES
Oneind7	7 = Finance, Insurance, and Real Estate	D&B, DES
Oneind8	8 = Services	D&B, DES
<i>2. Company Human Resource Practices</i>		
Fi	Dummy for the presence of an individual-oriented incentive plan	Survey II
Si	Dummy for the presence of at least one individual-oriented supporting program. [Training in	Survey II

	<i>statistical analysis, or skill-based pay]</i>	
Dg	Dummy for the presence of at least one group-oriented decision-making participation plan. <i>[Quality circles, self-managing work teams, quality of work life, joint labor-management committees, or employee representation on the board of directors]</i>	Survey II
Fg	Dummy for the presence of at least one group-oriented financial returns participation plan. <i>[Group bonus, gain sharing, cash profit sharing, deferred profit sharing, stock purchase plan, or employee stock ownership plan]</i>	Survey II
Sg	Dummy for the presence of at least one group-oriented supporting program. <i>[Training in team building skills, job rotation, job redesign, information sharing, or employment security]</i>	Survey II
EduF	The factor score of Educational programs	Survey II
TrainF	The factor score of job transition training programs	Survey II
InformF	The factor score of information sharing with employees	Survey II

3. Technology Environment

Tk1	Task Complexity ≤ 3 (low) and Interdependence ≤ 3 (low)	Survey II
Tk2	Task Complexity > 3 (high) and Interdependence ≤ 3 (low)	Survey II
Tk3	Task Complexity ≤ 3 (low) and Interdependence > 3 (high)	Survey II
Tk4	Task Complexity > 3 (high) and Interdependence > 3 (high)	Survey II
CompSkillsF	The factor score of computer-based technology impact on skills	Survey II

Computer	The Impact of computer-based technology on tasks	Survey II (Item 209)
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4. Health and Safety Practices

PhysPsyF	The factor score of Physical, Psychological Health programs	Survey II
SecureF	The factor score of non-video security measures	Survey II
VideoF	The factor score of video security measures	Survey II
OSHF	The factor score of Health and Safety practices	Survey II
InfraF	The factor score of infrastructure and environment	Survey II
JobProgramF	The factor score of Job programs	Survey II
WorkplaceF	The factor score of Workplace programs	Survey II
ProfActF	The factor score of professional activities	Survey II
OutdoorF	The factor score of outdoor activities	Survey II
IndoorF	The factor score of indoor activities	Survey II
F2FContactF	The factor score of face-to-face contact	Survey II
InsuranceF	The factor score of Life Insurance and Disability programs	Survey II
MedPlanF	The factor score of Single Medical Plan	Survey II
SupBenF	The factor score of Supplemental Benefits	Survey II

5. Outcomes

SatF	The factor score of Satisfaction	Survey II
CommitF	The factor score of Commitment	Survey II
ExpectF	The factor score of Expectation	Survey II
StressF	The factor score of Stress	Survey II
Injinc	Injury incident rate per 100 full-time-employees (FTE, Injury	DOLI

	Rates)	
Injsev1	Injury severity measure 1: lost working days per injury	DOLI
Injsev2	Injury severity measure 2: lost working days per 100 FEE	DOLI
Faw98	Firm average wage, 1998	DES
Eecv98	The coefficient of variation in firm employment, 1998	DES
Wcv98	The coefficient of variation in firm average wages, 1998	DES
Finstrs	Financial Stress Score Percentile (Financial Well-being)	D&B
Cmcrds	Commercial Credit Score Percentile	D&B
Sales	Sales Volume	D&B
Nsale99	Net Sales, 1999	COMPUSTAT
Tass99	Total Assets, 1999	COMPUSTAT
ERET99	Economic Returns, 1999	COMPUSTAT
ROA99	Returns on total assets, 1999	COMPUSTAT
ROE99	Returns on equity, 1999	COMPUSTAT
ROI99	Returns on total investment, 1999	COMPUSTAT
TSR99	Total Shareholders' return ratio, 1999	COMPUSTAT

Table 4 below presents descriptive statistics for these variables based on the 819 firms in our sample. Note that there are missing observations for many variables.

Table 4. Descriptive Statistics: Respondent firms

Variable	Definition	Number of Observations	Mean	Std. Dev	Min	Max
Fsize	Total number of employees in MN	813	178.26	435.22	3.00	5700.00
Fage	Years in business since establishment	773	34.56	27.63	0.00	153.00
Union	Percentage of unionized	785	11.18	27.15	0.00	100.00

	workforce in MN				
unionys	Unionized indicator	143	61.37	31.13	1.00
Public	Public firm indicator	819	0.10	0.31	0.00
Eage	Average age of Minnesota employees	745	34.25	7.14	10.00
Eeduc	Average education of Minnesota employees (years in school)	704	13.13	1.50	8.00
Tenure	Average tenure of Minnesota employees (in years)	751	6.51	4.67	0.00
Female	Percentage of female workforce in Minnesota	794	45.68	25.75	0.00
Industry					
	1 = Mining	0			
	2 = Construction	35			
	3 = Manufacturing	220			
	4 = Transportation & Public Utilities	22			
	5 = Wholesale Trade	80			
	6 = Retail Trade	285			
	7 = Finance, Insurance, and Real Estate	46			
	8 = Services	122			
Fi	Dummy for the presence of an individual-oriented incentive plan	819	0.56	0.49	0.00
Si	Dummy for the presence of at least one individual-oriented supporting program. <i>[Training in statistical analysis, or skill-based pay]</i>	819	0.42	0.49	0.00
Dg	Dummy for the presence of at least one group-oriented decision-making participation plan. <i>[Quality circles, self-managing work teams, quality of work life, joint labor-management committees, or employee representation on the board of directors]</i>	819	0.52	0.50	0.00

Fg	Dummy for the presence of at least one group-oriented financial returns participation plan. <i>[Group bonus, gain sharing, cash profit sharing, deferred profit sharing, stock purchase plan, or employee stock ownership plan]</i>	819	0.53	0.49	0.00	1.00
Sg	Dummy for the presence of at least one group-oriented supporting program. <i>[Training in team building skills, job rotation, job redesign, information sharing, or employment security]</i>	819	0.78	0.40	0.00	1.00
EduF	The factor score of Educational programs	807	0.00	1.00	-1.96	2.07
TrainF	The factor score of job transition training programs	807	0.00	1.00	-1.81	2.56
InformF	The factor score of information sharing with employees	748	0.00	1.00	-2.06	2.21
TK1	Task Complexity ≤ 3 (low) Interdependence ≤ 3 (low)	788	0.42	0.49	0.00	1.00
TK2	Task Complexity > 3 (high) Interdependence ≤ 3 (low)	788	0.08	0.27	0.00	1.00
TK3	Task Complexity ≤ 3 (low) Interdependence > 3 (high)	788	0.35	0.47	0.00	1.00
TK4	Task Complexity > 3 (high) Interdependence > 3 (high)	788	0.13	0.34	0.00	1.00
Comput eSkillsF	The factor score of computer-based technology impact on skills	541	0.00	1.00	-3.66	2.74
Comput er	The Impact of computer-based technology on tasks	810	2.81	1.29	1.00	5.00

PhyPsyF	The factor score of Physical, Psychological Health programs	810	0.00	1.00	-0.61	4.93
SecureF	The factor score of non-video security measures	810	0.00	1.00	-1.31	3.42
VideoF	The factor score of video security measures	810	0.00	1.00	-1.26	2.98
OSHF	The factor score of Health and Safety practices	789	0.00	1.00	-1.39	1.39
InfraF	The factor score of infrastructure and environment	798	0.00	1.00	-4.58	1.47
JobProgramF	The factor score of Job programs	748	0.00	1.00	-0.72	4.29
WorkplaceF	The factor score of Workplace programs	806	0.00	1.00	-1.02	1.88
ProfActF	The factor score of professional activities	817	0.00	1.00	-1.87	8.03
OutdoorF	The factor score of outdoor activities	817	0.00	1.00	-2.38	1.82
IndoorF	The factor score of indoor activities	817	0.00	1.00	-0.76	20.53
F2FContactF	The factor score of face-to-face contact	744	0.00	1.00	-3.28	2.39
InsuranceF	The factor score of Life Insurance and Disability programs	785	0.00	1.00	-2.18	1.77
MedicalPlanF	The factor score of Single Medical Plan	785	0.00	1.00	-1.97	1.34
SupplementalBenefitsF	The factor score of Supplemental Benefits	785	0.00	1.00	-1.31	4.73
SatF	The factor score of Satisfaction	757	0.00	1.00	-3.89	2.60
CommitmentF	The factor score of Commitment	757	0.00	1.00	-2.76	4.07
ExpectationF	The factor score of Expectation	757	0.00	1.00	-3.08	3.75
StressF	The factor score of Stress	757	0.00	1.00	-3.22	3.31
InjuryInc	Injury incident rate per 100 full-time-employees (FTE, Injury Rates)	813	1.40	4.30	0.00	81.60
InjurySev1	Injury severity measure 1: lost working days per	819	8.82	25.48	0.00	432.88

	injury					
Injsev2	Injury severity measure 2: lost working days per 100 FEE	813	32.60	143.07	0.00	2887.91
faw98	Firm average wage, 1998	634	35004.90	21035.25	558.16	177292.00
Eecv98	The coefficient of variation in firm employment, 1998	633	8.49	9.85	0.00	89.27
Wcv98	The coefficient of variation in firm average wages, 1998	630	4.36	4.72	0.20	46.77
Finstrs	Financial Stress Score Percentile (Financial Well-being)	792	75.13	27.19	0.00	100.00
Ccrds	Commercial Credit Score Percentile	793	53.23	27.89	0.00	100.00
Sales	Sales Volume	759	46777.82	229807.20	6.61	3357757.00
nsale99	Net Sales, 1999	62	281371.60	681702.90	0.00	3357760.00
tass99	Total Assets, 1999	62	947726.50	4258128.00	2010.00	24900000.00
eret99	Economic Returns, 1999	50	3.95	34.62	-132.97	117.07
roa99	Returns on total assets, 1999	62	-4.56	34.40	-184.08	56.88
roe99	Returns on equity, 1999	62	-16.57	91.21	-384.28	201.30
roi99	Returns on total investment, 1999	62	-10.10	63.17	-352.38	107.65
tsr99	Total Shareholders' return ratio, 1999	57	54.85	157.27	-57.62	1030.95

Data Integrity

Because Survey II was completed by one source (typically, a senior human resource manager for the firm), it was important to assess the accuracy and reliability of these data. One method to assess the accuracy of the data is to examine the correlations of the same variables assessed using different data sources. Human resource managers supplied their estimate of the total number of employees in their firm; such information was also supplied via the D&B and the S&P databases. The correlation between the HR manager estimate and the

D&B value was .76; the correlation between the HR manager estimate and the S&P value was .88. Thus, there was high agreement between these sources on this particular variable.

Choice of "Health Outcome Variables".

Following the leads provided by our initial study, we elected to make a preliminary choice of several employee health outcomes and firm health outcomes. We elected to use four measures of employee health: Satisfaction and Stress factors (where low scores signify low stress) as derived from Survey II (recall, however, that these variables are represented by reports from an human resource manager for each firm⁴), Firm Average Wage derived from Department of Employment Security database, and Injury Incident Rate (per 100 full time employees) derived from the DOLI data base (where low scores indicate fewer injuries). We also decided to use two measures of firm health outcomes: Total Sales⁵ derived from the D&B database and the Financial Well-being Score (high scores signifying better financial health) derived from the D&B database. These choices were made on the basis of our earlier analyses where we had usefully employed the wage and injury variables, as well as our examination of the correlations between subsets of variables that measured similar constructs (e.g. Injury rates per 100, Employees lost number of working days per injury, Lost number of working days per 100 employees), and logical analyses of which

⁴ We are aware of the potential problems associated with the use of one respondent to assess characteristics of one firm where the issues of the reliability of such data is questioned (i.e., Gerhart, Wright, McMahan, & Snell, 2000). Huselid and Becker (2000), however, suggest that the issues raised are overestimated.

⁵ We note that there may be some confounding between firm size and this Total Sales variable in that firms that have greater sales are likely to be bigger firms (and we confirm this relationship below). While we control for firm size in subsequent analyses, we argue here that firms that have greater sales are most likely those that are in better financial health than firms that have lower sales figures---regardless of size.

variables would constitute the more important outcome variables among our existing set of variables.

We subsequently correlated these variables to again examine the degree of relationship amongst them. The correlations are presented in Table 5 below:

Table 5. Correlation between Firm and Employee Health Variables

	Satisfaction	Stress	Wages	Sales	Injury Rates	Financial Well-Being
Satisfaction	1					
Stress	.00	1				
Wages	-0.047	-0.177*	1			
Sales	-0.079*	-0.081*	0.162*	1		
Injury Rates	-0.05	-0.01	-0.005	0.001	1	
Financial Well-Being	-0.064	0.082*	0.14*	0.057	0.027	1

* $p < .05$

These correlations are relatively low, and only are statistically significant, and when significant the correlations are still below the .20 level. The highest relationship observed is between the stress and wages variables ($-.177, p < .05$) signifying that high stress is associated with low wages. (Subsequent analyses showed that even when controlling for industry differences, a significant relationship exists between these two variables.) Somewhat surprising is the zero relationship observed between Satisfaction and Stress factors. Overall, however, these results are not unlike our previous Phase I analyses and findings: weak or no relationships exist between employee health and firm health outcomes.

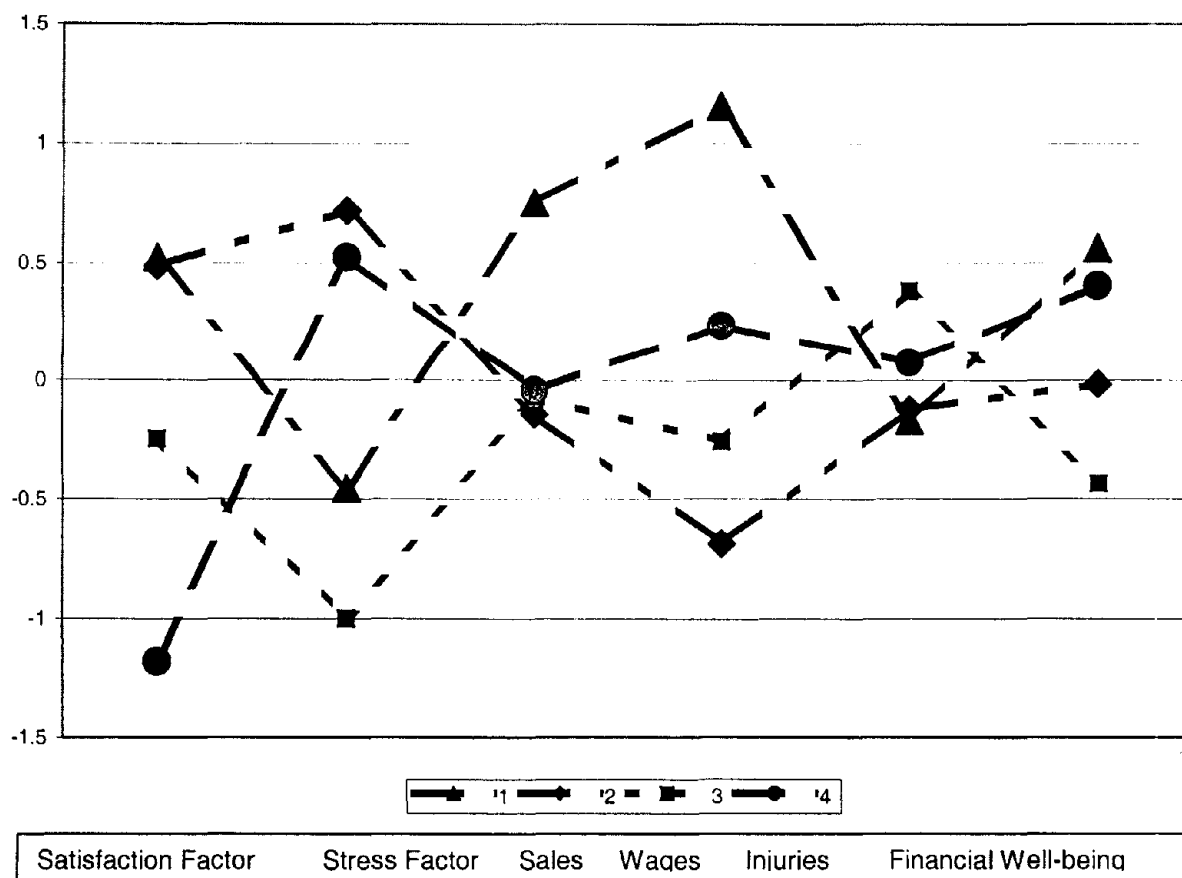
Classifying Firms On The Basis of Health.

Our previous effort in Phase I used a relatively primitive method of classifying firms into “healthy” and “unhealthy” firms—simply dichotomizing at the median of the various variables and developing a frequency count of the number of times firms will be considered to be healthy or unhealthy across the variables. We elected to pursue a more sophisticated statistical procedure in this current phase. We clustered the various firms across the six health outcome variables (after standardization) using a k-means partition analysis. The k-means cluster approach (using Stata [Release 7.0]) was chosen because it permits the specification of the number of clusters in advance (Johnson & Wichern, 1992) in addition to pursuing a non-hierarchical method of assigning objects (in this case firms) to a cluster having the nearest centroid (mean). The default option of similarity used was the Euclidian difference. Four clusters were specified based on our previous knowledge and rationale that firms might be differentiated into four general types (using the terminology we adopted from our earlier study: GG,GB, BG, BB). Results were highly encouraging. The four-cluster solution resulted in 547 firms being clustered—the remaining firms (N=272) did not have data on all the variables and therefore did not remain in the analyses. The means for the four clusters are shown in Table 6 below:

Table 6. Four-Cluster Solution

	Satisfaction Factor	Stress Factor	Sales (D&B)	Wages (D&B)	Injury Rates (DOLI)	Fin Well-being
Cluster 1 N=100	0.523	-0.455	0.753	1.158	-0.172	0.563
Cluster 2 N=177	0.487	0.72	-0.144	-0.687	-0.122	-0.017
Cluster 3 N=131	-0.247	-0.999	-0.076	-0.259	0.384	-0.435
Cluster 4 N=139	-1.18	0.525	-0.042	0.239	0.075	0.406

Perhaps a better way to examine the means for the clusters is to plot their profile means as shown in Figure 2 below:

Figure 2. Four-Cluster Solution (Plotted)

Reviewing these data, it seems that firms representing Cluster 1 might be called relatively “healthy” (or GG) firms. They demonstrate relatively high scores on the satisfaction, wages, sales, and financial well-being scales, and relatively low scores on the stress and injury scales (indicating low stress and low injury rates). It also appears that firms in Cluster 3 are relatively “unhealthy” (or BB) by demonstrating a relatively low score on satisfaction, average sales, below average wages, higher than average injury rates, and low financial well-being. The one exception to this pattern is the relatively low score on the stress variables. One interpretation of the low score (or very low stress) on this variable is that individuals are simply not working hard.

The other two clusters represent “in-between” firms, where there appears to be relative health to the employee or to the organization, but not both. For example, Cluster 4 indicates firms with relatively low satisfaction and high stress, but slightly above average wages and a relatively high score on the financial well-being score—a “mixed” bag. Similarly, Cluster 2 represents firms where satisfaction appears to be quite low and stress is high, but there are also relatively low scores for the wages and financial well-being scales.

To determine if the clusters differed statistically on the six healthy outcome variables, we conducted a one-way analysis of variance procedure for each variable at a time, as well as a multivariate analysis of variance looking at all six variables simultaneously. Pairwise comparisons were computed using Bonferroni post-analysis procedures. In all comparisons, for both the univariate and multivariate analysis of variance procedures, the differences

between the clusters were highly significant. All pairwise comparisons between clusters for each of the 6 variables were significant with the exception of the sales variable which showed non-significant differences between Clusters 2 and 3 and between Clusters 2 and 4 on this variable. These analyses are not reproduced (nor in the appendices) because of the desire to keep this report relatively brief.

We also examined whether these firms differed on several important firm characteristics. Specifically, we reviewed whether the four clusters differed in terms of the years in business since establishment, total number of employees, and net sales in 1999. One-way analyses of variance revealed that the four clusters differed significantly on the years in business variable ($F=7.228$, $p<.01$) and the total number of employees ($F=9.595$, $p<.01$) but not on the net sales variable ($F=1.267$, $p<.297$). The cluster means on these variables are shown in Table 7 below.

Table 7. Years in Business and Total Number of Employees

	Years in Business	Total Number of employees
Cluster 1	39.95	400.47
Cluster 2	33.99	115.8
Cluster 3	32.13	176.37
Cluster 4	46.26	156.78

Cluster 1 firms (or the healthy firms) were in business 39.95 years (s.d.=27.73) compared to 32.13 years (s.d.=24.92) for Cluster 3 (unhealthy firms). Similarly, there were more employees in Cluster 1 (400.47) compared to all other clusters. Thus, there is some indication that healthy firms are

those that are more established and have more employees than other types of firms.

To summarize these analyses, we were able to identify different clusters of firms on these six health “outcome” measures. Three elements have become apparent to us at this point of our analyses:

- 1) Organizational health might best be conceptualized as being multivariate in form. No single or combination of outcome variables appear to correlate sufficiently to recommend a reduction of variables into a more collapsed form.
- 2) Firms appear to cluster into identifiable groupings based on their relative profiles across the six outcome variables. The nature of their different profiles suggests that one set of firms might be labeled as relatively healthy and that another set of firms might be labeled as relatively unhealthy. Other firms cluster into two different groups that seem to represent relative health on only a few dimensions and/or unhealthy on a few dimensions.
- 3) Healthy firms appear to be different in terms of their relative size and years since establishment. This would make sense because relatively new and smaller firms would most likely allocate their profits differentially.

Testing the Model

We now turn to testing parts of our specified model. The first analysis we conducted was a multinomial logit program which tests how well a variable set will predict a multilevel classification. In this first set of analyses, we wish

to test the degree to which organizational practices (i.e., physical, psychological, social, and financial) can predict the firm clusters. We examined the degree to which the following variables would differentiate between the clusters:

1. Physical, Psychological, Health programs—PhysPsyF
2. Non-video security measures--SecureF
3. Video security measures—VideoF
4. Health and safety practices—OSHF
5. Infrastructure and environment—InfraF
6. Job programs--JobProgF
7. Workplace programs—WorkplaceF
8. Professional activities—ProfActF
9. Outdoor activities—OutdoorF
10. Indoor activities—IndoorF
11. Face-to-face contact—F2FContactF
12. Life insurance and disability programs—InsuranceF
13. Single medical plan—MedPlanF
14. Supplemental benefits—SupBenF

We also included the following control variables because of the potential for them to differentiate between clusters: Union, Public, Fsize, and industry type (dummy coded).

The analyses yielded a chi-square value which tests the overall degree to which these variables differentiated between the clusters. Also

included are results showing the degree to which each cluster can be differentiated against a designated cluster (in this case Cluster 3—the unhealthy firm cluster) on each of the variables. Appendix E presents the results of this analysis. The overall chi-square value was 287.24 which is highly significant ($p < .001$), indicating that these variables differentiated between the four clusters of firms. Review of these data indicates that a number of specific variables differentiate the various clusters from the designated cluster (Cluster 3). Cluster 1 (“Healthy”) and Cluster 2 firms could be significantly differentiated from Cluster 3 (“Unhealthy” firms) on the variable of Infrastructure and Environment (InfraF) factor score ($z=4.44$, $p < .01$ and $z=2.78$, $p < .01$ respectively). Three other control variables--Public, Fsize, and Retail Trade also differentiated Cluster 1 from Cluster 3 firms. That the size variable was a differentiating variable is not surprising because we showed similar results earlier. Cluster 2 was differentiated from cluster 3 on the Infrastructure and Environment factor ($z=2.78$, $p < .01$) and the Union variable ($z=2.44$, $p < .01$) but no other variables. Cluster 4 was differentiated from cluster 3 on only two variables: Face-to-Face contact ($z=-2.71$, $p < .01$), and Fage ($z=2.83$, $p < .01$). Thus, besides the control variables, only two of the hypothesized firm or organizational practice variables appear to significantly differentiate between the clusters—the Infrastructure and Environment and the Face-to-Face Contact variables. In order to examine the relationship between these two variables and the health outcomes more directly, correlations

between these them and the various health outcomes were calculated and shown in Table 8 below:

Table 8.

	Infrastructure/Environment (InformF)	Face-to-Face (F2FcontactF)
Satisfaction	0.257**	0.179**
Stress	0.026	-0.09
Sales	0.001	-0.068
Wages	-0.031	-0.218**
Injury		
Rates	-0.057	-0.014
Financial		
well-being	0.002	-0.037

**p<.01

The Infrastructure and Environment variable correlated significantly and positively with the Satisfaction variable ($p<.01$) and the Face-to-Face variable also correlated significantly with the Satisfaction variable. In addition, the Face-to-Face factor correlated significantly and negatively with the Wages variable, suggesting that core employees who have relatively more face-to-face contact with others have relatively lower wages. Because this might be an artifact due to omitted control variables, regressions were computed where the six health outcomes (satisfaction, stress, etc.) were considered as independent variables (along with the various control measures) and the Infrastructure and Environment variable and Face-to-Face contact variables were considered as dependent variables in separate equations. Also, because the Infrastructure and Environment and the Face-to-Face variables were significantly correlated ($r=.092$, $p<.05$) each was included as a control variable in the regression involving the other variable (i.e., Infrastructure and Environment was a control

variable in the equation where Face-to-Face was the dependent variable, and vice-versa). This allows us to examine the association of each of these variables with the health outcomes partialling out the effects of other controls. Under this set of analyses, the association between the Face-to-Face variable and the Wages variable dropped out, but the association between the Face-to-Face and Stress variables became significant ($B = -.246$, $t = -2.328$, $p < .05$); the F-value for the entire regression equation was also significant ($F = 2.88$, $p < .05$). This association means that in firms that have relatively more face-to-face contact, employees have less stress. The analysis with the Infrastructure and Environment variable showed that the Satisfaction variable was marginally significantly associated with this variable (as shown in the single-order correlation matrix above) ($Beta = .211$, $t = 1.924$, $p < .06$) but also significantly (and positively) associated with the Stress factor ($Beta = 2.233$, $p < .05$). This finding is somewhat surprising because it indicates that firms with relatively better environmental factors (e.g., air quality, ventilation, and lighting) are also firms where employees have relatively greater stress levels—not a finding we would expect. With both these regressions, the control variables failed to reach significance with one exception—that of Retail Trade when predicting the Face-to-Face variable ($t = 2.191$, $p < .05$).

To summarize this set of analyses that begins to test our model, there appear to be two organizational practices variables—Infrastructure and Environment and Face-to-Face contact that appear to differentiate between the different clusters of firms as well as demonstrate significant association with the

individual health outcomes. In addition, while several of the various control variables such as firm size, unionization, and public-private characteristics likewise differentiated between firms and outcomes, these tended to drop out when other variables were controlled.

A second set of analyses were directed toward the question of whether firm Human Resource practices would also differentiate between the four clusters of firms. It could very well be that there is a direct influence on the various health outcomes by HR practices, and that they don't necessarily operate through the mediation of other firm practices. Thus, another multinomial logit program was performed where cluster type was the dependent classification variable and a number of HR practice variables were specified as the independent variables:

1. Financial returns participation plan—individual level (Fi)
2. Supporting HR plan—individual level (Si)
3. Decision-making participation plan—group level (Dg)
4. Financial returns participation plan—group level (Fg)
5. Supporting HR plan—group level (Sg)
6. Educational programs factor score (EduF)
7. Job Transition training programs factor score (TrainF)
8. Information sharing w/employees factor score (InformF)

Again, we included the various control variables of Union, Public, Fsize, Fage, and industry. Cluster 3 firms were used as the cluster against which the other three clusters were compared. Results are given in Appendix F. The overall chi-square was significant (chi-square=302.46, $p < .01$). Cluster 1 was differentiated

from Cluster 3 on the variable of Information Sharing with Employees (InformF) ($z=4.20$, $p<.01$). Cluster 2 was differentiated by the Decision-making Participation Plan-Group level (Dg) variable ($z=2.46$, $p=.05$), and the Financial Returns Participation Plan-Group Level (Fg) variable ($z=-2.59$, $p<.05$). Cluster 4 was marginally differentiated from Cluster 3 on the Information Sharing with Employees variable (InformF) ($z=-1.72$, $p<.10$). Control variables of Fsize, Retail Trade, Union, and Fage also differentiated the clusters as we have seen before.

We subsequently performed regression analyses to determine whether the significant relationships between each of these HR practices variables (Information Sharing with Employees (InformF), Decision-making Participation—Group (Dg), and Financial returns participation—Group (Fg)) and the six outcome measures holding constant the various control variables. The only HR practices variable that was significantly related to the various outcomes was the Information Sharing with Employees variable (InformF). This variable demonstrated a significant beta-weight against the Satisfaction ($B=.290$, $t=3.289$, $p<.01$), and the Injury ($B=-.173$, $t=-1.98$, $p<.05$) outcomes.

On the whole, these particular results are somewhat disappointing. Few HR practices variables demonstrated significant relationships with the various health outcomes. Although there was significant differentiation among the clusters using these and the control variables, the differentiation was obtained largely through the control variables of Unionization, Firm size, and Firm age.

The next step in this analysis was to examine the single-order correlations between the various organizational and HR practices variables that had demonstrated significance in these earlier analyses against the six outcome variables. Essentially, we are attempting to determine the “best set” of variables that are associated with the various outcome variables and to specify a more precise model than the original omnibus model (see above). These correlations are shown in Table 9 below:

Correlations between Selected Organizational and HR practices variables and Firm

Table 9. Health Outcomes

	Decision Making (Dg)	Fin-group (Fg)	Information Sharing (InformF)	Infrastructure (InfraF)	Face to Face (F2FcontactF)
Decision Making (Dg)	1				
Fin-Group (Fg)	.177**	1			
Information Sharing (InformF)	.169**	.331**	1		
Infrastructure (InfraF)	0.022	0.031	.141**	1	
Face to Face (F2Fcontact F)	-0.054	-0.204**	-0.167**	.092*	1
Satisfaction (SatF)	.127**	-0.023	.226**	.257**	.179**
Stress (StressF)	-0.038	-0.121**	-0.142**	0.026	-0.09*
Sales	0.07	.107**	.089*	0.001	-0.068
Wages	-0.008	.284**	.223**	-0.031	-0.218**
Injury Rates	-0.021	-0.002	-0.069	-0.057	-0.014
Fin Well-Being	0.023	.140**	.087*	0.002	-0.037

Inspection of these correlations reveals the following observations:

1. The various HR and Organizational practice variables are generally significantly correlated, the highest being .331 between the

Information Sharing factor (InformF) and the HR variable of Financial Returns participation (Fg).

2. Each of the firm health outcomes is significantly associated with at least one of the HR or Organizational practice variables, with the exception of the Injuries health variable. This suggests that these HR and organizational practice variables are particularly important in terms of being associated with these outcomes.

The final set of analyses involved regressions of the five HR and organizational practice variables on each of the health outcomes to determine the independent contributions of each, after first entering the various control variables into the equation. Results are shown in Table 10. These analyses are informative and can be summarized in a point-by-point fashion.

Table 10 Regression Results: Relationships between Health Outcomes and Human Resources and Organizational Practice Variables

	Satisfaction	Stress	Sales	Wages	Injury Rates	Fin Well-Being
R ² of Control Variables ^a	.188 *	.125	.568 ***	.531 ***	.095	.105
R ² of Full Model	.335 ***	.231 *	.592 ***	.571 ***	.133	.164
Change in R ²	.147 **	.106 *	.024	.040	.037	.059
PREDICTORS ^b						
Infrastructure (InfraF)	.210 *	.209 *	.131 ^c	-.126	-.111	-.008
Face-to-Face Contact (F2FcontactF)	.148	-.330 **	-.076	.018	.012	.154
Information Sharing (InformF)	.280 **	-.073	-.017	-.154 ^c	-.116	-.244 *
Participation in Decision Making-group (Dg)	-.098	.042	.035	-.006	.032	.038
Participation in Financial Return-Group (Fg)	.067	.003	-.128	.161	-.096	.062

^a Control variables include union, Fsize, Fage, Industry variables

^b Entries are standardized beta coefficients

^c $p < .10$

* $p < .05$

** $p < .01$

*** $p < .001$

1. The various HR and organizational practice variables as a set are significantly related to the Satisfaction health outcome, above and beyond that explained by the control variables. The R-squared value for the

control variables is .188 and the value with the HR and organizational practice variables included is .335—the difference in the two R-squared values is significant ($p < .01$). The Information Sharing and Infrastructure and Environment variables demonstrated significant and positive Beta coefficients indicating that they were independently associated with Satisfaction, holding all other variables constant. Firms that share information concerning their profitability, corporate finances, etc. with employees as well as have relatively good physical work environments (e.g. air quality, ventilation, lighting, etc.) are firms wherein the core employees are more satisfied. We conducted another regression where the Infrastructure and Environment variable was removed to determine if the Information Sharing variable was still significant so as to detect whether the Infrastructure/Environment variable was acting as a mediating variable. When this variable was removed from the equation, the Information Sharing variable was still significant (Beta=.331, $p < .01$) indicating that it operates independently from the Infrastructure and Environment variable and thus was not mediated by this variable.

2. For the Stress outcome variable, the HR and organizational practice variables again explained greater variance than the control variables ($p < .05$). The Face-to-Face and Infrastructure and Environment variables were significantly related to this outcome variable. Firms with more face-to-face social contacts tend to also be less stressful. Firms with an environment that has good lighting, ventilation, air quality, etc. tend to

have relatively more stress . Further analyses were conducted to determine if the Face-to-Face variable might play a mediation role between the Infrastructure and Environment variable and the Stress outcome variable. Results indicated that no such mediation effect was found.

3. For the Sales outcome variable, the set of HR and organizational practice variables failed to reach the level of statistical significance when entered into the regression equation beyond that explained by the control variables. Inspection of the individual Beta coefficients indicated that the Infrastructure and Environment variable was marginally significant ($p < 0.10$) and positive.
4. For the wages outcome variable, the HR and organizational practices variables as a set failed to account for a significant amount of variance beyond that explained by the control variables. The only variable that approached significance was the Information Sharing variable, which was marginally significant at the .10 level. Interestingly, the relationship observed was negative, indicating that firms that share more financial information with core employees tend to have lower wages.
5. The HR and organizational practice variables failed to demonstrate a significant relationship with the Injuries variable either as a set or for any individual variable.
6. For the Financial Well-being outcome variable, the HR and organizational practice variables did not demonstrate statistical significance in terms of

explaining additional variance beyond the control variables as a set. Only the Information Sharing variable reached the .05 level when examining the variables individually for significance. Again, the relationship observed was negative such that firms that shared relatively more information about their financial conditions were less well off in terms of this financial well-being outcome variable. Perhaps firms that are in trouble financially forecast this information to employees in order to better deal with future employee problems (turnover and layoffs).

To summarize this particular set of finding, while the relationships observed were relatively small and sometimes only marginally significant, the two variables—Information Sharing, Infrastructure and Environment variables seemed to suggest consistent relationships with the various health outcomes identified. The Infrastructure and Environment variable was significantly associated with the Satisfaction and Stress outcomes and was marginally significantly associated with the Sales outcomes. The Information Sharing variable was significantly associated with the Satisfaction, Wages, and Financial Well-being outcome variables. As shown above the Infrastructure and Environment and the Information Sharing variables are also significantly correlated ($r=.141$, $p<.05$) but no evidence for any mediation effect was observed.

This concludes the analyses and finding from this particular phase of our research. Two independent variables appear to be significantly and consistently related to the firm and employee outcomes we have initially identified as being

the set of variables that help to define organizational health. One variable—Information Sharing—is identified as being amongst the Human Resource practice variables while the other variable—Infrastructure and Environment—is identified as an organization practice variable. The regression methods used demonstrated that these variables were associated with health outcome measures independently of one another although the two were significantly correlated. No evidence for mediation effects was observed suggesting that our original model was perhaps not correctly specified.

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APPENDIX A

BUILDING HEALTHY ORGANIZATIONS: AN EXPLORATORY ANALYSIS AND CONCEPTUAL DEVELOPMENT

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BUILDING HEALTHY ORGANIZATIONS: AN EXPLORATORY ANALYSIS AND CONCEPTUAL DEVELOPMENT

The interests of employees and shareholders are often at odds, yet they are allied by the fundamental fact that they are sharing the same ‘pie.’ The paramount questions are therefore twofold: (1) Are company profitability and shareholder financial success compatible with good compensation for employees, safe workplaces and other indicators of employee wellbeing? (2) What organizational practices, if any, are associated with the coincidence of both employee and shareholder wellbeing? Our preliminary investigation leads to the tentative conclusion that healthy companies share in common certain organizational features, e.g., their comparatively greater reliance on innovative human resource management practices and the relatively good match between their human resource systems and their technological circumstances.

The first author to use the term ‘healthy organizations’ was probably Rosen (1991). Many uses of the term organizational health are limited to occupational safety. But what kind of organizations can be regarded as “healthy organizations”? What are the organizational factors that affect the wellbeing of different parties in an organization? What are the organizational attributes that appear to be associated with ‘win-win’ situations in for-profit firms for both employees and shareholders?

The current state of knowledge on this question is very limited. There is practically no scholarly literature on the organizational factors that may affect the health of organizations from the perspective of *both* shareholders and employees. And there is only a very small body of research on organizational factors that affect different

dimensions of the wellbeing of either employees or shareholders. (e.g., Becker & Gerhart, 1996; Huselid & Becker, 1996; Ichniowski, Shaw & Prennushi, 1996; Park, 1997; and Ben-Ner & Park, 1998).

If organizational practices that promote high wages and occupational safety are at the same time conducive to low profitability, then few firms will seek to implement them voluntarily. If however it turns out that there is a set of practices that promotes the wellbeing of both parties then the scope of commonality of interests is evidently larger and cooperation between management (as representative of shareholders) and employees is easier to emerge.

Our preliminary investigation leads to the tentative conclusion that healthy companies share in common certain organizational features. The principal attributes of healthy organizations include their comparatively greater reliance on innovative human resource management practices – particularly on employee participation in decision-making and in financial returns – and the relatively good match between their human resource systems and their technological circumstances. These features seem to distinguish companies *within* as well as *across* industries. Consequently, it appears that the wellbeing of employees and shareholders is not simply determined by the industry in which they operate, but depends on the attributes of the individual companies in which they work and invest.

We recognize at the outset that it may be somewhat difficult to detect reliable statistical relationships between human resource practices and the various wellbeing measures and organizational health. This difficulty is due to several potential factors. First, sample sizes are somewhat small in different instances, resulting in low statistical

power (Lipsey, 1990; Austin, Boye & Lualhati, 1998). Second, we expect relatively small effects for the posited relationships. While human resource practices can influence firm performance, the effects of individual practices are not likely to be large and pronounced. Third, organizations are very complex. We believe that any observed relationships between human resource practices and these measures of wellbeing will be mediated, and/or moderated, by other complex organizational influences. Thus, we do not proceed with these analyses with preconceived notions that we will find the road paved with huge effect sizes.

The paper is organized as follows. In next section we present some conceptual considerations that guide our empirical investigation. In section II we discuss briefly the data set. Then we develop alternative measures of the wellbeing of employees and shareholders, and examine some organizational factors that affect them. In section III we examine variations in individual measures of employee and shareholder wellbeing relative to our classification of the health of our sample firms. Section IV contains the discussion of main findings of this study, concerning the organizational characteristics of the health of organizations.

PRELIMINARY CONCEPTUAL OBSERVATIONS

Organizational Stakeholders and Their Wellbeing :

The key stakeholders in an organization are the employees and the shareholders. Employees usually derive most of their income from compensation for the work they dedicate to one organization. Their health is also greatly affected by their work in the organization due to possible injuries and exposure to factors that may impact on their

short and long term health, as well as through the health care benefits and quality of health care provided in company-sponsored health plans. Employees also derive satisfaction from their work and social relations they develop in the workplace. In addition, employees often make investments in a company in the form of firm-specific human capital, social connections, geographical moves and so on, the risks to which they cannot diversify because (unlike investors in company capital) they generally have to work full-time in one company.

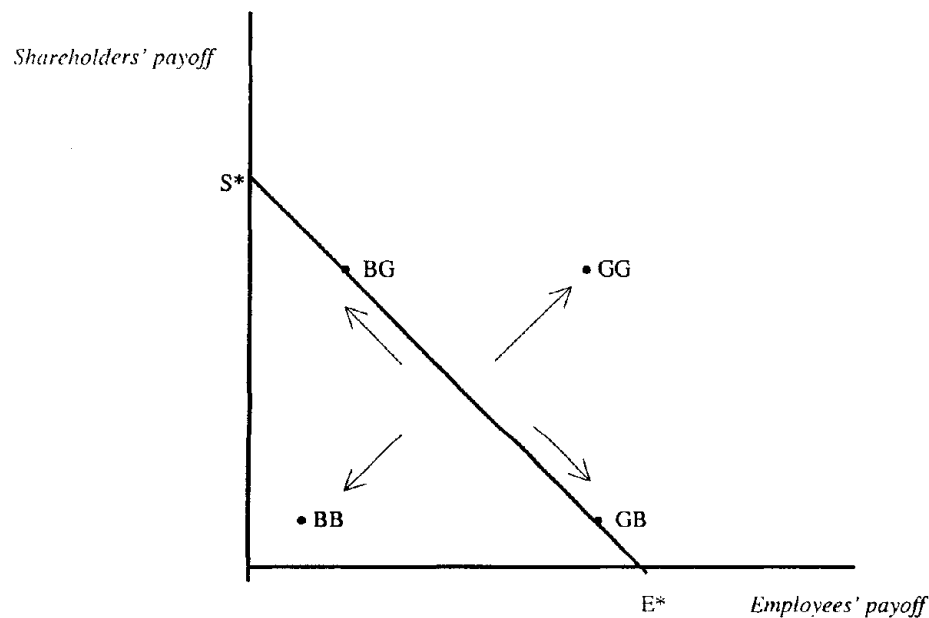
Owners of companies usually fall into one of two categories. They may own shares in a closely held company where shares are sold infrequently. Or they may own shares in publicly traded firms, where shares are traded, mostly anonymously, on stock exchanges. Shareholders in both types of firms derive income in the form of profits from the companies in which they own shares, and their wealth is determined by the value of their shares.

The Relationship between the Wellbeing of Different Stakeholders:

In the very short run, the wellbeing or payoff of one group is in direct competition with the payoff to the other group, because what is spent on wages, benefits or working conditions cannot be distributed as dividends to shareholders and vice versa. In the longer run, this competition-tradeoff can be somewhat mitigated by improving the productivity of the organization, something that is in the interest of both parties. For example, improving the ability of employees to be more productive may require investment in higher wages, greater safety, training, or better conditions of work, but this may increase the amount that can be distributed to both parties in the future.

In general, the wellbeing of an organization's stakeholders depends to a large extent on the wellbeing of the organization. Simply put, the more surplus an organization creates (the residual income after meeting contractual and legal obligations), the more is left for distribution among stakeholders. At the same time there is a straightforward tradeoff between what shareholders and employees take out from the organization. We illustrate this situation in Figure 1, which has the short-term wellbeing of employees on the horizontal axis and that of shareholders on the vertical axis.

FIGURE 1.
The Relationship between the Payoffs of Shareholders and Employees



If we imagine that the entire (current) surplus is allocated to one party or the other, we obtain the extreme points E^* and S^* , and all the possible allocations to the two parties form the line E^*S^* (a straight line, if we ignore risk attitudes). Given the current level of surplus E^*S^* , employees as a group would like to be as close as possible to point E^* , and

shareholders as a group would like to be as near S^* as they can. It is in the *common* interest of both parties to push the line E^*S^* as far as up and to the right as possible: a larger pie may improve all stakeholders' wellbeing. The exact location of a particular company in the space of Figure 1 depends on how productive the company is, and how its surplus is allocated to the two parties.

Organizational Health and Classification of Organizations:

Consider now four hypothetical companies located at points BB, GB, GG and BG in Figure 1. Clearly, company GG does best for both shareholders and employees, whereas BB does worst. The company represented by GB does relatively well for its employees but not for its shareholders, and the reverse holds for BG.

Among the four types of companies, the one labeled with GG can be considered 'healthy' in the sense that it is good for shareholders as well as for employees, whereas the firm at BB is comparatively bad for both parties, therefore 'unhealthy'. The companies at GB and BG are good for one party but not for the other. Note also that GG is the most productive company among the four, BB is the least productive, and BG and GB have intermediate productivity. GB and BG are shown to have equal productivity (they are both on the E^*S^* line, thus having the same-size pie), but this is not a logical or empirical necessity.

Organizational Practices and Organizational Health :

The allocation of the surplus to the two parties depends on internal and external factors. The external labor market usually places lower limits on how the wellbeing of

employees: employees can elect to leave the company for which they currently work for better conditions at another company. The wellbeing of employees is also affected by internal company policies, especially the compensation policy that frequently involves a determination to pay employees at, below or above market wage rates. The health measures and investments in equipment and training of employees by a company have direct effects on employees' wellbeing.

A gamut of human resource practices also impact on employee wellbeing in both direct and indirect ways. For example, for employees who value involvement in decision-making certain practices such as quality circles and team work may be a direct benefit to their wellbeing. Other practices may contribute directly to employees' compensation, such as profit-sharing plans and employee stock ownership plans (if they do not displace other form of compensation), or provide the opportunity to exercise greater effort in return for greater compensation, as is the case with some incentive plans. Employee security policies, to the extent that they are implemented, increase employment stability and its security. Yet many other practices may have indirect effects on employee wellbeing. Human resource practices that enhance employees' skills, knowledge and ability contribute to their compensation. Such practices include direct training as well as work that is demanding of employees to execute more complex tasks, execute multiple tasks, and so on, as is the case in many group decision-making practices. Other practices allow employees to make decisions that allow them to improve safety as well as satisfaction from work; such practices provide the individual employee or groups of employees with some autonomy to make their own decisions. As these illustrations suggest, the organization of work is likely to affect employees' wellbeing in many ways.

To summarize, the health of an organization depends on its productivity and the resulting surplus, and the wellbeing of its employees and shareholders depends on the level of organizational surplus and its allocation among them. The size of the surplus and the manner in which it is allocated among the parties depend on various organizational factors, as well as on market circumstances.

Data Set and Sample:

The data set used in this study was constructed from several sources: “Minnesota Human Resource Practices Survey” (MHRMPS) data, wage and employment data from Minnesota State Department of Economic Security (DES), workplace-safety data from Minnesota Department of Labor and Industry (DOLI), and financial data from the Standard & Poor CompuStat (SPC).

The survey data collection effort started in 1993 and continued through 1997. Our initial sample contains about 2,100 Minnesota firms. However, the current analysis is primarily based upon 113 publicly traded firms since only their financial return measures are available. We would also conduct some comparison with private firms wherever necessary. The majority of publicly traded firms are in manufacturing. The second largest group is in services, followed closely by services.

The descriptive statistics concerning organizational attributes, presented in Tables 1 and 2, reflect the industry distribution of firms in our sample, as well as type of ownership, public and private. Note that the category of “private” firms in these tables actually includes also a few dozen public firms for which financial data were not available and are therefore lumped together with the privately held firms.

TABLE 1
Organization and Task Characteristics in Sample Firms

Variable	All firms	Public firms	"Private" firms
Number of firms	680	113	567
<i>General information</i>			
Firm size (number of employees)	329 (1595)	1088*** (3472)	178 (726)
Firm age	36.8 (28.3)	31.5** (30.4)	37.8 (27.7)
Employee average age	34.6 (6.0)	35.0 (5.0)	34.5 (6.1)
Employee average tenure	6.8 (4.3)	5.6*** (4.5)	7.0 (4.3)
Employee average education	13.3 (1.6)	14.1*** (1.5)	13.2 (1.6)
Union status (proportion of unionized firms)	19.71%	15.04%	20.63%
<i>Task characteristics</i>			
Task complexity (1-5 scale)	2.97	3.18**	2.93
Task variability (1-5 scale)	3.25	3.24	3.25
Work skills transferability (1-5 scale)	3.64	3.56	3.66
Activity interdependence (1-5 scale)	3.60	3.73*	3.57
Work skills requirements (1-5 scale)	2.92	3.05	2.89
Computer-based technology influence (1-5 scale)	2.88	3.33	2.87
<i>Technology typology</i>			
Low uncertainty, low interdependence - tk1	28.04%	19.44%**	29.76%
High uncertainty, low interdependence - tk2	13.25%	12.04%	13.49%
Low uncertainty, high interdependence - tk3	30.04%	31.48%	29.76%
High uncertainty, high interdependence - tk4	27.89%	36.11%**	26.25%

^a Standard deviations are reported in parentheses for continuous variables. ^b Two-sample t-test (for continuous variables) or chi-square test (for dummy variables) between public and "private" firms are indicated in the public firm column by * for p < 10%, ** for p < 5%, and *** for p < 1%..

TABLE 2
Organization of Work and HR Systems in Sample Firms

Variable	All Firms	Public Firms	"Private" firms
Number of firms	680	113	567
<i>Percent of firms with type of practices or systems</i>			
<i>Type of Practices</i>			
Decision-making participation – individually	40.74	47.79*	39.33
Decision-making participation – collectively	46.32	51.33	45.33
Financial returns participation – individually	33.24	47.79***	30.34
Financial returns participation – collectively	65.59	79.65***	62.79
Supporting plans - individual oriented	40.29	39.82	40.39
Supporting plans - group oriented	55.29	59.29	54.50
<i>HR Systems</i>			
<i>Version I</i>			
Traditional HR system - v1sys1	33.53	30.09	34.22
Individual/DM-oriented HR system - v1sys2	20.15	18.58	20.46
Group-oriented HR system - v1sys3	25.74	22.12	26.46
Innovative HR system - v1sys4	20.59	29.20**	18.87
<i>Matches with technology</i>			
Match 1 - v1mat1	17.35	25.66**	15.70
Match 2 - v1mat2	15.29	10.62	16.23
Match 3 - v1mat3	31.47	30.09	31.75
Match 4 - v1mat4	30.59	28.32	31.04
<i>Version II</i>			
Traditional HR system - v2sys1	22.21	15.04**	23.63
DM-focused HR system - v2sys2	12.21	5.31**	13.58
FR-focused HR system - v2sys3	31.47	33.63	31.04
Balanced HR system - v2sys4	34.12	46.02***	31.75
<i>Matches with technology</i>			
Match 1 - v2mat1	12.65	20.35***	11.11
Match 2 - v2mat2	18.82	15.93	19.40
Match 3 - v2mat3	37.06	37.17	37.04
Match 4 - v2mat4	26.18	21.24	27.16

^a Two-sample t-test (for continuous variables) or chi-square test (for dummy variables) between public and "private" firms are indicated in the public firm column by * for p < 10%, ** for p < 5%, and *** for p < 1%.

Companies in our sample are very diverse in terms of the number of employees they hire. The average public firm has 1,088 employees and the average private firm only 178, but the standard deviations are very large, indicating great diversity in size. Public

firms are younger and their employees have shorter tenure on average than private firms. Employees in public firms have on average a little more education, by almost one year, than their counterparts in private firms, with two years above high school. About one-fifth of firms in the sample are unionized, that is, some of their employees are members of a bargaining unit.

In terms of task characteristics and technology we note that public firms tend to employ more advanced technologies. The mean complexity and interdependence scores are higher in public than in private firms, and the production technology constructed on the basis of these task attributes suggest just the same.

With a few exceptions, a larger proportion of public firms offers programs that involve employees in decision-making and in financial returns, both individually and collectively. Hence employees in the public firms in our sample have on average greater influence as well as financial stakes in the companies in which they work as compared to employees in private firms.

Using the individual/collective and decision-making/financial return distinctions, we also generated two versions of human resource systems, and their corresponding matches with certain types of technology, with match order evaluated at its possible effects on productivity and profitability. The first version of human resource systems focuses on both the level and the type of practices, and the second only group-oriented practices. Statistics are presented in the lower part of Table 2. Public firms have more innovative human resources systems, and their systems are more balanced. Furthermore, a significantly higher proportion of public firms has good matches than private firms.

ALTERNATIVE MEASURES OF THE WELLBEING OF EMPLOYEES AND SHAREHOLDERS, AND ORGANIZATIONAL HEALTH

There are several alternative standards by which the wellbeing of stakeholders and therefore the health of a company can be assessed empirically. In this section we propose a few alternative measures of wellbeing for employees and shareholders, and examine the relationship between some measures and the organizational factors described in the previous section. This examination provides preliminary information about the relationship between the *individual components* of the health of organizations and organizational factors.

Alternative Indicators of Shareholder and Employee Wellbeing:

Financial analysts and researchers often use returns-on-assets (ROA), returns-on-equity (ROE), after-tax economic return (ERET), and total shareholder return (TSR) as four broad alternative measures of the wellbeing of a company's shareholders (see, for example, Abowd, 1989). We adopt these four measures in this study.

For each company we also created relative measures of shareholder returns. We obtained these by dividing each company's returns measures by the average respective measures in the industry of their primary operation, where the industry was defined at the two-digit SIC code level. The technical definition and computational source for these absolute and relative measures of shareholder wellbeing are provided in the upper part of

TABLE 3
Wellbeing Measures: Definitions and Sources

Variable	Definition	Source
<i>Shareholder Wellbeing Measures</i>		
ROA - <i>return on total assets (%)</i>	$100 * (\text{Income before extraordinary items} / \text{Total assets})$	SPC
Relative ROA	$(100 + \text{ROAi}) / (100 + \text{two-digit industry ROA})$	SPC
ROE - <i>return on common equity (%)</i>	$100 * (\text{Income before extraordinary items} / \text{Common equity})$	SPC
Relative ROE	$(100 + \text{ROEi}) / (100 + \text{two-digit industry ROE})$	SPC
ERET - <i>after-tax economic return (%)</i>	$100 * (\text{Net sales} - \text{Cost of goods sold} - \text{Selling and adm. Expenses} - \text{Total income tax}) / (\text{Total assets of last year})$	SPC
Relative ERET	$(100 + \text{ERETi}) / (100 + \text{two-digit industry ERET})$	SPC
TSR - <i>total shareholder return (%)</i>	$100 * (\text{Total dividends} / \text{Common shares} + \text{Close price} - \text{Close price of last year}) / (\text{Close price of last year})$	SPC
Relative TSR	$(100 + \text{TSRi}) / (100 + \text{two-digit industry TSR})$	SPC
<i>Employee Wellbeing Measures</i>		
Annual wage (\$)		DES, SPC
Relative wage level	$W_i / \text{Minnesota two-digit industry average wage}$	DES
Injury incidence rate	$(100 * \text{lost work day injury number}) / (\text{firm size})$	DOLI
Relative injury rate	$(\text{injury incidence rate}) / (\text{Minnesota two-digit industry injury rate})$	DOLI
Injury severity 1	$(\text{total lost work days due to injury}) / (\text{injury number})$	DOLI
Injury severity 2	$100 * (\text{total lost work days due to injury}) / (\text{firm size})$	DOLI

For employees, measures of wellbeing may include total compensation, job satisfaction, workplace safety, investment in human capital, stability and security of employment, opportunities for involvement in decision-making, and more. At this stage we preferred to use two measures that are widely regarded as key elements of employee wellbeing: the average wage level in a company, and the incidence of workplace injuries (the injury rate). Definitions and sources for these variables are presented in the lower part of Table 3.

Measures of the Health of Organizations: Two Classifications:

The health of a company may be best compared with the health of companies sharing similar circumstances, that is companies within the same industry and/or the same region. However, one may argue that the wellbeing of employees and shareholders should not be judged relative to companies in a particular industry or region, but should be compared to the wellbeing of stakeholders in the rest of the economy.

Using the principles of identifying the four types of companies (see Figure 1), we construct two types of classifications. The *relative* classification is based on the standing of a company's employees and shareholders relative to the standing of employees and shareholders in companies within its own industry (at the two-digit SIC code level). The *absolute* classification compares the wellbeing of a company's employees and shareholders relative to some measures that are divorced from that company's industry circumstances.

Specifically, we divide of wellbeing measures (ROA, ROE, ERET, TSR, wage rate, and injury rate) for each company into above or at and below the corresponding

sample median in order to derive the *absolute* classifications. Thus, each of the four shareholder wellbeing measures were compared to their respective sample median, and for each measure a company was identified as good or bad for shareholders if it was above or below (including being at) the sample median. Similarly, for each of the two employee-wellbeing measures, companies were classified as good or bad if they were above or below (including being at) the median wage and injury incidence rate. With four alternative measures for shareholders and two alternative measures for employees, there are eight combinations. By counting the frequencies of each type (BB, GB, GG, and BG), we have an aggregate score of *absolute* classifications and could therefore assign each firm into one of the four regions of Figure 1. In case of a tie among two or more types, we assign randomly one of the tied types. Thus we can label our sample firm as ‘healthy’ or ‘unhealthy’ organization, or something in-between. Applying the similar procedure, we can compute the aggregate score of *relative* classifications based on *relative* wellbeing measures.

A little under one-third of the companies in the sample (35) are healthy (GG) firms on the basis of the absolute measures. Fewer companies – 24 – fall into the unhealthy category (BB). The remaining 54 companies, a little under one-half the sample, are in the mixed classifications, with 22 companies doing well by their shareholders but not their employees and 32 firms doing the opposite.

The distribution of companies changes when we use the classifications based on relative measures, with a larger proportion of the sample companies falling into the healthy category (46 firms) and a much smaller number (11) belonging to the unhealthy

category. In total, 32 companies are assigned to different types under the two overall classifications.

Not much should be made of the differences in the distribution of companies under the two classifications because the cut-off levels between the categories are somewhat arbitrary. Nonetheless, a confirmatory analysis of multinomial logistic regressions reveals that both classifications are internally consistent and significant.

TABLE 4
Multinomial Logistic Model: The Determinants of Organizational Health
(by *Absolute Welfare Measures*)

Variable	GG	BG	GB
ROA	1.68** (0.39)	1.44* (0.28)	0.95 (0.08)
ROE	1.14 (0.14)	1.36*** (0.15)	1.01 (0.01)
ERET	0.97 (0.09)	1.01 (0.09)	1.04 (0.09)
TSR	1.12*** (0.04)	1.09*** (0.04)	1.01 (0.01)
Wage	1.00 (0.00)	1.00 (0.00)	1.00** (0.00)
Injury rate	0.72** (0.11)	0.99 (0.15)	0.15*** (0.09)
Number of observations	81		
Prob. > chi2	0.00		
Pseudo R2	0.62		
Log likelihood	-42.65		

^a The unhealthy firm BB is the comparison baseline. ^b The estimated coefficients and the corresponding standard errors are transformed into exponential values. ^c The significant level of estimation is shown with * for $p < 10\%$, ** for $p < 5\%$, and *** for $p < 1\%$.

TABLE 5
Multinomial Logistic Model: The Determinants of Organizational Health
(by *Relative Welfare Measures*)

Variable	GG	BG	GB
ROA	2.22* (0.99)	1.80 (0.74)	0.66* (0.16)
ROE	1.72* (0.49)	1.79** (0.52)	0.97 (0.03)
ERET	1.50 (0.46)	1.80* (0.55)	2.17* (0.94)
TSR	1.36* (0.21)	1.32* (0.21)	1.00 (0.02)
Wage	1.00** (0.00)	1.00 (0.00)	1.00* (0.00)
Injury rate	0.14** (0.12)	0.20* (0.17)	0.00** (0.00)
Number of observations	81		
Prob. > chi2	0.00		
Pseudo R2	0.72		
Log likelihood	-30.91		

^a The unhealthy firm BB is the comparison baseline. ^b The estimated coefficients and the corresponding standard errors are transformed into exponential values. ^c The significant level of estimation is shown with * for $p < 10\%$, ** for $p < 5\%$, and *** for $p < 1\%$.

Table 6 provides the descriptive statistics of wellbeing measures within sample firms by ownership as well as by two categories of classifications.

TABLE 6
Alternative Measures of Shareholder and Employee Wellbeing by Type of Firm

Variable	All Firms	"Private" firms	Public firms	absolute measures				relative measures			
				GG firms	BG firms	BB firms	GB firms	GG firms	BG firms	BB firms	GB firms
Number of firms	680	567	113	35	22	24	32	46	31	11	25
<i>Shareholder Wellbeing Measures</i>											
ROA - return on total assets (%)	n.a.	n.a.	-0.71 (22.69)	10.38*** (8.73)	8.45 (7.10)	-3.60 (11.15)	-16.97 (34.25)	7.43*** (9.87)	6.18 (6.42)	-5.77 (8.63)	-22.00 (38.29)
Relative ROA	n.a.	n.a.	1.18 (0.42)	1.36*** (0.50)	1.17 (0.13)	1.07 (0.15)	1.09 (0.52)	1.37*** (0.53)	1.17 (0.13)	1.01 (0.10)	0.93 (0.34)
ROE - return on common equity (%)	n.a.	n.a.	1.78 (53.16)	23.82** (25.19)	16.77 (8.66)	-20.03 (81.73)	-16.29 (55.63)	17.22*** (26.31)	11.70 (8.15)	-11.42 (23.45)	-33.14 (98.21)
Relative ROE	n.a.	n.a.	1.08 (0.52)	1.32*** (0.56)	1.17 (0.28)	0.92 (0.32)	0.89 (0.62)	1.28*** (0.51)	1.14 (0.27)	0.81 (0.22)	0.77 (0.68)
ERET - after-tax economic return (%)	n.a.	n.a.	6.84 (21.58)	17.55*** (8.59)	16.77 (9.77)	3.38 (11.48)	-8.72 (31.96)	13.34*** (11.13)	15.36 (8.19)	-0.43 (9.24)	-13.88 (36.03)
Relative ERET	n.a.	n.a.	1.10 (0.32)	1.24*** (0.38)	1.12 (0.10)	1.01 (0.13)	1.02 (0.43)	1.24*** (0.34)	1.13 (0.08)	0.95 (0.08)	0.88 (0.43)
TSR - total shareholder return (%)	n.a.	n.a.	-10.83 (41.09)	11.97*** (47.73)	-1.12 (30.90)	-29.37 (32.18)	-27.85 (31.83)	7.57*** (43.02)	-7.04 (31.95)	-33.26 (39.51)	-38.51 (28.59)
Relative TSR	n.a.	n.a.	0.91 (0.42)	1.16*** (0.45)	0.99 (0.39)	0.74 (0.33)	0.73 (0.34)	1.11** (0.42)	0.93 (0.38)	0.74 (0.40)	0.62 (0.29)

(Table 6 continued)

<i>Employee Wellbeing Measures</i>											
Annual wage (\$)	31463 (17087)	29875 (16353)	40556*** (18403)	47672*** (23007)	30533 (10652)	32196 (14107)	46326 (13768)	45563* (20504)	30139 (9432)	30722 (23800)	49620 (15863)
Relative wage level	1.15 (0.63)	1.14 (0.62)	1.24 (0.70)	1.43* (0.97)	0.95 (0.29)	1.06 (0.61)	1.38 (0.47)	1.41 (0.88)	0.88 (0.22)	1.20 (0.88)	1.44 (0.48)
Injury rate (per 100 employees)	3.33 (5.8)	3.50 (5.8)	2.48* (5.59)	1.30* (4.52)	4.12 (2.88)	5.42 (9.67)	0.45 (1.11)	1.10 (3.95)	4.01 (3.01)	8.37 (13.63)	0.54 (1.23)
Relative injury rate	1.53 (2.9)	1.56 (2.9)	1.38 (2.82)	0.49** (0.90)	2.09 (1.45)	2.81 (4.17)	0.78 (3.21)	0.46* (0.90)	2.25 (1.85)	3.83 (5.57)	0.91 (3.58)

^a Two-sample t-test between public and "private" firms are indicated in the public firm column.

^b Two-sample t-test between GG and BB firms are indicated in the GG firm column.

^c For relative measures of shareholder wellbeing, we derive the ratios by dividing the returns+100 by industrial average returns+100, respectively. For relative ROE, there are two firms whose industrial average ROE is abnormally low (-524.88). We therefore decided not to use these two firms.

^d * for p < 10%, ** for p < 5%, and *** for p < 1%.

The relative wages in public firms are higher (by about 10%) than in private firms. Thus controlling for industry at the two-digit SIC code level, employees in public firms in our sample had earned on average 24% more than their counterparts statewide, whereas employees in private firms earned 14% more.

The injury rate in private firms was higher than that in public firms in our sample (3.50 vs. 2.48 per 100 full-time-equivalent employees, respectively). The relative injury rate suggests that employees in our sample firms were more likely to get injured than employees in the rest of the industry, and this was more so in private than in public firms.

Consider now the differences in the means of these measures across the four types of (public) firms, classified according to the organizational health measures. It is not surprising that all the four measures of shareholder returns in GG and BG firms (that are good for shareholders) are substantially higher than in BB and GB firms according to both absolute and relative measures. All but two of the absolute shareholder returns are positive in GG and BG firms, and all but one are negative for BB and GB firms. All the relative measures of returns are better in the former group of firms than in the latter.

Likewise, the typology ensures that wages are highest and safety is best (injury rates are lowest) in firms that belong to GG & GB, which do well by employees. The differences are very large, with employees in GG & GB firms earning about one and one-half times more than employees in BG & BB companies (when either absolute or relative measures are considered). These differences are not artifacts resulting of an industrial concentration of BG & BB firms in low-pay industries and of GG & GB firms in high-pay industries, because the relative measures tell the same story. In terms of workplace

safety, GG & GB firms did much better than BB & BG firms. Using the classification based on relative measures, workplace safety is worst in unhealthy firms; according to the absolute-measures classification, safety is worst in BG firms, where shareholders' wellbeing is good.

Consider now the comparison between healthy and unhealthy companies (GG vs. BB). With two minor exceptions, all measures are significantly different in healthy firms as compared to unhealthy firms, and usually the difference is statistically significant at the 1% level. (The significance level is denoted in the GG columns). For example, in BB firms the average ROE was -20% and -11% according to absolute and relative measures, respectively, whereas in GG firms the ROE was 23% and 17%. Employees earned on average \$47,672 in GG vs. \$32,196 in BB firms according to absolute measures, and controlling for industry employees in GG earned \$45,563 as compared to BB employees' \$30,722. And GG firms pay their employees 41-43% more than other firms in the industry, whereas BB firms pay 6-20% above the average industry wage rate. The same pattern holds for workplace safety: the injury rate in healthy firms is much lower than that in unhealthy companies, and compared to their peers in the industry, healthy firms in our sample have much fewer injuries whereas unhealthy firms have far more than their industry peers.

The classification of sample firms into four types draws clear lines among them in terms of the wellbeing of their key stakeholders. Employees do much better in GG and GB firms than in BB and BG firms; shareholders fare much better in GG and BG firms than in BB and GB firms. And both groups are much better off in healthy companies than in unhealthy ones.

THE HEALTH OF ORGANIZATION AND ORGANIZATIONAL PRACTICES

Human Resource Practices and Shareholder Wellbeing Measures:

The presence or absence of individual human resource practices does not seem to make a significant difference to various measures of returns to shareholders. Somewhat surprisingly, individual discretion in decision-making and collective decision-making in work teams are associated with lower returns, irrespective of the precise measure of the returns, and the differences are sometimes statistically significant. Employee representation on the board of directors, practiced only in a small proportion of the sample firms is associated with higher ROA, ROE and ERET – but lower TSR; none of these differences is statistically significant, however. Individual financial returns participation plans seem to be sometimes associated with higher returns, but a consistent pattern fails to emerge.

The four measures of shareholder wellbeing seem to convey similar information. Most of the differences between the values of the measures when a practice is present and absent go in the same direction in most cases. The TSR measure appears to be different than the other three measures in its relationship with individual human resource practices.

The presence or absence of a particular *type* of practice is not systematically associated with any of the four measures of shareholder wellbeing in our sample. Turning to human resource systems, using the first version of system classification, the innovative system is associated with lowest ROA, ROE and ERET, and the difference in comparison to the traditional system (the baseline system) is statistically significant in two cases. The

balanced HR system in the second version does not fare quite as badly as the innovative system, but it is not associated with the highest returns, either. In both versions the traditional system is associated with the highest or close to the highest returns, although most differences are not statistically significant.

Not much emerges with respect to the association between technology and returns. But it is clear that the advanced technology does not seem to be associated with best performance and the traditional performance is not associated with the worst performance, if anything, quite the opposite is possible.

Human Resource Practices and Employee Wellbeing Measures:

The presence or absence of a particular human resource practice is associated with few differences in the three injury measures and in average wages. Generally, employee wellbeing as measured here is not strongly related in this sample to individual human resource practices.

A few significant differences are worth mentioning. First, the presence of work teams is associated with a lower injury rate and fewer days lost to injuries. (This is to be expected because if workers can exercise collectively some decision-making power, they are likely to use it to improve their conditions of work, and safety is one of the few areas over which they may have some discretion). Second, the presence of gain sharing is associated with more severe injuries. (Again, this is to be expected, because the short-term financial incentives that offered in gain sharing plans might cause workers to speed up their work and engage in other activities that are unsafe). Job rotation may increase the severity of injuries (it is possible that employees not fully skilled in jobs among which

they rotate make graver safety-related errors, although not more often, to judge by the difference in the injury rate). Employment security appears to be weakly associated with safer workplaces in all three measures.

The differences in wages are not statistically significant, with one exception. Firms that have training in team building pay on average wages that are lower by about 20% than those in firms without such training.

When examining the connection of employee wellbeing measures with types of practices and human resource systems, we find that most differences are small in magnitude and there are only a few differences that are statistically significant. But the few significant differences are rather interesting and potentially important. Firms that have one or more collective financial returns plans (such as gain sharing, profit sharing or ESOP) have a substantially lower rate of injury incidence, but their injuries are substantially more severe, than firms that lack any such plans. The wages in companies with such plans are lower, perhaps as partial compensation for safer working conditions, although this is dubious given the mixed picture we have here.

Firms that have innovative HR systems, systems that involve employees in decision-making and financial returns at both the individual and group levels, have a significantly lower injury rate than firms with traditional systems. And firms with balanced systems at the group level likewise have a much lower injury incidence rate – but their fewer injuries appear to be more severe than those in firms with traditional systems are.

Finally, the type of technology, measured in terms of the nature of tasks it entails, does not seem to be significantly associated with measures of employee wellbeing. It is

noteworthy, however, that employees in firms with advanced technology earn on average considerably more than employees in companies with other types of technology.

Organizational Attributes and Task Characteristics of Healthy Organizations:

Firm size and firm age. Healthy firms and BG firms in our sample are much larger than unhealthy and GB firms, especially when we use absolute measures (but only once the difference between BB and GG reaches statistical significance). These average size measures are accompanied by very large standard deviations, suggesting that there is much variation in the size of firms of each type in our sample. Firm size has long been positively associated with higher wages for employees, greater compensation for executives, and higher returns for shareholders (although explanations for these phenomena vary widely). If 'lean' translates into 'small' then the expression 'leaner is meaner' gets some confirmation in our sample.

Healthy firms and BG firms are older than both unhealthy firms and GB firms, by both types of classification. The age of a firm may stand in for many other variables such as unionization (a higher proportion of older firms is unionized), product-type niche, more opportunities for learning how to perform better, and so on.

Unionization. Can unions efficiently guard the wellbeing of organized employees? Are unions against employers' interests? Whereas there are no easy answers to these questions (as the large literature on this subject suggests), our sample shows that a substantially larger proportion of GG & BG firms – both good to shareholders – is unionized than of BB and GB firms. The possibility that employees tend to unionize in

industries that pay relatively little therefore cannot be ignored, and the substantial differences in the proportion of unionized companies between the absolute and relative measures suggests that this hypothesis may be correct in this sample.

Employee characteristics. Employee age and length of employment with the current employer (tenure) show a significant difference between unhealthy companies and the remaining types of firms. Employees in unhealthy firms are younger, have shorter tenure and less education as compared to their counterparts in healthy as well as other types of firms, according to both absolute and relative classification measures. Although no causality can be detected with this kind of analysis, it is possible that these characteristics are *not* due to industry effects but to choices made in these firms regarding the composition of their workforce. For example, it does not seem to be the case of younger workers being employed in fast food restaurants and older workers in law firms.

Attributes of employees' tasks. As mentioned before, the nature of work can be described in terms of the tasks employees have to execute. We concentrate on the complexity, variability, and interdependence of tasks as well as on the types of skills entailed by these tasks, and focus on just the core employees (the largest group of non-managerial, non-supervisory employees).

The tasks of employees in healthy organizations are substantially and significantly more complex than the tasks of employees in unhealthy organizations. Similar but somewhat smaller differences exist in the extent of task variability, which is greater in healthy organizations. Likewise, skill requirements are substantially higher in healthy firms than in unhealthy ones. These observations suggest the possibility that the differences in task complexity and skill requirement *may* result from deliberate corporate

strategies – a choice of technology or product niche – rather than imperatives of particular industries.

Instead of concentrating on individual task attributes we may instead examine the nature of the work by combining task attributes into clusters that reflect different types of “production technology.” We first created a composite variable called *uncertainty* of tasks by adding the scores on task complexity and task variability (each on a scale of 1 to 5). Subsequently, we dichotomized this composite where ‘low uncertainty’ was represented by sums less than or equal to 6, and ‘high uncertainty’ for scores greater than 6. Similarly, an *interdependence* variable was created by dividing the score on task interdependence into two groups: low (scores of 1, 2 or 3) and high (scores of 4 or 5). We then have four groupings (two by two, to which we refer as technology attributes).

Healthy firms tend to rely on technologies associated with high task uncertainty and high task interdependence, with up to one-half of healthy firms having such technology (depending on the type of classification). And nearly as large a proportion of GB firms had such technology, too, suggesting that employee wellbeing may be positively associated with ‘advanced’ technology that entails complex and variable tasks and interdependence among the tasks of various employees. Less than a quarter of healthy companies have ‘traditional’ technology – low uncertainty and low interdependence of tasks.

On the other hand, only a small proportion of unhealthy companies have an advanced technology. Unhealthy organizations seem to concentrate in the low uncertainty and low interdependence or low uncertainty and high interdependence types of technology.

Human Resource Management Practices in Healthy Organization:

Individual human resource practices. Consider first decision-making participation practices. Considerable individual discretion in decision-making is practiced in less than half of all types of firms, whether healthy or not, with the exception of GB firms, where high levels of individual discretion are practiced in about two-thirds of firms. No particularly strong pattern appears to exist with respect to differences in reliance on practices that provide for employee participation in decision-making via group practices, via quality-of-work programs or quality circles. *Work teams*, however, are an exception in the classification based on relative measures, in that healthy firms rely on them more than unhealthy ones.

A weak pattern emerges for employee participation in financial returns. There are few differences in the percent of firms of the four types that adopt different financial participation practices. The differences are significant in the greater reliance of healthy firms than unhealthy ones on cash profit sharing and ESOPs (the difference is statistically significant only for the relative measures). Hence healthy firms provide greater financial stakes for their employees than unhealthy firms.

The tendency to rely on various supporting human resource practices varies only weakly across the four types of firms. Differences between healthy and unhealthy firms are substantial but only weakly significant for programs in the relative classification. In particular, it is notable that employment security is professed by almost one-quarter of the healthy firms in our sample according to both measures, more than any other type of firm.

It is notable that only one unhealthy firm (same firm in both classifications) reported having such a policy.

Another measure of the extent of reliance on different types of human resource practices consists of a simple count of the number of the three categories of practices. No systematic differences among healthy and unhealthy firms in their reliance on human resource practices appear to emerge when we compare total counts of practices by the three categories.

Collective decision-making is practiced in more healthy firms than any other types of firms, especially unhealthy ones. This is particularly true when we consider the relative measures classification, where the difference between GG and BB is statistically significant. However, there are no significant differences in reliance on financial-returns practices. A much larger proportion of healthy firms employs at least one individual-oriented and one group-oriented supporting practice, that is, invests in the training and development of employees.

Human resource systems. We examine two versions of systems. The first version relies on two criteria for classification: whether the practices affect individuals or groups (including the entire firm), and whether they concern employee participation in decision-making or in financial returns. Because of small sample size we do not include supporting practices in the construction of systems. The second version focuses only on collective participation and emphasizes the issue of decision-making on financial return orientation of the firm. In both versions the question of balance – whether or not decision-making participation is supported by financial returns participation and vice versa – is of particular interest.

Are innovative human resource systems or balanced human resource systems associated with healthy firms and traditional or unbalanced systems associated with unhealthy firms? In our sample, with this simplistic analysis, only a weak pattern emerges. The pattern is clearest when relative measures are considered.

A greater proportion of healthy firms than unhealthy ones relies on innovative HR systems and on balanced systems. Healthy firms in our sample appear to be more likely to employ combinations of human resource practices that involve employees in both decision-making and in financial returns, and at both levels, the individual and the group or firm. Moreover, healthy firms seem to combine their practices in ways we consider theoretically more balanced in the sense that decision-making and financial return practices support each other.

Theory and empirical research suggest that the effectiveness of human resources systems depends on their suitability to a company's circumstances, especially their technology and product niche as expressed in employees' tasks (Han, 1996; Liu, 1998). We proposed two sets of matches between human resources systems and the four types of technology. To recount the main points, we argued that matches are good if the human resources system of an organization suits its technology. For example, a traditional system may produce good productivity in the presence of a low-certainty and low-interdependence technology but it will be unproductive if the technology is more 'advanced.' The best matches are combined in the segments denoted by the first order in either version of human resource systems. We expect that the best matches will be associated with best productivity and therefore open up a possibility for better organizational health.

Our analysis suggest only a weak relationship between the health of an organization and the quality of its system-technology match. When the classification based on absolute measures is considered, no pattern can be distinguished. When the relative measures are used, a higher proportion of healthy organizations, but still less than one-third, have the best match between systems under both versions and their technology as compared to far fewer unhealthy organizations (none of the unhealthy organizations have the best match under the second version of HR systems).

PROFILES OF HEALTHY ORGANIZATIONS AND SUMMARY OF FINDINGS

Several tentative conclusions emerge from our preliminary investigation of 113 firms, 35 of which we classified as healthy and 24 as unhealthy when using absolute measures of wellbeing and 46 of which we classified as healthy and 11 as unhealthy when using relative measures of wellbeing. These conclusions may be put forth in the form of profiles of healthy and unhealthy organizations. It bears emphasizing that these profiles are based on an analysis of correlations and comparisons of means, and they are meant to be suggestive and illustrative. We are obviously going beyond the data, and the profiles offered below represent unscientific ‘point estimates’ – many other combinations of company and employee characteristics may combine to generate healthy and unhealthy companies. But we hope that the juxtaposition of opposites helps convey the flavor of the findings.

TABLE 7
Stylized Profile of a Healthy Organization

	<u>Healthy company</u>	<u>Unhealthy company</u>
Number of employees	2,000	300
Company age	40	20
Average employee age	40	30
Average employee tenure	8	2
Union status	may be unionized	non-union
Task complexity	very high	very low
Task variability	high	low
Employee skills	very high	very low
Team work	prevalent	not used
Employee ownership	widely used	not used
Profit sharing	widely used	not used
Employment security	may be offered	not offered
Training, etc.	may be offered	not offered
Pay for skill	may be offered	not offered
Job rotation	may be offered	not offered

The profiles described here conform largely to the theoretical discussion in the literature on the connection between the organization of work and human resource practices on the one hand and organizational productivity on the other. Various authors have identified employee involvement in decision-making and employee participation in

financial returns as important contributors to organizational success (for example, Rosen, 1991; Ben-Ner & Jones 1995; Han, 1995; Levine, 1995; Huselid, 1995; Becker & Gerhart, 1996 and Ichniowski et al., 1997).

We find no evidence that the wellbeing of employees and wellbeing of shareholders are correlated, either positively or negatively. If they were positively correlated, companies would tend to concentrate in the healthy and unhealthy cells of our relative classification. It appears in our sample that one group of stakeholders can do quite well while the other does poorly. Whether these are short-term phenomena or are conditions that can be sustained on the long run is an open question that cannot be answered without additional theoretical development and data. But we do have suggestive evidence that healthy and unhealthy companies have distinctive characteristics as described above.

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APPENDIX B

Minnesota Human Resource Management Practices Survey 1999

Section I. Background Information

1. In what year was your company established? 19_____
2. A) How many locations with over 20 employees do you have in Minnesota? _____
B) How many locations with over 20 employees do you have in the rest of the US? _____
C) How many locations with over 20 employees do you have outside the US? _____
3. Please estimate the following information about your current employees as best you can (you may ignore columns that do not apply to your organization):

	In Minnesota	Elsewhere in the US	Outside the US
Number of employees			
Average age (in years)			
Average education (in years)			
Average length of service (in years)			
Proportion of females in your workforce			
Proportion of workforce that is unionized			
Proportion of permanent employees that are not full-time			
Proportion of contingent employees (e.g., temporary, seasonal, contractual)			

*The remainder of this survey relates to **core employees in Minnesota**. We refer to the largest group of employees **core employees**. By **core employees** we mean **non-supervisory, non-managerial employees** at your company who are directly involved in making the product or providing the service (e.g., assembly-line workers at an auto manufacturing factory, computer programmers in a software company, or sales representatives in an insurance company) If you have more than one group that could be considered 'core', choose the **largest** core group of employees in Minnesota and describe them.*

4. What is the job title of your core employees?
-

5. Approximately how many of these core employees do you have? _____
6. Please describe briefly the kind of work your core employees do:
- _____
- _____
7. About what percentage of your core employees would you estimate are unionized? _____
8. About how many hours per week would you estimate your average core employee works? _____
9. What shift(s) do your core employees work? (circle all items that apply)
- a) 1st (day shift)
 - b) 2nd (evening or 'swing' shift)
 - c) 3rd (night shift)
 - d) Other. (please specify) _____

Section II. In this section we would like to learn about WORK AND FAMILY ISSUES with regard to your core employees in Minnesota.

10. Which of the following programs or plans are available in your organization for core employees? (circle all items that apply)

A) Job Programs

- | | |
|----------------|---------------------------|
| 1) Flextime | 4) Telecommuting |
| 2) Flexiplace | 5) Other (please specify) |
| 3) Job sharing | _____ |

B) Workplace Programs

- | | |
|---|---------------------------------|
| 1) Sexual harassment awareness programs | 4) Conflict resolution programs |
| 2) Diversity awareness programs | 5) Other, please specify |
| 3) Workplace violence programs | _____ |

C) Educational Programs

- | | |
|---|---|
| 1) Sabbaticals | 5) Company-provided seminars or conferences |
| 2) Tuition/partial tuition reimbursement | 6) Other (please specify) |
| 3) Scholarships/educational assistance for dependents | _____ |
| 4) Company-provided training | |

D) Job Transition Programs

- | | |
|---|---------------------------|
| 1) Mentoring programs | 6) Outplacement services |
| 2) School to work programs | 7) Career fairs |
| 3) Internship programs | 8) Other (please specify) |
| 4) Apprenticeship and training programs | _____ |
| 5) Retraining | |

(continuation of Question 10—please circle all items offered to core employees by your organization)

E) Family Programs

- | | |
|--|--|
| 1) Paid maternity leave (beyond disability insurance provisions) | 5) On-site or near-site child care provided by company |
| 2) Paid paternity leave (beyond disability insurance provisions) | 6) Taft-Hartley financial assistance for employee housing expenses |
| 3) Prenatal and well-baby programs | 7) Other (please specify) _____ |
| 4) Mother's room | |

F) Physical, Psychological Health- Related Programs

- | | |
|---|--|
| 1) Employee Assistance Program or counseling services | 5) Physical fitness programs |
| 2) On-site fitness facilities | 6) On-site health clinic |
| 3) Nutrition programs and/or weight loss programs | 7) Health screenings (e.g., cholesterol, blood pressure) |
| 4) Smoking cessation programs | 8) Other (please specify) _____ |

G) Welfare Benefits and Financial Programs

- | | |
|---|---|
| 1) Supplemental unemployment plans | 9) Long-term disability plans |
| 2) Life insurance plans | 10) Severance pay |
| 3) Medical plan-Single plan | 11) Pre-tax spending accounts |
| 4) Medical plan-Choice of plans | 12) Flexible cafeteria style benefits plans |
| 5) Death benefits (other than life insurance) | 13) Legal aide/assistant services |
| 6) Dental plans | 14) Financial planning workshops/seminars |
| 7) Vision plans | 15) Other (please specify) _____ |
| 8) Temporary disability (accident and sickness) plans | |

11. Approximately what is the ratio of the average salary of the top three executives to the average annual wage of core employees in your company (estimate as best as you can)? _____
12. Does your organization sponsor or support any of the following employee clubs or social activities for core employees? (circle all items that apply)
- a) Company picnics
 - b) Company holiday parties (e.g., Christmas)
 - c) Employee sport teams or clubs
 - d) Investment clubs
 - e) Technology/computer clubs
 - f) Chess clubs
 - g) Bridge clubs
 - h) Toastmasters club
 - i) Other (please specify) _____

13. Does your organization have any of the following security measures for core employees? (circle all items that apply)

- a) Security walk-through at night
- b) Security guards posted at entrances and exits
- c) Video monitoring system at entrances and exits
- d) Video system in parking lots/ramps/elevators
- e) Security escort services
- f) Security/emergency phones throughout the building
- g) Other (please specify) _____

14. Does your organization engage in any of the following health and safety practices for core employees? (circle all items that apply)

- a) Identification of safety and health hazards
- b) Return-to-work programs
- c) Labor-management safety committees
- d) Audit of safety programs
- e) Safety-goal setting
- f) Company-specific safety training
- g) Scheduled safety inspections
- h) Training to monitor health hazards
- i) Comprehensive written safety program involving employees
- j) Evacuation plan/fire drill
- k) Other (please specify) _____

15. How would you rate the infrastructure and environment of your organization for your core employees? (circle *one* answer on each line)

	Very Poor	Poor	Fair	Good	Very Good
Building facilities	1	2	3	4	5
Sanitation	1	2	3	4	5
Lighting	1	2	3	4	5
Ventilation	1	2	3	4	5
Heat/air conditioning	1	2	3	4	5
Transportation and parking	1	2	3	4	5
Air quality	1	2	3	4	5
Noise level	1	2	3	4	5

16. What mechanisms are in place in your organization for employees to deal with specific complaints and conflicts? (circle all items that apply)

- a) Open-door policy
- b) Grievance procedures
- c) Phone-in system
- d) Other (please specify) _____

17. Consider the turnover rate of your core employees over the past year.

- A) Approximately, what is the annual turnover rate of core employees is _____%.
- B) Divide the above number into two components: VOLUNTARY turnover _____% and INVOLUNTARY turnover _____. The summation of these two should be equal to the number in item 17A, above.

18. Most involuntary turnover of core employees is due to: (Rank order the top 3 reasons, 1 is the most common reason)

_____ Individual performance/behavior problems
_____ Technological change
_____ Economic cycle
_____ Downsizing

_____ Mergers and acquisitions
_____ Impasse of collective bargaining
_____ Other (please specify) _____

Section III. In this section, we would like to ask questions about HUMAN RESOURCES PRACTICES that apply to your core employees in Minnesota.

19. Which of the following human resource management practices has your company implemented?
(check all items that apply)

Note: This question refers not only to your core employees in Minnesota, but also to other employees in your core business in Minnesota.

	For CORE employees	For OTHER employees
1) On-the-job training		
2) Job rotation		
3) Training in statistical analysis		
4) Training in team building skills		
5) Realistic job preview		
6) Promotion from within		
7) Employment security		
8) Suggestion system		
9) Quality of Work Life (QWL)		
10) Quality circles		
11) Total Quality Management (TQM)		
12) Self-managing work teams		
13) Job redesign		
14) Joint labor-management committees		
15) Employee representative on the board of directors		
16) 401 (k) plan		
17) Employee stock ownership plan (ESOP)		
18) Stock purchase plan		
19) Stock option plan		
20) Cash profit-sharing plan		
21) Deferred profit-sharing plan		
22) Gain sharing		
23) Skill-based pay		
24) Individual bonus		
25) Group bonus		
26) Pension plan		
27) Periodic employee attitude survey(s)		
28) Other (please specify) _____ _____		

20. Thinking about your core employees, to what extent (circle *one* answer on *each* line):

	<i>Not at all</i>	<i>Slightly</i>	<i>Mode- rately</i>	<i>Very</i>	<i>Extremely</i>
a. Are the tasks performed by core employees <i>complex</i> ?	1	2	3	4	5
b. Are the tasks performed by core employees <i>routine</i> ?	1	2	3	4	5
c. Are the tasks performed by core employees <i>highly skilled</i> ?	1	2	3	4	5
d. Are the tasks performed by core employees <i>multifaceted</i> ?	1	2	3	4	5
e. Are the tasks performed by core employees <i>important</i> to the success of your business, compared to other groups?	1	2	3	4	5
f. Are the skills of core employees <i>transferable</i> to other companies?	1	2	3	4	5
g. Are the activities of core employees <i>interdependent</i> ?	1	2	3	4	5
h. Are the tasks of core employees <i>affected by computer-based technology</i> ?	1	2	3	4	5

21. Which of the following techniques does management use to communicate with core employees? Which are used with core employees to communicate with one another? (circle one answer on *each* line for management and core employee use)

USED BY MANAGEMENT				USED BY CORE EMPLOYEES		
Low use	Medium use	High use		Low use	Medium use	High use
1	2	3	Formal meetings	1	2	3
1	2	3	Informal meetings	1	2	3
1	2	3	Work groups	1	2	3
1	2	3	Newsletter	1	2	3
1	2	3	E-mail	1	2	3
1	2	3	Webpage	1	2	3
1	2	3	Bulletin boards	1	2	3
1	2	3	Video display monitors	1	2	3

22. How much on-the-job *face-to-face* contact do your core employees have with customers and/or other employees?

1 2 3 4 5
No contact Little contact Some contact Frequent contact Constant contact

23. How demanding is the workload for your core employees?

1 2 3 4 5
Not at all Not demanding Appropriately Highly Extremely
demanding enough demanding demanding demanding

24. To what extent does RELIANCE ON COMPUTER-BASED TECHNOLOGY reduce or enhance the skill sets possessed by core employees? (circle *one* answer on each line)

	Reduces skill set			No change	Enhances skill set		
	Greatly	Slightly			Slightly	Greatly	
a. <u>Content</u> skills: basic knowledge and skills that enable reading, computing, listening, writing, and speaking.	3←	2←	1←	0	→1	→2	→3
b. <u>Process</u> skills – skills needed to process information and facilitate procedures (e.g., critical thinking, monitoring, working with new information, etc.)	3←	2←	1←	0	→1	→2	→3
c. <u>Social skills</u> – skills needed for working with people to achieve goals (e.g., social perceptiveness, coordination and negotiation skills, persuasion and instruction skills, and team-working skills)	3←	2←	1←	0	→1	→2	→3
d. <u>Complex problem-solving skills</u> – skills needed for solving problems (e.g., idea generating and evaluation, implementation planning, and assessing outcomes, etc.)	3←	2←	1←	0	→1	→2	→3
e. <u>Technical skills</u> – skills needed for designing, operating and maintaining equipment (e.g., equipment selection, installation, programming, operating, testing and repairing.)	3←	2←	1←	0	→1	→2	→3
f. <u>System skills</u> – skills needed for understanding a system as a whole and acting upon it.	3←	2←	1←	0	→1	→2	→3
g. <u>Resources management skills</u> – skills needed for working with resources in creating products (e.g., time management, financial, materials, and personnel management.)	3←	2←	1←	0	→1	→2	→3

24. To what extent does management share information with core employees on the following areas?
(circle *one* answer on each line)

<i>Area</i>	<i>No information sharing</i>	<i>Little information sharing</i>	<i>Some information sharing</i>	<i>Moderate information sharing</i>	<i>Full information sharing</i>
Investment policies	1	2	3	4	5
Production planning	1	2	3	4	5
Human resources planning	1	2	3	4	5
Profitability	1	2	3	4	5
Corporate finance	1	2	3	4	5
Company current events	1	2	3	4	5

Section IV. In this section, we would like to learn WHAT YOUR CORE EMPLOYEES WOULD TELL US if they filled out an employee attitude survey. Please indicate how you think employees would respond to each of the following items.

	<i>Strongly Disagree 1</i>	<i>Disagree 2</i>	<i>Neither Agree nor Disagree 3</i>	<i>Agree 4</i>	<i>Strongly Agree 5</i>
<u>Our core employees would say</u>					
a. they are recognized when they do good work	1	2	3	4	5
b. their organization offers many opportunities for employee growth and career development	1	2	3	4	5
c. the organization's core values are evident (i.e., 'lived out') in day-to-day work life	1	2	3	4	5
d. they are encouraged to come up with new and better ways of doing things.....	1	2	3	4	5
e. they cooperate to get the work done	1	2	3	4	5
f. they are highly committed to their jobs.....	1	2	3	4	5
g. their morale is high.....	1	2	3	4	5
h. they are satisfied with their jobs.....	1	2	3	4	5
i. they are satisfied with their employer	1	2	3	4	5
j. they would be willing to spend the rest of their career with this organization	1	2	3	4	5
k. they feel a strong sense of belonging to their organization	1	2	3	4	5
l. they are under a lot of stress at work.....	1	2	3	4	5
m. they know exactly what is expected of them in their job	1	2	3	4	5
n. they have clear, planned goals and objectives.....	1	2	3	4	5

CONTACT INFORMATION FORM

Please complete the following information regarding yourself, as it will help us gain a better perspective on the information you have given us in this survey. Knowing your position helps us to understand the organization of your firm. **All survey responses and contact information will be held in the strictest of confidence.** Your contact information will be kept out of the data entry process and cannot be accessed or linked to your responses by unauthorized personnel. Your contact information will be used by authorized personnel only in the event that your survey responses should require clarification.

Name _____

Company _____

Position _____

Address _____

Phone _____

Fax _____

Email _____

THANK YOU VERY MUCH FOR YOUR COOPERATION.

Please return the completed questionnaire in the enclosed postage-paid self-addressed envelope, or if it is missing, please mail it to:

Prof. Avner Ben-Ner and Prof. Richard Arvey
Industrial Relations Center
321-19th Avenue South
Suite 3-300
Minneapolis, MINNESOTA 55455

APPENDIX C

Data Dictionary

Survey II Data Information

VARIABLE	DESCRIPTION
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	<i>Background Information</i>
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XID	Survey II Identification Number
ms001	Firm birth year
ms002	Number of establishments in MN
ms003	Number of establishments elsewhere in the US
ms004	Number of establishments outside the US
ms005	Number of employees in MN
ms006	Number of employees elsewhere in the US
ms007	Number of employees outside the US
ms008	Employee average age in MN
ms009	Employee average age elsewhere in the US
ms010	Employee average age outside the US
ms011	Employee average education in MN
ms012	Employee average education elsewhere in the US
ms013	Employee average education outside the US
ms014	Employee average tenure in MN
ms015	Employee average tenure elsewhere in the US
ms016	Employee average tenure outside the US
ms017	% of female employees in MN
ms018	% of female employees elsewhere in the US
ms019	% of female employees outside the US
ms020	% of unionized workforce in MN
ms021	% of unionized workforce elsewhere in the US
ms022	% of unionized workforce outside the US
ms023	% of non-fulltime permanent employees in MN
ms024	% of non-fulltime permanent employees elsewhere in the US
ms025	% of non-fulltime permanent employees outside the US
ms026	% of contingent employees in MN
ms027	% of contingent employees elsewhere in the US
ms028	% of contingent employees outside the US
ms030	Number of core employees
ms032	% of unionized core employees
ms033	Weekly working hours
ms034	Day shift dummy
ms035	Evening shift dummy
ms036	Night shift dummy
ms037	Other work shift indicator

Work and Family Issues

ms038	Flextime program
ms039	Flexiplace program
ms040	Job sharing program
ms041	Telecommuting program
ms042	Other Job program indicator
ms043	Sexual harassment awareness programs
ms044	Diversity awareness programs
ms045	Workplace violence programs
ms046	Conflict resolution programs
ms047	Other Workplace program indicator
ms048	Sabbaticals
ms049	Tuition/partial tuition reimbursement
ms050	Scholarship/Educational assistance for dependents
ms051	Company-provided training
ms052	Company-provided seminars or conferences
ms053	Other Educational Program indicator
ms054	Mentoring programs
ms055	School to work programs
ms056	Internship programs
ms057	Apprenticeship and training programs
ms058	Retraining
ms059	Outplacement services
ms060	Career fairs
ms061	Other Job Transition Program indicator
ms062	Paid maternity leave (beyond disability insurance)
ms063	Paid paternity leave (beyond disability insurance)
ms064	Prenatal and well-baby programs
ms065	Mother's room
ms066	On-site or near-site childcare by company
ms067	Taft-Hartley financial assistance for housing expenses
ms068	Other Family Program indicator
ms069	Employee assistance or counseling services
ms070	On-site fitness facilities
ms071	Nutrition programs and weight loss programs
ms072	Smoking cessation programs
ms073	Physical fitness programs
ms074	On-site health clinic
ms075	Health screenings
ms076	Other Physical Psych. Health-related Program indicator
ms077	Supplemental unemployment plans
ms078	Life insurance plans
ms079	Medical plan – Single plan
ms080	Medical plan - Choice of plans
ms081	Death benefits (other than life insurance)

ms082	Dental plans
ms083	Vision plans
ms084	Temporary disability (accident and sickness) plans
ms085	Long-term disability plans
ms086	Severance pay
ms087	Pre-tax spending accounts
ms088	Flexible cafeteria style benefits plans
ms089	Legal aide/assistance services
ms090	Financial planning workshops/seminars
ms091	Other Welfare benefit and financial Program indicator
ms092	Top3 salary/core employee wage ratio
ms093	Company picnics
ms094	Company holiday parties
ms095	Employee sport teams or clubs
ms096	Investment clubs
ms097	Technology/computer clubs
ms098	Chess clubs
ms099	Bridge clubs
ms100	Toastmasters club
ms101	Other Employer sponsored club and activity indicator
ms102	Security walk-through at night
ms103	Security guards posted at entrances and exits
ms104	Video monitoring systems at entrances and exits
ms105	Video systems in parking lots/ramps/elevators
ms106	Security escort services
ms107	Security/emergency phones throughout the bldg.
ms108	Other Security measure indicator
ms109	Identification of safety and health hazards
ms110	Return-to-work programs
ms111	Labor-management safety committees
ms112	Audit of safety programs
ms113	Safety-goal setting
ms114	Company-specific safety training
ms115	Scheduled safety inspection
ms116	Training to monitor health hazards
ms117	Comprehensive written safety programs involving employees
ms118	Evacuation plan/fire drill
ms119	Other Health and safety practice indicator
ms120	Building facilities rating
ms121	Sanitation rating
ms122	Lighting rating
ms123	Ventilation rating
ms124	Heat/air conditioning rating
ms125	Transportation and parking rating
ms126	Air quality rating

ms127	Noise level rating
ms128	Open-door policy
ms129	Grievance procedures
ms130	Phone-in system
ms131	Other conflict resolution mean indicator
ms132	Annual turnover rate (%)
ms133	Voluntary turnover rate
ms134	Involuntary turnover
ms135	Individual performance/behavior problems
ms136	Technological change
ms137	Economic cycle
ms138	Downsizing
ms139	Mergers and acquisitions
ms140	Impasse of collective bargaining
ms141	Other Turnover reason indicator
	<i>Human Resource Practices</i>
ms142	On-the-job training/core
ms143	Job rotation/core
ms144	Training in statistical analysis/core
ms145	Training in team building skills/core
ms146	Realistic job preview/core
ms147	Promotion from within/core
ms148	Employment security/core
ms149	Suggestion system/core
ms150	Quality of work life/core
ms151	Quality circle/core
ms152	Total Quality Management/core
ms153	Self-managing work teams/core
ms154	Job redesign/core
ms155	Joint labor-management committees/core
ms156	Employee representative on the board of directors/core
ms157	401K plans/core
ms158	ESOP/core
ms159	Stock purchase plan/core
ms160	Stock option plan/core
ms161	Cash profit sharing plan/core
ms162	Deferred profit sharing plan/core
ms163	Gain sharing/core
ms164	Skill-based pay/core
ms165	Individual bonus/core
ms166	Group bonus/core
ms167	Pension plan/core
ms168	Periodic employee attitude surveys/core
ms170	Other HR practices-1,dummy/core
ms173	On-the-job training/other

ms174	Job rotation/other
ms175	Training in statistical analysis/other
ms176	Training in team building skills/other
ms177	Realistic job preview/other
ms178	Promotion from within/other
ms179	Employment security/other
ms180	Suggestion system/other
ms181	Quality of work life/other
ms182	Quality circle/other
ms183	Total Quality Management/other
ms184	Self-managing work teams/other
ms185	Job redesign/other
ms186	Joint labor-management committees/other
ms187	Employee representative on the board of directors/other
ms188	401K plans/other
ms189	ESOP/other
ms190	Stock purchase plan/other
ms191	Stock option plan/other
ms192	Cash profit sharing plan/other
ms193	Deferred profit sharing plan/other
ms194	Gain sharing/other
ms195	Skill-based pay/other
ms196	Individual bonus/other
ms197	Group bonus/other
ms198	Pension plan/other
ms199	Periodic employee attitude surveys/other
ms200	Other HR practices -1, dummy/other
ms202	Task complexity
ms203	Task routine ness
ms204	Task skill requirement
ms205	Task multifaceted
ms206	Task importance
ms207	Skill transferability
ms208	Interdependence of activities
ms209	Effect of computer-based technology
ms210	Formal meetings/mgmt
ms211	Informal meetings/mgmt
ms212	Work groups/mgmt
ms213	Newsletter/mgmt
ms214	E-mail/management
ms215	WebPages/mgmt
ms216	Bulletin boards/mgmt
ms217	Video display monitors/mgmt
ms218	Formal meetings/core
ms219	Informal meetings/core

ms220	Work groups/core
ms221	Newsletter/core
ms222	E-mail/core
ms223	WebPages/core
ms224	Bulletin boards/core
ms225	Video display monitors/core
ms226	Face-to-face contact rating for core employees/customers
ms227	Workload demanding rating
ms228	Content skills rating
ms229	Process skills rating
ms230	Social skills rating
ms231	Complex problem-solving skills rating
ms232	Technical skills rating
ms233	System skills rating
ms234	Resources management skills rating
ms235	Investment policies info sharing
ms236	Production planning info sharing
ms237	HR planning info sharing
ms238	Profitability info sharing
ms239	Corporate finance info sharing
ms240	Company current events info sharing

Perceived Employee Response to CDC Items

ms241	Good work recognition
ms242	Opportunities for employee growth and career development
ms243	The organization's core values are evident
ms244	New and better ways of doing things encouraged
ms245	Cooperate to get the work done
ms246	Highly committed to their jobs
ms247	Morale is high
ms248	Satisfied with their jobs
ms249	Satisfied with their employer
ms250	Willing to spend the rest of the career with the firm
ms251	Feel a strong sense of belonging to the firm
ms252	Under a lot of stress at work
ms253	Know exactly what is expected of them in their job
ms254	Have clear, planned goals and objectives

Dunn & Bradstreet Data Information

START	END	DATA FIELD DESCRIPTION
Customer Data		
1	10	Mail ID#
11	76	Company Name
77	129	Address 1
130	155	Address 2
156	176	City
177	181	State Abbreviation
182	193	Zip
194	217	Telephone
Current DMI Data		
218	224	Match Sequence
225	225	Match Code
226	226	Match Filler
227	235	Match Duns Number
236	242	Match Grade
243	244	Match Confidence Code
245	248	Match Confidence Percentile
249	252	Primary Sic 4
253	256	Secondary Sic4
257	259	Commercial Credit Score
260	262	Financial Stress Score Percentile
263	271	Employees Total
272	272	Employees Total Code
273	281	Employees Here
282	282	Employees Here Code
283	297	Sales Volume
298	298	Sales Volume Code
Credit Historical Data		
299	301	Financial Stress Score Percentile '95
302	304	Commercial Credit Score '95
305	307	Financial Stress Score Percentile '96
308	310	Commercial Credit Score '96
311	313	Financial Stress Score Percentile '97
314	316	Commercial Credit Score '97
317	319	Financial Stress Score Percentile '98
320	322	Commercial Credit Score '98
323	325	Financial Stress Score Percentile '99
326	328	Commercial Credit Score '99
DMI Historical Data		
329	337	Employees Total '95

338	338	Employees Total Code 95
339	347	Employees Here '95
348	348	Employees Here Code '95
349	363	Sales Volume '95
364	364	Sales Volume Code '95
365	373	Employees Total '96
374	374	Employees Total Code 96
375	383	Employees Here '96
384	384	Employees Here Code '96
385	399	Sales Volume '96
400	400	Sales Volume Code '96
401	409	Employees Total '97
410	410	Employees Total Code 97
411	419	Employees Here '97
420	420	Employees Here Code '97
421	435	Sales Volume '97
436	436	Sales Volume Code '97
437	445	Employees Total '98
446	446	Employees Total Code 98
447	455	Employees Here '98
456	456	Employees Here Code '98
457	471	Sales Volume '98
472	472	Sales Volume Code '98
473	481	Employees Total '99
482	482	Employees Total Code 99
483	491	Employees Here '99
492	492	Employees Here Code '99
493	507	Sales Volume '99
508	508	Sales Volume Code '99
Financial Data 1st Most Recent Statement		
509	509	Statement Type 1
510	515	Statement Date 1
516	530	Cash 1
531	545	Accounts Receivable 1
546	560	Inventory 1
561	575	Current Assets 1
576	590	Current Liabilities 1
591	605	Total Assets1
606	620	Total Liabilities 1
621	635	Working Capital 1
636	650	Net Worth 1
651	665	Total Sales 1

666	680	Net Profit 1
681	686	Current Ratio 1
687	692	Quick Ratio 1
693	698	Sales Working Capital Ratio 1
699	704	Total Liab./Net Work Ratio 1
705	710	Return on Sales Ratio 1
711	716	Return on Assets Ratio 1
717	722	Collection Period Ratio 1
Financial Data 2nd Most Recent Statement		
723	723	Statement Type 2
724	729	Statement Date 2
730	744	Cash 2
745	759	Accounts Receivable 2
760	774	Inventory 2
775	789	Current Assets 2
790	804	Current Liabilities 2
805	819	Total Assets2
820	834	Total Liabilities 2
835	849	Working Capital 2
850	864	Net Worth 2
865	879	Total Sales 2
880	894	Net Profit 2
895	900	Current Ratio 2
901	906	Quick Ratio 2
907	912	Sales Working Capital Ratio 2
913	918	Total Liab./Net Work Ratio 2
919	924	Return on Sales Ratio 2
925	930	Return on Assets Ratio 2
931	936	Collection Period Ratio 2
Financial Data 3rd Most Recent Statement		
937	937	Statement Type 3
938	943	Statement Date 3
944	958	Cash 3
959	973	Accounts Receivable 3
974	988	Inventory 3
989	1003	Current Assets 3
1004	1018	Current Liabilities 3
1019	1033	Total Assets3
1034	1048	Total Liabilities 3
1049	1063	Working Capital 3
1064	1078	Net Worth 3

1079	1093	Total Sales 3
1094	1108	Net Profit 3
1109	1114	Current Ratio3
1115	1120	Quick Ratio 3
1121	1126	Sales Working Capital Ratio 3
1127	1132	Total Liab./Net Work Ratio 3
1133	1138	Return on Sales Ratio 3
1139	1144	Return on Assets Ratio 3
1145	1150	Collection Period Ratio 3

DES Data Information

VARIABLE	DESCRIPTION
<i>Background Information</i>	
hrri_id	Unique HRRI Identification Number
year	data year
ein	Employer Identification Number
unit	establishment number
coname	company name
dba_name	doing business as
address	street address
city	city
state	state
zip	ZIP code
sic	4-digit SIC code
<i>Monthly Employment Information</i>	
jan_emp	January employment
feb_emp	February employment
mar_emp	March employment
apr_emp	April employment
may_emp	May employment
jun_emp	June employment
jul_emp	July employment
aug_emp	August employment
sep_emp	September employment
oct_emp	October employment
nov_emp	November employment
dec_emp	December employment
<i>Quarterly Total Wage Payments</i>	
q1_wage	1st quarter wages

q2_wage	2nd quarter wages
q3_wage	3rd quarter wages
q4_wage	4th quarter wages

DOLI Data Information

VARIABLE	DESCRIPTION
age	Age at injury, supplied in place of birth date
attfeepd	The dollar value of fees paid to the claimant's attorney. This is the basis for (YSP's "ATTY" variable,) whether or not an attorney was involved. We can only track attorney involvement in the database through use of this variable.
clmdte	Claim petition filed date
clmflg	Claim petition flag. Only use the claim petition filed date if this flag's value is "X".
clmstat	Claim status ("CS")
closdate	The NOID date ("NDATE")
ddeath	Date of death, to be used as an indicator of claimant death, in place of "FT".
denydate	Date of claim denial filing, in place of the "DN" indicator
doi	Date of injury (no change)
eezip	Zip code of employee's residence
empstat	Employment status (full time, part-time, seasonal, temporary)
eraddress	Employer's address, to be used to help match claims to employers
ername	Employer's name
erui	Unemployment insurance number for the employer
erzip	Zip code of employer (may not be same as worksite, but a home office)
extdisab	Extent of disability, shows "D" for a fatality
fein	The employer's FEIN number
gender	Gender of claimant ("SX")
in	Indemnity flag ("IF") most recent --June 2000
indem	Indemnity flag ("IF") as of March 2000
injdate	The doi in a different format
inyear	Year of injury
instype	Insurance type (v=voluntary, s,g,p=self-insured, a=assigned risk)
irname	First four characters of insurer's name ("INSR")
losttime	Lost time flag. Indicates whether documents indicate more than 3 days of disability, regardless of payment of

	indemnity benefits. Generally, all indemnity claims have this flag as "Y". As of March 2000.
lt	The lost time flag as of June 2000.
marstat	Marital status. (M=married, N=not married, sometimes see S=not married, Y=married) needs editing.
nature	Nature of injury ("NOI")
occ	Claimant occupation, using 1990 Census codes ("OCC")
part	Part of body injury ("POB")
ppdpaid	Amount of benefits paid for permanent partial disability ("PPDPD")
ppdtype	Type of ppd benefit paid (E=economic recovery compensation, I=impairment compensation, is blank for most claims, since this was dropped in 1995)
rating	ppd percentage rating ("PPDPCT")
reasdisc	Reason for discontinuance (can ignore)
sic	SIC code ("SIC")
source	Source of injury code (can ignore)
stippaid	Amount of benefits paid as stipulation ("STIPPD")
sub7paid	Amount of attorney fees refunded to employee (can ignore)
suppaid	Amount of supplemental benefits paid (should be blank or 0 for nearly everyone)
tenure	Years claimant worked for employer
totdeppd	Total dependency benefits paid (only used in fatal claims)
totpaid	Total indemnity benefits paid ("TOTPD")
tpdbeg	Beginning date of temp partial benefits
tpdend	Ending date of temp partial benefits
tpdpaid	Total amount of tpd benefits paid
tpdweeks	Total weeks of tpd ("TPD")
ttdbeg	Beginning date of temp total benefits
ttdend	Ending date of temp total benefits
ttdpaid	Total amount of ttd benefits paid
ttdrate	Weekly rate for TTD benefits
ttdweeks	Total weeks of ttd ("TTD")
valsic	A marker for SIC data quality
wage	Claimant's average weekly preinjury wage ("AWW")

S&P's COMPUSTAT Information, Selected

VARIABLE	DESCRIPTION
data6	Total assets (MM\$)
data12	Net sales (MM\$)
data16	Total income taxes (MM\$)
data18	Income before extraordinary items (MM\$)
data21	Dividends - Common (MM\$)
data24	Share price - Close (\$&c)
data25	Common shares outstanding (MM)
data29	Employees (M)
data37	Total invested capital (MM\$)
data41	Cost of goods sold (MM\$)
data42	Labor and related expenses (MM\$)
data58	Earning per share – Basic, excluded extraordinary items (\$&c)
data60	Total common equity (MM\$)
data161	Income tax refund (MM\$)
data189	Selling, general & administrative expenses (MM\$)

Notes: M: Thousands

MM: Millions

MM\$: Millions of Dollars

\$&c: Dollars and cents

Form 5500 Series Data Information, Selected

VARIABLE	DESCRIPTION
FEIN	The nine-digit federal employer identification number, assigned to the plan sponsor/employer
Company name	The name of plan sponsor
Plan name	The name of plan the employer reported
Plan number	The three-digit number the employer assigned to the plan. All welfare benefit plan numbers start from 501, and all other plans including deferred profit sharing plans and ESOPs start at 001.
Plan entity code	Single-employer plan.....A

	Plan of controlled group of corporations or common control employers.....	
B	
	Multi-employer plan.....	C
	Multiple-employer-collectively-bargained plan.....	D
	Multiple-employer plan (other).....	E
	Group insurance arrangement (of welfare plans).....	F
Effective date of plan	The date the plan first became effective, mo., day, yr.	
Termination year	The year the plan terminated	
	Defined benefit.....	1
	Profit sharing.....	2
	Stock Bonus.....	3
	Target benefit.....	4
	Other money purchase.....	5
Pension benefit plan code	Other (specified).....	6
	Defined benefit plan with benefits based partly on balance of separate account of participant.....	7
	Annuity arrangement of certain exempt organizations.....	8
	Custodial account for regulated company stock.....	9
	Pension plan utilizing IRAs or annuities as the sole funding vehicle for providing benefits.....	0
	ESOP.....	
	...A	
	Leveraged ESOP.....	B
Other pension plan feature	Participant-directed account plan.....	C
	Pension plan maintained outside USA.....	D
	Plan covering self-employed	

	individuals.....E
	Affiliated service
	group.....F
	401(k)
	Plan.....G
	Top-heavy
	plan.....H
	Plan with permitted disparity
	provisions.....I
	Master
	plan.....J
	Prototype
	plan.....K
	Regional prototype
	plan.....L
	Health (other than dental or
	vision).....A
	Life
	insurance.....B
	Supplemental
	unemployment.....C
	Dental.....
	...D
	Vision.....
	...E
	Temporary disability (accident and
	sickness).....F
	Prepaid
	legal.....G
Welfare benefit	Long term
plan code	disability.....H
	Severance
	pay.....I
	Apprenticeship and
	training.....J
	Scholarship
	(funded).....K
	Death benefits (other than life
	insurance).....L
	Taft-Hartley financial assistance for employee housing
	expenses.....
	...P
	Other welfare benefit
	plans.....Z
Active	Total number of individuals who are currently in employment
participants	covered by a plan and who are earning or retaining

credited service under a plan

Total employees	Total number of employees of the employer
Total plan investment	Total investments of the plan
Employer security	Investment on employer's security
Total plan assets	Total assets of the plan
Employer contribution	Amount of contributions paid by the employer for the plan year
Employee contribution	Amount of contributions paid by the employees for the plan year
Total contribution	Total contributions made to the plan
Total income	Total income of the plan
Distributed benefits	Total distribution of benefits and payments to provide benefits
Total expenses	Total administrative and other expenses of the plan

APPENDIX D

FACTOR ANALYSES RESULTS

Results of Factor Analysis of Job Programs Items – JobProgramF

	Factor 1 Job Program Factor
Flextime	.70
Flexiplace	.58
Job sharing	.65
Telecommuting	.68
Eigenvalue	1.73
% of Variance	43

Results of Factor Analysis of Workplace Programs Items - WorkplaceF

	Factor 1 Workplace Program Factor
Sexual harassment awareness programs	.72
Diversity awareness programs	.77
Workplace violence programs	.78
Conflict resolution programs	.74
Eigenvalue	2.28
% of Variance	57

Results of Factor Analysis of Educational Programs Items - EduF

	Factor 1 Educational Program Factor
Sabbaticals	.31
Tuition/partial tuition reimbursement	.69
Scholarships/educational assistance for dependents	.40
Company-provided training	.74
Company-provided seminars or conferences	.74
Eigenvalue	1.82
% of Variance	36

Results of Factor Analysis of Job Transition Programs Items - TrainF

	Factor1 Non-training Job Transition Factor	Factor 2 Training Job Transition Factor
Mentoring programs	.40	.39
School to work programs	.12	.57
Internship programs	.69	.27
Apprenticeship and training programs	-.03	.72
Retraining	.14	.69
Outplacement services	.75	-.15
Career fairs	.63	.17
Eigenvalue	2.08	1.14
% of Variance	.30	.46

Results of Factor Analysis of Family Programs Items

	Factor1 Paid Leave Family Program Factor	Factor 2 Child Care Program Factor
Paid maternity leave (beyond disability insurance provisions)	.55	-.03
Paid paternity leave (beyond disability insurance provisions)	.55	-.04
Prenatal and well-baby programs	.03	.46
Mother's room	-.01	.54
On-site or near-site child care	-.06	.48
Taft-Hartley financial assistance for employee housing expenses	-.07	.16
Eigenvalue	1.68	1.27
% of Variance	28	21

Results of Factor Analysis of Physical, Psychological Health-Related Programs Items - PhysPsyF

	Factor 1 Physical, Psychological Health Program Factor
Employee Assistance Program or counseling services	.59
On-site fitness facilities	.47
Nutrition programs and/or weight loss programs	.75
Smoking cessation programs	.67
Physical fitness programs	.66
On-site health clinic	.34
Health screenings (e.g., cholesterol, blood pressure)	.68
Eigenvalue	2.60
% of Variance	37

Results of Factor Analysis of Welfare Benefits and Financial Programs Items

	Factor 1 Life Insurance and Disability Factor	Factor 2 Single Medical Plan Factor	Factor 3 Supplemental Benefits Factor
Supplemental unemployment plans	-.07	-.07	.69
Life insurance plans	.78	.09	.06
Medical plan-Single plan	.22	.89	-.02
Medical plan-Choice of plans	.37	-.82	.06
Death benefits (other than life insurance)	.33	.01	.36
Dental plans	.78	-.08	-.03
Vision plans	.48	-.18	.07
Temporary disability (accident and sickness) plans	.74	-.07	.10
Long-term disability plans	.72	-.02	.17
Severance pay	.37	-.08	.50
Pre-tax spending accounts	.70	-.01	.15
Flexible cafeteria style benefits plans	.39	.14	.31
Legal aide/assistant services	.15	-.08	.59
Financial planning workshops/seminars	.45	-.12	.03
Eigenvalue	4.11	1.55	1.09
% of Variance	29	11	8

Results of Factor Analysis of Employee Clubs and Social Activities Items

	Factor 1 Professional Activity Factor	Factor 2 Outdoor Activity Factor	Factor 3 Indoor Activity Factor
Company picnics	.08	.78	-.02
Company holiday parties	-.07	.76	.07
Employee sport teams or clubs	.37	.50	-.03
Investment clubs	.52	.02	.16
Technology/computer clubs	.69	.04	.13
Chess clubs	.00	.09	.82
Bridge clubs	.13	-.06	.81
Toastmasters club	.73	.02	.03
Eigenvalue	1.83	1.37	1.08
% of Variance	23	17	13

Results of Factor Analysis of Security Measures Items

	Factor1 Video Security Factor	Factor 2 Non-Video Security Factor
Security walk-through at night	.80	.12
Security guards posted at entrances and exits	.63	.32
Video monitoring system at entrances and exits	.13	.82
Video system in parking lots/ramps/elevators	.15	.82
Security escort services	.76	.17
Security/emergency phones throughout the building	.62	.11
Eigenvalue	2.57	1.00
% of Variance	43	17

Results of Factor Analysis of Health and Safety Practices Items - OSHF

	Factor 1 Health and Safety Practices Factor
Identification of safety and health hazards	.64
Return-to-work programs	.70
Labor-management safety committees	.77
Audit of safety programs	.79
Safety-goal setting	.74
Company-specific safety training	.76
Scheduled safety inspections	.79
Training to monitor health hazards	.68
Comprehensive written safety program involving employees	.78
Evaluation plan/fire drill	.59
Eigenvalue	5.30
% of Variance	53

Results of Factor Analysis of Infrastructure and Environment Items - InfraF

	Factor 1 Infrastructure and Environment Factor
Building facilities	.76
Sanitation	.78
Lighting	.83
Ventilation	.83
Heat/air conditioning	.74
Transportation and parking	.59
Air quality	.83
Noise level	.62
Eigenvalue	4.53
% of Variance	57

Results of Factor Analysis of Task Items

	Factor 1 Uncertainty and Demanding Task Factor	Factor 2 Important and Interdependence Task Factor	Factor 3 Face-to-Face Contact Factor
Are the tasks performed by core employees <i>complex</i> ?	.83	.08	-.07
Are the tasks performed by core employees <i>routine</i> ?	-.51	.45	.00
Are the tasks performed by core employees <i>highly skilled</i> ?	.84	.08	.00
Are the tasks performed by core employees <i>multifaceted</i> ?	.68	.24	.18
Are the tasks performed by core employees <i>important</i> to the success of your business, compared to other groups?	.22	.52	.28
Are the skills of core employees <i>transferable</i> to other companies?	.26	.52	.06
Are the activities of core employees <i>interdependent</i> ?	.12	.76	-.05
Are the tasks of core employees affected by <i>computer-based technology</i> ?	.50	.29	-.30
How much on-the-job face-to-face contact do your core employees have with customers and/or other employees?	-.02	.01	.89
How demanding is the workload for your core employees?	.44	.08	.32
Eigenvalue	2.96	1.27	1.05
% of Variance	30	12	11

Results of Factor Analysis of Skill Set Impact Items

	Factor 1 Skill Set Impact Factor
Content skills	.67
Process skills	.73
Social skills	.44
Complex problem-solving skills	.75
Technical skills	.72
System skills	.77
Resources management skills	.67
Eigenvalue	3.30
% of Variance	47

Results of Factor Analysis of Information Sharing Items - InformF

	Factor 1 Information Sharing Factor
Investment policies	.66
Production planning	.70
Human resources planning	.73
Profitability	.83
Corporate finance	.79
Company current events	.71
Eigenvalue	3.28
% of Variance	55

Results of Factor Analysis of CDC Items

	Factor 1 Satisfaction Factor	Factor 2 Commitment Factor	Factor 3 Expectation Factor	Factor 4 Work Stress Factor
They are recognized when they do good work	.73	.01	-.28	.02
Their organization offers many opportunities for employee growth and career development	.63	-.17	.11	-.23
The organization's core values are evident (i.e., 'lived out') in day-to-day work life	.68	-.13	-.20	.01
They are encouraged to come up with new and better ways of doing things	.47	-.16	.29	-.15
They cooperate to get the work done	.11	-.54	.35	.17
They are highly committed to their jobs	.12	-.74	-.14	-.22
Their morale is high	.63	-.38	-.15	.26
They are satisfied with their jobs	.44	-.56	-.09	.11
They are satisfied with their employer	.65	-.34	-.17	.28
They would be willing to spend the rest of their career with this organization	.10	-.76	.02	-.04
They feel a strong sense of belonging to their organization	.43	-.56	-.17	.02
They are under a lot of stress at work	.06	.06	.01	.90
They know exactly what is expected of them in their job	.16	-.02	-.84	.00
They have clear, planned goals and objectives	.14	-.21	.76	-.02

Eigenvalue	4.71	1.31	1.16	1.0
% of Variance	33	10	8	7

Note:

These tables were constructed by Hui Liao based on Fanmin Kong's STATA output file.

July

APPENDIX E

Multinomial regression

Number of obs = 407

LR chi2(72) = 287.24

Prob > chi2 = 0.0000

Log likelihood = -412.79426

Pseudo R2 = 0.2581

type5	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
1						
PhysPsyF	-.264964	.1973838	-1.34	0.179	-.6518291	.121901
SecureF	.1641175	.2245839	0.73	0.465	-.2760588	.6042939
VideoF	.0084321	.2042443	0.04	0.967	-.3918795	.4087436
OSHF	-.3438644	.2629236	-1.31	0.191	-.8591852	.1714564
InfraF	.9737603	.2190986	4.44	0.000	.544335	1.403186
JobProgramF	.0848358	.20193	0.42	0.674	-.3109398	.4806113
WorkplaceF	.1373748	.2330806	0.59	0.556	-.3194548	.5942044
ProfActF	-.0714767	.2000294	-0.36	0.721	-.4635271	.3205738
OutdoorF	.3518951	.2546144	1.38	0.167	-.14714	.8509302
IndoorF	-.0997793	.3228493	-0.31	0.757	-.7325522	.5329937
F2FContactF	-.2579913	.2140462	-1.21	0.228	-.6775142	.1615316
InsuranceF	.318933	.29582	1.08	0.281	-.2608636	.8987295
MedPlanF	-.0887325	.1837848	-0.48	0.629	-.448944	.2714791
SupBenF	-.2344257	.2040872	-1.15	0.251	-.6344293	.1655779
union	.0079308	.0076652	1.03	0.301	-.0070927	.0229543
public	1.169006	.5455388	2.14	0.032	.0997696	2.238243
fsize	.0011857	.00054	2.20	0.028	.0001273	.0022441
fage	.0064411	.008007	0.80	0.421	-.0092524	.0221346
Construction	.8476002	1.217499	0.70	0.486	-1.538655	3.233855
Manufacturing	-1.352123	.9245143	-1.46	0.144	-3.164138	.4598919
Wholesale						
Trade	.1235908	1.008224	0.12	0.902	-1.852493	2.099674
Retail Trade	-4.429189	1.595578	-2.78	0.006	-7.556465	-1.301913
Finance,						
Insurance,						
& Real Estate	-.94093	1.231541	-0.76	0.445	-3.354707	1.472847
Services	.004427	.9789045	0.00	0.996	-1.914191	1.923044
_cons	-.5877737	.9543895	-0.62	0.538	-2.458343	1.282795
2						
PhysPsyF	-.2746173	.2089088	-1.32	0.188	-.684271	.1346364
SecureF	.3043261	.2001068	1.52	0.128	-.087876	.6965281
VideoF	-.2691384	.1732484	-1.55	0.120	-.608699	.0704222
OSHF	.0664034	.2065635	0.32	0.748	-.3384537	.4712605
InfraF	.4583545	.1649046	2.78	0.005	.1351474	.7815617
JobProgramF	.243196	.1843435	1.32	0.187	-.1181105	.6045026
WorkplaceF	-.0238501	.1901726	-0.13	0.900	-.3965816	.3488813
ProfActF	-.0708296	.2304273	-0.31	0.759	-.5224589	.3807997
OutdoorF	-.1891444	.163044	-1.16	0.246	-.5087049	.130416
IndoorF	.3178366	.2984537	1.06	0.287	-.267122	.9027952
F2FContactF	-.3163297	.1790697	-1.77	0.077	-.6672999	.0346404
InsuranceF	-.3121932	.1994498	-1.57	0.118	-.7031077	.0787213
MedPlanF	.0273538	.1576508	0.17	0.862	-.2816362	.3363437
SupBenF	-.1753861	.1749021	-1.00	0.316	-.5181879	.1674156
union	.0152427	.0062372	-2.44	0.015	-.0274674	-.003018
public	-.5792173	.7437815	-0.78	0.436	-2.037002	.8785676
fsize	.0001002	.0004951	0.20	0.840	-.0008702	.0010706
fage	.0074707	.0070699	1.06	0.291	-.006386	.0213273
Construction	.9121932	1.389977	0.66	0.512	-1.812111	3.636497
Manufacturing	-.2074547	1.053881	-0.20	0.844	-2.273024	1.858115
Wholesale						
Trade	.2986981	1.133271	0.26	0.792	-1.922471	2.519868
Retail Trade	1.097013	1.063633	1.03	0.302	-.9876697	3.181696
Finance,						
Insurance,						
& Real Estate	.581669	1.307999	0.44	0.657	-1.981962	3.1453
Services	-.3854184	1.145914	-0.34	0.737	-2.631368	1.860531
_cons	-.325868	1.054929	-0.31	0.757	-2.393491	1.741755

4

PhysPsyF	-.1724599	.1798627	-0.96	0.338	-.5249844	.1800646
SecureF	.232675	.2154611	1.08	0.280	-.1896211	.654971
VideoF	-.2299747	.1960131	-1.17	0.241	-.6141532	.1542039
OSHF	.0221121	.2145409	0.10	0.918	-.3983804	.4426046
InfraF	.1170162	.1679615	0.70	0.486	-.2121822	.4462146
JobProgramF	-.3032001	.2286873	-1.33	0.185	-.751419	.1450187
WorkplaceF	-.29031	.2056047	-1.41	0.158	-.6932878	.1126677
ProfActF	-.0688685	.2603343	-0.26	0.791	-.5791143	.4413773
OutdoorF	-.2690336	.170894	-1.57	0.115	-.6039796	.0659124
IndoorF	-1.708805	1.376543	-1.24	0.214	-4.406779	.9891686
F2FContactF	-.4794939	.1770261	-2.71	0.007	-.8264588	-.1325291
InsuranceF	.3090015	.2323541	1.33	0.184	-.1464042	.7644071
MedPlanF	.1224626	.15621	0.78	0.433	-.1837034	.4286286
SupBenF	-.3479307	.1918872	-1.81	0.070	-.7240227	.0281613
union	.0053924	.0055406	0.97	0.330	-.0054669	.0162518
public	.4947735	.5207477	0.95	0.342	-.5258732	1.51542
fsize	-.0003778	.000694	-0.54	0.586	-.001738	.0009824
fage	.0187548	.0066172	2.83	0.005	.0057853	.0317243
Construction	1.120064	1.376587	0.81	0.416	-1.577998	3.818125
Manufacturing	.0335199	1.034136	0.03	0.974	-1.993349	2.060389
Wholesale						
Trade	1.045148	1.092608	0.96	0.339	-1.096323	3.18662
Retail Trade	-.0637474	1.098028	-0.06	0.954	-2.215843	2.088348
Finance,						
Insurance,						
& Real Estate	-.1443549	1.351096	-0.11	0.915	-2.792455	2.503745
Services	.6498255	1.111724	0.58	0.559	-1.529113	2.828764
_cons	-1.564743	1.066168	-1.47	0.142	-3.654394	.5249089

 (Outcome type5==3 is the comparison group)

APPENDIX F

Multinomial regression

Number of obs = 460

LR chi2(54) = 302.46

Prob > chi2 = 0.0000

Log likelihood = -475.84951

Pseudo R2 = 0.2412

	type5	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
1							
	fi	.5075264	.3733611	1.36	0.174	-.2242479	1.239301
	si	-.3715437	.3606571	-1.03	0.303	-1.078419	.3353311
	dg	-.0497247	.3757928	-0.13	0.895	-.786265	.6868156
	fg	-.1814176	.4146409	-0.44	0.662	-.9940988	.6312636
	sg	.1100037	.439314	0.25	0.802	-.751036	.9710433
	EduF	.0867577	.2307098	0.38	0.707	-.3654252	.5389406
	TrainF	-.3310336	.1908486	-1.73	0.083	-.70509	.0430228
	InformF	.9030068	.214798	4.20	0.000	.4820105	1.324003
	union	-.0034239	.0077326	-0.44	0.658	-.0185796	.0117318
	public	.8592083	.4832644	1.78	0.075	-.0879726	1.806389
	fsize	.0010627	.0004739	2.24	0.025	.000134	.0019915
	fage	.0068722	.0072542	0.95	0.343	-.0073458	.0210903
	Construction	1.638044	1.13238	1.45	0.148	-.58138	3.857468
	Manufacturing	-1.187358	.8708916	-1.36	0.173	-2.894274	.5195582
	Wholesale						
	Trade	-.0932013	.9548002	-0.10	0.922	-1.964575	1.778173
	Retail Trade	-4.60173	1.765678	-2.61	0.009	-8.062394	-1.141065
	Finance,						
	Insurance,						
	& Real Estate	-.4319253	1.16331	-0.37	0.710	-2.711971	1.84812
	Services	.2095872	.8690907	0.24	0.809	-1.493799	1.912974
	_cons	-.856624	.9660074	-0.89	0.375	-2.749964	1.036716
2							
	fi	.2171841	.2937203	0.74	0.460	-.358497	.7928652
	si	.0502466	.2903199	0.17	0.863	-.5187699	.6192632
	dg	.7506201	.3054053	2.46	0.014	.1520367	1.349204
	fg	-.8131474	.3137353	-2.59	0.010	-1.428057	-.1982376
	sg	.402774	.3740436	1.08	0.282	-.330338	1.135886
	EduF	-.273151	.1625003	-1.69	0.093	-.5916456	.0453437
	TrainF	.1072737	.1489109	0.72	0.471	-.1845863	.3991337
	InformF	.0219384	.1567485	0.14	0.889	-.2852831	.3291599
	union	-.0188722	.0056017	-3.37	0.001	-.0298513	-.0078932
	public	-.0054921	.5797044	-0.01	0.992	-1.141692	1.130708
	fsize	-.0004667	.0004419	-1.06	0.291	-.0013327	.0003994
	fage	.0086911	.0062018	1.40	0.161	-.0034641	.0208464
	Construction	.680113	1.183505	0.57	0.566	-1.639514	2.99974
	Manufacturing	-.5481589	.9075006	-0.60	0.546	-2.326827	1.23051
	Wholesale						
	Trade	-.0781552	.9766185	-0.08	0.936	-1.992292	1.835982
	Retail Trade	.5380466	.9076399	0.59	0.553	-1.240895	2.316988
	Finance,						
	Insurance,						
	& Real Estate	.458817	1.122113	0.41	0.683	-1.740484	2.658118
	Services	-1.059361	.9806416	-1.08	0.280	-2.981384	.8626609
	_cons	-.2162575	.9845346	-0.22	0.826	-2.14591	1.713395
4							
	fi	-.1210199	.3030075	-0.40	0.690	-.7149037	.4728639
	si	-.0935836	.3004365	-0.31	0.755	-.6824284	.4952612
	dg	-.1571368	.3115727	-0.50	0.614	-.7678081	.4535344
	fg	-.0074226	.3375143	-0.02	0.982	-.6689386	.6540933
	sg	-.3976453	.3452433	-1.15	0.249	-1.07431	.2790192
	EduF	.0573152	.1738702	0.33	0.742	-.2834642	.3980945
	TrainF	-.2200195	.1610748	-1.37	0.172	-.5357203	.0956814
	InformF	-.2880589	.1673117	-1.72	0.085	-.6159943	.0398765
	union	.0051258	.005422	0.95	0.344	-.0055011	.0157527
	public	.5767021	.4728445	1.22	0.223	-.3500561	1.50346
	fsize	-.0005782	.0005799	-1.00	0.319	-.0017148	.0005584

fage	.0199724	.0061294	3.26	0.001	.007959	.0319857
Construction	1.543543	1.237159	1.25	0.212	-.8812439	3.96833
Manufacturing	1.262314	.9999084	1.26	0.207	-.6974708	3.222098
Wholesale						
Trade	1.664354	1.052794	1.58	0.114	-.3990841	3.727792
Retail Trade	-.0034536	1.047097	-0.00	0.997	-2.055726	2.048819
Finance,						
Insurance,						
& Real Estate	.5346676	1.24901	0.43	0.669	-1.913347	2.982682
Services	.931871	1.046388	0.89	0.373	-1.119011	2.982753
_cons	-1.346701	1.093631	-1.23	0.218	-3.490179	.7967769

 (Outcome type5==3 is the comparison group)

PB2003-102271



Volume II

**Case Studies: Employee Surveys
University of Minnesota
Workplace Practices and Health Survey**

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Abstract

This phase of the project involves our effort to conduct case studies of firms in order to learn more about specific health and related HR practices/programs within specific firms. Forty-two firms in the manufacturing industry agreed to participate in this more in-depth study of their firms and employees. Of these 42 firms, we were able to gather employee information from 39 firms with a resulting sample size of 650 employees (representing a response rate of approximately 28 percent). Employees completed surveys asking about the following content areas: Workplace Safety, Interpersonal Relations, Job Stress, Moral, Job Characteristics, Employee Behaviors, Financial Incentives and Performance, and Employee Health. When predicting employee attitudes, results showed:

1. Employees who experienced more interpersonal incivility reported significantly lower moral, higher job stress, lower satisfaction with coworkers, and worse relationships with management.
2. Employees who participated in employee involvement programs reported significantly higher morale, lower job stress, higher satisfaction with coworkers, and better relations with management.

When predicting employee behaviors, results indicated:

1. Employees who perceived a better safety climate were more likely to engage in safety behaviors.
2. Employees who had better perceptions of management were less likely to engage in withdrawal behaviors.

3. Employees who reported higher employee involvement were more likely to engage in more citizenship behaviors.

When predicting employee health, results showed:

1. Employees who reported greater job stress reported worse physical health.
2. Employees who reported that the firm had an emphasis on health reported better physical health.

In addition, 34 firms that were classified according to the cluster methods described in Volume I and data indicated that firms that were classified as relatively “healthy” differed from “unhealthy firms” in that employees in the healthy firms had higher wages, reported a better safety climate, higher job satisfaction, lower job stress, and a greater firm emphasis on health.

Finally, results were disappointing in that after controlling for individual level variables, firm level human resource practices were generally not significant in predicting employee attitudes, behaviors, or health. And similarly, employee attitudes and behaviors did not predict any of firm outcome variables. Thus, essentially no relationships were observed between employee attitudes and behaviors when predicting firm financial performance indicators.

**Case Studies: Employee Surveys
University of Minnesota
Workplace Practices and Health Survey**

The next phase of this project was to conduct case studies with firms in order to learn more about the specific “health” and HR related practices/programs in which firms engage. Although the aggregate firm level data can illuminate the relationships between firm level variables (See Volume I), the processes driving these relationships may be further understood by gathering information about individual firms. Specifically, we were interested in several key issues:

1. Do the relationships observed at the firm level also hold true for data gathered within firms? For example, is there a relationship between perceived management practices regarding safety and employee outcomes of satisfaction, stress, and physical health symptoms?
2. Do the attitudes and behaviors reported by employees relate to firm level performance outcomes?
3. Do firms that “belong to” or are associated with one of our cluster types engage in different practices that we could observe through our case study approach of interviewing and surveys of employees within these firms?

To this end, we elected to contact firms (who had participated in our Survey II study) who were conducting business primarily within the manufacturing sector to elicit their interest in further participation in a more in-depth study of their organizational health. We focused on manufacturing firms because of two reasons: First, firms from this sector represented one of the larger group of respondents to our earlier survey (47.11%) and it seemed reasonable to continue to sample from within this sector.

Second, our initial efforts to contact firms for case study purposes in other sectors did not meet with much success; firms from the manufacturing sector appeared more willing to cooperate with this additional in-depth case study data gathering effort. We contacted all 220 manufacturing companies who had participated in the Survey II phase soliciting their interest in further collaboration in our research. Of these 220, 41 agreed to participate further in the case study phase. Of interest is that 34 of these 41 firms could be classified into one of the 4 clusters of firms we identified in earlier phase of this project (see Vol I). The 34 firms were classified as “belonging to” the following four clusters:

Table 1:

	Number of Firms	Number of Employees	Percent
Cluster 1	9	94	15.49
Cluster 2	3	30	4.94
Cluster 3	7	42	6.92
Cluster 4	15	441	72.65

Thus, the 34 firms are reasonably represented of the different cluster types. For each of these 41 firms, we collected three types of data:

1. Paper-and Pencil Individual Employee Surveys
2. An in-depth personal interview with the Human Resource manager
3. Paper-and-Pencil Supervisor Surveys

We discuss the results from the individual employee surveys in this volume and the results of the HR manager surveys and case studies in Volume 3. We do not discuss data from the supervisor surveys due to the small numbers of respondents; for several organizations we did not receive supervisor surveys and even for organizations

that did return supervisors surveys, we received very few responses making estimates unstable.

Employee Surveys

The individual employee survey was developed to systematically examine workplace issues related to employee job attitudes, behaviors, health, and safety issues (the complete survey can be found in Appendix IIA in this Volume). The employee survey assessed perceptions of job and organizational characteristics, employee benefits provided, employee job behaviors and attitudes, and employee health. This information supplemented information gathered from the Human Resources Manager and Supervisor surveys to provide a more full picture of the organization. Individual employee survey data was collected from 41 manufacturing firms in Minnesota who had agreed to participate in this phase of our research.

Paper and pencil versions of the surveys were administered to employees either (1) on-site in large groups by representatives from the organization, or (2) distributed within a packet including instructions and a return envelope. In both administration procedures, employees were given information about the project, assured their data would be handled confidentially, and were given the opportunity to decline participation. 2329 surveys were distributed to the organizations and 650 were returned for a response rate of 28 percent; note however this response rate is likely to be an underestimate given that we cannot be sure all surveys distributed to organizations were administered to employees. For two of the firms, no employee surveys were returned and thus these firms were excluded from further analyses. The sample size of firms involved in these analyses was therefore 39.

We describe the results in the sections that follow. First, we present information on our sample respondents. Subsequently, we report descriptive information on the particular items and composites that we constructed. For each category we provide the items from the survey and the mean and standard deviation of the composite score for each measure (created by assigning numerical values to responses and summing across items, or questions tapping the concept) for the overall sample. Item level information is provided for items assessing constructs where items may not necessarily covary with each other such as behaviors and health symptoms. Further, item level information may be useful for such items such as availability of financial incentives. Composite information is more appropriate for attitudinal measures where the underlying construct is assessed, resulting in higher inter-item relationships.

In addition to score composites, we have provided data for the mean level of a particular composite score by firm to illustrate the between-firm variability. Following the description of the scales and descriptive statistics, we move on to relational analyses between various scales on the employee survey, and between the HR Manager Survey responses (discussed in Volume I) and the employee survey scales.

Thus, this volume of the report will present:

- 1) Description of the measures and descriptive statistics for each section of the employee survey
- 2) Relational analysis among measures in the employee survey
- 3) Relational analysis among measures in the employee survey and HR manager survey

Section I: Sample Characteristics

A total of 650 respondents completed the individual surveys. The average age of the respondents was 42.56 (s.d.= 10.67), the average tenure was 12.07 (s.d.= 9.68) and 64.2% were males with 34.0% being females. Again, these individuals were working in the 39 different case study organizations. Below are the number of respondents and response rate by firm:

Table 2:

Firm	Firm ID	Number of Surveys Sent Out	Number of Respondents	Response Rate	Percentage of Total Respondents
1	5004	10	5	50%	.77%
2	5079	4	2	50%	.31%
3	5114	40	6	15%	.92%
4	5138	1400	303	22%	46.62%
5	5260	35	35	100%	5.38%
6	5318	20	7	35%	1.08%
7	5320	10	4	40%	.62%
8	5563	5	5	100%	.77%
9	5590	10	2	20%	.31%
10	5609	25	7	28%	1.08%
11	5620	10	8	80%	1.23%
12	5650	20	3	15%	.46%
13	5781	15	14	93%	2.15%
14	5797	8	8	100%	1.23%
15	5935	35	21	60%	3.23%
16	5988	20	12	60%	1.85%
17	6081	30	4	13%	.62%
18	6166	150	6	4%	.92%
19	6216	20	14	70%	2.15%
20	6240	10	9	90%	1.38%
21	6249	60	6	10%	.92%
22	6266	5	4	80%	.62%
23	6420	15	6	40%	.92%
24	6467	125	43	34%	6.62%
25	6486	7	4	57%	.62%
26	6495	4	4	100%	.62%
27	6616	32	11	34%	1.69%
28	6624	20	13	65%	2.00%
29	6732	24	7	29%	1.08%
30	6764	20	8	40%	1.23%
31	6796	35	4	11%	.62%
32	6797	10	9	90%	1.38%
33	6808	6	5	83%	.77%
34	6857	20	11	55%	1.69%
35	6892	10	4	40%	.62%
36	6904	21	21	100%	3.23%
37	6927	20	1	5%	.15%
38	7015	10	9	90%	1.38%
39	7272	8	5	63%	.77%

Section II: Workplace Safety and Health

A portion of the survey measured employees' perceptions of the safety and health features of their work environment. We asked employees about their firms' emphasis on health, the frequency of workstation redesign, perceptions of the organizational climate for safety, and work group and individual safety behaviors (see the "Workplace Safety and Health" section of the survey in Appendix IIA).

When asked to respond to the question "How would you describe your company's emphasis on health?", employees reported that their company's emphasis on health was "Just right" a majority of the time (53.4%). Some employees (37.8%) reported the emphasis was "Too little" whereas, 7.8% respondents reported that they "Don't know". Very few respondents reported that it was "Too much" (0.9%).

As a possible indicator of an organization's ergonomic concerns, employees were asked "When was the last time your workstation (the place where you sit or stand most on the job) was redesigned to improve employee safety and/or comfort?" Respondents reported the following frequency of redesign: Within the last 6 months (13.5%), Within the last year (12.5%), More than a year ago (22.6%), Never (28.1%), I don't know (23.4%).

Employee's perceptions of the safety environment (i.e., safety climate) demonstrate the extent to which organizational safety efforts are successful according to employee perceptions. For these items, we used scales developed by Neal, Griffin, & Hart (2000), Hoffman (personal contact), and items developed by the Centers for Disease Control. Items from the scales were selected with attention to the item content and factor loadings in the original work.

Items asked employees the extent to which they agree (from “strongly agree” to “strongly disagree” on a 5-point scale) with a number of safety items related to...

The organization and management: (7 items, provided by CDC, $\alpha = .89$)

- New employees quickly learn that they are expected to follow good safety practices
- There are no significant compromises or shortcuts taken when worker safety is at stake
- Where I work, employees and management work together to insure the safest possible working conditions
- Employees are told when they do not follow good safety practices
- The safety of workers is a big priority with management where I work
- I feel free to report safety violations where I work
- My supervisor is concerned about safety on the job

Their work group: (6 items, Hofmann, personal contact, $\alpha = .86$)

- Employees in my work group comply with safety regulations
- Employees in my work group remind each other of the need to follow safety regulations
- Workers who work safely try to emphasize it and make sure others appreciate it
- Workers who violate safety regulations irritate their fellow workers even when no harm results
- The best workers in the group expect other workers to behave safely
- The best workers in the group care about safety

Their own safety behavior: (6 items, Griffin & Neal, 2000, $\alpha = .88$)

- I use the correct safety procedures for carrying out my job
- I use all the necessary safety equipment to do my job
- I ensure the highest levels of safety when I carry out my job
- I actively promote the safety program within the organization
- I help my coworkers when they are working under risky or hazardous conditions
- I voluntarily carry out tasks or activities that improve workplace safety

The following table provides the descriptive statistics for these three safety related scales for the overall sample.

Table 3:

	N	Mean	Std. Deviation	Variance	Minimum	Maximum
Organizational Safety Climate	630	25.97	6.35	40.42	7.00	35.00
Work Group Safety Behavior	638	22.88	4.53	20.57	6.00	30.00
Employee's Safety Behavior	631	24.83	4.21	17.79	6.00	30.00

The relatively high scores on these scales suggest that employees perceive their organizations as responsive to safety concerns, and report that their work group and themselves are usually adhering to safe work practices. The correlations between these variables were presented in the following table.

Table 4:

	Organizational Safety Climate	Work Group Safety Behavior	Employee's Safety Behavior
Organizational Safety Climate	--		
Work Group Safety Behavior	.61	--	
Employee's Safety Behavior	.42	.66	--

When we examine the mean score of these scales by firm, we get a sense of the variability within firm of these perceptions. Note that these means are calculated on a small number of employees for some firms.

Figure 1:

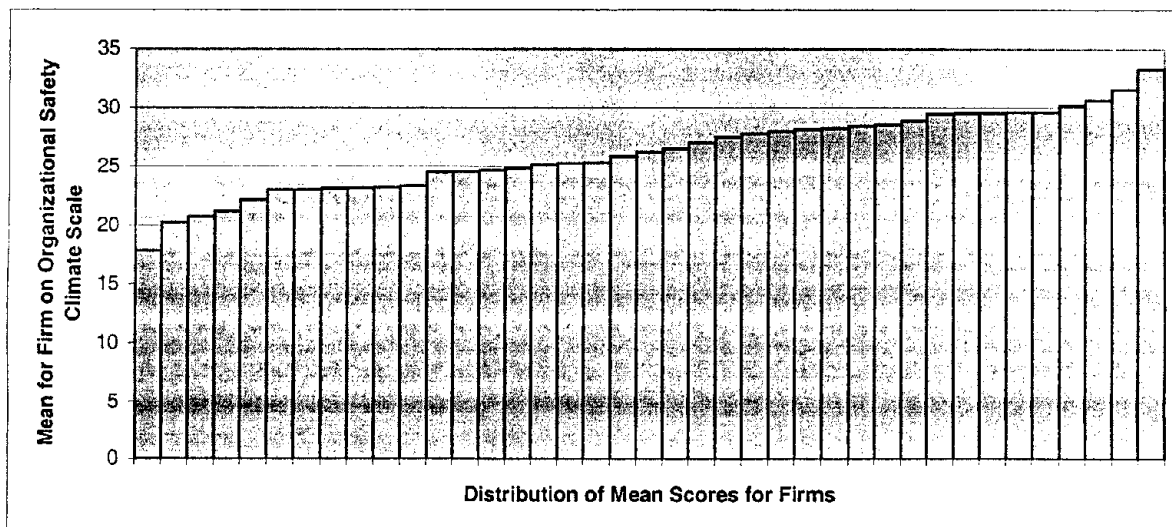


Figure 2:

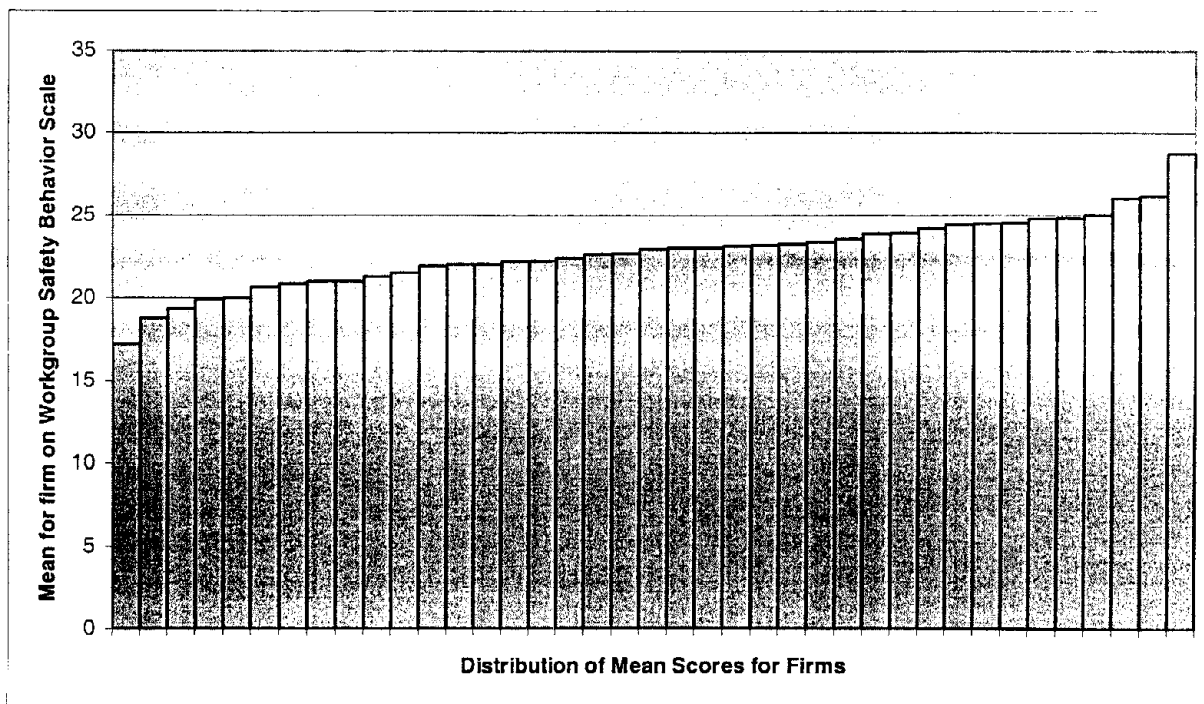
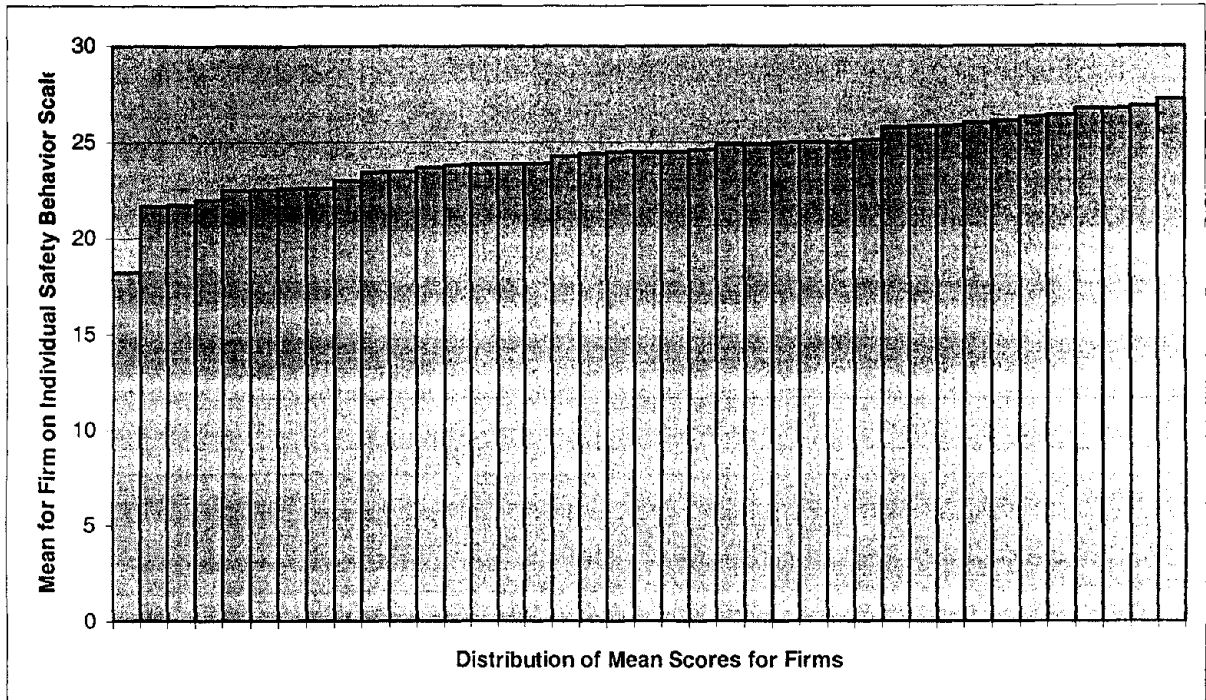


Figure 3:

Section III: Interpersonal Relations

The items in this section of the survey (see the section labeled “People you Work With” in Appendix IIA) assessed the satisfaction with the interpersonal contacts that employees have on their job. To assess the quality of interactions among employees we asked about coworker satisfaction, perceptions of trust between the employees and management, and how employees treated one another while on the job. A variety of item types are used to ask these questions and are represented below:

Coworker Satisfaction. Coworkers were assessed using a subscale of the Job Descriptive Index (JDI; Smith, et al., 1969; revised by Roznowski, 1989); the JDI is the most frequently used measure of job attitudes available. This scale has been subjected to rigorous psychometric evaluation reported by Smith, et al. (1969) and Roznowski (1989). We used a shortened five-item version of the Coworker Subscale ($\alpha = .82$; Sinar, 2000). Participants rated each characteristic of their coworkers on a 3-point, “yes,” “?”, “no,” scale. The negative response was scored 0, “?” was scored 1, and the yes response received a 3 according to scaling research reported by Hanisch (1992).

Do the following items describe the majority of people you work with most of the time?

- | | | | |
|---------------|------------------------------|----------------------------|-----------------------------|
| • Helpful | <input type="checkbox"/> Yes | <input type="checkbox"/> ? | <input type="checkbox"/> No |
| • Boring | <input type="checkbox"/> Yes | <input type="checkbox"/> ? | <input type="checkbox"/> No |
| • Intelligent | <input type="checkbox"/> Yes | <input type="checkbox"/> ? | <input type="checkbox"/> No |
| • Lazy | <input type="checkbox"/> Yes | <input type="checkbox"/> ? | <input type="checkbox"/> No |
| • Responsible | <input type="checkbox"/> Yes | <input type="checkbox"/> ? | <input type="checkbox"/> No |

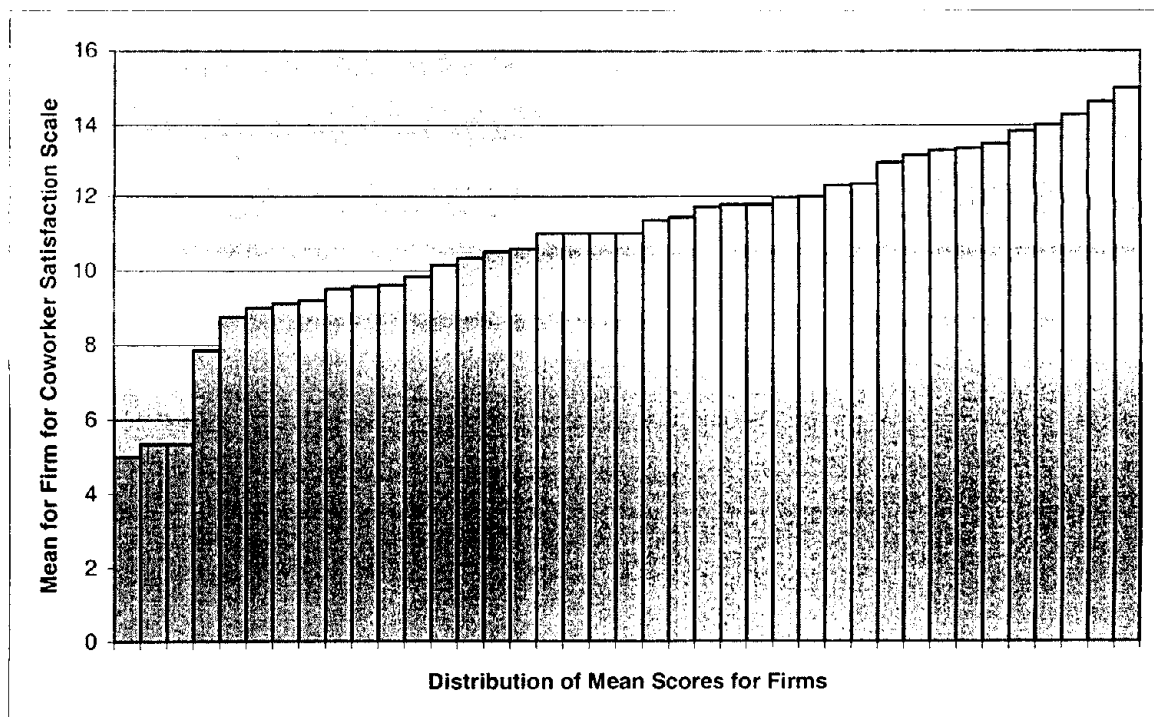
An item composite was formed by summing the items; the following table provides the descriptive statistics for the Coworker Scale for the overall sample.

Table 5:

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Coworker Satisfaction	616	.00	15.00	10.5471	4.3293	18.742

In general the scores on the Job Descriptive Index scales indicate that most participants have moderately positive attitudes toward their coworkers. The distribution of scores evidences the most frequently reported score for the scale is 15, the highest possible score. Despite the overall positive attitudes of the sample, there were a small number of respondents with very low scores, indicating unusually negative attitudes and decreasing the overall scale mean.

When we examine the mean score of these scales by firm, we get a sense of the variability within firms of these perceptions.

Figure 4:

Perceptions of Relations with Management: Perceptions of management-employee relations and trust were assessed using the four items presented below. As reflected in the percentages below, in general, employees report moderately good relations with and levels of trust in management. However, a number of respondents report poor relations and levels of trust, potentially a cause for concern.

"Most of the time, supervisors in this department treat employees fairly."

65.4% Yes

27.3% No

7.3 %Don't know

"In general, management treats workers fairly at this company."

52.7% Yes

36.9% No

10.4% Don't Know

"To what extent do you trust management at this company?"

16.0% Not at all

26.8% To a small extent

42.4% To some extent

14.8% To a great extent

"In general, how would you describe relations in your workplace between management and employees?"

10.7% Very bad

20.7% Bad

29.2% Neutral

29.9% Good

9.5% Very good

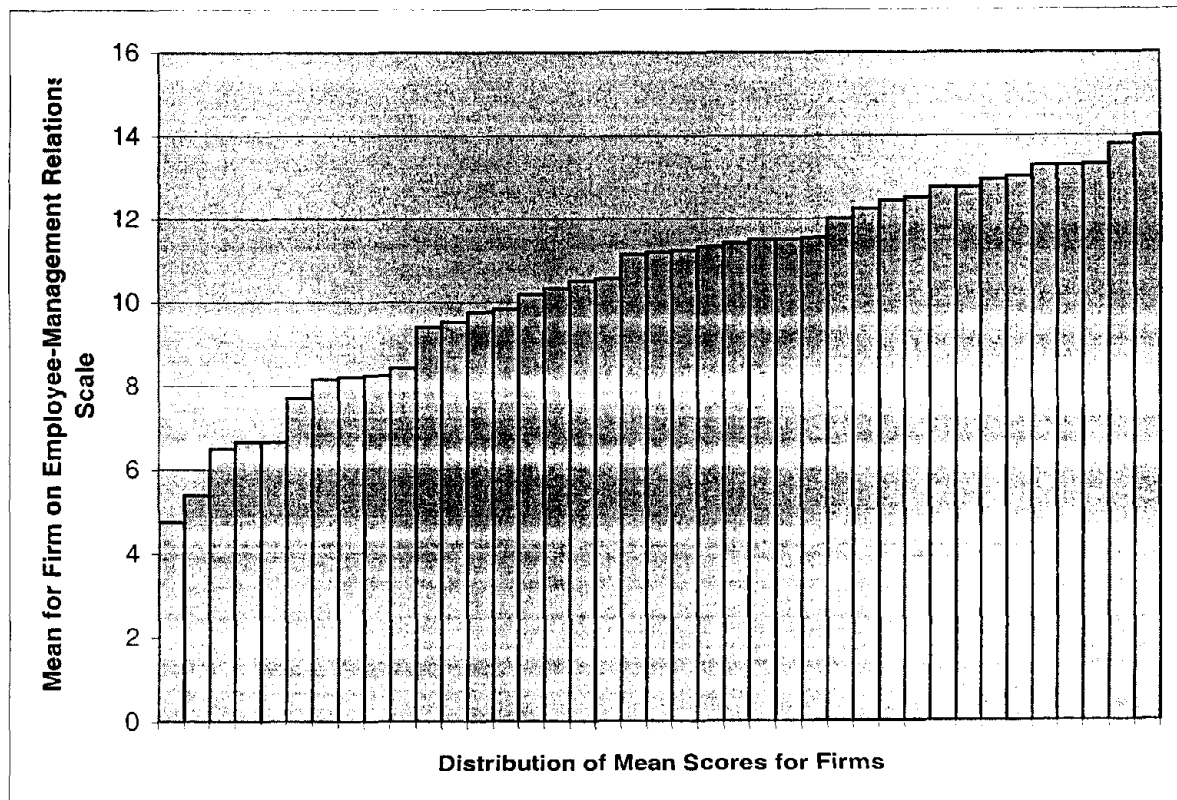
The similar underlying content and high inter-item correlations allow the formation of a scale score based on these four items ($\alpha = .65$).

Table 6:

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Perceptions of Relations with Mgmt.	636	2	15	9.35	4.12	16.97

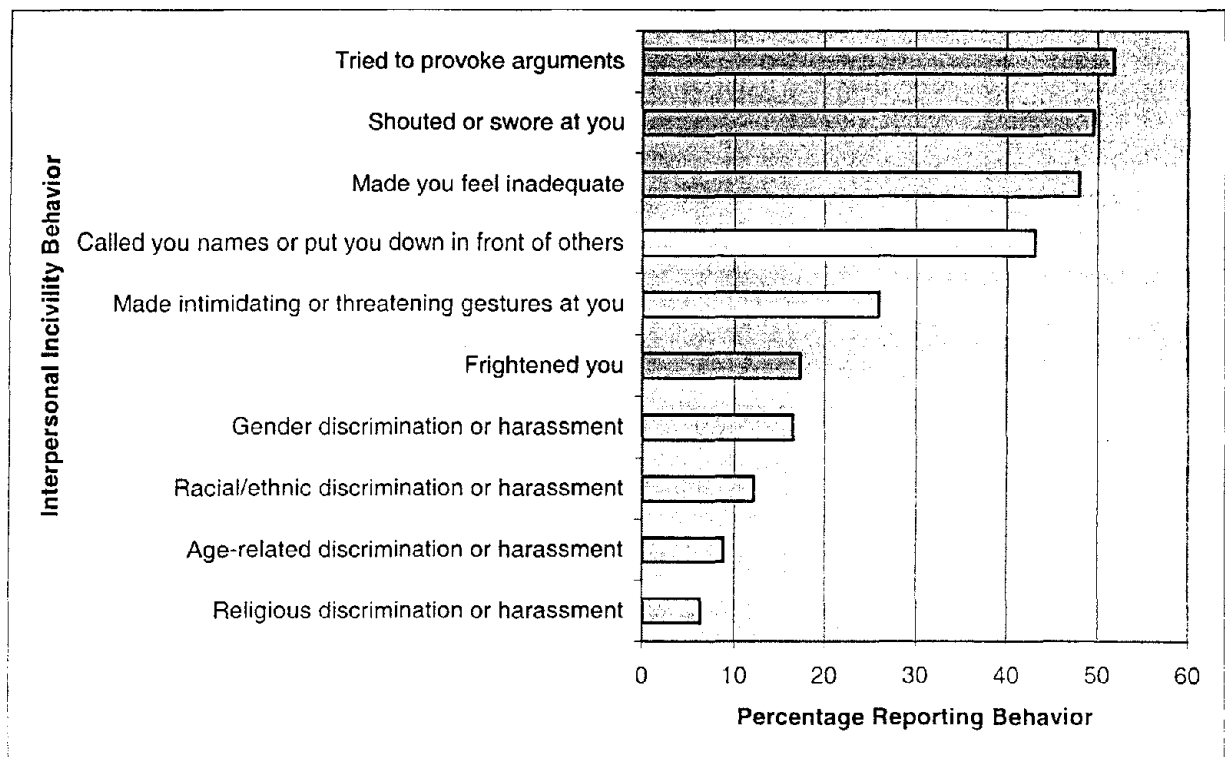
Combining the items provides a simplified way of comparing the firm means for this scale, as shown in the table below. It is clear that there are substantial differences in firms with regard to the reported trust and relationships employees have with management.

Figure 5:



Reports of Interpersonal Incivility. In this section, employees were asked whether they had experienced a set of 10 behaviors categorized as interpersonal incivility. Specifically, respondents were asked “Since you have been working for this company, has anyone ever done any of the following to you while you were at work?” The behaviors and the percentages of employees reporting being the target of these behaviors are reported below.

Figure 6:

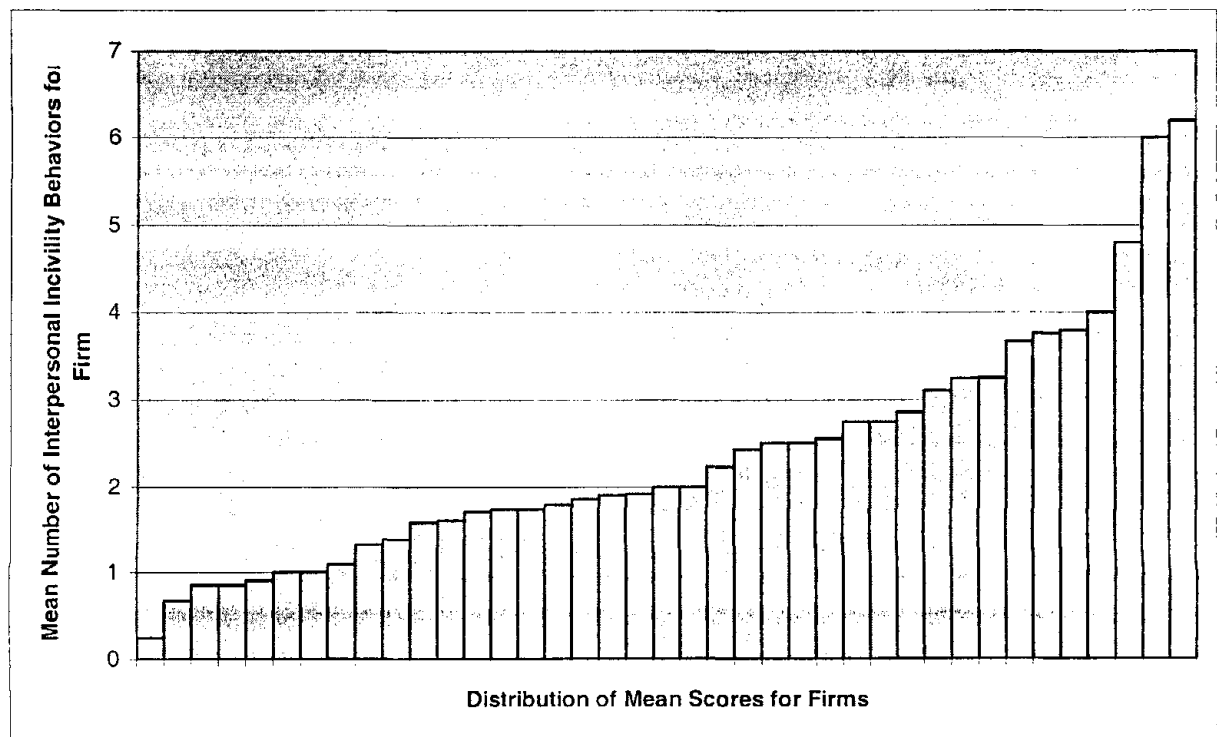


Note that a fairly large proportion of employees (i.e. more than 40%) report experiencing four of these behaviors. Others are reported with less frequency, specifically, the discrimination items. However, all behaviors were reported by at least some participants. A composite was formed by summing the number of behaviors reported ($\alpha = .82$). The descriptive statistics for this composite are shown below.

Table 7:

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Interpersonal Incivility Behaviors	629	10	0	10	2.77	1.88	3.53

When examined by firm, the mean number of interpersonal incivility behaviors for each of the 39 firms is as follows:

Figure 7:

Notice that in most firms, the mean number of interpersonal incivility behaviors is relatively low, with about half of the firm reporting a mean level of less than two behaviors. However, for a few firms, the mean number of behaviors reported is quite high. Note that these means are calculated on a small number of employees for some firms.

Section IV: Job Attitudes

This section assesses a variety of employees' attitudinal reactions to components of their jobs including their supervisors, their coworkers, their development opportunities and their commitment. A number of these items were developed by the CDC (13 items) with the remaining items selected from existing scales (job security, Probst, 2000) or designed by the research team to capture the overall perceptions employees have of their jobs. Responses to these items tell us about the overall perceptions employees have of their jobs. Employees are asked the extent to which they agree with a number of job related statements on a scale from "strongly agree" (1) to "strongly disagree" (5).

Two major factors emerged from the principle factor analyses (with varimax rotation) of these items: a general commitment and satisfaction, or "morale" factor ($\alpha = .94$); and a perceived job stress factor ($\alpha = .71$). Individual items and factor loadings are presented in the table below. Items in bold for each factor were used to form a composite score. Note some stress-related items also loaded relatively high on the morale factor (e.g., I have little control over my job). However they were typically included in previous research in scales to measure stress, therefore they were considered as indicators of stress here.

Table 8:*Factor Loadings for Morale and Job Stress Factors*

	Morale Factor	Job Stress Factor
When I do an excellent job, my accomplishments are recognized	.73	-.05
My company offers many opportunities for growth and career development	.66	-.15
My company's core values are evident (lived out) in day-to-day work life	.71	-.17
There is not enough time in the day to do my job	.04	.52
I am encouraged to come up with new and better ways of doing things	.65	.01
People I work with cooperate to get the job done	.39	-.21
My supervisor gives me constructive feedback on my work	.77	.02
This company functions smoothly and effectively	.70	-.26
I have little control over my job	-.37	.23
I frequently receive conflicting requests from two or more people	-.27	.49
I have the information and resources I need to do my job well (R)	.48	-.36
I would be willing to spend the rest of my career with this company	.57	-.15
I am under a lot of stress at work	-.21	.63
People I work with are highly committed to their jobs	.55	-.14
I know exactly what is expected of me in my job (R)	.38	-.23
I have clear, planned goals and objectives	.44	-.20
My supervisor treats employees with dignity and respect	.74	-.11
I am responsible for too many tasks on my job	-.18	.58
I am effectively coached and developed to improve my performance	.61	-.09
In my workgroup, morale is high	.67	-.20
I am satisfied with my pay	.41	-.14
I am satisfied with my working conditions	.64	-.35
I am satisfied with my supervisor	.73	-.11
In general, I am satisfied with my job	.71	-.30
Overall, this is an effective organization	.76	-.27
My supervisor provides strong leadership and direction	.78	-.07
I plan to leave this company within the next year	-.40	.12
If I were choosing my place of work again, I would choose to work at this company	.69	-.25
My job is secure in this company	.48	-.27
My future employment in this company looks uncertain to me	-.47	.30

Note: (R) indicates the item was reverse coded.

The following table provides the descriptive statistics for the two employee attitudinal measures for the overall sample.

Table 9:

	N	Mean	Std. Deviation	Variance	Minimum	Maximum
Morale	583	75.16	18.08	326.90	31.00	115.00
Job Stress	616	19.19	4.88	23.82	7.00	35.00

The relatively high scores on the morale factor suggest that employees are satisfied with and committed to their organizations in general. The relatively high scores on the job stress factor suggest that employees perceived higher stress associated with their job.

The following graphs present the mean score of these two factors by firm.

Figure 8:

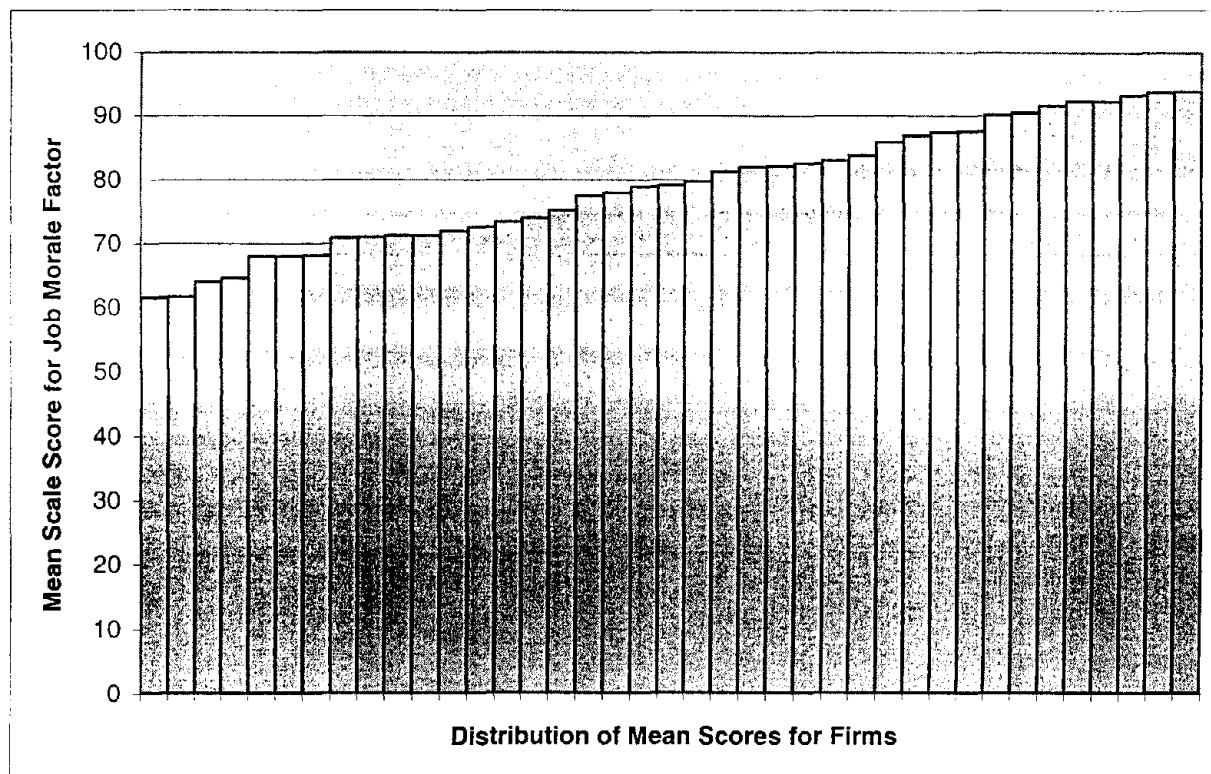
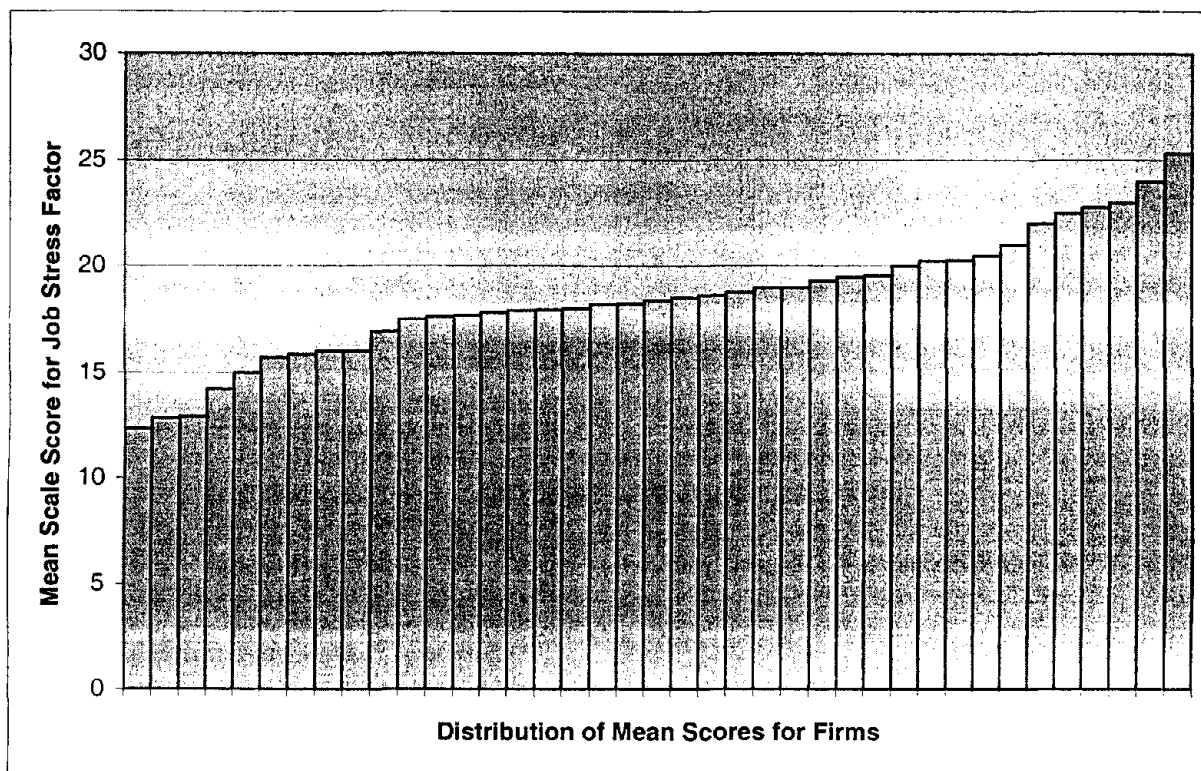


Figure 9:

Some of these attitudinal items were assessed in both employee surveys and HR manager surveys (discussed in Vol I). We examined below at the item level to what extent employees' responses were consistent with the managers' reports via individual item correlations. To do this, we aggregated employee responses for each firm and correlated this score with that provided by the HR manager on the same item.

Table 10:

	Correlation Between Employees' and Managers' Responses (N=39)
When I do an excellent job, my accomplishments are recognized	.08
My company offers many opportunities for growth and career development	.46 **
My company's core values are evident (lived out) in day-to-day work life	.56 **
I am encouraged to come up with new and better ways of doing things	.45 **
People I work with cooperate to get the job done	.05
I would be willing to spend the rest of my career with this company	.14
I am under a lot of stress at work	.02
People I work with are highly committed to their jobs	.26
I know exactly what is expected of me in my job	-.12
I have clear, planned goals and objectives	-.31
In my workgroup, morale is high	.09
In general, I am satisfied with my job	.19

As shown in this table, HR managers did not always have an accurate picture of their employees' attitudes. Only three out of the twelve items showed significant relationships between employees' reports and managers' report. On the other hand, the positive relationships exhibited on the moral and satisfaction items suggest that there is some congruence between the HR managers and the employees on these items. However, note that these relationships are often based on the responses of a small number of employees. Additionally, item-specific variance may have affected the relationships between employees' and HR manager's responses. Therefore we further

grouped the variables into the morale and job stress factors and conducted the correlation analyses. The results revealed that the correlation between employees and managers reported morale was positive and significant ($r = .34$, $p < .05$), however the correlation between the employees and managers reported job stress was essentially zero and not significant ($r = -.04$, $p > .10$). These data suggest that managers are relatively aware of whether employees are committed and satisfied, but are not particularly aware of the level of job stress employees are experiencing. Interestingly, the mean level of manager reported employee job stress (5.53) is slightly higher than the mean level of employee reported job stress (4.85).

Section V: Other Job Characteristics

This section consisted of a variety of questions about employees' perception of their involvement in organizational decision-making and control, level of supervisory monitoring, and the impact of technological changes on their job. The research team designed these items.

An *employee involvement scale* was developed that included 3 items. Employees were asked to indicate to what extent they “have control over how your work is done”, “rely on established procedures and practices” (reverse-coded), and “participate in employee involvement programs” on a 4-point scale (1 = not at all, 4 = to a large extent). The coefficient alpha for this scale was .55.

A *monitoring scale* was developed that included two items. Employees rated the extent to which they were “guided and directed by supervisors and managers” and “monitored by supervisors and managers” on a 4-point scale (1 = not at all, 4 = to a large extent). The coefficient alpha for this scale was .66.

A *technology changes scale* was developed using the following questions: “New technologies have made my job ...” (1 = more difficult, 2 = no change, 3 = easier; “New technologies have made my job ...” (1 = more stressful, 2 = no change, 3 = less stressful); and “New technologies have made my job ...” (1 = less productive, 2 = no change, 3 = more productive). The coefficient alpha was .78.

The following table presents the descriptive statistics for the scale composites for the three scales.

Table 11:

	N	Mean	Std. Deviation	Variance	Minimum	Maximum
Employee Involvement	628	8.67	1.88	3.53	3	12
Monitoring	634	4.91	1.40	1.96	2	8
Technology Changes on Job	382	6.41	1.97	7.65	3	9

These descriptive statistics suggest that employees report moderate levels of employee involvement and monitoring on their jobs. On average, employees report that technological changes on their jobs have made their jobs less stressful and more productive.

The following graphs present the distribution of mean scores for the employee involvement, monitoring, and technological changes scales across the firms in our sample.

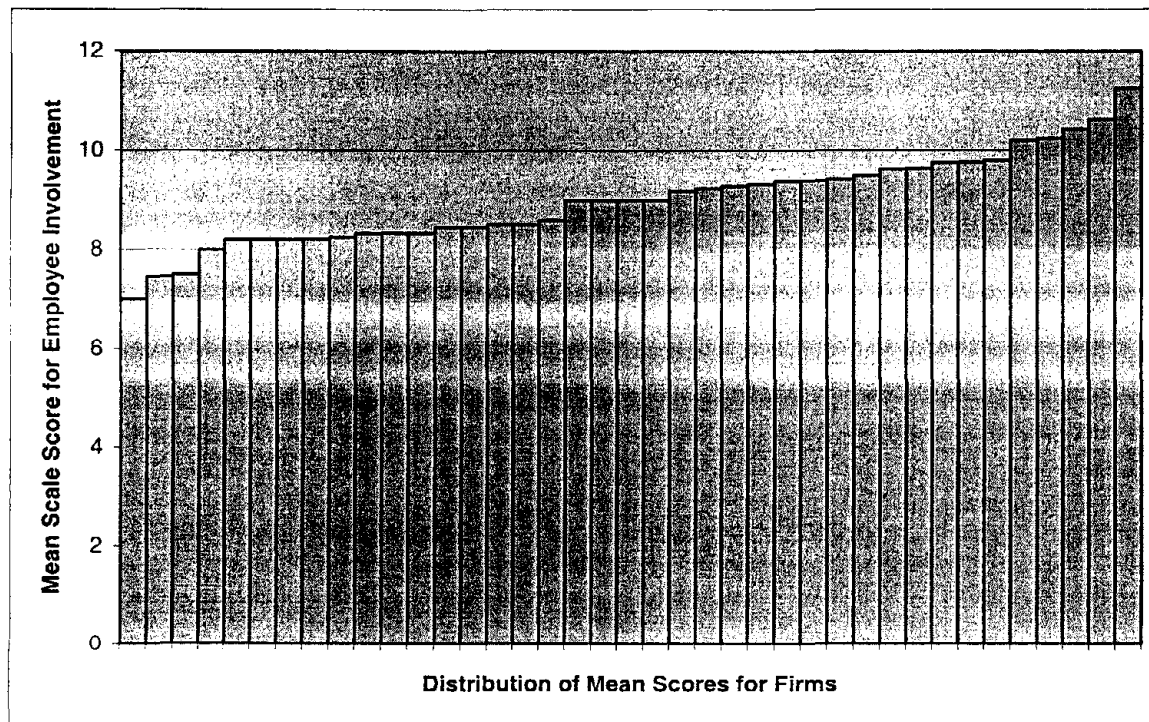
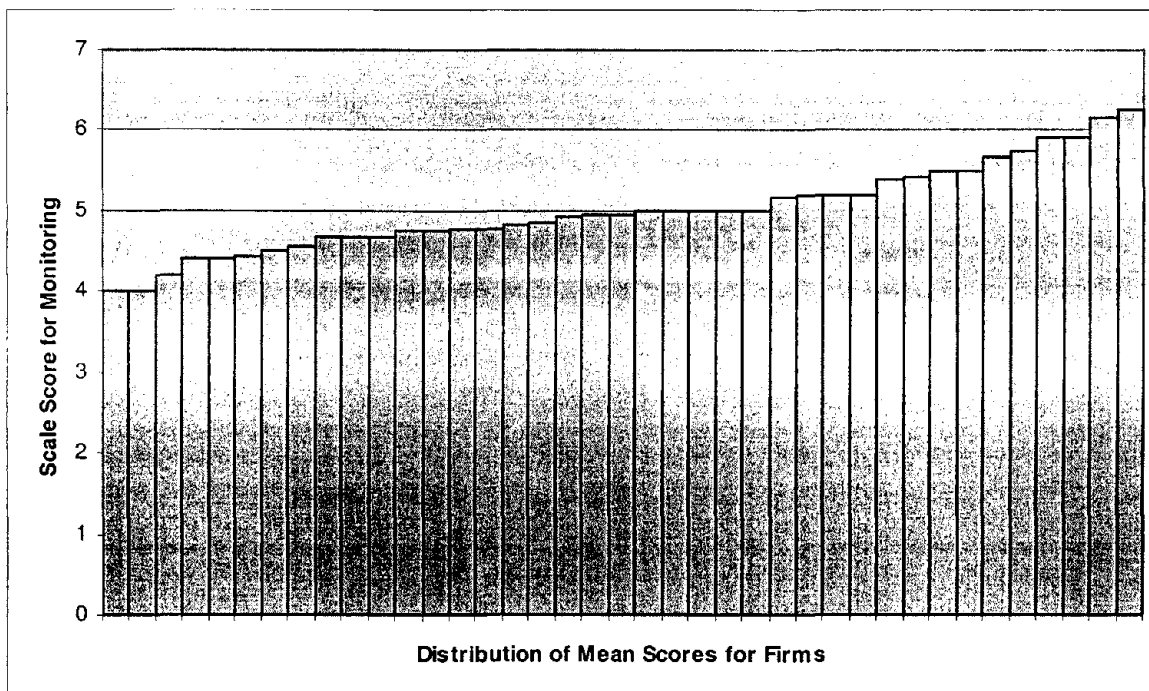
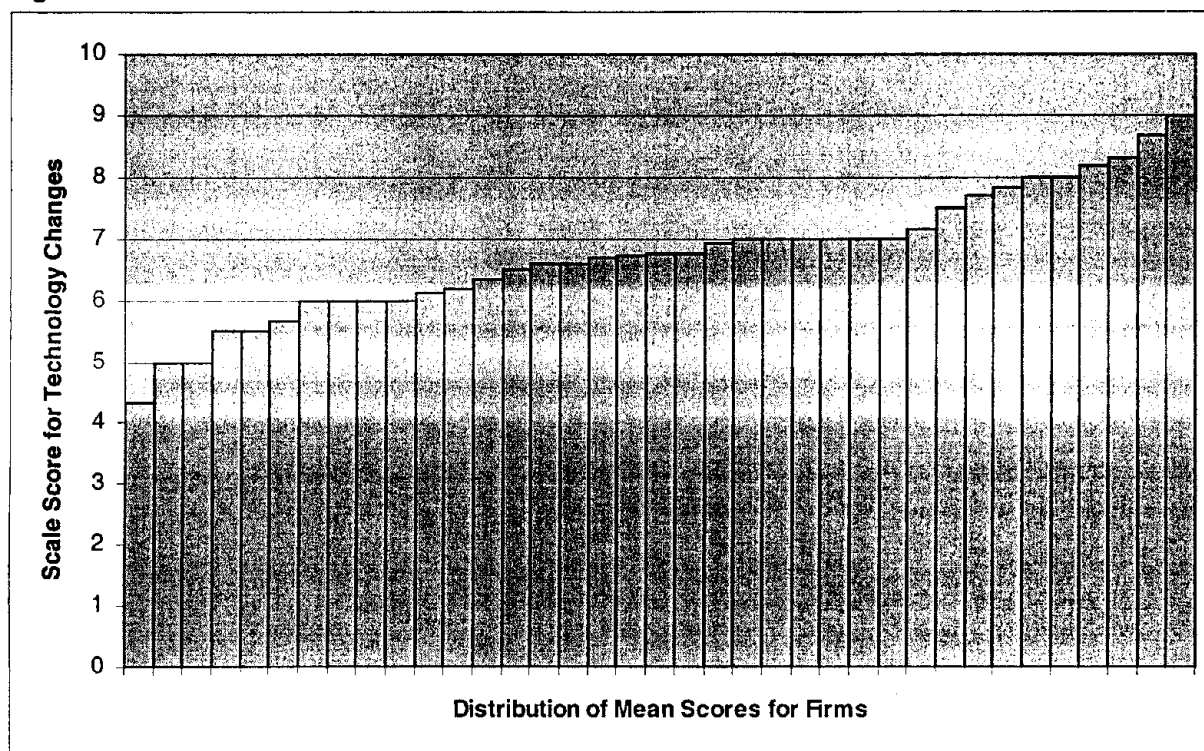
Figure 10:**Figure 11:**

Figure 12:

Section VI: Employee Behaviors

This section is intended to measure the behavioral *outcomes* of the perceptions, attitudes, and organizational characteristics assessed elsewhere in the survey. It is important to examine such outcomes, including the positive and negative behaviors that employees engage in while on the job. This section of the survey asked employees to rate the frequency with which they engage in a series of positive and negative organizational behaviors. These negative behaviors have been referred to as *work withdrawal behaviors* and the positive behaviors have been referred to as *organizational citizenship behaviors*.

Organizational Citizenship Behaviors (OCBs). OCBs are defined as “those organizationally beneficial behaviors and gestures that can neither be enforced on the basis of formal role obligations nor elicited by contractual guarantee of recompense” (Organ, 1990, p. 46). A 11-item scale ($\alpha=.67$) measuring OCBs was derived from the work of Borman and colleagues (Borman, Hanson, Motowidlo, Drasgow, Foster & Kubisiak, 1998) and Morrison (1994). Participants were instructed to respond with respect to their activities “during the past six months” on a 5-point frequency response scale ranging from “never” (1) to “always” (5).

Work Withdrawal. Work withdrawal is defined as behaviors that remove oneself from the work situation or attempts to avoid the quotidian tasks of one’s work role, e.g., “How frequently do you make excuses to get out of work early?” A 6-item ($\alpha=.55$) version of the original Hanisch and Hulin (1990; 1991) measure was constructed and participants instructed to respond with respect to their activities “during the past six

months.” The response scale for these behaviorally based items ranged from “never” (1) to “always” (5).

The following charts show the percentages of employees reporting that they have engaged in the behaviors during the past six months (collapsed across responses of rarely, occasionally, often, or always).

Figure 13:

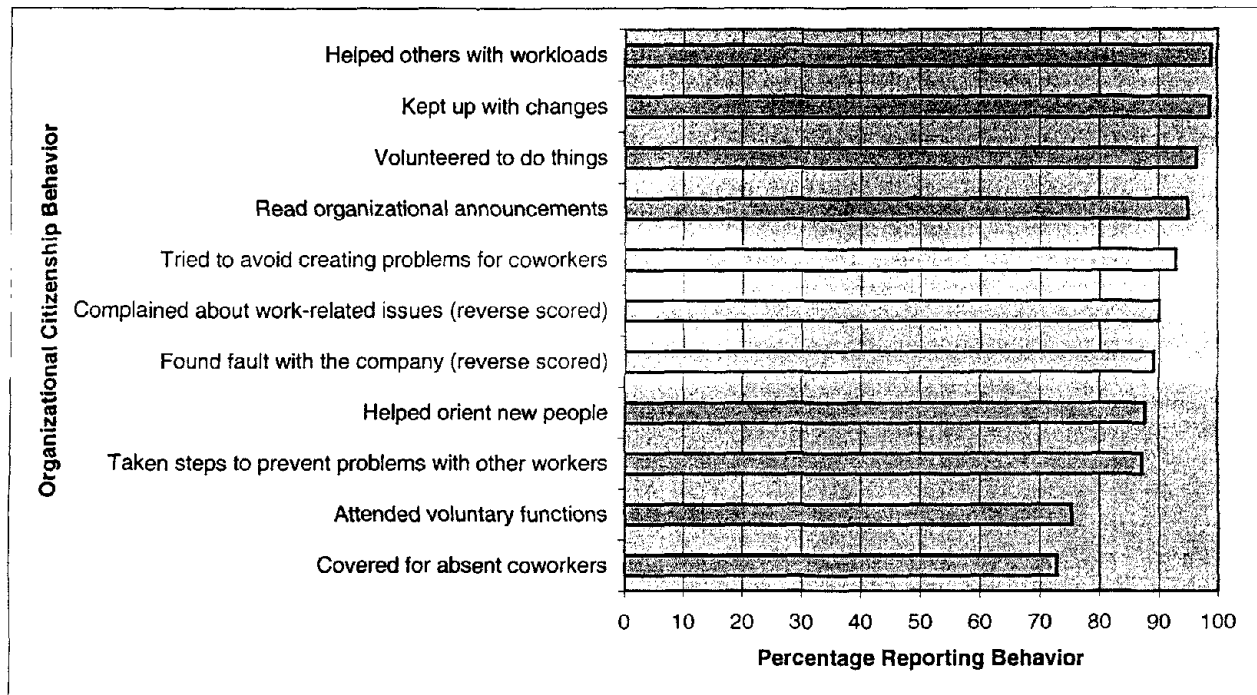
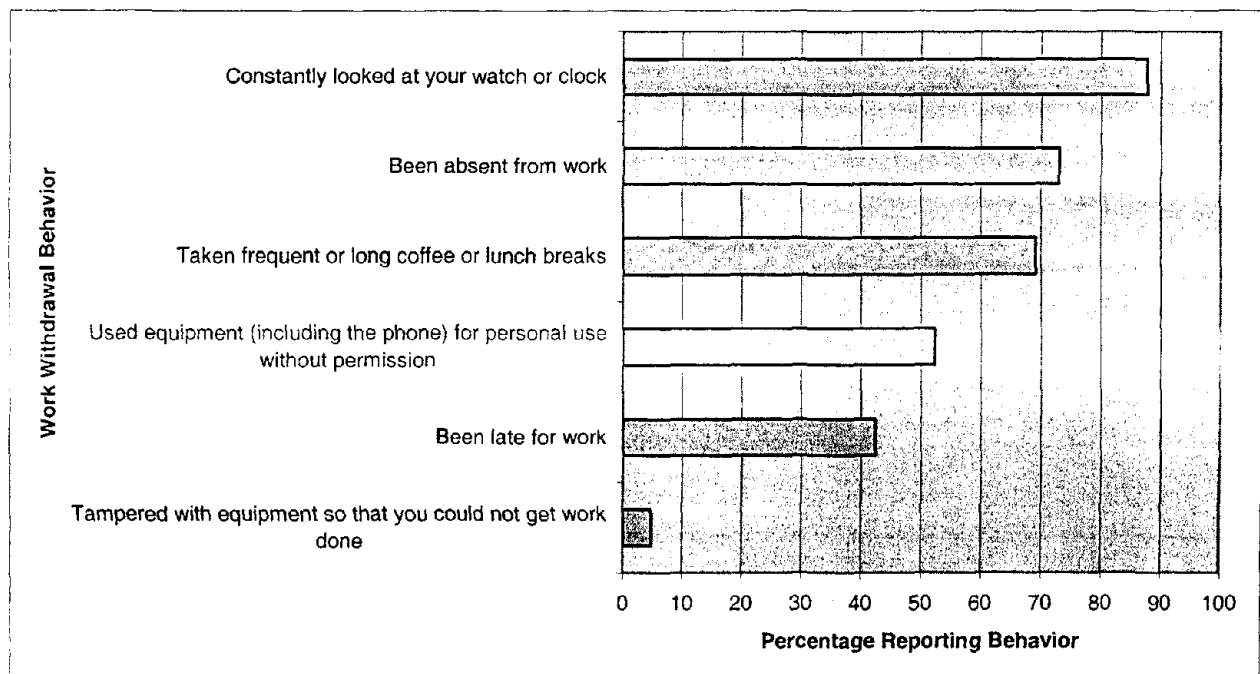


Figure 14:



Composite were formed by aggregating across the OCB behaviors and Work Withdrawal behaviors ($\alpha = .67$ for OCB and $.55$ for work withdrawal). The descriptive statistics for these composite are shown below.

Table 12:

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
OCB	594	19	50	35.68	4.95	24.50
Work Withdrawal	619	6	20	10.89	2.63	6.92

When we examine the mean composite score of these scales by firm, we get a sense of the variability of these perceptions within firm.

Figure 15:

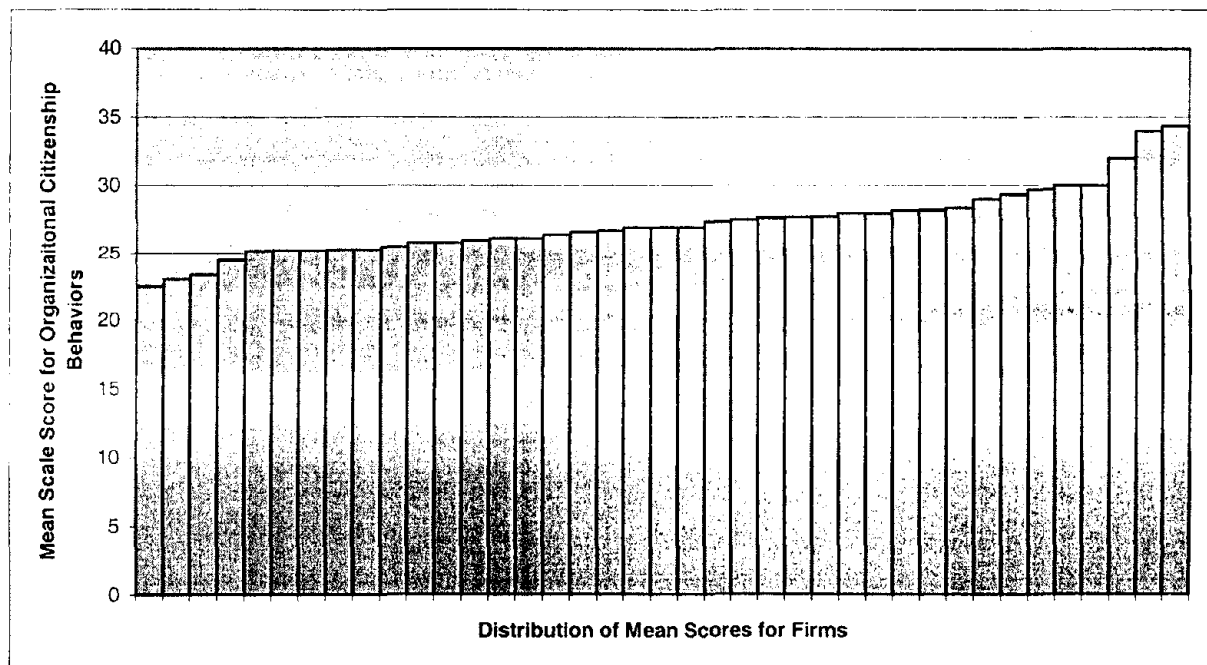
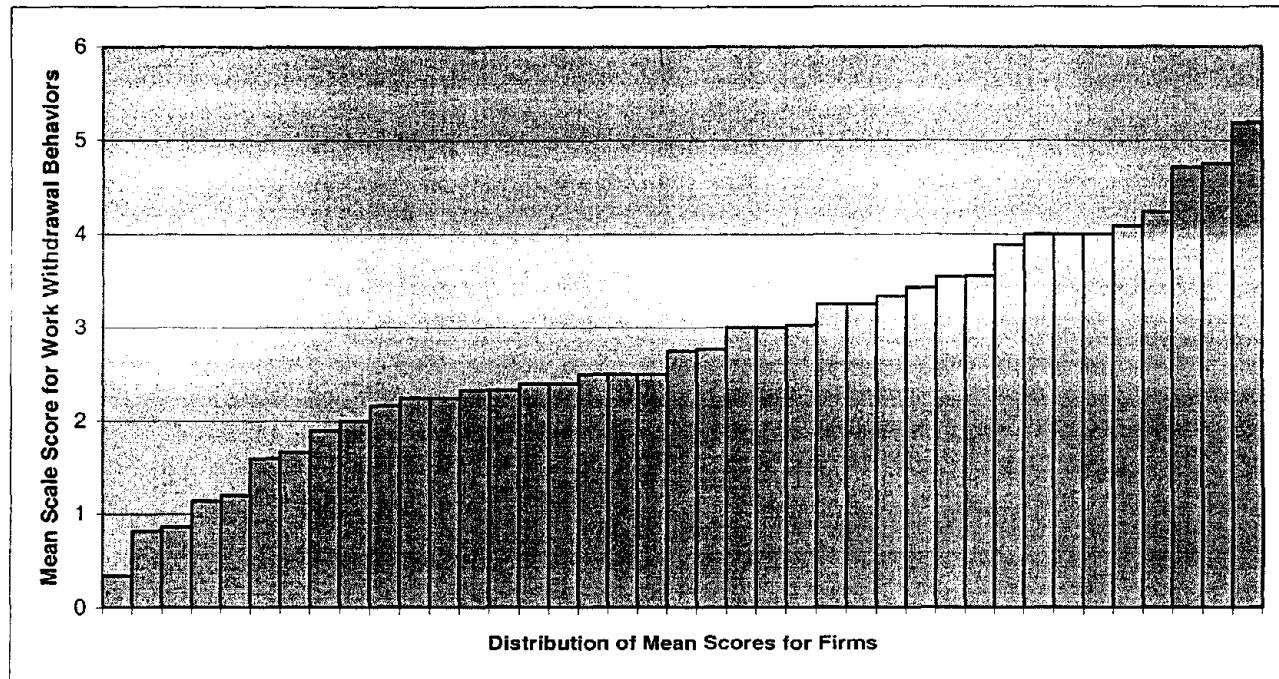


Figure 16:

Section VII: Financial Incentives and Performance

This section asks respondents to indicate the availability of a number of financial incentives and plans. Specifically, respondents were asked, “*How much does each of the following plans contribute to your total annual income?*” The plans and responses are presented below.

Table 13:

	Plan not offered %	Not at all %	A little %	A lot %
Stock ownership	67.12	20.40	10.12	2.36
Profit-sharing	53.34	17.56	21.91	7.19
Gain-sharing	71.48	19.30	8.00	1.22
Group bonus	59.56	15.02	20.99	4.44
Individual incentives (such as piece rate, commission)	73.97	19.69	5.48	0.86
Individual bonus	63.79	19.63	14.21	2.37
Pension plan (other than those plans described above)	31.46	21.27	38.31	8.96
Health related benefits	11.75	16.18	40.89	31.18
Other	33.63	18.58	33.63	12.39

We created a scale called “financial plans” based on the above items to reflect the overall contribution of different financial plans to employees’ annual income. We recoded “plan not offered” and “not at all” as 0, “a little” as 1, and “a lot” to 3, and summed across these items. The coefficient alpha for this scale was .65. The scale score of this item ranged from 0 to 20, with a mean of 3.17 across all the employees.

In addition, this section evaluated the effect of such incentives on employee motivation and performance when plans were present. If employees reported that the plan does contribute to their income, they responded to a follow up question concerning

the effect of the plan on their performance. Specifically, respondents were asked, "If you indicated that you had any of these plans, how do they affect your performance?" Note that these percentages are not for the total sample, rather they are percentages of those employees responding that they had a particular plan in the items above.

Table 14:

	Has no effect %	Decrease %	Increase a little %	Increase a lot %
Stock ownership	75.30	3.01	14.46	6.63
Profit-sharing	54.63	3.24	54.63	13.43
Gain-sharing	78.01	2.13	14.18	5.67
Group bonus	57.69	2.75	24.18	15.38
Individual incentives (such as piece rate, commission)	81.29	2.16	10.79	5.76
Individual bonus	65.91	3.41	22.73	7.95
Pension plan (other than those plans described above)	70.23	2.67	22.14	4.96
Health related benefits	59.71	1.76	59.71	12.35
Other	67.80	3.39	20.34	8.47

Specific questions about stock ownership revealed that 9.7 % of employees own stock in the company, 88.2% do not, and 2.0% do not know. Respondents who own stock in their companies were asked three follow-up questions, presented below.

"Did you purchase the stock or was it granted by the company?"

15.9% Purchased

71.4% Granted

12.7% Some purchased and some granted

"What proportion of your retirement funds is invested in company stock?"

37.1% None

24.2% A small proportion

12.9% A moderate proportion

16.1% A large proportion

9.7% Don't know

"Does having stock in your company increase your sense of ownership?"

39.7% Yes

44.4% No

15.9% Don't know

Section VIII: Individual Health

This section of the survey assessed health related behaviors and the overall health of the employees. We are interested in both the organizational stressors and individual behaviors that influence the health and well-being of employees and want to ensure we do not misattribute health outcomes to organizational stressors when they may be the results of an individual's healthy/unhealthy lifestyle. To assess an employee's health we asked about overall perceptions of health, healthy and unhealthy behaviors, and physical health symptoms.

Most employees report their general health as "excellent" (17.2%), "very good" (42.3%), or "good" (34.0%). Relatively few employees report that their health is "fair" (6.2%) or "poor" (0.3%).

Close to 80% of the employees surveyed reported no days missed due to injury or illness in the last month. Only 2.5% of the employees reported that they missed days due to work related illness or injury (ranging from one-half day to eight days).

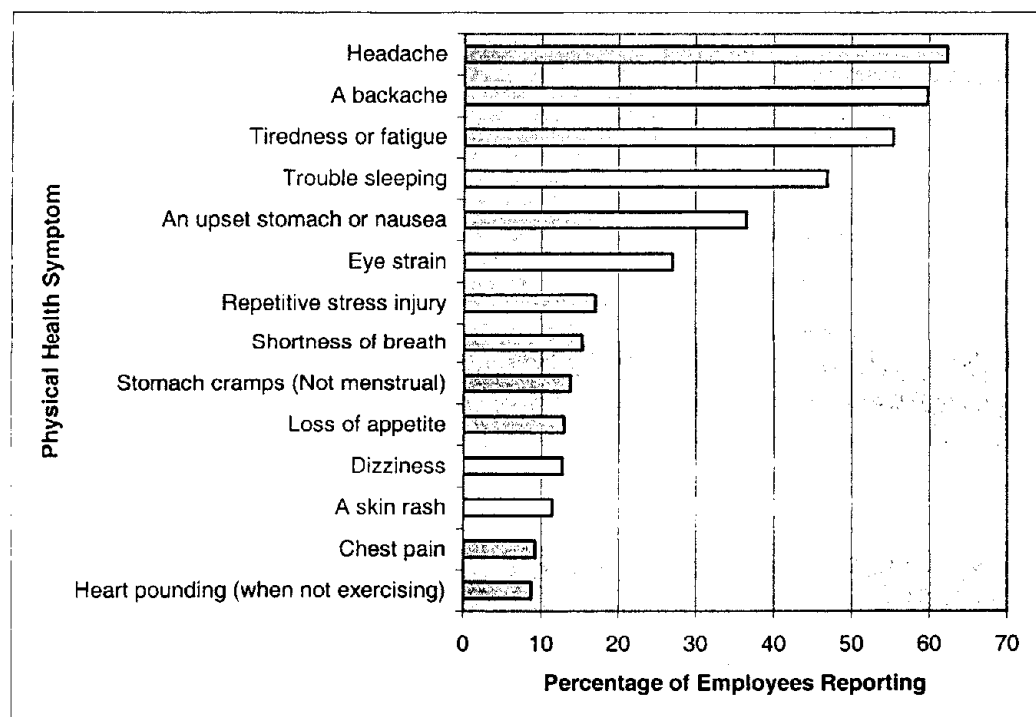
Respondents were asked whether or not they engaged in a number of health related behaviors. The behaviors and frequencies are presented below.

- o 61.81% report that they are 10 or more pounds overweight
- o 51.01% report that they have a routine check up for health risks such as high blood pressure/high cholesterol"
- o 73.94% report that they try to eat a balanced diet
- o 42.83 % of employees report exercising to the point of perspiration each week, with the mean number of times 1.65 per week.

- o 57.12 % of employees report consuming alcohol beverages, with the mean number of beverages 3.83 per week.
- o 28.59 % of employees report smoking cigarettes, with the mean number of cigarettes 29.27 per week.
- o 3.9% of employees report using other forms of tobacco, with the mean number of cigarettes .45 per week.

To assess physical health symptoms experienced, we used a scale based on Spector and Jex (1998). Respondents were asked about fourteen health symptoms experienced over the last 30 days by asking “ During the past 30 days did you have the following physical health symptoms?” Symptoms and frequencies are reported below.

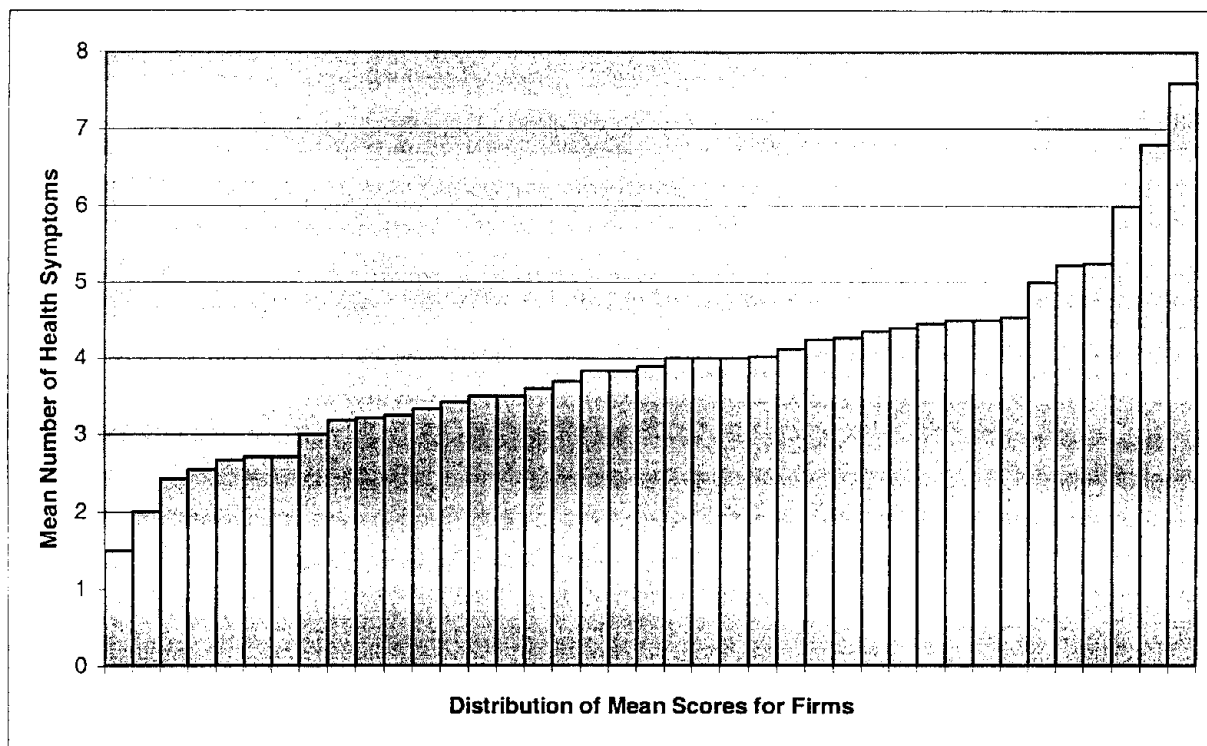
Figure 17:



The most common health ailments during the past 30 days were headache, backache, and tiredness or fatigue. Although these may be considered relatively mild symptoms, they are reported by a majority of employees. Further, symptoms that would be considered more extreme, such as chest pain and heart pounding are reported by almost 10% of the employees surveyed.

When we sum the number of health symptoms for each participants and calculate the mean number of health symptoms for employees for each firm, we get a sense of the variability within firm of these perceptions. The mean number of health symptoms (out of 14) reported by employees for each firm is presented below.

Figure 18:



Selected Relational Analysis

In this section we report the results of selected relational analyses based on the employee survey data. The set of analyses seeks to address the following questions:

- 1) What determines employee job attitudes?
- 2) What determines employee performance and behavior at work?
- 3) What determines employee health and well-being?
- 4) Do employees from firms of different clusters report different attitudes, behavior at work, and health and well-being indicators?
- 5) What relationship, if any, is present among employee job attitudes, behavior and health and HR practices?

To investigate questions 1) to 4), we conducted analyses using information exclusively from the employee survey data. We then matched employee survey data with the HR manager survey data to examine question 5).

Employee Job Attitudes

We are interested in how employees' evaluations of task characteristics, managerial practices, and physical and interpersonal working environment are related to their morale (overall satisfaction and commitment factor), perceived job stress, satisfaction with coworkers, and perceived employee-management relationship. The table below presents the results from multiple regression analyses.

Table 15:

	Dependent Variables			
	Morale Factor	Job Stress Factor	Coworker Satisfaction	Perceptions of Relations with Management
Gender (male=1)	1.28	-.32	-.42	.64
Age	.19	.00	.04	.03
Wage	.32	.14	.06	.09
Safety Climate	.90 ***	-.12 *	.06	.19 ***
Interpersonal Incivility	-1.16 ***	.38 ***	-.40 ***	-.38 ***
Employee Involvement	2.38 ***	-.77 ***	.49 ***	.32 **
Monitoring	2.30 ***	-.37	.22	.07
Technology Changes	1.45 ***	-.52 ***	.06	.09
Financial Plans	.55	-.04	.02	.07
N	249	253	254	258
Adjusted R ²	.61	.39	.23	.46
F	11.09 ***	4.97 ***	2.90 ***	6.48 ***

Note: All regressions included an intercept as well as a set of dummy variables representing the 39 firms that the employees were sampled from with one firm (ID = 5138) as the comparison group.

* $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed tests.

The results suggested that two variables, interpersonal incivility and employee involvement had significant relationships with all of the attitudinal variables. Employees who experienced more interpersonal incivility reported significantly lower morale, higher job stress, lower satisfaction with coworkers and worse relationship with management. One the other hand, employees who participated in employee involvement programs reported significantly higher morale, lower job stress, higher satisfaction with coworkers, and better relationships with management.

Safety climate and technology changes also demonstrated significant relationship with some of the attitudinal variables. Specifically, employees who perceived a strong commitment to workplace safety from management reported significantly higher morale, lower job stress, and better relationships with management. Employees who found new technologies made their job easier, less stressful and more productive reported significantly higher morale and lower job stress.

Two other variables also contributed to higher employee morale: financial plans and monitoring. Employees' morale increased as different financial plans (e.g. stock ownership, profit-sharing, gain-sharing, group bonus, pension plan, health benefits) contributed more to their total annual income, and as they were guided and monitored by supervisors and monitored by coworkers to a greater extent.

Employee Performance and Behavior at Work

We are interested in how employees' safety behavior, organizational citizenship behavior, and work withdrawal behavior are associated with their attitudes and evaluations of managerial practices. The table below presents results from multiple regression analyses.

Table 16:

	Dependent Variables		
	Safety Behavior	Organizational Citizenship Behavior	Work Withdrawal Behavior
Gender (male=1)	-.51	-2.60 ^{***}	.05
Age	-.01	-.03	-.06 [*]
Wage	-.00	.11	-.06
Morale Factor	.01	.06	.01
Job Stress Factor	-.04	.15	.04
Coworker Satisfaction	-.04	-.12	.02
Perceptions of Relations with Management	-.13	.23	-.15 [*]
Emphasis on Health	-1.16 [*]	.34	.11
Safety Climate	.19 ^{***}	.02	.01
Coworkers' Safety Behavior	.47 ^{***}	NA	NA
Employee Involvement	.06	.64 ^{**}	.01
Monitoring	-.34	.03	.08
Technology Changes	.10	.17	.05
Financial Plans	-.01	.27 [*]	-.01
<i>N</i>	193	187	193
Adjusted <i>R</i> ²	.49	.29	.14
<i>F</i>	5.21 ^{***}	2.70 ^{***}	1.70 ^{**}

Note: All regressions included an intercept as well as a set of dummy variables representing the 39 firms that the employees were sampled from with one firm (ID = 5138) as the comparison group.

* $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed tests.

Overall the results are not very strong. Most variables failed to demonstrate significant relationships. When predicting safety behavior, only safety climate showed significant positive relationship. Employees reported less safety behavior when they regarded the company's emphasis on health "just right", which is an unexpected finding.

Male employees reported less organizational citizenship behavior. Employees who participated more frequently in company planned social activities reported more organizational citizenship behavior.

Older employees reported less work withdrawal behavior. Employees who perceived a better employee-management relationship also reported less work withdrawal behavior.

Employee Health and Well Being

We are interested in how employees' overall health (as assessed by the one item measure described above) and health symptoms are related to their health habits, job attitudes, and evaluations of managerial practices. Regression results are presented in the table below.

Table 17:

	Dependent Variables	
	Overall Health	Health Symptoms
Gender (male=1)	-.06	-.50
Age	-.00	-.07 **
Wage	-.00	.02
Overweight (10 pounds or more)	-.15	.08
Routine Check ups for Health Risks	-.14	.53
Eat a Balanced Diet	-.02	.87
Exercises	.07 **	-.05
Drinking Alcohol	.01	-.04
Smoking	-.00	.01
Morale	.01	-.03
Job Stress	.01	.16 **
Coworker Satisfaction	.00	.03
Employee-Management Relationship	.02	-.05
Emphasis on Health	.37 *	-1.11 *
Workstation Redesign	-.09	.35
Safety Climate	.01	.06
Employee Involvement	.00	.22
Monitoring	-.16 **	-.10
Technology Changes	.01	.08
Financial Plans	.01	.12
N	189	189
Adjusted R ²	.11	.24
F	1.49 *	1.69 **

Note: All regressions included an intercept as well as a set of dummy variables representing the 39 firms that the employees were sampled from with one firm (ID = 5138) as the comparison group.

* $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed tests.

As shown in the table, employees who exercised to the point of perspiration more frequently per week and who thought the company's emphasis on health was "just right" (as compared to too much or too little) reported better overall health. On the contrary, employees reported worse overall health when they were guided and monitored by supervisors and monitored by coworkers to a greater extent.

Older employees reported fewer health symptoms. Employees who thought the company's emphasis on health was "just right" also reported fewer symptoms. However, employees who experienced more job stress and participated more in employee involvement activities reported more health symptoms

Comparisons of Employee Responses from the Four Different Firm Clusters

In Volume I we classified firms into four general types based on health outcome variables. While we can pre-specify the firms into different clusters based on the firm-level data described in Volume I, it will be interesting to see whether the information we obtained from individual employees were consistent with this classification. In what follows, we compared the mean of all the key attitudinal, behavioral, and health variables for employees from different firm clusters. We also conducted one-way analyses of variance to determine whether the observed differences were statistically significant.

Table 18:

Variable	Cluster 1 Healthy	Cluster 2	Cluster 3 Unhealthy	Cluster 4	ANOVA (F Values)
Male	0.60	0.52	0.88	0.68	3.48 ***
Age	38.24	40.14	39.68	43.82	4.02 ***
Wage	17.99	11.27	14.24	14.55	7.52 ***
Emphasis on Health	0.83	0.67	0.45	0.46	3.85 ***
Safety Climate	28.10	29.41	24.90	25.55	2.65 ***
Coworkers' Safety Behavior	23.30	24.13	21.78	22.98	1.35
Interpersonal Incivility	2.37	1.70	2.10	2.97	2.38 ***
Employee Involvement	8.97	9.14	8.63	8.55	2.16 ***
Monitoring	4.54	5.55	5.17	4.93	1.54 *
Technology Changes	6.92	6.76	6.20	6.25	1.35
Financial Plans	4.51	5.71	3.40	2.71	6.40 ***
Morale	84.57	88.42	77.38	72.26	4.58 ***
Job Stress	17.14	15.93	19.87	19.71	3.04 ***
Coworker Satisfaction	12.76	10.43	10.03	10.08	2.39 ***
Employee-Management Relationship	11.66	12.17	10.12	8.65	5.33 ***
OCB	35.97	36.19	35.79	35.50	1.74 **
Work Withdrawal	11.86	11.61	10.03	10.68	2.20 **
Safety Behavior	24.24	25.90	23.51	25.14	1.38
Drinking	3.38	3.23	4.65	3.88	1.08
Smoking	20.50	28.02	32.46	30.30	1.22
Overall Health	3.83	3.77	3.64	3.68	1.04
Healthy Symptoms	3.53	4.27	3.31	3.78	.80

* $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed tests.

As shown in the table, most of the variables demonstrated significant mean differences across the four clusters. In particular, Cluster 1 (healthy) firms evidenced the highest employee wages, the highest emphasis on health, technology changes that improved their jobs, higher coworker satisfaction, and less work withdrawal. Cluster 2 firms scored highest on the percentage of females employed, the employee perceptions of the safety climate, employee involvement, leveling of monitoring, financial plans offered, employee morale, employee-management relationship, and employee

organizational citizenship behaviors. Cluster 3 (unhealthy) firms scored highest on the percentage of males employed and the level of job stress. Cluster 4 firms scored the highest on employee age and the frequency of interpersonal incivility, and lowest on employee involvement, financial plans offered, and employee morale. No significant mean differences were found for employee safety behavior and health outcomes. Tukey post hoc tests revealed significant differences between Cluster 1 (healthy) firms and Cluster 3 (unhealthy) firms for the following variables: gender, wage, safety climate, satisfaction with coworkers, work withdrawal behavior, job stress, and management emphasis on health. No significant differences were detected between Cluster 1 and Cluster 2 for the other variables listed in the table.

Therefore the results suggested that in general we had more favorable employee responses from Cluster 1 (healthy) firms and Cluster 2 firms, than those from Cluster 3 (unhealthy) firms and Cluster 4 firms. Cluster 2 firms, although paid the lowest wage among the four groups, did enjoy the highest employee morale, lowest job stress, best employee-management relationship, and greatest number of organizational citizenship behaviors. However, these results are only preliminary and descriptive in nature, because we may have not obtained representative samples from these four categories.

HR Manager Reported Firm Practices on Employee Attitudinal, Behavioral, and Health Outcomes

In this set of analyses, we matched the employee survey data and the HR manager survey data and examine to what extent HR practice factors influence employee level outcomes such as attitudes, behaviors and health. The table below presents the results of these analyses. In all regressions, we included HR practices factors as well as variables that have been examined in previous sections.

Table 19:

	Attitudes				Behaviors			Health	
	Morale	Job Stress	Coworker Satisfaction	Employee-Management Relationship	OCB	Withdrawal Behavior	Safety Behavior	Overall Health	Health Symptoms
Professional Activity Factor	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
Outdoor Activity Factor	7.49	8.25 ***	-2.64	-.77	3.25	-.25	8.18	1.10	-5.52
Indoor Activity Factor	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
Face-To-Face Contact Factor	-3.80	-4.37 *	1.04	1.28	-1.64	-.45	-3.48	-.33	3.10 *
Non-Video Security Measure	.38	.54	.21	-1.43	4.92	3.10 **	.37	.31	.02
Video Security Measure Factor	1.62	7.19 *	-1.35	-.13	-4.15	-1.35	3.79	.07	-2.57
Health And Safety Practice	3.84	5.91 *	-.57	-1.49	2.13	-.80	8.44 *	.30	-6.37 *
Infrastructure And Environment	(dropped)	2.96	.05	.47	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
Physical, Psychological Health Program Factor	-4.11	-.96	1.67	1.33	-3.52	-.32	-2.65	-.58	1.60
Job Program Factor	-.74	-1.44	.36	.58	-1.16	.23	3.12	.15	-.71
Work Place Program Factor	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
Educational Program Factor	-15.74	(dropped)	(dropped)	(dropped)	-4.53	-.48	-5.88	-.24	3.80
Non-Training Job Transition	.03	-2.76 *	-.45	-.66	.54	.48	-2.31	-.39	1.96 *
Training Job Transition Factor	-.11	-1.42	.73	.24	3.84 *	1.51	.29	.00	.09

	Attitudes				Behaviors			Health	
	Morale	Job Stress	Coworker Satisfaction	Employee-Management Relationship	OCB	Withdrawal Behavior	Safety Behavior	Overall Health	Health Symptoms
Paid Leave Family Program	.69	4.43 *	-.30	.04	-1.98	-.19	1.58	.12	-1.53
Child Care Program Factor	5.12	1.08	-1.43	-.52	3.33 *	.59	-1.79	.20	-.14
Life Insurance And Disability	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
Single Medical Plan Factor	.34	2.51	-.75	.12	1.57	.37	2.15	.23	-1.55
Supplemental Benefits Factor	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
Important And Interdependent Task Factor	(dropped)	-.09	-1.23	-.39	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
Uncertainty And Demanding Task	-1.48	-5.92 *	3.15	.29	2.85	1.95	-2.15	-.07	1.05
Skill Set Impact Factor	1.63	4.59 *	-1.44	-.20	-1.87	-2.39	.38	.46	-1.05
Information Sharing Factor	.26	3.39	-.42	.41	-2.01	-.75	4.38	-.33	-2.80
N	197	202	205	206	182	190	155	151	151
Adjusted R ²	.62	.38	.23	.42	.25	.11	.30	.08	.31
F	13.93 ***	5.65 ***	3.37 ***	6.71 ***	2.96 ***	1.81 **	3.22 ***	1.37	2.84 ***

Note: All regressions included an intercept and the employee level predictors that were used to predict the corresponding outcomes in previous analyses. Some variables were dropped from some regressions automatically by the computer program due to insufficient information on these variables.

*, **, *** $p < .05$, $p < .01$, $p < .001$, two-tailed tests.

The results suggested that after controlling for individual level variables, these firm level HR practices were generally insignificant in predicting employee level attitudes, behavior and health. However, a few factors did demonstrate significant relationships with some of these employee level outcomes. Specifically, outdoor activity factor was associated with more job stress; face-to-face contact factor was associated with less employee job stress but more health symptoms; non-video security measure was associated with more work withdrawal behavior; video security measure was associated with associated with more job stress; health and safety practice was associated with more job stress, higher safety behavior, and less health symptoms; non-training job transition factor was associated with less job stress but more health symptoms; training job transition factor was associated with OCB; paid leave family program was associated with more job stress; child care program factor was associated with more OCB; uncertainty and demanding task was associated with less job stress; and skill set impact factor was associated with more job stress.

The insignificant and somewhat unexpected findings may partially due to the large number of predictors we included in each regression. In what follows, we only included two firm level variables, face-to-face contact factor and infrastructure and environment factor, in addition to other employee level predictors, in predicting these employee level outcomes. These two firm level variables showed consistent relationships with other important variables in Vol I. The results indicate that face-to-face contact factor was negatively associated with morale, but positively associated with safety behavior; and that infrastructure and environment factor was positively

associated with both morale and employee-management relationship. These additional analyses were presented in the following table:

Table 20:

	Attitudes				Behaviors			Health	
	Morale	Job Stress	Coworker Satisfaction	Employee-Management Relationship	OCB	Withdrawal Behavior	Safety Behavior	Overall Health	Health Symptoms
Face-To-Face Contact Factor	-.07 *	-.01	-.05	-.04	.06	.07	.13 *	.05	-.06
Infrastructure And Environment	.11 ***	-.07	.03	.13 ***	.02	.02	-.06	-.08	.11
N	466	488	485	495	426	422	335	319	319
Adjusted R ²	.61	.33	.21	.45	.20	.12	.26	.33	.17
F	78.87 ***	28.05 ***	15.58 ***	45.07 ***	9.11 ***	5.94 ***	9.44 ***	3.45 ***	4.28 ***

Note: All regressions included an intercept and the employee level predictors that were used to predict the corresponding outcomes in previous analyses.

* $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed tests.

The Impact of Employee Attitudes and Behaviors on Firm Financial Performance

Finally we examined to what extent employee job attitudes and behaviors transformed into more favorable firm financial performance. The results showed that after controlling for HR factors such as Participation in Decision-making, Participation in Financial-Return, Infrastructure, Face-to –Face contact, Information-Sharing, employee attitudes and behaviors were not significantly related to either sales (in natural log form) or financial well-being. Thus, essentially no relationships are observed between the employee attitudes and behaviors and firm financial performance indicators. These results are somewhat disappointing given our expectations.

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APPENDIX IIA

UNIVERSITY OF MINNESOTA WORK PRACTICES AND HEALTH SURVEY

Welcome to the **University of Minnesota Work Practices and Health Survey**. We appreciate your participation and hope that you will find the survey interesting. You will be asked a variety of questions about your job experiences and attitudes and how your job influences your health and well-being.

Before you begin, you should know that:

- All information that you provide will be kept **strictly confidential** and any report of the study will not identify you personally in any way. Only the researchers from the University of Minnesota will handle these surveys. No one at your organization will have access to your survey or will be able to identify your responses.
- Your participation is completely **voluntary**. You have the right not to participate or to stop participating at any time. You also have the right not to answer any item asked in the survey. However, we hope that you choose to answer all items so we will get the most reliable, accurate data.

If you have any questions, please contact the researchers who will be happy to answer them.

Thank you for your participation!

BACKGROUND INFORMATION

We would like to ask you to provide some background information about yourself. Please remember that your responses are **completely confidential**. You may skip any question you feel uncomfortable answering.

1. Job title _____
2. Gender ☐ Male ☐ Female
3. Age _____
4. Marital Status ☐ Married/Living with Partner ☐ Widowed/divorced/separated ☐ Never married
5. Do you have a working spouse or partner? ☐ Yes ☐ No
6. Number of dependents _____
7. How many hours do you work during a typical week at this company? _____
8. What hours do you typically work? ☐ Day ☐ Evening
9. If you hold a second job, how many hours do you work during a typical week at your second job? _____
10. Employment Status ☐ Permanent ☐ Temporary/contract/seasonal
11. How long have you worked at this company? _____ year(s) _____ month(s)
12. What is your hourly wage? _____

WORKPLACE SAFETY AND HEALTH

1. How would you describe your firm's emphasis on safety and health?
 - ☐ Too little
 - ☐ Just right
 - ☐ Too much
 - ☐ Don't know
2. When was the last time your workstation (the place where you sit or stand most on the job) was redesigned to improve employee safety and/or comfort?
 - ☐ Within the last 6 months
 - ☐ Within the last year
 - ☐ More than a year ago
 - ☐ Never
 - ☐ I don't know
3. Do health and safety rules sometimes get in the way of doing your job?
 - ☐ Yes
 - ☐ No
 - ☐ Don't know

4. Have you ever been injured on the job at this company? ☐ Yes ☐ No

If you have been injured on the job, did the following persons encourage or discourage you from filing a worker's compensation claim? Please select one response for each group of people.

	Encouraged me to file a claim	Neither encouraged nor discouraged me from filing a claim	Discouraged me from filing a claim
Your coworkers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your supervisor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HR representative(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your union representative(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent do you agree with the following statement: People at this company file worker's compensation claims for non-work related injuries.

- ☐ Strongly agree
☐ Agree
☐ Neutral
☐ Disagree
☐ Strongly disagree

5. Do you agree or disagree with the following statements about your company?

	Strongly Disagree	Somewh at Disagree	Neutr al	Somewh at Agree	Strongly Agree
a. Management is sincere in its efforts to ensure employee safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. There is open communication about safety issues in this company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. This company has a useful and well-developed safety training program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Accident investigations are always conducted thoroughly in this company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Existing equipment and tools in this company have been modified to minimize safety hazards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Please indicate the extent to which each statement describes the people you work with in the department.

	Strongl y Disagre e	Somewh at Disagre e	Neutr al	Somewh at Agree	Strongl y Agree
a. Employees in my work group comply with safety regulations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Employees in my work group remind each other of the need to follow safety regulations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Workers who work safely try to emphasize it and make sure others appreciate it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Workers who violate safety regulations irritate their fellow workers even when no harm was resulted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. The best workers in the group expect other workers to behave safely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. The best workers in the group care about safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Please indicate the extent to which each statement describes your supervisor.

	Strongly Disagree	Somewh at Disagree	Neutral	Somewha t Agree	Strongly Agree
a. My supervisor says a good word whenever he sees a job done according to the safety rules	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. My supervisor gets annoyed with any worker ignoring safety rules, even minor rules	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. I feel comfortable discussing safety and health related issues with my supervisor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. My supervisor seriously considers any worker's suggestions for improving safety and health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. As long as there is no accident, my supervisor doesn't care how the work is done	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Whenever pressure builds up, my supervisor wants us to work faster, rather than by the rules	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Please indicate the extent to which you agree with each of the following statement.

	Strongly Disagree	Somewha t Disagree	Neutra l	Somewh at Agree	Strongly Agree
a. I use the correct safety procedures for carrying out my job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. I use all the necessary safety equipment to do my job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. I ensure the highest levels of safety when I carry out my job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. I actively promote the safety program within the organization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. I help my coworkers when they are working under risky or hazardous conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. I voluntarily carry out tasks or activities that improve workplace safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PEOPLE YOU WORK WITH

1. Do the following items describe your **supervisor** (or the person you generally report to) most of the time?

a. Praises good work	<input type="checkbox"/> Yes	<input type="checkbox"/> ?	<input type="checkbox"/> No
b. Annoying	<input type="checkbox"/> Yes	<input type="checkbox"/> ?	<input type="checkbox"/> No
c. Tactful	<input type="checkbox"/> Yes	<input type="checkbox"/> ?	<input type="checkbox"/> No
d. Bad	<input type="checkbox"/> Yes	<input type="checkbox"/> ?	<input type="checkbox"/> No
e. Up-to-date	<input type="checkbox"/> Yes	<input type="checkbox"/> ?	<input type="checkbox"/> No

2. Do the following items describe the majority of **people you work with** most of the time?

a. Helpful	<input type="checkbox"/> Yes	<input type="checkbox"/> ?	<input type="checkbox"/> No
b. Boring	<input type="checkbox"/> Yes	<input type="checkbox"/> ?	<input type="checkbox"/> No
c. Intelligent	<input type="checkbox"/> Yes	<input type="checkbox"/> ?	<input type="checkbox"/> No
d. Lazy	<input type="checkbox"/> Yes	<input type="checkbox"/> ?	<input type="checkbox"/> No
e. Responsible	<input type="checkbox"/> Yes	<input type="checkbox"/> ?	<input type="checkbox"/> No

3. How often do you participate in *informal* social activities with your co-workers (such as meeting for drinks or coffee outside work hours, non-company planned parties, etc.)?

- ☐ Rarely or never
- ☐ Several times a year
- ☐ Monthly
- ☐ Several times a month

4. How often do you participate in *company-planned* social activities with your co-workers (such as holiday parties, picnics, sports groups, etc.)?

- ☐ Rarely or never
- ☐ Several times a year
- ☐ Monthly
- ☐ Several times a month

5. Yes or no: Most of the time, supervisors in this department treat employees fairly.

- ☐ Yes
- ☐ No
- ☐ Don't know

6. Yes or no: In general, management treats workers fairly at this company.

- ☐ Yes
- ☐ No
- ☐ Don't know

7. To what extent do you trust management at this company?

- ☐ Not at all
- ☐ To a small extent
- ☐ To some extent
- ☐ To a great extent

8. In general, how would you describe relations in your workplace between management and employees?

- ☐ Very bad
- ☐ Bad
- ☐ Neutral
- ☐ Good
- ☐ Very good

9. Since you have been working for this company, has anyone ever done any of the following to you while you were at work?

	Yes	No
Tried to provoke arguments	<input type="checkbox"/>	<input type="checkbox"/>
Calling you names or put you down in front of others	<input type="checkbox"/>	<input type="checkbox"/>
Made you feel inadequate	<input type="checkbox"/>	<input type="checkbox"/>
Shouted or swore at you	<input type="checkbox"/>	<input type="checkbox"/>
Frightened you	<input type="checkbox"/>	<input type="checkbox"/>
Made intimidating or threatening gestures at you	<input type="checkbox"/>	<input type="checkbox"/>
Racial/ethnic discrimination or harassment	<input type="checkbox"/>	<input type="checkbox"/>
Gender discrimination or harassment	<input type="checkbox"/>	<input type="checkbox"/>
Religious discrimination or harassment	<input type="checkbox"/>	<input type="checkbox"/>
Age-related discrimination or harassment	<input type="checkbox"/>	<input type="checkbox"/>

COMPANY FINANCIAL PLANS AND BENEFITS

Now we would like to ask you about some financial plans that may be present in your company.

	1. How much does each of the following plans contribute to your total annual income?				2. If you indicated that you had any of these plans, how do they affect your performance?			
	Plan not offered	Not at all	A little	A lot	Has no effect	Decrease	Increase a little	Increase a lot
a. Stock ownership	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Profit-sharing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Gain-sharing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Group bonus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Individual incentives (such as piece rate, commission)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Individual bonus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Pension plan (other than those plans described above)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Health related benefits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Do you own stock in your company?

- ☐ Yes
- ☐ No
- ☐ Don't know

If you answered "No" to the previous question, you may continue to the section, "Your Experience of Work," on the next page. If you answered "Yes," please complete the following three items.

a. Did you purchase the stock or was it granted by the company?

- ☐ Purchased
- ☐ Granted
- ☐ Some purchased and some granted

b. What proportion of your retirement funds is invested in company stock?

- ☐ None
- ☐ Small
- ☐ Moderate
- ☐ Large
- ☐ Very large
- ☐ Don't know

c. Does having stock in your company increase your sense of ownership?

- ☐ Yes
- ☐ No
- ☐ Don't know

YOUR EXPERIENCE OF WORK

1. Check the response in each row that most accurately reflects your feelings about your job.

	Strongly Disagree	Somewh at Disagre e	Neutra l	Somew hat Agree	Strongly Agree
a. I am recognized when I do good work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. My company offers many opportunities for growth and career development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. My company's core values are evident (lived out) in day-to-day work life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. There is not enough time in the day to do my job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. My company encourages employees to come up with new and better ways of doing things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. I have little control over my job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. I frequently receive conflicting requests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. I would be willing to spend the rest of my career with my company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. I am under a lot of stress at work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. I know exactly what is expected of me in my job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. I have clear, planned goals and objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. I am responsible for too many tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Employees at my company are highly committed to their jobs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. Employee morale is high	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o. I am satisfied with my pay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p. I am satisfied with my working conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q. I am satisfied with my supervisor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
r. I am satisfied with my job in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
s. I think I will leave this company within next year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
t. If I were choosing my place of work again, I would choose working at this company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
u. My job is secure in this company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
v. My future employment in this company looks uncertain to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent do you...

	Not at all	Small	Moderate	Large	Extrem e
a. have control over how your work is done?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. rely on established procedures and practices?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. participate in any employee involvement program?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Approximately how often have you engaged in the following behaviors during the past six months?

	Never	Rarely	Occasional ly	Often	Always
a. Cover for absent coworkers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Be absent from work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Take steps to prevent problems with other workers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Find fault with the company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Attend voluntary functions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Tamper with equipment so that you cannot get work done	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Help others with workloads	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Try to avoid creating problems for coworkers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Complain about work-related issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Take frequent or long coffee or lunch breaks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Help orient new people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Be late for work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Keep up with changes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. Use equipment (including the phone) for personal use without permission	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o. Volunteer to do things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p. Constantly look at your watch or clock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q. Read organizational announcements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent are you....

	Not at all	Small	Moderate	Large	Extreme
a. guided and directed by supervisors and managers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. monitored and supervised by supervisors and managers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. monitored by coworkers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Has your work been affected by new technologies?

☐ Yes

☐ No

If you answered "No" to the previous question, you may continue to the section, "Health and Life," below. If you answered "Yes," please complete the following three items.

New technologies have made my job...

- ☐ Easier
- ☐ More difficult
- ☐ No change

New technologies have made my job...

- ☐ Less stressful
- ☐ More stressful
- ☐ No change

New technologies have made my job...

- ☐ More productive
- ☐ Less productive
- ☐ No change

HEALTH AND LIFE

1. In general, my health is:

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor

2. How many days have you missed due to illness or injury in the last month? _____

3. Of those absences, how many were due to *work-related* illness or injury? _____

4. To what extent do you agree with the following statements?

	Strongly Disagree	Somew hat Disagre e	Neutr al	Somew hat Agree	Strongly Agree
In general I am satisfied with my life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have to miss family activities due to the amount of time I must spend on work responsibilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have to miss work activities due to the amount of time I must spend on family responsibilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Do the following items describe you most of the time?

	Yes	No
a. I am 10 pounds or more overweight.	<input type="checkbox"/>	<input type="checkbox"/>
b. I have routine check up for health risks such as high blood pressure/high cholesterol	<input type="checkbox"/>	<input type="checkbox"/>
c. I try to eat a balanced diet	<input type="checkbox"/>	<input type="checkbox"/>

6. In a typical week,

- | | |
|---|--|
| I exercise _____ times to the point of perspiration per week. | <input type="checkbox"/> I don't exercise regularly. |
| I have about _____ alcohol beverages per week. | <input type="checkbox"/> I don't drink alcohol. |
| I have about _____ cigarettes per week. | <input type="checkbox"/> I don't smoke. |
| I use other forms of tobacco _____ times per week. | <input type="checkbox"/> I don't use other forms of tobacco. |

7. Please answer the following questions about your coworkers and supervisor (excluding yourself):

How many people in the group	None	Few	Half	Most	Everybo dy	Don't Know
a. Are in good health?						
b. Have a negative attitude?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Smoke?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Eat nutritiously?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. At least 10 pounds overweight?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Often complain about job?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Often lose temper?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Have low back pain or carpal tunnel syndrome?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Exercise regularly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Go on diets?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. During the **past 30 days** did you have the following physical health symptoms?

- | | | |
|----|---------------------------------|--------------------------|
| No | Yes, but I didn't see
doctor | Yes, and I saw
doctor |
|----|---------------------------------|--------------------------|

a. An upset stomach or nausea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. A backache	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Trouble sleeping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. A skin rash	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Shortness of breath	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Chest pain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Headache	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Fever	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Acid indigestion or heartburn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Eye strain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Diarrhea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Stomach cramps (Not menstrual)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Constipation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. Heart pounding when not exercising	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o. An infection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p. Loss of appetite	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q. Dizziness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
r. Tiredness or fatigue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
s. Repetitive stress injury such as carpal tunnel syndrome	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please use the space below and the back of the survey to tell us about things that are going on in your company that we have not asked about that may have influenced your responses or let us know anything else you think is important.

Thank you very much for your time and your cooperation!

PB2003-102272



Volume III
Case Studies: Human Resources Manager Interviews and Case-Writeups
University of Minnesota
Workplace Practices and Health Survey

Contents: Volume III

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Introduction

To supplement quantitative information from the HR manager, employee, and supervisor surveys, we conducted HR Manager interviews and, for each organization created a case write-up based on this interview information, company literature, and publicly available materials. These alternative data sources served to fill out the quantitative data with qualitative data that can often provide a richness not found in quantitative information. This qualitative information was then examined for emergent themes in accordance with the firm's categorization in the Clusters previously identified using quantitative data. These cluster themes were supplemented with selected direct quotes from the HR Manager interviews.

HR Manager Interviews. The research team developed, pilot tested, and administered a scripted interview protocol for HR Manager interviews. The script is presented in Appendix IIIA and includes questions concerning the adoption of different health, safety, and employee well-being practices by the firm. We were interested in learning what prompted adoption or non-adoption of various health related practices as well as executive management concern with employee health and well-being. We also asked questions regarding specific HR and organizational practices and how they were adopted. Lists of different practices and programs were prepared in order to prompt recollection of recent programs that have been adopted by the firm. Questions were also asked about each company's hiring and recruitment practices as well as the various compensation and benefits packages that were available to employees. Information gleaned

from the HR Manager interviews is presented in the case write-ups for each of the firms (Section II).

Section I: Cluster Themes and Quotes

As mentioned previously, a majority of the case study firms (34 of 43) could be classified into one of the 4 clusters of firms we identified earlier using quantitative data (see Volume II). To determine if the information in the HR Manager Interviews and alternative data sources was consistent with the data from the cluster analysis based on firm level data, we categorized the firms according to their clusters to see if any themes or dimensions emerged. Indeed, the clusters of firms (based on firm level data) produced themes that were consistent within clusters and meaningfully different from emergent themes present in other clusters. Thus, the presence of themes in these interviews that are consistent within cluster, but not fully overlapping with themes in other clusters, provides support for the cluster structure.

Below we have provided these emergent themes and selected supporting quotes from this rich qualitative interview data. Note that although these cluster distinctions are somewhat fuzzy at the borders, a picture of relatively different sets of firms emerges.

Cluster One (Healthy firms): Themes

- Emphasized group atmosphere, had group bonuses
- Skill requirements were specific and there was a structured recruitment process through agencies and advertisements
- Tend to have a lot more company-sponsored events – Valley Fair picnics, holiday parties, vacations for achievement of production goals
- Tend to have some form of profit sharing
- Did not let decline in profits affect their policies regarding employees
- All had STD, LTD and Life insurance
- Many specific committees and programs designed for safety and health issues; used specific measures of program effectiveness
- Training beyond what was specified; for example training for CPR, first aid and financial management classes
- A few firms had a focus on work-life balance
- Company's culture is geared towards employees i.e. management listens to employees, conducts surveys...in turn employees seem more loyal as retention is claimed to be higher than competitors
- Never mention low employee morale or dissatisfied employees

Quotes:

"We are extremely people-oriented, employee-oriented, that's a big part of our corporate mission, our core values, and the people come first. The company really started as a result of my Dad working in different businesses in the same industry and he did not like how people were treated and wanted something different; and that's really what everything we do is more or less built on". – Firm 14

"I've retained employees beyond and above than probably any other firm of similar business and we lay a certain amount of that to this same caring atmosphere" – Firm 14 responding to effectiveness of company-specific training

" (Morale is) pretty high. One of the things we're looking on in our strategic direction is to focus some positive energy, I think its there but its just not harnessed as well as it could be. We have yet to lose someone to another company..." – Firm 14

"Come and work for us, and we'll give you a piece of the pie" – Firm 7

"My safety budget is about \$100,000 for all programs." "Someone just retired with 42.5 years of service." – Firm 24

"There's a unique internal motivation in the production staff. We have a strong sense of loyalty because of the drive to do well." – Firm 25

"Listening to employee grievances and employee issues, and having employees know you're listening and know you want to help them, is a happier, better employee." – Firm 34

"We're very proud of our facility, we have a clean, very bright facility. When individuals walk in they can see our concern is for our employees, for their safety." – Firm 41

Cluster Two: Themes

- Hiring requirements are for low skilled workers; Recruitment is mainly from the neighboring areas; opportunities for employees were fewer as they were in smaller towns
- The process of recruitment seems less structured; a lot of reliability on word-of-mouth as a source of hiring
- Family-oriented cultures were dominant in the company. One firm, had a change of ownership which caused problems adapting to a corporate culture; employees were close to each other in both firms in these family-oriented cultures
- Health and safety programs were initiated in one firm because the work compensation claim was high, in the other some safety programs were offered for over 25 years
- In order to measure the effectiveness of programs, one firm ensures that it meets specified rules (MSDS book), the other judges it by the reduction in incidents
- Management styles in both firms were hands-on, in one of them a more corporate style is being put in place

Quotes:

"Very family-oriented, fun place to work, flexible". – Firm 4

"If there is an issue that comes up it is addressed in a way that our employees know it's addressed and they may not like the answer but they know it was addressed....everybody knows everybody. And we are all available. The sign over my door reads 'HR Lane'. We are just real open, we have meetings, I think if they feel they don't feel we're accessible I would be surprised". – Firm 4 on issues between workers and managers

"In looking at the application, number one I evaluate whether its filled out completely. My philosophy is that if an employee can't take the time to adequately fill out an application, its definitely a reflection on how thy are going to perform the work". – Firm 4

"A couple of years ago they had a very high work compensation rate and they've been working on trying to reduce claims all the time but that one year really opened up the eyes of the management team, that hey had to get the employees involved and set up a good safety program, there really wasn't that good of a safety program in place at that time." – Firm 17

"The cost for the company is minimal but the savings are great". – Firm 17 on estimating the costs for the above program

"It did change quite a bit, morale is very low. A lot of changes happened here...And the job satisfaction, you know the employees are putting in long

hours and working very hard because they're dedicated to this company, unfortunately the company is still losing money". - Firm 17

Cluster Three (Unhealthy Firms): Themes

- They tend not to have either LTD or STD
- There tended to be some degree of conflict between workers and managers
- Communication tended to be low between managers and workers
- They tended to initiate programs because of either OSHA requirements or ergonomic issues
- Implementation of safety training tended to be geared towards meeting regulations
- Skill requirements for hiring were low and there were no clear expectations of educational standards

Quotes:

Regarding safety issues, the HR manager “hears a lot of employees say ‘I’ve been bringing this up for five years and nobody’s ever done anything about it’. – Firm 27

“For production employees, “pay is always an issue but people have had plenty of opportunities to go elsewhere and they choose to stay here.” – Firm 38

“...We’ve got a lot of highly motivated people - and of course you’ve got some that aren’t so, and some that are positively liabilities - but we do try to foster teamwork...” - Firm 22

“There is a written safety handbook that each new employee gets and are required to read and sign a sheet afterwards that says they have read it, and understand it, and they have received it, and understood it, and they have received what they feel to be appropriate training from their supervisor, both the supervisor and the employee are required to sign that”. – Firm 22

“There are always periodic upheavals, if you will, but I wouldn’t classify anything as being very serious”. – Firm 22 on conflict between workers and managers

“For us to maintain morale, to me its one of the largest issues the company has, it can’t afford to play a pet hand’. – Firm 22

“OSHA walked in the door! So we had to do our Aware program, our Right-to-know program, all of that and put together the safety committee....”. - Firm 1

“We haven’t had any big employee issues, and no return visit from OSHA” – Firm 1 on effectiveness of the training

“Just your typical ‘high school mentality’ problems”. – Firm 1 on conflict between workers and managers

"Its pretty tough work out there, so I think it does affect retention, especially on the short term, it only takes a couple of days for someone to understand that this isn't going to be what they want to do!" - Firm 16

"Things are improving". - Firm 16 on effectiveness of training

"Its mandated post-injury". – firm 16 on how the 'return to work' program is implemented

Cluster Four: Themes

- They tended to have more than one shift, some functioned 24/7
- Employees tended to work more hours a week
- Regarding bonuses, firms emphasized individual bonuses and not group bonuses
- Cultures were described to be causal, laid-back and family oriented
- There is conflict between workers and managers; poor communication between workers and managers was often a cause of this conflict
- The firms were in the midst of an organizational change or had recently undergone a change in ownership
- Morale was usually described to be 'fair to low'

Quotes:

"We have a very small second shift and we need to expand on that but who's going to train these people? So many of us have changed our lifestyle to go from days to nights in order to do it." Employees do not necessarily want to change their lifestyle and start working nights. – Firm 23 on the manager's response to why employee morale is low right now

"Right now its probably a little lower than it should be because of all the mandatory overtime, 45- hour work week... we've also gotten a lot of new contracts". – Firm 26 regarding job satisfaction

Regarding sick days/ PTO, the President responded, "It's simple here: no work, no pay".- Firm 28

"Now we have not had any layoffs but at this plant employees have typically worked at the minimum 50 hours a week. Well, rather than laying people off, everybody's at 40-hour weeks now. So they (employees) are looking at it as a cut in pay." - Firm 30 on why employee morale is low

"I see the meetings, when we don't make bonus or we have a very small bonus, I can see people pointing fingers to say 'Well what is so and so doing to make sure these reworks don't happen? And we're doing this, and we're doing that and..." – Firm 31

Regarding manager/employee relationship "Balanced treatment to all employees is sometimes an issue." – Firm 42

"To help manage the work-life relationship". – Firm 15 on the reason for employee assistance programs

"We can't measure it yet but I think it met a lot of people's needs, at least in concept". Firm 15 in response to measurement of effectiveness of employee assistance programs

"I think there's frustrations. I would just say in general its communication. The channels of communication leaves the production employees not feeling as well informed as they would like to be, just overall what's going on in the business"...."I think they often get the impact of a lot of decisions that change the course of their day, the course of their week, and they don't see the reasons behind it".- Firm 15 on conflict between workers and managers

"I wouldn't say open conflict, its just that some of the people have been here a long time and expect a piece of the pie so to speak, whereas if you are a stockholder they're a little bit more conservative in their thinking, if you're here you get your pay and your benefits and it's a two-way street here". – Firm 19 on conflict between workers and managers

"When you look at some of the pay and benefits, I guess the fact that the company's been in existence so long that a large percentage of the employees have been here so long, I think that's probably the biggest thing". - Firm 19 on employment security programs in the company

"High school or GED, but many of them are below that". – Firm 6 on minimum education levels required

"Because we had people who had come up to us to say 'We think maybe there's a problem here'...we got a group together and that's primarily our safety committee's job...." - Firm 13

"...good..., I think if there's anything that people would say makes them apprehensive it's the fact that we are a small medical device company and we've seen a lot of them bought out and that kind of thing..." - Firm 13 on overall employee morale

"Yes. We recently did a survey of departees, they felt it (company) was safe but they really didn't like the condition". - Firm 2 stating that health and safety did impact recruitment and retention

"Arbitration handles all issues. We go back to the table". - Firm 2 on how issues between workers and managers are resolved

"To some extent I think they're still trying to work past a 'good old boys' network of administration, we've some managers who have been here for a long period of time and aren't as progressive in their thinking as I'd like them to be". - Firm 11 on the company's culture

"I think one issue that comes up a lot is lack of communication from the managers". – Firm 11 on conflict between workers and managers

"High school or GED would be preferred but in an aging workforce you don't always have that...." – Firm 11 on minimum education levels while hiring

Section II: Case Write-ups

To provide an overview of each of the firms in our case study, we compiled data from a number of alternative sources that give us a snapshot of the firm's practices and functioning. Below are the write-ups for each of the firms, each including information on HR management practices; financial, wage, and injury data; a summary of information from the HR manager interview; and information about the employee composition. Note that in these write-ups identifying information has been removed in accordance with confidentiality agreements.

Case Study: Firm One, Cluster 3 Forest Lake, MN

I. Overview: Firm One is a subsidiary of a Forest Lake-based corporation. It has more than 40 years of experience in the design and fabrication of custom components for the retail industry and the original equipment manufacturing (OEM) markets. The company is a distributor of tube, rod, and sheet plastics products. Firm One is an ISO 9002 compliant company, delivering precision components that withstand the high tolerances required in the OEM market. The range of services offered include Project Management, Field Assistance, Design Assistance, Engineering Services, Drop Shipment programs, and Warehouse Management.

II. Summary of HR Management Practices

The size of the firm is small. It employs only 85 employees, twenty percent of whom are female. The workforce is not unionized. The employees work 45 hours a week (80th percentile), which is more than the industry average.

Firm One offers job transition programs like mentoring and retraining which sets it at the 93rd percentile. It also offers above average Educational Programs (56th percentile), Financial Programs (60th percentile) and social activities (64th percentile). The company does not offer any Job Programs or Workplace Programs and offers few Physical, Psychological and Health-Related Programs. It offers several health and safety programs (n=9) which place it at the 83rd percentile. Overall its featured at the 33rd percentile on physical and psychological programs and does better on health and safety practices at the 65th percentile.

It consistently rates average on physical work environment factors like building, sanitation, lighting, etc. Employees require minimal skill to perform tasks that are moderately complex. The tasks are fairly important and interdependent. Decision-making is individual-based and financial returns are also structured around individuals

Information on human resource planning is shared to a lesser degree with the employees. Information on other areas like investment policies and profitability is conveyed as per industry standards. Informal meetings, email, and bulletin boards serve as the main ways of communicating with employees. Work groups and newsletters are rarely used for this purpose.

A cash profit-sharing plan is among the distinct human resources practices at Firm One. This plan is implemented by only 23% of the other firms in the

industry. On the whole, the satisfaction level of the employees is very high (77th percentile) and the level of stress in the workplace is low (18th percentile).

III. Summary of Financial, Injury and Wage Data

Overall, the company's financial health is weak. It is at the 28th percentile. In addition, employees receive an average wage of \$21,952 per year, which is significantly lower than the industry (19th percentile). Sales per employee are \$240,192, which is again lower than the industry (40th percentile).

The injury incident rate per 100 FTE is 2.35 and the number of working days lost per injury total 35.69. The injury level in the organization is marginally above average (54th percentile).

IV. Summary of Information based on HR manager

The interview with the Director of Human Resources revealed that there was a merger of Firm One with another firm about two and a half years ago. With the new ownership, some employees have been integrated into the new corporate culture and others have not been integrated as yet. Both the companies had a 1-3 % turnover. Since the merger, the total employee strength has increased from the 50-employee and 34-employee companies to an 80-100 employee company. This has created a company with a broad corporate overview but it has been difficult for some employees to assimilate into this culture.

The primary safety or health concern for production employees is the repetitive motion of tasks. Despite this, there does not seem to be any impact on recruitment and retention of production employees on account of health and safety issues. The company has put together an 'Aware program', a 'Right-To-Know' program, created a safety committee, and also developed a voluntary 'First Response Team'. A consultant assisted in the implementation of this process. This was in response to a visit from OSHA representatives. The efficacy of this program can be judged by the lack of major employee issues and also the fact that there was no visit from OSHA in this period. A Smoking Cessation program was also implemented but it has had limited efficacy.

There have been no employment related lawsuits in the last 2 years. There are minimal conflicts between workers and managers. Also there is no unionization.

Recruitment is primarily through a temp-to-hire process lasting 90 days. However, if there is an applicant from a competitor or someone with matching skill sets, then there is greater flexibility in the recruitment process. There is no expectation of any minimum educational level and the applicants are from many different geographical areas. After the companies merged, the employees

wanted to stay with the company as they also lived in the neighboring area. It has not really been difficult to recruit prospective employees, and the current low number of employees in the company is by design.

The employees socialize outside of work too. The company supports a softball league, although it is not directly connected to the company, holiday parties, quarterly employee appreciations, and awards for longevity anniversaries.

Any safety issues are completely addressed by the management. The company moved to a PTO system as of April 1, 2001.

Core Employees Total Compensation List is as below:

Component	%
Hourly wage	75
Health Insurance	25

Health and Benefits program/Percentage contributions are as below:

In % Contribution	HMO	STD	LTD	Life	Dental
<i>Company</i>	80	100	100	100	80

An estimate of the average salary of production supervisors, either hourly or annually exclusive of benefits is \$48,500.

Case Study: Firm Two, Cluster 4 Red River Valley, MN

I. Overview: Firm Two is an agricultural cooperative that specializes in sugar and sugar-based products. The cooperative is owned by more than 3000 growers in the Red River Valley of North Dakota and Minnesota. Firm Two, formed in 1899 and converted into a co-op in 1973, divides the 35-mile-wide valley into five districts, each served by a processing plant. During an annual eight-month "campaign", the plants operate continuously, producing sugar, molasses, and beet pulp. Its products are sold through marketing co-operatives. Firm Two also owns 46% of a corn sweeteners joint venture.

The company is fairly old, and can trace its antecedents to late in the 19th century. It is spread across 7 locations in Minnesota and other states in the US. It employs over 1800 people. The core employee title is "factory worker" and it has about 659 such workers.

The revenues for the six months ending February 28, 2001, were \$416 million, an increase of \$30.4 million from 2000. Revenue from total sugar sales increased 9.5 percent, which reflects the proceeds from the forfeiture of sugar to the Commodity Credit Corporation (CCC) this year, partially offset by a 1.8 percent decrease in hundredweight sold, and an 8.4 percent decrease in the average selling price per hundredweight.

The domestic sugar market is currently experiencing an oversupply of refined sugar. This oversupply is the result of several factors. First the World Trade Organization (WTO) requires imports of sugar, regardless of the domestic supply situation, from approximately 40 foreign countries that produce and export sugar. Second, sugar is entering the United States from Canada, over and above the WTO minimum, in the form of "Stuffed molasses". "Stuffed molasses" is molasses that contains an extremely high percentage of sugar. Once the "stuffed molasses" reaches the United States, it is run through a desugarization process that separates the liquid sugar from the molasses. The liquid sugar is then sold in the domestic market. Third, Mexico, under the North American Free Trade Agreement (NAFTA), will be allowed to export 2.5 million hundredweight of sugar, tariff free, into the United States during the fiscal year 2001.

Due to these factors, the supply of refined sugar currently exceeds the domestic demand for refined sugar in the United States. This excess supply has resulted in a decline in domestic sugar prices. This hits the state of Minnesota hard, as it is the nation's top sugar beet producer. The state's \$1.2 billion sugar industry supports more than 10,000 jobs, with three companies processing roughly 40 percent of the US sugar beet supply.

Low sugar prices lead to lower payments to Red River valley sugar beet growers. Firm Two's grower payments would be about \$10 per ton less than average. This would amount to \$100 million that will not come into the valley, which would generate an overall economic impact of \$250 million. The lower payments make it difficult for many of the growers to break-even.

II. Summary of HR Management Practices Survey

In terms of demographics, the firm is a large-sized firm with 1720 employees (73rd percentile). Although overall 80% of the overall workforce is unionized, all 100% of the core employees "factory workers" are unionized. The average core employee works for about 40 hours per week (61st percentile). The number of hours worked may increase a bit during the processing time. Twenty five percent of the workforce is female. There are also a significant (25%) proportion of contingent employees.

Workplace Programs (n=2), Job Transition Programs (n=2), Physical, Psychological and Health Related Programs (n=1), and Financial Programs (n=5) offered are all close to the average. Educational Programs (n=3) like tuition reimbursement sets the company at the 56th percentile. There are several health and safety practices (n=10) that rank the company at the 89th percentile. Security measures like video monitoring systems and security guards are in place here (78th percentile). In addition, the company sponsors an average number of social programs (n=2). No Job Programs or Family Programs are offered. For psychological programs, the company ranks at the 33rd percentile while on health and safety practices it is at the 75th percentile.

The noise level, air quality, ventilation and air conditioning are all rated below the industry norms. Other physical work environment factors like building facilities and lighting are as per the average. The tasks performed by employees are considered to be extremely important requiring moderate skills to execute. The tasks are fairly complex.

The information shared with employees on different factors like production planning, profitability and corporate finance are as per industry standards. Video display monitors, formal meetings and email are among the most widely used means of communicating with employees. Work groups and bulletin boards are rarely used.

It may be noted that the item "clear, planned goals and objectives for core employees" was described as relatively low (7th percentile). Overall the satisfaction level in the company is low (15th percentile) and there is a high degree of stress in the workplace (78th percentile).

III. Summary of Financial, Injury and Wage data

Generally, the firm enjoys satisfactory financial health (79th percentile). Each employee generates sales worth \$553059. This is high and sets the firm at the 99th percentile. However, its wage level is close to the industry average with each employee receiving an average annual wage of \$ 40147. Employee turnover is 10% of which 2% is involuntary.

The injury incident rate per 100 FTE is 1.88 and the number of days lost per injury totaled 13.04. This was close to the average for the industry.

IV. Summary of Information based on HR Manager

The interview (with one HR person and one Occupational Health nurse) indicated that safety issues impact retention to some extent. In a survey of departees conducted internally, the company found that although the departees felt the working conditions were safe they did not like them. As it is an industrial environment, hazards do exist and there are unpleasant odors too. Also the production employees work in rotating shifts, and the company operates 24 hours a day, 7 days a week.

Air quality, slips, trips and falls were described as the primary safety or health concerns. Many ventilation installation projects seem to have been initiated. With in-house safety committees on every shift, safety audits and mandatory safety training for all employees, there has been a reduction in accidents indicating the effectiveness of the program for health-related issues. The company has adopted the practice of on-the-job training as it provides employees the opportunity for promotions and different skill-based pay increases.

The company has experienced employment-related lawsuits in the last 2 years but this seems to have affected employee/management morale or behavior minimally. Overall, labor relations are positive, but there are frequently some issues that are of sensitive nature. However, arbitration handles all such issues.

In terms of hiring, each plant coordinates its own hiring. Physical ability to do the work, screening for physical conditioning, and ability to understand their environment are the criteria for selection. Nonetheless, it has been difficult to recruit prospective employees.

The production employees are described to be satisfied on the whole. The management considers it a moral obligation to be concerned about employee health and welfare. Currently, there are few company-sponsored social activities, although people do socialize outside of work. The plants attract people from local areas, mostly from family and friends.

The absentee rate among all plants is described to be about 5%. In terms of the core employees' compensation, hourly wage constitutes 55% and the pension program and health insurance constitute a combined 45%. HMO, Dental, STD, LTD, and Life are all offered, with the union negotiating on the rates on a regular basis. The company does feel that they try to attract and retain production employees by offering an attractive health and insurance benefits package. The estimate of the average salary of production supervisors, exclusive of benefits, is about \$55,000-\$60,000 annually.

Case Study: Firm Three Stillwater, MN

I. Overview: A Minnesota-based research chemist established Firm Three in 1973. It initially began by selling a SCUBA diving-suit lubricant. In 1974, the company changed its marketing focus and began selling the same technology to the telecom and power utility markets in the form of a water-based cable pulling lubricant. Since the industry used mud, wax, and grease, this product revolutionized the industry and assumed the position of the market leader since then.

Over a period of time, the company's line expanded to include a broad range of cleaners and other specialty chemicals in addition to pulling lubes. The expansion of the product range has resulted in the expansion of the markets that Firm Three caters to. In addition to telephony and power utility markets, its products are sold into the general electrical trades, CATV, MRO industrial, and data communications markets in over fifty countries worldwide.

Firm Three employs 40 people. It has a single location of operation, which is in Minnesota. The title of the core employees was described as "Production Technician".

II. Summary of HR Management Practices Survey

In terms of demographics, the firm is small with only 40 employees where the industry average is 254 employees. The entire workforce is non-unionized. The average core employee works for about 40 hours per week, which is above the industry norms (61st percentile). About 20% of the workforce consists of contingent workers, which is far higher than the industry average of 7.4%. 35% of the workforce consists of females.

Firm Three conducts an above average number of Educational Programs (n=4) and Job Transition Programs (n=3). The Workplace Programs (n=2), Welfare Benefits and Financial Programs (n=5), and Physical, Psychological and Health Related Programs (n=1) it offers are marginally under average. The company sponsors an average number of social programs. It does not offer any Job Programs or Family Programs. The firm also engages in health and safety practices for core employees (n=8), which places it at the 75th percentile.

The firm has not instituted any security measures for its employees. The firm also rates below the average on all parameters of infrastructure and environment. An average number of conflict resolution mechanisms are in place like the 'Open door policy'. On the whole, the firm rates at the 56th percentile on

Health and Safety. It rates lower at the 33rd percentile for the Physical and Psychological programs.

The tasks performed by core employees are of moderate complexity and require a moderate level of skill. The importance of the tasks is high and the possibility of transferring skills is low.

An 'employee stock option plan' is in place here, which is practiced by only 18% of the other firms in the industry. Other than that, 'self-managing work teams' and a 'cash profit sharing plan' are some other Human Resources practices implemented at Firm Three.

Meetings, email, and WebPages are the most frequently utilized ways of communication, while bulletin boards and newsletters are used to a lesser degree. Information on aspects like production planning, profitability, and corporate finance is shared with employees. Limited information on investment policies is shared. Decision-making is both individual and group based. The financial returns are also oriented towards both individuals and groups. Overall, the firm rates at the 88th percentile on employee.

The firm is characterized to be a high stress workplace as per industry standards (77th percentile).

III. Summary of Financial, Injury and Wage data

The financial health of the company is poor and rating at the 18th percentile. The average firm level wage is \$51,081 which is higher than average at the 69th percentile. Employee turnover is 15%, all of which is voluntary. Sales per employee are \$170,000, which is lower than the industry average (38th percentile).

From the limited data available on injuries, it appears that the firm, at the 33rd percentile, has fewer injuries than average.

IV. Summary of Information based on HR Manager

The interview (with the Vice President of Operations) revealed that the firm has a flat management structure with a team orientation. Safety issues do not impact recruitment and retention. As the product manufactured is lubricants, the primary safety concerns are slipping or falling and heavy lifting.

The company adopted the practice of identification of safety and health hazards. One reason for this was that the company manufactures water-based lubricants. About 10 years ago, there had been a problem with knife cuts, razor cuts and so

on. So a safety program was implemented at that time, which is a quarterly safety bonus event. This program covers all the full-time employees, not including temporary workers.

The company has also adopted the practice of labor-management safety committees and safety goal setting. This is mainly because the thrust of insurance is huge. There were a series of big accidents that initiated this process. The insurance company would send out an analyst to do a safety inspection on the floor and that spurred the development of the company safety program, safety committee and a written program. The insurance carrier supported the company in this effort by providing material, reviewing the written program and offering advice. This program is implemented through quarterly meetings and a safety committee that rotates with a few permanent management seats. This program affects all production employees and it has proven to be effective as the insurance company has not returned for inspection.

Employment security is another program that is implemented. The business is seasonal and therefore the company is very selective while hiring. Employees are seldom fired and people are evaluated carefully before being hired permanently. The recruitment process is a temp-to-hire process undertaken with three different agencies. The company gets its best people through the referrals from current employees but even these employees are routed through the agency for its screening process. After three months, the hiring decision is made after consultations with the colleagues of the prospective employee on the shop floor.

Work ethic, punctuality, teamwork and some personality traits constitute the criteria for selection. It has been difficult for the company to recruit employees. Out of ten temporaries, only one ends up being a full-time employee. The agency fee for placing a temporary is about 150% of the wage rate. Most of the employees have completed high school and a few have taken some college classes.

There have been no employment-related lawsuits in the last two years. The employees are not unionized and there is described to be no conflict between managers and workers. The company is described to be a place where an employee can succeed and be accepted and that draws people to work. This also results in longevity of full-time employees.

The company sponsors a bocce ball league and a tournament and there are company picnics too. The company follows a personal paid leave allotment system and the employees use all of it. The estimate of the average salary of production supervisors exclusive of benefits is \$12-15 hourly base wage.

Core Employees Total Compensation List is as below:

Component	%
Hourly wage	65
Health Insurance	10
Stock ownership	6
Profit sharing	14
Pension program	5

Health and Benefits program/Percentage contributions are as below:

In % Contribution of –	HMO	STD	LTD	Life	Dental
<i>Company</i>	80	0	0	0	50

Case Study: Firm Four, Cluster 2 Worthington, MN

I. Overview: Firm Four is a family-owned manufacturing company founded in Worthington, Minnesota in 1966. It began its operations by producing plastic-coated wire twist ties used as closures for bread bags and trash bags. Since then, the company has expanded into all types of wire closures, identification ties and tags, specialized industrial and bundling ties, packaging reclosures, and related machinery.

Firm Four has established various divisions and in-house departments. It has set up Firm Four Graphics for designs, layouts and mockups for printed bags and a trucking division called Firm Four Transportation. All these aim to enhance customer service efforts. Firm Four Technology, formerly a division of Firm Four Industries, designs and produces the reclosable packaging and building systems machinery. This division branched off on its own in 1998.

Firm Four is a major supplier of twist-ties not only in the US but in other parts of the world too. It operates out of 2 manufacturing locations – Worthington, MN and Sioux City, SD.

II. Summary of HR Management Practices

Firm Four employs 170 people; 40% are female. The entire workforce is not unionized. The employees work 40 hours week (61st percentile).

Firm Four conducts Job Programs (n=2) like Flextime for its employees. For this indicator it is placed at the 72nd percentile. Workplace Programs (n=2), Family Programs (n=1), and Financial Programs (n=6) offered are as per the average. Educational Programs (n=3) are more than what other firms offer (57th percentile). Firm Four has an on-site health clinic and nutrition programs. Only 2.69% and 7.33% of the firms, respectively, offer these programs. Therefore, Firm Four ranks at the 99th percentile on physical, psychological and health-related programs. With diverse health and safety practices (n=9), the company is set at the 83rd percentile.

There are few social activities and no job transition programs and security measures for employees in the company. On the whole, Firm Four fares poorly on physical and psychological indicators (38th percentile) but better on health and safety programs (67th percentile).

The physical work environment is rated consistently above average on building facilities, sanitation, noise level and so on. Employees execute tasks that are deemed to be extremely important and moderately complex and interdependent.

The required level of skill to perform these tasks is not of a high order. Employees are made aware on all facets of the company especially investment policies (97th percentile), profitability (92nd percentile), and corporate finance (98th percentile). Various modes of communication including email, meetings, and bulletin boards are used to communicate with employees.

Decision-making is both individual and group-based although financial returns are structured around groups. Although overall employee satisfaction level is high (87th percentile), the stress-level in the company is also high (82nd percentile), indicating a large amount of stress.

III. Summary of Financial, Injury and Wage Data

Largely, the company has sound financial health (72nd percentile). Yet, employees receive an average wage of \$28,788, which is below par (29th percentile). Each employee generates sales worth \$112,500, which is also slightly below average (40th percentile).

The injury-level in the organization is lower than other firms (33rd percentile), indicating a comparatively safer work environment.

IV. Summary of Information based on HR manager

The interview with the Manager of Human Resources revealed that the culture of the company was family-oriented, flexible and fun. Once people are recruited, the company trains them on safety issues. Over the last few years the primary safety concerns of heavy lifting and repetitive motion have been addressed.

The company adopted the practice of safety committees in the 1970s. There is a weekly production supervisor meeting where one safety topic per week is discussed. Safety articles are also periodically distributed to the supervisors. A monthly safety meeting where one-person per department is involved is also conducted. This committee has a three-month rotation. This program can be judged to be effective on account of the lack of any incidents. In the previous year, there were only two lost time injuries for a total of 10 days in manufacturing. Continuous awareness and reinforcing safety issues through training have contributed to making this program effective.

A health screening program has also been implemented in this company. Once every three years, health screening is conducted. It is voluntary for all employees and their spouses and the company pays the entire bill. In addition, through a physical fitness program, employees are reimbursed for fitness program membership; this program has been offered for the last 10 years. About 108 of the production employees are involved in this program. The

program costs the company \$3,500 per employee which does not include time away from work.

The company has not experienced any employment-related lawsuits in the last two years. The workforce is not unionized. If any issues arise between workers and managers, it is addressed in a way that the employee knows that the issue has been addressed. The president and the general manager also spend time in the production area, about 50% of their day is spent there. There is a great deal of sharing of information, openness in communication, and accessibility for employees.

The company does not advertise for recruiting new employees. Usually, it follows the word-of-mouth route. There is no temp-to-hire process. In selecting employees, the job history of the candidate is looked at. Experience in manufacturing and length of service in a job are the key factors assessed. There is very little employee turnover and so it has not been very difficult to recruit prospective employees. There are also limited opportunities for people in Worthington and so there is less switching of jobs unlike a metropolitan area. Firm Four believes that it has a good reputation, is considered a fun place to work and has a great benefits program. There is no minimum education level expected of applicants and most of the people working there live within a twenty-mile radius.

Overall, the employee morale and job satisfaction for the production employees has been described to be "very good". There are no company-sponsored social activities. However, there are many internal activities like company picnics. The employees have also selected two charitable organizations that the company supports for fundraising and the employees participate in these activities too.

An in-house maintenance department undertakes preventive maintenance to ensure that the facility functions smoothly. The seriousness of the management about employee health and welfare can be judged by the fitness programs that the company has. The company allows leaves for vacation and sickness. However, attendance has been described as very good and illness is an insignificant issue.

The company does yearly employee benefits statements and the average employee receives 45.1% of their wage in benefits, which includes profit sharing, health insurance and other items. The company pays 80% on individual policies for Major Medical and 100% for STD, LTD, Life. It does not pay for Dental. The estimate of the average salary of production supervisors, exclusive of benefits is \$37,000 annually.

Case Study: Firm Five St. Paul, MN

I. Overview: Firm Five is a specialty manufacturer, producing wood products for over twenty-five years in Minnesota. Firm Five began producing specialty wood products in 1973. The company originally designed and built hand-weaving looms and related accessories for sale primarily to specialty yarn stores and schools. In the early 1980s, it shifted its focus to the design and production of large-scale creative play products for children.

Firm Five is owned and operated by an extended family group, headed by two brothers. One of the brothers is responsible for general management duties and the other is responsible for Research and Development as well as facility development issues.

II. Summary of HR Management Practices

Firm Five is a small firm employing 22 people, 45% of whom are female. The entire workforce is not unionized. Employees work 38.75 hours per week, which is close to the average.

Firm Five offers few Job Programs (n=1), Workplace Programs (n=1), and Educational Programs (n=2). It fares below average compared to other firms in the industry here. It does offer Job Transition Programs (n=3) like school to work programs and retraining, which sets it high at the 71st percentile. The company has no Family Programs, Physical, Psychological and Health-Related Programs, and security measures in place. Financial Programs (n=3) and health and safety practices (n=1) are also below the industry standards. In terms of social activities, the company has picnics employee sports teams and holiday parties, which places Firm 5 in the 60th percentile.

The physical environment like building facilities, lighting, air quality all rate below the industry norms. The physical and psychological programs are hence ranked overall at the 18th percentile and health and safety even lower at the 4th percentile.

The tasks employees engage in are extremely interdependent and important. Nonetheless, these tasks are relatively simple and do not require a high degree of skill. The management shares modest amount of information on investment policies, production planning, and profitability. Negligible information on corporate finance and HR planning is given to employees. Employees do receive information on current events of the company (82nd percentile). Email and WebPages are the main modes of communication. All other forms of communication like meetings and bulletin boards are sporadically used.

Decision-making revolves around both individual and group-based decisions. The financial returns are also individual and group based. Total quality management and a cash profit sharing plan are some of the unique human resources practices which only 23% of other firms have instituted. The satisfaction level in the firm is high at the 88th percentile. Paradoxically, the stress levels in the organization are high as well at the 86th percentile pointing to a high-stress workplace.

III. Summary of Financial, Injury and Wage Data

The company has comparatively satisfactory financial health (79th percentile), employees receive an average annual wage of \$37,918, which is average for the industry (45th percentile). Sales per employee are \$63,132, which is low (37th percentile).

The injury incident rate per 100 FTE was 4.54. On the whole, the injury level at Firm Five is higher than the industry (73rd percentile).

IV. Summary of Information based on HR manager

The interview with the President revealed that the culture of the company was family-oriented. The brothers run the business as an extended family business that is a part of their lifestyle. There is a focus on teamwork here and sharing the benefits arising from that. The pattern followed for decision-making is to make decision-making compatible with employee needs, the personal needs of the owners and the financial needs of the business. One of the benefits of the company that is communicated to employees clearly, but is unwritten, is that the needs of the family are understood.

Health and safety issues impact retention more than hiring. As it is a woodshop, there are a lot of people who work with machinery all the time. The environment is dusty in some areas because of the woodwork. Consequently, safety is not an initial concern but becomes a concern in the long run. The primary safety concern of employees is dust and also the kind of safety equipment provided to them. Working with machinery in the woodshop may pose as a safety hazard.

The company has adopted the practice of safety training. There is no formal schedule set, as the company is small in terms of the number of employees. When a new employee joins, a lot of time is spent with that employee by his supervisor and the President. Whenever there is an incident or a minor report, the employees get together and discuss that. Most of the sessions are informal. The insurance carrier of the company also visits regularly. Relationships with

outside agencies are also maintained and discussions on safety are carried out with them.

Conflict resolution is another practice adopted by the company. The intent behind this practice is that it would serve as an open-ended invitation to communicate and participate. An invitation for feedback is stated in the manual handed to employees. It is also emphasized when a bonus is handed out, or whenever a formal letter is issued. It has not been established empirically internally whether these programs have been effective. However, subjective positive feedback on the work culture has been received.

The company also offers skill-based pay. As the marketplace is competitive, there is an effort to increase people's pays as their skills increase. The contribution of people is often a function of the level of skill and there is an effort to compensate people for their contribution. It is communicated to the employees that opportunities for learning would be provided and if individuals pick up new things, their compensation would increase. The effectiveness of this approach can be judged by the fact that this has reduced the turnover from earlier levels.

The company has not experienced any employment-related lawsuits in the last two years. The workforce is also not unionized. There is some degree of conflict between workers and managers but it is minimal and is largely "personality driven". The issues are mainly of 'protecting ones turf' and usually they are sorted out through a discussion.

The President has the direct responsibility and authority for recruitment. He considers the projections and the budgets and discusses them with the other principals, the co-owner, the production supervisor, and the assembly supervisor. The supervisors conduct the actual interviewing and hiring. Appropriate skills, aptitude and trainability, and people skills are the criteria for selection of the core employees. There is little difficulty in recruiting although there are only a few applicants. The company considers a 10:1, applicant to final selection ratio, as positive. There is no formal requirement of a minimum level of education. The majority of the applicants are from the local St. Paul area.

The company has holiday-parties, picnics, and volleyball games. These are informal events. People meet after work for drinks or dinner. As the company has a significant investment in equipment and has about 30% of the staff focused on machine work, there is an attempt to involve everyone in maintenance. There are also some people who are primarily involved only in maintenance.

The company has personal days for leaves. Vacation time and sick time have been grouped together.

Core Employees Total Compensation List is as below:

Component	%
Hourly wage	80
Health Insurance	10
Individual incentives	02
Pension programs	01
Profit-sharing	Varies

The company pays 80% individual for Major Medical but does not pay anything for dental. The estimate of the average salary of the production supervisors, exclusive of benefits is \$50,000 for the shop supervisor and \$35,000 for the assembly supervisor.

Case Study: Firm Six, Cluster 4 St. Paul, MN

I. Overview: Firm Six was originally founded in 1923 as a supplier of mixed wiping rags. The company followed a process of acquisitions and expansions and added the fiber department and the laundry department to become a full service wiping rag supplier.

Business growth spurred a movement to a larger facility in 1969. The wiper department continued to diversify into additional product lines including non-woven materials, paper products, specialty wipers, and floor care products. Through the years, additional equipment and plant expansion has been carried out to now offer over 20 different types of paper/non-woven wipers and over 50 types of cloth wipers.

Firm Six is one of the few companies around the country that recycles textile waste. One of the challenges facing companies like Firm Six is maintaining a steady stream of supplies from clothing manufacturers as the companies move offshore. It reports annual sales between \$5 million and \$10 million.

II. Summary of HR Management Practices Survey

The firm is a relatively small employing 110 people. Approximately, 25% of the workforce is female which average for the industry. The workforce is not unionized. The job title of the core employees is "machine operator" and there are approximately 55 such employees. The average core employee works 40 hours a week (61st percentile) in 3 shifts.

Workplace Programs (n=1), Educational Programs (n=1), Family Programs (n=1), and Physical, Psychological and Health Related Programs (n=1) offered are all below the average number of programs offered in comparable firms. Firm Six offers a number of Welfare Benefits and Financial Programs (n=6), which pegs it at the 52nd percentile. The company sponsors few social programs (n=1). Firm Six also engages in slightly below average health and safety practices for core employees (n=5), which places it at the 42nd percentile. It is rated mediocre on heat/air conditioning but is consistently around the average on other physical environment parameters like building facilities and noise level. Largely, on physical and psychological indicators it is ranked below average at the 33rd percentile. It fares even worse on health and safety programs at the 24th percentile.

Tasks at Firm Six are highly important but are of minimal complexity. Correspondingly, they do not require skills of a high order to execute them. The tasks are moderately linked to each other. Very little information on investment

policies and corporate finance is shared with employees. By and large, on other areas like production planning, profitability and current events too, negligible information is conveyed. Only information on human resources planning is shared more than the other firms in the industry (81st percentile). Informal meetings and bulletin boards are the main ways in which communication occurs. Email, newsletters, and WebPages are not used.

It may be noted that the item "organization offers many opportunities for employee growth and career development" (13th percentile) and the item "feel a strong sense of belonging to their organization" (2nd percentile) was each described to be lower than the average. Overall, this correlated with the low level of satisfaction (27th percentile) and the high-stress level (97th percentile) in the organization.

III. Summary of Financial, Injury and Wage data

The overall financial health of the company is good (64th percentile). Each employee generated sales worth \$52000. This is below the industry average (38th percentile). Wage levels were markedly lower at the 28th percentile. The average wage of employees is \$28,085. Significantly, the annual turnover rate of core employees is 64% of which voluntary turnover is only 4% and the remainder is involuntary.

There are 1.9 injuries per 100 FTE with 11.2 working days lost per injury. The injury rate for the firm is average for the industry.

IV. Summary of Information based on HR Manager

The interview (with one HR Generalist) pointed out that across the different shifts there are distinct areas in terms of the company's culture. The primary safety concern for production employees is working with blades and ensuring safety while working on machines.

The company has taken on the practice of Safety Training when they obtained European machines that had unusual mechanical features. This program is implemented through pre-employment training and monthly safety meetings. The program covers all the production employees and the safety manager is the judge of the efficacy of this program.

The Sexual Harassment Awareness program is implemented through yearly training and employee commitment gained through signing a form. Since the implementation of this program there have not been any incidences regarding this issue. The cost of this program, measured in terms of time, is two days of training every year and about 1-2 hours per employee per year.

The company imparts on-the-job training as they hire many unskilled people. The employee's introduction to the job, followed by close supervision for a while is the mode in which this program is executed. All employees except rehires go through this program. The company has not experienced employment-related lawsuits in the last 2 years. The company is not unionized and expresses that there is no conflict between workers and managers.

Human Resources screens potential employees and the hiring decisions are made jointly with the line supervisors. Work history and education are the decisive factors while selecting employees. Each month there are about 1-3 positions available which attract about 25 applications. The education level expected is High School or GED although many applicants are below that level. Most of the employees hail from the Midway district.

The company conveys that the morale is good and it is developing an internal survey to assess the morale. Picnics and holiday parties are the company-sponsored social activities. There is absenteeism amongst employees but it could not be confirmed whether it was solely due to illness.

Core Employees Total Compensation List is as below:

Component	%
Hourly wage	80
Health Insurance	15
Individual incentives (commission, piece rate)	Vary
Pension program	Varies

Health and Benefits program/Percentage contributions are as below:

In % Contribution of –	HMO	STD	LTD	Life	Dental
Company	80	100	100	100	NS

NS- available, but not specified

The company communicates that to a large extent it does not attract or retain production employees by offering an attractive health and insurance benefits package. The estimate of the average salary of production supervisors, exclusive of benefits, is about \$12 hourly.

Case Study: Firm Seven, Cluster 1 Eden Prairie, MN

I. Overview: Firm Seven develops and manufactures fast-dissolve and enhanced-absorption drug delivery systems. The company produces fast dissolving oral dosage of pharmaceutical products (currently six commercial products) and is developing several new drug delivery technologies. The revenues for this firm have grown 1,505 percent during the years 1995-1999. Its stock price has ranged from \$12 to \$73 in the past 12 months, and is listed on the Minnesota Fast 50, which is a ranking of the 50 fastest-growing technology firms in Minnesota. In addition, Deloitte & Touch ranks Firm Seven as one of the fastest growing technology companies in North America.

The firm is relatively young, being established in 1986. The core employee job title is described as "machine operator" of which 13 of the 133 individuals employed in Minnesota hold this job description.

The growth rate for this company is high. There are two facilities; one in Eden Prairie and another in Brooklyn Park, with about 133 employees (based on HR interview). The company was in a developmental phase for its' first 3 ½ years and not profitable for the first four years. Stock options were offered to all employees (for employees working two years ago, the options were priced at \$2.75 and now the stock price is currently over \$50—as of Jan 8, 2001, the price was \$51 ¾). Thus, the stock for this company has performed extremely well over the last year.

Total revenues increased 28% from \$4.2 million in the three-month period ended September 30, 1999 to \$5.4 million in three-month period ended September 30, 2000, and increased 83% from \$9.2 million in the first nine months of 1999 to \$16.8 million in the first nine months of 2000 (taken from SEC quarterly report).

E-trade lists this company as being in the health care sector and the biotechnology/drug industry. Industry surveys for the Biotechnology and Healthcare pharmaceuticals provided by Standard and Poor. The pharmaceutical industry appears healthy and strong notwithstanding challenges presented by changes in Medicare and rising drug costs. The Standard and Poor survey of the healthcare pharmaceutical industry indicates, "although it faces challenges, the U.S. pharmaceutical industry is still one of the healthiest and most profitable industries in the United States. Historically, the industry has rejuvenated itself by developing premium-priced breakthrough therapies that opened up entirely new markets. We expect this pattern to continue."

It appears as if Firm Seven is a tiny company compared to such giants as: Abbot labs with \$2,444 million in sales from pharmaceuticals, Johnson & Johnson

(\$10,694), Pfizer (\$14,859), but as noted above, the company is expanding rapidly.

The core employees were described as being “machine operators” for this organization. The company is not unionized, with 48% of the workforce females.

II. Summary of HR Management Practices Survey.

In terms of the demographics of the firm, the firm is relatively small (N=133) but still places slightly above the 50th percentile of the manufacturing firms surveyed in Minnesota. The average education of the employees is described as 16 years, which places it at a relatively higher level of education (90th percentile amongst the manufacturing firms). It is also distinctive in that the average core employee is reported as working 60 hours per week, placing it at the 99th percentile compared to other manufacturing firms in MN. Employees are working long shifts and long hours. The HR manager indicated that the average core employee work 60 hrs per week compared to an average of 37.3 hours for the 820 firms in our database.

The firm was described as having an above average number of Educational Programs (n=4), Family Programs (n=2), Physical/ Psychological Health-related Programs (n=3), and Welfare Benefits and Financial Programs (n=9) but not substantially lower than the averages in the other programs. Thus, the firm appears to offer a substantial number of “health” related programs.

In addition, the company sponsors an above average number of social programs (n=4), compared to an average of 2.71 for the larger sample.

Of some interest, morale was described as relatively low (a “2” compared to the average of 3.4 on this item). However, turnover was only 10% and employee satisfaction is slightly higher than average placing Firm Seven in the 66th percentile. Employee Stress levels are definitely lower than average falling in the 10th percentile.

The organization engages in an above average number of health and safety practices (n=9) compared to the larger sample (5.64).

III. Summary of Financial, Injury, and Wage data.

Sales are average for the industry. Financial well-being scores are slightly higher than average placing Firm Seven in the 77th percentile. Wage rate is

above average ranking in the 80th percentile. Injury incidence rate is average for the industry.

IV. Summary of Information based on HR Manager.

The interview (with two HR people) revealed that the organization has been trying to change its culture to one of being open. They describe the firm as being very good about communicating with employees, and that employees feel that they can express themselves without any fear of retaliation.

There do not seem to be any major safety concerns at the firm currently. Only minor cuts have been reported in the last year, with only one reportable injury in the last 4 ½ years, even though they are dealing with prescription-type drugs.

The last program implemented, sexual harassment combined with diversity training, was adopted basically to avoid legal problems. It is part of the orientation of new employees as well as an on-going program every 12-18 months.

They have a written safety program, calling for area inspection. A safety committee made up of employees and management performs the inspection.

Firm Seven has a stock option plan offered to all employees along with a group bonus program. These programs were initiated to retain people because they "weren't the most secure company to work for, so we told people to 'come and work for us, and we'll give you a piece of the pie'. The bonus was put into place because of our growth and the demand from our partners for production". The bonus program pays out quarterly.

Not much conflict between employees or between employees and management was reported.

Recruitment is primarily through the Internet and referrals from friends and family (bonus of \$500 for each referral), also advertising through the Minneapolis Star/Tribune. They are looking to hire another 40 people next year. There are generally 4 applicants per opening. Applicants need to be mechanically inclined; they generally come out of voc-tech school or an industry with similar equipment.

The company has several sponsored social activities (men's softball and co-ed softball team, holiday parties, summer picnic, fall hayride, potluck lunches) but "not as much as we'd like to". HR is not sure how much informal socializing goes on.

The firm places a strong emphasis on training and education. The President said, "If I'm going to be over-budgeted someplace it should be on training and tuition". Employees receive a \$5,000 tuition reimbursement per year.

In addition, the benefit package is described as strong. "The comments that I hear from people is 'Wow! You have a very nice benefit package!' We have a flexible-spending plan as well...for out-of pocket medical and dependent care....and then there is a stock purchase plan."

Case Study: Firm Eight Waseca, MN

I. Overview: Firm Eight began its operations in Montreal in 1981. It introduced its first products at the Geneva Telecoms show.

Firm Eight is a designer and manufacturer of advanced wireless data products and systems for mission critical applications. Its products are found in a variety of mobile data and automation and control networks around the world. It has been in the market for private data-by-radio solutions for over 20 years now.

The customers of Firm Eight's private wireless networks are firms involved in law enforcement, utilities, oil and gas production and distribution, transportation, freshwater and wastewater management and factory automation. Private networks provide security, control, cost benefits and improve operating efficiencies. Over 1,000 mission critical networks worldwide utilize Firm Eight equipment and engineering for wireless data communication.

Firm Eight has established partnerships with a number of software providers, system integrators, complimentary hardware manufacturer's and OEMs. It is anticipated that regulatory changes and technical advances would bring new movement into the area of supervisory control and data acquisition (SCADA) equipment in the coming decade. At the same time, there would be an increasing emphasis on increasing productivity and reducing overhead by moving from copper- and fiber-based SCADA systems to the wireless over licensed and unlicensed spectrum.

The SCADA markets are offering both opportunity and concurrently are increasingly getting focused. There are more than 400 suppliers that deal with some aspect of SCADA software or instrumentation. Simultaneously, established firms are recombining into stronger entities, such as the 1997 incorporation of one data telemetry firm into Firm Eight. The merger was renamed as Firm Eight COR (for Connectivity Over Radio) in 1999. It led to the release of RF modules the size of business cards that include surface acoustic wave (SAW) filter designs.

II. Summary of HR Management Practices Survey

The size of the firm is relatively small with 83 employees. Females constitute 40% of the workforce. The workforce is not unionized. The employees work 36 hours per week, which is slightly below the average of 37.3 hours for the industry.

The company figures at the 73rd percentile on Workplace Programs (n=3) and at the 84th percentile on Educational Programs (n=4). Firm Eight has only a few Family (n=1) and Physical/ Psychological Health-Related Programs (n=1). It does not have any Job or Job Transition Programs. It is ranked fairly high at the 75th percentile for Welfare Benefits and Financial Programs (n=8) with a few distinct programs like severance pay being offered. Social programs sponsored by the company include picnics and employee sports teams. A number of security measures are in place for employees placing the company at the 78th percentile in terms of this indicator. However, only a few health and safety practices are followed (22nd percentile). Building facilities, ventilation transportation, air quality, and noise level are all rated below par. Only sanitation and lighting are rated highly in terms of the physical work environment.

Employees perform relatively simple tasks and hence have a low skill requirement. The tasks are highly important but minimally interdependent. Management shares information with employees only on production planning and current events. Little information on profitability, investment policies and corporate finance is shared. Informal meetings and bulletin boards are the main modes of communication, with email, newsletter and formal meetings rarely being used. Decision-making is driven both by individuals and groups. Correspondingly, financial returns also accrue in individual and group forms.

Joint labor management committees (22% of total firms) and a cash profit sharing plan (23% of total firms) are some of the relatively unique practices at Firm Eight.

III. Summary of Financial, Injury and Wage data

Employees earned an average wage of \$40,704 in 1998.

IV. Summary of Information based on HR Manager

In the interview (with the Director of Finance) it was pointed out that he was responsible for payroll and benefits and all personnel accounting functions. As the company is family-owned this is also reflected in its culture. There is a clear profit motive expressed but the company is still a comfortable place to work.

The primary safety concern is the repetitive movement on the job and boredom. It is opined that safety issues do not have an impact on recruitment and retention.

A 'Workplace violence program' has been initiated because the pay is low and this can lead to tempers flaring. There is also a large immigrant Hispanic population and there is a clash in terms of the work styles. This program is

implemented through a “one strike” policy that is in place and it has led to a reduction in the number of such incidences.

The company has experienced employment-related lawsuits in the last two years. The effects of this on employee and management morale were not discussed. The employees are not unionized. The conflict between managers and workers is mainly in terms of the imbalance of power between management and employees and it is found objectionable that information is shared only on a need-to-know basis.

The hiring process followed for production employees is converting a temp to a permanent employee. If there is no one in the temp pool available, then the company also advertises locally. A sequence of internal interviews assessing stable work history, attitude, and aptitude is followed. The company stated that it had been difficult to recruit prospective employees. The company is cooperatively linked to other similar industries in surrounding communities, so any increase in wages requires the company to match the corresponding wage. A minimum education level is not expected of the employees, most of whom are applicants from areas in the vicinity.

The morale is the company is described to be ‘variable’ mainly because the employee population fluctuates. There are no company sponsored social activities and employees’ socializing outside of work is also minimal.

A regular floor rotation for inspection is carried out five times a year. The maintenance and housekeeping staff also have a checklist that they adhere too and this ensures maintenance of the facility. The management is concerned with improvements in employee health and welfare whenever it is necessary although this is not on a daily basis. There is no formal sick time offered for production employees, only vacation time is budgeted.

Core Employees Total Compensation List is as below:

Component	%
Hourly wage	75
Health Insurance	15
Pension (401k)	5
Gain sharing	5

Health and Benefits program/Percentage contributions are as below:

In % Contribution of –	HMO	STD	Life	Dental
<i>Company</i>	80	100	100	100

The employee pays 100% for LTD. The company expresses that its benefits package is marginally better than similar companies in the region, especially in the areas of dental and holidays.

Case Study: Firm Nine Duluth, MN

I. Overview: Firm Nine is based in Duluth, MN. Firm Nine was bought in 1992. At that time the revenues of the firm were four million dollars a year and the firm employed 54 people.

The new owner wanted to expand the business and identified the Komori presses that the company owned as promising assets. He focused on improving the quality of printing and this resulted in their winning many publishing awards.

By 1997, its 35,000 square foot facility fell short of its needs and the company moved to a 45,000 square-foot plant that also had scope for additional growth. It purchased advanced new machinery at the same time as well.

Firm Nine now produces over 170 titles for publications all over the United States. The company has grown to reach sales figures of \$12 million.

II. Summary of HR Management Practices Survey

Firm Nine employs 117 people. Thirty percent of the workforce is female. Seventy five percent of the workforce in Minnesota is unionized. Forty one percent of the employees constitute contingent workers. The employees work 40 hours a week (61st percentile), which is slightly greater than the average.

Educational Programs (n=2), Physical/ Psychological Health-Related Programs (n=1), and Workplace Programs (n=1) all figure below average. The company also does not offer any Job Programs, Family Programs, Job Transition Programs or social activities. It does offer several Welfare Benefit and Financial Programs (n=8) which sets it at the 75th percentile. It conducts numerous health and safety programs (n=9). It ranks at the 83rd percentile for this indicator. Overall, it fares slightly below average on physical and psychological indicators (42nd percentile) but is better placed at the 68th percentile for health and safety practices.

Heat and air-conditioning rate poorly. Other than that, the other physical work environment factors like building facilities, noise level, etc. are close to the average. Very little information on corporate finance (18th percentile) and company current events (1st percentile) is shared with employees. Only significant information on production planning is shared (92nd percentile). Bulletin boards are mainly used to communicate with employees, followed by formal meetings. WebPages, informal meetings and newsletter are sporadically used. Decision-making is both individual and group based. Still financial returns are mainly channeled on an individual basis.

The company does have human resources practices like a suggestion system and pension plans. However, practices like on-the-job training and job rotation are not in place at Firm Nine, which are offered by approximately 92% and 52% of the firms respectively. Overall, the satisfaction level is better than the industry (65th percentile). The work environment can be characterized as one of moderate stress at the 50th percentile.

III. Summary of Financial, Injury and Wage data

Largely, the company has poor financial health (1st percentile). Its sales are also low at the 42nd percentile. As a result, employees also receive an average wage of \$32,329, which is below par (35th percentile).

The injury incident rate for 100 FTE is 0.85. The injury level is slightly below the industry average (42nd percentile), depicting a comparatively less injury-prone workplace.

IV. Summary of Information based on HR Manager

The interview (with the Controller) indicated that a team effort was involved in daily operations. The owner of the company resides out-of-state and owns several other companies that are all independent of each other in their functioning.

Health and safety is perceived to be a secondary issue as far as recruitment and retention are concerned. The primary safety concern is of air quality. In the bindery department the jobs are repetitive so it has been suggested to shift people in different positions to enable some form of job rotation.

The company's insurance company initiated the safety practices at Firm Nine. The insurance company noted the safety issues prevalent and Firm Nine then designated one person as the safety coordinator. This person monitors the issues the insurance company specified. As a part of this practice, hearing testing was carried out for all employees to ensure that loud noise was not an issue. Currently, there are no safety teams, and this one person is given this entire responsibility. The efficacy of this program is uncertain at this point of time.

The company is unionized and the union drives the practice of 'Promotion from within'. All employees are eligible for this program after they have spent a designated amount of time on the job. The company has not experienced any employment-related lawsuits in the last 2 years.

The plant manager hires independently but keeps the Controller informed of hiring decisions. Usually the referral system is followed as the nature of work is specialized and the company recruits people through the union. For non-union positions it places an advertisement.

The company asks new recruits to begin work in the bindery department and based on their potential moves them to other positions. Both untrained and skilled people are hired. Temps are also hired when there is an additional workload but if someone with potential is found, then the individual is hired as an employee. The company attracts its employees from across the region.

The morale of the employees fluctuates. There are times when customer complaints increase and this brings down the morale and then at other times, the morale is at a high. There are few company-sponsored events, although the need to do more is expressed. Currently, there is a group that meets every Thursday evening to socialize.

A full-time maintenance person ensures that the facility is running smoothly. The company has also worked for the past year to make certain that the equipment is maintained well and that replacements of equipment are made as necessary.

The number of days lost due to illness vs. injury was described to be 'normal'. The company follows the system of sick days.

Core Employees Total Compensation List is as below:

Component	%
Hourly wage	80
Health Insurance	10
Pension program	10

Information on HMO, Life etc. was available with the union. The company did not offer dental.

The company believes its benefits package is better than other companies. The estimate of the average salary of press supervisor is \$16 to \$17 hourly, exclusive of benefits.

Case Study: Firm Ten Minneapolis, MN

I. Overview: Firm Ten is a supplier of printing solutions based in Minneapolis. Firm Ten offers its services to a variety of clients in different segments like Commercial, Corporate, Retail/Fashion, Paper Promos, and Annual Reports.

Firm Ten's prepress technologies include high-resolution drum and flat bed scanners, G3/G4 Macintosh, and Pentium PC Workstations on a Scitex backbone. It possesses eight Heidelberg and Mitsubishi presses and a full service bindery as well.

II. Summary of HR Management Practices Survey

Firm Ten employs 210 people, 40% of whom are female. The workforce of the company in Minnesota is not unionized. Twenty percent of the workforce in Minnesota is comprised of contingent workers. Employees work 45 hours a week, which is significantly more than other firms (80th percentile).

Educational Programs (n=3), Family Programs (n=1), and social activities (n=2) offered to employees are close to the industry average. Outplacement services are offered by only 9.21% of the firms in the industry. With programs like outplacement services and mentoring, the company stands at the 97th percentile on Job Transition Programs. Health and safety practices are at the 89th percentile with 10 programs being offered. On the other hand, no Job Programs and security measures are in place for the employees. The physical work environment is rated highly on all indicators including, sanitation, air quality and lighting. Only the noise level is rated below standards. On the whole, the company has superior ratings on the physical and psychological programs (99th percentile) and on health and safety practices (76th percentile).

The tasks for employees are complex and require significant skill. The tasks are important and linked to one another. Employees are given a high degree of information on all aspects on the company especially profitability (92nd percentile), and production planning (92nd percentile). Informal meetings and work groups function as the key ways of communication with WebPages and newsletters sporadically used. The decision-making at Firm Ten involves both group and individual decision-making. The employees receive financial returns both in individual and group forms.

The practices of job design and joint labor-management committees are relatively distinct human resources practices at Firm Ten. These practices are in place at 20% and 22% of the firms in the industry respectively. This leads to

high overall satisfaction levels (89th percentile) and low levels of stress at work (21st percentile).

III. Summary of Financial, Injury and Wage data

Overall, the financial health of the company is rather weak (28th percentile). Sales per employee were \$160,000, which was below the industry level (42nd percentile). Employees also received relatively lower wages than the industry average (40th percentile).

The injury incident rate per 100 FTE is 1.42 and the number of days lost per injury is 9.79. The injury level is below the average for the industry.

IV. Summary of Information based on HR Manager

The interview (with the Human Resources Manager) indicated that the company was on the transition path from being a family owned company to becoming more of a corporate entity with professional management.

The company has two separate facilities where they operate. The company had a specific position for Safety that reported to the HR manager. However, with the resignation of the Safety Director and a recent restructuring in the company, the company was looking at ways to absorb the duties of the Safety Director within existing positions.

Safety issues are perceived to be secondary as far as recruitment and retention are concerned. Heavy lifting, repetitive motion, chemicals, air quality, and ergonomics are some of the important safety issues affecting production employees. The company adopted the Ergonomics program as it had a lot of injuries relating to this mainly because different lift devices were involved. With the insurance company's assistance and the inputs of the Safety Director, this program was implemented. This has resulted in a drop in the injury rate.

With the 'Return-To-Work' program, the company has evolved a mechanism to help people with injuries to continue working on some light duty. The 401(k) plan has been in operation for 16 years and it has high enrollment; all employees are eligible.

The company has not experienced any employment-related lawsuits in the last 2 years. The company is not unionized and relations between workers and managers are described to be good. As the company has an open culture, whenever problems surface, they are resolved.

The HR generalist handles the first contact screening for recruitment. The company uses other sources for attracting applicants: newspaper ads, the internet, networking, and posting the positions. As per the situation, HR may or may not be directly involved in recruiting and the supervisor would have the decision-making responsibility for that position. The applicants work history, pre-employment drug testing, and a pre-employment physical based on the requirements for the job are assessed. Attitude and aptitude for the job are the other criterion for selection. The number of applicants for each position varies as per the position, although at times the company had to scout talent with greater effort. There is a minimum level of education expected, although for some entry-level positions the high school degree is waived if the employees are able to get a GED within a year of being hired. The company helps with the tuition. Most of the employees reside in the St. Cloud or north metro area.

Overall, the morale was described to be good as the company was not as procedure-bound as other companies and that appealed to people. Yet as the company was laying off people some stress was experienced. The company does not sponsor many social activities. They have a holiday party annually and a holiday buffet. The employees organize many events spontaneously like picnics and grilling, a Saints game, and going-away events.

To ensure smooth running of the facility the company has dedicated maintenance staff. The company expresses the view that their investments in health and safety are made because they enhance their bottom line. The company has a system called 'Personal leave' and employees use that for vacation, sickness, or for any other reason.

Core Employees Total Compensation List is as below:

Component	%
Hourly wage	70
Health Insurance	20
Pension program	03

Health and Benefits program/Percentage contributions are as below:

In % Contribution	HMO	STD	LTD	Life	Dental
<i>Company</i>	75	100	100	100	75

The estimate of the average salary of the Department managers, exclusive of benefits is \$70,000 - \$120,000 annually.

Case Study: Firm Eleven, Cluster 4 Howard Lake, MN

I. Overview: Firm Eleven has been in the business of handcrafted cabinetry for the last 40 years. The company is based at Howard Lake, Minnesota where they moved from Cokato in 1980.

Firm Eleven is listed amongst the top 25 cabinetmakers by W & WP. The company generated sales worth \$38.7 million in the year 2000. It employs 397 people.

Forty seven percent of the work is new and fifty three percent of it is in the area of remodeling.

II. Summary of HR Management Practices Survey

Firm Eleven employs 400 people. This is higher than the industry average of 254 employees for other firms. Forty percent of the workforce is female. The workforce is not unionized. Employees work 40 hours a week (61st percentile).

The company ranks at the 73rd percentile for Workplace Programs (n=3). It has specific programs for workplace violence which only 25% of the other firms in the industry offer. However, the company has no Job Programs, Job Transition Programs, Family Programs or any security measures for its employees. It offers few Educational Programs (n=2), Physical/ Psychological and Health-Related Programs (n=1), and social activities (n=1). It conducts Welfare Benefits and Financial Programs as per industry standards (n=6). On health and safety practices, the company features at the 89th percentile illustrating a strong coverage of all the major programs in this area. Hence, overall it is at the 76th percentile on the health and safety dimension. Simultaneously, it is at the 33rd percentile on physical and psychological programs because of the fewer programs in this area.

Ventilation, transportation and parking, and air quality are rated particularly poor. On all other dimensions of the physical work environment, Firm Eleven rates below average. Employees engage in highly important tasks of moderate complexity that correspondingly require moderate skills. The tasks are interdependent to a large extent.

Employees are given a high amount of information on investment policies (97th percentile). Conversely, they receive little information on production planning (16th percentile). Information on corporate finance and current company events is also not shared extensively. Bulletin boards, informal meetings, and work groups are among the main forms of communication. Email and formal meetings

are infrequently used. Decision-making is in both individual and group modes with financial returns also accruing in a corresponding manner. Overall, the level of satisfaction is rated low at the 26th percentile. This could also be correlated with the high stress level in the organization (80th percentile).

III. Summary of Financial, Injury and Wage data

In general, the company was at the 65th percentile for financial well-being. This points to a relatively positive financial health.

Employees earned an average wage of \$23,381. This was significantly lower than the industry bringing the company to the 21st percentile on this indicator. Each employee generated sales worth \$107,692. This was also below the industry norms (41st percentile).

The data reveals an injury incident rate of 0.75 for 100 FTE with the number of lost working days per injury numbering 10.73. On the whole, the injury level in the organization is lower than the industry average at the 40th percentile.

IV. Summary of Information based on HR Manager

In the interview, the Human Resources Coordinator pointed out that the company was a family-owned company. The view expressed is that there is a “good old boys” network of administration and that there are some managers who have been with the company for a long time and are not very progressive in their thinking. Regarding processes and procedures, the company is progressive but it could be more so in other areas too.

Overall, safety and health concerns are not a primary issue impacting recruitment and retention. The primary safety concerns are repetitive motion, heavy lifting, stress from the pressure of production, and some air quality issues.

The company has Employee Assistance and Sexual Harassment Awareness programs in place. The employee assistance program had been in place for over 5 years. A service provider implements these programs. The company has been proactive in referring employees and inviting the service provider to visit the company's location and provide training there. The company has had programs on workplace violence too, which have generated awareness towards these issues.

For the sexual harassment program, the company has a written policy and then through ongoing training, handouts and videos, the definitions of sexual harassment are explored. The Civil Rights Act and the Minnesota Department of Human Rights information are also handed out to all employees.

Regarding the employee assistance program, the usage of the services from the provider has lessened. The receptiveness of employees toward these services is low and there is defensiveness although the company continues to strongly encourage employees to participate. The awareness of issues regarding sexual harassment has increased and increasingly employees are bringing issues to Human Resources, which is considered to be a positive trend. Female employees are present in all departments other than certain positions where there is lifting involved. The sexual harassment program is mandatory for all employees. There is material available for supervisors and managers to increase their awareness about these issues too.

The company has initiated a 'Cash Profit Sharing Plan' in the current year. The company would allocate these funds through two distinct pools – pool 'A' would be based on the rate of pay and seniority and there would be some discretionary pool 'B' funds that would be determined by skill level, attendance and other parameters.

The company faced a marital discrimination suit that went to court. The case, which was resolved in the company's favor, was kept guarded and so it did not affect employee morale.

The company is not unionized. The issue of communication between workers and managers is an irritant in the worker-management relations.

The Human Resources department is notified whenever any hiring has to be done. The company advertises in the local newspaper and on highway signs. It also uses employee referrals and walk-ins as other sources of recruitment. The company has been trying to reduce the number of positions available through natural attrition and transfer employees to areas where there is a more critical need. The company states that it has been difficult to recruit qualified candidates. The company does not follow the temp-to-hire process as the management feels it is better equipped to handle this process internally. The company prefers an educational level of High School or GED from its employees and they also require precise measuring skills for some of the positions.

The overall morale of production employees has been characterized as "good to fair". There are limited company-sponsored events other than a few burger bashes, a fishing tournament, and golf outings. With the completion of the new addition of facilities, a Christmas gathering for employees was held.

The factory is not air-conditioned and it gets very hot in the production area. Besides this, the facility is considered to be functioning well. The concerns of management about employee safety balanced against profitability are described as "above average".

The company does not have a PTO system. Production employees only have vacation time, they do not have paid personal or sick leave. Attendance is a concern in the company as there are a lot of "Monday illnesses". Currently, the management is addressing this issue and making changes to the policies and procedures to improve them for the employees.

Core Employees Total Compensation List is as below:

Component	%
Hourly wage	80
Health Insurance	15
Profit-sharing	05

Health and Benefits program/Percentage contributions are as below:

In % Contribution	HMO	STD
<i>Company</i>	60	100

The estimate of the average salary of production supervisors exclusive of benefits is \$42,000 annually.

Case Study: Firm Twelve, Cluster 4 Monticello, MN

I. Overview: Firm Twelve was founded in 1973 with the intent of manufacturing niche market or specialty products. The company is a family-managed business.

In 1973, the company had one product - a gas fired air make up heater for confinement buildings and a single customer. The company then decided to diversify into other product lines. With their prior contact with rural electric utilities, the company began developing a line of load management applications.

In 1976, Firm Twelve began working with a power company based in North Dakota. Through their association with the company they designed and delivered the first small trailer load of dual forced air furnaces. With that experience they developed the plenum boiler and a dual heat conversion electric boiler.

In 1988, the company introduced a full line of ETS charge controllers that are universal to almost all major ETS manufacturers, both in the US and abroad. The company also manufactures a full line of load intercept relay and submetering controls. This family of products is currently the largest product line of the company having been used by over 200 utilities across the country. In 1991, the company introduced a microprocessor product family.

The company experienced a fire outbreak in February 1999. The fire destroyed one of the company's structures, but the main portions were back in operation soon. Post the fire; it has two new buildings and new sheet metal equipment.

Firm Twelve employs 44 people at its single location in Monticello, MN.

II. Summary of HR Management Practices Survey

From the survey, the demographics indicate that the firm is a small sized firm with 44 employees. About 30% of the workforce employed is female, lower than the industry figure of 45.7%. Three per cent of the workforce does not work full-time and one percent of the workforce constitutes contingent workers.

The job title of the core employees is labeled as "Assemblers and Machine Operators". There are 30 such core employees. The workforce is not unionized and works on an average 40 hours per week (61st percentile) in a single shift.

Job Programs (n=1), Educational Programs (n=1), and Job Transition Programs (n=1) offered are all below the industry norms. Firm Twelve conducts Welfare Benefits and Financial Programs (n=6) which is the average for the industry. No Workplace Programs, Physical/ Psychological and Health-Related Programs,

and Family Programs are offered. The company does not sponsor any social programs nor has any security measures for its employees. Hence, overall it ranks at the 18th percentile for physical and psychological programs.

Its building facilities and transportation and parking are rated highly, while its air-conditioning and air quality are marginally below average. On other work environment parameters it is rated close to the average. The company engages in health and safety practices for core employees (n=10), which ranks at the 89th percentile. For health and safety programs in totality, it ranks at the 75th percentile.

Employees perform relatively simple tasks and hence the skill required is not of a high order. However, the tasks are important and interdependent. Employees receive little information on aspects like investment policies, production planning and profitability. Only information on current company events is shared on par with the industry.

On-the-job training and job rotation, which are practiced by 92% and 52% of the firms respectively, are some of the HR practices that are not conducted here. A suggestion system and 401K plans are among the few (n=4) HR practices followed.

Of some significance is the fact that, aspects such as commitment, employee morale, job satisfaction, feeling of belonging to the organization, expectations in the job, and stress are all rated at "2" where the average for all these items is "3 or more" on a 5 point scale. This is collaborated by the fact that the firm is ranked very low (3rd percentile) on satisfaction and is a high-stress work environment (95th percentile).

III. Summary of Financial, Injury and Wage data

Overall, the company is at the 78th percentile on the indicator of financial well-being. The approximate ratio of the average salary of the top 3 executives to the average annual wage of core employees in the company is 2.5 to 1. On average, the employees earned a wage of \$20,369 that puts it low at the 17th percentile. This could be correlated with the annual turnover rate of core employees that is significant at 25%, half of which is voluntary and the other involuntary.

Each employee generates sales worth \$68,082, which is again lower than the industry average (37th percentile).

The injury incident rate per 100 FTE is 4.54 and the number of days lost per injury is 17.5. The company is an injury-prone workplace as it ranks far above the industry average (73rd percentile).

Case Study: Firm Thirteen, Cluster 4 St. Paul, MN

I. Overview: Firm Thirteen was incorporated in May 1992. Firm Thirteen designs, develops and manufactures a minimally invasive system for diagnosing tachycardia, a potentially fatal arrhythmia. This system tracks electrical activity in the heart and builds graphical displays to help physicians map certain problems with heart rhythms. Its products are the clinical workstation and the catheter. The company received ISO 9002 certification for its electrophysiology workstation and a CE mark for its catheter.

A large medical electronics firm owns 20% of Firm Thirteen. Through a distribution arrangement with this firm, its products are available throughout Europe, Canada and Japan. Firm Thirteen sells its systems in the US through a direct sales force.

Firm Thirteen raised over \$50 million in four years. It went public in March 1997 and raised \$20.3 million when it offered 2.25 million shares. It is publicly traded on the NASDAQ. For the fiscal year ending December 2000, its revenues rose 52% to \$14.6 million. Its net loss fell 12% to \$10.3 million. These results reflected the sales of the catheter and clinical workstation, partially offset by increased sales and marketing costs.

Firm Thirteen employs approximately 140 people. The majority of the employees are based in Minnesota, while about 17% are located in other states in the US.

II. Summary of HR Management Practices Survey

The demographics indicate that the firm, with approximately 140 employees, is somewhat smaller in size than other firms in the industry. The workforce is not unionized and works on an average 40 hours per week (61st percentile) in 2 shifts. The core employees are labeled as "Assemblers". There are 40 core employees.

Educational Programs (n=3) offered are marginally above the average, but Physical/ Psychological and Health Related Programs (n=1) fall below the industry average. Firm Thirteen offered Welfare Benefits and Financial Programs (n=8) like pre-tax spending accounts and flexible cafeteria-style benefits. With such programs the company is at the 75th percentile for this indicator. It does not offer any Job Programs, Workplace Programs, Job Transition Programs, and Family Programs. There are no security measures implemented for the employees. Overall, it ranks at the 33rd percentile for physical and psychological programs.

The company sponsors few social programs (n=1). On the other hand, the firm engages in a significant number of health and safety practices for core employees (n=10) that places it at the 89th percentile. For work environment factors like ventilation, transportation, noise level and so on, Firm Thirteen is rated at the industry average. For health and safety practices as a whole, the company is placed at the 76th percentile.

The employees perform tasks, which are fairly complex and interdependent. The tasks are highly important and require moderate skill deployment in execution. An open door policy is the only program for resolving any work-related conflicts.

Information on all aspects of the company like production planning, corporate finance and profitability is shared with the employees. Informal meetings and bulletin boards are the main mechanisms of communicating with employees. Newsletter and WebPages are the least used ways of communicating.

The overall satisfaction in the company is low and Firm Thirteen is at the 16th percentile on this parameter. However, the employees experience a low level of stress (20th percentile in the industry) here indicating a relatively stress-free work environment.

III. Summary of Financial, Injury and Wage data

The injury level is low, placing Firm Thirteen at the 33rd percentile. The employees earn an average wage of \$61,401 per year. This is higher than the industry average (84th percentile). Yet, the annual turnover rate of core employees is 15% of which voluntary turnover is 10% and the remainder is involuntary.

Each employee generated sales worth \$63,981 per year, which figured at the 39th percentile and was lower than the industry standards. Overall, the company is placed at the 63rd percentile for financial health.

IV. Summary of Information based on HR Manager

In the interview with the Manager-Human Resources, she described that the company was at the end of its start-up phase. The environment was depicted to be unstructured, very casual, and entrepreneurial.

Some of the employees make the short catheter that is one of Firm Thirteen's products. As the pieces are very small, the employees have to use their hands frequently in a repetitive motion. This is a prime safety concern.

A group of people catalyzed the initiation of the "Identification of safety and health hazards and Safety goal setting program". The safety committee formed, meets every month and conducts an inspection every two months. The committee has managed to locate and fix problems thereby reducing the accidents pertaining to those areas. All production employees are covered under this program.

Firm Thirteen does not have a profit-sharing program with its employees currently, as its not profitable as yet. So it has adopted the 401-k plan that is important to its employees. All production employees are eligible to participate in this program and as yet there are about 85% participating in it.

The company has not experienced employment-related lawsuits in the last 2 years. There is some conflict between managers and workers. The most cause of tension is the issue of attendance. The company is putting a new policy in place that makes this process more structured. The company is not on a PTO system although it had explored this option.

The manager has the final decision making authority with respect to recruitment. The HR manager facilitates the recruitment process. About 90% of the recruitment for production employees is carried out through the temp-to-hire process. The applicants are administered a test where their reading level till Grade 12, their mechanical aptitude and basic reasoning are assessed. It takes the company about a month and half to fill one position in production after interviewing about 20 applicants. The company has not completely automated its operations yet. As it is a company manufacturing medial devices, all instructions are text-based. The employees have to have a reading ability equivalent to the 12th grade. Most of the employees are high school graduates. The estimated recruitment costs per employee (for production) is \$125 including the advertisements and the tests. About 70% of employees are of Hmong ethnic origin and most of the employees reside locally.

The employee morale is described to be "relatively good". The employees like the atmosphere prevalent in the company. There have been recent acquisitions of other small companies like Firm Thirteen in the medical device industry. The performance in two quarters was also lower than the expectations. Although this does not worry people in the front office, it did cause apprehension amongst the production employees. The HR manager opined that the turnover of the company was not high and those who left the company went because of other opportunities. The production employees are very close to each other and they meet after work too. The company organizes cookouts, potlucks and other similar activities.

The company expressed that the management is concerned about the welfare and health of employees. They are interested in the problems that individuals

face and are ready to give them a leeway till they can sort out their pertinent issues. The company has smoking cessation and employee assistance programs among others in place. The company has about 40 hours per year as per its policy for illness or injury and almost all employees have used it.

Core Employees Total Compensation List is as below:

Component	%
Hourly wage	75
Health Insurance	10
Other (Life, STD, LTD)	15

Health and Benefits program/Percentage contributions are as below:

In % Contribution of –	HMO	STD	LTD	Life	Dental
<i>Company</i>	85	100	100	100	90

The company states that it attracts its employees by being the company it is and not solely on its benefits package. The estimate of the average salary of production supervisors, exclusive of benefits, is about \$55,000 annually. The company has grown from 60 employees to 140 in two and a half years. The product of the company is now available in the market and expected to do well; employees want to purchase stocks of the company and be a part of its success.

Case Study: Firm Fourteen, Cluster 1 Minnetonka, MN

I. Overview: Firm Fourteen is a private family-owned company based in Minnetonka, MN. The company was founded in 1968. The company creates interior store fixtures and custom casework. Firm Fourteen designs and manufactures these fixtures. It operates through two locations in Minnesota. Firm Fourteen has received various design awards.

Eighty-eight people are employed at Firm Fourteen.

II. Summary of HR Management Practices Survey

The demographics indicate that the firm is comparatively a small sized firm with about 88 employees where the industry has 254 employees on average. The average length of service in the company is just over 8.25 years (64th percentile). The workforce is not unionized.

The job title of the core employees is "production/direct labor". There are approximately 45 such core employees. The average core employee works 42 hours a week (69th percentile) in 2 shifts, the day and the night shift. Six percent of the workforce is female which is far below the industry figure of 45.7%. Six percent of the permanent employees do not work full time and one percent of the workforce constitute contingent workers.

Firm Fourteen undertakes Job Programs (n=1), Workplace Programs (n=2) and Educational Programs (n=2) that are close to the industry average. It offers a significant number of Physical/ Psychological and Health Related Programs (n=5) like on-site fitness facilities and smoking cessation programs. This places the firm at the 99th percentile. The company also offers Welfare Benefits and Financial Programs (n=8). With programs like death benefits and pre-tax spending accounts, the company ranks at the 75th percentile.

Social programs (n=4) offered are also above average (87th percentile). In addition, Firm Fourteen carries out many programs (n=10) to ensure the health and safety practices of its core employees, which sets it at the 89th percentile for this indicator. The work environment in terms of the building, sanitation, ventilation, air quality, etc. is consistently rated above the industry average on all parameters. On the whole, for both physical and psychological programs (96th percentile) and health and safety programs (75th percentile) the company fared markedly better than the industry.

The employees engage in fairly complex tasks that require a high degree of skill. The importance of the tasks is high and they are highly interdependent. The management shares information with its employees on all aspects of the company, particularly on investment policies where the firm ranks at the 89th percentile in the industry. Training in statistical analysis and quality circles are some of the distinct human resources practices at Firm Fourteen, which are followed by only 13% and 9% of the other firms respectively.

Decision-making is both individual and group based. However, financial returns accrue mainly in an individual form. Informal meetings, work groups and email are the primary means of communication in the company. Formal meetings and bulletin boards are lesser used. The overall satisfaction level in the company was very high as compared to the industry (96th percentile). Simultaneously, the stress levels were also low (38th percentile).

III. Summary of Financial, Injury and Wage data

The approximate average of the salary of the top 3 executives to the average annual wage of core employees in the company is 1:11. Interestingly, the employees made \$40,274 on an average per year, which was as per the industry average. The annual turnover rate of core employees is 11% of which voluntary turnover is 10%.

Sales per employee were \$254,857 per year, slightly lower than industry norms (40th percentile). In terms of the overall financial well-being, the company is at the 77th percentile indicating good financial health.

The data available for injuries indicated a low injury level at the 33rd percentile for the company.

IV. Summary of Information based on HR Manager

The interview (with the Production Supervisor) revealed that the company was process-oriented and proactive in terms of training people. This minimized the level of supervision necessary and allowed the Production Supervisor to deploy his time in being a member of trade associations and working for different advisory boards.

The company was described as being people-oriented. The owner had worked in a variety of industries prior to starting this company. The owner attempted to reduce the negatives he had seen in other companies in the way people were treated in his company.

Safety issues exert an impact on recruitment and retention. The primary safety concern is one of being cut, as there are many cutting machines. The company focuses on ergonomics and lifting because that is where the company realized they were bearing a cost in terms of worker's compensation. With increasing specialization and process-orientation that is imminent, the company is guarding itself from injuries suffered due to repetitive work.

About 20 years ago, the company decided on working with a consultant from a safety company and chalked out a company-specific safety training/comprehensive written safety program. They conduct monthly team meetings and the consultant assesses if any gaps exist in their safety and methods to minimize them through training or other interventions. This enables the company to be proactive about the issue of safety. As the company has retained employees better than other companies in a similar industry, it believes the program has been effective. Its compensation costs are also low; it claims that it spends less per employee than many other organizations.

The cost per employee could not be directly quantified but the company did give an indication of it as follows. Firm Fourteen has constituted an Emergency Response Team of 12 members from different parts of the company who meet for an hour every month; this is one part of the cost. In most months, there is some training for 5 to 15 people and there is also a Right-to-know training for everybody that is a couple of hours every year. The consultant's fees are in the range of \$15,000-20,000 a year. This gives an estimate of the costs.

All employees in the company have undergone twice-a-week half-day training sessions in Total Quality Management (TQM) through four months. This program was started 5 years earlier. The company objective was to ensure that all employees had the tools to make qualified decisions in a team environment. The company expressed that the training was well-received and has further enhanced the process of empowerment of employees.

The company has not experienced any employment-related lawsuits in the last 2 years. Also, the company is not unionized and expresses that there has never been much conflict between workers and managers.

People are hired through two different sources. One source is by using recruitment agencies, which conduct the advertising, the prescreening and testing. The other source is recruiting students from technical schools. The Production supervisor is also on the advisory board of various technical schools. The company hires its employees from amongst four schools based on the recommendations of the teachers. The applicants from the agencies are hired on a temp-to-hire basis. The company focuses more on attitude than on skills while hiring, as it believes that skill building can occur on-the-job. The company operates 24-hours-a-day through 2 shifts although the hours are not set. Its current recruitment is mainly for night crews for which there are fewer applicants.

The company decides on an hourly wage and the agency then informs the company its payment based on this figure. The agency then directly issues the paycheck to the employee. Most of the permanent production employees have studied at technical colleges that have two-year programs, post high school. The company draws its employees from a broad geographical region with the furthest distance being 45-50 miles. The company supposes that about half the employees commute what is considered a normal commuting distance.

The overall morale of the employees is thought to be high. The company states that it has yet to lose an employee to another (similar) company. The company is 32 years old and about 10% of the employees have been with the company for 20 years or more. About 50% of the employees have been with the company for over 10 years. Firm Fourteen experienced a huge burst of growth 12-14 years earlier when it grew from 25 to 50 people. This growth was linked to the growth of the company's customers.

An extensive array of social events are sponsored. Softball teams, basketball teams, volleyball, bowling, hockey, and pig-pong events are sponsored. The company has a sand volleyball court on its premises. In the summer, the company facilitates barbecues and lunches that are organized by the employees themselves. In the beginning of the year, an all-expenses paid four-day weekend ski-trip for employees and their spouses is organized. In summer, the company organizes a big picnic for employees and their extended families and also sponsors a party for Christmas. Thrice in the last ten years, it has offered three-week long vacations at locations abroad to its employees. These are based on the achievement of a production milestone.

The company has not let fluctuating profit figures affect its policies as regards employees as its employees are considered to be the number one asset. The company expresses that its concern for employee's health goes beyond work-related safety measures. It offers training in First Aid, CPR, infant CPR, family financial management classes, fitness and nutrition and flu shots. Sick days are not offered but vacation days and personal time are. Personal time can be earned by overtime work. There is an informal PTO system although a person cannot bank hours. There is limited sick time available. Often people take sick time not for themselves but for their children.

The compensation consists of an Hourly wage, a pension program and health insurance. The percentages vary with each employee. For HMO, the company is self-insured and the employee pays \$5 per week. Dental is optional and the costs are shared. STD is optional too. Firm Fourteen pays 100% for Life.

Firm Fourteen has encountered people taking a pay cut and joining it in order to have the stability of the pay and the benefits offered by it. The estimate of the average salary of production supervisors, exclusive of benefits, is about \$1200 weekly. The supervisor's pay is also dependent on their length of service.

Case Study: Firm Fifteen, Cluster 4 Minneapolis, MN

I. Overview: Firm Fifteen is a Minneapolis-based device manufacturer founded in 1983. It develops, manufactures and markets bipolar electro-surgical instrumentation that are used in minimally invasive surgery.

Firm Fifteen is now a subsidiary of a UK-based corporation. This corporation announced the acquisition of Firm Fifteen in April 2000 in order to expand in the market of minimal access surgery. It sells and markets its products through both direct channels and through the distribution and licensing agreements with multinational healthcare companies. Its sales and marketing activities are focused on two market segments – surgery on the lower abdomen (including gynecological, urological, and colorectal surgery) and head and neck surgery (including ENT, plastic, facial, and reconstructive surgery).

The other products of Firm Fifteens' area of growth are devices used in cardiovascular surgery. It takes an Original Equipment Manufacturer (OEM) approach to this market. It supplies a large healthcare corporation based in Indianapolis with the scissors and forceps included in the vein harvesting kits

Firm Fifteen went public in 1990. An increase in sales resulted in the establishment of a new 5,000 square-foot facility in 1997. Its net sales rose 18% to \$12.6 million at the end of 1999.

II. Summary of HR Management Practices Survey

The demographics indicate that the firm is a relatively small-sized firm with about 100 employees. The average length of service in the company is 4 years (29th percentile), which is below the average of 6.5 years for the industry. The workforce is not unionized.

The job title of the core employees is "assembly worker" and there are approximately 65 such employees. The average core employee works 42 hours a week (69th percentile) in a single shift. Fifty percent of the workforce is female which is average for the industry.

The firm undertakes few Workplace Programs (n=1) which puts it at the 21st percentile. It fares better on Educational Programs (n=3) placing it at the 57th percentile. With financial planning programs amongst others for its employees, the company offered above average Welfare Benefits and Financial Programs (n=7). For this indicator it ranked at the 64th percentile.

Both social programs (n=2) and health and safety practices for core employees (n=5) offered are close to the industry average. Firm Fifteen does not offer any Job Programs, Job Transition Programs, Family Programs, or Physical/Psychological and Health Related Programs. There are also no security measures in place for its employees. On the whole, for both physical and psychological programs (18th percentile) and for health and safety programs (22nd percentile) the company fares below industry standards.

In terms of the physical work environment the company is rated close to the average on all aspects like sanitation, lighting, and air quality among others. With an open door policy and grievance procedures, mechanisms for resolving conflict are present in the company. Employees are engaged in relatively simple tasks that do not require a high degree of skill. Skill transfer is moderately possible as the importance of the tasks is high. On the whole, satisfaction levels are low (19th percentile) for the company.

Information on investment policies and production planning shared with employees is lesser than the industry. Comparatively, there exists a higher flow of information to employees on profitability (76th percentile) and corporate finance (91st percentile). Human resources practices at Firm Fifteen are varied. On the one hand, they have distinct practices like Quality Circles (9% of total firms) and Cash-profit sharing plans (23% of total firms). Yet common practices like on-the-job training and job rotation which are followed by 92% and 52% of the firms in the industry respectively, are not practiced at Firm Fifteen.

The company uses formal meetings, bulletin boards and the newsletter to be in touch with its employees. Email and WebPages are used less frequently. Employees experience moderate stress levels in this company (58th percentile). Decision-making is group-based and correspondingly financial returns are also structured around groups.

III. Summary of Financial, Injury and Wage data

The overall financial health of the company is reasonably sound (77th percentile). The average salary of the top 3 executives is about 6 times the average annual wage of core employees. On an average, the employees earn \$35,039 per year. This puts the firm at the 40th percentile indicating a wage level below the industry average. The annual turnover rate of core employees is 5% of which voluntary turnover is 3% and the remainder is involuntary.

Sales per employee are \$159,605 which ranks the firm at the 39th percentile.

The number of days lost per year due to injury is around 20. The injury incident rate per 100 FTE is 2. Overall the injury level is close to the industry average.

IV. Summary of Information based on HR Manager

In the interview (with one HR Manager and the Vice President – Finance and Administration), it was pointed out that the culture was laid back, fun, and fast-paced. The work involved was of high-precision. The environment was characterized as a clean and professional one. As there are many different schedules and product lines, flexibility is built into the organization. The focus is also on becoming an innovative producer of high quality surgical instruments.

The environment at Firm Fifteen is described to be different from a traditional manufacturing firm – in that it's a clean-room type environment. One important task that employees face is cutting with blades and scissors, and they face minimal issues with the facility. One important safety concern is of repetitive work. Also, a lot of the work is performed under microscopes, making small assemblies. This micro-intensive work results in repetitive stress and ergonomic issues.

To manage the work-family relationship better, the company adopted the Employee Assistance program. The production workers work from 5:30 am to about 2:30 pm which causes family issues. Many employees also have big families and face financial difficulties. Employees are made aware of this program by placing business cards in the restroom and the cafeteria. Memos are also issued as reminders during holidays. The efficacy of this program has not been measured yet, but it is perceived to be meeting employee's needs. All the employees have 24-hour telephone access that entitles them to three consultations. If they then feel the need to refer their issues beyond this point of time, they could do so. The cost of this program per employee is about \$2 per month. The program is run through the employer's association.

To ensure that all employees are trained and are wearing the necessary protective equipment when working with certain chemicals, the company has set up 'Training to Monitor Health Hazards' program. The employees have to be certified on a process and are updated annually in terms of biohazards. All policies and procedures are documented which is one requirement of a medical device manufacturer. About 60% of the workforce is of South East Asian origin. Training thus poses a challenge. The company also has conducted English as a Second language training. An audit committee reviews the documentation to judge whether the program is effective. The cost of this program can be measured as indirect labor time.

On-the-job training is offered to the employees so they can add new skills and gain qualifications in different operations. At times, this is the company's need and on other occasions, it is the desire and/or the demonstrated capacity of the employee.

The company has not experienced employment-related lawsuits in the last 2 years. The main issue of conflict between workers and managers is the one of communication. The employees often do not feel as informed about decisions affecting their work, as they would like to be. The increase in the number of employees and the language differences necessitate a greater effort in communicating with people. The process of the HR manager meeting the line supervisors on an every-other-month basis has begun. The company wants the supervisors to be more proactive in their roles – be involved in employee reviews, influence their line and their work priorities.

Production employees are hired mainly through a referral and by a temp-to-perm process through an agency. The company has a referral bonus program and it estimates that referrals constitute about 75% of the recruitment. Production employees are selected through on-the-job training and on demonstrating their skill development. On account of the referral program, if an applicant known to another employee joins, the person is helped on-the-job and this works to the company's advantage too. The company hires extra temps as a buffer, because of the low unemployment rates and the possibility that all temps would not be offered a permanent job. Employees also go on vacation and may return to their home country for a month. Therefore, the company has to budget for these variables too. The cost of recruitment of new employees works out to \$2,500 on an annualized basis per employee. A minimum level of education has not really been an issue while hiring. Most of the employees are from the Asian community and are educated, but not educated in English. The employees are largely based in the Minneapolis and St. Paul region.

The overall morale in the company was described to be good. Addressing the communication issue was an expressed concern. The rewards and employee benefits system ensures that the company remains an attractive employer. Hence, the turnover of employees is extremely low. The company organizes a holiday party and a picnic for its employees and the employees also meet regularly on their own.

In the current facility, there is a space crunch, although the company is moving to another facility soon. Attendance is stated to be improving. If a person is sick, leave is taken without pay. If there is no sickness, then the employee is compensated in the beginning of December and receives a bonus for attendance.

Core Employees Total Compensation List is as below:

Component	%
Hourly wage	80
Health Insurance	10
Stock ownership	5
Profit sharing (401k)	5

Health and Benefits program/Percentage contributions are as below:

In % Contribution of –	HMO	STD	LTD	Life	Dental
<i>Company</i>	93	100	100	100	90

As per a survey that Firm Fifteen conducted with its peers, it supposes that it is competitive in terms of the benefits it offers. The estimate of the average salary of production supervisors, exclusive of benefits, is between \$27,500 and \$35,000 annually.

Case Study: Firm Sixteen, Cluster 3 Savage, MN

I. Overview: Firm Sixteen is located in Savage, MN. It has been producing and erecting prestressed, precast concrete panels since 1971. In 1995, Firm Sixteen acquired two precast concrete plants in Indiana and Ohio.

Firm Sixteen's projects range from a 10,000 square foot machine shop to a 1,000,999 square foot warehouse/storage facility. Its projects also include housing projects and major retail outlets. Firm Sixteen has conducted business in over 20 states in the US. It ships and installs panels throughout these areas.

Firm Sixteen employs 675 people. Of these, 275 are located in Minnesota and 400 are located in other US states.

II. Summary of HR Management Practices Survey

As per the demographics, the firm is an above average sized firm with about 675 employees. Fifty per cent of the workforce based in Minnesota is unionized. At other locations, 18% of the workforce is unionized.

The job title of the core employees is "production laborers". There are approximately 140 such core employees all of whom are unionized. The average core employee works 50 hours a week (92nd percentile) in 3 shifts. Twenty percent of the workforce located at Minnesota and 10% at other locations is female.

Firm Sixteen undertakes a high number of Workplace Programs (n=4), which puts it at the 90th percentile. However, it offers below average Educational Programs (n=2), Family Programs (n=1), and Physical/ Psychological and Health Related Programs (n=1). It does not conduct any Job Programs, Job Transition Programs or have any security measures. Welfare benefits and financial programs (n=6) offered are close to the average. The financial planning workshops conducted by Firm Sixteen are offered by only 20.61% of the other firms.

The company sponsors a few social activities (n=2). It features at the 9th percentile on health and safety practices as it offers a single program of identification of health and safety hazards. Conflict resolution mechanisms are close to the average with an open-door policy and grievance procedures instituted in the company.

The physical work environment consistently rates below the average on all parameters. Sanitation, lighting and air quality are especially below industry

standards. On the whole, the firm figured at the 42nd percentile for physical and psychological programs and notably lower for health and safety programs (3rd percentile).

The skill required to perform the tasks are not very high as the tasks themselves are relatively simple. The tasks are highly important although transferring skill to undertake them is moderate. Very little information is shared with the employees. Information on investment policies (16th percentile), profitability (23rd percentile) and corporate finance (17th percentile) is particularly not shared. Decision-making is individual-based.

Email and bulletin boards are the primary means of getting information through to employees. Informal meetings, WebPages, and work groups are seldom used for this purpose. It may be noted that responses to items relating to employee recognition, organizational values being operative, morale, and job satisfaction among others drew a relatively low rating of 2. The averages for these areas were 3 or more on a 5 point scale. This tied in with the fact that the satisfaction level for the firm was lower than the industry (34th percentile). Surprisingly, the workplace is one of low stress (9th percentile).

III. Summary of Financial, Injury and Wage data

Overall the firm has reasonably sound financial health (65th percentile).

The injury incident rate per 100 FTE is 8.36. The numbers of days lost per injury are 30.54, which is worse than the industry average and pegs the firm in the 93rd percentile. This depicts a highly injury susceptible workplace.

Employees were paid an average wage of \$48,243, which was higher than the industry (64th percentile). Significantly, the annual turnover rate of core employees is 50% of which voluntary turnover is at 45% and the remainder is involuntary. The most common reasons for the turnover are cited as "individual performance/behavior problems" and "economic cycle" in that order.

IV. Summary of Information based on HR Manager

The interview (with the Human Resources Representative) revealed that the company followed a continuous process in manufacturing involving set-up, casting and stripping. The teams decide on what they would work on. Firm Sixteen has a rotating schedule where the teams work four days and then get two days off. The shift is of 10 hours each. At times, the hours can extend to twelve hours or fourteen hours.

As the nature of work is tough, it does create an impact especially on retention. Heavy lifting, repetitive motion, bending, and falling are the primary safety and health concerns.

The company extensively trains its employees for each position in the first 90 days of their job. The supervisor and the lead man of the group handle the training. This program covers all employees and it is expressed that the program has led to improvements. Videos were used to impart the training, so the cost of this program can be measured in terms of the loss of production time. There are about 40 hours of training per employee.

The company has implemented the 'Return to work' program, which is mandated post-injury. This program also covers all employees. The costs of this program could not be ascertained. The company follows the practice of promoting from within. Firm Sixteen operates in the precast industry and there are not too many companies operating in this industry. So it suits Firm Sixteen as they then have well trained people moving up the hierarchy. All production employees are eligible to benefit from this practice, depending on their length of service.

The company has not experienced any employment-related lawsuits in the last two years. Some degree of conflict between workers and managers is stated to be prevalent. It usually relates to the union, where issues like seasonal hours surface. Supervisors resolve issues or employees refer them to the union for assistance in resolving these issues. The last big change in the union contract was 3 years earlier and another was scheduled for February 2001.

The line supervisors have direct responsibility for hiring. The line supervisor conducts the initial interview with an applicant and chooses whether to hire or reject the candidate. If a decision is made to hire, then the candidate is put through a drug screening process. If that is cleared then Human Resources conducts an orientation wherein the required employment paperwork is completed. Past work history and reliability, and a good skill match are the criteria for selection. The number of applicants for each position varies. Usually the company manages to fill the jobs available, but its choices in the labor market are limited. Forty hours for training, four hours of Human Resources, some advertising costs, and costs of the background and drug checks constitute the estimated recruitment cost. Most of the employees have completed a High School education and the applicant pool is largely from the local area.

As per the latest data with the company, the overall morale and job satisfaction is termed as "fair". The company does not have any sponsored teams but it does organize barbecues and other similar activities. It hires many employees through referrals and so family members and friends join in on these occasions.

The company has appointed a full time safety director in Minnesota and opines that this indicates the management's interest in its employees' safety.

Core Employees Total Compensation List is as below:

Component	%
Hourly wage	80
Health Insurance	10
Pension (401k)	10

Health and Benefits program/Percentage contributions are as below:

In % Contribution of –	HMO
<i>Company</i>	93

Note: STD, LTD, Life and Dental are all offered but the percentages vary.

The estimate of the average salary of production supervisors, exclusive of benefits, is about \$45,000 annually.

Case Study: Firm Seventeen, Cluster 2 Faribault, MN

I. Overview: A craftsman founded Firm Seventeen in 1865. The firm is a manufacturer of woolen blankets and throws. The business evolved from an infant mill to one where the entire process from design to manufacturing is conducted.

Until the end of the 1992 fiscal year, Firm Seventeen had completed 127 consecutive profitable years of business. Earlier two families owned the private mill. However, from 1992 to 1997 the company faced five consecutive years of loss. The blankets and throws industry shrank in the 1990s as upscale customers preferred comforters and price-sensitive ones preferred acrylic blankets. A competitor of Firm Seventeen also bought out Firm Seventeen's acrylic supplier. Department stores reduced their orders with Firm Seventeen as the company could supply only wool and cotton blankets and not acrylic ones. Department stores preferred to purchase all three types of blankets from one company.

The company then embarked on cutting costs and reduced its employees from 178 in mid-1997 to 125 and then increased back to 160 people. In April 1998, the families sold an 80 percent ownership position to a management-consulting firm. The company has now chalked out stiff production targets and its strategy is: reinvest in its mills, grow its retail sales and catalog business, and move into acquisitions. The company is upgrading to computer-aided design systems that will be tied in with electronic looms. In order to expand its sales to retailers, the company is planning to license its products to brand names that connote quality. It is preparing to increase revenue from its consumer catalog and corporate promotions and incentives catalog. It hopes to do so by introducing new designs and expanding into cotton and other product categories.

Firm Seventeen currently employs 150 people at a single location in Minnesota.

II. Summary of HR Management Practices Survey

The demographics indicate that the firm is sized below average at 150 employees where the industry figure is 254. The age of the firm (135 years) places it in the 99th percentile. The average length of service in the company is 14 years (94th percentile). Seventy-eight employees are unionized which is about 52% of the workforce.

The job title of the core employees is "production" and there are approximately 75 such employees. The average core employee works 40 hours a week in a single shift. About 14% of the workers do not work full-time.

Workplace Programs (n=1), Educational Programs (n=1), and Physical/Psychological and Health Related programs (n=1) conducted by the company are all below the average number offered in the industry. The company does not offer any Job Programs, Job Transition Programs, or Family Programs and has no security measures in place. The social programs it sponsors also figure below the average. Overall, for physical, psychological and health related programs the company is ranked significantly below the average at the 18th percentile.

Firm Seventeen offers Welfare Benefits and Financial Programs (n=7) to its employees, which puts it at the 64th percentile. The company also engages in a high number of health and safety practices for core employees rating it at the 74th percentile. Other than the noise level, which is below the average, the other parameters of the physical work environment like sanitation and ventilation are rated close to the average. On health and safety programs, the company is at the 55th percentile on the whole.

The tasks for employees do not require significant skill and not complex. Transferring skills is relatively simple although the importance of the tasks is high. Information is shared with employees on all aspects including production planning (71st percentile), Human Resources (81st percentile), and information on Profitability (92nd percentile).

Firm Seventeen has only a few Human Resources practices like the suggestion system and the 401k plan. Some of the practices that are offered almost across the industry but not at Firm Seventeen are, on-the-job training (92% of the firms), Job Rotation (52% of the firms) and Employment security (50% of the firms). Email and bulletin boards are the most frequently used means of communication between managers and employees. WebPages and work groups are rarely employed.

It may be noted that the items "the morale is high" (6th percentile) and "the employees are under a lot of stress" (11th percentile) was each described to be low. Overall, the level of satisfaction is at the 56th percentile. The level of stress is at the 75th percentile indicating a high-stress work environment.

III. Summary of Financial, Injury and Wage data

Financially, the firm is considered to be of very poor health. This is also reflected in the sales per employee at \$28,639, which are below the average (39th percentile).

The injury incident per 100 FTE is 3.33 and the days lost due to injury are 11.2. This is worse than the industry norms (63rd percentile) depicting an injury-prone workplace.

The average wage of the employees is \$30,427. The annual turnover rate of core employees is not indicated but 64% of the turnover is voluntary and the remaining 36% is involuntary. It is interesting to note that there is a higher percentage of voluntary turnover and the wage level (32nd percentile) is lower than the average for the firms in the industry.

IV. Summary of Information based on HR Manager

In the interview with the Director Human Resources, he stated that he was a one-person staff responsible for safety, compensation, and all other areas for 275 employees across 2 locations. In the past, the company was family-owned and so it was run like a family-owned business. The employees' needs were addressed on an individual basis. After the company went through financial troubles, investors purchased it and now a new management team is in place.

Health and safety issues were not considered a factor in recruitment and retention. The primary safety concern for production workers was repetitive motion and back injuries.

Labor management safety committees were formed when the management realized that the employees had to be involved and a safety program would have to be set-up. This was driven because there was a high work compensation claim. After organizing the committee, safety audits were designed with representatives from all departments. The program was initiated 2 years ago and has led to a reduction in claims. The cost of this program is estimated to be minimal. Employees are on a six-month committee rotation. Audits and meetings take place once a month for half-hour each.

The identification of the health and safety hazards program has led to an increase in awareness. It also undertook lock-out and tag-out training for certain groups of people such as the maintenance staff and the mechanics in each department. The cost of this program for the company is also stated to be minimal but the savings have been significant.

The 401K plan was instituted for retention and attraction of employees. The plan is described as competitive and a high company match. All employees can avail of this plan. Currently 75% of the total employees are enrolled in this plan.

The company has not experienced any employment-related lawsuits in the last two years. The conflict between workers and managers is expressed to be greater than what it was earlier. The family-owned company's management style

followed an individual approach, while the new management is more aggressive. The conflict resolution program is a new program set up to deal with this issue. The HR Director acts as the liaison between the new executives and the production staff. The employees can directly approach the HR Director without involving their supervisors, so that conflicts could be handled in a more neutral environment. The last big change in the contract was in January 1999.

Hiring is a joint process with the HR director involving the supervisors in the process. This aids in minimizing complaints regarding new hires at a later date and in sharing the responsibility. The majority of the openings are for unskilled entry-level jobs. Career development and job stability are considered criterion of selection. There are few textile companies located around the company's area of operations. For recruiting skilled people, the company also recruits from the East coast, the South, and Southeastern states where many textile industries are located.

Most of the employees have been with the company for a long-time, and in some cases are second-generation employees from the same family. The turnover of the company is mainly from new hires. Few employees belonging to minority groups are working with the company. About 5 to 10 applications are received every week; most of them being walk-in applicants. Recruitment for production is not very significant. The cost of recruitment is described to be minimal except for skilled jobs, which involves using agencies on the East coast. A High School education is the minimum expected education level. Most of the unskilled employees are residents of local communities. Some skilled employees reside in the Twin Cities.

The morale in the company is currently low. The employees had great respect for the family. When the investors bought the business, the family members were laid off. Employees are working long hours on account of their dedication to the company but yet the company is still losing money. A couple of supervisors also left in this transition period. The employees are very close to each other. However, their rapport with the production staff and the top executives is not as good.

Production is described to be "good" and better than it had been for a few years. Cross training is also being done to have greater flexibility.

Some of the management staff is concerned with health and welfare of employees but some of it is not. In some areas relating to long hours on the plant floor, the union is addressing issues with the management.

The average number of days lost to illness-vs.- injury with all employees combined is estimated to be around 15-20 days a month.

Core Employees Total Compensation List is as below:

Component	%
Hourly wage	85
Health Insurance	15

Health and Benefits program/Percentage contributions are as below:

In % Contribution of –	HMO	STD	Life
<i>Company</i>	90	100	100

The estimate of the average salary of production supervisors, exclusive of benefits, is around \$40,000 annually.

Case Study: Firm Eighteen, Cluster 1 Minneapolis, MN

I. Overview: Firm Eighteen was founded in 1982 and is headquartered in Minneapolis, MN. It develops and markets internet-based enterprise-wide business software and markets business relationship and human resources management systems.

Its principal product includes integrated manufacturing, financial and e-business applications. Its software system operates in the computing environments most accepted by the business community. It was one of the first enterprise-wide resource planning systems to facilitate access of employees, customers, and suppliers to essential business data over the Internet.

The company serves its global markets through a direct sales force as well as a network of distributors and value-added resellers. It provides training, services and support to its customers. Firm Eighteen's customers include a wide-range of manufacturing industries.

Firm Eighteen has offices in 8 countries excluding the US and its distributors' offices are located in over 25 countries. The Americas account for nearly 75% of its sales. Firm Eighteen's software is licensed by over 3700 customer sites in 60 countries and is translated in more than 12 languages.

The company is expanding through an e-commerce initiative and alliances with leading technology firms. A UK based Corporation has announced plans to acquire Firm Eighteen. For the fiscal year ending December 2000, revenues fell 12% to \$61.2 million. The loss in revenues is mainly because of the reduced demand for enterprise software solutions. The net loss also reflects the charges for headcount and facility reductions.

There are 200 employees located at its facility in Minneapolis, MN and 90 more employees across 27 other states.

II. Summary of HR Management Practices Survey

The firm is relatively young and has an average number of employees as per industry standards. The percentage of females in the workplace is 38%, which is below the industry average of 45.7%. The workforce is not unionized. A core employee at Firm Eighteen works for 45 hours per week, which places the firm in the 80th percentile. With a telecommuting program, which is offered by only 9.31% of the other firms, the Job Programs are rated at the 93rd percentile. The company is at the 90th percentile for Workplace Programs as it has instituted workplace violence programs and diversity awareness programs. The Education

Programs (n=4) and Job Transition Programs (n=3) are also above the average for the industry. Physical fitness programs and Smoking cessation programs, undertaken by 7.96% and 14.55% of the firms in the industry respectively, ensure that Firm Eighteen figures at the 95th percentile for physical, psychological and health related programs.

Its legal aide assistance program is unique in that only 7.58% of the other firms offer it. This takes the company to the 94th percentile for the indicator of Welfare Benefits and Financial Programs. The company does not offer any family programs and has limited security measures (n=1). Health & Safety practices offered are also below average. This could also be in part due to the nature of the industry where this is an added technology focus.

Its infrastructure in terms of building, sanitation, lighting, and noise level are all as per industry norms. An open door policy is the only program for conflict resolution and so the company fares poorly in this aspect.

The nature of the tasks is highly complex. The tasks are also considered to be important with a high degree of skill transferability. The skill requirement for the task and the interdependence are both moderate. The management shares information on all aspects of the company including profitability (92nd percentile) and corporate finance (98th percentile). A stock purchase plan is a distinct Human Resources practice of this company as only 9.8% of the firms in the industry practice it.

The mode of decision-making is both individual and group based. Financial returns are also allocated to both groups and individuals. The company primarily uses meetings, work groups, and email to communicate with its employees. Newsletters and bulletin boards are used sparingly.

III. Summary of Financial, Injury and Wage data

The injury incident rate is 0.4 for 100 FTE and no working days are lost due to injury. Again, the technology-intensive nature of the industry ensures that physical injury would be minimal.

The average firm level wage as per the MDES was \$70,617. The rate of voluntary turnover was 16% and that of involuntary was 6%.

Sales per employee were \$138,498.

IV. Summary of Information based on HR Manager

The interview (with the Employee Care Specialist) indicated that the primary safety issues were clean air, some repetitive motion issues like carpal tunnel, and also keyboarding.

The Physical fitness program was started to decrease health care costs. Discounted fitness memberships are available at the Northwest Athletic club. As per the employees, they feel much more relaxed, and in better physical and mental health because of this program. About 100 employees currently use this program.

The Employee Assistance program is implemented through an insurer. The program was initiated last year and is described to be popular. The costs for this program are estimated to be minimal.

The company conducts periodic Employee Attitude Surveys. The company spread its operations internationally two years earlier. This was a big change for it. The survey is distributed company-wide and it is described to have improved communication. All employees are covered through this survey. The costs for this program are minimal although it is time-consuming.

There is minimal conflict between workers and managers. The company is non-unionized.

The Employee Care specialist and other associates have the direct responsibility and authority to hire production employees. The supervisor indicates a need and submits a requisition for employees. This is filed with HR and then placed on the company's Internet site. Skills and qualifications match are assessed while recruiting. There are usually about 15 applicants for an open position. Most of the employees have a BS or a BA and are mainly from the local area. For some highly technical production positions, the company also receives international applications.

The morale is described to be from "good to fair". The morale is being affected because of the acquisition by the UK-based Corporation.

The company focuses on maintaining a work-life balance. (It has received the "Year 2000 Working Family Support Award from the Working Family Resource Center").

The company has vacation and sick days while illness is described to be seasonal.

Core Employees Total Compensation List is as below:

Component	%
Hourly wage	75
Health Insurance	20
Individual incentives (commission, service awards)	5

Health and Benefits program/Percentage contributions are as below:

In % Contribution of –	HMO	STD	LTD	Life	Dental
<i>Company</i>	75	100	100	100	85

Firm Eighteen opines that it is competitive in the area of benefits offered to attract and retain employees.

The estimate of the average salary of production supervisors, exclusive of benefits, is between \$55,000 and \$65,000 annually.

Case Study: Firm Nineteen, Cluster 4 Hancock, MN

I. Overview: Firm Nineteen was founded in 1917. It began its operations by manufacturing concrete drain tile. Firm Nineteen currently manufactures pre-cast concrete pipes, culverts, boxes, manholes, and arches.

After beginning production with concrete drain tiles, Firm Nineteen expanded its product range in 1928 to include fence posts, silo bloc, flowerpots, birdbaths, lawn seats and light posts for the city. Firm Nineteen introduced a revolutionary method of reinforced concrete pipe production, which incorporated a semi-dry concrete mix.

During World War II, its facility was moved to a town in Kansas. An Air Force Base was being constructed in Kansas and large quantities of pipes were required for drainage. After the war, production boomed as numerous cities like the Twin Cities, Fargo, Grand Forks, and so on were expanding and pipes were needed for the infrastructure.

In the 1980s, the company introduced concrete arch structures called BEBO systems which could be used for stream crossings, underpasses for vehicles and trains and pedestrian walkways. German and Swiss know-how was used for this purpose. Another system that added versatility to box culverts was also launched. This system allowed the engineers to adjust the angle of the exposed end of the culvert to fit the stream crossing and highway shoulder.

Firm Nineteen earned a national safety award in 1999. The award is given to plants that post a lost-time incidence rate equal or better than the US Bureau of Labor Statistics or published Canadian data.

Firm Nineteen operates through 3 locations in Minnesota and employs 172 people. Firm Nineteen relocated its operations in March 2001.

II. Summary of HR Management Practices Survey

The demographics indicate that the size of the firm is at the 48th percentile with about 172 employees. The average length of service in the company is 11 years, (82nd percentile) where the industry average is 6.5 years. The workforce is not unionized.

The job title of the core employees is "laborers, operators, leadman, and supervisor" and there are approximately 150 such employees. The average core employee works 50 hours a week in a single shift which. This is significantly above the industry average of 37.3 hours (92nd percentile).

Overall, the level of satisfaction is below the industry average (46th percentile) and the indicators of work stress suggest that the level of stress is high (95th percentile). The firm undertakes average workplace programs (n=2). The firm performs poorly particularly in Educational Programs (n=1) and Job Transition Programs (n=1), which are at the 6th and 7th percentile respectively. Welfare Benefits and Financial Programs (n=3) figure at the 18th percentile and security measures for its core employees (n=1) at the 28th percentile. Firm Nineteen does not offer any Family or Job Programs. Only Physical/ Psychological and Health Related Programs (n=2) are offered above the average and are placed at the 61st percentile. The company sponsors a below average number of social programs and is ranked at the 30th percentile. However, the health and safety practices for core employees are placed at the 89th percentile (n=10).

It may be noted that the item the "organization offers many opportunities for employee growth and career development" (13th percentile) and the item "the employees are under a lot of stress at work" (11th percentile) was each described to be low.

The ratings for the physical infrastructure and the environment are all consistently below the industry averages, except the rating for 'transportation and parking.' Some significant HR practices at Firm Nineteen are 'Joint Labor-management committees' and a 'Group Bonus'. Hence overall, physical and psychological programs, financial well-being programs (77th percentile) and health programs (75th percentile) are above the industry average.

The conflict resolution measures in place are ranked at the 33rd percentile. Except skill transferability, all the other task attributes of complexity, skill requirement, multifaceted and importance are above the average. The interdependence of activities is below average. Activities can be described to be of low complexity and low interdependence. Decision-making is biased towards group decision-making and so are the financial returns.

Information shared on production plans and company current events is higher than average. However, less than average information is shared on corporate finance, profitability, and investment policies indicating that financial issues are discussed minimally at the company. The most highly used techniques of communication are formal meetings, newsletters, e-mail and bulletin boards.

III. Summary of Financial, Injury and Wage data

The injury incident rate per 100 FTE was 2.9. The number of lost working days per injury was 26.66. Overall, the level of injury is above average (60th percentile) indicating an injury-prone work environment.

The firm level average wage in 1998 as per MDES data was \$42,255.95. The annual turnover rate of core employees is 10% of which voluntary turnover is 7% and the remainder is involuntary. Wages and benefits are cited as the top reason for the turnover of employees. Despite these factors the turnover rate is below the industry average at the 35th percentile. In particular, wages offered are close to the industry norms at the 53rd percentile).

As per Dunn & Bradstreet data, Sales per employee were 100,000, which are lower than, average (39th percentile).

IV. Summary of Information based on HR Manager

In the interview the Director of Safety and Personnel, indicated that he was responsible for personnel activities and also safety and environmental issues. The company was in the process of relocating from the plant at New Ulm and building a new facility at Courtland.

The company is now a third-generation family owned one. Family members hold the main management positions in the company. The organization is structured into different departments, which are geographically based at different locations. Therefore, production employees in one division are separated from those in other divisions.

The employees of the company are from the local area. They view the company as a long-term stable employer. Safety issues are not predominant in recruitment or retention. The company received more applicants than positions available and so recruitment is not perceived to be a problem. Skills sought are not of a high order and the employees can be trained on the job.

Different areas pertaining to safety have to be addressed. These include protective equipment and safe lifting of heavy products. The employees are trained on safety procedures. Prior to joining the company, they receive an introductory session and a tour of the plant. Every two weeks, a safety meeting is held and specific topics like eye protection and back safety are covered. These meetings are of 15-20 minutes duration. The state run 'Aware' program helps in evaluating the effectiveness of these programs.

The company has adopted the practice of employment security. A large percentage of its employees have been with the company for a long time. Information on sales, business overview and expectations from employees are communicated and employee involvement is sought through this process.

The company has not faced any employment-related lawsuits in the last-two years. There is no open-conflict between the workers and managers. Employees, who have been with the company for a long time, have higher

monetary expectations. Monetary need is expressed to be very high in that specific area of the Minnesota, as compared to job satisfaction or recognition. The on-going effort is to resolve employee issues by addressing the specific concern and issuing an answer. The answer may not be acceptable to the employee, but the efforts are to provide an answer nevertheless.

The Director of Safety and Personnel, the supervisors and the managers have the responsibility of recruitment. The plants located at other locations hire directly independent of the Director's approval. The town is small and so information on an application filters into the company. The Director can then ascertain the candidate's background by checking with sources within the company to verify the candidate's antecedents. The company receives about 10 applications for every position. The cost of recruitment is approximately \$300 per person. This cost covers the pre-employment physical and back screening process. The company does not advertise for positions and so those costs do not arise. Most of the employees have completed a secondary level of education.

The overall morale is described to be "fine". There are no company sponsored social events but employees socialize after office hours. The facility is stated to be working well. Improvements are underway in some old buildings and a new facility is also being constructed.

Core Employees Total Compensation List is as below:

Component	%
Hourly wage	70
Health Insurance	15
Pension Program	10

Health and Benefits program/Percentage contributions are as below:

In % Contribution of –	HMO	STD	LTD	Life	Dental
Company	75	0	0	0	0

The estimate of the average salary of production supervisors, exclusive of benefits, is \$14 hourly.

Case Study: Firm Twenty Minneapolis, MN

I. Overview: Firm Twenty was founded in 1979 and is located in the Twin Cities. It is a family-owned company. Firm Twenty is a medium sized, multi-color, high quality, sheetfed commercial printer.

The services it offers include electronic prepress and computerized artwork, digital color scans and film output, conventional film preparation, full bindery capabilities, and handwork among other services. Industries such as financial institutions, graphic designers, catalog publishers, magazine publishers and educational institutions use their services.

The company is located at a single location in Minnesota and employs 60 people.

II. Summary of HR Management Practices Survey

The demographics indicate that the size of the firm is below average with about 60 employees as against an industry figure of 254. The average length of service in the company is 8 years, which places it at the 62nd percentile. Significantly, 75% of the workforce is female at Ideal Printers, far above the industry figure of 45.7%. The workforce is not unionized.

The job title of the core employees is "press operators" and there are approximately 18 such employees. The average core employee works 43 hours a week in two shifts, the day and the evening shift. The number of hours worked are above the average of 37.3 hours placing the firm in the 73rd percentile.

The firm undertakes a below average number of Job Programs (n=1) and Job Transition programs (n=1). Compared to the industry, the Job Transition Programs are particularly low at the 21st percentile. Firm Twenty does not offer any Workplace Programs, Job Transition Programs, Family Programs, or Physical/ Psychological and Health-Related Programs. Educational Programs (n=3) offered by the company place it at the 56th percentile. Firm Twenty offered marginally above average Welfare Benefits and Financial Programs (n=6).

Sponsoring social programs (n=3) is also marginally above average. The company rates especially low in the number of health and safety practices for core employees (n=3), it falls in the 22nd percentile. Return-to work programs and scheduled safety inspection are some of the programs that differ from what the industry offers. Overall health and safety programs figure below the industry average (21st percentile), as do physical and psychological programs (18th percentile).

The organizational practices for core employees of 'Quality Circles' and 'Cash profit sharing plan' are relatively unique, practiced by only 9% and 23% respectively of the firms in the industry. The overall level of employee satisfaction and level of stress is average for the industry.

The company's infrastructure and environment is rated consistently above the average, other than a higher noise level. In terms of conflict resolution mechanisms, the lack of grievance procedures brings the company a little below the industry average.

Employees perform tasks that are moderately complex and important. Complexity and task importance are rated below the average. Decision-making is driven more by groups than by individuals. Financial returns are also allocated as per groups.

On most of the information-sharing attributes, the organization is rated above the average, mainly in sharing investment policies and sharing information on profitability. All communication techniques are employed by the company with newsletters and bulletin boards being used the most. The usage of formal meetings and email is lower.

III. Summary of Financial, Injury and Wage data

On the whole, the financial health of the company is sound (77th percentile). The average firm level wage in 1998 as per MDES data was \$42,353.3. It is close to industry levels (54th percentile). The annual turnover rate of core employees is 7% of which 5% is voluntary and the remaining is involuntary.

The injury incident rate per 100 FTE is 1.66. The number of lost working days per injury is 86.79.

Sales per employee are at \$122049.1 that is also below the industry average (38th percentile).

IV. Summary of Information based on HR Manager

The interview with the President revealed that the Vice President handled both Finance and Human Resources functions. The employees of the company were described to be a cooperative group.

The company describes itself to be considerate of its employees, an opinion which it says was reiterated by an insurance company soliciting its business. As the company is small, it does not receive as much attention from OSHA as a big company. A safety procedure is in place and is communicated to new employees. There is also a Safety manager who handles this responsibility in

addition to other duties. Back injuries and carpal tunnel are identified to be the primary health concerns. The different programs in the questionnaire relating to work and family issues were not marked and it was pointed out that the company was a small one and most of the issues were not relevant for it.

The prevalence of back injuries and heavy lifting caused the company to set up specific training programs. At the time of hiring, the people are screened for pre-existing back issues. On-the-job training is also conducted wherein the usage of installed lifts is stressed. Agency inspections and visits by fire marshalls are other activities carried out. The cost of this program is mainly related to the time invested by the employees in it.

On requests from employees, the 410(k) plan begun. The company had an existing profit-sharing plan and then had the administrator set up the 401 (k) plan. Over half the employees have participated in this plan. The approximate cost per employee for this program is \$40.

The company has not experienced any employment-related lawsuits in the last two years. Conflict between managers and workers is stated to be non-existent.

The supervisors hire new employees with the assistance of the HR manager. In certain cases, the VP-Production is involved in hiring. Hiring is described to be a group decision. As the turnover rate is low, hiring is not perceived to be difficult. Most of the hiring is at the entry-level and is from the local labor market. For the position of the folder-operator, it is relatively tougher to hire and the company could receive 2-3 applications for a position in that case. Most of the employees have had a high school education and some have also had Vo-Tech. For higher degree skills, the company advertises in the Twin Cities papers to secure applications from a regional pool of applicants.

The overall morale is described to be "good". Health of employees is an important consideration and not compromised at the cost of profitability.

It is estimated that about 4 days per year per employee are lost due to injury.

Core Employees Total Compensation List is as below:

Component	%
Hourly wage	83
Health Insurance	15
Stock ownership	0
Profit sharing	2

Health and Benefits program/Percentage contributions are as below:

In % Contribution of –	HMO	STD	LTD	Life	Dental
<i>Company</i>	90	0	0	0	90

The company considers itself to be competitive in the area of its total benefits package in order to attract employees.

The estimate of the average salary of production supervisors, exclusive of benefits, is around \$42,000 annually.

Case Study: Firm Twenty-One Chanhassen, MN

I. Overview: Firm Twenty-One was founded in 1969. It is based in Chanhassen, Minnesota.

Firm Twenty One provides integrated web printing, envelope conversion and direct mailing services. It offers color printed products that can be produced in a variety of formats on coated and uncoated stocks. It specializes in the printing of Computer forms, Direct Mail brochures, Flyers and Inserts for Direct Marketing Promotions. Firm Twenty One has a Promotional Plastics Division. This division manufactures printed plastic products for promotional cards, phone cards, blister packaging and luggage tags.

The company has had changes in its top-management in recent years. It has restructured its workforce and cut about 5% of it from across different divisions. Sales had been flat for 5 years and rose in 1999 by 8%. The company employs about 960 people.

II. Summary of HR Management Practices Survey

The demographics indicate that the firm is an above average sized firm employing 960 people compared to the industry average of 254. The workforce is not unionized and is below the industry average of 11.2%. The percentage of female employees in the workforce is close to the average. As the size of the firm is bigger than others in the industry, consequently, it has a higher number of core employees (n=500). The weekly working hours of 40 are just above the average of 37.3.

The overall satisfaction is at the 67th percentile and the level of stress in the organization is low at 34th percentile. By offering 'Flexi-time' and 'Job Sharing', Firm Twenty One has above average Job programs in the 71st percentile. 'Sabbaticals' and 'conflict resolution programs' among others ensure that Education programs are offered in the 96th percentile of the sample. Programs like 'Mentoring' and 'School to Work' ensure that Job Transition programs are at the 97th percentile.

Physical, psychological and health-related programs and employee-sponsored activities are as per the industry average. No Family and Workplace programs are offered. With 'Severance pay' and 'flexible cafeteria style benefits' financial programs offered are at the 75th percentile. Security measures in place at the company are above the average (78th percentile) with 'video monitoring systems at entrances/exits' and 'emergency phones throughout the building'. Health and safety practices rate at the 83rd percentile. The ratings for the physical facility at the plant encompassing the sanitation, lighting, and air and noise quality among other indicators are around the average figures for the industry. Overall,

Physical and Psychological programs (61st percentile) and Health & Safety programs (65th percentile) are above the industry average.

Conflict-resolution measures are below the average although 'grievance procedures' and an 'open-door policy' are in place. Employees engage in tasks that are of moderate complexity and hence require moderate skills, which can be transferred. The importance of the tasks is 'high'.

The level of information sharing is high; especially for human resources planning (81st percentile). Different means for communicating with employees are prevalent with email and bulletin boards topping the list. The emphasis of decision-making is more on individual decision-making than on group decision-making.

III. Summary of Financial, Injury and Wage data

The firm level average wage in 1998 as per MDES data is significantly higher than average. Both the voluntary turnover rate and the involuntary turnover rate are below the industry average. On the whole, the wages offered are above the industry (74th percentile).

Sales per employee as per D&B data are \$100000, which are close to the average (53rd percentile).

Overall, the financial health indicates that the company is at the 55th percentile. The number of days lost due to injury is 7.55. Largely, the prevalence of injury is lower than the industry (38th percentile).

IV. Summary of Information based on HR Manager

The interview (with the HRIS Benefits Specialist) revealed that the company had brought in new management across all functions including the President and the CEO. The current president follows a hands-on approach, which was different from his predecessor. The management style is more family-oriented now. The company was not doing very well in its business in the recent past. It now is focused on building partnerships with its customers and it plans to change its name too. The 'web' in the company name causes people to think of the company only as a technology company.

Health and safety were deemed to be a secondary issue at this plant location but perceived to be more pertinent at the location in Little Falls. Depending on the sub-facility and the position in that sub-facility, an employee is in; the safety concerns could be heavy lifting, repetitive motion, ergonomics and air quality.

The Sexual Harassment and Workplace Violence Program was put into place as there were some concerns and situations that arose in these areas. With the change in management, there is a greater information flow between the employees and the management. HR managers visit the production floor and address concerns of people there. The company also never had any objectives or goals for its employees in the past.

All production employees are eligible for promotion from within, which is another program the company has instituted.

Regarding employment-related lawsuits, a potential problem was initiated by a job applicant. However, there were no problems from within the company by an employee regarding this situation.

Issues between workers and managers are related to wages, seniority, health insurance claims and other similar issues. The workforce is not unionized.

Two HR representatives are responsible for hiring. A line supervisor puts in a requisition that needs to be approved by upper level management. The HR representative interviews the applicants and if they are found suitable a supervisor meets the candidate. Based on the supervisor's recommendation a job offer is made. The company receives many employee referrals so those applicants are considered first. As the turnover rate is high, the company is considering using the services of an agency to induct people on a temp-to-hire process. It also advertises in the newspapers, but that is an expensive source of recruitment. Depending on the position, the company receives around 10-15 applicants for production positions. The company hires at two levels- "skilled entry level" and "entry level". For the "entry level" position, high school education is considered a sufficient education level for selection. Most of the applicants are from the Twin Cities area.

The morale is considered to be better than that in the past. Although there have been layoffs, communication is strong and so people better understand the events happening currently. The company organizes social events like picnics and hot dog days. It also sponsors sports teams.

It is estimated that the PTO system would be in place in soon as there have been discussions about it. Currently, the company has personal hours and vacation hours but no sick days.

Core Employees Total Compensation List is as below:

Component	%
Hourly wage	90
Health Insurance	10

Health and Benefits program/Percentage contributions are as below:

In % Contribution	HMO	STD	LTD	Life	Dental
<i>Company</i>	85	90	100	100	15

The benefits package is not considered as an influencing factor in attracting or retaining employees.

The estimate of the average salary of production supervisors, exclusive of benefits, is about \$36,000 annually.

Case Study: Firm Twenty-Two, Cluster 3 Lakeville, MN

I. Overview: Firm Twenty-Two was established in 1972 in Lakeville, MN. The company manufactures custom metal stampings, sheet metal fabrications, weldments and assemblies. Its customers are located throughout the US in 30 states and in Canada and Ireland.

Firm Twenty-Two provides concurrent quoting, engineering and manufacturing services for projects. Its manufacturing capability spans traditional presses to computerized multi-function sheet-metal fabricating equipment. Both conventional painting and robotic powder coating technology are available in-house at Firm Twenty Two.

The company uses an ISO-9000 based Quality Management System in conducting its operations. It employs 100 people at a single location in MN.

II. Summary of HR Management Practices Survey

The demographics indicate that the size of the firm is below average with about 100 employees compared to the industry figure of 254. The figures for the average length of service and the average education are as per industry standards. The workforce is not unionized. 20% of the workforce is female which is below the industry average of 45.7% of female workers. The number of contingent workers in the workforce, at 10%, is marginally lower than the industry.

The job title of the core employees is "precision sheet-metal manufacturers". There are approximately 70 core employees at Firm Twenty Two. The average core employee works 45 hours a week in two shifts, the day shift and the evening shift. This is above industry standards and puts the company at the 80th percentile.

The firm undertakes a low number of educational programs (n=1) placing it at the 6th percentile. Firm Twenty-Two does not offer any Job, Workplace, Job Transition, Family and Physical, Psychological and Health related programs. However, it offers a number of welfare benefits and financial programs (n=7), which places it at the 64th percentile. The social programs sponsored (n=2) are under just the industry average. Firm Twenty-Two also engages in Health and Safety practices for core employees (n=4). The lack of 'company specific training' and 'comprehensive written safety programs', which are practiced by a majority of the firms, set the firm at the 32nd percentile.

Except for air quality and noise level the company rates close to the average on other parameters of infrastructure like building facilities, lighting and so on. On

the whole, on parameters of Health and Safety (17th percentile) and Physical & Psychological programs (18th percentile) the company rates significantly below average.

Other than an 'open door policy' there are no other mechanisms of conflict resolution which brings the company below the average on this parameter. 'Cash profit sharing plan' and a 'Group Bonus' are some of the relatively distinctive Human Resources practices at this company. These practices are observed by 23% and 20% respectively of the other firms in the industry.

On the whole, information regarding financial issues like productivity and investment plans is not shared by the management with the employees. More information regarding current company news is shared than the average. Decision-making is both individual and group-based, although financial returns are oriented more towards groups and complemented with individual returns. Meetings and Bulletin boards are used to communicate with employees. Email, WebPages and Newsletters are not used.

The item "employees have clear, planned goals and objectives" was described to be relatively low (a "2" compared to the average of "3.3" on this item). Overall, the level of satisfaction was noted to be below average (44th percentile). The organization is also a high stress environment when compared to the industry.

III. Summary of Financial, Injury and Wage data

In terms of Financial well being the firm is placed at the 8th percentile indicating a poor level of financial health. The average firm level wage in 1998 was \$34,869. The approximate ratio of the average salary of the top 3 executives to the average annual wage of core employees in the company is 2.8 to 1. Wages are lower than those for the industry (40th percentile). The annual turnover rate of core employees is 10% of which voluntary turnover is 9% and the remainder is involuntary. Individual performance and behavior problems are cited as the top reason for the turnover of employees.

Sales per employee figured at \$73,333, which is also lower than the industry standards. The firm is placed at the 38th percentile for this parameter.

Data on injuries could not be adequately ascertained although the level of injuries appears below the industry average (33rd percentile).

IV. Summary of Information based on HR Manager

In the interview (with the CEO and the Controller), the company was described to be team-oriented. The work involved is repetitive in nature and so employees

are moved around on the production floor. This is deemed good for both production and health and safety reasons. The company also tries to follow the 'matrix-management' approach in dealing with any issues or conflicts.

Health and safety issues are considered to impact recruitment and retention. As the company follows a temp-to-hire process, this gives both the company and the employee about 90 days to form an opinion about the employment relationship.

Other than repetitive motion, lifting heavy articles is a safety concern. The company has forklifts for this purpose. The customers also establish limits on the storage quantity in a box. This has reduced the need for heavy lifting by the employees. Most of the painting work undertaken is through powder painting and very few hazardous chemicals are handled. There have been 3 carpal tunnel cases in 5 years, which illustrate a low level of injuries in the company.

Every new employee is required to read the safety handbook. The employees also have to receive appropriate safety training from their supervisors. This fact is documented and both the employee and the supervisor have to attest to it.

A safety committee of 7 members meets once a month. Every one and half to two years the committee members are rotated. Once a month, two safety committee members go around the plant to do an inspection. The results of the inspection are discussed and appropriate action is taken. It is opined that the program has been effective based on the inputs received from employees. The need to improve feedback processes throughout the organization was additionally stressed as the company was embarking on developing its ISO 9000 program.

In the 401k program, the company puts in \$0.50 to the dollar up to 5% of the employees salary. After a minimum level of service all employees are eligible to participate in this program.

The company has not experienced any employment-related lawsuit in the last 2 years. It is stated that there are periodic issues between workers and managers but nothing of significance occurs. The CEO follows an open-door policy and grievances, if any, are addressed by the CEO.

The majority of the recruitment, about 90% is handled through recruitment agencies for temps. The selection standards for the initial placement are minimal. Temps require little or no experience. When a skilled employee is needed there is a greater search than the one for temps. The company faced difficulty in recruiting temps about 6 months earlier, though now the situation has eased. The nature of the business does not allow for estimating the business in a time frame of 2-3 months. So the lead times for recruitment are down from 5-5 weeks to 2-3 weeks now. It costs the company \$1200 to recruit each new

employee. No minimum education level is expected and most of the applicants belong to the local area.

The morale is characterized as "fair to good". It is stated that in a company of 100 people there are limited opportunities for growth. So a need to increase the size of the firm is perceived. The average age of the employees is close to 40 years. The dilemma before the company is whether to hire younger people in their 20s or to hire people close to the average age. If after investing in the 20-year olds, they leave, that would be a loss to the company. At the same time, younger employees would bring in creativity and labor-saving ideas to the business.

The company's culture is also described to be laid-back and accommodating, which makes people comfortable. The low turnover rate is attributed to this factor. The company organizes a summer-picnic and another event for Christmas. Each month an employee luncheon is organized. On the first day of each month a "town meeting" is held in which the Employee of the Month is announced. Through the ISO 9000 program the company is aiming to develop a preventive maintenance program. It has two maintenance employees and considers its facility to be rated a "B". The management believes that high morale and healthy body would translate into higher productivity and ultimately to increased profitability.

The company does not have a sick-leave policy but a Personal time policy. Through this policy, each employee earns four hours of personal time for every 8 weeks of perfect attendance. As there is cross-training, if one employee is not available, someone else can do that job.

Core Employees Total Compensation List is as below:

Component	%
Hourly wage	85
Health Insurance	12
Profit sharing	3
Pension (401k)	0
Stock ownership	0

Note: The company has recently started a profit-sharing program, so the figure is an estimate.

Health and Benefits program/Percentage contributions are as below:

In % Contribution of –	HMO	STD	LTD	Life	Dental
<i>Company</i>	50 for 1 st year, later 90%	0	100	100	0

The estimate of the average salary of production supervisors, exclusive of benefits, is about \$42,000 annually.

Case Study: Firm Twenty-Three, Cluster 4 Minneapolis, MN

I. Overview: Firm Twenty-Three was founded in 1961. In the beginning, it made a deal with a large corporation to use a polyester and extrusion PE film. Soon after, it used this material to develop the "boil- n- bag" concept for food manufacturers. Later, this material was marketed to consumers for home storage.

In 1972, Firm Twenty- Three developed an evidence storage system, which provided law enforcement agencies with high barrier material and heat sealers for preserving evidence collected in the field.

In the 1990's, Firm Twenty- Three established itself as the premier pouch converter in the country. Today, Firm Twenty- Three is a complete flexible packaging converter specializing in preformed standup pouches and rollstock for both vertical and horizontal applications. Its production capabilities include adhesive laminations, rotogravure printing, pouch making, slitting, spout insertion, and in- line die cutting. The firm uses a variety of flexible packaging structures, custom shapes, spout fitments, resealing options, and package design. It attends to a variety of markets and can package both hot and cold materials.

Firm Twenty- Three is a privately held company located in Minneapolis, Minnesota. Its production facility is ISO 9001 certified. Firm Twenty- Three currently holds sixteen U.S. and International registered patents, eleven registered trademarks, and has earned numerous industry awards for package development.

II. Survey of HR Management Practices Survey.

Firm Twenty- Three is 39 years old. Currently, the firm employs 85 people, all of which work in Minnesota. None of the workforce is unionized.

The firm does not offer any Job Programs or Job Transition Programs. On the other hand, it offers above average Welfare Benefits and Financial Programs (n=7). It offers an average amount of Workplace Programs (n=2), Education Programs (n=2), and Family Programs (n=1). The company sponsors picnics, holiday parties, and employee sports teams.

Security measures are slightly lower than average (n=1). However, the firm seems to offer many health and safety programs (n=9) in comparison to the other sample firms (n=5.64). The infrastructure and environment rate average.

To deal with employee complaints and conflicts, Firm Twenty- Three has an open- door policy. However, it does not have grievance procedures, which half of the firms offer. Turnover rate, employee satisfaction, and employee stress levels are average.

Whereas the majority of the firms have little or no information sharing regarding investment policies, Firm Twenty- Three has moderate information sharing. Regarding Human Resources Practices, it implements training in statistical analysis and administers employee attitude surveys, which only 13% and 35% of the other firms implement, respectively. Although the average employee does not participate in decision-making, he does participate in financial returns on both the individual and group levels.

III. Summary of Financial, Injury, and Wage data.

Financial well-being and sales are average compared to the industry. The firm's average wage in 1998 was \$42,892.64 (MDES); wages are also average for the industry.

IV. Summary of Information based on HR Manager.

We interviewed the Human Resources Manager. At Firm Twenty- Three, she has a generalist role. She covers everything from recruiting and payroll to benefits and organizational practice. Ninety employees are in her area of responsibility. None of the employees are unionized.

There is an entrepreneurial environment and culture. The management and core employees are integrated. They use the same lunchroom and have an open door policy. However, the atmosphere can be very tense and stressful. Firm Twenty- Three seizes opportunities as they arise.

Health and safety issues do not impact recruitment or retention of employees. Firm Twenty- Three's biggest health and safety concerns are when employees are working with solvents, adhesives, and inks; there may be some long-term effects of prolonged exposure to these substances. However, they try to protect their employees' health; they added a catalytic converter that is an air exchanger as well.

One of the programs Firm Twenty- Three implements is a Diversity Awareness Program. It is the culture of Firm Twenty- Three to embrace diversity. The employees speak multiple languages and practice different religions. They learn about different cultures by bringing in food for celebrations and for different religious holidays. Furthermore, they make sure they do not plan activities

during Ramadan, so that no one misses out. In the past, they have hired translators to help make situations more clear.

Firm Twenty- Three performs many safety programs. For example, they outsource to provide training with the sophisticated inks, adhesives, and solvents.

They also have promotion from within. There is a lot of opportunity for people to progress as they prove themselves on the job and as positions open up. It is rewarding because some people enter Firm Twenty- Three thinking it is just a *job* and then turn it into a career.

Currently, the morale is not as high as normal. There are concerns about not being able to fill positions. They have a very small second shift and they need to expand on that. However, current employees need to change their schedule in order to train the new second shift employees. The current employees do not want to make a lifestyle switch.

In addition, they are doing an organizational shift. Because there has been much increase in competition, they are trying to find ways to "work smarter". They focus on using time more efficiently. They are adopting some of the Japanese principals of efficiencies.

They are not on PTO. They have vacation and personal time. The employees' compensation includes hourly wage, health insurance, and individual incentives. In addition, for a 401k, Firm Twenty- Three pays 25% of the first 6%. The health and benefits package is based on how long the person has been employed. For HMO and Dental, the company starts at paying 75% individual. After the first year, Firm Twenty- Three pays 90% and at the end of the second year Firm Twenty- Three pays 100%. Firm Twenty- Three pays 100% Life and Short Term Disability.

Case Study: Firm Twenty- Four, Cluster 1 Northfield, MN

I. Overview: This hot wheat cereal company was founded in 1919. Then, in 1953 the company name changed and is currently functioning under this same name. The company remains family owned.

Firm Twenty- Four produces many different cereals. Under the Firm Twenty- Four brand and private- label store brands, it makes about 20 products. These cereals are distributed in the US to grocery stores.

II. Survey of HR Management Practices Survey.

The firm is 81 years old which places them in the 95th percentile for firm age. It has 3 establishments in the US and a greater than average number of total employees (n=850). There are 500 core employees, none of which are unionized. Thirty percent of the workforce is female.

With regard to work and family issues, Firm Twenty- Four rates very highly. It offers well above average Job Programs (n=4). Most impressive is the fact that it offers both Flexiplace and Telecommuting which only 3% and 9% of the other firms offer, respectively. In addition it has an above average number of Workplace Programs (n=3). It offers an average number of Educational Programs (n=3), Job Transition Programs (n=2), Social Activities (n=3), and Family Programs (n=1). Firm Twenty- Four offers a well above average number of Physical and Psychological Health- Related Programs (n=4); most notably is the nutrition program which only 7% of firms offer. This gives Firm Twenty- Four a high score for Physical and Psychological Programs, placing it in the 98th percentile. In addition, it has a well above average number of Welfare Benefits and Financial Programs (n=9); most notable are severance pay and financial planning workshops, which only about 20% of the other firms offer.

Regarding security for the employees, Firm Twenty- Four is slightly below average, only offering security walk- through at night. On the other hand, it enacts an above average number of Health and Safety Practices (n=10); it ranks in the 75th percentile for these practices. Firm Twenty- Four ranks slightly above average for the infrastructure and environment.

Firm Twenty- Four deals with complaints and conflicts with both an open- door policy and through grievance procedures; this is average for the industry. Employee satisfaction remains high, placing the firm in the 87th percentile. Even though task complexity and skill requirements are above average for the industry, employee stress levels remain relatively low.

Management shares a greater than average amount of information with their employees regarding production planning, profitability, and company current events. Firm Twenty- Four applies many Human Resources Practices. Significantly, it offers training in statistical analysis and job redesign, which less than 20% of the other firms offer. Although the majority of firms have individual bonuses, Firm Twenty Four has group bonuses.

III. Summary of Financial, Injury, and Wage data.

Financial well-being is higher than average placing Firm Twenty- Four in the 79th percentile. Its sales are average.

The injury rate per 100 employees is 2. Although there are a relatively low number of incidents, there is a greater than average number of working days lost per incident (n=22).

In 1998, employee average wage was \$46,595. Although wage is just about average for the industry, employee turnover is much less at only about 5% compared to the industry average of 22%.

IV. Summary of Information based on HR Manager.

For the interview, we met with four people: The Benefits Manager, The Human Resources Manager, The Human Resources Generalist, and The Safety Manager. There are 825 employees in the facility in Northfield. None of the employees are unionized.

Firm Twenty- Four is a family owned company. The founder ran the business for about fifty years, and then the son-in-law ran it for another twenty years. Since 1986, they have had an outside president but the family still maintains ownership, board seats, and governance. They have always been a family that has shared the success of the company with its employees.

Two major safety/health issues are with ergonomics and manual materials handling in the processing areas. They have a safety committee, which consists of one member from 72 different teams. (The employees have no direct supervisors; instead they have 72 safety teams.) The meetings are on a monthly basis. Everyone in the company is on one of the safety teams. This includes senior management. The annual safety budget is about \$100,000 for all programs.

In addition Firm Twenty- Four provides Company- Specific Safety Training. It brings in an outside consultant every year, and trains everyone over a 6-8 week period. Some of the training is OSHA mandated.

Since 1951, Firm Twenty- Four has implemented a Pension/Profit Sharing Plan. It is a defined contribution program where historically the firm pays 10% of compensation into the pension plan and 5% into the profit-sharing plan, so for years employees have been able to count on 15%.

Firm Twenty- Four hires employees on a full- time temporary basis. They recruit at job fairs, through unsolicited walk-ins, and through ads. Applicants must have a high school diploma.

The company sponsors golf tournaments, softball games, an annual bike tour, a Valley Fair every summer, a Winter Holiday party, and a Halloween party.

Core Employees Total Compensation List is as below:

Hourly Wage	66%
Pension Program	10%
Health Insurance	19%
Profit-Sharing	5%
Other sources of Income	\$50-\$200 Holiday Bonus, \$60 Safety Awards

Health and Benefits program/Percentage contributions are as below:

	Managed Care Plan	Dental	Life	STD/LTD
(%) Company Contributions	80% individual	100% individual	100%	100%

Case Study: Firm Twenty- Five, Cluster 1 Minneapolis, MN

I. Overview: Firm Twenty- Five produces films and videos for large corporations. It takes the ideas, message in which the client wants to send, and the client's mission in order to create the films. Firm Twenty- Five's motto is to "keep it fresh, keep it fun, and make it look simple." This is how the firm approaches and carries out each project.

Corporate benefactors, employees, and prospective buyers of the products are just a few of the audiences who are targeted with these films and electronically generated images. A few of its past clients include Universities, department stores, and large corporations.

Furthermore, Firm Twenty- Five also creates presentations and leads meetings. This service it refers to is called "live business theater." The firm brings live theater into the business setting. Sometimes it uses live bands, scenic storefronts, smoke, and even working street lamps.

The company was established in 1974 and is 100% employee owned. It has 45 employees and is only located in Minneapolis. The President was a 1998 Minnesota and Dakotas entrepreneurs of the year finalist.

II. Summary of HR Management Practices Survey:

The firm is relatively small (n=45) compared to the industry average. The average education of the employees is described as 16 years. None of the workers are unionized and half of the workforce is female. The core employees are in production (n=30). These core employees work, on average, longer hours (n=50) compared to the average of 37.3 hours for the 820 firms in our database.

The firm was described as having no Job Programs, Workplace Programs, Job Transition Programs, Family Programs, or Physical/ Psychological Health-Related Programs. In addition, it is below average in Educational Programs (n=1). Whereas the majority of the firms offer sexual harassment awareness programs, company- provided training, and company provided seminars, Firm Twenty- Five does not. Furthermore, the firm sponsors less than average social programs (n=1) compared to 2.71 for the larger sample. It does offer a slightly above average number of Welfare Benefits Programs (n=7); this includes death benefits, which only 15.83% of firms offer.

Firm Twenty- Five takes more security measures for its employees than average. Whereas less than 15% of firms have security guards posted at entrances and

exits, video systems in parking lots/ ramps/ elevators, and security escort services, Firm Twenty- Five has these measures of security. However, it falls below average in health and safety practices ($n=3$) compared to 5.64 for the industry. Over half of the companies offer return- to- work programs, company specific training, and scheduled safety inspections, but Firm Twenty- Five does not. The infrastructure and environment rate average.

Employees deal with specific complaints and conflicts with an open- door policy and through grievance procedures. Employee turnover is relatively low at 4% compared to the industry average of 22.54%. Management shares more information than average with the employees regarding investment policies, human resources planning, profitability, and corporate finance. The employees have constant face- to- to face contact with customers and other employees. The workload is extremely demanding.

Although Firm Twenty- Five offers an ESOP, which only 18% of companies offer, it does not implement 401K plans, individual bonuses, or job rotation, which over 50% of the firms implement.

III. Summary of Financial, Injury, and Wage data.

There is not information regarding injury incident rate.

In 1998, firm average wage was \$69,384.

IV. Summary of Information based on HR Manager.

The interview revealed the atmosphere at Firm Twenty- Five is team oriented. Although the departments are distinct, there is much crossover between them.

In order to lessen their liabilities they have established a safety program; at each event they audit what is going on. The technical director is responsible for overseeing the onsite issues; these include issues with heavy equipment, fire, lighting, and wiring.

Firm Twenty- Five also practices promotion from within. The production staff has high internal motivation and a strong sense of loyalty to the firm. Part of this motivation comes from knowing that the senior management also worked in production before becoming executives.

Regarding recruitment, Firm Twenty- Five goes through a hiring company that does the initial screenings. Most applicants are for entry-level positions. They select individuals with internal motivation, experience, skills, and personality. All

of the candidates have a high school diploma and some have a couple of years of college.

Overall morale and job satisfaction seems to be pretty good. They have holiday parties and martini parties to encourage employee socialization.

Currently, they are moving to a new facility. In their currently facility they are out of space. Space is one of the things holding them back right now.

They are on the PTO system. "Most of the full production staff has the full balance just sitting there in their accounts."

Health and Benefits program/Percentage contributions are as below:

	HMO	Dental	Life	STD/LTD
(%) Company Contributions	80% individual	80% individual	100%	100%

Case Study: Firm Twenty- Six, Cluster 4 Minneapolis, MN

I. Overview: Firm Twenty- Six designs, manufactures and markets temperature sensors, instruments, heaters, and flex- circuits. Each of these four major product divisions has its own production area, personnel, and engineering staff. However, all divisions share the sales department, machine shop, and administrative duties. The firm employs over 700 people.

Firm Twenty- Six was founded in 1956 as an engineering firm, which built and designed electromechanical devices. In 1958 it introduced temperature sensors, which were used for aerospace guidance systems. In 1960, it developed etched-foil heaters. Throughout the 1960's it expanded the temperature sensor line and became a supplier to large machinery manufacturers and energy management system contractors.

Not much later, the temperature sensors became useful in commercial and medical applications as well. The plant expanded greatly. The firm's current headquarters, in Fridley, Minnesota, occupy three buildings totaling 228,000 square feet. It has an additional manufacturing point in France and an additional distribution point in Switzerland; these serve European customers.

Firm Twenty- Six's annual sales exceed \$50 million. It is a private company.

II. Survey of HR Management Practices Survey.

Firm Twenty- Six has 700 employees. The average length of service at Firm Twenty- Six is 10 years. The core employees are assemblers; they make up approximately half of Firm Twenty- Six's workforce (n=350). The assemblers weld, solder, laminate, pot, and calibrate. None of them are unionized and they work 40 hours a week, which is average for the industry. There are both day shifts and evening shifts.

The firm offers an average number of Job Programs (n=1), Educational Programs (n=3), Job Transition Programs (n=2), and Physical/ Psychological & Health Related Programs (n=2). The firm ranks in the 77th percentile on physical and psychological health related factors. However, the firm offers significantly lower numbers for Family Programs (n=0) and Workplace Programs (n=1). On the other hand, Firm Twenty- Six offers a significantly greater number of Welfare Benefits and Financial Programs (n=11); the most notable are death benefits, which only 15% of firms offer, and financial planning workshops, which only 20% of firms offer. The firm rates below average in company sponsored events (n=1). Whereas the majority of companies sponsor both holiday parties and picnics, Firm Twenty- Six does not.

Security measures rate greater than average (n=3). Firm Twenty- Six has video monitoring systems at entrances, exits, parking lots, ramps, and elevators. In addition, the firm has security phones throughout the building. Firm Twenty- Six ranks average in health and safety indicators. It implements greater than average health and safety practices (n=7). The infrastructure and environment do not differ significantly from the average.

Employee satisfaction falls in the 23rd percentile. Although employee stress is slightly higher than average, task complexity is average.

Management shares no information with the employees regarding investment policies, production planning, or corporate finance. The firm shares an average amount of information in the other areas.

The firm Implements Quality of Work Life (QWL), which only 20% of firms offer and ESOP, which only 18% of firms offer. Whereas the majority of firms offer an individual bonus, Firm Twenty- Six does not. However, it does offer a group bonus, which only 20% of firms offer.

III. Summary of Financial, Injury, and Wage data.

Financial well- being and sales are average.

There is no significant difference in injury rate for Firm Twenty- Six's employees. For 100 Employees, 7 employees are injured. There are 16.5 working days lost per injury.

Wages are average. In 1998, the average wage was \$35, 696. The turnover rate is below average at 10% compared to the all- firm average of 22%.

IV. Summary of Information based on HR Manager.

The Human Resources Administrator was interviewed by the IRC. She said that a main health and safety issue is working with chemicals. However, the staff is "very well trained and concerned about what they're working with, so they get extra time on safety."

Another health concern is with tendonitis and carpal tunnel. This is due to space issues. The worker's space is not set up right for him and he does not tell the supervisor this.

They currently have an ergonomic person on staff. He will make recommendations, get the changes made, and then check back on a daily basis.

Firm Twenty- Six has a return to work program because it reduces Worker's Comp, which therefore reduces their modification factor, which then reduces their cost.

They also have a Sexual Harassment Awareness Program. Every bulletin board (n=7) covers the issue. However, many people do not read these boards. The supervisors are given a manual.

The core employees are given Individual Bonus' as a way of appreciation. This is based on company profitability. This is in addition to profit sharing and an ESOP plan.

Last year this was equal to about eleven weeks of gross salary.

They have not been very successful with the Star Tribune for recruitment. They are most successful with walk- ins. Many employees drive a long distance, but some only work 4 days a week. At 32 hours a week, they are considered full time employees and receive benefits.

The employee morale is a little low right now. Due to increased contracts, the employees are required to work overtime, a 45-hour week. They recently had a 10% increase in pay to try to get more people to come in. However, this did not work out as well as expected.

Employee compensation includes hourly wage, a pension program, health insurance, stock ownership, profit- sharing, gain- sharing, and individual incentives.

Case Study: Firm Twenty- Seven, Cluster 3 Mankato, MN

I. Overview: Firm Twenty- Seven was founded in 1971 as a one-man elevator maintenance company. Today, Firm Twenty- Seven is not only involved with elevator maintenance, but it is also involved in manufacturing, installation, and modernization. Furthermore, it is a supplier to other elevator companies and direct customers. Firm Twenty- Seven's elevators can be found in almost every state and internationally.

Firm Twenty- Seven is a family owned business; it consists of a father and his two sons. They attribute their success of their business to "Quality, Experience, & Commitment." They engineer small two story passenger elevators up to 60,000 pound freight elevators.

In May 2001, the company added a 10,000 square foot shipping/ receiving area and a 2,000 to 3,000 square foot testing facility onto its already existing 50,000 square foot building.

II. Survey of HR Management Practices Survey.

Firm Twenty- Seven is 29 years old. It has 175 employees, all of whom work in Minnesota. Twenty- two percent of the employees are unionized and 15% of the workforce is female.

This firm offers an average number of Job Programs (n=1), Educational Programs (n=3), Job Transition Programs (n=2), Company Sponsored Activities (n=3), and Family Programs (n=1). Firm Twenty- Seven offers paid paternity leave, which only 7.5% of other firms offer. However, it does not offer any Workplace Programs or Physical and Psychological Health Related Programs. In fact, it falls in the 19th percentile for Physical and Psychological Health Programs. On the other hand, Firm Twenty- Seven ranks above average for Welfare Benefits and Financial Programs (n=9). Significantly, it offers vision plans and financial planning workshops.

Security measures are lower than average (n=0). It has an above average number of Health and Safety Practices. Most notable are both the safety goal setting and the training to monitor health hazards. Although it offers an above average number of health and safety practices, the overall Health and Safety factor is only average. The building facilities, sanitation, lighting, and ventilation rate slightly higher than average.

The mechanisms in place to deal with employee complaints and conflicts include an open- door policy, grievance procedures, and a phone- in system. Overall,

the employee satisfaction is slightly above average. This is apparent in the low turnover rate of 5%.

Regarding investment policies, profitability, and corporate finance, management shares more information than average with the employees. The organization has an innovative HR system. Significantly, Firm Twenty- Seven applies Quality of Work Life and Total Quality Management, which only 20% and 23% of firms apply, respectively.

III. Summary of Financial, Injury, and Wage data.

Financial well being is average

Firm Twenty- Seven ranks average in injury scores. Injury rate per 100 employees is 3.4. Lost working days per injury are 4.9.

In 1998, average wage was \$39,566. Employee wage is average for the industry.

IV. Summary of Information based on HR Manager.

We interviewed the HR Manager. He manages all the HR functions and reports directly to the president of the company. It is a family- owned company with 195 employees.

Firm Twenty- Seven has Labor- Management Safety Committees. They "have monthly safety committee meetings and monthly company meetings that address the full range of obvious safety issues including emergency evacuation and OSHA using mock inspections."

The firm has a suggestion program called "I Power". Employees are paid for improvement ideas; the compensation ranges from \$2-\$5. Firm Twenty- Seven does this to encourage innovation.

HR is in charge of recruitment and hiring of production employees. They look for attitude, attentiveness in the interview, and a stable job history. Depending on the position, certain skills are important. They have a high number of applicants (n=35) for every open position.

Firm Twenty- Seven has social activities to encourage group atmosphere. These include a bowling league, bike rides, and holiday parties.

Health and Benefits program/Percentage contributions are as below:

	Medical	Dental	Life	STD/LTD
(%) Company Contributions	65% individual	79% individual	100%	0%

Case Study: Firm Twenty- Eight, Cluster 4 Bloomington, MN

I. Overview: Firm Twenty- Eight has been offering its services since 1945. It melts and pours aluminum into molds. These molds are either sand or ceramic and they can withstand very high temperatures. Firm Twenty- Eight also offers finishing touches, which includes deburring, sawing, and grinding.

The firm has a 22,000 square foot facility. This includes three automated production lines. In addition, there are melt, pattern, core, and finishing and inspection departments.

II. Survey of HR Management Practices Survey.

Established 55 years ago, Firm Twenty- Eight is older than the average firm. Firm Twenty- Eight has 35 employees. The employees' average length of service is 10 years. None of the employees are unionized or part- time. Only one employee is female.

The core employees are foundrymen. There are 26 foundrymen and they do various foundry assignments. They work 40-hour weeks, which is average for the industry.

Firm Twenty- Eight rates pretty low regarding Work and Family Issues. It does not offer any Workplace Programs, Educational Programs, Job Transition Programs, Family Programs, or Physical/ Psychological & Health- Related Programs. The firm falls in the 18th percentile regarding Physical/ Psychological indicators. However, it offers an average amount of Welfare Benefits and Financial Programs (n=5).

The firm does not follow any of the security measures listed on the survey. It does, however, have an above average number of health and safety practices for core employees (n=8). The infrastructure and environment of the organization is average.

Firm Twenty- Eight shares more information with its employees in investment policies, production planning, profitability, and corporate finance than other firms do. In addition, it has joint labor- management committees, which only 22% of firms have. More noticeable is the HR practice of having an employee representative on the Board of Directors because only 7% of firms have this. It also has cash profit sharing plans, stock option plans, and an ESOP, which less than half of the firms in our sample have.

Like 97% of the companies studied, Firm Twenty- Eight also has an open-door policy. However, it does not have grievance procedures, which half of the other organizations have. Decision making participation is both individual and group based. However, financial returns are only group based.

Employee morale is lower than normal. Employee satisfaction is also lower, falling in the 5th percentile. This may be due to relatively high levels of stress, placing them in the 81st percentile. Even though satisfaction is low, turnover is also low at 10%. Employee wages are average and employee injuries are below average.

III. Summary of Financial, Injury, and Wage data.

Financial well-being is greater than average ranking in the 79th percentile. However, sales are slightly lower than average. Average wage level in 1998 was \$38,932.

No injuries have been reported.

IV. Summary of Information based on HR Manager.

We interviewed the President of Firm Twenty- Eight. His primary concern for production employees is the use of safety equipment.

Firm Twenty- Eight has a comprehensible written safety program. It adopted this practice to make sure it would "work safe." Its stable workman's comp rates reflect their concern.

Firm Twenty- Eight also has a realistic job preview because foundry work is hot, dangerous, and intense. They give each prospective employee a complete preview of the entry-level work and then a short introduction period where they decide if they want to stay.

The employee compensation includes: hourly wages, a pension program, health insurance, stock ownership, profit- sharing, and gain- sharing.

Health and Benefits program/Percentage contributions are as below:

	HMO	Dental	Life	STD/LTD
(%) Company Contributions	100% individual	100% individual	100%	0%

Case Study: Firm Twenty- Nine, Cluster 4 Lino Lakes, MN

I. Overview: Firm Twenty- Nine was established in 1897. It manufactures and installs pre-stressed/ pre-cast concrete products. Its products, which include floor and roof planks, insulated wall panels, non- insulated wall panels, and pre-cast, pre-stressed beam/ columns, can be used in both residential and commercial construction. The firm supplies its products and services to customers in the Midwest.

Firm Twenty- Nine is a family run business. The company is currently in its fourth generation of ownership by the family.

In 1998, Firm Twenty- Nine wanted to expand its plant 70%, adding 17,000 square feet for new products and materials. They were approved and issued a \$3million bond by the state.

II. Survey of HR Management Practices Survey.

Firm Twenty- Nine is older than most firms; it is located in the 99th percentile for firm age. It employs 135 people. The core employees (n=95) are laborers. 95% of these core employees are unionized and they work approximately 60 hours per week, which is much higher than the average (n=37.8).

The firm falls below average in Job Programs (n=0), Workplace Programs (n=1), Job Transition Programs (n=1), and Family Programs (n=0). It rates very low in Physical and Psychological Health Programs, falling in the 18th percentile. However, it has an average number of Educational Programs (n=3); it offers tuition reimbursement, company- provided training, and company- provided seminars. The union provides all benefits per collective bargaining agreements. Additionally, the firm sponsors social activities every year (n=3), which is average for the industry.

Firm Twenty- Nine does not remark on having any security measures, which puts them in the 10th percentile. However, it has many health and safety practices (n=9) for the employees; these include safety- goal settings, training to monitor health hazards, and labor- management safety committees. The firm ranks in the 68th percentile for health and safety practices. The environment rates fair on most levels; the transportation and parking rating is high (n=5) and the noise level rating is low (n=2).

Employee satisfaction is slightly above average even though they experience greater than average stress, and very high injury rates. Seemingly, to offset the

risk involved in this business, the firm offers pretty high wage rates placing them in the 87th percentile. Even with high wages, the firm still has a very high turnover rate of 60%. Voluntary turnover is 50% and involuntary turnover is 10%. Interestingly, most of the employees are willing to spend the rest of their career with Firm Twenty- Nine and have a strong sense of belonging.

Task complexity and task skill requirement are lower than average. However, the tasks are very important to the company. Decision making participation is group based whereas financial return participation is individual based.

For the core employees, there is much communication. There is a high use of formal and informal meetings, newsletters, e- mail, web pages, and bulletin boards.

Management shares information with the laborers regarding production planning, human resources planning, profitability, and company current events. They do not share any information regarding investment policies. Human Resources Practices are pretty average in most areas. However, Firm Twenty- Nine has joint labor management committees, which only 22% of firms studied have. Two additional positive HR practices, not utilized by most firms, but which Firm Twenty- Nine uses are cash profit sharing plans and pension plans.

III. Summary of Financial, Injury, and Wage data.

Average employee wage in 1998 was \$64,857 (MDES). This wage is high compared to the other firms. Therefore, it is interesting to also see a very high turnover rate.

IV. Summary of Information based on HR Manager.

We interviewed the Human Resources Director at Firm Twenty- Nine. She is in charge of 151 employees. A problem with health and safety seems to come from the high turnover rate. When turnover rate is increased, then workman's comp is high. However, for the long- term employees the accident ratio is low.

Firm Twenty- Nine provides training to monitor health hazards. This is for workman's comp needs. They have a safety director who provides employee orientations. Furthermore, there are two Safety Day programs offsite every year, which all employees attend and there are weekly safety management meetings.

The core employees compensation is: 85% hourly wage, 1% pension program, 10% health insurance, and 4% profit- sharing. Specifics on the health and benefit programs are provided through the union.

Case Study: Firm Thirty, Cluster 4 Cambridge, MN

I. Overview: Firm Thirty was established in 1967 as a family company, with a few employees. In 1994, it became part of a corporate company; it is now a division of a larger organization.

Today, Firm Thirty has almost 300 employees and operates in a 130,000 square foot facility. Firm Thirty produces a variety of machine parts, especially drive train components. These drive train components are for automotive, industrial, agricultural, and recreational vehicle applications. Furthermore, it has a working SPC program, which provides customers with inspection data and statistical analysis including Cpk reports.

In addition, Firm Thirty provides both Ultra Sonic and Magnetic Particle inspection on castings and bar stocks. The firm also has a Metallurgy lab, center-less and cylindrical grinding, and thread rolling capabilities.

In April 2000, Firm Thirty achieved QS- 9000 Registration. Firm Thirty is committed to quality and producing its products at a reasonable cost. It is a non-union shop. The firm's sales are about \$50 million.

II. Survey of HR Management Practices Survey.

Firm Thirty has 265 employees with an average age of 35 years and an average length of service of 5 years. None of the workforce is unionized. The core employees (n=190) are machine operators. These employees work 50-hour weeks, which is greater than the all- firm average (n=37.3).

The firm does not offer any Job Programs, Workplace Programs, Physical/ Psychological Health- Related Programs, or Family Programs. Therefore, the firm falls in the 18th percentile for Physical/ Psychological indicators. Firm Thirty offers an average amount of Education Programs (n=3) and a slightly above average number of Job Transition Programs (n=3). In fact, Firm Thirty implements mentoring programs which only 18% of firms claim to implement. The firm offers a slightly above average amount of Welfare Benefits and Financial Programs (n=7). In addition, the company sponsors an average number of social events.

Although Firm Thirty does not indicate to take any security measures for its employees, the firm does offer an average amount of health and safety practices (n=6). The infrastructure and environment does not significantly differ from the industry ratings.

Employee task complexity and skills do not vary significantly from the average. Employee satisfaction is significantly low placing Firm Thirty in the 2nd percentile. However, wages are only slightly lower than average and employee stress ranks in the 27th percentile, which is relatively low. There is no significant difference from the average in turnover rate. In addition, there are no significant deviations in Human Resources Practices.

III. Summary of Financial, Injury, and Wage data.

Financial well- being is high placing Firm Thirty in the 79th percentile. Sales are average.

Injury rate per 100 employees is 2.6. Working days lost per injury equal 40.8 days.

In 1998, the average wage was \$32,544. This wage is slightly lower than industry average.

IV. Summary of Information based on HR Manager.

We interviewed the Human Resources Coordinator. She is a Human Resource Generalist and involved in all aspects of Human Resources within Firm Thirty. 248 employees are within her area of responsibility. (There are more employees at other divisions around Minnesota, but she is not responsible for them.)

Firm Thirty will be offering an Employee Assistance Program. This is so the employees can receive the assistance they need without tying up the Human Resources Coordinator's time. This also is more private. This program has not been implemented yet. However, it is expected to be effective in reducing pressure on the HR Coordinator and the pressure on the employees to get needed help. This in turn will increase productivity. The cost of the program is coming from headquarters, it is for the entire corporation, all plants.

Firm Thirty implements skill- based pay. They do early evaluations and have tied training to moving to the next level. This includes continuing education. Skill-based pay is specific to production employees only.

The firm has had one employment- related lawsuit in the past two years. This affected management morale because they went through some depositions. Employee's behavior also changed. Some of the supervisors and employees lost their jobs. Some of the employees were sued. Financially it hit both employees and Firm Thirty in the pocketbook.

Both the HR Coordinator and the supervisors do the recruitment and hiring. First, they select applicants with a skillset. However, they do hire a lot of individuals to train in- house. They also look for applicants who fit to their culture. The cost of recruitment for every new employee is between \$500 and \$1000. Prospective employees need to have finished high school or obtained their GED.

Firm Thirty does not have a PTO system. They do have an "incentive time" earning system based on attendance. Sick days are unpaid; they can use this "incentive time" to fill it or their vacation time. Their absenteeism is still pretty high.

Health and Benefits program/Percentage contributions are as below:

	HMO	Dental	Life	STD/LTD
(%) Company Contributions	80% individual	80% individual	100%	0%

Case Study: Firm Thirty- One, Cluster 4 Plato, MN.

I. Overview: Firm Thirty- One was founded in 1893 in the rural Minnesota community of Plato. It is a family owned business and has been in the same family for five generations. The firm designs and builds fine custom cabinetry.

The company has grown to 130 employees. Retail kitchen dealers sell Firm Thirty- One's cabinets throughout the United States; it works with about 250 dealers

Firm Thirty- One's clients include a list of popular actors. The firm's cabinets have been featured in *Country Living* magazine and in *Better Homes and Gardens*.

II. Survey of HR Management Practices Survey.

There are 130 employees working for Firm Thirty- One with an average age of 40 years. None of the workforce is unionized and 30% of the workforce is female. The core employees are cabinet assemblers (n=20). They work between 40 and 45 hours per week, which is average for the industry.

The company has an average number of Workplace Programs (n=2) and Educational Programs (n=3). It ranks in the 89th percentile for Job Transition Programs (n=4). Furthermore, it has an average number of Health Related Programs (n=2) and an average amount of Welfare Benefits and Financial Programs (n=9). It does not have any Job Programs or Family Programs.

Employee task complexity, skill level, and task importance are average for the industry.

Firm Thirty- One engages in many health and safety practices (n=9). It places in the 68th percentile for Health and Safety Practices. However, it does not seem to take many security measures for the cabinet assemblers. The firm rates average in Human Resources Practices. It does offer job redesign, which only 20% of the other firms offer.

Firm Thirty- One has an open- door policy and grievance procedures. The turnover rate is relatively low at 10% compared to 22.54% for the industry. This seems to contradict employee satisfaction, which is quite low, falling in the 16th percentile. Another reason satisfaction may be low is because Firm Thirty- One employees' have a slightly above average stress level and lower than average wages.

The management's most common way to communicate with the cabinet assemblers is through newsletters and bulletin boards. Management shares more than an average amount of information regarding profitability and company current events.

III. Summary of Financial, Injury, and Wage data.

Financial well being score is above average; Firm Thirty- One places in the 72nd percentile. Sales are average for the firm.

Injury incident rate per 100 employees is relatively low ($n = .76$) for the industry. Time lost per injury is 23 days.

Firm wage average in 1998 was \$28,711. As stated earlier, wages are lower at Firm Thirty- One than at the other firms, falling in the 30th percentile.

IV. Summary of Information based on HR Manager.

We interviewed the Human Resources Manager. The firm has about 250 dealers throughout the United States who sell Firm Thirty- One's cabinetry. Firm Thirty- One has sales representatives that seek the dealers out. They only go to kitchen and specialty shops.

The firm did not go national until 1991. It has remained a family business. All the employees are within the HR Manager's area of responsibility.

Firm Thirty- One has four manufacturing departments, which work interdepartmentally. It is highly encouraged to have cross- department communication. They do not want employees to think, "this department, that department."

The HR Manager claims to have the "cleanest place you'll ever see in woodworking." The firm does not have much concern for dust, because it is very clean. One problem it does face is with some hand- sanders whom experience some carpal tunnel and wrist issues. Also, there is some heavy lifting.

The firm implements an Audit of Safety Program. Someone internally works with safety but the firm also contracts people from the outside so that safety is very structured. It is an advantage to bring people in from outside because they keep up to date on OSHA standards. These outside consultants also do workshops a couple of times a year for all employees.

Firm Thirty- One also has an on- site health clinic; they call it the Gemini Program. A chiropractor comes in three times a week. He has an office inside

the facility and the employees set up appointments with him. Firm Thirty- One pays \$150 per employee per benefit year towards it. He is not only for chiropractic adjustment, he also helps toward work comp. He also offers consultations and makes sure things are ergonomically correct.

In addition, Firm Thirty- One has a Gain Sharing program. This is very important to its employees. It adopted this program two years ago. It is based on quarterly profits and if they exceed a certain percentage then that is paid out to the employees as bonuses.

The HR Manager and the Supervisors do interviewing and hiring together. They do not need trained applicants because they can train on the job. They look for longevity, a good work history, and interaction skills. The applicants also need a high school diploma.

The HR Manager reported the employee morale to be high. This may be due to increases in employee's wage levels, and profit sharing. More so, the Wellness Program and company- subsidized uniform program increases job satisfaction.

Firm Thirty- One sponsors bowling, softball, and volleyball leagues. They also have an off- site, formal, Saturday night, recognition banquet once a year. They have quarterly meals catered for the employees. They also shut down for the whole week after Christmas so their employees can be with their families; although this is not paid.

Health and Benefits program/Percentage contributions are as below:

	HMO	Dental	Life	STD/LTD
(%) Company Contributions	95%	95%	95%	95%

Case Study: Firm Thirty- Two Bloomington, MN

I. Overview: Firm Thirty- Two has been in existence for a little over one year. Executives of a former company (which was acquired by a large organization) formed the new company in April 2000. They consider themselves a "time- to- volume partner" with their customers.

Firm Thirty- Two specializes in the manufacturing, process development, and testing of bipolar and BiCMOS intended for analog and mixed- signal processes. Its systems are optimized in order to deliver low signal noise, low power, and high performance.

Firm Thirty- Two encourages innovation and is constantly working on new projects. The company has many services to guarantee quality. These include quality and reliability service, failure analysis capability, production wafer and package testing, and in- house quick-turn prototype assembly.

The firm has already achieved ISO 9001 and ISO 9002 certification. It is working on QS9000 registration.

Currently, Firm Thirty- Two operates 24 hours a day, seven days a week. In its first year of operation, Firm Thirty- Two projected revenues in excess of \$70 million.

II. Survey of HR Management Practices Survey.

Firm Thirty- Two has 450 employees in Minnesota. 126 of these employees are core employees. 36% of the workforce is female and none of the workforce is unionized.

Regarding Work and Family Issues, Firm Thirty- Two offers a great amount of programs. It offers an average number of Job Programs (n=2), Educational Programs (n=3), and Workplace Programs (n=2). The firm offers an above average number of Job Transition Programs (n=4); most notable are the mentoring program and outplacement services, which only 18.7% and 9.2% of firms offer, respectively. In addition, it offers a slightly above average number of Family Programs (n=2); these include prenatal and well- baby programs and on-site childcare, which only 16.3% and 2.6% of firms offer, respectively. More so, Firm Thirty- Two has many Physical/ Psychological Health- Related Programs (n=4); most notable of these are the onsite fitness facility, which only 6.2% of firms offer, the smoking cessation programs, which only 14.5% of firms offer, and physical fitness programs, which only 8% of firms offer. Firm Thirty- Two ranks in the 97th percentile for Physical/ Psychological Health indicators. In addition it

has a significantly greater than average amount of Welfare Benefits and Financial Programs (n=10). The firm sponsors picnics, holiday parties, employee sports team, and computer clubs.

Security for the employees is another strong point for Firm Thirty- Two; it takes all the security measures, which were included in the survey. Of significance are the security guards at entrances, which only 8.7% of firms have and video system in parking lots, which only 12% of firms have. Firm Thirty- Two also engages in many health and safety practices; it rates average in health and safety indicators. The infrastructure and environment rate above average at the "very good" level.

Employee satisfaction is quite high placing Firm Thirty- Two in the 93rd percentile; the employees feel a strong sense of belonging to the firm and are willing to spend the rest of their career with the firm. The turnover rate is very low at 5% compared to 22.5% for the industry. Employee stress and wage rates are average.

Firm Thirty- Two implements many HR Practices. Of great significance are training in statistical analysis, which only 13% of firms have, Quality of Work Life, which only 20% of firms implement, and quality circles, which only 9% of firms implement. In addition, it applies Total Quality Management, which only 23% of firms apply. Furthermore, Firm Thirty- Two offers a stock purchase plan and stock option plan, which less than 10% of firms offer. It also has an ESOP, cash profit sharing plan, and group bonus, which only 18%, 23%, and 20% of firms offer, respectively. The HR system is innovative.

III. Summary of Financial, Injury, and Wage data.

Financial well-being is below average. Firm Thirty- Two falls in the 16th percentile for firm well-being. Sales are average.

Injury incidence rate per 100 employees is 1.3. Working days lost per injury are 17.5. Employee injury incidence is average for the industry.

In 1998, the average wage was \$48,976; this amount does not significantly differ from the mean wage for industry.

IV. Summary of Information based on HR Manager.

We interviewed the Vice President- Human Resources. There are about 480 employees, all within the Bloomington facility. The company's culture is entrepreneurial. They believe in working in teams.

There is Company- Specific Safety Training for the employees. This training involves very specific chemicals and gases. They do the actual training themselves. They have an employee who is an expert in MSDS and identifies other potential problem areas (example: heavy lifting). The nature of their manufacturing is such that they have specifically trained people who can respond to problems.

The safety trainings include an evacuation plan and fire drill. This training is done on an ongoing basis.

They have a cash profit- sharing plan. It was implemented in 1992 and affects everyone. It was very effective when they were doing really well, but that was not their recent experience.

They do their manpower planning in the fourth fiscal quarter of each year. From this, they match the manager's requests for new employees. Afterwards, they use many vehicles of recruitment: employee referral program, a job- posting program for internal opportunities, employment advertising in newspapers and professional publications, college relations programs, and headhunters.

They think it is difficult to recruit prospective employees. This is because all of the openings they have start out being unattractive in terms of shift hours; they are invariably on third shift or weekend shifts. Therefore, they created some additional incentives to attract employees, specifically ones at the production level. They pay over-market base pay and over-market shift premiums. They also instituted a quarterly cash retention program and have performance incentives.

According to the VP of HR, the overall morale is outstanding. They are not unionized.

They have company- sponsored social activities. They have an employee recreation club. From this they have softball teams, a golf league, and bowling leagues.

Firm Thirty- Two has had PTO since 1985. They have an all- inclusive PPO. The company pays 80% on individual and families.

Case Study: Firm Thirty- Three Burnsville, MN

I. Overview: Firm Thirty- Three is a cultured marble company. It provides on-site measuring, delivery, and installation for marble bathrooms, sinks, etc.

II. Survey of HR Management Practices Survey.

Firm Thirty- Three is relatively young (n=11) compared to the other firms in our sample (n=34.5). It also has relatively few employees (n=42). None of its employees are unionized. The number of core employees are 37.

The firm offers an average number of Workplace Programs, Job Programs, and Educational Programs. These include flextime, sexual harassment awareness programs, and company- provided training and seminars. It offers below average Job Transition Programs (n=1) and Family Programs (n=0). However, it does offer a slightly higher number of Physical and Psychological Health-Related Programs; these include employee assistance/ counseling services and health screenings. Firm Thirty- Three offers many welfare benefits programs (n=8). Furthermore, the company sponsors picnics, holiday parties, and clubs; it rates average in the company sponsored events

Firm Thirty- Three does not follow any security measures for the core employees. However, it has a high number of health and safety practices; these include scheduled safety inspections, company- specific training, and return- to-work programs. In addition, building facilities, sanitation, lighting, and ventilation all rank higher than average.

Although employee wage is lower than average, only falling in the 28th percentile, employee satisfaction remains slightly higher than average and employee morale is average. Employees seem to face an above average amount of stress and many injuries; they fall in the 78th and 96th percentiles, respectively, for these two indicators.

Although employee task complexity and task skill requirements are low, the task importance is still great. Like the majority of other companies, Firm Thirty- Three, has some information sharing regarding investment policies, production planning, human resources planning, and company current events. However, they share no information regarding the firm's profitability.

III. Summary of Financial, Injury, and Wage data.

According to DNB, Firm Thirty- Three's Financial Stress Score is in the 88th percentile. Financial well-being and sales are average.

As stated earlier, injury rate is high at 9.52 injuries per 100 employees. They lose approximately 19 working days per injury. Injury rate is much higher than average placing Firm Thirty- Three in the 96th percentile.

Their average wage in 1998 was \$28,124 (MDES). Employee wage is lower than average, falling in the 28th percentile.

IV. Summary of Information based on HR Manager.

The General Manager and the Manufacturing Manager are responsible for hiring, firing, and benefits. There is some one else who handles the administrative end. These two men are in charge of the 48 employees in the plant. None of the employees are unionized.

The company culture is changing. The company was bought three years ago. At that time, there were no benefits or vacation days for the employees. The GM and Manufacturing Manager were brought on to change this. Before they were there, there was tremendous turnover in one year (n=200). Their number one asset is the employee; they are bringing on benefits to increase retention of the employees. They have also increased the wages and have a new profit- sharing program for their employees. They have almost turned over the entire workforce in the three years of the new ownership.

They feel safety is definitely an issue. They have two outside services to help them; these outside services come in and train for safety. Their primary concerns are with lifting, grinding, and ergonomics.

Therefore, they implemented an Ergonomics Program. They have implemented this program in order to identify and eliminate problems. Employees bring in a lot of suggestions. The program is effective because the injuries have dropped.

Another program Firm Thirty- Three implements is an Audit of Safety Program. They have an outside consulting company that comes in. They also pay an outside service for a monthly onsite inspection and to implement training.

Furthermore, they have Self- Managing Work Teams. They do this to instill responsibility in every employee, to get them to the point where they can address issues, and do their job without having someone stand over them.

The company morale seems to be good. There is constant positive feedback regarding how this company was and where it is going. The employees are appreciating that they are being treated well.

Case Study: Firm Thirty- Four, Cluster 1 St. Paul, MN

I. Overview: Firm Thirty- Four was founded on September 1, 1963. In April 1990, Firm Thirty- Four purchased another printing company in order to increase their client base in an ever- competitive commercial printing industry. In August of 1998, a large corporation (a parent company) acquired Firm Thirty- Four. Firm Thirty- Four provides print marketing services in many markets: local and national commercial printing, reprint printing, digital asset management, advertising and point- of- purchase displays for high visibility clients.

Its mission statement: *To provide security and opportunity for our employees, to enhance our customer's business for their success, and to make a fair profit.*

Firm Thirty- Four is a commercial printing company. In order to meet clients' needs at all times, it is open 24 hours a day, seven days a week. Some of the projects which Firm Thirty- Four has done include annual reports, banners, greeting cards, posters, and technical manuals.

II. Survey of HR Management Practices Survey.

The firm is 37 years old and has one establishment in Minnesota. There are 160 employees, including 20 core employees. 40% of the workforce is female and none of the workforce is unionized.

Although Firm Thirty- Four does not offer any Job Programs, it does offer a greater than average number of Workplace Programs (n=4); of significance are the diversity awareness programs, which only 26.72% of firms offer, and the workplace violence programs, which only 25.92% of firms offer. In addition, Firm Thirty- Four offers a larger than average number of Job Transition Programs. The firm offers slightly greater than average Family Programs (n=2) and these programs are of great significance; Firm Thirty- Four offers both paid maternity leave and paid paternity leave, which only 16.42% and 7.48% of firms offer, respectively. Firm Thirty- Four also rates higher in Welfare Benefits and Financial Programs (n=9); most notable are the supplemental unemployment plans, which only 7.4% of firms offer. It offers an average number of Educational Programs. However, it does not offer any Physical/ Psychological Health-Related Programs, which places them in the 18th percentile for Physical/ Psychological Health indicators. The company sponsors both picnics and holiday parties.

Security measures for employees (n=2) are average for the industry. In addition, Firm Thirty- Four offers many health and safety practices (n=10). The firm

places in the 75th percentile for health and safety indicators. The infrastructure and environment ratings are average.

Employee satisfaction is greater than average, placing the firm in the 85th percentile. The high employee satisfaction may lead to the relatively low turnover rate of 5% compared with 22.54% for the industry. Employee stress levels and wages are average. Employee commitment to their jobs is greater than average.

Firm Thirty- Four shares full information with its employees regarding investment policies, production planning, human resources planning, profitability, corporate finance, and company current events. Most firms share little or some information in these areas.

Firm Thirty- Four applies an average number of Human Resource Practices. It does not implement job rotation or individual bonuses, which the majority of firms implement. However, it does implement self- managing work teams and joint-labor management committees, which only 30% and 22% of firms implement, respectively.

III. Summary of Financial, Injury, and Wage data.

Financial well- being is greater than average placing them in the 77th percentile. Sales are average.

Injury rate is also average. The injury incident rate per 100 employees is 0.625.

In 1998, average wage was \$38,405. As stated earlier, employee wages are average.

IV. Summary of Information based on HR Manager.

The HR Manager handles and directs all employee benefits, but they are administered by their parent company. The HR Manager is also in charge of payroll. They have 178 employees, all in the St. Paul location. None of the employees are unionized.

Firm Thirty- Four has safety programs/ a safety committee. They meet once a month, they go through the whole building and they look for possible safety hazards. The committee rotates every six months, which leads to company-wide involvement. This safety program is created in- house, set up to follow OSHA standards.

They also have a Periodic Employee Attitude Survey. They present this survey once a year, at the end of the year. It is presented company wide. When they get the results back they address the issues the employees brought up. A specific concern has been with health benefits; employees felt their health benefits lacked in comparison to other places they have been. Now Firm Thirty-Four is in the process of looking around for different health care providers

The departmental heads identify what job openings they need to fill and they are free to hire. However, if they create a position, they need to run it through the president. The managers then go through HR to set the new hire up in the system and to administer a drug test.

It is difficult to cover job openings. This is because Firm Thirty-Four is open twenty four hours a day, seven days a week. Although overtime is not mandatory, people do work it. Furthermore, they are rarely closed.

The overall morale is high. They offer job security by promoting from within. They also sponsor social activities. These activities include potluck, employee appreciation days, an employee picnic, and a holiday party.

Core Employees Total Compensation List is as below:

Hourly Wage	90%
Pension Program	-
Health Insurance	5%
Profit-Sharing	5%
Other sources of Income	-

Health and Benefits program/Percentage contributions are as below:

	Major Medical	Dental	Life	STD/LTD
(%) Company Contributions	70% individual	50% individual	100%	100%

Case Study: Firm Thirty- Five, Cluster 3 Brooklyn Park, MN

I. Overview: Firm Thirty- Five was established in 1977 as an independent printing company. They print many items which include, but are not limited to, checks, membership cards, gift certificates, statements, accounting forms, shipping forms, invoices, and financial forms. They have pre- press, production, press size and color, and bindery capabilities.

They value their relationships with both their customers and employees. Many of their key employees have been with the company for more than 10 years. Their mission is to provide both dependable and quality products to their customers and to have security for their employees. Leadership, Unity, and Responsibility as a team, are their core principles.

II. Survey of HR Management Practices Survey.

Firm Thirty- Five is 23 years old and has 115 employees, all in Minnesota. Their average age is 37 years and none of them are unionized. Their core employees are the press room/ manufacturing employees (n=80).

Although they have an average number of Educational Programs (n=3) and Welfare Benefits and Financial Programs (n=6), they do not have any Family, Workplace, or Job Programs. Firm Thirty- Five sponsors company picnics, holiday parties, and employee sports teams. In addition, they have a greater than average amount of Physical and Psychological Health- Related Programs (n=4). They are located in the 97th percentile for these programs.

Their infrastructure and environment rating is average. They implement many health and safety practices for their core employees (n=8). Although they exhibit an open- door policy, they do not have any grievance procedures, which 50% of the other firms exhibit.

The tasks performed by the employees are moderately complex and slightly routine, which is average for the industry. Employee stress is relatively low. Although employee wage is average, employee satisfaction and morale scores are slightly lower than average.

The management does not share any information regarding profitability and corporate finance with the core employees. Therefore, Firm Thirty- Five falls below average in information sharing. However, they do share an average amount of information regarding production planning, human resources planning, and company current events.

Although Firm Thirty- Five offers some HR Practices, they do not engage in two of the typical practices. Whereas over half of the firms have a job rotation program and employment security, they do not. However, they do offer a group bonus plan, which only 20% of the other firms offer.

Although decision-making participation is both individual and group based, financial returns participation is only group based.

III. Summary of Financial, Injury, and Wage data.

Financial well-being is higher than average, placing Firm Thirty- Five in the 74th percentile. The sales score is average.

There are 3.47 injuries per 100 employees. This places Firm Thirty- Five higher than average in injury rate. For each employee injured, 36 working days are lost.

In 1998, average wage was \$33,682.

IV. Summary of Information based on HR Manager.

We interviewed the Human Resources Generalist for Firm Thirty- Five. She has approximately 110 employees in her area of responsibility.

The number one safety concern for production employees is in ergonomics and injuries; they have employees that are working very physical jobs, for a long time, and their bodies are starting to feel it.

Identification of Safety & Health Hazards is a practice they adopted. Both members of management and employees from shop make up a safety committee to bring concerns forward to their supervisor or plant manager. Once the problem is identified, they figure out what action needs to be taken to alleviate the problem.

Another program Firm Thirty- Five implements is a Return- to- Work Program. They recently started this program along with their managed care group and worker's compensation insurance. This program reduces expenses by getting people back to work and keeping them at work.

They also have a 401k Plan for their employees. In order to stay competitive in the labor market, the company matches 1/3 of the first 6%. Their average employee contributes 9% of their earnings, with 75% of employees participating.

HR does all the recruiting and hiring. They get most candidates through the StarTribune, walk- ins, and referrals. The cost of recruitment per new employee

is between \$1,500 and \$2,500 per position. Just to run an ad in the Star Tribune is between \$700 and \$800. The applicants must have their GED. Some have a 2- year degree.

The employees' compensation includes an hourly wage, 401k, and health insurance.

Health and Benefits program/Percentage contributions are as below:

	HMO	Dental	Life	STD
(%) Company Contributions	75% individual	0%	100%	100%

Case Study: Firm Thirty- Six Blaine, MN

I. Overview: Firm Thirty- Six specializes in custom design in casework and millwork for fixtures for the physical therapy and the healthcare industry. For retail and commercial environments they provide cash wraps, service counters, display cases, museum cases, and kiosks. For the Physical Therapy and the Healthcare Industry they provide treatment tables, pillows, stairs, exam tables, and patient aids.

II. Survey of HR Management Practices Survey.

Firm Thirty- Six was established in 1971. They currently have 41 employees, all in Minnesota. None of the workforce is unionized and 25% of the workforce is female. The core employees are cabinet makers (n=31).

The company exhibits slightly lower than average Job Programs (n=1), Workplace Programs (n=1), and Educational Programs (n=2). On the other hand, they are slightly higher than average in Job Transition Programs (n=3); they engage in outplacement services which only 9% of the other firms in the industry offer. Firm Thirty- Six offers no Family Programs or Physical and Psychological Programs. Therefore, they rate relatively low on the Physical and Psychological Health indicator, falling in the 18th percentile. They offer lower than average Welfare Benefits and Financial Programs (n=4) compared to the industry average (5.83). However, the company sponsors picnics, holiday parties, and employee sports teams, which is average for the industry.

Firm Thirty- Six takes no security measures for the employees but has an average facility rating. The organization engages in less than average Health and Safety Programs (n=4); they rank at the 14th percentile for Health and Safety indicators.

Regarding specific complaints, Firm Thirty- Six has an open door policy, like 97% of the industry. However, over half of the other organizations include grievance procedures, which Firm Thirty- Six does not include. Employees rate job satisfaction relatively high, placing Firm Thirty- Six in the 82nd percentile. Interestingly, job satisfaction is high even though employee wage is slightly lower than average and stress is slightly greater than average. This job satisfaction may lead to the low turnover rate of 10% compared with the industry average of 22%.

Task complexity and employee skill levels are slightly higher than at other firms. These tasks are both of great importance for Firm Thirty- Six and extremely transferable to other industries.

Whereas the majority of the firms share some information regarding investment policies and production planning, Firm Thirty- Six shares no information with their employees regarding these two areas.

Human Resources practices are average for this firm. Like most other firms, they offer on- the- job training, job rotation, promotion from within, a 401k plan, and a suggestion system. In addition, they arrange joint labor- management committees, which only 22% of the other firms arrange.

III. Summary of Financial, Injury, and Wage data.

Financial well-being is far below average. Firm Thirty- Six only ranks in the 1st percentile regarding financial well-being. Sales are slightly below average, placing Firm Thirty- Six in the 38% percentile.

The injury rate per 100 workers is slightly lower than average ($n=7.13$). They lose a day and a half of working time per injury.

In 1998, the firm's average wage was \$32,507.

IV. Summary of Information based on HR Manager.

We interviewed the General Manager. His responsibilities include hiring, firing, benefits, employee relations, staffing, and compensation. There are 35 employees within his area of responsibility.

The company is currently going through reorganization. Their culture is very reactionary by need now; they want to segue into planning soon.

One of the programs Firm Thirty- Six implements is Safety Goal- Setting. Historically, they have made adjustments to the safety program and investments for safety issues, and that triggered additional responses to issues that arose. However, with the current change of ownership, safety goals are not as important to them.

Another program they offer is an individual/ group bonus program. They adopted this practice to connect reward with effort and to move towards growth.

The General Manager is really trying to implement "Theory of Constraints". He feels this is a very important managerial business plan. He feels now they are not solving the core of the problems, just solving the symptoms.

Recruitment has been quite difficult for the company. Currently, there are not experienced cabinetmakers on the market. Therefore, they are really looking for anyone with any skill set. The General Manager feels if finding good people was not the constraint, than they could easily double their business. The employees need a high school degree. Some have a technical degree.

They are on PTO at Firm Thirty- Six.

Core Employees Total Compensation List is as below:

Hourly Wage	92%
Pension Program (401) k	3%
Health Insurance	5%

Health and Benefits program/Percentage contributions are as below:

HMO	Company pays 50% on individual policies
Dental	Company pays 50%
LTD, Life	Company pays 100%

Case Study: Firm Thirty- Seven Brooklyn Park, MN

I. Overview: Firm Thirty- Seven offers open, intelligent, and integrated data storage solutions. Firm Thirty- Seven's products include tape, disk, storage networking, virtual, and software. Furthermore, the firm provides professional services to assist companies in choosing the storage management solution to fit their needs. The firm also offers leasing, education and training, and packaging and testing. These storage products and services are designed to provide customers with a broad range of solutions for storage and retrieval of digitized electronic data. Firm Thirty- Seven's customers include large multinational firms, small businesses, and governmental agencies.

Firm Thirty- Seven itself is about 33 years old and was originally founded in Boulder, Colorado. Now it is an international company that employs approximately 7,000 employees. It is the world's leader in tape storage devices.

In 1995, the Firm Thirty- Seven in Colorado acquired a company in Minnesota for \$170 million. Since this purchase, it has done a lot of downsizing at this site. The firm started with 1,250 employees and now has about half of that. The company focuses predominantly on engineering now, with a little manufacturing. Firm Thirty- Seven just developed a new product called the XXX6000. Now, the firm is building up manufacturing capability.

II. Survey of HR Management Practices Survey.

Firm Thirty- Seven has 400 employees in the Minnesota location. None of the workforce is unionized. Only 15% of the employees are female which is significantly lower than the female workforce average of 45.7% for the industry. There are 200 core employees, who work an average of 40 hours per week.

Regarding work and family issues, Firm Thirty- Seven offers many programs for employees. Firm Thirty- Seven implements greater than average Job Programs (n=4), Workplace Programs (n=4), and Educational Programs (n=3). Of great significance is the flexiplace program, which only 3.6% of firms offer. In addition, Firm Thirty- Seven implements telecommuting which only 9.3% of other firms offer. Of great importance regarding Workplace Programs, Firm Thirty- Seven offers diversity awareness programs and workplace violence programs which only about 26% of the other firms in the industry offer. Firm Thirty- Seven also applies a greater than average amount of Job Transition Programs (n=5); these include mentoring, retraining, and outplacement services. Furthermore, it offers slightly above average Family Programs (n=2) and a well above average number of Physical/ Psychological Health- Related Programs (n=6). In fact, the firm ranks in the 99th percentile for Physical and Psychological indicators. The firm

offers on- site fitness facilities, which only 6.2% of firms offer, nutrition programs, which only 7.3% of firms offer, and physical fitness programs, which only 7.9% of firms offer. Not surprisingly, Firm Thirty- Seven implements a greater than average number of Welfare Benefits and Financial Programs (n=12). Worth a mention are the death benefits, severance pay, and legal aide/ assistance services, which less than 20% of firms offer. The company sponsors picnics, holiday parties, sport teams, and technology clubs.

There may be a correlation between the great amount of work and family programs and the incredibly low amount of employee stress. The firm falls in the 2nd percentile for levels of employee stress, which is extremely low. Employee satisfaction and wages are average. However, employee morale is slightly below average. The organization deals with specific complaints with both an open-door policy and a phone- in system.

Employee security measures are greater than average. The firm has video monitoring systems in the entrances, exits, parking lots, and elevators. In addition, Firm Thirty- Seven implements a greater than average number of Health and Safety Practices for the employees (n=10). Most notable are the safety- goal setting and training to monitor health hazards, which less than half of the other firms implement. The firm ranks slightly below average in the building facilities, ventilation, and heat/ air conditioning ratings.

Both employee task complexity and skill requirements are higher at Firm Thirty- Seven than in other organizations. However, task importance, and task interdependence are average.

Firm Thirty- Seven applies many Human Resources Practices. The most notable of these include quality circles, only found at 9% of firms, total quality management, only found at 23% of firms, and job redesign, only found at 20% of firms. In addition to offering the average financial plans, the firm also offers stock purchase plans and stock options.

III. Summary of Financial, Injury, and Wage data.

For the fiscal year ending 12/29/00, revenues fell 13% to \$2.06 billion. Net loss decreased 98% to \$1.8 million. These revenues reflect a decrease in OEM sales of disk storage products, and lower tape products sales. The lower loss reflects headcount reductions and the absence of a \$103.6 million litigation charge. (Yahoo! Finance)

Injury incident rate is average at Firm Thirty- Seven.

IV. Summary of Information based on HR Manager.

We interviewed the Director of Human Resources at Firm Thirty- Seven. He and three other HR staff members do their own employment, handle the full range of affirmative action programs and diversity programs. Benefits and the administrative duties are handled at headquarters in Colorado.

Ergonomics is a key safety issue. If someone complains of a problem with ergonomics, they immediately deal with it; they adjust workstations, get different chairs, and/ or change keyboards. They have an ergonomics engineer that comes out on a quarterly basis from headquarters. They also have a lot of health related material available on- site for employees.

Firm Thirty- Seven has a program to identify health hazards and anything related to them. They have a safety committee and an emergency response committee. They also have an ER team, which includes 15 trained employees. They have defibrillators in each building and every body has had CPR training and first- aid training. They just had a Tier 2 audit and they do their own internal tier inspections. The safety committee, half of which is manufacturing staff, meets monthly.

The company sponsors bowling leagues, softball teams, a golf league, company picnics, company holiday parties, a racquetball league, theater trips, and hockey club trips.

None of the staff is unionized. The turnover rate in manufacturing is virtually nonexistent. They are on PTO. Every employee accrues personal time in addition to the holidays. Past sick time has been converted into PTO hours. They can carry as much as 160 hours, which is four weeks.

Core Employees Total Compensation List is as below:

Hourly Wage	70%
Health Insurance	15%
Profit- Sharing	5%
Individual Incentives	10%

Health and Benefits program/Percentage contributions are as below:

	Choice of 3 Health Plans	Dental	Life	STD/LTD
(%) Company Contributions	90% individual	90%	100% group	100%

Case Study: Firm Thirty- Eight, Cluster 3 Minneapolis, MN

I. Overview: Founded in 1990, Firm Thirty- Eight designs and manufactures feeders. These feeders are versatile, reliable, and easy-to-operate. In addition, Firm Thirty- Eight utilizes its patented technology in order to precisely separate, singulate, and deliver a wide range of material into various production streams. The majority of Firm Thirty- Eight's customers are in the direct mailing, packaging, graphic arts, and business office products industries. Furthermore, its feeders and collating systems are sold through authorized resellers and system integrators.

In 1996, the original owners sold Firm Thirty- Eight to a venture capital company. The new owners brought in new management.

II. Survey of HR Management Practices Survey.

Firm Thirty- Eight is only 10 years old, which is relatively young. The firm employs 59 employees in Minnesota and 1 employee elsewhere; compared to other firms (n=254), Firm Thirty- Eight is quite small. About a quarter of the workforce is female and none of the employees are unionized. There are 12 core employees whom work an average amount of 41.5 hours per week.

The firm implements no Job Programs, Workplace Programs, or Family Programs. However, it offers an average amount of Education Programs (n=3) and Physical/ Psychological Health-related Programs (n=1); Firm Thirty- Eight offers its employees health screenings which only 16% of firms offer. In addition, the firm offers an above average amount of Job Transition Programs (n=4); most notable are mentoring and retraining, which less than 30% of other firms offer. On the other hand, the firm implements fewer than average Welfare Benefit and Financial Programs (n=4); whereas half of the firms offer long- term and temporary disability plans, Firm Thirty- Eight does not. It sponsors company picnics, holiday parties, and employee sport teams.

Falling in the 4th percentile, Firm Thirty- Eight ranks quite low in Health and Safety indicators. It does not follow any of the security measures for the employees and offers significantly below average Health and Safety Programs (n=1) compared to the firm average (n=6). Whereas the majority of the firms identify safety and health hazards, implement a return- to- work program, and have scheduled safety inspections, Firm Thirty- Eight does not.

Furthermore, the firm only utilizes an open-door policy to deal with specific complaints whereas half of the firms also implement grievance procedures. With such high employee satisfaction, ranking in the 84th percentile, the firm may not

have many complaints. In addition to the high levels of satisfaction, Firm Thirty-Eight employees have very low levels of stress, falling in the 12th percentile. Turnover rate is quite low being less than 1% compared to the industry rate of 22.5%. Management shares full information with the employees regarding investment policies, production planning, human resources planning, profitability, corporate finance, and company current events; most firms share little or some information regarding these areas.

The firm implements an average amount of Human Resources Practices. Firm Thirty- Eight offers a cash profit sharing plan, which only 23% of industries offer. Decision-making participation is both individual and group. Financial returns participation is also both individual and group.

III. Summary of Financial, Injury, and Wage data.

Financial well- being and sales are average for the industry.

The injury rate per 100 employees is 1.7. Lost working days per injury are 32.2. The firm rates average for injury incidents and severity.

In 1998, the average wage was \$48,041. The wage rate is average for the industry.

IV. Summary of Information based on HR Manager.

We interviewed the Human Resources Manager. She does everything from administrative tasks like managing the payroll and benefits to recruiting and helping with staffing levels. Fifty-eight employees are within her area of responsibility. None of these employees are unionized.

They are an "open book management" company and try to treat every employee like an owner. They share all their financial information with the employees and teach them business literacy. They adopted this practice in 1996, when the original owners sold Firm Thirty- Eight to a venture capital company.

They have wellness programs and incentive programs to help people quit smoking. They even switched their benefit plan to cover a smoking cessation program.

Firm Thirty- Eight adopted Health Screening Practices. They do not require them, but in the spring they have people do blood pressure and cholesterol testing. Then, in the fall, they test blood pressure and administer flu shots. They do this free of charge and it is part of the benefits package.

Another program Firm Thirty- Eight implements is an Employee Assistance Program. This program runs through Medica. It is completely confidential and they can help with all kinds of issues whether its blended families, divorce, child custody, or mental health. There is no charge to the employees and it is used often.

In addition, Firm Thirty- Eight offers an Employee Bonus. The individual bonus plan comes out of the "Open Book Management" idea; if you act like an entrepreneur, you contribute to the success of the company. Therefore, they reward you like an entrepreneur. So when people get a performance review score they tie the two together so that the bigger the score the bigger the bonus. Last year the range in bonuses was between \$100 and \$800 per month.

Recruitment and hiring goes in shifts. First, they do an annual budget and it tells them how much hiring they can do for the year. They watch their numbers and if a position comes up, they run an ad. Then, the Manufacturing Manager gets the applications and makes the first cut. Afterwards, the Human Resources Manager phone screens the applicants. Finally, the Manufacturing Manager interviews the applicant.

They have not adopted a PTO system. They have a floating holiday, vacation time, and sick days.

Core Employees Total Compensation List is as below:

Hourly Wage	70%
Pension Program (401k)	5%
Health Insurance	15%
Stock Ownership	3%
Profit- Sharing	7%

Health and Benefits program/Percentage contributions are as below:

	HMO	Dental	Life	STD/LTD
Company Contributions	95% Individual	93% Individual	100%	Company Self- funds

Case Study: Firm Thirty- Nine Minneapolis, MN.

I. Overview: Founded in 1981, Firm Thirty- Nine started with just one ankle brace product. Since then, Firm Thirty- Nine has grown; they now specialize in lower extremity products and have 10 unique ankle braces. Both Medical Professionals and Certified Athletic Trainers in over thirty countries have prescribed these ankle braces.

II. Survey of HR Management Practices Survey.

Firm Thirty- Nine employs 40 people, none of which are unionized. 85% of the workforce is female. The core employees (n=30) are machine- operators. They manufacture and sew the orthopedic soft goods. They work forty hours a week.

The firm offers an average amount of Job Programs (n=1), Educational Programs (n=2), and Physical/ Psychological Programs (n=2). It offers a slightly above average number of Workplace Programs. Although it does not offer any Job Transition Programs, it does offer Family Programs (n=2) of significance; these include prenatal/well – baby programs, and Mother's room, which only 16% and 8% of firms offer, respectively. It offers a lower than average number of Welfare Benefits Programs (n=3). Whereas the majority of the firms offer Dental plans and temporary disability, Firm Thirty- Nine does not. Socially, the company sponsors picnics and holiday parties.

Not only does the firm not take any of the indicated security measures, it also offers a below average number of health and safety programs (n=4). The infrastructure and environment rate average.

Regarding employee complaints and conflicts, the firm has an open- door policy but does not have grievance procedures, which half of the firms have. The turnover rate is relatively low at 6% compared to the all-firm average of 22.5%. The employees do not seem to be under a lot of stress at work. Task complexity and skill level are also slightly lower than average.

Firm Thirty- Nine implements both Total Quality Management and self- managing work teams, which only 20% and 23% of firms implement, respectively. Although the firm does not offer an individual bonus, as most firms do, it does offer a group bonus, which only 20% of firms offer.

III. Summary of Financial, Injury, and Wage data.

The injury incident rate per 100 employees is 2.5. Working days lost per injury are 43.4. In 1998, firm average wage was \$18,000.

IV. Summary of Information based on HR Manager.

We interviewed the CFO of Firm Thirty- Nine. He and the President own the company 50/50. The plant is physically located in North Branch, Minnesota. However, the administrative office is set up in Edina. They currently have 37 employees, 30 of which are production and shipping, seven are administrative including the president, the director of sales and marketing, customer service, purchasing, and general administrative staff. They would like to bring an accounting function to the firm and some additional customer service. None of the employees are unionized.

The company culture is very open door. Health issues are important to them. The employees are required to wear goggles.

They have a Health and Safety Program, because without the employees they would not do any business, so they need to keep them healthy. New hires go through a safety program. This includes running through equipment and running through the job tasks and the risks involved in the machines that they operate. Also, there is a safety committee that reviews their practices and highlights issues.

Another program Firm Thirty- Nine implements is an Employee Assistance Program. They adopted this program because some of the employees need various types of counseling. It is implemented through their health coverage.

A third practice Firm Thirty- Nine has is a 401k Plan. They adopted this practice in January 1995. It was a way to give the employees an opportunity to start planning for their later years. They match \$.50 on the dollar up to 8%. Participation in the program is high, with only two eligible employees out of 38 who are not enrolled.

The CFO feels the job morale is good. They recently did a survey and there was not much dissatisfaction. Firm Thirty- Nine is under some capital restraints that the core employees are not aware of.

Core Employees Total Compensation List is as below:

Hourly Wage	70%
Pension Program (401k match)	10%
Health Insurance	20%

Health and Benefits program/Percentage contributions are as below:

	HMO	Dental	Life	STD/LTD
Company Contributions	75% Individual	-	100%	-

Case Study: Firm Forty Fridley, MN.

I. Overview: Established in 1962, Firm Forty has been custom designing and manufacturing specialty rotary unions to meet the needs of its customers. The firm supplies computer, aerospace, medical, heavy equipment, and defense industries with this high quality machining and assembly. From single passage units of only an inch in length, to multi- passage units up to 40" in diameter, Firm Forty adapts its products to meet customers' needs. Firm Forty adapts the rotary unions to fit individual machines, temperature ranges, and pressure requirements.

It is a family owned business. The current owner bought the business from his father.

II. Survey of HR Management Practices Survey.

Firm Forty is 38 years old and is only located in Minnesota. It has 27 employees, none of which are unionized. Women make up 15% of the workforce, which is a small percentage compared to 46% for the total sample. There are 20 core employees, who work on average 42 hours a week.

The firm offers an average number of Job Programs (n=2), which includes job sharing and flextime. Firm Forty also rates average on providing Educational Programs (n=3) and Job Transition Programs (n=2). However, it offers a below average number of Workplace Programs (n=1) and a slightly below average number of Physical/ Psychological Health- Related Programs (n=1), although there is an onsite fitness center, which only 6% of firms have. The firm is average in Physical/ Psychological indicators. It ranks above average in Family Programs (n=2); the firm implements both paid maternity leave and paid paternity leave, which only 16% and 7% of other firms offer, respectively. Welfare also ranks slightly above average (n=7) offering financial planning workshops, which only 20% of firms offer. The firm sponsors both company picnics and employee sport teams.

Security measures are average (n=1); the firm has security phones throughout the building. Furthermore, Health and Safety Practices are also average. However, Firm Forty places in the 25th percentile, which is relatively low, for health and safety indicators.

Although task complexity is average, employee stress seems relatively high. Firm Forty places in the 80th percentile for employee stress.

Firm Forty shares relatively little information with the employees. Management shares no information regarding production planning, profitability, or corporate finance.

While Firm Forty offers many of the basic Human Resources Practices, it does not implement a suggestion system, which at least half of the firms implement. Decision making participation is individual and financial returns participation is both individual and group based.

Employee satisfaction is relatively average. However, morale is slightly higher than average.

III. Summary of Financial, Injury, and Wage data.

Financial well-being is relatively high, placing Firm Forty in the 78th percentile. Sales are slightly below average.

Firm Forty ranks in the 34th percentile for employee injury, which places the firm slightly below the average injury rate.

In 1998, the average wage was \$35,737. Although this wage is slightly lower than average, the turnover rate remains low at only 5% compared with 22% for the industry.

IV. Summary of Information based on HR Manager.

We interviewed The Owner /Vice President of Firm Forty. The company is 38 years old and has been in the current building for 25 years. Twenty-five employees are in his area of responsibility. None of the employees are unionized.

Since it's a family run business, they run it very loose. There is no direct line of command or a supervisor.

The primary health concern is heavy lifting; they try to limit 50lbs as the maximum they let people lift. Another health issue has been the air quality.

One program Firm Forty implements is a Health- Related Issues Program. They used to have a committee, but since they have downsized recently, now it consists of the Owner and the Safety Manager. Basically, the Safety Manager knows the OSHA regulations and he trains the employees on different pieces of equipment. This program has reduced Firm Forty's premiums to their insurance company.

Another program Firm Forty enacts is Employment Security. There is really no structure to it, but employees know that once they are hired, they will be there for a while. The owner very seldom lays people off or fires anyone.

The owner does all the hiring. He recruits through the StarTribune. He finds it difficult to find highly skilled people. In the past year, he only needed to hire one additional employee. All employees must have a high school diploma or GED.

Core Employees Total Compensation List is as below:

Hourly Wage	70%
Pension Program/ 401k	15%
Health Insurance	15%

Health and Benefits program/Percentage contributions are as below:

	HMO	Dental	STD, LTD, Life
Company Contributions	65% individual	0%	100%

Case Study: Firm Forty-One, Cluster 1 Minneapolis, MN

I. Overview: Firm Forty- One is a specialist in micro- miniature and ultra thin precision metal stampings. Firm Forty- One was founded in 1962. It invents, develops and manufactures metal stampings worldwide. Its facility, equipment, and systems efficiently produce millions of parts per month. Firm Forty- One emphasizes precision; tolerances are set at $\pm .0002$

Firm Forty- One is a privately owned company. The range of annual sales is between \$1 and \$2.5 million.

II. Survey of HR Management Practices Survey.

Firm Forty- One employs 141 people in Minnesota and 6 people elsewhere. The average employee age is 41 years and average education is 14.2 years. None of the workforce is unionized. The core employees are press operators.

Firm Forty- One rates average in implementing Workplace Programs (n=2), Physical/ Psychological Health Related Programs (n=2), and Family Programs (n=1). Firm Forty- One ranks in the 61st percentile for Physical/ Psychological indicators. Educational Programs (n=4) and Job Transition Programs (n=3) rate slightly above average for the industry. It does not offer any Job Programs. However, it offers a greater than average amount of Welfare Benefits and Financial Programs (n=7); most notably are the financial planning workshops, which only 20% of the other firms offer. Firm Forty- One sponsors two company social activities, which is comparable to the industry average

Although security measures are slightly lower than average (n=1), Firm Forty- One engages in a well above average number of Health and Safety Programs (n=10). These programs include labor- management safety committees, safety-goal setting, and training to monitor health hazards. For Health and Safety indicators, Firm Forty- One ranks in the 75th percentile. The building facility rates average, however, noise level is slightly lower than average.

In order to deal with specific complaints and conflicts, Firm Forty- One has an open door policy. However, they do not implement any grievance procedures, which over half of the other firms implement.

Task complexity, importance, and transferability are all average for the industry. However, Firm Forty- One employees' skills rate higher. Employee satisfaction ranks quite high placing Firm Forty- One in the 98th percentile. This high satisfaction level may be due to very low levels of stress and slightly above

average wages. Firm Forty- One places in the 6th percentile for employee stress, demonstrating incredibly low levels of stress compared to the industry.

Firm Forty- One shares more information than average with its employees regarding production planning and company current events. In addition, it follows many Human Resources Practices. These included Total Quality Management, which only 23% of other firms offer, training in statistical analysis, which only 13% of other firms offer, and joint labor- managements committees, which only 22% of other firms offer.

III. Summary of Financial, Injury, and Wage data.

Sales at Firm Forty- One are slightly lower than average. Financial well- being is average.

The injury incident rate per 100 employees is 2.12. Furthermore, 36.4 working days are lost per injury. Firm Forty- One rates average for employee injury incidence.

In 1998, the average wage at Firm Forty- One was \$46,674. This rate is slightly above average for the industry.

IV. Summary of Information based on HR Manager.

We interviewed the Director of HR & Administration. She is in charge of the usual HR functions and safety functions. All 140 employees are in her area of responsibility plus 10 employees in New Mexico. None of the employees are unionized.

The company is very product focused. They are always trying to find ways to improve and they are attentive to detail and precision. In addition, they are concerned with safety issues. They are constantly monitoring their air quality and noise levels.

Each month, Firm 41 has Scheduled Safety Inspections. The safety committee and everyone in management participates in the safety walk through. They have a list and make sure that things are fixed by the closure date.

Another practice implemented is an Ergonomics Program. Since many of their employees have been around for 20-25 years, the workforce is aging. With all the repetitive work there have been concerns about how to make it easier and they created a committee to buy new equipment and make modifications. The committee is made up of both members of the workforce and management. The supervisors are responsible for watching and overseeing the committees.

Furthermore, they have an ergonomics quiz and in the lunchroom they have an entire display of booklets on various types of ergonomic issues. In addition, there is an open book quiz for the employees who read the books, and then from the correct answers, they draw a name, and someone wins as \$25 gift certificate. This program affects everyone and costs about \$50,000 a year.

There is some conflict between workers and managers. Therefore, they have an employee suggestion system that is handled directly by Human Resources. The suggestions may be anonymous.

Recently, they are having great difficulty recruiting prospective employees. They are finding a number of individuals who are entry- level or below entry level. However, many of their jobs are quite technical. Therefore, they have to do a lot of training for some positions. As a follow up to hiring, Human Resources does a 30-day review, a 60-day review, and a 90-day review. In the end, they are able to keep about 80% of selected applicants.

Firm 41 sponsors many social actives. There is a regular party every year; last year it was a cruise on the St. Croix. On Memorial Day and Labor Day they do barbecues. In addition, they have theme days and holiday parties.

They are on a PTO basis. Percentage breakdowns for total employee compensation are not available.

Health and Benefits program/Percentage contributions are as below:

	HMO	Dental	Life	STD/LTD
(%) Company Contributions	80% Individual policies	100%	100%	100%

Case Study: Firm Forty- Two, Cluster 4 Minneapolis, MN

I. Overview: Founded in 1910, Firm Forty- Two is a full service, wholesale only laboratory. Firm Forty- Two has fifteen branch locations serving ophthalmic accounts in all fifty states. These branches are found in Minnesota, Montana, North and South Dakota, Wyoming, Iowa, Wisconsin, Michigan, New Mexico, and Kentucky. It is a subsidiary of a larger corporation.

Firm Forty- Two is a member of the Optical Laboratory Association (OLA), a designated laboratory for Vision Plan (VSP) and Vision Benefits of America, an All- Nations Indian Health Services Provider, and a firm believer of the Crosby Quality Control Process. The firm has 350 employees throughout the United States.

II. Survey of HR Management Practices Survey.

Firm Forty- Two has 91 employees at their Minnesota location. 40% of the workforce is female and none of the workforce is unionized. There are 80 core employees, who work on average, 40-hour weeks.

The firm offers an average number of Job Programs (n=2), Education Programs (n=3), and Job Transition Programs (n=2). Whereas less than 30% of firms implement job sharing and school to work programs, Firm Forty- Two does. However, it does not offer any Family Programs or Physical/ Psychological Health- Related Programs. The firm falls in the 18th percentile for Physical and Psychological Health indicators. However, it does offer an above average number of Welfare Benefits and Financial Programs (n=9); the most notable are supplemental unemployment plans, which only 7% of firms offer and severance pay, which only 26% of firms offer. The firm sponsors a below average number of employee clubs and social activities (n=1).

Security is average at Firm Forty- Two. In addition, it offers a slightly above average number of health and safety practices (n=7). However, it only ranks in the 24th percentile for health and safety indicators.

Whereas the majority of firms enact grievance procedures to deal with employee complaints and conflicts, Firm Forty- Two does not. Employee satisfaction is slightly lower than average placing it in the 32nd percentile and employee stress is slightly higher than average placing it in the 67th percentile. Satisfaction may be lower than average because wage is lower than average placing Firm Forty- Two in the 28th percentile for wages. In addition, turnover is incredibly high at 57% compared to an industry average of 22.5%.

Regarding HR Practices, Firm Forty- Two seems to implement many practices. This includes Total Quality Management, which only 23% of firms implement. In addition, it offers an ESOP and stock purchase plan, which only 18% and 9.8% of other firms offer, respectively. Furthermore it offers a group bonus and a pension plan, which less than 30% of firms offer.

III. Summary of Financial, Injury, and Wage data.

Financial well-being and sales are average.

The firm ranks in the 33rd percentile for employee injury, which is slightly better than average.

In 1998, average wage was \$28,316. As stated earlier, this wage is slightly below average.

IV. Summary of Information based on HR Manager.

For this study, we interviewed the Area Human Resources Manager. She looks after 300 employees in 8 laboratories between Minnesota, Iowa, South Dakota, Wisconsin, and Illinois. In the Minnesota facility, there are 120 employees. None of the employees are unionized.

In the laboratory there are many different chemical substances. These chemicals, like acetone, can be very flammable. Therefore, employees need to know about each chemical and all the chemicals need to be labeled properly. In addition, the company implements a program called "Right- to Know". It is all part of the OSHA compliance manual. They do annual updates including translating policies into Spanish, developing a video and manual, safety sheets, and a "terms" list for definitions.

The company adopted Vision Plans because this is naturally reflective of the product line. The program is included in their benefits package; they get vision testing, free glasses after six months, and wholesale prices to family members.

Another company practice is Total Quality Management. This program is brand new. The company is targeting certain labs to reduce turnover. They are using employee satisfaction surveys, manager- employee committees, and intensive TQM manager training programs.

They use PTO plus vacation days.

Core Employees Total Compensation List is as below:

Hourly Wage	65%
Health Insurance	30%
Individual Incentives	5%

Health and Benefits program/Percentage contributions are as below:

	HMO	Dental	Life	STD/LTD
Company Contributions	65% individual	50% individual	0%	0%

APPENDIX IIIA

University Of Minnesota
Work Practices And Health Survey
(Human Resources Managers)

COMPANY:

HR MANAGER:

TODAY'S DATE:

This survey will be solely used for academic purposes. All responses to this survey will be held confidential. Only aggregate results will be presented.

Conducted by

**Industrial Relations Center
Carlson School of Management
University of Minnesota
321 19th Ave. S.
Minneapolis, MN 55455**

Sponsored by

**Centers for Disease Control and Prevention
National Institute for Occupational Health and Safety**

Human Resources Manager Protocol

The purpose of our study is to learn more about what makes “Healthy Work Organizations.”

We are looking at “health” from two perspectives. The first concerns the health, safety and well-being of your employees. The second concerns the financial health of your company. So we will ask you about your company’s HR practices and how they interact with these two dimensions of health.

We expect this conversation to last around 50 minutes or less.

To start, we would like to find out a bit about your personal background.

1. How long have you worked in the field of Human Resources?
2. How long have you worked at your company?

3. How long have you been at this location?

4. What is the scope of your responsibilities here?

5. Approximately many employees are within your area of responsibility?

6. Approximately how many employees total are in this facility? _____

We'd like to ask you about your HR practices that involve what we call 'core' employees. By core employees we mean non-supervisory, non-managerial employees who are directly involved in making the product or providing the service. Examples include assembly-line workers at an auto plant, computer programmers at a software company, or sales representatives in an insurance company.

6. To start off, how would you describe your company's culture with respect to core employees? (e.g., *one big happy family, a focus on performance, developing skills over a lifetime, cost minimization, etc.*)

7. Do health and safety issues impact recruitment and retention of core employees?

8. We'll have a chance to discuss some of your HR practices in detail in a minute, so you don't need to give us a lot of detail right now on this question, but we'd like to know *what the primary safety and/or health concerns are in this facility for core employees*, and what your company has done to address it?

Next, we'd like you to take a look at the following list of health, safety, and employee well-being practices. You may not have all of them, so we'd like you to identify which ones you have, especially those that apply to your core employees.

*[Show them the attached list **Health, Safety, and Employee Well-Being Practices.**]*

We'd like to ask you some questions about what led to the adoption of the most important one, assuming you are familiar with how that came about.

[Interviewee chose # ____]

1. Why did your company adopt this practice?
2. How is this practice implemented?
3. How does your company decide whether this program is effective in addressing the needs it is designed to address?
4. What proportion of your core employees use this program?
5. What is your estimate of the cost per core employee of this program?

Now choose the next most important program and answer the same questions (repeat questions 2-5).

[Interviewee chose # ____]

2. How is this practice implemented?
3. How does your company decide whether this program is effective in addressing the needs it is designed to address?
4. What proportion of your core employees use this program?
5. What is your estimate of the cost per core employee of this program?

Next, we'd like to focus on programs that have been shown to be beneficial to the health of the organization.

*[Show them the attached list **Organizational Practices for Core Employees.**]*

We'd like you to look at this list of programs and identify those that apply to core employees, then choose the one that perhaps the most important, provided you are familiar with its history. We will then ask you several questions about the program you choose.

[Interviewee chose #_____]

6. Why did your company adopt this practice?

7. How is this practice implemented?

8. How does your company decide whether this program is effective in addressing the needs it is designed to address?

9. What proportion of your core employees use this program?

10. What is your estimate of the cost per employee of this program?

Next, we'd would like to ask some questions regarding whether there are many employment -related lawsuits in your organization.

1. Have you experienced any employment-related lawsuits in the last two years? (e.g. sexual harassment, age discrimination, etc.)

2. What kind of impact have they had on employee morale?
On management morale? On employee and management behavior?

Next, we'd like you to tell us about some specific aspects of HR management at this facility.

1. First of all, is there much conflict between workers and managers?
2. If so, what are the issues involved?
3. How do they get resolved?
4. Are the core employees here unionized?
5. If so, when was the last big change in the contract?

Next, we'd like to ask you about your company's hiring practices for core employees.

1. Who has direct responsibility and authority for recruitment and hiring of core employees—line supervisors, or the HR staff?

If the HR staff: [if not, skip]

2. How do you select core employees from among those who apply?

3. Typically, how many applicants are there for each core employee position? _____

4. How difficult is it to recruit prospective employees?

5. What is your best estimate for the costs of recruitment per core employee?

6. What is the average educational level of those core employees that are hired?

7. From where do you draw your applicants? Locally, regionally, or nationally?

Next we have some general questions about the health of employees.

1. In your opinion, how is the overall morale or job satisfaction of the core employees here?
2. Are there many formal or informal social activities that take place for amongst employees? What are they?
3. Overall, in your opinion, how well is this facility functioning? What accounts for that?
4. Is executive management concerned about employee health and welfare? How do they balance these against the need for profitability?
5. Please estimate the average number of days lost to illness among core employees in a month: _____

Finally, here are some question regarding income and benefits to employees.

1. How much does each of the following plans contribute to the core employees' total compensation? (Consider the entire package - which will include wages plus all other contributions.)

- a. Hourly wage or salary
- b. Pension program
- c. Health Insurance
- d. Stock ownership
- e. Profit-sharing
- f. Gain-sharing
- h. Individual incentives (such as piece rate, commission)
- j. Other sources of income

2. Describe the kinds of health and benefit programs that offered to the employees through your insurance program.

3. How much or what proportion of the insurance costs are born by the employee? How are the pension contributions apportioned between employees and the organization?

4. Does your organization try to attract employees (or retain them) by offering attractive benefit packages (e. g. health and insurance programs, etc.)?

And our last question...

5. What is your best estimate of the average salary of the core employees supervisors? _____

Thank you for your participation!

Health, Safety, and Well-Being Programs for Core Employees

- 1) Sexual harassment awareness programs
- 2) Diversity awareness programs
- 3) Workplace violence programs
- 4) Conflict resolution programs
- 5) Prenatal and well-baby programs
- 6) Physical fitness programs
- 7) On-site health clinic
- 8) Employee Assistance Program or counseling services
- 9) On-site fitness facilities
- 10) Health screenings (e.g., cholesterol, blood pressure)
- 11) Nutrition programs and/or weight loss programs
- 12) Smoking cessation programs
- 13) Vision plans
- 14) Identification of safety and health hazards
- 15) Return-to-work programs
- 16) Ergonomics program
- 17) Labor-management safety committees
- 18) Audit of safety programs
- 19) Safety-goal setting
- 20) Company-specific safety training
- 21) Scheduled safety inspections
- 22) Training to monitor health hazards
- 23) Comprehensive written safety program involving employees
- 24) Evacuation plan/fire drill

Organizational Practices for Core Employees

- 1) On-the-job training
- 2) Job rotation
- 3) Training in statistical analysis
- 4) Training in team building skills
- 5) Realistic job preview
- 6) Promotion from within
- 7) Employment security
- 8) Suggestion system
- 9) Quality of Work Life (QWL)
- 10) Quality circles
- 11) Total Quality Management (TQM)
- 12) Self-managing work teams
- 13) Job redesign
- 14) Joint labor-management committees
- 15) Employee representative on the board of directors
- 16) 401(k) plan
- 17) Employee stock ownership plan (ESOP)
- 18) Stock purchase plan
- 19) Stock option plan
- 20) Cash profit-sharing plan
- 21) Deferred profit-sharing plan
- 22) Gain sharing
- 23) Skill-based pay
- 24) Individual bonus
- 25) Group bonus
- 26) Pension plan
- 27) Periodic employee attitude survey(s)