Employee attitude survey:

The evaluation of an instrument

by

Diana Katherine Henderson

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INTRODUCTION

"Advances in industrial and organizational psychology must come from both scientists and practitioners and, in particular, from those who successfully blend both science and practice."

Dunnette, 1990

The purpose of this project is to evaluate the psychometric properties of an employee attitude survey that is currently in use by a large organization. Instruments like the one in this study are used by practitioners in organizations to assess the attitudes of employees on an ongoing basis. In many cases, the research methods and practices from academia are not integrated into the design and evaluation of employee attitude surveys. This may be due in part to a lack of understanding between academics and practitioners concerning the resources and constraints affecting both areas.

The growing schism between academic and nonacademic industrial and organizational psychologists has been the focus of a great deal of attention within industrial and organizational psychology. As an illustration of the increasing importance of this controversy, the first chapter of Volume One of the Handbook of Industrial & Organizational Psychology (1990) is titled "Blending the Science and Practice of Industrial and Organizational Psychology: Where Are We and Where Are We Going?" by Dunnette. As this title suggests, there appears to be a discrepancy between the goals and

this title suggests, there appears to be a discrepancy between the goals and methods used by industrial and organizational psychologists in academia and those used by consultants and management in business organizations. The current project is an attempt to narrow this gap by applying psychometric techniques used by academics to an employee attitude survey currently in use at a large financial services organization.

A great deal of this controversy focuses on the differing goals, methods, and constraints of survey development and use between academics and practitioners. Lapointe (1990) and Banks and Murphy (1985) argue that in many cases the needs of the organization are too "messy" to fit neatly in the research practices of academia. In the quest to fit these problems to the research techniques of academia much of what would be valuable to the organization is lost. Although the reward systems of both the applied and the academic environment emphasize short-run rather than more encompassing and thorough projects (Dunnette, 1990), the extensive differences between these two systems make it difficult to integrate their work.

An article by Boehm (1980) presents some of the issues concerning "real world" research. Boehm (1980) points out the importance of dealing with "what is" and not with "what should be." He argues that the "messiness" that is characteristic of much applied research accurately reflects the organizational environment. The advancement of industrial and organizational psychology will be best served when the differences between the applied and scientific research models are understood and respected.

There are large bodies of literature that appear to relate directly to the applied setting yet in reality are almost unused by practitioners because the research, objective, method, and presentation, are far divorced from the realities of the applied setting. For example, Banks and Murphy (1985) discussed research in performance appraisal. Their main point was that research on performance appraisal emphasizes the *capabilities* of the rater to provide accurate ratings, while the concern of the practitioner is the *willingness* of the rater to provide accurate ratings. Although both aspects are important, this example illustrates a difference in focus between academics and practitioners. Many professionals in both areas are striving to address these issues, however, there are difficulties involved in merging these two perspectives. Professionals in academia may not have a thorough understanding of all of the influences and constraints present in the workplace or the specific needs of the practitioners, while the practitioners may not have the resources or the expertise to fully appreciate the value of research findings.

A different perspective on this issue, stemming from the constraints and same lack of understanding discussed previously, is the "success" and "failure" in applying psychology as presented by Levy-Leboyer (1988). The author states that psychology is often too easily and too quickly applied. When a psychological theory or methodology meets the restrictions and the needs of a situation it is applied quickly and indiscriminately. Sometimes these solutions have not been properly tested or are generalized beyond its basis. Levy-Leboyer (1988) cites several examples in industrial and

organizational psychology where a theory or a solution was adopted without reservation by many professionals. For example, in work motivation theory, Maslow's (1943) need hierarchy theory has been applied yet has not been tested. Herzberg's (1966) two-factor theory is another example cited. Both of these theories were and continue to be very popular with managers even after criticisms by academics were leveled against the theories. This illustrates a lack of communication between the applied and the academic settings.

This dilemma is a two-way street. While academic researchers are, in general, missing the needs of the organization, the practitioners in organizations may not be taking advantage of the knowledge, research methodologies, and experience available in academia. For example, research suggests younger raters give lower performance evaluations than older raters (Griffeth & Bedeian, 1989), yet there does not seem to be many safeguards against this and other types of rater effects possible in most organizations' appraisal systems. The schism has become so extreme that in many cases neither side looks to the other for the benefits it could provide. On both sides of the science versus applied issue, an awareness is necessary of the other's perspective, needs, limitations, and capabilities. Although the successful integration of research and implementation will require an effort from both parties (cf. Hakel, Sorcher, Beer, & Moses, 1982), it is precisely this type of cooperation that is critical for the development and advancement of industrial and organizational psychology as an applied science.

Perhaps the best place to begin this process is with the basic issue of measurement. As most researchers would agree, the cost of using a poor measure can be very high. In some cases the cost of a poor measure may be higher than the cost of no measure (cf. Rosenthal, 1994). DeVellis (1991) remarks that researchers should recognize when their measure is flawed and interpret their results within the framework of the measure's limitations. However, a practitioner may face a situation where the pressures to gather information about the issues addressed by a survey are so important that they overwhelm the psychometric aspects of the survey itself. Before this conflict can be resolved, it is important to clarify the differing goals and research techniques used by academics and practitioners.

Academics

In general, researchers in academia often construct surveys designed to assess a particular latent construct of interest with their primary goal being the understanding of this construct. Latent constructs are unobservable phenomena that are presumed to take a specific value under specified conditions (DeVellis, 1991). The techniques used by researchers in developing a new instrument, evaluating an existing instrument, and analyzing data derived from an instrument reflect this interest in the underlying concept. Given the nature of the current study, most relevant to this discussion are the psychometric techniques used to evaluate an existing instrument that did not use statistical analyses in the development phase. These techniques involve understanding the issue(s) the researcher or client would like to address with the measure, assessing the reliability of the

measure, establishing its validity, and identifying the latent constructs tapped by the measure.

The basis of any instrument is the question or issue it was developed to address. As such, this question is where an evaluation begins. Given the conceptual basis for the measure, the possibility of latent variables must be considered. If more than one latent variable is of interest in a single survey, then a scale is used to tap each latent construct (DeVellis, 1991). A good scale should show the psychometric characteristics of a good measure; it should have evidence of both reliability and validity.

Reliability

Reliability has been defined as the proportion of variance attributable to the true score of the latent construct (DeVellis, 1991). This translates into several characteristics. Reliability is the degree to which a measure is free from random error (Standards for Education and Psychological Testing, 1985); in other words, it is the extent to which a measure taps stable differences between scores (Carmines & Zeller, 1979).

The use of internal consistency reliability estimates are very common in the literature. When working in an applied setting, internal consistency may be the preferred type of reliability because it does not require repeated administration as does test-retest or additional resources that are required by alternative forms. One commonly used technique for assessing the internal consistency of a measure is Cronbach's alpha (DeVellis, 1991). Otherwise known as coefficient alpha, this is the variance attributable to the latent variable or (1 - error variance). The value of alpha is a function of the

average item reliability and is influenced by the number of items in a scale. Given that coefficient alpha tends to increase with the number of items on an instrument, it can be useful to calculate the average inter-item reliability in interpreting this reliability coefficient.

Validity

Reliability is an empirical issue dealing with item correlations, variances, and the random error of a measure. As such, it is basically atheoretical. Validity, on the other hand, is built on theory. Validity is the extent to which an instrument or scale measures the latent variable it purports to measure. Validity is a matter of degree and can be supported by different types of validity evidence. There are essentially three types of evidence: Content-related, criterion-related and construct-related.

Content-related validity addresses whether the items of a scale adequately sample the content domain of interest. Theoretically, this is achieved by randomly selecting the items for a scale from the universe of all possible items. This can be difficult to establish if the universe of all possible items cannot be defined (DeVellis, 1991). Face validity is a type of content-related validity. In many cases content-related validity relies on experts' judgments to assess the relationship between the items and the content domain (Standards for Education and Psychological Testing, 1985).

Unlike the subjective nature of content-related validity, criterion-related validity is established by demonstrating an empirical association between a scale and an external criterion. In other words, the measured scores are systematically related to a relevant criterion (Standards for

Education and Psychological Testing, 1985). The theoretical or conceptual underpinnings of the association do not need to be understood; criterion-related validity tends to focus on empirical and practical issues (DeVellis, 1991).

Construct-related validity is the link between the measured variable and the desired theoretical construct. The question addressed here is whether or not the construct "behaves" the way the theory would predict (DeVellis, 1991). Construct-related validity is essential to the measurement of theoretical concepts.

In most cases, there are many ways to support the reliability and validity of a measure. The actual techniques chosen should reflect what is most relevant to the measure and feasible to obtain. It is important to gather as much reliability and validity evidence as is possible and useful within the constraints of one's resources. In addition, the reliability and validity of a measure should be monitored for every administration of the instrument.

Factor analysis

Factor analysis is a statistical method that can support both the reliability and the validity of a measure (Carmines & Zeller, 1979). Factor analysis is best known as a tool to determine empirically how many latent variables exist within a measure. It can also be used as a form of data reduction by explaining the effects of the observed variables by fewer latent variables. Also, the factor analysis accounts for items measuring the factor unequally (Devellis, 1991). This type of analysis is frequently used to support construct validity as it analyzes the relationship between an item and

a latent construct This statistical technique has proven to be valuable in the development and evaluation of instruments with latent variables (Carmines & Zeller, 1979).

In academia, the goal of developing new knowledge is not constrained to information that is practical or applicable, and scientists are encouraged to ensure the meticulous development and use of their methods. Validity, reliability, replication and consideration of alternative hypotheses are all standards in academic work. However, the applied environment must play by a different set of rules.

Practitioners

An employee attitude survey is a valuable tool for an organization. The survey provides a practical and systematic mechanism for the collection and analysis of large quantities of attitudinal data that would not otherwise be available to management. These surveys also give employees perhaps their only opportunity to voice their opinion and ideas anonymously.

Generally, these employee attitude surveys are paper and pencil questionnaires and regularly administered to all employees in an organization. For business requirements, the procedures used to administer the survey must be practical and without prohibitive cost or severe disruption of work tasks. Once collected, the data are usually analyzed in a manner that will expeditiously address the concerns of management.

The employee surveys are designed by internal or external consultants for internal company use. These surveys are typically developed

and modified specifically for the organization using it. The survey covers topics of interest to the specific organization and the corresponding industry.

Employee surveys can address traditionally important issues such as attitudes towards pay, organizational career opportunities, and satisfaction with immediate manager. These surveys can also include more time-relevant issues. For example, questions about employees' reactions to a recently implemented flexible work arrangement policy or a change in the organization's philosophy regarding the role of the human resources department.

The results of these surveys provide for regular tracking of the attitudes of the employees so trends can be monitored, baselines established, and action taken when an issue becomes problematic. They can also provide organizational management with information on what is most and least important to their employees, allowing the organization to maximize the effectiveness of its policies and procedures. There are many types of information valuable to managers and scientists.

Contructs of Interest

Job Attitudes

Job attitudes encompass attitudes towards all aspects of the individual's job, work environment, and organization. Previous research has examined the relationships between job attitudes and other variables including intrinsic aspects of a job (Herzberg, 1957), work group (i.e., norms, group supplied stimuli, Hackman, 1992), merit pay (Greene, 1973), supervision (Herzberg, 1957), organizational commitment (Shore & Martin,

1989), organizational characteristics (Green, Blank, & Liden, 1983), performance (Iaffaldano & Muchinsky, 1985) and job motivation (Wood, 1974). Research has shown that job attitudes are, in fact, composed of several dimensions. Although there is no universally accepted group of dimensions, most attitude surveys contain attitudes towards work/job, pay, recognition, management, co-workers, supervisors, and organizational policies and procedures. Employee job attitudes are shaped by personal, environmental, and organizational factors (Locke, 1976).

There are measurement issues that are unique to attitude measures in addition to the general psychometric review discussed above. Many attitude measures contain both evaluative items (e.g., How satisfied are you with your co-workers?; Does your team do a good job?), and descriptive items, (e.g., Do your co-workers participate in decision making?; Does your team meet its deadlines?). As discussed by Locke (1976), when evaluating descriptive items, unless the respondent's value standards are known or unless there are differences in the values among respondents concerning a particular item, scoring errors are possible for some respondents. In addition, there is evidence to support the idea that evaluative and descriptive items may relate differently to other variables (Smith, Kendall, & Hulin, 1969).

Other measurement issues include context effects (Tourangea, Rasinski, Bradburn, & D'Andrade, 1989), that account for the responses to attitude items varying depending on the preceding items in the survey, and self-generated validity (Feldman & Lynch, 1988) which is the phenomena by which an attitude measure can create an attitude if the respondent does not

already have an applicable attitude stored in long-term memory. The design of the questionnaire itself is also a measurement issue. For example, the placement of the demographic questions can have an effect on the response rate (Roberson & Sundstrom, 1990). All of these measurement concerns must be considered when evaluating an attitude survey.

Performance

Performance is an employee's behaviors or actions relevant to the organization's goals. Performance is not the result of an employee's action, it is the action itself (Campbell, 1990). Campbell distinguishes performance from effectiveness, which is the evaluation of the results of performance, and productivity, which is the ratio of effectiveness to the cost of achieving that level of effectiveness. Researchers have examined the relationship between performance and such variables as training (Campbell, 1988; Goldstein & Buxton, 1982), ability (Weiss, 1990) motivation (Ilgen & Klein, 1988; Vroom 1964), job enrichment (Berlinger, Glick, & Rodgers, 1988), stress (McGrath, 1976), and feedback (Lawler, 1976).

Within organizations, a common way to evaluate performance is supervisor ratings. There has also been a great deal of research done on the methodological issues concerning this type of performance appraisal system. Examples of specific rater reliability issues are systematic errors like halo effect (Balzer & Sulsky, 1992), escalation bias (Schoorman, 1988), and distribution errors (Smith, 1976), as well as situational constraints (Peters & O'Connor, 1980; Herman, 1973). As with all measures, when using raters for

performance appraisal, researchers and practitioners must be aware of the limitations of this method and temper their conclusions accordingly.

Work Groups

Most organizations are made up of work groups consisting of traditional departments with a manager and some number of employees or self-managing work teams. The role of the work group in organizational behavior and outcomes is very important. There has been a considerable amount of research done on the work groups themselves (i.e., the characteristics) and how they relate to other variables. Research on the characteristics of work groups tends to focus on structure, cohesiveness, communications, size, compatibility of members' personalities, performance, and group norms (Guzzo & Shea, 1992; Bass, 1982). There seems to be a general consensus that the work group has a strong effect on the job attitudes and performance of the individuals within the work group. Hackman (1992) stated that the work group can affect an individual's informational state (current beliefs about the organization and his or her self), affective state (job attitudes and values), and behavior (directly by punishment or reward or indirectly through the group's impact on the individual's informational state). The effect of the work group and the strength of its position in the organization makes it a useful and important unit of analysis for organizational research.

Work Groups and Performance

An individual within an organization is always exposed to group influences. The effect of the group can be very strong when dealing with an

individual group member's performance. Perhaps the most well know example of this is the Hawthorne plant studies (Roethlisberger & Dickson, 1939). This is a classic example of group norms developing under testing conditions that influenced the individual's work performance

The group can influence individual performance by group norms, advanced by direct instruction, feedback, and modeling (Hackman 1992). These norms can work to increase, decrease, or otherwise alter an individual's performance.

There are many theories about the dynamics of group behaviors and the effects on the individual. There are, however, several themes that Guzz and Shea (1992) have identified as underlying most theories of groups. These are: Group composition, group development, social interaction process, the nature of the group task, motivational issues for the group, and the contextual influences effecting the group. Not only does the performance environment created by the group influence the individual's performance, but there are factors beyond the control of the group (e.g., group task, contextual influences), that affect both the individual and the group, creating an even stronger relationship between the performance of an individual and the dynamics of the group.

Constraints of Practitioners

All of these findings concerning job attitudes, performance, and work groups, and these psychometric constructs are interesting, but the value comes when this information is applied in an organization. Employee surveys typically are administered only within a single organization for the

use of that specific organization. Most organization's primary and underlying motive is profit. Surveys are very expensive, so the goal is to maximize the usefulness of the information for the lowest cost. The costs associated with the development of an employee attitude survey are similar to the costs incurred for the development of any survey. Costs include the work hours and resources required to do the background research, compiling the items, determining the possible legal repercussions of the survey, and organizing the final product. Organizations sometimes hire external consultants to provide these services. Although consultants can cost a company upwards of one thousand dollars a day, in the long run it can be less expensive than an organization retaining a permanent staff with the expertise to create a survey. Administration is also costly, including typesetting and printing of the survey, envelopes for sending out and returning the survey, assembling the materials, and delivery. Once the surveys are returned, data entry, programming and computer time for analyses, and the design, production, and distribution of the results are additional expenses that are incurred. (This is only a broad overview of the expenses that are connected with an employee attitude survey.)

Unfortunately, in an applied environment, resources are not always allocated for the meticulous development and continued monitoring of instruments as encouraged in the academic environment (e.g., pilot testing, reliability measures, and relations between questionnaire responses and external criteria such as performance ratings). In many cases, the instruments used within an organization are not tested for their psychometric

properties either during their development or afterwards. Yet, it is obvious from the use of the information gained from these surveys and the amount of money spent on them, that they are very important to organizations.

The emphases in the work environment on applicability and cost effectiveness combine to encourage a heavy reliance on face validity. There are several reasons for this. First, face validity is relatively easy to defend to non-experts as an important attribute in a survey. By definition an instrument is face valid if the purpose of the items make intuitive sense and is recognizable as relevant to the respondent (Brown, 1983). Also, evidence of face validity is inexpensive to acquire; it can be based on experts' judgments or the comments from participants in pilot testing. Other forms of validity evidence are typically more expensive and time consuming to obtain.

Practitioners are looking for ways to gather information from employees that are practical from the development phase through the implications of the survey. Organizations are interested in job attitudes as they relate to the function of the business operations, and for practitioners, the emphasis is on providing useful information in a timely fashion. Resources are typically not available or allocated for the involved psychometric evaluation used by scientists.

The Current Project

Given the importance of reaching a middle ground between the practical, face valid instruments used by organizations and the psychometric soundness encouraged by academia, this project will evaluate some of the psychometric properties of an employee attitude survey used by a large

financial services institution. The reliability and validity of the survey will be evaluated including the measure's relation with employees' performance ratings. Projects like this provide an excellent opportunity for applied industrial research and academia to work together.

METHODS

Data Collection Procedure[1]

The employee attitude survey administered in a large financial services institution was designed in 1990 and 1991 specifically for this organization by an external consulting firm. The external consultant worked with the department in the organization responsible for survey development and administration. The objective was to develop an instrument that would tap constructs relevant to all levels of management, from the department level through the division level. Although some corporate level issues were to be addressed, the focus was on issues under the control of lower-level management.

The specific issues to be covered in the survey came from several sources. First, types of information gathered in previous attitude surveys used by this company were considered. The previous surveys used by the organization focused on corporate level issues as well as issues under the control of lower-level managers. The consultant also met with top management of the organization to discover the issues they would like addressed. Focus groups were held with managers and employees from different levels and areas of the organization to get their input on topics they felt were important.

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[1] Data collection was performed by the financial services organization during the fall of 1993 as part of the regular survey program. This project was developed around the existing system.

Using these topics as a guide, individual items were chosen. The attitude surveys used within this organization in the past provided a pool of items to draw from in the development of the current survey instrument. New items were developed or borrowed from other sources as necessary. The organization wanted to continue trend data on a few key questions, for example, "How do you rate your total benefits program (insurance, medical, etc.)?" and "Considering everything, how would you rate your overall satisfaction with 'company name' at this time?". These items were automatically carried over to the new survey.

The items and response options for the new survey are shown in Appendix A. Considering the scales used in the previous attitude surveys and the expert judgment of the consultant the items were broken into nine scales (see Appendix B). These scales were labeled General Satisfaction, Organizational Effectiveness, Management, Service Quality, Communication, Job, Recognition and Rewards, Career, and Employment Environment (there are four additional items not included in a scale and are referred to collectively as "Other Topics"). The scales are not mutually exclusive, some items are used in two scales. There is no empirical support for the membership of specific items within each scale.

This company employs approximately 85,000 individuals, therefore it is not efficient to survey all employees in a single administration. A survey program was developed where survey administration is offered twice a year, once in the spring and once in the fall. Each division within the company participates as a whole in one administration every two or three years. Top

management of each individual division decides in which administration to participate.

For coding purposes the response alternative for each item is scored as positive, negative, or neutral. For example, Strongly Agree and Agree are coded as positive, Neither agree nor disagree is coded neutral, and Disagree and Strongly Disagree are coded as negative. The results returned to the manager are the percentage of the respondents who answered favorably, the percentage who answered negatively, and the percent who responded neutral for each item. The percent of positive responses are then averaged over the items in each scale (see Appendix B), yielding a scale score. Comparison data is often available from either an external norm, previous administrations, other levels of the same division or, other participating divisions. This information is used as a benchmark when managers are interpreting the results.

Every manager receives a results report based on survey responses. With a necessary minimum of five survey respondents to protect the confidentiality of the employees, the data for all the respondents within a department or level are analyzed. The results for each department are returned to the manager of that department; the results for each consolidated level of management (e.g. all of Human Resources) are returned to the manager of that group and level.

After receiving his or her results, each manager is then responsible for holding a feedback meeting with his or her employees to discuss the results and generate ideas for improvements. The managers are also required to

develop a specific written plan to improve any weaknesses that have surfaced from the survey and to discuss this strategy with his or her manager. Issues beyond the control of a particular manager are discussed with the next level of management until the issues reach a level where action can be taken. Wide spread issues or corporate level issues are forwarded so they can be addressed by top management.

Every employee in the organization has the opportunity to respond to the survey, and then to elaborate and make suggestions during the feedback session. Every manager also has the opportunity to respond to the survey, address issues identified in his or her department's results, as well as communicating to higher levels of management other issues of concern. This process goes on in every department and at every level within a participating division at least once every 2 to 3 years.

The results of an attitude survey can have a significant effect within the organization. Measures like the one used for this paper are already in use and are having an impact on individuals' lives and organizations' futures. Since in many cases the practitioners lack the resources, it is important that we in academia use our expertise to validate and refine these measures and their use within the practical restrictions of the applied setting. It is difficult to reconcile the theoretical and scientific basis of academic research with the applied atmosphere. However, it is a necessary synthesis for the continued progress of industrial and organizational psychology as an applied science. It is hoped that this project will contribute to the integration of these two areas.

Sample

In the fall of 1993 the employee attitude survey (see Appendix A) was administered to 10,410 employees of a large financial services institution. This constitutes the total population of eight out of more than 30 divisions within the organization, that chose to participate in the survey in the fall of 1993. A variety of divisions participated that represented many areas of the organization. At least 25% of the survey was completed by 8,766 employees for a response rate of 84% (this completion minimum was set for data entry purposes). Out of the 71 topical items, 83.3% of the respondents had five or fewer missing data points; 95.5% had 10 or fewer missing data points (). The same items were given to all employees including manager, exempt, non-exempt, full-time, and part-time. All employees were encouraged to participate, but participation was voluntary and anonymous. The process was designed so that managers do not know which employees participated and which did not.

Demographic information was voluntarily provided by most of the respondents on the survey (see Appendix C for specific demographic items). From the total sample, 7,640 employees responded to the question concerning job grade. Of those, 29.2% said they were in grade 50-54, 5.7% said 55-57, 28.7% said 75-79, 20.1% said 80 or above, and 16.3% said "Don't know/Non-graded" (grades 50-57 are non-exempt, grades 75 and above are exempt, and generally pay increases as the grade increases). Of the 8,055 employees who specified gender, 33.6% were male, and 66.4% were female. Of the 7,876 employees who indicated race/ethnic background,

79.4% were Caucasian, 10.4% were Hispanic, 5.9% were Asian/Pacific Islander, 3.7% were Black, and .5% were American Indian/Alaskan Native. Age was broken into two categories; 66.6% were under 40 and 33.4% were 40 or over, out of 8,006 respondents. Concerning tenure with the company, 8,054 responded with 16.4% having less than one year with the company, 19.7% having 1 to 2 years, 28.7% having 3 to 5 years, 15.8% having 6 to 10 years, and 19.4% having more than 10 years with the company. Of the 7,654 respondents who gave their employment status, 56.8% were exempt employees and 43.2% were non-exempt. These percentages do not reflect the organization as a whole; there is a higher response rate for exempt employees than non-exempt. Of these same 7,654 respondents, 79.7% were full-time, 10.5% were part-time employees, and 9.8% were hourly. Concerning management responsibilities of the 7,612 who responded to this item, 19.4% had management responsibilities, and 80.6% did not. Management responsibility is defined as having performance appraisal responsibility for two or more employees.

Instrument

The employee attitude survey used for this project consisted of the 71 items shown in Appendix A, not including the seven demographic questions. The format was multiple choice and all of the topical items were rated on a five or six point Likert-type scale (the six point scales have an "I don't know" or "Not applicable" option). The items in the survey booklet were ordered roughly by topic (the nine topic areas used by the company and shown in Appendix B) and by response scale (to form strings). Employees marked

their responses directly in the survey booklet and were asked not to identify themselves. Each booklet was coded for the department and the subgroup (usually exempt or non-exempt status) and these codes were explained to the employees. Inside the cover of the survey was a letter from the division manager asking employees to participate, discussing the importance of the survey, and assuring the confidentiality of the responses.

The performance rating measure used in this project was from the performance appraisal given once a year by the immediate manager to the employee (see Appendix D for the performance evaluation form). The manager meets with each employee on or about the anniversary of the employee's start date. At this time the manager and employee discuss the past year's performance objectives for the employee, the employee's strengths and weaknesses, and the objectives for the coming year. An overall performance rating is given to the employee at the meeting. This rating is the basis for pay increases and is considered in promotional and lateral move decisions. A 5-point scale is used with anchors of Far Exceeded Objectives (1), Exceeded Objectives (2), Met Objectives (3), Met Some but Not All Objectives (4), and Did Not Meet Objectives (5). The ratings used for this project could have been given to employees anywhere from 10 months before to two months after the administration of the survey.

Procedures

The surveys for each department were mailed to the department manager along with instructions for administration, a video about the process (to be watched by the manager and the employees), a large return envelope,

and a separate envelope for each employee to seal his or her survey in when completed. The administration instructions indicated (among other things) that:

- Employees are to be given one hour away from their work station to complete the survey, preferably in a group administration (i.e., a staff meeting).
- The manager is to introduce the survey, explain that the survey is voluntary, emphasize the importance of participation, and explain the safeguards for confidentiality.
- Each individual or part of the organization specifically referenced in the survey is to be identified (e.g., "Where a question reads 'your immediate manager' think of Terry Smith", "Where a question refers to 'your division' think of XYZ Communications.").
- Managers are not to be in the room while employees complete the survey and are not to collect or review the completed surveys.
- Each employee seals his or her survey in an individual envelope and is given the option of returning it with the rest of the department or mailing it individually to human resources.
- An employee volunteer is given the responsibility of collecting and mailing the surveys back to human resources.

Two weeks are given for the administration of the survey.

Analyses

Before any analyses were run, all items with a sixth point on the response scale ("I don't know" or equivalent) were recoded as missing data.

All analyses were calculated using the full 5-point scale. For the 19 items effected by this recoding, the number of responses recoded ranged from 43 to 2,935; for most items there were fewer than 1,000 employees who selected that option. General descriptive statistics including means, standard deviations, and frequencies for the items were calculated using the total sample. Also, coefficient alpha and inter-item correlations were run for the entire instrument. The sample was then randomly divided into two parts using the "Select Cases" command in SPSS, specifying a random sample of approximately 50% of the original sample. SPSS uses a pseudo-random number generator that begins with a seed that is a very large integer value (Norusis, 1993). These two groups will be used later in a validation analysis. Group 1 had 4,361 cases and Group 2 had 4,405. Summary statistics were run on each item for each group separately. Independent sample t-tests compared the means of each of the demographic questions of the two groups to support equity of sampling. For all these analyses missing data were not replaced and the N used for the calculation was adjusted accordingly.

Group 1 and Group 2 were used for cross-validation of the factor analysis of the survey. For this method, one half of the sample was used for the exploratory phase of the project. A factor analysis was completed allowing the items to group statistically, there were no preconceived restraints are placed on the factor structure. The focus of the exploratory factor analysis was the question of how many factors are necessary to explain the relationship among the items (Pedhazer & Schmelkin, 1991). Once the data had been analyzed and the results examined, a model was

developed. This model was then tested on the second half of the data, using this data as if it where a new sample. This confirmatory factor analysis was concerned with hypothesis testing and parameter estimation.

Group 1 was used for the exploratory phase of the structure of the survey. A factor analysis with the principle-axis method of factor extraction was used (Norusis, 1993). This method is similar to principle components analysis. However, in the principle-axis method the diagonals of the correlation matrix are replaced with communality estimates based on the squared multiple correlation coefficients. Factors are then extracted and the communalites for each item are reestimated from the factor loadings. Factors are again extracted and the communalites are again estimated. This process continues until there is "negligible change" in the communality estimates for each item (Norusis, 1993). This allows for a more accurate estimation of the amount of variance that can be accounted for by each item. An oblique rotation was appropriate given the expected correlation between factors. It makes intuitive sense that various job attitudes covary to some extent (Smith, Kendall, & Hulin, 1969).

The output of the exploratory factor analysis using Group 1, containing the factor loadings and the communalities and the inter-item correlations was examined for items in the survey that did not contribute significantly to the explanatory power of the instrument for the latent variables. Items with high unique variance (low communality) might provide very useful information to an organization. For example, a single evaluative item that directly addresses a specific topic can provide a indicator for management without

the additional items to form a full scale. However, the factor analysis technique is based on common variance. Therefore, items with high unique variance (low communalities) can distort the results of the analysis by effecting the distribution of the residual variance (Anderson & Gerbing, 1988). Factor loadings, communalities, and inter-item correlations were examined. At this point the items that were considered as not contributing to the instrument were removed and the exploratory factor analysis was run on the remaining items as it had been the first time. Using the eigenvalues, the percent of variance accounted for, and the conceptual underpinnings of employee attitudes, the number of factors was chosen.

Broad constructs such as job attitudes are sometimes more accurately represented by a higher-order factor structure. In this case, a second-order factor analysis was run as an exploratory method on Group 1 to investigate the possibility of such a structure existing behind this instrument. This was accomplished by a factor analysis that was calculated on the correlation matrix between the original, first-order factors. The principle component method of extraction was used, as opposed to principle axis, because the correlation matrix with communalities on the diagonal had a determinent of zero and therefore could not be inverted.

These first- and second-order factors were then evaluated using Group 2 in the confirmatory factor analysis in the LISREL software. This was done in two stages. First, the model of first-order factors were confirmed on Group 2 using the inter-item correlations from Group 2. The correlation matrix can be used in this situation because the units of measurement are

arbitrary and the model is scale invariate (Joreskog & Sorbom, 1988; Bohrnstedt & Borgatta, 1981). The LISREL program specified that a relationship existed between each item and the factor it loaded on in the exploratory factor analysis. The program also specified that the first-order factors could be correlated. Correlations between the error terms were also permitted. As all assessments came from a single measure, correlated measurement error is expected.

Next the analysis was run again adding the second-order factor specifying a relationship between each of the first-order factors and the second-order factor. As indicators of the first-order factors were necessary, all the items loading on a particular factor were summed to a single indicator. This was necessary for the structure required by LISREL; it also emphasized the confirmatory analysis of the first-order factors to the second-order factors.

Once the factors were determined and interpreted, the sample was again used as a whole. Correlations were computed between the factor scales and the company topic areas. This was an exploratory technique, particularly because the correlations were inflated do to item overlap.

The department and not the individual was used as the unit of analysis for the remaining procedures. Only departments with a response rate on the survey of 80% or better and 5 or more employees were used in the remaining analyses. Responses to each survey item were aggregated (mean) within the department. Scale scores were then summed based on the first-order factors identified in the exploratory and confirmatory factor analyses. This process resulted in each department which met the selection criteria having a

score on each of the factor scales. Scores were also calculated for the company's topic areas.

For all the departments that met the above selection criteria, the performance rating of each employee in the department was averaged with equal weighting. Simple correlations were run between each factor scale score for a department and that department's average performance rating as well as the company's topic area and that department's average performance rating. As much of this project was exploratory, correlations were also calculated between each item (the average for each department) and the department's average performance rating. Also calculated were the reliability of the instrument based on the 59 remaining items, the factor scales, and the company topic areas

RESULTS

All analyses completed on the sample as a whole and on Group 1 as well as the descriptive statistics for Group 2 used the SPSS 6.0 for Windows statistical software. The descriptive statistics on the entire sample were examined to check for unusual numbers or patterns that might indicate a problem with the data. No problems were identified. The inter-item correlations (see Appendix E) for the total sample ranged from -.46 to .83. Partially as a function of the large sample size, the majority of the inter-item correlations are significant at the $p<.05$ level. These correlations were run without replacement of missing data. The number of cases used in the calculations ranged from 2,871 to 8,595 with most having more than 7,500 respondents. The coefficient alpha calculated on the instrument as a whole (71 items) was .97. Although this reliability coefficient is high, it should be interpreted with caution as there are a large number of items and coefficient alpha increases with the number of items (Brown, 1983).

The total sample was split into two groups (Group 1 and Group 2) by a random selection of the cases. The means and standard deviations for every item within each of the two groups are presented in Appendix F. The means and standard deviations are very similar across the two groups. T-tests were run on the demographic data between Group 1 and Group 2 to further support the equivalence of the two groups. There were no significant differences at the $p<.05$ level between Group 1 and Group 2 on any of the seven demographic items.

Exploratory Factor Analysis

Group 1 was used for the exploratory factor analysis. Missing data for each item was replaced with the item mean for Group 1. The principle axis method of extraction was used to best estimate each item's common variance. Direct Oblim was used for an oblique rotation because the factors were expected to correlate. Delta controls the extent of the obliqueness of the rotation. Delta was set to 0 to allow the factors to be most oblique (Norusis, 1993).

The results of this first factor analysis revealed that there were items that did not contribute to the measurement of the latent variables assumed to underlie this instrument. Factor analysis is based on the estimation of common variance; the purpose is to determine the number of latent variables being tapped by the instrument. In order to identify the items that had low common variance, and were therefore not useful for measuring the latent variables, the factor loadings, communalities, and inter-item correlations were examined. The items shown in Table 1 were below the cutoff point on at least 2 of the 3 criteria. The cutoff points used to flag these items were .3 for factor loadings and communalities (Pedhazer & Schmelkin, 1991) and .2 for inter-item correlations. Any item that fell below the cutoff score on at least two of the three criteria was examined for content.

Anderson and Gerbing (1988) state that content as well as statistics should be considered before the removal of an item. After an examination of the content, it was decided to remove all 10 of these items from further

Table 1. Items removed from analysis after the first factor analysis

	Item	Highest Factor Loading	Commun-ality
12.	emphasis on high quality work	-.20	.11
13.	emphasis on costs	-.31	.14
14.	number of approvals	-.25	.16
15.	correcting poor performance	.30	.16
22.	other units work with my unit as team	.21	.27
46.	rate your total benefits program	.33	.12
47.	amount of pay	.23	.21
49.	quality of equipment	.18	.19
66.	aware of job opening	.26	.21
70.	use of last attitude survey	.23	.22

analyses. It appeared from the content that several items where too specific to be of value in the factor analysis. These items did not seem to fit in with the other groups of items measuring a latent variable (e.g. How do you rate the quality of equipment you use to perform your job). The wording of the other items was ambiguous or inappropriate. The phrasing of these items may have led to different interpretations by different respondents (e.g. I am aware of job openings in "company name" for which I am qualified and in which I might be interested). Some items seem to be phrased in a way that made them particularly vulnerable to response bias (e.g. How do you rate the amount of pay you receive for your job?).

The factor analysis was run again, this time with the 61 remaining items. The structure of the resulting factors was slightly different from the initial exploratory factor analysis which used all 71 items. One factor was made up of only two items. These items were, "How do you feel about the amount of work you are expected to do?" and "Job pressures seriously interfere with my time for my personal and family life." As content of this factor was very different from the other factors, and as convention encourages at least 3 items per scale for reliability and for interpretation of the factor, a decision was made to eliminate those two items from the factor analysis.

The exploratory factor analysis was run a final time on Group 1 using 59 items. This time the factor structure was relatively clean. There are many indicators to consider when choosing the number of factors. The scree plot method suggested at most three factors, which would account for only 43.2%

of the variance and would result in factors using only 22 of the 59 items. The Kaiser-Guttman rule (Loehlin, 1987) selects factors with eigenvalues greater than 1.0. In this case, this rule would result in five factors that account for 47.3% of the variance in the instrument. This creates factors that include only 29 of the 59 items.

Recognizing the application of this survey, content was considered in addition to the statistics when choosing the number of factors. Nine factors included all of the items in scales. There are interpretable themes among the items within each of the factors. As this instrument is in use, it is important to retain as much of the instrument as possible in these analyses. This will allow an understanding of current data and what statements can and cannot be made based on the data collected with this instrument thus far. However, it is also the goal of this project to recommend refinements for the future use of this instrument. Nine factors were chosen to best serve both goals (see Appendix G for factor loadings for each item).

There was a strong first factor that accounted for 35.8% of the variance in the instrument. The other factors contributed a smaller percent of the variance, ranging from 4.5% for factor 2 to .9% for factor 9, resulting in a total of 52.5% accounted for by all 9 factors. Eigenvalues ranged from 21.1 for factor 1 to .5 for factor 9 (see Table 2).

The names for each factor are given in Table 2 (see Appendix G for the items that load on each factor). Factor 1 addresses Unit Effectiveness. Items concerning work flow and efficiency at the unit or department level load on this factor. For example, the question, "Where I work, the work is well

organized (smooth work flow, good methods and procedures, etc.)" is the item with the highest loading on this factor.

Factor 2 deals with the competency of the Immediate Manager. Questions or statements specifically about the immediate manager load on factor 2. "My immediate manager: Creates an open and trusting work environment with employees." and, "How do you rate your immediate manager on being competent in 'human relations' (dealing with the people who work for him/her)?" both load very highly on Factor 2.

Factor 3 will be called Division Effectiveness because all the items loading on this factor are concerned with the productivity, efficiency, or atmosphere of the division. This factor is tapped by items such as "All in all, how would you rate your own Division on providing high quality products/services?"

Items related to Clarity of Goals, the employee's understanding of the goals of his or her job, the division, and how the two fit together, load on factor 4. The item loading highest on this factor is, "I can see the relationship between what I do (my job responsibilities, objectives, etc.) and my Division's overall goals and objectives."

All items that specifically mention Performance Evaluation or appraisal load on factor 5. For example, factor 5 is strongly defined by the items, "My last performance evaluation gave me a good idea of my strengths and

Table 2. First-order factor names, eigenvalues, and percent of variance, and cumulative variance

Factor Number	Factor Name	Eigen-value	Percent Variance	Cumulative Variance
Factor 1	Unit Effectiveness	21.14	35.8	35.8
Factor 2	Immediate Manager	2.68	4.5	40.4
Factor 3	Division Effectiveness	1.69	2.9	43.2
Factor 4	Clarity of Goals	1.35	2.3	45.5
Factor 5	Performance Evaluation	1.07	1.8	47.3
Factor 6	Upper Management	.93	1.6	48.9
Factor 7	Satisfaction with Company	.81	1.4	50.3
Factor 8	Reward for Performance	.76	1.3	51.3
Factor 9	Communication	.53	.9	52.5

weaknesses." and "My last performance evaluation reflected my performance accurately."

Factor 6 directly addresses the quality of Upper Management. Items like, "All in all, how good a job do you think is being done by the head of your division?", and "All in all, how good a job do you think is being done by top management of your division, as a group?" load on factor 6.

Factor 7 concerns the attitudes towards and perceptions of the company as a whole, the organizational level beyond the division. The highest loading item on this Satisfaction with Company factor is, "I feel proud to work at 'company name.'"

Items such as, "How satisfied are you with your opportunity to get a better job in 'company name'?", and "The better my performance, the better will be my opportunity for promotion to a better job." and other items that address the relationship of Rewards for Performance load on factor 8.

Communication, factor 9, addresses the flow and availability of information within the organization. This factor consists of items like, "When changes are made where I work, communications are usually handled well (sufficient explanation is given as to the reasons for the changes, sufficient notice is given, etc.)", and "All in all, how would you rate your own Division on keeping employees informed about matters that affect them?"

The correlations among the nine factors from the exploratory factor analysis are shown in Table 3. This inter-correlation matrix for the factors is the product of the transpose of the transformation matrix and the transformation matrix, inverted, $(T'T)^{-1}$. The transformation matrix is the

result of an iterative process. This process begins with an initial arbitrary matrix that when multiplied by the initial factor matrix yields a pattern matrix that gets progressively more simple, while still able to reconstruct the original inter-item correlations (Loehlin, 1987). The strength of factor 1, Unit Effectiveness, as well as the strong inter-correlations between factors (ranging from -.55 to the weakest at .00, and most stronger than .25) prompted the investigation of a possible higher-order structure. A second factor analysis was run on the correlation matrix between the first-order factors.

Principle components extraction was used with a Direct Oblim (Delta=0) oblique rotation. This resulted in one second-order factor that accounted for 83.7% of the variance in the first-order factors. This factor was labeled General Satisfaction to reflect the wide variety of topics covered by the instrument. The sequence and factor loadings of the first-order factors, ranging from .76 to .91, on the second-order factor are presented in Table 4.

Confirmatory Factor Analysis

Group 2 was used for the confirmatory factor analysis. LISREL 8 was the statistical software used and the model was run in two phases. First, the first-order factors and the items were programmed as a separate model (Figure 1). The inter-item correlation matrix was entered along with the standard deviation for each item. The LISREL program written for this project permitted a relationship between each item and the factor it loaded on in the exploratory factor analysis. Errors between the items were allowed to

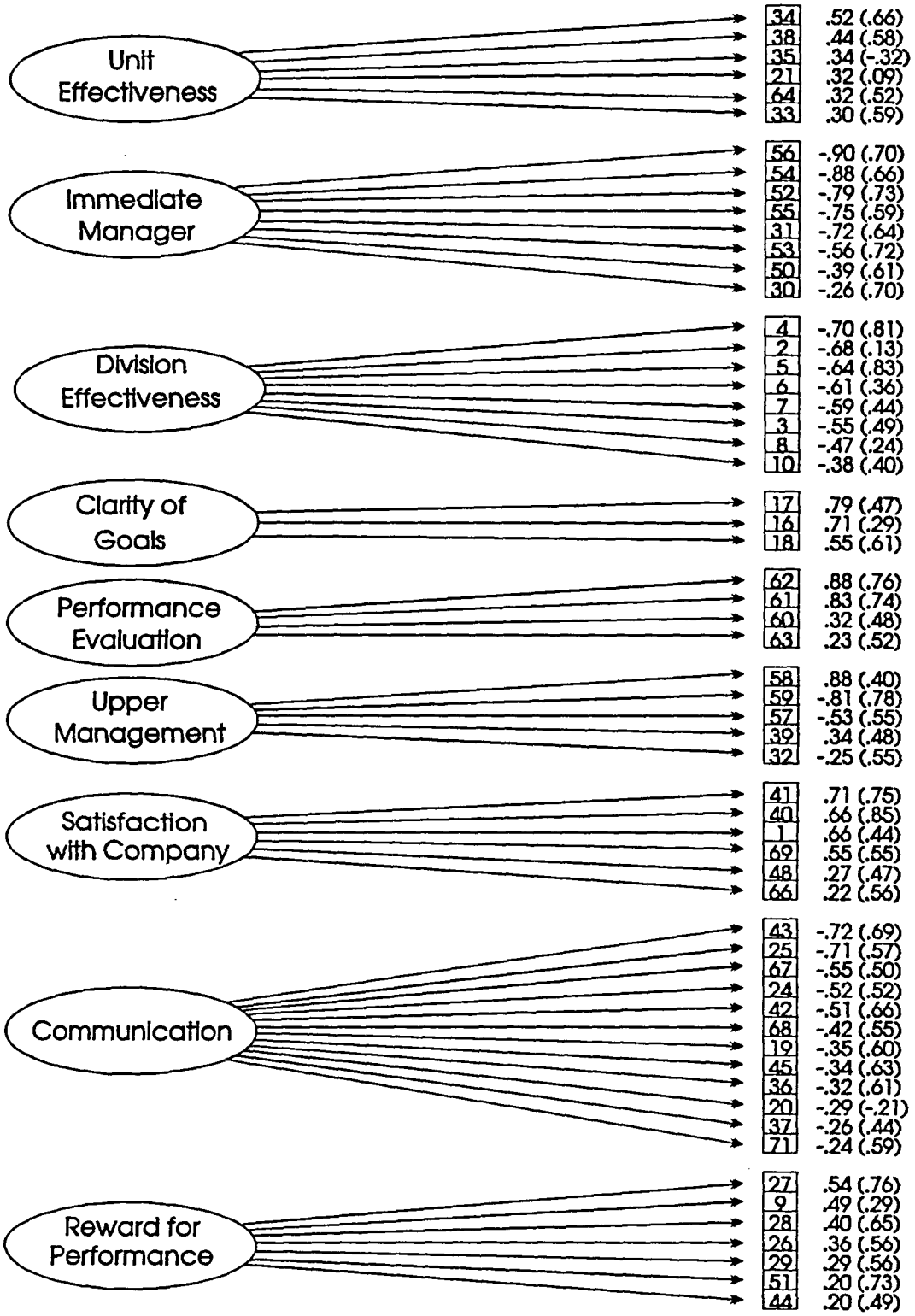
Table 3. Correlations between the first-order factors

Factor Name	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Unit Effectiveness	---								
2. Immediate Manager	.67	---							
3. Division Effectiveness	.68	.56	---						
4. Clarity of Goals	.48	.41	.51	---					
5. Performance Evaluation	.49	.54	.39	.42	---				
6. Upper Management	.61	.59	.66	.47	.43	---			
7. Satisfaction with Company	.57	.49	.62	.44	.41	.65	---		
8. Reward for Performance	.67	.69	.61	.52	.56	.66	.67	---	
9. Communication	.71	.65	.67	.54	.48	.63	.63	.73	---

Table 4. Factor loadings of first-order factors on second-order factor

Factor Name	Factor Loading/Communality
Reward for Performance	.91
Division Effectiveness	.89
Immediate Manager	.88
Upper Management	.87
Clarity of Goals	.85
Unit Effectiveness	.81
Performance Evaluation	.79
Communication	.77
Satisfaction with Company	.76

Figure 1. Model of first-order factors and items.
Note. The factor loadings appear to the right of the item number. Exploratory (Confirmatory)


Unit Effectiveness
34 .52 (.66)
38 .44 (.58)
35 .34 (-.32)
21 .32 (.09)
64 .32 (.52)
33 .30 (.59)
Immediate Manager
56 -.90 (.70)
54 -.88 (.66)
52 -.79 (.73)
55 -.75 (.59)
31 -.72 (.64)
53 -.56 (.72)
50 -.39 (.61)
30 -.26 (.70)
Division Effectiveness
4 -.70 (.81)
2 -.68 (.13)
5 -.64 (.83)
6 -.61 (.36)
7 -.59 (.44)
3 -.55 (.49)
8 -.47 (.24)
10 -.38 (.40)
Clarity of Goals
17 .79 (.47)
16 .71 (.29)
18 .55 (.61)
Performance Evaluation
62 .88 (.76)
61 .83 (.74)
60 .32 (.48)
63 .23 (.52)
Upper Management
58 .88 (.40)
59 -.81 (.78)
57 -.53 (.55)
39 .34 (.48)
32 -.25 (.55)
Satisfaction with Company
41 .71 (.75)
40 .66 (.85)
1 .66 (.44)
69 .55 (.55)
48 .27 (.47)
66 .22 (.56)
Communication
43 -.72 (.69)
25 -.71 (.57)
67 -.55 (.50)
24 -.52 (.52)
42 -.51 (.66)
68 -.42 (.55)
19 -.35 (.60)
45 -.34 (.63)
36 -.32 (.61)
20 -.29 (-.21)
37 -.26 (.44)
71 -.24 (.59)
Reward for Performance
27 .54 (.76)
9 .49 (.29)
28 .40 (.65)
26 .36 (.56)
29 .29 (.56)
51 .20 (.73)
44 .20 (.49)

correlate as were the nine first-order factors.

The factor loadings showed a reasonable fit with a few exceptions (see Appendix H). By looking at the factor loadings it appears there are several items that might be misspecified. An examination of the squared multiple correlations (the amount of variance in the item explained by the model), and the modification indices (measures of predicted decrease in chi-square if a single constraint is removed) (Joreskog & Sorbom, 1989) support this finding. These items are "Employees in my work unit work together as a team", "All in all, how would you rate your own Division on striving for excellence?" and "I receive enough feedback on how well I do my work."

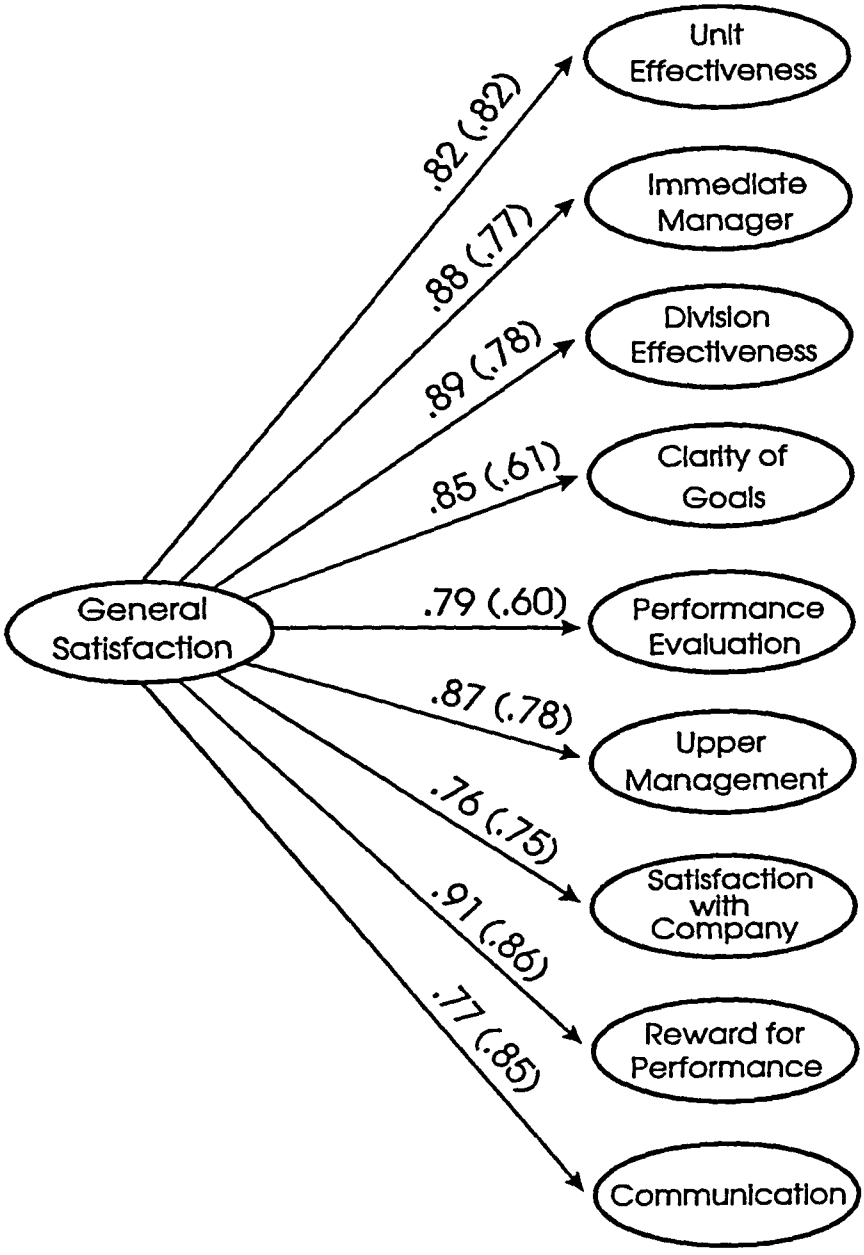
Indices of fit are supposed to represent the accuracy with which the correlation matrix is reproduced from the factor loadings. The indices of fit on this confirmatory factor analysis were very low by conventional guidelines. The chi-square for the model is 78,469.24 with 1652 degrees of freedom. The chi-square for the null model is 132,761.75 with 1711 degrees of freedom. Although both chi-squares are highly significant this is in part due to the large sample size. The chi-square for the model is significantly better than the null model, indicating that the model as it is, is better at explaining the data than no model. However, the other indices also reflect a poor fit. The minimum fit function is high, 17.82. This number is the basis for most other indices including chi-square. Zero is a perfect fit and there is no upper limit (Marsh, Balla, & McDonald, 1988). The root mean square residual, the square root of the mean squared residual between the sample correlation matrix and the estimated correlation matrix, is .30. This is much higher than

researchers like to see because the range is only 0 to 1. The goodness of fit index is .49, the adjusted goodness of fit index (adjusted for the degrees of freedom for the model) is .46. The normed fit index is .41, and the non-normed fit index is .39. The normed fit index and the non-normed fit index compare the fit of the model with the fit of the null model which assumes that all the items are uncorrelated. All four of these indices are well below the general guideline of .90 for a good fit. The fitted residuals range from -.23 to .79 with a possible range of -1 to 1. These are high; |.05| is considered a reasonable fit (Pedhazer & Schmelkin, 1991).

The next step of the confirmatory analysis is to evaluate the relationship between first-order factors and the second-order factors from the exploratory analyses (see Figure 2). However, LISREL requires indicants of the first-order factors. To maintain the emphasis on the higher order structure and focus the LISREL program on estimating the paths among the first and second-order factors, scale scores were calculated for each first-order factor. Therefore, each first-order factor has a single indicator. The nine first-order factors were permitted to correlate with each other as were the residuals.

The fit for the higher-order structure to the data was excellent. Almost all of the goodness of fit indices were well above .90 (chi-square for the model with 27 degrees of freedom was 1,330.91, the chi-square for the null model with 36 degrees of freedom was 25,355.46, minimum fit function was .30, the root mean squared residual was .04, goodness of fit index was .94,

Figure 2. Model of the second-order factor and first-order factors.
Note. Exploratory (Confirmatory)


General Satisfaction
Unit Effectiveness
Immediate Manager
Division Effectiveness
Clarity of Goals
Performance Evaluation
Upper Management
Satisfaction with Company
Reward for Performance
Communication
.82 (.82)
.88 (.71)
.89 (.78)
.85 (.61)
.79 (.60)
.87 (.78)
.76 (.75)
.91 (.86)
.77 (.85)

adjusted goodness of fit was .89, normed fit index was .95, non-normed fit index was .93, and the fitted residuals ranged from -.08 to .08).

The sample was now evaluated as a whole again. The coefficient alpha estimate of reliability for the instrument based on the 59 items used in the factor analysis` was .97. Using the Spearman-Brown formula an average item reliability of .35 was calculated. This is a slight improvement over the original instrument which had an average item reliability of .31. The reliability estimates for the factor scales are presented in Table 5. Most of these reliability estimates are acceptably high, .80 is the conventional guideline for reliability estimates for use with groups (Nunnally & Bernstein, 1994). Performance Evaluation, is an area for concern and would benefit from careful monitoring in future administration. Perhaps a reevaluation of the items in this factor for wording changes or the addition or deletion of items to try to improve the reliability of this scale.

There is a wide range in reliability estimates for the scales based on the company's topic areas (see Table 6). The data that has been collected and interpreted in the framework of both Job and Recognition and Rewards should be viewed with caution as the reliability estimates are lower than .80. The scale Service Quality has a reliability estimate of .54 which is unacceptable. Using this scale to interpret data is strongly discouraged.

The reliability estimates say nothing about what construct is being measured, only whether the measure itself is internally consistent. The reliability of the factor scales is generally higher, and has less variability with

Table 5. Reliability estimates for factor scales

Factor Name	Reliability Estimate	Number of Items
Unit Effectiveness	.81	6
Immediate Manager	.92	8
Division Effectiveness	.88	8
Clarity of Goals	.78	3
Performance Evaluation	.71	4
Upper Management	.82	5
Satisfaction with Company	.82	6
Reward for Performance	.90	12
Communication	.84	7

Table 6. Reliability estimates for company topic areas

Topic Area	Reliability Estimate	Number of Items
General Satisfaction	.85	10
Organizational Effectiveness	.91	12
Management	.87	8
Service Quality	.54	4
Communication	.82	8
Job	.77	12
Recognition and Rewards	79	7
Career	.80	5
Employment Environment	.80	7

fewer items than the company topic areas.

Correlations were calculated among the factor scales and the company topic areas; they are shown in Appendix I. This should be viewed only as an exploratory analysis because the overlap of items in the company topic areas will inflate the correlations.

Performance and Factors

Based on the total sample, scale scores were calculated for each of the nine factors identified in the factor analysis. Scale scores were also calculated for the nine topic areas used by the company. The scores were calculated for each individual. Then each scale score was averaged within each department. Correlations were computed between each scale score for a department and the average performance rating for that department. Also, the correlations between each of the original 71 items and the department's average performance ratings were calculated. The use of anonymous questionnaires and the confidentiality of individuals' performance rating required the use of the department as the level of analysis. This level has support from previous research.

The five point performance ratings were averaged across all the individuals in each department that had a response rate of greater than 80% and a minimum of 5 respondents. There were 358 departments, totaling 4,902 individuals, that met these criteria. The average performance rating across all the individuals in the departments used in this analysis is 2.33 with a standard deviation of .67, and a range from 1.20 to 3.25. The simple average of performance ratings within a department were then correlated

with the department's scale scores. Table 7 presents these correlations for the factor scales and Table 8 for the company topic scales. Five of the nine factor scales had statistically significant correlations, however, with the highest correlation of .19 there is some question of practical significance. Six of the company topic areas were statistically significant. The strongest correlation was .33 with the company topic area Job. All the rest were below .20.

The average performance ratings were also correlated with each item, averaged across the department (see Appendix J). Four items were correlated .25 or above with performance ratings. These were "Employees in other units work with my unit as a team." (.33), "I feel encouraged to come up with new and better ways of doing things." (.27), "How do you rate the quality of equipment you use to do your job?" (.51), and "Considering everything, how would you rate your overall satisfaction in 'company name' at the present time?" (.25). While little weight should rest on the responses to a single item, the strength of these correlations may merit follow-up research. If work is done to identify what it is about each of these items that leads to these correlations, perhaps attitude scales could be developed to better tap performance ratings.

Table 7. Correlations between each factor scale score and the aggregated performance rating

Factor Name	Correlation with Performance Rating
Unit Effectiveness	***18***
Immediate Manager	10
Division Effectiveness	07
Clarity of Goals	08
Performance Evaluation	***14***
Upper Management	07
Satisfaction with Company	***19***
Reward for Performance	***14***
Communication	***13***

Table 8. Correlations between each company topic area score and the aggregated performance rating

Company Topic Area	Correlation with Performance Rating
Career	-05
Communication	***15***
Employment Environment	***13***
General Satisfaction Index	***14***
Job	***33***
Management	07
Organizational Effectiveness	10
Reward and Recognition	***14***
Service Quality	***17***

Note. Decimal points have been omitted.
Entries in italic and bold-type are significant at the $p<.05$ level.
The number of cases for these calculations was 358.

DISCUSSION

In the interest of blending the science and application of industrial and organizational psychology, the results of this project need to be interpreted in the framework of both systems. The purpose is to better understand the employee attitude survey as it exists as well as to make practical recommendations for refinements. The results of this project indicate that with some minor changes this employee attitude survey can have reasonable psychometric properties. Empirical support for the psychometric soundness of this survey will provide the organization with a basis for the interpretation and implementation resulting from the data. These changes are not beyond the resources of most organizations.

Exploratory Factor Analysis

The organization has the total employee attitude survey divided into the same number of scales that where found in the factor analysis. However, the items that compose the scales are different (see Appendix B). From the factor analyses, Unit Effectiveness and Immediate Manager address issues that are close to the employee such as work flow and the competency of the manager. Division Effectiveness contains the items related to the efficiency of the division. An employee's understanding of work related goals and objectives is tapped by Clarity of Goals. Performance Evaluation is composed of items that specifically address the formal evaluation process. Upper management reflects attitudes towards the management of the organization in general. Other factors are Satisfaction with Company and

Reward for Performance. Communication is the last factor and addresses the flow of information within the organization.

It is possible that the scales based on the factor analysis of this project will not meet all the needs of the company. In this case, the organization should consider working from the scales that resulted from the factor analyses to change the instrument rather than relying on the current system. If the items are tapping into the latent variables described in the factor names, then the continual use of the current topic areas may lead to misinterpretation of the results as the instrument will not be measuring what the organization believes it is measuring.

The factors identified seem to represent more of a hierarchical structure than the organization's current topic areas. Specifically, Unit Effectiveness is differentiated from Division Effectiveness and responses concerning the Immediate Manager are separate from responses concerning Upper Management. Some factor scales have a similar theme to the company topic areas. For example, the factor Reward for Performance and the topic area Recognition and Rewards both focus on rewards although all of the items in these scales are not the same. There are some scales that reflect different aspects of the organization than any currently in use such as Performance Evaluation and Clarity of Goals.

One of the assumptions of this project is that each item would appear in only one scale. However, the factor loadings from the exploratory factor analysis (Appendix G) show two items that have fairly strong cross loadings. For example, the highest loading of the item "All in all, my unit is an

effectively managed, well-run organization" is on factor 1, Unit Effectiveness (.44). However, this item also had a moderate loading (-.33) on factor 2, Immediate Manager. Considering content, this items fits with both scales. The item, "All in all, how would you rate your own division on listening to employees (their ideas and suggestions, etc.)?" that is currently included in Division Effectiveness with a factor loading of -.38 could also be in Communication with a loading of .30. Further research is necessary to know if these changes would improve the instrument.

Also worthy of note, the two factors accounting for the most variance in the instrument, Unit Effectiveness and Immediate Manager, address content that is very close to the individual employee. This supports the original goal of the organization when developing this survey -- to create an instrument to measure attitudes and issues under the control of lower-level managers.

The final instrument in this project is 12 items shorter than the original instrument. As stated previously, it is not necessarily being recommended that these items be dropped from the survey. Some items may provide very useful information to the organization. If a single item is to be used it is very important that the wording be clear and direct. The results from such an item must be interpreted with caution as this is in effect a one item scale. Organizations are often interested in a wide variety of information that when developed into full length scales create an extremely long survey. The careful use of single items may be a plausible solution to this problem. For example, the item "How do you rate your total benefits program (insurance,

medical, etc.)?" was removed based on low common variance. However, employees' perceptions of an organization's benefit program are important, and if the organization is interested in a general indication of employees attitudes on this topic then this item alone is probably sufficient.

There were other items removed for ambiguous wording. These items should be examined closely by the organization to evaluate the purpose of the item and to choose the simplest and clearest wording possible. There were three items in a string that were removed. The string began with "How do you feel about the following?" and the items where "The emphasis, where you work, on doing work of high quality," "The number of approvals that, on average, is required to get a decision made where you work," and "The emphasis, where you work, on correcting poor employee performance." It is recommended that these items be in a string that begins with "How would you rate your unit on each of the following?". This would eliminate the "where you work" phrase in each of these items which tends to make the structure of the item complex. The items might read, "The emphasis on doing work of high quality," "The number of approvals the are usually required to get a decision made," and "The emphasis on correcting poor employee performance."

Also, the revised items should be examined in the context of the instrument as a whole. These items should be treated as new items to the survey; the contribution of the item in light of the existing scales should be examined. If the item does not appear to fit with an existing scale and it is not intended to stand alone, then perhaps another scale is necessary and

more items should be developed to supplement the measurement of this added construct.

After the 10 items were removed the exploratory factor analysis with 61 items showed a factor containing two items that seemed to address workload or job stress. These items were removed from further analyses, however, the construct is important. It is recommended that additional items be developed and tested to create a scale to tap this latent variable. The new items and the scale as a whole should be monitored closely over the first several administrations to ensure acceptable psychometric standards.

In addition, this instrument is fairly long, the benefits of the addition of any item or scale should be weighed against the disadvantages of a long instrument. Surveys designed for long term use should be examined regularly for items that are outdated or no longer appropriate.

Confirmatory Factor Analysis

The factor loadings from the confirmatory factor analysis are satisfactory. However, there are three items that have weak loadings. In the exploratory factor analysis, two of these, "Employees in my unit work together as a team," and "I receive enough feedback on how well I do my work," while having a moderate loading on a single factor, each have loadings on several other factors in the .10 to .20 range. The third item, "All in all, how would you rate your own Division on striving for excellence," has a single strong loading and weak loadings on all other factors. However, the modification indices for this third item show a moderate improvement could be expected if a relationship were permitted to any of the other factors. These findings imply

that a reevaluation of the wording of these items might help to establish a stronger relationship between the item and the factor. Perhaps these items should not be included in scales if the information they provide is too general. "All in all, how would you rate your own Division on striving for excellence" might yield more consistent results if it were more specific, for example, "all in all, how would you rate your own Division on striving for excellence in customer service." Further research on these items in particular and the instrument as a whole will clear up some of these ambiguities.

Although the confirmatory factor loadings of the items on the first-order factors were good, the indices of fit were not. This could be due to several reasons. It is possible that the model does not fit the data. A more likely reason, however, is that it is unknown from these results how accurately the model based on Group 1 fits the data in Group 2.

The most obvious complication is sample size. Models that are fit using very large samples will almost always be rejected statistically (Bentler, 1980; Bentler & Bonett, 1980). Indices of fit are all, to some extent, dependent on sample size. Some are relatively immune from the impact of sample size. However, an index that is relatively immune to sample size with a sample size of 700 or 800 respondents is no longer immune with over 4000 respondents. It may seem tempting to choose a subset of the data and calculate the analyses on a smaller sample size. However, this is altering the study for the purpose of improving the fit indices is inappropriate scientifically, and is strongly discouraged in the literature (March, Balla, & McDonald, 1988).

Another complication is the size of the model. The first stage of the confirmatory factor analysis (the items to the first-order factors) requires estimating 1,806 paths. The estimation of each path is based on the previously estimated paths. There is a problem of bias resulting from estimation error. Breaking the model into smaller pieces and using a separate confirmatory factor analysis on for example, each factor and its individual items would decrease the number of paths being estimated in each analysis. This should improve the fit indices. But again, this is altering the structure of the project just to improve the fit indices.

The third complication is the number of items. One basic premise of LISREL is that a model will explain all of the variance in the data. The variance of all the items, across all the respondents is simply more variance than can be accounted for by this model. Items could be summed into subscales and the subscales could be used as the indicator of the factors. This would decrease the number of indicators, increase reliability, and likely improve the fit. However, without evidence to support the subscales this is just another way of manipulating the data to make the model appear to fit the data better. Interpretation of the results should be based on a careful examination of all the results (Marsh, Balla, & McDonald, 1988). Particularly for this project, the indices of fit are not as appropriate in evaluating the accuracy of the model for the reasons given above.

The fit indices of the confirmatory factor analysis for the second-order factors reflect the decrease in the amount of error variance and the number of paths being estimate. Summing the items in each factor into a single

indicator decreases the random measurement by increasing the reliability estimate (Brown, 1983). The number of paths estimated is reduced to 54 from the original 1,806 because each factor has only one path associated with the higher-order factor.

Performance and Factors

The analyses using the aggregated performance ratings yielded very interesting results. Considering that previous research has found a weak relationship between individual job attitudes and individual performance (Locke, 1976) it is encouraging that several scales correlate .15 or above with the performance data.

If the organization is interested in investigating further the relationship between the factor scales and performance, it would be best if a research program was developed to match the individual performance rating with the individual survey responses. This information can then be aggregated to the work group level if desired, however, the one to one match would improve the soundness of any findings. Confidentiality would be a critical issue in this type of study, and the organization should consider carefully the procedures of such a project.

There are limitations to the performance ratings as used in this project. There are the problems typically associated with this type of evaluation method including differences between raters, halo effects, and situational constraints. However, even if the performance data are assumed to be accurate, the method of aggregation used in this project was not optimal but was dictated by availability of information. Criteria were used to help ensure

the quality of the analysis, the minimum of 5 respondents in a department and the required 80% response rate. However, without a one to one match, the results concerning the performance ratings should be interpreted with caution. The correlations between several of the scales and individual items are encouraging. In general, researchers expect low correlations between job attitudes and performance (Locke, 1976).

Addtional Recommendations to the Company

Several issues in addition to those discussed previously were noted by the researchers during the course of this project that may be of practical use. The following suggestions are designed to be specific and practical.

1. Be aware of which items are evaluative and which are descriptive. Although the difference did not seem to cause a problem in these analyses the scales may be more valid if evaluative items are used only for evaluative information and descriptive items are used only for descriptive information.

2. Consider using all 5-points currently available in the analyses for the managers. If this is not possible then consider changing the response scales to 3-points.

3. Consider changing the response scales to be consistent. For example, the scale for some items is the same except for the midpoint which is either "Fair" or "So-so". As much consistency as possible between scales is recommended.

4. Approximately half of the items should be reverse scored. This will diminish the effects of response sets.

5. Any items added to the survey should be consistent with the scales in use. If another construct is of interest, when possible, three or more items should be developed and included in the survey.

6. Evaluate all items on an ongoing basis. In particular, clarity and timeliness of wording should be considered.

Conclusions

This project is a start towards establishing the psychometric credibility of this instrument. The reliability is very good for the survey as a whole and acceptable for most of the factors. Content-related evidence is best established during development and as items are changed, added, or deleted this support can be continually updated. The reliance on face validity and expert judgment is fairly standard evidence for content-related validity, however careful consideration on an ongoing basis of the items and the constructs the organization would like measured is encouraged.

Criterion-related validity can be particularly important to an organization given their business-oriented goals. Correlating the performance ratings with the scales is a step forward in the validation of this instrument. However, the limitations of the performance data used in the current project prohibit conclusive statements and as such this evaluation should only be used as a starting point. It is hoped that a regular check of criterion-related validity can be structured into this survey program.

The factor analysis supports construct-related validity. Construct-related validity is the evidence supporting the relationship between a measure and the theoretical construct. Factor analysis measures the

relationship between items and latent variables. Items that load on factors that are theoretically sound when content is examined, and are supported by a confirmatory factor analysis provide evidence of construct-related validity.

Although there definitely is support for the scales proposed for this instrument there is also potential for improvement. To ensure the progressive evolution of this instrument, continual monitoring of the data at each administration is recommended. This will allow fine tuning of items and scales. New items and scales could be developed and tested on an ongoing basis with every administration of the survey. This may seem as if it is beyond the time and budget resources of most practitioners, but that is not necessarily true. Sophisticated statistical analyses are not absolutely necessary. Ideally, items and scales would be tracked, confirmatory factor analyses would be completed, and relationships to external criteria would be evaluated. Barring this, a thorough examination of the inter-item correlations can provide much useful information and alert the practitioner to possible problems. Reliability estimates are easy to calculate and evaluate. With the new statistical software packages that can be run on a personal computer, a basic factor analysis has become a relatively uncomplicated and quick analysis to run. The largest time investment is becoming familiar with and understanding the statistical output and the use of the software.

Establishing a procedure for the systematic gathering of criterion-related validity evidence, for example, a performance measure, would be time consuming and complex. However, this is an area in which most organizations have a strong interest. It might be possible for a practitioner to

argue the importance of establishing the relationship between the attitude survey and performance in order to get the resources necessary to set up the program.

Many industrial and organizational psychologist, both scientist and practitioners, would propose that the psychometric development and maintenance of an attitude survey is very important and deserving of time and resources. However, the realities of the applied setting do not always allow for this. The careful allocations of resources available can accomplish some of these recommendations which is a beginning to better measurement.

There is another option available for the practitioner who would like to monitor the psychometric properties of a survey but doesn't have the resources for an elaborate research program. This is an opportunity for a partnership. If practitioners and organizations with an interest in employee attitudes could be matched up with scientists doing research on employee attitudes, both sides could benefit. The organization would produce a more psychometrically sound survey that is monitored to ensure it maintains its quality, and the scientist collects data on attitudes, items, scales, and any external criteria being used. Practitioners would be exposed to the style and methods of academic research. Scientists would experience the constraints and issues faced in the applied setting. Relationships like these could do much to bring the worlds of application and academia closer together as we work to narrow the schism.

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APPENDIX A
ITEMS AND SCALES

	Item
1.	How would you rate "company name" as a company to work for compared to other companies? One of the best / Above average / Average / Below average / One of the worst
	All in all, how would you rate <u>your own Division</u> on each of the following?
2.	Striving for excellence
3.	Having a clear sense of direction
4.	Providing high quality products/services
5.	Being innovative in its products/services
6.	Being responsive to customers (their requests, questions, complaints, etc.)
7.	Being efficient, i.e., doing its work at a low cost for the amount accomplished
8.	Having a cooperative atmosphere, i.e., The various parts of your Division working well together in the interests of your Division as a whole
9.	Keeping employees informed about matters that affect them
10.	Listening to employees (their ideas and suggestions, etc.) Very good / Good / So-So / Poor / Very poor / I have no idea
	How do you feel about each of the following?
11.	The amount of work you are expected to do
12.	The emphasis, where you work, on doing work of high quality

	Item
13.	The emphasis on keeping costs down
14.	The number of approvals that, on average, is required to get a decision made where you work
15.	The emphasis, where you work, on correcting poor employee performance Much too much / Too much / About the right amount / Too little / Much too little
16.	I understand the strategy and business goals of my Division Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
17.	I can see the relationship between what I do (my job responsibilities, objectives, etc.) and my Division's overall goals and objectives Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
18.	I have clear idea of the results expected of me on my job Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree

	Item
19.	My job makes good use of my skills and abilities Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
20.	I receive enough feedback on how well I do my work Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
21.	Employees in my unit work together as a team Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
22.	Employees in other units work with my unit as a team Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
23.	Job pressures seriously interfere with my time for my personal and family life Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
24.	The better my performance, the bigger my merit increases will be Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree

Item
25. The better my performance, the better will be my opportunity for promotion to a better job Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
26. I am satisfied with the availability of information I need to do my job Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
27. When changes are made where I work, communications are usually handled well (sufficient explanation is given as to the reasons for the changes, sufficient notice is given, etc.) Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
28. I have sufficient information about what is going on in other parts of the business Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
29. When I have a question or need information, I am usually able to find the right person in "company name" to talk to without too much difficulty Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree

Item
30. Employees where I work can usually get a reasonable hearing for their complaints Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
31. I feel I can discuss work-related problems and concerns with my immediate manager without fear of consequences or reprisals Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
32. If I cannot get a problem resolved by discussing it with my immediate manager, I feel I can take it to higher management without fear of consequences or reprisals Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
33. Decisions are made where I work without undue delay Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
34. Where I work, the work is well organized (smooth workflow, good methods and procedures, etc.) Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree

	Item
35.	There is a lot of wasted time and effort where I work (redundant work, unnecessary paperwork, poor quality work that has to be redone, etc.) (reverse scored) Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
36.	I feel encouraged to come up with new and better ways of doing things Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
37.	Management where I work encourages employees and managers to report both good and bad news up-the-line Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
38.	All in all, my unit is an effectively managed, well-run organization Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
39.	All in all, my Division is an effectively managed, well-run organization Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree

Item
40. All in all, "company name" is an effectively managed, well-run organization Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
41. I feel proud to work at "company name" Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
42. How satisfied are you with the recognition you receive for doing a good job? Very satisfied / Satisfied / Neither satisfied nor dissatisfied / Dissatisfied / Very dissatisfied
43. How satisfied are you with your opportunity to get a better job in "company name"? Very satisfied / Satisfied / Neither satisfied nor dissatisfied / Dissatisfied / Very dissatisfied
44. How satisfied are you with the training you received for your present job? Very satisfied / Satisfied / Neither satisfied nor dissatisfied / Dissatisfied / Very dissatisfied

Item
45. How satisfied are you with your involvement in decisions that affect your work? Very satisfied / Satisfied / Neither satisfied nor dissatisfied / Dissatisfied / Very dissatisfied
46. How do you rate your total benefits program (insurance, medical, etc.)? (Answer only if you are eligible for benefits.) Very good / Good / Fair / Poor / Very poor
And, how do you rate each of the following?
47. The amount of pay you receive for your job
48. Your job security
49. The quality of equipment you use to perform your job (answer only if applicable)
50. The extent to which management treats you with respect and dignity
51. The consistency with which policies are administered where you work Very good / Good / So-So / Poor / Very poor
52. Overall, how good a job do you feel is being done by your immediate manager? Very Good / Good / Fair / Poor / Very poor

	Item
	How would you rate your immediate manager on...
53.	Being technically competent (knowing his/her job)
54.	Being competent in "human relations" (dealing with the people who work for him/her)
	Very good / Good / So-So / Poor / Very poor
	My immediate manager:
55.	Is available to talk about things that bother me about my job
56.	Creates an open and trusting work environment with employees
	Almost always / Often / Sometimes / Rarely / Almost never / Don't know/Too new to evaluate
	All in all, how good a job do you think is being done by each of the following?
57.	Your immediate manager's manager
58.	The head of your Division
59.	Top management of your Division, as a group
	Very good / Good / So-So / Poor / Very poor / Don't know
60.	Agree or Disagree: I understand the criteria on which my performance rating is based.
	Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree / Too new to evaluate

	Item
	My last performance evaluation...
61.	Reflected my performance accurately
62.	Gave me a good idea of my strengths and weaknesses Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
63.	My current performance plan ("specific name of plan") requires me to give high quality service to external customers of the bank or other "company name" units Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree / Don't know
64.	My unit emphasizes quality throughout the work process Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree / Don't know
65.	My unit receives high quality service/products for other "company name" units it depends on Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree / Don't know

	Item
66.	I am aware of job openings in "company name" for which I am qualified and in which I might be interested Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
67.	I am given a real opportunity to improve my skills in "company name" Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
68.	From what I have seen, the most qualified people are selected when job opportunities come up Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
69.	Considering everything, how would you rate your overall satisfaction in "company name" at the present time? Very satisfied / Satisfied / Neither satisfied nor dissatisfied / Dissatisfied / Very dissatisfied

Item
70. Do you feel the results of the last employee opinion survey were used constructively by management? Yes, definitely / Yes, probably / Hard to say / No, probably not / No, definitely not / I have no idea (Hired since the last survey)
71. Do you believe the results of this survey will be used constructively by management? Yes, definitely / Yes, probably / Hard to say / No, probably not / No, definitely not

APPENDIX B
COMPANY TOPIC AREAS AND FACTOR NAMES

Company Topic Area Item		Factor Name
General Satisfaction		
1.	as a company to work for	Satisfaction with Company
30.	reasonable hearing for complaints	Immediate Manager
42.	satisfaction with recognition	Reward for Performance
43.	satisfaction with opportunity for promotion	Reward for Performance
46.	rate your total benefits program	Removed
47.	amount of pay	Removed
48.	job security	Satisfaction with Company
50.	management treats you with respect	Immediate Manager
52.	how good a job done by immediate manager	Immediate Manager
69.	performance rating criteria	Satisfaction with Company
Organizational Effectiveness		
2.	striving for excellence	Division Effectiveness
3.	clear sense of direction	Division Effectiveness
4.	providing quality products/services	Division Effectiveness
5.	innovative in products/services	Division Effectiveness
6.	responsive to customers	Division Effectiveness
7.	being efficient	Division Effectiveness
8.	cooperative atmosphere	Division Effectiveness
9.	keeping employees informed	Communication
10.	listening to employees	Division Effectiveness
38.	unit is effectively run	Unit Effectiveness
39.	Division is effectively run	Upper Management
40.	"company name" is effectively run	Satisfaction with Company

Company Topic Area Item	Factor Name
Management	
52. how good a job done by immediate manager	Immediate Manager
53. immediate manager on technical competency	Immediate Manager
54. immediate manager on "human relations"	Immediate Manager
55. immediate manager on available to talk	Immediate Manager
56. immediate manager creates open environment	Immediate Manager
57. how good job done by immediate manager's manager	Upper Management
58. how good job done by head of Division	Upper Management
59. how good job done by top management	Upper Management
Service Quality	
12. emphasis on high quality work	Removed
63. performance plan requires good service	Performance Evaluation
64. unit emphasizes quality	Unit Effectiveness
65. unit receives quality from other units	Satisfaction with Company

Company Topic Area Item		Factor Name
Communication		
16.	understand strategy	Clarity of Goals
17.	relationship between job and Division goals	Clarity of Goals
18.	clear idea of results expected	Clarity of Goals
26.	availability of information for job	Communication
27.	changes communicated well	Communication
28.	information about other parts of the business	Communication
29.	can find right person to answer questions	Communication
37.	report good and bad news	Reward for Performance
Job		
14.	number of approvals	Removed
19.	good use of skills	Reward for Performance
21.	my unit works as team	Unit Effectiveness
22.	other units work with my unit as team	Removed
23.	job pressures interfere with personal time	Removed
33.	decisions made without delay	Unit Effectiveness
34.	work is well organized	Unit Effectiveness
35.	a lot of wasted time and effort	Unit Effectiveness
36.	come up with new and better ways	Reward for Performance
44.	satisfaction with training	Communication
45.	satisfaction with involvement in decisions	Reward for Performance
49.	quality of equipment	Removed

Company Topic Area Item	Factor Name
Recognition and Rewards	
20. receive enough feedback	Reward for Performance
24. better performance, bigger merit increase	Reward for Performance
42. satisfaction with recognition	Reward for Performance
47. amount of pay	Removed
60. performance rating criteria	Performance Evaluation
61. last evaluation accurate	Performance Evaluation
62. last evaluation reflected strengths and weaknesses	Performance Evaluation
Career	
25. better performance, better promotion	Reward for Performance
43. satisfaction with opportunity for promotion	Reward for Performance
66. aware of job openings	Removed
67. opportunity to improve skills	Reward for Performance
68. most qualified people selected	Reward for Performance
Employment Environment	
30. reasonable hearing for complaints	Immediate Manager
31. can discuss problems with immediate manager	Immediate Manager
32. can discuss problems with higher management	Upper Management
46. rate you total benefits program	Removed
48. job security	Satisfaction with Company
50. management treats you with respect	Immediate Manager
51. consistency of policy administration	Communication
Other Topics	
11. amount of work	Removed
13. emphasis on costs	Removed
15. correcting poor performance	Removed
41. proud to work for "company name"	Satisfaction with Company

APPENDIX C
DEMOGRAPHIC ITEMS

Item	N	(%)
What is your grade?	7640	(87.2)
50-54	2228	(29.2)
55-57	439	(5.7)
75-79	2194	(28.7)
80 or above	1534	(20.1)
Don't know/Non-graded	1245	(16.3)
Are you...?	8055	(91.9)
Male	2709	(33.6)
Female	5346	(66.4)
What is your race/ethnic background?	7876	(89.8)
American Indian/ Alaskan Native	43	(.5)
Asian/Pacific Islander	467	(5.9)
Black	293	(3.7)
Caucasian	6250	(79.4)
Hispanic	823	(10.4)
What is your age?	8006	(91.3)
40 or over	2675	(33.4)
under 40	5331	(66.6)
How long have you worked at "company name", that is, how many years since your service date?	8054	(91.9)
Less than 1 year	1320	(16.4)
1 -2 years	1588	(19.7)
3 - 5 years	2311	(28.7)
6 - 10 years	1271	(15.8)
More than 10 years	1564	(19.4)

Item	N		(%)
Are you:	7654		(87.3)
Exempt employees	4347		(56.8)
Full-time		4127	(94.9)
Part-time		127	(2.9)
Hourly		93	(2.1)
Non-Exempt (time sheet) employees	3307		(43.2)
Full-time		1971	(59.6)
Part-time		677	(20.5)
Hourly		659	(19.9)
Do you manage (i.e., have performance evaluation responsibility for) two or more employees or managers?	7612		(86.8)
Yes	1477		(19.4)
No	6135		(80.6)

Note. Total N=8,766.

APPENDIX D
PERFORMANCE EVALUATION FORM

Performance Planning, Coaching and Evaluation

EMPLOYEE NAME	SOCIAL SECURITY #	DEPARTMENT NAME	UNIT NUMBER

POSITION TITLE	DATE ASSIGNED TO PRESENT POSITION

PERFORMANCE REVIEW PERIOD: From: _____ Mo/Yr To: _____ Mo/Yr

PART I: PERFORMANCE PLAN

KEY OBJECTIVES AND MEASUREMENT CRITERIA	RESULTS RATING SCALE: FE = Far Exceeds E = Exceeds M = Met MSNA = Met Some Not All DNM = Did Not Meet
RANK	RATING:
RANK	RATING:
RANK	RATING:
RANK	RATING:
RANK MANAGEMENT RESPONSIBILITIES [Refer to Chapter 5 of the Manager's Guide]	RATING:
ONGOING RESPONSIBILITIES [List.....]	RATING:

Employee and Manager have discussed key performance objectives and criteria.

EMPLOYEE'S SIGNATURE	DATE	MANAGER'S SIGNATURE	DATE

UNPLANNED ACTIVITIES [Significant opportunities or challenges which occurred during review period]

PART II: PERFORMANCE SUMMARY		
OVERALL RATING		
COACHINGS: Comment on key points covered in the discussions that occur during the review period.		
DATE		
DATE		
DATE		
EMPLOYEE'S STRENGTHS		
SUGGESTED IMPROVEMENTS		
EMPLOYEE'S COMMENTS [Comments need not be confined to this space.]		
MANAGER'S COMMENTS		
REVIEW OF COMPLETED DOCUMENT:		
*EMPLOYEE'S SIGNATURE**	*EMPLOYEE'S PRINTED NAME*	*DATE*
MANAGER'S SIGNATURE	*MANAGER'S PRINTED NAME*	*DATE*
REVIEWING MANAGER'S SIGNATURE	*REVIEWING MANAGER'S PRINTED NAME*	*DATE*

**Employee's signature indicates employee has seen the completed evaluation form but does not necessarily imply agreement with the evaluation.*

[redacted]NT&SA

APPENDIX E
INTER-ITEM CORRELATIONS

	Item	1	2	3	4	5	6	7	8	9
1.	as a company to work for	---								
2.	striving for excellence	37	---							
3.	clear sense of direction	39	65	---						
4.	providing quality products/services	38	58	55	---					
5.	innovative in products/services	36	52	53	65	---				
6.	responsive to customers	32	49	46	53	48	---			
7.	being efficient	31	48	47	48	46	53	---		
8.	cooperative atmosphere	36	51	54	45	41	46	50	---	
9.	keeping employees informed	36	46	53	40	40	38	42	56	---
10.	listening to employees	41	49	53	43	44	43	43	59	69
11.	amount of work	-15	-03	-09	-07	-05	-06	-05	-11	-09
12.	emphasis on high quality work	05	16	11	13	07	09	08	06	07
13.	emphasis on costs	-13	***-01***	-02	-03	-03	-03	08	-05	-06
14.	number of approvals	-17	-12	-19	-12	-13	-15	-16	-20	-18
15.	correcting poor performance	09	18	17	14	14	12	17	20	22
16.	understand strategy	27	37	45	32	33	29	30	33	37
17.	relationship between job and Division goals	27	38	43	33	33	30	31	34	37
18.	clear idea of results expected	25	32	39	29	29	27	29	32	35
19.	good use of skills	33	33	34	30	31	27	29	30	33
20.	receive enough feedback	29	34	37	28	26	27	27	37	43
21.	my unit work as team	24	35	34	29	26	29	30	49	37

	Item	1	2	3	4	5	6	7	8	9
22.	other units work with my unit as team	24	28	31	27	26	27	26	43	31
23.	job pressures interfere with personal time	22	10	17	13	12	14	12	20	17
24.	better performance, bigger merit increase	33	29	29	25	24	22	23	30	34
25.	better performance, better promotion	33	33	33	27	29	25	25	32	37
26.	availability of information for job	29	32	40	33	33	28	31	36	45
27.	changes communicated well	31	36	45	33	32	31	33	43	61
28.	information about other parts of the business	27	28	35	27	28	25	26	32	44
29.	can find right person to answer questions	34	28	33	30	28	29	27	35	36
30.	reasonable hearing for complaints	33	38	37	31	30	30	29	42	47
31.	can discuss problems with immediate manager	27	32	33	27	25	25	24	36	39
32.	can discuss problems with higher management	31	30	32	26	26	25	24	36	37
33.	decisions made without delay	31	37	42	33	33	32	35	41	45
34.	work is well organized	32	39	46	39	35	35	40	44	43
35.	a lot of wasted time and effort*	24	27	30	27	26	25	32	30	28
36.	come up with new and better ways	31	35	34	31	32	27	28	33	37
37.	report good and bad news	28	36	35	28	29	26	26	37	43
38.	unit is effectively run	37	48	52	42	39	39	41	53	53
39.	Division is effectively run	42	51	56	45	43	43	44	55	52

* Reverse Scored

	Item	1	2	3	4	5	6	7	8	9
40.	"company name" is effectively run	58	32	40	37	36	34	33	35	36
41.	proud to work for "company name"	67	38	41	38	38	35	34	37	37
42.	satisfaction with recognition	35	36	37	29	28	26	26	39	43
43.	satisfaction with opportunity for promotion	38	31	34	27	30	25	25	32	37
44.	satisfaction with training	26	28	32	27	28	23	24	31	33
45.	satisfaction with involvement in decisions	34	36	40	33	33	29	31	39	45
46.	rate your total benefits program	32	13	10	14	13	08	10	10	14
47.	amount of pay	31	19	18	19	16	14	13	20	21
48.	job security	37	24	30	25	26	22	20	27	29
49.	quality of equipment	26	19	20	24	24	19	18	20	20
50.	management treats you with respect	36	41	41	33	31	29	30	46	47
51.	consistency of policy administration	36	41	46	36	35	34	37	47	51
52.	how good a job done by immediate manager	30	40	42	33	32	30	30	41	44
53.	immediate manager on technical competency	25	35	36	30	26	26	25	32	35
54.	immediate manager on "human relations"	27	35	37	28	28	27	27	39	42
55.	immediate manager on available to talk	24	31	32	26	24	26	23	34	37
56.	immediate manager on open environment	28	36	38	30	29	29	27	42	43

	Item	1	2	3	4	5	6	7	8	9
57.	how good job done by immediate manager's manager	33	41	44	36	34	33	32	42	41
58.	how good job done by head of Division	41	44	49	41	40	38	38	45	42
59.	how good job done by top management	44	43	48	41	41	39	38	45	42
60.	performance rating criteria	25	28	30	24	24	22	23	24	32
61.	last evaluation accurate	23	28	27	22	21	21	21	27	29
62.	last evaluation strengths and weaknesses	25	31	32	26	26	24	24	29	34
63.	performance plan requires good service	18	28	22	25	23	22	23	20	24
64.	unit emphasizes quality	29	45	39	40	35	35	36	36	36
65.	unit receives quality from other units	27	26	29	29	28	27	27	33	28
66.	aware of job openings	15	15	17	14	17	14	14	14	20
67.	opportunity to improve skills	37	32	34	29	31	25	25	31	37
68.	most qualified people selected	33	32	34	28	28	25	26	35	38
69.	overall satisfaction with company	62	40	45	39	37	36	36	44	44
70.	use of last attitude survey	41	33	35	29	31	28	29	36	39
71.	use of this attitude survey	43	33	36	30	30	28	29	36	40

	Item	10	11	12	13	14	15	16	17	18
10.	listening to employees	---								
11.	amount of work	-12	---							
12.	emphasis on high quality work	05	14	---						
13.	emphasis on costs	-09	22	13	---					
14.	number of approvals	-21	16	04	18	---				
15.	correcting poor performance	17	03	19	10	***01***	---			
16.	understand strategy	37	***00***	10	***01***	-10	13	---		
17.	relationship between job and Division goals	38	***00***	10	***00***	-10	12	67	---	
18.	clear idea of results expected	35	-06	11	***01***	-13	11	45	51	---
19.	good use of skills	37	***01***	10	***-01***	-14	12	31	37	43
20.	receive enough feedback	45	-08	07	***-02***	-12	19	31	33	43
21.	my unit work as team	38	-05	07	***01***	-08	26	23	24	27
22.	other units work with my unit as team	33	-07	04	-04	-14	14	22	23	24
23.	job pressures interfere with personal time	21	-46	-08	-19	-17	-02	07	08	16
24.	better performance, bigger merit increase	37	-10	07	-07	-15	12	26	28	27
25.	better performance, better promotion	42	-08	06	-06	-17	13	29	31	29
26.	availability of information for job	41	-10	08	-03	-17	14	34	34	41
27.	changes communicated well	52	-10	08	-04	-19	20	33	33	35
28.	information about other parts of the business	39	-03	04	-02	-13	15	36	33	27

	Item	10	11	12	13	14	15	16	17	18
29.	can find right person to answer questions	37	-13	04	-09	-20	11	26	27	26
30.	reasonable hearing for complaints	57	-06	04	-05	-13	19	30	32	31
31.	can discuss problems with immediate manager	46	-04	***01***	***-02***	-09	12	26	27	32
32.	can discuss problems with higher management	44	-09	03	-06	-15	10	26	28	29
33.	decisions made without delay	47	-08	07	-07	-32	20	30	32	32
34.	work is well organized	44	-18	09	-03	-17	21	30	32	36
35.	a lot of wasted time and effort*	30	-15	04	-04	-22	17	19	20	25
36.	come up with new and better ways	47	-02	06	-02	-14	12	31	32	31
37.	report good and bad news	49	-03	06	***-02***	-11	13	30	31	30
38.	unit is effectively run	56	-10	10	***-02***	-15	24	36	38	40
39.	Division is effectively run	56	-12	09	-06	-19	17	40	41	34
40.	"company name" is effectively run	38	-15	03	-12	-19	11	31	31	26
41.	proud to work for "company name"	43	-14	04	-10	-20	10	32	33	29
42.	satisfaction with recognition	48	-12	04	-07	-16	16	29	30	34
43.	satisfaction with opportunity for promotion	42	-08	02	-09	-18	12	28	29	27
44.	satisfaction with training	32	-10	03	-03	-13	14	28	29	34
45.	satisfaction with involvement in decisions	53	-10	05	-07	-22	15	33	35	37
46.	rate your total benefits program	13	-04	***-02***	-06	-03	03	09	09	07
47.	amount of pay	24	-16	-04	-11	-07	07	13	14	13

* Reverse Scored

	Item	10	11	12	13	14	15	16	17	18
48.	job security	32	-12	***-02***	-09	-17	***02***	23	24	26
49.	quality of equipment	21	-14	***02***	-12	-10	07	14	15	16
50.	management treats you with respect	56	-11	***02***	-06	-16	10	31	33	36
51.	consistency of policy administration	52	-10	06	-04	-20	22	33	34	36
52.	how good a job done by immediate manager	47	-09	05	-02	-13	19	28	29	32
53.	immediate manager on technical competency	37	-07	05	-01	-10	13	23	23	27
54.	immediate manager on "human relations"	45	-07	04	***-02***	-12	17	26	27	31
55.	immediate manager on available to talk	41	-06	***01***	***-02***	-09	11	24	25	30
56.	immediate manager on open environment	47	-08	03	-02	-11	16	26	29	33
57.	how good job done by immediate manager's manager	48	-10	04	-05	-17	14	31	31	29
58.	how good job done by head of Division	49	-10	03	-08	-22	11	38	38	30
59.	how good job done by top management	49	-14	04	-12	-22	-10	36	36	30
60.	performance rating criteria	32	-05	05	***00***	-10	11	34	34	43
61.	last evaluation accurate	31	-06	***02***	***-01***	-09	06	23	25	32
62.	last evaluation strengths and weaknesses	35	-06	06	***-01***	-11	12	27	28	35
63.	performance plan requires good service	25	03	06	03	-04	10	27	30	27
64.	unit emphasizes quality	38	***-02***	22	03	-06	19	33	36	36

	Item	10	11	12	13	14	15	16	17	18
65.	unit receives quality from other units	30	-13	04	-04	-19	11	21	21	21
66.	aware of job openings	20	-03	***02***	-02	-08	05	17	17	17
67.	opportunity to improve skills	41	-04	06	-06	-14	12	30	30	29
68.	most qualified people selected	41	-08	04	-05	-16	17	25	26	25
69.	overall satisfaction with company	50	-22	02	-13	-22	12	32	33	33
70.	use of last attitude survey	43	-13	05	-12	-20	17	28	29	24
71.	use of this attitude survey	47	-12	***02***	-10	-18	14	28	29	24

	Item	19	20	21	22	23	24	25	26	27
19.	good use of skills	---								
20.	receive enough feedback	44	---							
21.	my unit work as team	29	36	---						
22.	other units work with my unit as team	25	27	39	---					
23.	job pressures interfere with personal time	08	14	09	12	---				
24.	better performance, bigger merit increase	33	36	24	23	12	---			
25.	better performance, better promotion	39	37	27	24	13	66	---		
26.	availability of information for job	35	40	30	29	16	32	35	---	
27.	changes communicated well	32	46	37	31	17	32	35	52	---
28.	information about other parts of the business	28	35	26	30	09	27	30	42	50
29.	can find right person to answer questions	26	30	26	33	19	26	29	41	39
30.	reasonable hearing for complaints	33	45	40	29	15	33	38	37	47
31.	can discuss problems with immediate manager	34	49	39	22	14	30	35	35	41
32.	can discuss problems with higher management	30	38	30	25	17	31	36	32	37
33.	decisions made without delay	33	39	35	31	15	32	34	41	50
34.	work is well organized	35	39	45	32	20	29	31	46	48
35.	a lot of wasted time and effort*	28	25	27	23	21	20	22	27	31
36.	come up with new and better ways	37	41	31	25	09	32	38	35	37

* Reverse Scored

	Item	19	20	21	22	23	24	25	26	27
37.	report good and bad news	32	44	35	27	10	31	36	34	44
38.	unit is effectively run	40	49	53	34	17	34	38	45	54
39.	Division is effectively run	37	40	37	37	19	35	39	41	48
40.	"company name" is effectively run	31	27	23	30	20	32	33	32	35
41.	proud to work for "company name"	36	29	27	28	21	35	37	33	35
42.	satisfaction with recognition	40	64	37	28	19	47	48	39	44
43.	satisfaction with opportunity for promotion	43	41	28	25	16	42	59	35	36
44.	satisfaction with training	32	36	26	22	15	27	31	47	37
45.	satisfaction with involvement in decisions	44	49	35	30	19	37	42	45	48
46.	rate your total benefits program	11	10	09	10	07	12	13	11	11
47.	amount of pay	20	21	18	14	16	30	25	19	20
48.	job security	25	25	18	18	23	28	34	27	26
49.	quality of equipment	21	19	18	20	17	14	15	24	21
50.	management treats you with respect	38	51	39	29	22	35	42	39	46
51.	consistency of policy administration	35	44	41	34	18	33	39	43	53
52.	how good a job done by immediate manager	33	47	39	25	15	30	34	36	44
53.	immediate manager on technical competency	26	35	29	19	13	23	27	31	36
54.	immediate manager on "human relations"	32	46	37	23	17	29	34	34	42
55.	immediate manager on available to talk	30	45	33	21	15	26	29	33	39

	Item	19	20	21	22	23	24	25	26	27
56.	immediate manager on open environment	34	48	40	25	16	31	35	35	44
57.	how good job done by immediate manager's manager	30	34	30	28	18	29	34	32	38
58.	how good job done by head of Division	31	30	24	30	21	31	35	33	37
59.	how good job done by top management	31	30	23	32	22	31	35	34	37
60.	performance rating criteria	32	42	26	19	10	29	30	34	33
61.	last evaluation accurate	35	44	27	20	11	31	33	30	31
62.	last evaluation strengths and weaknesses	36	47	27	22	13	33	35	33	34
63.	performance plan requires good service	25	26	20	17	01	21	22	22	22
64.	unit emphasizes quality	33	36	38	26	07	26	30	34	34
65.	unit receives quality from other units	22	21	19	38	17	23	23	29	28
66.	aware of job openings	19	18	12	13	08	17	26	20	20
67.	opportunity to improve skills	46	41	30	25	10	37	48	37	35
68.	most qualified people selected	35	33	28	28	14	36	47	32	37
69.	overall satisfaction with company	43	40	33	30	29	40	43	40	42
70.	use of last attitude survey	29	32	24	28	18	34	37	33	38
71.	use of this attitude survey	30	32	27	26	20	36	39	32	37

	Item	28	29	30	31	32	33	34	35	36
28.	information about other parts of the business	---								
29.	can find right person to answer questions	42	---							
30.	reasonable hearing for complaints	37	39	---						
31.	can discuss problems with immediate manager	30	30	56	---					
32.	can discuss problems with higher management	31	32	50	54	---				
33.	decisions made without delay	38	37	46	39	40	---			
34.	work is well organized	36	34	42	36	33	50	---		
35.	a lot of wasted time and effort*	22	26	26	23	21	33	45	---	
36.	come up with new and better ways	32	28	43	42	38	36	35	21	---
37.	report good and bad news	35	30	52	49	45	41	37	21	53
38.	unit is effectively run	38	36	55	57	45	54	64	38	46
39.	Division is effectively run	40	39	47	41	44	48	52	34	41
40.	"company name" is effectively run	34	39	33	22	31	36	37	28	28
41.	proud to work for "company name"	30	36	36	29	35	35	36	28	34
42.	satisfaction with recognition	35	32	49	50	44	41	38	27	43
43.	satisfaction with opportunity for promotion	34	30	41	37	39	37	33	24	38
44.	satisfaction with training	31	30	32	32	28	33	38	23	28
45.	satisfaction with involvement in decisions	41	36	49	47	43	46	44	30	50

* Reverse Scored

	Item	28	29	30	31	32	33	34	35	36
46.	rate your total benefits program	14	15	15	11	12	12	12	07	11
47.	amount of pay	18	17	22	20	20	19	19	14	14
48.	job security	23	29	28	27	30	25	25	19	27
49.	quality of equipment	21	23	21	17	18	20	25	20	20
50.	management treats you with respect	33	34	54	59	50	43	41	28	46
51.	consistency of policy administration	39	36	51	47	42	50	49	34	41
52.	how good a job done by immediate manager	31	29	48	67	38	44	43	28	38
53.	immediate manager on technical competency	25	25	37	50	30	37	35	24	31
54.	immediate manager on "human relations"	28	28	46	68	39	39	36	25	36
55.	immediate manager on available to talk	28	28	45	65	39	36	34	20	35
56.	immediate manager on open environment	30	29	50	72	44	41	39	26	39
57.	how good job done by immediate manager's manager	29	31	40	34	47	41	37	24	35
58.	how good job done by head of Division	30	33	36	28	39	38	35	25	35
59.	how good job done by top management	33	34	35	25	38	37	35	25	34
60.	performance rating criteria	30	24	34	36	29	31	33	20	30
61.	last evaluation accurate	24	21	33	43	32	29	29	18	33
62.	last evaluation strengths and weaknesses	27	24	34	43	36	33	32	20	34

	Item	28	29	30	31	32	33	34	35	36
63.	performance plan requires good service	21	19	26	25	23	23	23	16	24
64.	unit emphasizes quality	27	25	37	35	30	35	42	29	36
65.	unit receives quality from other units	28	37	23	16	22	29	31	26	21
66.	aware of job openings	24	18	19	17	19	19	16	09	19
67.	opportunity to improve skills	36	31	40	37	36	35	34	23	41
68.	most qualified people selected	32	30	38	31	34	36	32	26	33
69.	overall satisfaction with company	35	38	43	40	41	40	44	33	39
70.	use of last attitude survey	36	33	39	28	38	36	35	24	34
71.	use of this attitude survey	32	33	42	32	40	38	34	26	35

	Item	37	38	39	40	41	42	43	44	45
37.	report good and bad news	---								
38.	unit is effectively run	55	---							
39.	Division is effectively run	47	68	---						
40.	"company name" is effectively run	28	39	55	---					
41.	proud to work for "company name"	31	41	48	66	---				
42.	satisfaction with recognition	47	51	44	32	38	---			
43.	satisfaction with opportunity for promotion	38	39	41	35	42	57	---		
44.	satisfaction with training	29	39	35	28	30	38	35	---	
45.	satisfaction with involvement in decisions	49	52	46	34	38	55	48	45	---
46.	rate your total benefits program	11	11	15	24	26	15	19	13	15
47.	amount of pay	20	23	23	24	27	37	30	20	24
48.	job security	25	26	31	34	37	33	38	26	34
49.	quality of equipment	19	23	25	27	26	20	21	18	25
50.	management treats you with respect	52	58	51	31	38	58	45	36	55
51.	consistency of policy administration	47	59	53	38	40	49	41	37	51
52.	how good a job done by immediate manager	45	64	47	25	32	48	36	33	47
53.	immediate manager on technical competency	36	51	39	22	27	37	28	27	37
54.	immediate manager on "human relations"	43	57	42	22	29	48	36	32	44
55.	immediate manager on available to talk	43	49	35	19	25	44	32	30	42

	Item	37	38	39	40	41	42	43	44	45
56.	immediate manager on open environment	47	59	43	23	30	49	37	32	47
57.	how good job done by immediate manager's manager	41	50	53	34	36	41	36	29	41
58.	how good job done by head of Division	37	42	59	45	44	37	37	28	39
59.	how good job done by top management	34	39	58	51	48	37	38	28	40
60.	performance rating criteria	33	39	32	25	26	40	33	32	37
61.	last evaluation accurate	36	39	30	20	23	46	33	31	39
62.	last evaluation strengths and weaknesses	37	42	34	23	27	45	35	34	40
63.	performance plan requires good service	26	29	24	19	24	24	21	21	24
64.	unit emphasizes quality	37	50	40	28	33	36	29	38	36
65.	unit receives quality from other units	22	28	36	35	32	25	25	23	29
66.	aware of job openings	17	16	18	17	19	19	33	20	22
67.	opportunity to improve skills	39	40	39	34	39	47	59	40	48
68.	most qualified people selected	35	39	41	34	36	43	51	29	41
69.	overall satisfaction with company	38	50	52	56	65	51	52	35	49
70.	use of last attitude survey	35	38	45	41	42	39	38	29	38
71.	use of this attitude survey	37	41	44	42	44	42	41	28	42

	Item	46	47	48	49	50	51	52	53	54
46.	rate your total benefits program	---								
47.	amount of pay	26	---							
48.	job security	19	27	---						
49.	quality of equipment	16	19	21	---					
50.	management treats you with respect	13	26	37	24	---				
51.	consistency of policy administration	16	24	32	27	60	---			
52.	how good a job done by immediate manager	11	22	25	17	58	51	---		
53.	immediate manager on technical competency	10	19	22	18	46	43	68	---	
54.	immediate manager on "human relations"	07	20	25	15	57	47	78	57	---
55.	immediate manager on available to talk	10	18	24	16	52	42	64	49	66
56.	immediate manager on open environment	09	20	26	17	59	50	76	56	80
57.	how good job done by immediate manager's manager	12	21	29	19	50	46	42	37	38
58.	how good job done by head of Division	15	21	34	22	44	44	34	30	32
59.	how good job done by top management	18	24	37	25	42	44	32	29	30
60.	performance rating criteria	13	21	26	16	36	36	36	30	32
61.	last evaluation accurate	12	23	26	17	43	36	43	35	41
62.	last evaluation strengths and weaknesses	11	20	29	15	43	38	47	38	44

	Item	46	47	48	49	50	51	52	53	54
63.	performance plan requires good service	10	13	15	11	27	26	26	24	24
64.	unit emphasizes quality	13	17	21	20	39	41	41	38	36
65.	unit receives quality from other units	13	17	21	22	25	32	22	19	20
66.	aware of job openings	12	08	20	09	19	20	15	14	15
67.	opportunity to improve skills	19	24	33	24	44	41	36	29	35
68.	most qualified people selected	16	25	31	19	42	43	35	31	34
69.	overall satisfaction with company	26	37	44	29	50	48	44	34	40
70.	use of last attitude survey	19	29	30	25	38	41	31	27	29
71.	use of this attitude survey	21	26	33	25	44	42	36	29	33

	Item	55	56	57	58	59	60	61	62	63
55.	immediate manager on available to talk	---								
56.	immediate manager on open environment	77	---							
57.	how good job done by immediate manager's manager	34	39	---						
58.	how good job done by head of Division	27	32	62	---					
59.	how good job done by top management	26	31	58	83	---				
60.	performance rating criteria	35	35	27	26	25	---			
61.	last evaluation accurate	39	42	29	28	27	49	---		
62.	last evaluation strengths and weaknesses	42	46	33	31	31	48	73	---	
63.	performance plan requires good service	25	26	22	23	23	34	30	35	---
64.	unit emphasizes quality	36	39	35	34	34	35	37	39	51
65.	unit receives quality from other units	17	22	29	33	38	17	18	23	22
66.	aware of job openings	18	16	16	18	19	21	17	23	16
67.	opportunity to improve skills	34	36	34	35	37	34	35	38	25
68.	most qualified people selected	28	33	36	38	38	28	32	34	21
69.	overall satisfaction with company	36	42	43	49	52	35	36	37	24
70.	use of last attitude survey	23	31	40	43	45	28	29	32	24
71.	use of this attitude survey	28	35	42	42	46	29	28	31	24

	Item	64	65	66	67	68	69	70	71
64.	unit emphasizes quality	---							
65.	unit receives quality from other units	31	---						
66.	aware of job openings	16	16	---					
67.	opportunity to improve skills	34	25	38	---				
68.	most qualified people selected	30	29	29	50	---			
69.	overall satisfaction with company	36	33	21	49	44	---		
70.	use of last attitude survey	30	35	21	36	43	48	---	
71.	use of this attitude survey	32	31	21	39	42	51	71	---

Note. Italized and bold-type items are not significant at p=.05.
Number of responses for each calculation range from 2,871 to 8,595.
Decimal points have been omitted.

APPENDIX F
GROUP 1 AND GROUP 2
MEANS AND STANDARD DEVIATIONS

	Item	Group 1 Mean	Group 1 Standard Deviation	Group 1 N	Group 2 Mean	Group 2 Standard Deviation	Group 2 N
1.	as a company to work for	2.42	.85	4050	2.42	.85	4074
2.	striving for excellence	1.99	.83	4234	1.97	.83	4260
3.	clear sense of direction	2.37	.97	4222	2.36	.99	4258
4.	providing quality products/services	2.11	.86	4212	2.08	.85	4233
5.	innovative in products/services	2.30	.87	4104	2.30	.88	4121
6.	responsive to customers	2.07	.93	4111	2.07	.94	4117
7.	being efficient	2.33	1.02	4090	2.31	1.02	4105
8.	cooperative atmosphere	2.44	1.10	4239	2.45	1.13	4249
9.	keeping employees informed	2.52	1.10	4261	2.56	1.12	4288
10.	listening to employees	2.55	1.09	4195	2.59	1.12	4209
11.	amount of work	2.63	.72	4269	2.64	.70	4318
12.	emphasis on high quality work	2.95	.54	4243	2.94	.55	4293
13.	emphasis on costs	2.76	.76	4231	2.75	.75	4280
14.	number of approvals	2.47	.79	4233	2.48	.77	4286
15.	correcting poor performance	3.29	.69	4191	3.31	.72	4263
16.	understand strategy	2.25	.89	4269	2.28	.88	4307
17.	relationship between job and Division goals	2.09	.87	4272	2.11	.85	4301
18.	clear idea of results expected	1.98	.88	4277	2.00	.88	4304
19.	good use of skills	2.35	1.14	4275	2.36	1.15	4307
20.	receive enough feedback	2.68	1.18	4274	2.72	1.19	4310

	Item	Group 1 Mean	Group 1 Standard Deviation	Group 1 N	Group 2 Mean	Group 2 Standard Deviation	Group 2 N
21.	my unit works as team	2.25	1.08	4287	2.26	1.09	4312
22.	other units work with my unit as team	2.79	.95	4270	2.81	.96	4303
23.	job pressures interfere with personal time	2.90	1.18	4280	2.90	1.21	4306
24.	better performance, bigger merit increase	2.99	1.24	4274	3.01	1.24	4298
25.	better performance, better promotion	2.77	1.21	4279	2.78	1.02	4306
26.	availability of information for job	2.60	1.04	4280	2.64	1.03	4310
27.	changes communicated well	2.87	1.13	4285	2.90	1.15	4308
28.	information about other parts of the business	3.08	1.00	4278	3.10	1.03	4312
29.	can find right person to answer questions	2.65	1.05	4285	2.66	1.04	4310
30.	reasonable hearing for complaints	2.65	1.00	4261	2.66	1.01	4302
31.	can discuss problems with immediate manager	2.24	1.14	4276	2.27	1.18	4310
32.	can discuss problems with higher management	2.71	1.18	4275	2.69	1.17	4300
33.	decisions made without delay	2.78	1.05	4270	2.79	1.04	4314
34.	work is well organized	2.72	1.06	4283	2.71	1.07	4308
35.	a lot of wasted time and effort (reverse scored)	2.79	1.15	4271	2.76	1.14	4309

	Item	Group 1 Mean	Group 1 Standard Deviation	Group 1 N	Group 2 Mean	Group 2 Standard Deviation	Group 2 N
36.	come up with new and better ways	2.50	.99	4278	2.52	1.00	4302
37.	report good and bad news	2.51	1.00	4262	2.52	1.00	4300
38.	unit is effectively run	2.44	1.06	4264	2.44	1.07	4300
39.	Division is effectively run	2.59	.97	4264	2.57	.97	4293
40.	"company name" is effectively run	2.63	.92	4269	2.66	.95	4304
41.	proud to work for "company name"	2.26	.91	4261	2.27	.93	4296
42.	satisfaction with recognition	2.71	1.11	4280	2.75	1.13	4308
43.	satisfaction with opportunity for promotion	2.85	1.06	4270	2.89	1.08	4305
44.	satisfaction with training	2.60	1.06	4271	2.62	1.08	4308
45.	satisfaction with involvement in decisions	2.76	1.04	4275	2.80	1.06	4312
46.	rate you total benefits program	2.36	.95	3458	2.39	.99	3460
47.	amount of pay	2.79	.99	4262	2.78	1.00	4292
48.	job security	2.61	.98	4255	2.63	.99	4279
49.	quality of equipment	2.58	1.09	4114	2.62	1.12	4163
50.	management treats you with respect	2.26	1.04	4255	2.27	1.04	4290
51.	consistency of policy administration	2.54	1.00	4223	2.54	1.01	4269
52.	how good a job done by immediate manager	1.99	.97	4048	1.99	.99	4118
53.	immediate manager on technical competency	1.77	.90	4254	1.74	.89	4285

	Item	Group 1 Mean	Group 1 Standard Deviation	Group 1 N	Group 2 Mean	Group 2 Standard Deviation	Group 2 N
54.	immediate manager on "human relations"	2.14	1.13	4257	2.14	1.15	4274
55.	immediate manager on available to talk	1.97	1.07	4076	1.97	1.06	4138
56.	immediate manager creates open environment	2.13	1.19	4080	2.12	1.19	4133
57.	how good job done by immediate manager's manager	2.15	1.01	3857	2.15	.99	3862
58.	how good job done by head of Division	2.18	.93	3384	2.18	.93	3429
59.	how good job done by top management	2.28	.93	3271	2.26	.94	3291
60.	performance rating criteria	2.32	.96	3999	2.33	.96	4073
61.	last evaluation accurate	2.20	.99	2902	2.21	.99	2937
62.	last evaluation reflected strengths and weaknesses	2.29	.98	2879	2.31	.98	2911
63.	performance plan requires good service	2.07	.87	3779	2.08	.88	3814
64.	unit emphasizes quality	1.97	.85	4157	1.99	.84	4173
65.	unit receives quality from other units	2.84	1.00	3880	2.87	1.00	3906

Item	Group 1 Mean	Group 1 Standard Deviation	Group 1 N	Group 2 Mean	Group 2 Standard Deviation	Group 2 N
66. aware of job openings	2.32	.98	4264	2.32	.98	4309
67. opportunity to improve skills	2.60	1.04	4262	2.64	1.05	4307
68. most qualified people selected	2.99	1.05	4251	2.98	1.08	4281
69. overall satisfaction with company	2.48	.96	4251	2.48	.97	4289
70. use of last attitude survey	2.98	.98	1736	3.02	.94	1762
71. use of this attitude survey	2.67	.93	4244	2.68	.94	4270

APPENDIX G
FACTOR LOADINGS FOR FIRST-ORDER FACTORS FROM EXPLORATORY FACTOR ANALYSIS

	Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
34.	work is well organized	**52**	-04	-12	05	02
38.	unit is effectively run	**44**	-33	-12	04	01
35.	a lot of wasted time and effort (reverse scored)	**34**	00	-12	01	-01
21.	my unit works as a team	**32**	-19	-17	-02	-01
64.	unit emphasized quality	**32**	-09	-23	18	16
33.	decisions made without delay	**30**	-07	-08	03	02
56.	immediate managers creates open environment	-04	**-90**	01	02	01
54.	immediate manager on "human relations"	-07	**-88**	-03	00	02
52.	how good a job done by immediate manager	06	**-79**	-07	00	05
55.	immediate manager is available to talk	-03	**-75**	02	06	04
31.	can discuss problems with immediate manager	04	**-72**	08	03	02
53.	immediate manager on technical competency	08	**-56**	-08	00	07
50.	management treats you with respect	07	**-39**	01	02	04
30.	reasonable hearing for complaints	15	**-26**	-05	00	-03
4.	providing quality products/services	01	-01	**-70**	04	03
2.	striving for excellence	03	-06	**-68**	08	00
5.	innovative in products/services	-04	03	**-64**	03	04
6.	responsive to customers	03	01	**-61**	-01	03
7.	being efficient	11	04	**-59**	01	03
3.	clear sense of direction	-01	-06	**-55**	15	00
8.	cooperative atmosphere	07	-13	**-47**	-04	-01
10.	listening to employees	-10	-16	**-38**	00	-02

	Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
17.	relationship between job and Division goals	-04	-02	-05	**79**	-07
16.	understand strategy	-10	-02	-07	**71**	-05
18.	clear idea of results expected	09	-06	-01	**55**	08
62.	last evaluation reflected strengths and weaknesses	-08	-03	-03	-05	**88**
61.	last evaluation accurate	-04	-02	00	-06	**83**
60.	performance rating criteria	06	-06	03	28	**32**
63.	performance plan requires good service	15	00	-08	22	**23**
58.	how good job done by head of Division	-04	06	-02	08	04
59.	how good job done by top management	-06	07	-02	07	03
57.	how good a job done by immediate manager's manager	09	-12	-08	-03	02
39.	Division is effectively run	20	-13	-18	05	-02
32.	can discuss problems with higher management	09	-22	08	02	01
41.	proud to work for "company name"	03	-06	-06	05	-04
40.	"company name" is effectively run	05	01	-01	04	00
1.	as a company to work for	-06	-09	-10	-01	-02
69.	overall satisfaction with company	06	-13	-01	00	05
48.	job security	-10	-07	02	03	07
65.	unit receives quality for other units	17	06	-08	00	08

	Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
43.	satisfaction with opportunity for promotion	-01	01	-02	-02	01
25.	better performance, better promotion	-07	02	-10	04	-01
67.	opportunity to improve skills	04	00	-02	03	09
24.	better performance, bigger merit increase	-04	02	-08	05	04
42.	satisfaction with recognition	09	-16	03	00	13
68.	most qualified people selected	02	01	-07	-03	06
19.	good use of skills	13	-01	-05	23	07
45.	satisfaction with involvement in decisions	15	-10	04	08	09
36.	come up with new and better ways	14	-09	-05	10	06
20.	receive enough feedback	12	-17	03	18	16
37.	report good and bad news	16	-20	-01	05	05
71.	use of this attitude survey	02	-06	-04	-02	03
27.	changes communicated well	12	-10	-08	09	06
9.	keeping employees informed	-12	-10	-38	05	05
28.	information about other parts of the business	09	02	02	16	06
26.	availability of information about job	16	01	-02	21	12
29.	can find right person to answer questions	09	-02	-02	04	04
51.	consistency of policy administration	19	-17	-07	01	06
44.	satisfaction with training	14	-03	01	13	12

	Item	Factor 6	Factor 7	Factor 8	Factor 9
34.	work is well organized	-05	08	03	15
38.	unit is effectively run	-12	02	-01	08
35.	a lot of wasted time and effort (reverse scored)	-01	15	-01	06
21.	my unit works as a team	03	-03	-10	06
64.	unit emphasized quality	-03	02	-03	-16
33.	decisions made without delay	-13	00	-11	23
56.	immediate managers creates open environment	01	03	02	01
54.	immediate manager on "human relations"	02	05	04	00
52.	how good a job done by immediate manager	00	06	06	-04
55.	immediate manager is available to talk	03	02	02	02
31.	can discuss problems with immediate manager	01	-02	-13	03
53.	immediate manager on technical competency	-05	04	05	-03
50.	management treats you with respect	-19	-04	-29	06
30.	reasonable hearing for complaints	-12	-04	-25	19
4.	providing quality products/services	01	07	-01	-06
2.	striving for excellence	-06	-07	-10	-08
5.	innovative in products/services	00	06	-05	00
6.	responsive to customers	-04	05	00	01
7.	being efficient	-01	05	02	03
3.	clear sense of direction	-10	02	01	10
8.	cooperative atmosphere	-09	01	-01	19
10.	listening to employees	-14	-05	-19	30

	Item	Factor 6	Factor 7	Factor 8	Factor 9
17.	relationship between job and Division goals	-07	00	-01	00
16.	understand strategy	-08	03	04	08
18.	clear idea of results expected	00	00	-04	02
62.	last evaluation reflected strengths and weaknesses	-03	-01	04	02
61.	last evaluation accurate	-02	-04	-02	00
60.	performance rating criteria	04	02	-11	01
63.	performance plan requires good service	00	03	-03	-13
58.	how good job done by head of Division	**-88**	03	02	-06
59.	how good job done by top management	**-81**	13	04	-02
57.	how good a job done by immediate manager's manager	**-53**	-05	-09	-01
39.	Division is effectively run	**-34**	13	-02	11
32.	can discuss problems with higher management	**-25**	-01	-24	10
41.	proud to work for "company name"	-03	**71**	-08	-04
40.	"company name" is effectively run	-12	**66**	04	09
1.	as a company to work for	01	**66**	-09	-03
69.	overall satisfaction with company	-07	**55**	-21	-03
48.	job security	-11	**27**	-20	06
65.	unit receives quality for other units	-15	**22**	03	-10

	Item	Factor 6	Factor 7	Factor 8	Factor 9
43.	satisfaction with opportunity for promotion	-04	10	**-72**	-02
25.	better performance, better promotion	-02	02	**-71**	00
67.	opportunity to improve skills	01	11	**-55**	02
24.	better performance, bigger merit increase	01	09	**-52**	02
42.	satisfaction with recognition	-05	-01	**-51**	05
68.	most qualified people selected	-12	10	**-42**	05
19.	good use of skills	06	09	**-35**	-05
45.	satisfaction with involvement in decisions	-10	01	**-34**	19
36.	come up with new and better ways	-09	-06	**-32**	06
20.	receive enough feedback	01	-07	**-29**	11
37.	report good and bad news	-18	-14	**-26**	13
71.	use of this attitude survey	-20	21	**-24**	09
27.	changes communicated well	-02	03	-01	**54**
9.	keeping employees informed	-03	-03	-05	**49**
28.	information about other parts of the business	00	10	-07	**40**
26.	availability of information about job	04	08	08	**36**
29.	can find right person to answer questions	-06	27	00	**29**
51.	consistency of policy administration	-17	04	-13	**20**
44.	satisfaction with training	03	09	-14	**20**

Note. Decimal points have been omitted.
The highest loading for each item is in bold-type.

APPENDIX H
FACTOR LOADINGS OF FIRST-ORDER FACTORS FROM CONFIRMATORY FACTOR ANALYSIS

	Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
34.	work is well organized	66	--	--	--	--
38.	unit is effectively run	58	--	--	--	--
35.	a lot of wasted time and effort (reverse scored)	-32	--	--	--	--
21.	my unit works as a team	09	--	--	--	--
64.	unit emphasized quality	52	--	--	--	--
33.	decisions made without delay	59	--	--	--	--
56.	immediate managers creates open environment	--	70	--	--	--
54.	immediate manager on "human relations"	--	66	--	--	--
52.	how good a job done by immediate manager	--	73	--	--	--
55.	immediate manager is available to talk	--	59	--	--	--
31.	can discuss problems with immediate manager	--	64	--	--	--
53.	immediate manager on technical competency	--	72	--	--	--
50.	management treats you with respect	--	61	--	--	--
30.	reasonable hearing for complaints	--	70	--	--	--
4.	providing quality products/services	--	--	81	--	--
2.	striving for excellence	--	--	13	--	--
5.	innovative in products/services	--	--	83	--	--
6.	responsive to customers	--	--	36	--	--
7.	being efficient	--	--	44	--	--
3.	clear sense of direction	--	--	49	--	--
8.	cooperative atmosphere	--	--	24	--	--
10.	listening to employees	--	--	40	--	--

	Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
17.	relationship between job and Division goals	--	--	--	47	--
16.	understand strategy	--	--	--	29	--
18.	clear idea of results expected	--	--	--	61	--
62.	last evaluation reflected strengths and weaknesses	--	--	--	--	76
61.	last evaluation accurate	--	--	--	--	74
60.	performance rating criteria	--	--	--	--	48
63.	performance plan requires good service	--	--	--	--	52

	Item	Factor 6	Factor 7	Factor 8	Factor 9
58.	how good job done by head of Division	40	--	--	--
59.	how good job done by top management	78	--	--	--
57.	how good a job done by immediate manager's manager	55	--	--	--
39.	Division is effectively run	48	--	--	--
32.	can discuss problems with higher management	55	--	--	--
41.	proud to work for "company name"	--	75	--	--
40.	"company name" is effectively run	--	85	--	--
1.	as a company to work for	--	44	--	--
69.	overall satisfaction with company	--	55	--	--
48.	job security	--	47	--	--
65.	unit receives quality for other units	--	56	--	--

	Item	Factor 6	Factor 7	Factor 8	Factor 9
43.	satisfaction with opportunity for promotion	--	--	69	--
25.	better performance, better promotion	--	--	57	--
67.	opportunity to improve skills	--	--	50	--
24.	better performance, bigger merit increase	--	--	52	--
42.	satisfaction with recognition	--	--	66	--
68.	most qualified people selected	--	--	55	--
19.	good use of skills	--	--	60	--
45.	satisfaction with involvement in decisions	--	--	63	--
36.	come up with new and better ways	--	--	61	--
20.	receive enough feedback	--	--	-21	--
37.	report good and bad news	--	--	44	--
71.	use of this attitude survey	--	--	59	--
27.	changes communicated well	--	--	--	76
9.	keeping employees informed	--	--	--	29
28.	information about other parts of the business	--	--	--	65
26.	availability of information about job	--	--	--	65
29.	can find right person to answer questions	--	--	--	56
51.	consistency of policy administration	--	--	--	73
44.	satisfaction with training	--	--	--	49

Note. Decimal points have been omitted.

APPENDIX I
CORRELATIONS BETWEEN FACTOR SCALES AND COMPANY TOPIC AREAS

Factor Scales	Company Topic Areas				
	General Satisfaction	Organizational Effectiveness	Management	Service Quality	Communications
Unit Effectiveness	67	76	67	59	70
Immediate Manager	76	63	93	42	63
Division Effectiveness	63	97	62	51	66
Clarity of Goals	48	56	46	42	79
Performance Evaluation	54	46	52	56	52
Upper Management	69	74	76	46	64
Satisfaction with Company	79	70	55	53	61
Reward for Performance	85	70	68	49	74
Communication	71	76	65	49	90

Factor Scales	Company Topic Areas			
	Job	Recognition and Rewards	Career	Employment Environment
Unit Effectiveness	87	60	53	68
Immediate Manager	66	66	53	83
Division Effectiveness	68	52	50	61
Clarity of Goals	54	49	42	47
Performance Evaluation	50	78	46	53
Upper Management	65	56	55	73
Satisfaction with Company	65	56	59	66
Reward for Performance	79	84	87	77
Communi-cation	78	64	61	73

Note. Decimal points have been omitted.

APPENDIX J
CORRELATIONS BETWEEN EACH ITEM AND AGGREGATED PERFORMANCE RATING

	Item	Correlation with Performance Rating
1.	as a company to work for	***23***
2.	striving for excellence	03
3.	clear sense of direction	03
4.	providing quality products/services	***14***
5.	innovative in products/services	-05
6.	responsive to customers	07
7.	being efficient	05
8.	cooperative atmosphere	10
9.	keeping employees informed	03
10.	listening to employees	09
11.	amount of work	-06
12.	emphasis on high quality work	04
13.	emphasis on costs	-02
14.	number of approvals	***12***
15.	correcting poor performance	05
16.	understand strategy	07
17.	relationship between job and Division goals	05
18.	clear idea of results expected	09
19.	good use of skills	***23***
20.	receive enough feedback	***21***
21.	my unit works as team	***21***
22.	other units work with my unit as team	***33***
23.	job pressures interfere with personal time	05
24.	better performance, bigger merit increase	01
25.	better performance, better promotion	***-17***
26.	availability of information for job	***12***
27.	changes communicated well	08
28.	information about other parts of the business	***18***
29.	can find right person to answer questions	***15***
30.	reasonable hearing for complaints	04

	Item	Correlation with Performance Rating
31.	can discuss problems with immediate manager	***13***
32.	can discuss problems with higher management	04
33.	decisions made without delay	-03
34.	work is well organized	***12***
35.	a lot of wasted time and effort (reverse scored)	***17***
36.	come up with new and better ways	***27***
37.	report good and bad news	***18***
38.	unit is effectively run	***16***
39.	Division is effectively run	***12***
40.	"company name" is effectively run	***14***
41.	proud to work for "company name"	***15***
42.	satisfaction with recognition	10
43.	satisfaction with opportunity for promotion	-03
44.	satisfaction with training	03
45.	satisfaction with involvement in decisions	***19***
46.	rate your total benefits program	08
47.	amount of pay	01
48.	job security	05
49.	quality of equipment	***51***
50.	management treats you with respect	***15***
51.	consistency of policy administration	***14***
52.	how good a job done by immediate manager	09
53.	immediate manager on technical competency	***15***
54.	immediate manager on "human relations"	01
55.	immediate manager on available to talk	06
56.	immediate manager creates open environment	03
57.	how good job done by immediate manager's manager	-01
58.	how good job done by head of Division	08
59.	how good job done by top management	07
60.	performance rating criteria	10

	Item	Correlation with Performance Rating
61.	last evaluation accurate	***21***
62.	last evaluation reflected strengths and weaknesses	06
63.	performance plan requires good service	08
64.	unit emphasizes quality	***20***
65.	unit receives quality from other units	***11***
66.	aware of job openings	***-22***
67.	opportunity to improve skills	***16***
68.	most qualified people selected	09
69.	overall satisfaction with company	***25***
70.	use of last attitude survey	04
71.	use of this attitude survey	08

Note. Decimal points have been omitted.
Entiries in italic and bold-type are statistically significant at the $p<.05$ level.
The number of cases used for these calculations was 358.