Exploring the Viability of an Organizational Readiness Assessment for Participatory Management Programs in a Passenger Airline Carrier

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ABSTRACT

This study attempted to determine the feasibility of conducting an organizational readiness assessment for a participatory management program for maintenance workers within a large passenger airline. Organizational readiness factors consisted of the motivation climate of the department, supervisory behaviors, and the employee's orientation to group problem-solving. The results of a questionnaire study among 73 line maintenance workers revealed that only the group orientation factors predicted employees’ willingness to participate in group process improvement programs. However, strong and statistically significant correlations were shown among the willingness to participate variable and employee job satisfaction. The study revealed that employee group orientation moderates the relationships between the independent and criterion factors. Results also revealed that the employee’s personality orientation moderates the relationships between the organizational factors and employees’ willingness to participate in group process improvement programs.

INTRODUCTION

The use of employee participatory schemes for enhancing organizational effectiveness is becoming more popular in a wide variety of organizations (Lawler, Mohrman, and Ledford, 1992). This approach is being considered within the air carrier environment as a viable method for impacting organizational and cultural change.

In general, employee involvement has been conceptualized as an approach that ameliorates many of the negative consequences of traditional hierarchical forms of management. Participatory structures have been cited as positively affecting worker morale (Steel and Lloyd, 1988), and organizational effectiveness (Macy, Peterson, and Norton, 1989; Lawler, 1986). The focus of this paper is on the use of employee participatory schemes within the maintenance function of an air carrier. Participatory processes within these units are particularly salient because of the potential positive impact that they may have for reducing human and work process errors affecting the safety of air carriers (Rasmussen, Duncan, Leplat, 1987; Helmruech, Wilhelm, Klinec and Merritt, 1997). However, we propose that the expected positive outcomes of the lexicon of employee involvement schemes that exist may be undermined by the organization’s lack of information concerning its state of readiness for these types of interventions.

More specifically, organizations could possibly improve upon the fecundity of their team process improvement attempts by ascertaining information concerning the employee’s perception of these processes prior to their implementation. Employee involvement alone is not a panacea for
improving the effectiveness of work processes in organizations.

Knowing the perceptual/attitudinal genome of the workforce prior would facilitate more effective design of the program’s structure and implementation. Empirical research indicates that employee participation in decision-making and problem-solving has a minimal influence on job performance and work attitudes (Cotton, Volrath, Froggart, Lengnick-Hall, and Jennings 1988; Wagner, 1994). Perhaps pre-assessment of the organization’s readiness for participatory structures is the critical factor that has been missing from employee involvement programs that attempt to affect performance and attitudes.

The purpose of this paper is to describe the results of an organizational readiness survey conducted within a large passenger airline that was contemplating the deployment of a team process improvement program within their maintenance department. Our objective is to determine if organizational readiness factors, consisting of the department’s organizational climate (which we refer to as the “motivation climate”) supervisory behavior, and the group orientation of the employees, are related to the maintenance worker’s willingness to participate in work related group problem-solving improvement (GPI) processes in their department. We also examined the extent to which the organizational readiness factors are correlated with employee job satisfaction.

This paper begins with a discussion of a theoretical framework that we feel is helpful in analyzing and interpreting our data. We then describe the organizational readiness factors incorporated within the present research study.

**THEORETICAL FOUNDATION**

Expectancy theory (Vroom, 1964; Mitchell, 1974) provides theoretical support to our proposition that the organizational readiness factors will influence the efficacy of team-based process improvement programs. Although this is a theory of work motivation, which initially was concerned with predicting work attitudes (for example, job satisfaction) and work performance, the theory is also applicable for analyzing attitudes towards things such as participating in employee involvement programs.

According to this theoretical framework, the manner in which employees respond to organizational actions is influenced by:

1. their perception of whether or not an action or behavior in response to organizational stimuli will lead to various outcomes (referred to as expectancy), and
2. the value that is attached to the predicted outcomes (referred to as valences).

Each of the readiness factors delineated within this study may affect employees’ expectancy as to whether or not desirable outcomes (for example, improved work processes) will emerge as a result of their participation in group work improvement processes. Secondly, we are suggesting that the value attached by employees to such processes is influenced by the readiness factors. In short, the theory suggests that the willingness of maintenance workers to participate in group problem-solving efforts would be influenced by their perceptions of previous and existing organizational actions (climate) and the manner in which employees are approached by their supervisor. Both factors are expected to impact employee’s perceptions of whether or not something useful will emerge from such efforts. Accordingly, these perceptions may determine the valence that employees’ attach to participatory management and process improvement schemes.

Central to the expectancy theory framework is the idea that qualities of the individual affect the expectancy and
valences attached to organizational actions. This study examined the extent that the problem-solving orientation of employees moderates the relationships between the organizational readiness factors and the employee's willingness to engage process improvement processes within a work group structure.

We will now give a brief description of each of the variables that will be analyzed within the context of expectancy theory.

**ORGANIZATIONAL READINESS FACTORS**

**The Motivation Climate**

Work unit or organizational climate pertains to employees’ perceptions of formal and informal reward system expectations of behavioral and organizational outcomes, and perceptions of organizational policies and procedures (Tesluk, Vance & Mathieu, 1999; Schenieder, 1990). Climate is particularly affected by management practices and behaviors as well as intrā and interunit relationships. Within this study, we examined the following factors that can be conceptualized as climate factors that may affect employees’ willingness to participate in a process improvement program:

1. The extent that management encourages employees to “think.”
2. The extent that management encourages employees to make suggestions regarding ways to improve work processes.
3. The extent that employees perceive that management will take credit for their ideas.
4. The extent that management is perceived listen to employees’ ideas concerning work improvements
5. The extent that employees perceive that they have to be careful about publicly discussing their ideas about work improvements
6. The extent that employees perceive that management utilizes the knowledge of the workforce.
7. Employees’ perception regarding the efficacy of interunit communications.
8. Employees’ perception regarding the efficacy of intraunit communications.

**Supervisory Practices**

Expectancy theory proposes that the behaviors of supervisors can clarify or stifle channels leading to high employee motivation and performance (House and Mitchell, 1976). Accordingly, they may also influence employees’ willingness to be involved in work improvement efforts. This study analyzes two areas of supervisory behavior:

1. The supervisor’s reward-punishment orientation
2. The participatory orientation of the supervisor

We suspected that these behaviors could positively or negatively affect employees’ willingness to participate in process improvement efforts. The reward-punishment orientation of the supervisor has been shown in previous research to affect the employees’ disposition towards work (Keller & Szilagyi, 1978; Sims, 1980; Podsakoff, Todor, Grover, & Huber 1984). This supervisory dimension pertains to the extent that supervisors are oriented toward rewarding employees when they do something positive or not rewarding for good performance but punishing them when they do something wrong. We anticipated a negative correlation between a punishment orientation and willingness to participate in GPI.

The participatory orientation of supervisors pertains to behaviors that reflect the asking of, or consulting with, employees when making work related decisions. Supervisors exhibiting a participatory orientation resemble the participatory nature
of group problem-solving processes and are therefore expected to raise both the expectancy levels and valence that employees would attach to GPI. We expect a positive correlation between this factor and GPI.

Employee Orientation Towards Group Problem-Solving

A factor often overlooked by organizations in their attempt to affect change through group problem-solving tactics is the employee's orientation towards group interaction. Often times, the organization takes a hierarchical approach to decentralizing decision-making processes by “demanding” employees to participate in group decision making processes. In short, not all employees have a need to engage in group problem-solving. Some employees may prefer to work alone while others would enjoy working in a group. Either disposition should be seen as affecting the valence that workers would attach to participatory management schemes involving team or group problem solving.

Organizational change is perhaps made less virulent by not taking into consideration the employees’ disposition towards working in process improvement groups. For example, one would suspect that employees’ willingness to participate in GPI would decline with their tendency to work alone.

Problem-Solving Orientation

Problem-solving orientation refers to an individual’s internal needs and preferences that influence the ways in which she/he processes (or perceives) information from their environment. This construct was developed by Carl Jung (1923) and first codified empirically by Meyers-Briggs personality type inventory (1970). According to Jung, there are four dimensions that are involved in information gathering and evaluation: Sensation-Intuitive and Thinking-Feeling. This study is concerned with only one function, the gathering of information, which consists of the bipolar opposites of sensation and intuition. The sensing dimension pertains to an orientation toward structure, organization, details, and a need for what is actual and real. Intuition, on the other hand, relates to an internal preference that looks for possibilities rather than facts and focusing on “the big picture” rather than small details of a problem. In short, a sensation personality type is one who prefers routine and structure whereas intuitives, when solving problems, become impatient with routine details.

The problem-solving orientation of employees may be very significant as a moderator factor within our study, as well as in practice. For example, we would expect that each type would perceive group problem-solving in a different way, which in turn influences the relationships between our criterion factors and the organizational readiness variables.

SPECIFIC RESEARCH QUESTIONS

In attempting to determine the utility of conducting an analysis of how employees’ perceptions of various organizational and interpersonal factors may influence the effectiveness of team based work improvement processes, this study examined the following questions:

1. What is the nature and extent of the correlation between organizational climate factors (as perceived by employees) and the employees’ willingness to participate in process improvement groups?
2. How does the employee’s orientation towards working in groups influence their willingness to participate in process improvement groups?
3. What is the relationship between supervisory behaviors and the employees’ willingness to participate in process improvement groups?
4. What is the relationship between each of the organization readiness factors identified within this study and employee job satisfaction?
5. In what ways does a person’s problem-solving orientation moderate the relationships between the organizational readiness factors and their willingness to participate in process improvement groups as well as their attitude towards their job?

Although some studies have not shown high correlation between job satisfaction and employee involvement schemes (Wagner, 1994), investigating the nature of this relationship would be a useful indicator to management of how organizational processes are affecting the attitudes of its employees. Subsequently, this type of feedback may be helpful during the planning stages of their work improvement programs.

METHODOLOGY

Sample
Data for this study were collected from 73 employees, randomly selected from the maintenance department of a large commercial airline. The total number of employees within this group is 475. The study also collected information from 9 managers within this department. However, this study will only present information obtained from line maintenance workers.

Measurement
A questionnaire consisting of 55 items was administered to this study’s sample group during the summer of 1997. A description of how the variables of this study were measured is as follows:

Criterion Factors: Willingness to Participate and Job Satisfaction
1. Willingness to participate in group process improvement processes was measured by one questionnaire item that stated: “If given the opportunity, I would participate in a process improvement group for this station, if personnel from other departments were included”.
   This item utilized a Likert type structure consisting of five response choices ranging from strongly disagree to strongly agree.
2. Job Satisfaction was measured by a five-item scale that measured workers’ attitudes toward the following job factors:
   - The job itself
   - Supervision
   - Opportunity for promotion
   - Pay

   Respondents were asked to respond to each of these items in terms of their satisfaction level with each. The items were constructed in a Likert format consisting of five scale points with response categories ranging from strongly disagree to strongly agree.

   For analysis purposes, each of the five items were combined to form a job satisfaction scale. Cronbach’s alpha reliability for this scale (within this particular study) is .70.
   Scores for this scale ranged from 4 – 19 with a standard deviation of 3.30. A copy of this scale can be found in Appendix A.

Independent Factors: Organizational readiness variables
Each of the organizational readiness variables was measured by using Likert type items consisting of five scale points with response anchors ranging from strongly disagree to strongly agree. A total of 7 organizational readiness items are reported.
within this paper. A copy of each of these items is presented within Appendix A.

**Moderator factors: Problem-solving orientation**

The problem-solving orientation of employees was measured by 6 items selected from the Meyers-Briggs Personality Type Inventory that pertained to the sensation-intuition psychological function. Each of these items consisted of bipolar selections pertaining to the sensing and intuitive functions. For analysis purposes, a value of 1 was given to intuitive choices and a value of 2 was assigned to sensation choices. Each of the items was then added to form a single problem-solving scale. Thus, higher scores reflect a sensation orientation and vice versa. This greatly shortened “version” of the Meyers-Briggs personality inventory was used because the 138 item of the full inventory is simply too large to use in applied research. A comparison was made prior to the study between the resulting personality profile for these dimensions on our modified version and those produced by the Keiersey Temperament Scale (1973), which has been shown to present the same personality profile as the Meyers-Briggs Scale. Our pilot analyses revealed identical profiles on the sensation-intuitive functions for both measurements. Our shortened version revealed an alpha reliability of .74. Scores for this scale ranged from 6 thru 12 with a median of 11. Scores were recoded into two categories to indicate personality type. The intuitive category has scores ranging from 6 thru 9 (n=16). The sensation category is comprised of scores ranging from 10 thru 12 (n=57). A copy of the problem-solving orientation scale is presented in Appendix A.

**RESULTS**

**General Findings**

Table 1 reveals that strong and statistically significant correlations exist between the readiness factors and employees’ willingness to participate in group improvement processes with the group orientation factors. From a practical viewpoint, this is a very important finding because it strongly suggests the need for management to take more serious consideration of their employees’ perceptions regarding group processes before implementing employee involvement programs. This is a variable that is curiously missing in many employee involvement programs. Organizations most commonly insist upon full participation among all employees regardless of their orientation towards groups. Table I reveals that there are very strong and statistically significant correlations between the climate and supervision factors with job satisfaction. Only one of three group orientation factors ("performs well in groups") is correlated with job satisfaction. The relatively strong correlation between the "performs well in groups" factor and job satisfaction, supports the expectancy theory framework that performance impacts job satisfaction as opposed to the idea that job satisfaction "causes" performance. (The other two group orientation factors are not referencing performance).

It is particularly important to point out that job satisfaction is not highly correlated with employees’ willingness to participate in group work improvement processes.

**The Moderator Influence of Problem-solving Orientations: Motivation Climate Factor**

We will now attempt to determine if the problem-solving orientation of employees alter the relationships between
the organizational readiness factors and the two criterion variables. If they do alter the correlations, this would suggest to management that this factor (as well as others) should be carefully contemplated within the planning processes of employee participatory schemes.

Tables 2 and 3 illustrate the correlations between the motivation climate factors and the criteria by categories of intuitive and sensation employees, respectively. In comparing the results of the two tables, it is shown that the problem-solving orientation of the employees does not moderate the relationships between willingness to participate and the climate factors. However, important differences are revealed among the job satisfaction and climate factors. The largest difference is found for the variable pertaining to the employee's perception of whether or not management listens to employees' ideas regarding work improvements. While both large and statistically significant correlations are found among both problem-solving types, the relationship is much stronger among intuitives. This may indicate that intuitives place higher valence on this factor than sensations. This proposition is congruent with their propensity (theoretically) towards being "idea" people in comparison to sensations, who are more directed towards detail and order. Thus, the higher correlation shown among this group on this variable could be implying that intuitives are more sensitive to this factor than sensation type employees.

The other substantial correlation difference is found for the communication within the work unit variable. There is virtually no correlation found for intuitives, while sensations exhibit a strong and statistically significant correlation for this variable with job satisfaction.

The Moderator Influence of Problem-solving Orientations: Supervision Factors

The degree to which the problem-solving orientations influence the relationships between willingness to participate and supervision factors is shown in Tables 4 and 5. As can be seen by comparing the two tables, no statistically significant results are shown for this variable. However, in spite of this lack of significance, much stronger correlations are shown among the intuitives, which seems to imply that supervision influences the expectancies associated with participating in work improvement groups among intuitives more than it does among sensation employees.

Examining the correlations among the job satisfaction criteria, we observe very strong and statistically significant correlations only among the sensation employee group. This finding can be understood when seen within the context of Path-Goal theory of leadership (House and Mitchell, 1974) whose basic tenets extend from expectancy theory. According to this theory, a leader’s behavior influences work attitudes “...to the degree that the behavior increases subordinate goal attainment and clarifies the paths to these goals.”

The supervisory behaviors identified within this analysis can be seen as more path clarifying for sensation employees than for intuitives, since sensation individuals would theoretically have a higher intrinsic need for direction and order than intuitives. In short, higher valance may be attached to supervision as "path clarifying" by sensations than by intuitives who theoretically have less of an internal need for external direction.

The Moderator Influence of Problem-solving Orientations: Group Orientation Factors
The results shown in Table 6 indicate that the problem solving orientation of maintenance employees does indeed moderate the relationship between their willingness to participate in GPI and their group orientation. Statistically significant correlation between their willingness to participate in GPI and their group problem-solving orientation is found only among the sensation group and these are for the “enjoy working in groups” and “performs well in groups” items. (Although an analysis of variance procedure revealed intuitives exhibiting a higher mean average than sensations on the working alone variable, no statistical significance was shown for this difference). No mean differences were shown for the other two group orientation variables). On the other hand, in comparison to the other readiness factors, the group orientation variables reveal the strongest correlation with the primary criterion. This, is parallel to the findings for the entire sample population. However, these findings are strongest for the sensation subpopulation. In short, the variables “enjoys working in groups” and “performs well in groups” are much better predictors for participating in group work improvement processes among employees with a sensation personality orientation.

DISCUSSION

Overall, the results of this study strongly indicate that conducting research on an organization’s readiness to implement employee involvement type programs prior to implementation would enhance an understanding of many of the social psychological dynamics that exist and that could undermine or support change efforts. Although relatively weak correlations were found between two of the readiness factors and the willingness to participate variables, this study does illustrate very strong correlations between the readiness factors and job satisfaction. This finding in and of itself, is very significant information and should be considered during the planning stages of a participatory management program for improving work processes. The success of any organizational change effort is contingent upon the employee's attitudinal "buy-in" of the program.

The finding that the personality variable moderates many of the relationships within the study points to the importance of conducting organizational assessment systematically. Future research should attempt to include more variables that reference intrinsic characteristics of the employees to determine their influence on various participatory management schemes. From a practical viewpoint, variables that are shown to moderate important correlations would serve as a signal to management for determining how to structure their employee involvement programs. For example, our analyses suggest that supervisory behavior, within the context of employee involvement, is affecting intuitive and sensation-oriented employees differently. The same can be stated in regards to the group orientation factor. This information could be highly useful in designing the content of training programs that are commonly utilized to deploy participatory management programs. It would help change agents to better understand some of the specific problems associated with their work improvement programs. (Bennett, Lehman, & Jamie, 1999; Johnson, 1993; Shandler, 1996). Furthermore, pre-assessment would help to determine the extent to which employee involvement would actually bring about the results intended (Hackman & Wageman, 1995).

Finally, we must keep in mind that the sample population consists of employees who have direct responsibility for
maintaining the safety of the airlines. As such, the improvement of work processes through group processes is extremely salient within this industry and should be highly valued. This exponentially magnifies the importance of management taking a strategic and purposeful approach to change efforts related to team based process improvement programs.
Table 1
Correlation Matrix For All Variables For Entire Sample Population

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Table 2
Correlations Between Climate Factors and Criterions by Intuitive Problem-Solving Function

n=16

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<tr>
<td>2. Job satisfaction</td>
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<td>3. Encourages to suggest</td>
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<td>8. Utilizes ideas</td>
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<td>.435*</td>
<td>.068</td>
<td>.041</td>
<td>.355</td>
<td>.140</td>
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<td>9. Takes credit for ideas</td>
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*p<.05 two-tailed
**p<.01 two-tailed
Table 3
Correlations Between Climate Factors and Criterions by Sensation Problem-Solving Function

n=57

<table>
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<tr>
<th></th>
<th>1 Willingness to participate</th>
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<th>3 Encourages to suggest</th>
<th>4 Interunit communication</th>
<th>5 Intraunit communication</th>
<th>6 Listen to ideas</th>
<th>7 Encourages to think</th>
<th>8 Utilizes ideas</th>
<th>9 Takes credit for ideas</th>
<th>10 Careful about ideas</th>
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<td>-.033</td>
<td>.354**</td>
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<td>-.438**</td>
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*p < .05  two-tailed
**p < .01  two-tailed
Table 4
Correlations Between Climate Factors and Criterions by Intuition Problem-Solving Function

\[ n=16 \]

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<tr>
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<td>2 Job satisfaction</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3 Punishment orientation</td>
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<td>-.349</td>
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<tr>
<td>4 Gives recognition</td>
<td>-.286</td>
<td>.123</td>
<td>-.510*</td>
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<td>5 Tells</td>
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<td>.501*</td>
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<td>6 Consults</td>
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<td>.502*</td>
<td>-.595**</td>
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<td>7 Asks for ideas</td>
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<td>.752**</td>
<td>-.503*</td>
<td>.672**</td>
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*p ≤ .05  two-tailed

**p ≤ .01  two-tailed
### Table 5
Correlations Between Climate Factors and Criteria by Sensation Problem-Solving Function

N=57

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<tr>
<th></th>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>.148</td>
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<tr>
<td>3</td>
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<td>.591**</td>
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<td>5</td>
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<td>-.398**</td>
<td>.413**</td>
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<td>6</td>
<td>.106</td>
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<td>-.601**</td>
<td>.649**</td>
<td>-.595**</td>
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<tr>
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<td>.095</td>
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</table>

*p ≤ .05 two-tailed

**p ≤ .01 two-tailed
Table 6
Correlations Between Group Orientation Factors and Criterions by Intuitive and Sensation Problem-Solving Functions

<table>
<thead>
<tr>
<th></th>
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<td></td>
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<td>1 2 3 4 5</td>
</tr>
<tr>
<td>1. Willingness to participate</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>2. Job satisfaction</td>
<td>.275 ___</td>
<td>.148 ___</td>
</tr>
<tr>
<td>3. Enjoys working alone</td>
<td>-.226 -.087 ___</td>
<td>-.175 -.122 ___</td>
</tr>
<tr>
<td>4. Enjoys working in groups</td>
<td>.303 .027 -.251</td>
<td>.559** -.006 -.260* ___</td>
</tr>
<tr>
<td>5. Performs well in groups</td>
<td>.047 -.048 -.172</td>
<td>.417** .006 .359** .363* ___</td>
</tr>
</tbody>
</table>

*p<.05  two-tailed  
**p<.01  two-tailed
REFERENCES


Criterion Factor

If given the opportunity, I would participate in a process improvement group for this company.

Job Satisfaction

I am satisfied with my job.

I am satisfied with my supervisor.

I am satisfied with my pay.

I am satisfied with the opportunity for promotion associated with this job.

Motivation Climate Factors

Communication within my department needs to be improved.

Communication between departments needs to be improved.

People around here are encouraged to “think”.

Management encourages employees to make suggestions about how to improve work in this department.

Management takes credit for employees ideas

Management will listen to your ideas.

Management fully utilizes the knowledge of its employees.

You have to be careful about talking about new ideas around here; someone may use them and take the credit for them.
Supervision Factors

My supervisor is more apt to punish you when you do something wrong than praise you when you do something right.

My supervisor will give you recognition for good performance.

My supervisor consults the workers before making a major decision that will affect the work unit.

My supervisor asks for my ideas on how to do things around here.

My supervisor often tells people what to do rather than ask them their opinions.

Group Orientation Factors

I perform well in groups.

I perform better working alone than with a team of people.

I enjoy work in problem-solving groups.

Problem-Solving Orientation

I usually get on better with:

a. Imaginative people
b. Realistic people

If I were a teacher, I would rather teach:

a. Courses involving theory
b. Fact courses

Are you more attracted to:

a. A person with a quick mind, or
b. A practical person with a lot of common sense.

I get more annoyed at:

a. Fancy theories
b. People who do not like theories

When you have a special job to do, do you like to:

a. Organize it carefully before you start, or
b. Find out what is necessary as you go along

Is it higher praise to say someone has:

a. Vision, or
b. Common sense