

THE EFFECTS OF PARTICIPATIVE LEVEL ON
JOB ATTITUDE IMPROVEMENT

A Thesis
Presented to
the Faculty of the Department of Psychology
University of Houston

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

By
Richard Perlow
August, 1986

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Abstract

The purpose of the present research was to address the issue of identifying the relationship between participative level and work attitude improvement. Employees ($n = 202$) of a northeast manufacturing facility completed a survey measuring job attitudes and work related perceptions five months before, and five years after a gainsharing program was implemented at the plant. After the second survey administration, the employees were classified as either direct or indirect participants depending on whether or not they were ever a member of a gainsharing committee. The later survey scores were regressed on the initial survey scores. The residual was considered to be an index of improvement and was correlated with participative level. Moderate correlations were obtained for some work attitudes. It was concluded that participative level affects some but not all work attitudes and perceptions.

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Chapter I

Introduction

Basic Issue

Although many basic questions about participation remain unanswered, the most fundamental issue centers around the effects of participation on job attitude improvement. There are two major reasons why the issue has not been resolved. The first reason is that although participation has been suggested as a way of improving employees' attitudes towards the job (Likert, 1967), many of the hypothesized relationships between participation and job attitudes have not been evaluated or tested adequately. The second reason involves the equivocal results in the literature. For example, Locke and Schweiger (1979) conducted an extensive review of the literature examining the relationship between participation and job satisfaction. They concluded that a positive relationship appears to exist but that a large proportion of studies suggested undetermined, insignificant, or negative relationships. Thus, despite the effort that has gone into what is probably the most intensely studied relationship of any

job attitude and participation, basic questions concerning the nature of the relationship can't be unequivocally answered.

What is needed is the development of a rigorous body of research aimed at identifying the relationship between participation and job attitude change.

Moreover, the research that forms the foundation must overcome at least some of the methodological barriers that have hindered previous investigations.

Purpose

The purpose of the present study is to examine the relationship between participation and improvement in certain key job attitudes, while resolving some methodological barriers of prior research. The major research question of the present study is: Do individuals who are directly involved in the participative process of gainsharing show greater improvement in core work attitudes than people who are indirectly involved in the participative process? An ancillary research question is: Do individuals who are directly involved in the participative process of gainsharing show greater awareness of selected organizational processes than indirect participants in the participative process? Continued research efforts

at studying participation is important for two major reasons. First, influence is a major need of employees. Research has shown (e.g., Hesse & Wall, 1976) that although employees felt they have a lot of influence over matters that affect their day to day activities, they believed they should possess more influence. Lawler, Renwick, & Bullock (1981) reported similar findings when the results of their national study indicated that employees felt they should possess more influence over how their work was done and how their work activities were scheduled. Thus, participation is important because it is a mechanism through which a major employee need can be satisfied.

Second, participation continues to have potential for theory building in organizational behavior and industrial/organizational psychology. For example, Schuler (1980) proposed a model suggesting that participation in decision making affects satisfaction through participation's effects on role and expectancy perceptions. Jackson (1983)¹ developed a model describing the relationship among participation in decision making, selected psychological phenomenon (e.g., role strain), and behavior (e.g., absence frequency). Thus, participation is an important

theoretical issue because of its potential for the development of theories that lead to greater understanding of topics in organizational behavior and industrial and organizational psychology.

Confusion exists regarding the efficacy of participation as an organizational intervention strategy. The confusion stems from the contradictory results in the research literature on the effects of participation. One reason for the conflicting results that exist in the literature can be traced to methodological problems. At the present time, it would be of benefit to focus on the types of methodological problems that have plagued previous research on participation.

Method Barriers

Several methodological problems in the research on participation complicate the interpretation of participation's effects on job attitudes. The problems involve (1) the research designs used to study participation, (2) the conceptualization of participation, (3) the time frame employed in many participation studies.

One problem with some participation research is that it was conducted in artificial environments.

Although the potential for controlling extraneous factors is greater in studies that utilize contrived settings, results of the research often fail to generalize to real world situations because the artificial environments do not usually replicate natural settings. Thus, it is desirable for participation research to be executed in actual organizational settings for the meaningfulness of participation to be real.

The second method barrier to be discussed concerns the confusion of influence and participation. The vague conceptualizations often lead to inappropriate measurement of the concept. For example, several researchers appeared to have conceptualized participation as a psychological state by employing survey measures of perceived influence in their assessment of participation (Vroom, 1959; Tosi, 1970; Schuler, 1977; Siegel and Ruh, 1973). However, it seems more clear to conceptualize participation as an activity that may or may not alter the perception of influence than conceptualizing it as a psychological state. Precise conceptualizations are important because it is possible for individuals to partake in a considerable amount of participation but yet possess or

perceive little influence. Rosenfeld and Smith (1967) were cognizant of the difference between participation and influence by warning against the use of "pseudo-participation". The importance of distinguishing between participation and influence is further demonstrated when one considers the possibility that the conflicting results in the literature on participation and job satisfaction may not be due to the participative experience itself, but rather to the content of those experiences. If employees believe that the issues they participate in are unimportant it is unlikely that work attitudes (e.g., job satisfaction) will improve even if they have considerable influence on the outcome of the matters. However by only altering the topics and issues the employees discuss and decide on, it is conceivable that attitudes will change even though the participative mechanism remained the same! The argument has implications for model building. That is, the possibility exists that influence is an important mediating variable in the participation/job attitude relationship. In sum, it is important to conceive participation as separate from other variables in order to reduce the potential of confounding. One way this

can be accomplished is to conceive participation as an activity and to measure it objectively.

Another methodological barrier of many participation studies concerns the time frame of the research. It is recognized by most researchers that attitude change is a process that occurs over a long period of time. Unfortunately, numerous researchers of participation did not incorporate an adequate time frame in their designs. There are two major reasons why the time lapse between observations must be sufficient. One reason is to rule out the possibility that the observed change is due to the Hawthorne effect. Secondly, if the effects of participation are latent, use of a short time frame will weaken any observed effects which might lead to erroneous conclusions regarding the true effects of participation. What is needed are studies that consider the possibility that attitude changes due to participation may be transient and/or the effects of a participative program may be latent.

Many quasi-experimental studies on participation have been single observation designs. The problem with such studies is that any relationship found between two variables is undetermined (Campbell and Stanley, 1966).

White and Ruh (1973) for example, stated that although a significant relationship existed between participation and job involvement, it could not be determined from their results whether participation increased job involvement or job involvement increased participation. One possible explanation of the relationship not discussed by White and Ruh (1973) is that the relationship between participation and job satisfaction is spurious (i.e., the relationship is due to a common underlying cause).

Another problem with single observation quasi-experimental studies is that attitude change can not be assessed. In order to study the effects of participation on job attitude change, data on the attitudes must be gathered before and after the participative experience begins. Thus, at least two observations are required.

To recapitulate, methodological weaknesses have complicated the interpretation of much research on participation. The major weaknesses discussed were the design of some participation studies, the conceptualization of participation, and the time frame of many participation studies. In sum, there is a need for not only examining the relationship between job

attitudes and participation, but to conduct the research in a manner that makes the results obtained lucid and interpretable. The present research attempts to meet the need.

Fundamental Contribution

The present investigation contributes to the literature on participation in two ways. The first contribution involves the dependent variables under investigation. As previously mentioned, although participation has been posited to affect a large number of employee attitudes and perceptions many of the variables have not been empirically investigated or studied adequately. The present research will attempt to provide evidence on the positive relationship of participation and several core job attitudes. Thus, one focus of the present research is to empirically evaluate the relationship between participation and hypothesized attitudinal and perceptual outcomes that have not been previously considered by researchers.

The second contribution of the present research is inherent in its design. The study was designed to overcome the methodological barriers of many participation studies. In doing so the likelihood that obtained results are interpretable and less ambiguous

increases. Our attention will now turn to the way in which the methodological barriers are resolved.

Resolution of methodological problems

Earlier, it was argued that many participation studies utilized designs that were inappropriate for research on participation. The present investigation resolves the problem by incorporating several features in its methodology. One feature is that the study was conducted in a bona fide organization. Thus, the external validity of the interpretation of the results will most likely be greater than participation studies that were conducted in artificial environments. Another feature of the study is its longitudinal design. As previously mentioned, longitudinal studies are important because it is recognized that attitude change is a relatively slow process that occurs over time. Related to the aforementioned feature is the time frame between observations in the present research. The time frame (five years) is long enough for the attitude change process to occur. In addition, if a change occurs it most likely reflects a true change as opposed one that was due to an artifact of the experiment. Moreover, the time frame is long enough to decrease the probability that the observed

attitude change is transient.

Another methodological problem of some research in participation is the way in which participation was conceived. Instead of being conceived and subsequently measured as a psychological state, participation in the present study is conceived as an activity and measured objectively. When measured objectively the confounding of the participation measure with the measure of influence is eliminated.

Overview

The present research will test 12 hypotheses. The hypotheses and their respective rationale are presented in the ensuing paragraphs. The findings of germane research investigations follow the rationale section of each hypothesis.

Hypotheses

Hypothesis 1. Direct participants in the process of gainsharing will show greater improvement in job satisfaction than indirect participants. That is, direct participation in the process of gainsharing is positively correlated with improvement in job satisfaction

It is through participation that personal concerns about the job could be addressed and resolved.

Examples of possible concerns may revolve around role conflict and/or ambiguity. By resolving problems in such areas, a reduction in the negative aspects of the job would occur. This would result in employees experiencing a more positive attitude toward their jobs.

Much of the extensive research on participation in decision making has dealt with the relationship between participation and job satisfaction and/or job performance. Most results have found that a positive relationship exists between participation and job satisfaction. Schuler (1976) dichotomized 353 employees of a manufacturing organization into high or low participative groups. He found that the high participative subordinates scored significantly higher on the Satisfaction with Work scale of the Job Descriptive Index (JDI) than the low participation group. Abdel-Halim and Rowland (1976) found a correlation of .32 between participation and satisfaction with work and satisfaction with supervisor subscales of the JDI for 106 managers in a drug store company. Schuler and Kim (1978) reported a correlation of .46 between participation and satisfaction with work and satisfaction with supervisors subscales of the JDI

for 409 white collar employees from financial divisions of a public utility company. A correlation of .51 was found between the two variables for 382 employees of a manufacturing firm (Schuler, 1980). Lee and Schuler (1982) studied 134 employees of a service company. They found that participation in the development of work objectives was significantly correlated with general satisfaction ($r. = .41$) as measured by three items from the Job Diagnostic Survey (JDS). The correlation between job satisfaction and the means to achieve those objectives was .34. Locke and Schweiger (1979) conducted a review of the research on the relationship between participation in decision-making and job satisfaction. As part of their research, the findings of the laboratory experiments, correlational studies controlled field investigations were totalled. They reported that in 26 of 43 instances (60%), participation in decision-making was positively related to job satisfaction. In 4 cases (9%) it was concluded that participation was negatively related to employee satisfaction with their jobs.

Hypothesis 2. Direct participants in the process of gainsharing will show greater improvement in organizational involvement than indirect participants.

That is, participative level is positively correlated with improvement in organizational involvement.

It is through the direct participative process that employees become more cognizant of the common bond they share with other employees. Even though the individual group members of the process possess different characteristics (i.e., jobs, experiences, educational level, etc.), they become united with other direct participants by the desire to make the organization more efficient and effective. The direct participants are no longer indifferent to the problems that occur in other departments of the organization. Rather, they become concerned because the problems may inhibit the realization of organizational goals. Thus, the employees become motivated to work with other group members in order to resolve problems. The direct participants see themselves as people who do not just perform a job for an organization. They feel that they are an integral part of the organization because of the impact they have on its direction. The indirect participants are not as involved with organization concerns and are less likely to experience these feelings. As a result, the indirect participants will not show as much improvement in organizational

involvement than the direct participants.

Several studies have found a positive relationship between participation and organizational involvement. Patchen (1970) reported that a positive relationship existed between participation in cooperative work programs and organizational involvement for Tennessee Valley Authority employees. He suggested that perceptions of shared characteristics (e.g. common goals) among employees led to feelings of solidarity with the organization. This in turn promoted feelings of loyalty. However, it was noted that if the work programs were small in terms of actual involvement and influence, organizational involvement was less likely to occur.

Bullock (1983) studied the effects of implementing a participative program on an engineering division of a utility company. In the study, the participants were involved with the development of a merit reward program. He found organizational involvement was positively related to participation. Tannenbaum (1961) conducted a study on the League of Women Voters and reported that groups high in influence tended to have active and loyal members. However, in a study on factory personnel, Jenkins and Lawler (1981) did not

find a significant relationship between organizational involvement and perceived influence in the development of a pay plan.

White and Ruh (1973) examined the relationship between participation and job attitudes for workers and managers from 19 plants of six midwest manufacturing organizations. A correlation of .47 was found between organizational identification and participation for the total subject sample ($n = 2730$).

Hypothesis 3. Direct participants in the process of gainsharing will show a greater improvement in job involvement than indirect participants in the gainsharing process. That is, participative level is positively correlated with improvement in job involvement.

Direct participation in the process of gainsharing allows individuals to evaluate suggestions in terms of whether or not the suggestions will improve their jobs or the jobs of coworkers. Modifying proposed ideas and assessing the efficacy of implemented suggestions are additional responsibilities of direct participants. Thus, the participative process requires more thinking on the part of direct participants. In turn, thinking requires an investment of time and energy. The

increase in investment results in an increased feeling of attachment to the job.

Lodahl and Kejner (1965) defined job involvement as "the degree to which a person is identified psychologically with his work, or the importance of work in his total self-image" (p. 24), and "the degree to which a person's work performance affects his self-esteem" (p. 25). Lodahl (1964) and Lodahl and Kejner (1965) hypothesized that job involvement is primarily determined early in the socialization process and that it is relatively resistant to change from environmental influences. However, Lodahl and Kejner (1965) modified the hypothesis by stating that organizational factors (with particular emphasis on social variables) and values learned early in the socialization process affect job involvement. Unfortunately the authors did not elaborate on the latter statement.

Some empirical evidence has not supported the position of Lodahl & Kejner's (1965) view that participation would have a small role in the development of job involvement. White & Ruh (1973) and Siegel and Ruh (1973) found a statistically significant (.01 level) relationship between participation in

decision-making and job involvement in studies of workers and managers.

Hypothesis 4. Direct participants in the process of gainsharing will show a greater improvement in perceived knowledge of the organization than indirect participants. That is, participative level is positively correlated with improvement in perceived knowledge of the organization.

Direct participants are exposed to more information, and therefore acquire more knowledge about how and why an organization functions than indirect participants. For example, direct participants who work in the shipping department will be exposed to information about how other departments operate. Moreover, the direct participants will develop a broader outlook of the organization. These individuals will also become cognizant of the interrelatedness of the departments, and view the organization as a single entity as opposed to separate units. On the other hand, the indirect participants have less of an opportunity to acquire such information and therefore will tend to view organizational events from a departmental perspective.

Hypothesis 5. Direct participants in the process

of gainsharing will show greater improvement in their perception of impact on the organization than indirect participants. That is, participative level is positively correlated with improvement in the perceptions of employee impact on the organization.

Indirect participants are less likely to see their job behavior as being vital to the successful functioning of the organization. Moreover, they are not completely cognizant of how inefficiency adversely affects organizational performance or of the additive effects numerous inefficient acts have on the organization in terms of productivity. In other words, the indirect participants are not as sensitive as direct participants to the relationship between job effort and overall performance as direct participants. Direct participation on a gainsharing committee affords the opportunity for employees to obtain first hand knowledge of the benefits accrued from corrective measures designed to ameliorate inefficient actions. The same argument can be made for inappropriate or inefficacious job behaviors. This results in the direct participants becoming more sensitive to the relationship between their job effort and overall performance. The indirect participants are less likely

to view their job behavior in this manner. The indirect participants feel that their job behaviors don't make much of a difference in the day to day functioning of the organization. Therefore, the indirect participants perception regarding the importance of their job actions on organizational performance is not as large as the perception held by direct participants.

Hypothesis 6. Direct participants in the process of gainsharing will show a greater increase in their perceptions of influence than will indirect participants. That is, participative level is positively correlated with improvement in employees' perception of influence.

Employees have the opportunity to contribute information and ideas on topics of concern through the direct participative process. When employee ideas are solicited at the meetings, the reality of the opportunity is confirmed for all those in attendance. The result is that employees' perceptions of influence increase because they see that others feel that the ideas are worthy of the time it takes to discuss them. When ideas and/or suggestions reviewed by the direct participants are implemented, the direct participants

have concrete evidence that they can make a difference in company procedures or policies. This in turn increases the perception of influence.

Wood (1972) examined the potential effect of manipulating the amount of participation (along with task situation) on individual's subsequent perceptions of influence. In the study the decision process was divided into three components: alternative generation, alternative evaluation, and alternative choice. Results indicated that participation affected non leader group members' perception of influence. The perception of influence was greatest for individuals who were able to participate in all three phases of the decision process. Likert (1967) describes a participative management style called System 4 through which reciprocal influence is increased. That is, the influence subordinates gain do not result in a decrease in the supervisor's level of influence. The supervisor's level of influence actually increases because the potential for having a greater effect on matters affecting subordinate's performance is increased.

Hypothesis 7. Direct participants in the process of gainsharing show greater improvement in the

perception of intrinsic satisfaction than indirect participants in the process. That is, participative level is positively correlated with improvement in intrinsic satisfaction.

The direct participants in the process of gainsharing invest time and energy as they attempt to help the organization become more efficient and effective. It is unlikely that the direct participants would continue in the process or be as intensely involved if they perceived the organization's concerns as trivial. It is therefore predicted that the direct participants view their committee activities as meaningful. This in turn increases the intrinsic reward received from the participative process. The employees would perceive themselves as having an impact on the organization's development through contributions made. The employees may also improve their feelings about themselves because it would be realized that in the process of helping the organization, they are indirectly helping themselves as well as their families and coworkers. Feeling better about oneself from experiences at work will also lead to increased intrinsic satisfaction derived from work.

Direct participation also produces cognitive

changes within individuals. One way this can occur is when the direct participants learn about ways to ameliorate organizational difficulties that could transfer to other environments. For example, through direct participation individuals may learn ways to improve communication among people, which could be applied to other organizations and/or committees of which the direct participants are members. In addition, direct participants are exposed to various methods others utilize when dealing with problems. The direct participants can then incorporate these techniques when solving future problems. Learning new problem solving techniques may improve intrinsic satisfaction of direct participants through the experiencing of personal growth.

The indirect participants do not have as much opportunity to experience the affective and cognitive changes described above. The indirect participants should therefore show less improvement in intrinsic satisfaction than direct participants.

Hypothesis 8. Direct participants in the process of gainsharing will show greater improvement in their trust towards management than indirect participants. That is, participative level is positively correlated

with improvement in the perception of trust towards management.

Some individuals have little faith in what management personnel do or say. Improvement of trust is often constrained by the limited contact and communication between management and the employees. Moreover, such encounters usually revolve around the administering of directives. Through direct participation in the gainsharing process line staff come into contact with management personnel they would not ordinarily have contact with. Through increased communication via the ensuing working relationship, direct participants can get to know management as individuals. As the working relationship develops, the direct participants begin to view management as concerned people who are not only interested in achieving organizational goals, but who are also interested in employee concerns and ideas. Management personnel are no longer viewed as components of a nebulous unit that is to be blamed for employee troubles. Rather, management is seen as a collection of individuals with whom ideas can be generated, information shared, and feedback provided in order to attain common goals. The new impressions formed by the

direct participants allow for the establishment and growth of trust. The indirect participants do not have the opportunity to interact with management personnel to the extent the direct participants have. Therefore, impressions are less likely to improve. However, if improvement is observed, it is not likely to be as large as the improvement shown by direct participants in the gainsharing process.

Lawler and Hackman (1969) demonstrated that a bonus system designed to improve the attendance of maintenance workers was effective for groups that participated in the development of the plan. Improved attendance did not occur for either the groups that had the same plan imposed on them or the control groups. The authors indicated that the successful outcome in the participative condition may have been due to factors including increased perceptions of trust of management's intentions.

Hypothesis 9. Direct participants in the process of gainsharing will show greater improvement in the perception of teamwork than indirect participants. That is, participative level is positively correlated with improvement in the perception of teamwork.

Indirect participants in the process of gainsharing

are less cognizant of the cooperative actions occurring within and between departments, than members of gainsharing committees. This is because the direct participants work together with other individuals, which in turn increases their exposure to cooperative behaviors. At the cognitive level, the direct participants realize that it takes a group effort in order to realize organizational goals and that successful outcomes can not be attributed to any one individual. For example, although a person may come up with an idea that reduces inefficiency in a department, it takes the combined efforts of others to ensure successful implementation of the idea. Perceptions of teamwork are also improved when productivity information is shared, because it is at this time when data on the the combined efforts of the entire organization is presented.

Experiences such as those described above sensitize the direct participants to the occurrences of teamwork. Concurrently, the direct participants realize that a lack of cooperation prevents the organization from operating at maximum efficiency. In sum, it is expected that the direct participants will show greater improvement in the perception of teamwork than indirect

participants.

Tannenbaum and Massarik (1974) suggested that one possible benefit from the participative experience is feelings of "group belongingness" obtained by means of working together. In a study of sales personnel Likert (1967) found that supervisors who allowed subordinates to participate in decisions were perceived by the subordinates as being a team member.

Hypothesis 10. Direct participants in the process of gainsharing will show greater improvement in perceived awareness of organizational productivity measures. That is, participative level is positively correlated with improved cognizance of how the organization assesses its productivity.

The direct participants receive more information about organizational levels and measurement of those levels than the indirect participant. This in turn, leads to increased knowledge. Because the direct participants receive information directly, misunderstanding from distortion is reduced. In sum, the direct participants receive a greater amount of information as well as more accurate information concerning organizational productivity. Therefore, it stands to reason that direct participants will show

greater improvement regarding awareness of the measures an organization will use to assess productivity.

Hypothesis 11. Direct participants in the gainsharing process will show a greater perceived understanding of the gainsharing program than indirect participants.

Direct participants are exposed to information not readily available to indirect participants. The information enables the direct participants to develop a better understanding of the program. For example, one component in the gainsharing program involves the computation of a monetary bonus calculated from productivity increases the suggestions generated as estimated by suggestion effectiveness measures. Both direct and indirect participants would be expected to know how much the bonus is each month but the direct participants would have access to first-hand information on how the bonus was calculated. This is one way where direct participants would possess greater information than indirect participants on the gainsharing program.

Direct participants also are expected to show greater understanding of the gainsharing plan because they are part of the actual process. Information about

what happens during committee meetings is experienced by the direct participants first hand. It is unlikely that complete and detailed information about committee proceedings can be shared with indirect participants. The differences in amount of information received would affect understanding of what went on in committee meetings and what the entire process entails. Therefore, it is expected that a disparity will exist between direct and indirect participants regarding their perceived understanding of the gainsharing program.

Lawler & Hackman (1969) noted that members of groups who participated in the development of a bonus system appeared to possess greater understanding of the plan than individuals who had the system imposed on them by management. The authors stated that one possible reason for this was that the participative groups received more information about the plan than the imposed groups. Other possible reasons may have been due to the greater amount of time the participative employees had to think about and ask questions about the plan. The participative employees also had time to talk about the system amongst themselves which may have increased understanding.

Bullock (1983) also found that participation in the development of a pay plan increased understanding of the plan. Although these studies refer to participation in the development of a program, it seems reasonable to hypothesize that greater perceived understanding of the program could occur once the program is implemented.

Hypothesis 12. Direct participants will attribute greater effects of gainsharing on the organization than indirect participants. That is, participative level is positively correlated with perceived impact of the gainsharing program.

Direct participants would be expected to be more sensitive to the effectiveness of gainsharing because they are the individuals who process suggestions that may go unnoticed by indirect participants. In addition, it is the direct participants that acquire first-hand information on the effects of an implemented suggestion regarding estimated savings. The information indirect participants receive is second-hand and abbreviated. Through discussion of alternative solutions to problems, the direct participants would become aware of possible supplementary effects of actionable suggestions (e.g.,

better communication a supervisor and subordinate) that may be overlooked by indirect participants. By virtue of increased exposure to such information, the direct participants are more sensitive to improvements that are attributable to the gainsharing program. That is, direct participants would be better able to explain how the gainsharing program improved the work environment. Thus, it is expected that the direct participants' perception of the gainsharing program's effectiveness is greater than the perception of the indirect participants.

Chapter II

Method

Design

Employees of a manufacturing facility were administered an attitude survey in May and July of 1978 (Herein this administration will be referred to as Time 1.). The Time 1 survey included eight scales measuring different job attitudes and two scales tapping perceived knowledge of the organization and awareness of measures the organization uses to assess productivity. A gainsharing program was implemented at the plant the following January. Five years and five months after the administration of the Time 1 survey (October, 1983), the attitude survey was readministered (herein the readministration is referred to as Time 2) along with two additional scales measuring understanding of the gainsharing program and the perceived effects of the gainsharing plan on the organization. The design employed in the present research is the nonequivalent control group design as described by Campbell and Stanley (1966). For purposes of clarity however, the terms experimental group and

control group will not be used to classify the subjects in this study. It is more accurate to view the employees as either being direct participants or indirect participants in the process because all employees are affected by the program (e.g., through the implementation of an actionable suggestion). Assignment to the direct or indirect conditions are based upon the criteria described below.

Procedure

During all survey administrations the employees were told that completing the questionnaire was voluntary, and that their individual responses would not be shared with anyone at the plant. In order to ensure confidentiality and to aid in the coordination of the Time 1 and Time 2 surveys, every employee was assigned a computer generated number that was placed on a label located on the inside cover of the attitude survey. Each respondent was given the opportunity to tear off the number label before returning the survey to the researchers. A file of names and numbers has been kept at this university and the only individuals allowed to see the file of matching names and numbers were members of the research team. The Time 1 survey was administered at the plant. The employees were

instructed to complete the Time 2 survey at home and return it to the researchers the following day. All employees were then classified as identifiable or unidentifiable. For research purposes, employees were classified as identifiable if they a) completed the surveys at Time 1 and Time 2, and b) left their computer generated number on both survey protocols.

Sample

The present study was part of a large ongoing research project at this manufacturing facility. The employees were non-union skilled craftspeople who produced high quality office and residential furniture. The sample of the study consisted of all identifiable employees ($n = 202$) who completed both surveys. The sample was 32.8% of the employees who completed the survey at the beginning of the research ($n = 618$), which in turn was 89% of the total number of people employed at the plant ($n = 694$). The sample of 202 employees, whose average age was 41 years (range of 23 to 63), was 71.8% male. More than three-fourths (79.2%) were married. Seventy-nine percent graduated from high school. Approximately one fourth (25.9%) did not have dependents, 24.9% had one dependent and 36.2% had between 2-4 dependents, inclusive. Most of the

subjects (81.7%) were the primary means of support in their family. Two and one half percent worked less than 40 hours per week; 38.6% worked more than 40 hours each week. The average tenure was 16 years.

The sample of 202 employees was comparable to the total sample of respondents who completed the survey at Time 1 (approximately five years earlier). Demographic data for the total sample at Time 1 were as follows. The average age of the respondents was 35 (range of 17 to 64). Most of the respondents were male (71.1%) and married (68.5%). Eighty-four percent graduated from high school. One third of the respondents did not have dependents at that time. Approximately one fifth (21.1%) had one dependent; 41.2% had between 2-4 dependents, inclusive. Most of the respondents (72%) were the primary means of support in their households. One fifth of the respondents (20.9%) worked more than 40 hours per week; 1.5% were part time employees. The average length of tenure at Time 1 was 8 years. The comparison of the 202 sample with the full sample suggests that the 202 sample was representative of the employees at the company. Therefore, sample selection bias was not felt to be a factor in this research.

Participation system

The participation system utilized in the research was part of a gainsharing system designed for the plant. The two mechanisms through which participation occurred were via the action teams and Participation-Equity-Performance (PEP) committee. Each department of the plant had an action team. As described by Bullock and Bullock (1982), the action teams were responsible for "...providing information to the department regarding company performance, responding to feedback from members of the department, identifying problem areas, and processing actionable suggestions to solve those problems." (p. 404). Each of the action teams consisted of a supervisor and up to 4 elected employee representatives.

The purpose of the PEP committee was to provide a mechanism for "...management to report on the state of the business, to challenge the company's total performance on a regular basis, and to provide an information and communication basis for regular review of the total organizational performance from the entire system." (Bullock & Bullock, 1982, p.404). The committee, whose membership included elected action team representatives and appointed managers, ranged in size from 25 to 39 members during the course of the 5

1/2 year investigation. For supplemental information on the gainsharing system designed for the factory refer to the discussion of Company B by Bullock and Bullock (1982).

Measures

The direct and indirect participative conditions were based on committee membership. Individuals who were members of one or more action teams for any length of time, comprised the direct participative condition regardless of whether or not they served on a PEP committee. The indirect participative condition included all other employees.

The work attitude scales employed in the study were from the Michigan Organization Assessment Questionnaire (MOAQ). Information on the technical aspects of the MOAQ are reported elsewhere (Cammann, Fichman, Jenkins, and Klesh, 1983). The other four scales that tapped understanding of the gainsharing plan, the perceived effects of gainsharing, awareness of organizational productivity measures, and perceived knowledge of the organization were developed by R. J. Bullock.

Definitions of job attitudes

Job satisfaction. Job satisfaction is defined here as the extent to which the individual's affective

response to the job is positive.

Organizational involvement. Organizational involvement is defined here as the extent to which the individual's perceived personal identification with the organization is strong.

Job involvement. Job involvement is defined here as the extent to which the individual's perceived personal identification with the job is strong.

Impact. Impact is defined here as the extent to which the individual believes his or her efforts affect organizational functioning.

Influence. Influence is defined here as the extent to which the the individual believes he or she has a say in decisions made concerning the job.

Trust towards management. Trust towards management is defined here as the extent of an employee's faith in what management says or does.

Teamwork. Teamwork is defined here as the extent to which the respondent believes that employees work with others on solving problems of mutual concern.

Intrinsic satisfaction. Intrinsic satisfaction is defined here as the extent to which the individual feels satisfied with the intangible outcomes of the job.

Knowledge of the organization. Knowledge of the organization is defined here as the extent to which employees believe they are familiar with how the organization functions.

Awareness of organizational productivity measures. Awareness of organizational productivity measures is defined here as the extent to which the employee feels that he or she is cognizant of the measures an organization uses to assess its productivity.

Understanding of the gainsharing plan. Understanding of the gainsharing plan is defined here as the extent to which the individual perceives that he or she is knowledgeable about pertinent aspects of the gainsharing plan as it applies to the organization.

Effects of gainsharing on the organization. Effects of gainsharing on the organization is defined as the extent to which the individual believes that the gainsharing plan has had an impact on selected aspects of the organization.

Analysis

Cronbach's alpha, a measure of internal consistency, was calculated for each administration of every scale. The test-retest reliability was also computed for all scales administered at both survey

administrations. Descriptive statistics on all survey scales and respective items were also computed.

A t-test analysis was conducted to determine if the individuals who would eventually be classified as direct or indirect participants differed initially on the Time 1 measures of the job attitudes and perceived knowledge of the organization. The analysis was not run on perceptions of the gainsharing itself. Assessment of these variables were not collected at Time 1 because the results would not be meaningful. That is, it is not meaningful to ask people about their perceptions of gainsharing if the program has not been implemented at the plant.

Another t-test analysis was conducted after the data from the Time 2 administration had been collected. The direct participant's Time 2 scores were compared with the Time 2 scores of indirect participants in order to determine if statistically significant differences existed on the measures. This procedure was used to test the hypotheses pertaining to the perceived understanding and perceived effectiveness of the gainsharing program.

The measurement of change in nonequivalent control group designs has received a good deal of attention in

the literature. There are some (e.g. Cronbach and Furby, 1970) who feel that change can not be ascertained. Kenny (1975) believes otherwise but argues for the importance of identifying how individuals were selected into the groups of nonequivalent control group designs. Kenny (1975) identified selection models (e.g. selection based on pretest scores) and their corresponding statistical techniques for accurately measuring differential change. Kenny (1975) also observed that there may be occasions when it is unclear which method of analysis is appropriate or that the methods of analysis presented are not appropriate. This appears to be the case in the present research. In the present research, individuals were elected into the participative condition. Selection was not based on Time 1 scores. No individual was forced to serve on an action team and any person on an action team could withdraw from the committee at any time. Selection occurred on a continuous basis. That is, people were selected when a vacancy occurred on an action team, when an action team was expanded or when new departmental action teams were formed. Because the selection model was not in consonance with any model described by Kenny (1975),

the analysis of change was measured in two ways. The first method of analysis is based, in part, on the fan close model of growth explicated by Bryk and Weisberg (1977). In brief, the model assumes that the growth curves of the two groups will converge over time and that the variances of each group will attenuate in the absence of treatment. The model was chosen because regression toward the mean is problematic for designs in which data is gathered on only two occasions (see Nesselroade, Stigler, and Baltes (1980). Regression and correlation procedures were used to test the hypotheses involving job attitudes and perceived knowledge of the organization. The first step involved regressing the Time 2 score on the Time 1 score, participative level, and the interaction between the Time 1 variable and participative level. The Johnson-Neyman technique (see Hutema, 1980; Rogosa, 1980) was used to identify nonsimultaneous confidence intervals of the variables with statistically significant interactions. What the Johnson-Neyman technique indicates is a region of statistical significance. The technique allows the inference of the probability of observed group differences on Time 2 scores (for those individuals who obtained a given Time

1 score) occurring by chance. If the interaction effect was not statistically significant, the Time 2 scores were regressed on the Time 1 scores. A residual score was calculated. The residual represents the portion of the Time 2 score that is uncorrelated with the Time 1 measure. The residual score was conceived as an index of change relative to how others changed in the present investigation. The residual was then correlated with participative level in order to examine the relationship between the two.

Hypotheses of differential improvement were also examined using the raw difference score between the Time 2 and Time 1 measures. That is, the mean difference between the Time 2 and Time 1 measures for the direct participants were compared with the Time 2 and Time 1 mean difference for the indirect participants. The rationale behind the use of difference scores involves explication of an expected model of change in the absence of treatment. In the present study the parallel mean growth model, as described by Eryk & Weisberg (1977), served as one kind of expected growth model. The major assumption of the model is that in the absence of treatment it is expected that the mean difference in attitude between

the groups, and the within group variance remains the same across time. The analysis will serve as a cross check of the regression procedure described above. Two analyses were conducted because no organizational research on attitude change, found by this writer, specifically addressed the assumptions of any growth model explicated by Bryk & Weisberg (1977). Cohen and Cohen (1983) noted that major assumptions underlying the use of raw difference scores are not likely to be met in the behavioral sciences and will result in an underestimation of true effects. Thus, it is expected that the analysis using raw difference scores would yield results less accurate than the results of the residual analysis. Therefore, the residual analysis described in the preceding paragraph will serve as the basis for data interpretation.

Hypotheses regarding perceived understanding and effectiveness of gainsharing were tested on Time 2 scores because no comparable measures were collected at Time 1. Means of the two groups were compared via the t-test.

Chapter III

Results

Scale and item analysis at Time 1 and Time 2

Descriptive statistics for each scale, and the items that comprise the scales, are presented in Table 1. The scale and item means at Time 1 were generally smaller than their respective means at Time 2. Most scales at Time 1 and Time 2 were negatively skewed.

Insert Table 1 about here

Reliability

The reliability of each scale was measured in two ways. The first method ascertained the stability of the scales by correlating the two administrations over a five year period. The correlation coefficients represent a lower bound estimate of the scales' test-retest reliability. The second index of reliability assessed the internal consistency of each scale via coefficient alpha. Results of the analyses are presented in Table 2.

Insert Table 2 about here

The correlation coefficients of the Time 1 and Time 2 administrations ranged from .15 to xx. All but the Awareness of Organizational Productivity Measures scale was statistically significant at the .001 level. The test-retest reliability is not reported for perceived understanding and effectiveness because data for these scales were not collected at Time 1.

Coefficient alphas are presented in Table 2. All scales across both administrations had alphas greater than .60 with the exception of the scales assessing awareness of organizational productivity measures and perceived influence. One reason why the two scales exhibit low coefficient alphas may be due to the few number of items that comprised the scales.

All scales were considered to have adequate reliability with the exception of the Awareness of Organizational Productivity Measures and Perceived Influence scales. The Awareness of Organizational Productivity Measures scale was judged to have inadequate reliability because the test-retest correlation was nonsignificant and coefficient alpha

was low at Time 1 and Time 2. The Influence scale was discarded because of low internal consistency at Time 1. It was necessary for the Time 1 measure to demonstrate satisfactory reliability because it would be used as a covariate in portions of the data analysis. An unreliable covariate could lead to biased results (Pedhazur, 1982).

Scale derivation

One issue in the analysis of scale data involves the interpretation of missing data. That is, if a respondent omits one or more items of a scale, the question of whether or not to include the individual in subsequent data analyses arises. One could argue that the respondent's data should not be included in the analyses because the reliability of the scale's score is affected by missing data. Concerns about whether or not one is measuring the same thing may be raised if different items are responded to differentially across administrations. On the other hand, it can be argued that despite the number of items responded to the scale measures the same entity if quality items comprise the scale. Both arguments are incorrect according to the results of the current research. The statistical procedures were run with and without missing data. No

major differences were found regarding data interpretation. For clarity, individuals with missing data were included in all analyses.

Group differences at Time 1

Table 3 presents the results the two sample pooled variance t-test analysis that determined if the people who would eventually become direct or indirect participants differed initially on the Time 1 measures. Seven of the eight group means were not statistically significant with probability values ranging from .217 (Job Satisfaction) to .834 (Trust). The mean knowledge of organization for direct participants was slightly greater than the mean for indirect participants ($t = 2.81$, $p = .005$).

Insert Table 3 about here

Group differences at Time 2

A comparison of the participative groups is presented in Table 4. All mean differences were in the hypothesized direction with the exception of the Job Involvement scale. Results show that statistically significant mean differences between the two participative conditions existed for all work attitudes

with the exception of Job Involvement, Impact, and Teamwork. Differences between means for the two groups were statistically significant for the scales measuring Knowledge of the Organization, Perceived Understanding of Gainsharing, and Perceived Effectiveness of the Gainsharing.

Insert Table 4 about here

Correlational results

A multiple regression analysis was performed where the Time 2 measure was regressed on the Time 1 measure, participative level, and the interaction of participative level and the Time 1 scores. The test of the interaction is a test of whether the regression of Time 2 scores on Time 1 scores are parallel in the two participative groups. This is important because nonparallel regression slopes suggests that participation has differential effects across people. That is, the effects of participation is dependent upon what one scored at Time 1. Table 5 shows that a statistically significant interaction effect was present for Impact ($F = 4.11$, $p = .04$).

The Johnson-Neyman technique is a procedure that

identifies regions of significance for groups exhibiting nonparallel regression slopes. That is, it allows inferences to be made regarding the probability of groups differing on a dependent variable (if in the population such differences exist) as a function of independent variable levels. Non-simultaneous boundaries will be calculated because an overall treatment effect is desired (see Rogosa, 1980). When interpreting the boundary it should be realized that each level of the independent variable is being analyzed independent of all other levels. The upper boundary was beyond the upper range of the scale which indicates that the interaction is ordinal. The lower boundary was 3.9.

Insert Table 5 about here

Participative level was correlated with the residual of Time 2 on Time 1 for variables with nonsignificant interactions. The correlation coefficients are shown in Table 6. The correlations ranged from .03 (Job Involvement) to .23 (Trust).

Insert Table 6 about here

Repeated measures analysis

Descriptive statistics for the scale and item raw difference scores are shown in Table 1. Table 7 presents the results of the repeated measures analysis. The test germane to this study is the test of the interaction effect. The test of the interaction is tantamount to examining the relationship between participation level and the raw difference score between the Time 1 and Time 2 variables. Results show that statistical significance was attained for Trust. Differences between Time 2 and Time 1 were similar for the two groups were similar on all other variables.

Insert Table 7 about here

Power analysis

The sensitivity of the analyses to detect group differences in job attitudes and work related factors, if in fact such differences exist, is determined by alpha level, sample size and effect size. The power of the present research was capable of detecting moderate

correlations. One common means of increasing power is to increase the sample size. An increase in sample size would enable smaller group differences to attain statistical significance. However, statistical significance in no way implies practical significance. That is, even if smaller differences were statistically significant the amount of variance explained would not increase appreciably. In sum, the power of the present research was capable of detecting moderate group differences.

Chapter IV

Discussion

The basic question of the present research was: Is the improvement in core job attitudes of people who directly participate in the process of gainsharing greater than the attitude improvement of people who are indirect participants in the gainsharing process? The hypotheses predicted a positive relationship between participative level and attitude improvement for specific variables. The current investigation found that people who are direct participants in the process of gainsharing showed a greater increase in some core job attitudes than the indirect participants. Direct participants in the gainsharing process showed some improvement in job satisfaction, organizational involvement, intrinsic satisfaction, and trust towards management than indirect participants. Direct participants who were not high in their perceptions of impact at Time 1 showed greater improvement in the attitude than indirect participants who were not high in their perception of impact at Time 1. The amount of improvement of direct participants was not greater than

the improvement shown by indirect participants for job involvement, and teamwork. Although the results indicate improvement, the size of most correlations were small. Trust in management appeared to moderately improve as a result of the participative experience. Moreover, trust was the only dependent variable that reached statistical significance for both the residual and raw gain score analyses. Therefore, it does appear that participation in a gainsharing committee is an effective means of improving employees trust in management.

The results also indicated that the direct participants' perceived understanding of gainsharing and perceived effectiveness of the program was greater than the perceptions of indirect participants. Findings showed also that the amount of improvement regarding knowledge of the organization did not differ between the two participative levels.

The findings of the present study support results obtained by Jenkins & Lawler (1981) where a positive relationship was found between participation and organizational involvement. However, present results are not in consonance with the positive relationship found between participation and job involvement as

reported by White & Ruh (1973) and Siegel & Ruh (1973). One possible reason for conflicting results could have been due to the conceptualization of participation. In the Siegel and Ruh (1973) study, the participation measure "...essentially asked the subject to indicate the degree of influence he had in decisions affecting his job" (p. 322). Siegel and Ruh (1973) did not attempt to change the level of job involvement as was the case in the present investigation. The conception of participation was also different in the current research and the study by White and Ruh (1973) research. In addition, committees were concerned primarily with processing employee suggestions in the present research. The individuals of the Siegel and Ruh (1973) and White and Ruh (1973) studies appeared to have been asked to respond to influence in all aspects of their work. What this may mean is that for participative programs to increase job involvement, employee participation may need to encompass aspects of the job other than suggestion processing.

There is another possible reason why the results of the current research failed to detect a relationship between participative level and improvement in job involvement. The problem lies in the measurement of

job involvement. DeBettignies (1986) argued that only one item of the scale ("I am very much personally involved in my work.") is a valid measure of job involvement. Individuals who respond at the lower end of the continuum on the other two items do not necessarily indicate that they are people who are not high in job involvement. For example, people can be very involved with the job but do not respond at the upper end of the continuum for item 3 ("The most important things that happen to me involve my job.") because their families are the most important things that happen to them (DeBettignies, 1986). Thus, if job involvement was measured the way DeBettignies (1986) recommended, different conclusions may have been drawn in the present study.

Another explanation as to why a larger correlation was not found between participative level and improvement in job involvement is that the variable increased for both conditions. Any attitude improvement in the indirect group results in a lower correlation because the improvement for the direct group has to be over and above the increase for the indirect group. That is, rate of increase was a factor that affected the correlations between participative

level and attitude improvement. If the improvement rate for the two conditions were similar, low correlation coefficients would be obtained. This is what appeared to have happened to job involvement in the present investigation.

The hypothesis regarding differential improvement in the knowledge of the organization was not supported in the present study. An examination of the sample means reveal an overall increase in perceived knowledge. One plausible explanation of why a larger correlation was not obtained was that the direct participants did an excellent job of relaying relevant organizational information to the indirect participants. Thus, everyone's knowledge of the organization increased but differences in the rate of improvement between the two participative conditions were not obtained.

Differences were also not found for perceptions of teamwork for the two participative conditions. The possibility may exist that the perception may be intertwined with actual job performance. That is, the perception may be concretely tied to the job where differential improvement occurs when one participative condition produces something tangible as a result of

combined efforts. Direct participation on a gainsharing committee does not yield such a product which is why differential improvement may not have occurred between the two conditions.

The findings of the present research are important because they provide a viable explanation of why inconsistent results of previous studies examining the relationship between participation and job satisfaction exist. Inconsistent conclusions from previous literature may be due, in part, to the initial level of the samples' job satisfaction. If the initial level of job satisfaction is high, the possibility exists that improvement may be constrained unless the data is transformed. The sample used in the present investigation was fairly high in initial levels of job satisfaction. The finding is in consonance with previous research (Quinn & Staines, 1978). Although a statistically significant relationship was attained between job satisfaction and participative level in the present study, individuals may not have responded to the interventions of other investigations because they were already quite satisfied with their jobs.

Staw and Ross (1985) analyzed data obtained from the National Longitudinal Survey (Center for Human

Resources, 1977) and found a correlation of .29 ($p < .001$) between two administrations of a job satisfaction measure. When the effects of attrition were controlled, the correlation was .30. The time interval between administrations was five years. On the basis of that and other analyses, Staw and Ross (1985) argued that one reason some intervention programs designed to improve job satisfaction are not successful is due to the stability of the persons' attitude. The beneficial effects of some intervention programs are negated by the stability of the job satisfaction across time. The findings of the present research offer an alternative viewpoint on the matter. That is, many people may not significantly improve their perceptions of job satisfaction because they are already satisfied with their work. The argument extends to other work attitudes as well. For example, Lawler and Hall (1970) observed that the restriction of range in the sample of their study could have affected the relationship among the variables they investigated.

The findings of the study are also important because new information is contributed to the literature. Prior participation studies have often compared the effects of participation on the work

attitudes of participants vis-a-vis nonparticipants. There was no nonparticipative group in the present investigation. Everybody was involved in the participative process in some way. People either indirectly participated through committee representatives or directly participated in the actual process. It has been shown that one means of improving some core job attitudes of employees is to have them directly participate on gainsharing committees. Indirect participation in the process may also improve work attitudes, but direct participation increases the chances for attitude improvement. Greater perceptions of program effectiveness is also acquired through direct participation which may be important when additional intervention programs are offered to the employees. This is important because the more people show positive perceptions of one intervention program the more receptive they would probably be to future organization intervention programs.

The results of the study are also germane to the issue concerning the characteristics of people who participate in gainsharing committees. That is, do people who join participative committees initially differ on core job attitudes than individuals who do

not directly participate on the committees? One may argue that those who join committees possess better attitudes because those who have poor attitudes may be too pessimistic about the outcomes of committee work, too distrustful of management motives, or too apathetic to care about the committee. On the other hand, it can be argued that people who join committees will have poorer work attitudes than those who do not join committees because they have nothing to lose by participating on the committees. Both arguments could be incorrect for the results of the current research because there were no statistically significant differences between the direct and indirect participants on any core job attitude measured in this study. Caution must be exercised against unconditional acceptance of the conclusion because of selection bias. Less than 1/3 of the sample allowed themselves to be identified for research purposes.

Limitations

Two limitations of the study should be noted. First, the initial work attitude levels of the direct and indirect participants did not differ significantly. However, the possibility exists that there were unmeasured characteristics that interacted with the

participative experience that caused the increase in attitudes. The possibility of such an effect reduces the potential internal validity of the study. This problem could be eliminated by randomly assigning individuals to the direct and indirect participative groups. However, by doing so, one alters the nature of the gainsharing program. Through random assignment it is likely that people will be on committees they do not wish to serve on. Thus, the risk of creating negative employee reactions that could have pernicious effects on the efficacy of the committee, the intervention, and other aspects of organizational functioning exists (Refer to Bullock, in press).

Only two measurements were collected in this study. One advantage of collecting additional data is that the nature of attitude change can be better detected. With measures at only two points in time the issue of attitude stabilization can not be addressed. That is, it can not be determined if attitude change stabilized. With more than two measurement points, not only can stabilization be detected but when the stabilization occurred could also be observed. Moreover, the nature of the change can not be detected with measurements. With multiple measurements it can be determined if

attitude change occurred slowly at first and then increased at a rapid rate or if the reverse occurred. The second problem is corrected by taking multiple measures of employee attitudes. Extensions and replications of the research should incorporate multiple attitude measures.

Future research

The present research leads to additional questions concerning the relationship between participation and job attitudes. For example, does intensity of involvement in the gainsharing committee relate to job attitude improvement? People vary in the intensity of involvement in groups. While some people may be members of a participative group they may be content to sit back and let the go getters do all the work. Is there a difference in attitude change between the low intensity committee members and the high intensity individuals? One issue that merits exploration is the possible attitudinal change differences that might occur among people in the same participative group (e.g., among members of the action teams in the present study). An investigation of this nature would necessitate the development of measures to assess intensity of involvement among members of the same

committee.

Another research issue involves the effects of participation on job attitudes in relation to the amount of time spent on committees. For example, people were classified in the direct condition if they were ever a member of an action team in the present study. A person who served on one committee in 1979 was in the same classification as the individual who had been on a committee for five years. One beneficial research topic would be to examine the relationship between attitude differences and tenure length in participative committees. Investigating the effects of serving on two or more committees on work attitudes is also of import. In sum, much research needs to be conducted if a better understanding of the effects of participation on job attitudes is to be attained.

Another research issue concerns the attitude improvement shown by only those individuals who were not high in the job attitudes. The present study attempted to address this issue but the sample size was small enough to have a marked impact on the power of the analyses. Thus, no test of this hypothesis was conducted.

Conclusions

The major finding of the present research was that direct participants in the gainsharing process experienced a slightly greater amount of improvement than the improvement experienced by the indirect participants in some (but not all) core job attitudes. Differential improvement regarding trust in management was observed. Even if direct and indirect participants were fairly high in the work attitudes, differential improvement was demonstrated. Direct participants also showed greater perceptions of understanding the gainsharing plan as well as greater perceptions of gainsharing's impact on the organization. The predominant function of the direct participants were to process employee work improvement suggestions. Level of participation appears to have differential impact on the improvement in work attitudes. Future studies could investigate the scope of responsibility in the participative process.

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Note

1. Corrections were made to the article. The citation is: Jackson, S. E. (1984). Correction to "Participation in decision making as a strategy for reducing job-related strain". Journal of Applied Psychology, 69, 546-547.

Table 1

Descriptive Statistics for All Measures Used in This Research

Scale and Item Description ^a	Time 1 Survey			Time 2 Survey			T2-T1 Change		
	n	M	SD	n	M	SD	n	M	SD
<u>Job satisfaction</u>	199	5.5	1.2	201	5.6	1.1	198	.15	1.4
1. All in all, I am satisfied with my job.	199	5.1	1.6	200	5.4	1.4	197	.23	1.8
2. In general, I like working here.	199	5.8	1.1	200	5.8	1.0	197	.03	1.1
3. In general, I don't like my job. (reversed)	197	5.5	1.5	200	5.7	1.4	195	.19	1.8
<u>Organizational involvement</u>	199	5.8	1.1	200	5.9	1.1	197	.09	1.2
1. What happens to this organization is really important to me.	199	5.8	1.2	200	5.9	1.1	197	.07	1.2
2. I don't care what happens to this organization as long as I get my paycheck. (reversed)	199	5.8	1.4	200	5.9	1.3	197	.10	1.6
<u>Job involvement</u>	199	3.9	1.2	200	4.2	1.2	197	.30	1.2
1. I am very much personally involved in my work.	198	5.4	1.5	199	5.9	1.3	195	.52	1.6
2. I live, eat, and breathe my job.	195	2.7	1.7	195	3.1	1.7	189	.35	1.7
3. The most important things that happen to me involve my job.	195	3.4	1.7	197	3.4	1.6	190	-.05	1.8

Table 1 (continued)

Descriptive Statistics for All Measures Used in This Research

<u>Scale and Item Description^a</u>	<u>Time 1 Survey</u>			<u>Time 2 Survey</u>			<u>T2-T1 Change</u>		
	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>
<u>Knowledge of the organization</u>	198	4.4	1.5	200	5.0	1.4	196	.67	1.6
1. I understand the operations of this company.	197	4.3	1.7	198	4.9	1.5	193	.60	2.0
2. I really don't know much about how (this company) functions.	198	4.4	1.8	199	5.1	1.6	195	.73	1.9
<u>Impact</u>	142	4.6	1.3	193	5.1	1.2	135	.49	1.4
1. By working harder and smarter, I can improve the productivity of this organization.	142	4.8	1.4	192	5.3	1.2	135	.49	1.6
2. When I work hard, it has a positive impact on the total performance of this company.	142	4.4	1.5	191	4.9	1.3	133	.47	1.7
<u>Intrinsic Satisfaction</u>	199	4.6	1.5	199	4.9	1.4	196	.32	1.7
1. How satisfied are you with...									
a. ...the chances you have to learn new things?	199	4.5	1.7	195	4.9	1.6	192	.39	2.0
b. ...the chances you have to accomplish something worthwhile?	197	4.6	1.6	196	4.9	1.5	191	.27	2.0

Table 1 (continued)

Descriptive Statistics for all Measures Used in This Research

<u>Scale and Item Descriptions^a</u>	<u>Time 1 Survey</u>			<u>Time 2 Survey</u>			<u>T2-T1 Change</u>		
	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>
<u>Trust</u>	199	4.1	1.4	200	4.1	1.5	197	-.04	1.6
1. I feel like I can trust the people in this company.	196	4.1	1.7	196	4.2	1.7	190	.03	1.9
2. When the management of this company says something, you can believe its true.	198	4.1	1.5	200	4.0	1.7	196	-.10	2.0
<u>Teamwork</u>	202	3.4	1.5	202	3.6	1.5	202	.11	1.6
1. When problems arise, everybody involved works together to solve them.	197	3.5	1.8	199	3.7	1.8	194	.13	2.1
2. We all work together as a team here.	141	3.6	1.6	193	3.7	1.8	136	.21	2.0
3. All the employees here cooperate to get the job well done.	141	3.3	1.5	194	3.3	1.6	136	.12	1.7
<u>Perceived understanding of gainsharing</u>				194	5.0	1.5			
1. I understand the formula used for calculating our bonus each month.				194	4.0	1.8			
2. I understand what the PEP committee does.				192	4.7	1.6			
3. Do you know who your Action Team leader is? ^c				187	5.7	2.5			
4. Do you know who your PEP representative is? ^c				184	5.9	2.3			

Table 1 (continued)

Descriptive Statistics for All Measures Used in This Research

<u>Scale and Item Descriptions^a</u>	<u>Time 1 Survey</u>			<u>Time 2 Survey</u>			<u>T2-T1 Change</u>		
	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>
<u>Perceived Effectiveness of Gainsharing^b</u>				191	3.7	.7			
1. Overall, has gainsharing helped or hurt things here at (this company)? (reversed)				175	4.0	.8			
2. In the ten areas below, has gainsharing helped or hurt improvement efforts?									
a. Productivity? (reversed)				176	4.0	.8			
b. Quality? (reversed)				173	3.5	1.0			
c. Cost Savings? (reversed)				171	4.1	.7			
d. Information about the company? (reversed)				174	4.0	.7			
e. Communication between management and workers? (reversed)				175	3.8	.9			
f. Skills and effectiveness of supervisors? (reversed)				172	3.5	.9			
g. Job attitudes? (reversed)				173	3.6	1.0			
h. Pay and bonuses? (reversed)				177	3.8	.8			
i. Ideas and suggestions? (reversed)				173	4.0	.8			
j. Cooperation between management and workers? (reversed)				172	3.6	.9			

Table 1 (continued)

Descriptive Statistics for All Measures Used in This Research

^aThe anchors for the scales were "Strongly Disagree" (1), "Disagree" (2), "Slightly Disagree" (3), "Neither Agree nor Disagree" (4), "Slightly Agree" (5), "Agree" (6), and "Strongly Agree" (7) for all items except where noted.

^bThe anchors for these items were "Helped a lot" (1), "Helped a little" (2), "Had no impact" (3), "Hurt a little" (4), "Hurt a lot" (5), and "Don't know" (6) except where noted. Assessment of the scale prior to onset of the gainsharing program was not considered meaningful. T1 and change scores are therefore not available.

^cThe response choices for the item were "Yes" (1) and "No" (2). The numeral 1 was recoded to 7 and the numeral 2 was recoded to 1 for all data analyses.

Table 2

Internal consistency and test-retest reliability of Scales

Scale	k	<u>Internal Consistency</u>						<u>Test-Retest</u>	
		<u>Time 1</u>		<u>Time 2</u>		<u>T2 - T2</u>		<u>r^b</u>	<u>p</u>
		n	a ^a	n	a ^a	n	a ^a		
Job satisfaction	3	197	.83	199	.78	194	.77	.29	.001
Organizational involvement	2	199	.64	200	.63	197	.48	.42	.001
Job involvement	3	191	.61	191	.65	182	.54	.48	.001
Knowledge of the organization	2	197	.71	197	.73	192	.55	.40	.001
Impact	2	142	.79	190	.74	133	.67	.34	.001
Influence	2	193	.38	195	.57	186	.49	.30	.001
Intrinsic satisfaction	2	197	.82	192	.79	197	.69	.33	.001
Trust	2	195	.73	196	.63	189	.53	.41	.001
Teamwork	3	135	.72	190	.80	129	.56	.40	.001
Awareness of org. productivity measures	2	140	.49	192	.59	133	.42	.15	.042
Understanding of gainsharing ^c	4			183	.73				
Perceived effectiveness of gainsharing ^c	11			134	.91				

^aCoefficient alpha measure of reliability.

^bCorrelation between Time 1 and Time 2 measures.

^cNo Time 1 or change measures are available on program assessment measures, since the questions were not meaningful at the administration of the Time 1 survey.

Table 3

Comparison of Participative Groups at Time 1

Scale	<u>Direct Participants</u>			<u>Indirect Participants</u>			t ^a	df	p ^b
	n	M	SD	n	M	SD			
Job satisfaction	77	5.6	1.2	122	5.4	1.2	1.24	197	.217
Organizational involvement	77	5.9	1.1	122	5.7	1.1	.93	197	.355
Job involvement	77	3.7	1.2	122	3.9	1.2	-1.36	197	.175
Knowledge of the organization	76	4.7	1.6	122	4.1	1.5	2.81	196	.005
Impact	57	4.7	1.3	85	4.5	1.3	.66	140	.509
Intrinsic Satisfaction	77	4.7	1.6	122	4.5	1.5	.79	197	.430
Trust	77	4.1	1.4	122	4.1	1.5	-.21	197	.834
Teamwork	77	3.5	1.5	125	3.4	1.5	.54	200	.586

^aTwo-sample pooled variance t-test.

^bTwo-tailed probabilities.

Table 4

Comparison of Participative Groups at Time 2

Scale	<u>Direct Participants</u>			<u>Indirect Participants</u>			t ^a	df	p ^b
	n	M	SD	n	M	SD			
Job satisfaction	76	5.8	.8	125	5.5	1.2	1.88	199	.031
Organizational involvement	76	6.1	.9	124	5.8	1.1	1.78	198	.039
Job involvement	76	4.1	1.2	124	4.2	1.2	-.40	198	.344
Knowledge of the organization	76	5.3	1.4	124	4.8	1.4	2.65	198	.005
Impact	74	5.3	1.2	119	5.0	1.2	1.40	191	.082
Intrinsic satisfaction	77	5.2	1.4	122	4.7	1.4	2.08	197	.020
Trust	76	4.5	1.4	124	3.8	1.5	2.95	198	.002
Teamwork	77	3.7	1.4	125	3.5	1.5	1.26	200	.104
Perceived understanding of gainsharing	74	5.7	1.3	120	4.6	1.5	4.75	192	.001
Perceived effectiveness of gainsharing	72	3.9	.6	119	3.7	.7	2.26	189	.013

^aTwo-sample pooled variance t-test.

^bOne-tailed probabilities are reported because the direct participative group was expected to show greater T2 scores than the indirect participative group.

Table 5

Test of the Interaction effect of T1 scores and Participative level on T2 scores

Scale	F	df	p
Job satisfaction	2.31	1,193	.13
Organizational involvement	1.49	1,192	.22
Job involvement	.46	1,192	.50
Knowledge of the organization	.00	1,191	.97
Impact	4.11	1,130	.04 ^a
Intrinsic satisfaction	1.55	1,191	.22
Trust	1.06	1,192	.30
Teamwork	.08	1,197	.77

^aThe Johnson-Neyman lower boundary for this statistically significant interaction was 3.91. The upper boundary was greater than 7 (the upper limit of the response scale).

Table 6

Correlation of residual change scores and participative level

<u>Scale</u>	<u>n</u>	<u>r</u>
Job satisfaction	198	.12
Organizational involvement	197	.12
Job involvement	197	.03
Knowledge of the organization	196	.10
Intrinsic satisfaction	196	.15
Trust	197	.23
Teamwork	202	.08

Table 7

The effects of participative level on the raw difference score

Scale	F	df	p
Job satisfaction	.22	1,196	.64
Organizational involvement	.77	1,195	.38
Job involvement	1.13	1,195	.29
Knowledge of the organization	.41	1,194	.53
Impact	1.52	1,133	.22
Intrinsic satisfaction	1.39	1,194	.24
Trust	8.08	1,195	.01
Teamwork	.44	1,200	.51