A STUDY OF CAUSAL RELATIONSHIPS BETWEEN ORGANIZATIONAL VARIABLES AND PERSONAL INFLUENCE VARIABLES DURING THE IMPLEMENTATION OF A SCANLON PLAN

Thesis for the Degree of Ph. D.
MICHIGAN STATE UNIVERSITY
GERRY S. BURTNETT
1973

This is to certify that the

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presented by

Gerry S. Burtnett

has been accepted towards fulfillment
of the requirements for

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Date February 22, 1973

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ABSTRACT

A STUDY OF CAUSAL RELATIONSHIPS BETWEEN
ORGANIZATIONAL VARIABLES AND PERSONAL INFLUENCE
VARIABLES DURING THE IMPLEMENTATION OF
A SCANLON PLAN

By

Gerry S. Burtnett

The purpose of the research reported here was to discover causal connections between a set of five organizational climate variables and four personal influence variables during the implementation of the Scanlon Plan in a small firm. The basic proposition tested in this research was that the perceived level of an organizational variable at one point in time was a contributing cause of the perceived level of a personal influence variable at a subsequent point in time as the firm implemented the Scanlon Plan.

In order to test this basic proposition, twenty hypotheses were formulated as independent statements of its veracity. Logically, these hypotheses were derived in four stages. First, the nature of personal influence was defined and a model of actual influence, ideal influence, the felt importance of influence, and the congruence between actual and ideal influence was constructed. Second, the concept of participative decision-making was developed, along with a set of five environmental variables affecting the organizational change

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from a hierarchical to a participative system of management. Third, it was argued that any change to a more participative system involved increased personal influence throughout an organization and that such increased influence enhanced the effectiveness of the organization through higher quality decision-making and implementation. Fourth, the basic proposition of the study was framed and the hypotheses of this study were generated by independently considering each combination of a causative environmental variable and a resulting personal influence variable.

A questionnaire was devised to measure the variables of interest and administered at two points in time: (1) during the company's second month with the Plan, and (2) during its seventh month. A preliminary statistical analysis of the questionnaire scales showed that three scales measuring actual influence and two scales measuring environmental variables (perceived organizational commitment to the Plan and perceived linkage between bonuses and suggestions) were valid.

As a result of this preliminary finding, only two of the original twenty hypotheses could be tested:

1. The perceived level of commitment to the Scanlon Plan at one point in time is the predominant cause of the level of perceived actual influence at a subsequent point in time.

2. The perception of an explicit link between suggestions and bonus payments at one point in time is the predominant cause

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They were tested with the cross-lagged panel correlation technique. Partial support was found for both hypotheses. They were significantly supported with reference to the respondents' own jobs and the activities of their departments. There were no significant findings for either hypothesis with regard to the activities of the company.

Two primary conclusions were reached. First, the causative nature of the two organizational variables specified in these hypotheses and actual personal influence had been demonstrated. Second, this causative connection highlighted the importance of these variables in any attempt to shift an organization to a more participative mode of operations.

Committee Members:

Dr. Carl Frost

Dr. Jack Wakeley

Dr. Frank Schmidt

Dr. Michael Moore

Approved: _____
CHAIRMAN

Date: _____

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Gerry S. Burtnett

A THESIS

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"Hallo!" said Piglet, "what are *you* doing?"

"Hunting," said Pooh.

"Hunting what?"

"Tracking something," said Winnie-the-Pooh very mysteriously.

"Tracking what?" said Piglet, coming closer.

"That's just what I ask myself. I ask myself, what?"

"What do you think you'll answer?"

"I shall have to wait until I catch up with it."

-- *A. A. Milne*

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ACKNOWLEDGMENTS

I wish to acknowledge the professional aid of the four members of my dissertation committee. Each man has made a distinct contribution to both my research efforts and my career.

Dr. Carl Frost showed me that data without context is sterile.

Dr. Jack Wakeley showed me that meaningful research involves close attention to detail.

Dr. Frank Schmidt showed me that hasty analyses are never valid.

Dr. Mike Moore showed me that a researchable idea can be fun in itself.

I also want to acknowledge the very special aid of the "fifth" member of my committee. The years of graduate school and this thesis are dedicated to her.

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CHAPTER I

INTRODUCTION

Personal influence has been a topic of central concern to organizational theorists and researchers for some time. It has been included in the treatment of topics of such apparent diversity as authority (Barnard, 1938), power (French and Raven, 1959), control (Tannenbaum, 1961), and job enlargement (Hertzberg et al., 1959). It is difficult to conceive of an organizational structure of function which does not involve personal influence. For this reason, it would seem that the pattern of personal influence within an organization would be central to the consideration of organizational change over time in structure and/or function. In the case considered here, the organizational change is the implementation of a Scanlon Plan in a small firm.

The theme of organizational change and personal influence will be developed in three stages. First, a literature review will summarize the major points regarding influence in general, participative decision-making, and the Scanlon Plan. Second, the relationships between (a) influence and organizational effectiveness and (b) the type of influence investigated here will be delineated to demonstrate the theoretical and practical relevance of this study. Third, after a discussion of the

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causes of personal influence in an organization implementing the Scanlon Plan, hypotheses will be generated regarding the establishment of causal links between organizational variables and personal influence variables.

Influence

As the term is commonly used, an organization is an arrangement of interdependent parts, each having a separate function with respect to the whole. Thus, the major characteristics of an organization are (1) the formulation of a purpose, (2) the coordination of replaceable, specialized units to achieve this purpose, and (3) the establishment of a system of authority, or legitimatized influence, to enhance coordination (Tannenbaum, 1966). In a nutshell, every organization is commonly assumed to have a basic objective and a control system to guarantee accomplishment of that objective. As Gilman (1962) puts it, "positive control of performance down the line is possible only because one can influence, when and if necessary, the behavior of the subordinate in such a way that he acts on the basis of his superior's judgment rather than his own [p. 106-107]."

One of the most important criticisms of the common, or "classical," view of organizations is directed to the assumption that the accomplishment of organizational goals requires the exercise of one-way control, or influence, from the top of the organization downward. McGregor (1960) has criticized this assumption on the grounds that it is unrealistic, given the nature of man. Argyris (1957) has argued that

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actions predicated on this assumptions are injurious to the mental health of the organization's members. Likert (1961) has shown empirically that the most effective organization is one whose parts are actively interdependent and which provides avenues for reciprocal influence up and down the "line."

Cartwright (1965) has presented a definition of influence which is quite germane to the research proposed here.

> (a) The agent exerting influence, who for convenience is denoted O, (b) the method of exerting influence, and (c) the agent subjected to influence, denoted P. When an agent, O, performs an act resulting in some change in another agent, P, we say that O has power over P [p. 4].

In the following discussion, this trichotomy of agent exerting influence, method of exerting influence, and agent subject to influence will be examined.

Agent Exerting Influence

Most theorists assert that the ability of an agent to exert influence arises from the possession of valued resources (e.g., Thibaut & Kelly, 1959). Dahl (1957) refers to these as the "base" of an actor's power, consisting of "all the resources--opportunities, acts, objects, etc.--that he can exploit in order to effect the behavior of another [p. 203]." For example, a supervisor can obtain compliance with his directives because his position gives him the ability to reward or punish his subordinates by controlling promotions, salary increases, suspensions, and so on. Likert (1961), among others, has pointed out that the supervisor's ability to influence rests on a much broader base: that which can meet the subordinate's "ego needs." As Likert puts it,

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"Each of us wants appreciation, recognition, influence, a feeling of accomplishment, and a feeling that people who are important to us believe in us and respect us [p. 102]." It is obvious that these resources cannot be owned by an impersonal agent, but are possessed by specific persons. Thus, the occupant of a position may exert influence through his "personal power" as a unique individual interacting with a given role.

Although the control of valued resources gives the agent the capacity to exert influence, it does not necessarily follow that he will attempt to exert influence under all circumstances. Stogdill (1959) has pointed out that most typically an occupant of a particular position engages in influence attempts because they conform to his view of the expectations that others attach to his position. The agent's basic motivation, then, is not simply to exercise influence, but rather to gain the rewards contingent upon fulfilling these expectations.

Methods of Influence

Theoretically, an influence base is inert or passive (Dahl, 1957). It must be exploited if the behavior of others is to be altered. Thus, Dahl defines the means of influencing as "a mediating activity by A between A's base of power and B's response [p. 203]."

Cartwright (1965) has identified what he feels are the most significant features of different means of influencing. He argues that since a means can be conceived of as a mediating activity on the part of O between his base and P's behavior, the attributes of the means are properties of O's actions. He postulates five such properties. First,

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O's reasons for exerting influence: for example, the degree to which O displays a concern for P's needs conditions the outcome of the influence attempt. Second, the exchange relationship between O and P: an agent can exert influence because he can use a resource as an inducement. Thus, the mediating activity between O's base and P's behavior is essentially bargaining. Third, contingency in use of a base: the use of a base of influence by O may be made contingent upon P's behavior. Fourth, temporal features: even though an agent's ability to influence may rest ultimately upon the resources he can exploit, influence can occur prior to any transmission of resources. For this reason, credibility and trust between O and P is essential for the actualization of influence under these conditions. Fifth, change in distribution of resources: in some situations, the exercise of influence does involve relinquishing ownership of resources, as when money is paid for services. It is possible, however, to exert influence without giving up a resource, as illustrated by behavioral contagion.

Agent Subjected to Influence

When it is said that O influences P, what is meant is that an action of O results in a change in some "state" of P. A complete delineation of the general nature of influence requires, therefore, the specification of the state of P that is affected.

French and Raven (1959) deal with this problem in identifying five "bases of power." (1) Reward power is based on P's belief that O has the ability to mediate rewards for him. (2) Coercive power is based on P's belief that O has the ability to mediate punishments for him.

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(3) Referent power is based on P's identification with O. By identification, French and Raven mean a "feeling of oneness of P with O, or a desire for such an identity [p. 158]." (4) Legitimate power stems from the internalized values of P which dictate that O has a right to influence P and that P has an obligation to accept this influence. (5) Expert power is based on P's belief that O has some special knowledge. In sum, French and Raven state that O can influence P because O can take some action that has significance for P's needs or values: P submits to O's wishes because he hopes thereby to gain a reward, avoid a punishment, become more like O, do what is right, or have more control over his environment.

Participative Decision-Making

Influence, as discussed above, is an important consideration in the theoretical and empirical work done to date on participative decision-making (PDM). It should be emphasized that influence, per se, has not been the major focus of the studies done thus far. Rather, it has largely been treated as an implicit ingredient in the process of participative decision-making; the results of this process have received the major attention.

Lowin (1968) has presented an illuminating analysis of the social-psychological dynamics of the participative process. Basically, he views PDM in terms of the interaction between individual needs and participation. His focus is therefore similar to the theoretical orientation of the research reported here, in that it emphasizes the

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Lowin defines PDM as a ". . . mode of organizational operations in which decisions as to activities are arrived at by the very persons who are to execute those decisions [p. 69]." Lowin contrasts PDM with the conventional hierarchical (HIER) mode of operations in which decision and action functions are segregated in the formal authority structure. Finally, he notes that an organizational change from HIER to PDM tends to shift the locus of many decisions in the organization, specifically from superior to subordinate.

Lowin goes on to describe the "ideal case" of a PDM managerial pattern. Under PDM, participation by subordinates is frequent and constructive. The manager, in turn, is willing and prepared to discuss relevant issues with subordinates and to respect their suggestions. Continual feedback of suggestion evaluations from decision points maintains employee PDM motivation, and enhances the quality of future suggestions. Subordinates become more closely identified with the goals of the organization, and increase their efforts to achieve these goals. In turn, this state of affairs reinforces management's pro-PDM attitudes. Subordinates' ego motives are met as well through the suggestion-evaluation process. Thus, because the needs of both management and labor are met, the PDM structure is able to perpetuate itself.

Lowin is quick to note that the perpetuation of any PDM structure is dependent upon the negative or positive attitudes toward PDM held by organizational members. These attitudes may either abort or

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support a PDM structure, and they are in turn determined by the degree to which the PDM structure satisfies the overall needs of all organizational members within a given inter- and intra-organizational environment.

Finally, any organizational change involving the introduction of PDM is successful mainly to the degree that it adequately copes with the determinants of pro-HIER attitudes. Ideological beliefs on the parts of both management and labor may make them suspicious of each other and the new PDM structure. For example, preconceived expectations about the effectiveness of PDM may cause managers to proceed very conservatively in evaluating suggestions from subordinates, thus confirming subordinates' beliefs that PDM is a ruse solely intended to get something for nothing. In order to overcome this systematic antagonism toward the implementation of PDM, the change agent or agents must prepare a supportive environment in which PDM acts are not aborted. The change to a PDM structure from a HIER structure can be successful only if the change agents within and outside the organization are successful in their attempts to alter people's attitudes sufficiently to permit the development of PDM. Such attitude change, if it is indeed possible, requires that the PDM structure satisfy the needs of both manager and subordinate to a greater extent than did the HIER structure. Thus, Lowin concludes, "the final success of a PDM program hinges on (a) the ability of the experimenter to neutralize the hostile environment, and (b) the extent to which the new environment meets organizational goals (manager's motives) and subordinate's motives [p. 74]."

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The PDM studies reviewed below are divided into four sections for clarity of presentation. This division is based on the methodology used in the various studies. The four methodological divisions are: (1) large scale field experiments, involving large sections of the organization studied, (2) small scale field experiments, involving small sections of the organization studied, (3) laboratory experiments, and (4) survey studies involving persons at various levels of various organizations. Whenever possible, an index of the magnitude of a study's finding is reported. It should be noted that those studies grouped under the first heading are most similar in methodology to the investigation proposed here, while the studies grouped under the last heading are most similar in content.

Large Scale Field Experiments

Morse and Reimer (1956) conducted an experiment at the organizational level to test two hypotheses: (1) an increased role in decision-making on the part of workers would increase their satisfaction, and (2) an increased role in decision-making on the part of workers would increase their productivity. The rationale underlying the first hypothesis was that more ego needs would be satisfied by decisions reached by workers than by decisions imposed upon them from others higher in the organizational hierarchy. The second hypothesis was advanced on the grounds that shifting the locus of decision-making downward would increase work motivation by increasing commitment to the decisions reached. The experiment was conducted in one department of an industrial organization. This department had four parallel

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divisions each engaged in the same type of work. The authors make quite a point of the fact that the amount of work done by the divisions was completely dependent upon the flow of work to them. Thus, productivity could only be increased by reducing the number of persons in a division. Two divisions were assigned to an "autonomy program," while the other two were assigned to an "hierarchical program." In the autonomy program, authority was delegated by upper management to lower levels in the hierarchy with the understanding that they would redelegate it to the work groups. In the hierarchy program, authority was delegated up the line to increase the role of higher company officials running the two departments. The authors only state that there were "training programs for the supervisors of the divisions to insure that the formal changes would result in actual changes in relations between people [p. 121]." The first hypothesis was clearly supported. According to questionnaire data collected before and after the experiment, workers in the autonomy program (1) experienced a significant increase in felt self-actualization, (2) were significantly more satisfied with their supervision, and (3) experienced an increase in liking for the company. The workers in the hierarchy program showed no changes on these variables. The productivity hypothesis was not supported. The measure of productivity was a measure of clerical costs, and the divisions under the autonomy program. The authors point out that the methods of cost reduction varied between programs, however. In the hierarchical program, employees were simply dropped from the payroll. In the autonomy program, group decision determined the number of people

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who would remain in the departments. While the hierarchical method proved superior during the tenure of the experiment (one year), the authors expressed doubt that the effect would not have been reversed over a longer period.

French et al. (1958) relate a case history of participative management in implementing a company-wide production change. The company studied was a clothing manufacturer, and the major innovation introduced involved the transport of each batch of garments from one work station to another. Previously, each worker had obtained her work from a centrally located rack. The proposed change involved several racks and a more rapid movement of material. The authors point up two benefits derived from involving the employees in implementing such a change. First, technical problems become apparent more rapidly and may be brought to management's attention. Second, employee suggestions regarding these problems may be incorporated into their solutions, giving the workers a sense of pride and accomplishment. In essence, the organizational change becomes partly their own project, and they may be expected to take responsibility for its success. The proposed change was introduced in a series of group meetings throughout the plants which were to be affected. At the first meeting, the need for the proposed change in methods was explained to the workers. Immediately after this meeting the change was put into effect. Problems were solved on the floor between managers, engineers, and workers as they arose. After the new system had been in effect long enough to be operating smoothly, a second series of meetings were called to discuss

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revised wage rates. After the workers were thanked for their help in developing the new production system, they were given an explanation of how wage rates had been fixed on their jobs. The primary purpose of this meeting was to show the employees that management was not trying to hide anything. The authors used three indices to gauge the reaction to the change. First, production soon either returned to or exceeded the pre-change norm. Second, there was no increase in turnover, as might be expected if the employees felt antipathy for the change. Third, there was no apparent increase in grievance rates. The authors concluded that employee participation in implementing production changes is highly desirable from the standpoint of both labor and management.

Seashore and Bowers (1963) utilized Likert's (1961) theory of participative management in a field experiment in the installation of PDM in the Harwood organization. Through supervisory seminars, individual counseling sessions, and meetings with employees conducted by first line supervisors, an attempt was made to bring three departments of the organization closer to Likert's "participative groups" model. Two other departments served as controls. Four variables were deliberately increased: (1) the emphasis on the work group as a functioning unit of the organization, (2) the amount of supportive behavior by supervisor and peers, (3) the participation by employees in decision-making processes, and (4) the amount of interaction and influence among work group members. The expected changes in organizational effectiveness as the result of these increases were (1) increase in employee satisfaction, (2) increase in productivity rate, (3) decrease in waste

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rate, and (4) decrease in absenteeism. The authors present evidence that they did, in fact, significantly increase the four organizational variables which they had set out to change in the three experimental departments over a period of three years. There were no significant changes in the two control departments. Similarly, the predicted differences were found with regard to employee satisfaction. No tests of significance were possible on the data from the other three criteria of organizational effectiveness, but trends were clearly in the predicted direction in the experimental departments as opposed to the controls. The authors conclude that this research supports the proposition that organizations can be changed toward greater participation and that such a change enhances organizational effectiveness.

Marrow et al. (1967) initiated a change program in the Weldon Company to bring it more into line with Likert's (1961) participative model. The change program involved both "technical" and "social" innovations. Technical innovations included the purchase of new machinery, reengineering some jobs, and reorganizing total work flow. Social innovations included sensitivity training for all managers, joint problem-solving meetings between foremen and workers, and an organization-wide emphasis on involving the lower echelons in the company in decisions directly affecting their jobs. The company's performance improved greatly over the two-year period. Some of these improvements included: a 32% increase in return of capital investment, a 25% increase in production efficiency, a 6% decrease in monthly turnover, and a 3% decrease in daily absenteeism. It should be pointed out,

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however, that it is virtually impossible to ascertain which organizational changes, or combinations of organizational changes, brought about these improvements in effectiveness. The authors also measure changes in attitudes throughout the company. There was only a slight improvement in attitudes toward the organization, compensation policy, and fellow employees. Further, while the workers saw the supervisors supervising less closely and being less exclusively concerned with production, they also saw them as being more inept in dealing with people. These rank and file reviews were in striking contrast to the views of management who almost universally felt that the two-year change program made them "more effective" managers within an increasingly participative organizational climate.

Seashore and Bowers (1969) returned to the Harwood Company to attempt to assess the permanence of the changes they had helped initiate earlier. They found that the firm's employees were even more satisfied with their jobs and with the company. Productivity data was not quite so unambiguous, however, in that there was a decline in the number of employees reporting that they were producing at a high rate and an increase in the number expecting a future rise in their productivity. The authors interpret this finding to mean that there are an increasing number of new, relatively unskilled employees who have not yet reached their potential level of performance. Further, the authors found that the complaints the workers had about the quality and quantity of supervision had disappeared. They felt the workers now saw their supervisors as a valuable asset in aiding them to do a better job. Finally, some

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significant changes in the amount and distribution of influence had occurred in the organization. After four and one half years, more total influence was being exercised, with the greatest increases accruing to the headquarters staff and first line supervisors, a marked decrease being observed among plant managers, and virtually no change in the status of the workers. Although the authors make no statistical analysis of any of their findings, an inspection of the graph they present showing changes in influence over time leads one to the suspicion that total influence increased very little and this effect was of a far lesser magnitude than the differential shifts in influence between hierarchical levels. The authors conclude that: (1) the organization has definitely not regressed since they last assessed its change program, and (2) it has on the whole progressed even further in the direction of the desired changes.

A study by Smith and Jones (1968) is probably the most relevant of those reviewed thus far in the research reported here. Essentially, the authors reanalyzed the data from the Seashore and Bowers (1963) experiment, but concentrated more explicitly upon the changes in the organization's interaction-influence system over the period of experimentation. There were four general areas of organizational change bearing most directly upon the hypotheses of Smith and Jones which were encouraged by the experimenters.

(1) Supervisors were encouraged to direct their subordinates as a group, rather than on an individual basis. (2) High mutual influence was encouraged in superior-subordinate group meetings. The experimenters attempted to shift the views of persons throughout the organization

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such that influence was accepted on its merits, regardless of its source. (3) Psychological support was provided in terms of encouraging high performance and recognition for good work. (4) An attempt was made not to confine influence to eliciting conformity to goals but rather to include influence over changes in the goals, activities, and norms of the group. The authors hypothesized that as people in the organization shifted in the encouraged direction in these four areas, an interaction-influence system would result which would ". . . be characterized by a large flow of multidirectional communication, a high rate of mutual influence, and a pattern of group decision-making throughout the organization that fosters, and in turn is supported by, a strong normative structure [p. 172]." More specifically, they made seven predictions. As time passed for the experimental departments, there would be: (1) More two-way communication; (2) More adequate communication; (3) A greater total amount of influence or control; (4) Greater changes in influence for persons at lower, as opposed to those at higher levels, in the organization; (5) More decentralized decision-making; (6) More group decision-making; (7) More perceptual uniformity regarding organizational functioning.

The findings of this study were far from unambiguous. There was clear support for both communication hypotheses. On both "general" (i.e., How much influence do you have in the company) and "specific" (i.e., How much influence do you have over how pay raises are made) influence measures, total control increased in the experimental departments over the control departments. However, the differential effect

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predicted for hierarchical levels was found only for the specific measure of influence. An analysis of changes in influence at each hierarchical level revealed that the increases in total control for the experimental departments were primarily due to increases in influence on the part of middle management. The authors interpret these results as supporting the contention that participative management may work out to be a means of increasing management's influence even more than that of the rank-and-file. Results on the fifth prediction were inconclusive in that while managers felt that decision-making had become more decentralized, workers still felt that most decisions were made by the foremen. The sixth prediction could be neither proven nor disproven with the data collected. The seventh prediction was confirmed. The authors saw this increased uniformity of perception to be the consequence of increased communication, influence, and decision-making in the experimental groups. They conclude: "Insofar as these uniformities represent norms, we see them as providing structure for organizational processes and as partly underlying the increased productivity and satisfaction in the experimental departments [p. 181]."

Small Scale Field Experiments

Coch and French (1948) conducted a classic study in the PDM literature in the Harwood Manufacturing Corporation, which had traditionally faced a high degree of employee "resistance" to necessarily frequent methods changes. This resistance expressed itself in grievances regarding the new methods, high turnover, and restriction of

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output. The authors decided to test the effectiveness of participation in overcoming this resistance. Their design included four groups of employees. In the "no-participation" group, change was implemented as usual (from the top downward). In the "participation through representation" group, a group meeting was held of all persons effected by the change, and the need for the change in operating methods was presented quite forcibly. After agreement was reached that the change was necessary, this group chose several operators to aid management in determining the nature of the new methods. The procedure was much the same for the two "total-participation" groups, except that all of the operators in each group helped determine the new methods. After the change was implemented, all four groups abruptly declined in productivity. After a few days, however, marked differences appeared between the groups. The no-participation group remained at its post-change low efficiency level, suffered a 17% turnover, and filed several grievances during the first 32 days. The representative-participation group brought their production to slightly above standard after 14 days, lost no members, and filed no grievances during the first 40 days. The total-participation group achieved production slightly better than standard after two days, and eventually outstripped the other two groups by achieving an efficiency level 14% above standard, with no turnover and no grievances filed in the first 40 days. The authors interpreted these results as supporting the contention that involving employees in change-decisions enhances their subsequent satisfaction and productivity.

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Lawrence and Smith (1955) conducted an experiment to explore the effects of the nature of group discussion upon productivity. The experiment was conducted in a Midwestern garment manufacturing company. Two groups, of five and six employees each, engaged in discussion of only non-productive matters. An additional two groups of the same sizes engaged themselves in similar discussions, but also set weekly work goals for themselves. After five weeks, performance of both sets of groups was compared with the five week period prior to the initiation of the study. Both groups increased their performance, but only the goal-setting group did so significantly. In addition, it was shown that the production increases did not correlate with length of employment, age, dexterity, or intelligence. The authors conclude that group discussion of non-production topics must be accompanied by group decisions on production related matters in order to enhance production.

French et al. (1960) attempted to replicate the original Coch and French study in a different culture and using a more precise theory of participation. The authors defined participation as inter-personal influence in a mutual decision-making paradigm when the decisions involved have future effects on the participants. Further, the authors distinguish between "psychological participation," or perceived influence, and "objective participation," or actual influence. It was predicted that significant positive relationships would be found between objective participation and (1) productivity, (2) management-worker relations, and (3) job satisfaction. The authors argued that increases in objective participation should result in increased

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productivity because of an increase in decision quality and a concomitant increase in worker motivation toward decision implementation. Further, increased participation should relate positively to an improvement in worker-management relations because the mutual influence involved in PDM would lead to a communality of goals and heightened mutual respect. Finally, participation should be positively related to job satisfaction because the workers would be improving their job in ways which are most relevant to them. The study was conducted in an assembly department of a shoe factory in Norway. Nine groups of four workers each were employed in the experiment. Two groups were allowed "moderate" participation in decisions involving the allocation of tools. The remaining four control groups did not participate in any of these decisions. There were no significant differences between groups with respect to production. Slight and generally nonsignificant differences in the predicted direction were found for the questionnaire measures of labor-management relations and job satisfaction. The authors attribute their results to the low relevance of the decisions to productivity and their general lack of importance to the workers. Further, it should be pointed out that this study was performed in a different culture from the PDM studies reviewed thus far and that it is possible that the expectations regarding the possibilities of participation may be far lower in Norway than in the United States.

Fleishman (1965) reported significant production increases as the result of participative decision-making in a clothing manufacturer. This firm had a long history of fairly predictable style changes. It

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had been common that a marked drop would occur in production shortly after the introduction of a style change, followed by a seven or eight week "learning curve" which brought production back up to standard. This cycle occurred despite the fact that few workers actually changed their jobs. One experimental and one control group was selected, with 20 women in the experimental group and 40 in the control group. The workers in each group were matched according to the operations they performed, their average experience, and their average earnings. The working hypothesis was that increased participation on the part of the workers in the experimental group would result in less of a production decrement. The experimental group was informed that a new style change was coming and that they would determine the operational sequence, the bundling procedures, the piece rates for each operation, etc. A standard for the finished product was set, but it was left up to the group to decide on both the methods and rewards of production accruing to each individual. The results indicated that there was little initial drop in production, the plateau of the production curve matched that of the previous style three times sooner than had previously occurred during style changes with the same group, and the entire lot was finished in three instead of the expected eight days. The control group showed a marked production drop during the style change, but their production did not drop as far as it usually did. The author concludes that the control group benefited from a "transfer" of the participation effect because they perceived it was possible for the workers in the experimental group to influence their work methods.

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Lawler and Hackman (1969) found evidence that attendance can be affected by participation. The authors argued that if a pay plan is to be effective, all participants must understand it and be committed to it. Understanding and commitment may be brought about through participation. Therefore, they predicted that a pay incentive program would be most effective if it was participatively developed rather than imposed upon the group of employees by management. The subjects were janitors in a small company which provided cleaning services to larger firms. Nine work groups were involved in the experiment; three designed their own incentive plans, two had plans imposed on them by management, two aired grievances with the researchers but did not have their incentive plans changed, and two received no treatment at all. Through a series of meetings, the participative groups decided on both the amount and the timing of the incentive payments they would receive for perfect attendance. Two other groups had these resulting pay formulas imposed upon them. The results were both pronounced and significant in the participative groups. Before the incentive plans went into effect, the average attendance rate in these groups was 88%. It moved up to 94% after several months and leveled off. There was no improvement in attendance in any of the non-participative groups. Possible reasons for these results were discussed: (1) participation may have caused the workers to become more committed to the incentive plan, (2) the workers who participated in the development of their own plan were more knowledgeable about it, and (3) participation may have increased the employees' trust of the good intentions of management with respect to the plan.

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Scheflen et al. (1971) followed up the Lawler and Hackman study using the same organization and sample, but collecting their data one year after the installation of the participative pay program. They set out to answer two questions: (1) Did the initial increase in attendance result from an immediate, short-term enthusiasm over participation, rather from the processes inherent in participation per se?, and (2) Is it possible that the imposed program is just as effective, but its results take longer to manifest themselves? An unexpected factor entered into their research when management discontinued the pay system agreed upon by two out of the three participative groups. The authors' results supported the position that participative processes produce long-term changes in the direction of increased organizational effectiveness. In the single participative group in which the pay plan arrived at through PDM was still in force after one year, the average employee worked 93% of his scheduled hours, as opposed to the 88% attendance he had evidenced before the new plan was installed. In the imposed work groups, attendance averaged 87%, as opposed to 83% for the 12 week period immediately preceding the installation of the new pay plan. Thus, there was a significant increase ($p < .05$) in attendance in the imposed work group, but this increase was still below that of the participative groups. The most dramatic result was the marked drop in attendance in the two participative work groups whose pay programs were unilaterally discontinued by management six months and eleven months after their inception. In the nine weeks immediately prior to discontinuation, these two groups had averaged 92% attendance. This rate

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dropped to 82% four weeks after discontinuance. The authors point up two major conclusions drawn from their study. First, they felt it was significant that attendance remained high in the participative groups over a considerable period of time, despite change in group membership. They hypothesized that the groups developed long-term work norms as a result of participation, which made the initial attendance increase last over time. Second, they noted that the managers who discontinued the pay program for two of the participative groups were not involved in the participation process. They therefore felt, and expressed, little identification with the program and apparently were inclined to discontinue it at the first opportunity. The authors conclude, therefore, that for a program based upon participation to be effective over a considerable period of time, it must involve and obtain commitment from as many hierarchical levels of the organization as possible.

Laboratory Experiments

The classic laboratory experiment bearing on PDM was that conducted by Lewin et al. (1939) as reported in White and Lippit (1960). Actually, two experiments were performed. In the first study, two groups of eleven-year-old boys were led by the same person, playing a "democratic" role with one group and an "autocratic" role with the other. In the second experiment, four groups of five boys each were exposed to four different leaders. Every six weeks each group was exposed to a different leader employing a different leadership style. The three leadership styles were: (1) Democratic-low goal and means

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control, high stimulation of group processes; (2) Autocratic--high goal and means control, high stimulation of group processes; (3) Laissez-faire--low on both dimensions. Taken together, the two experiments yielded two primary conclusions. First, democratic leadership can be efficient. Both work, although the quantity of work done under autocratic leadership was greater, and motivation and originality were greater under democratic leadership. Second, autocratic leadership can create hostility and aggression. In both experiments the "autocratic groups" showed more hostility toward scapegoats, more destruction of property, and had a greater tendency to stop work when the leader left the room.

Shaw (1955) investigated the performance and satisfaction of four-man groups in different communications nets under authoritarian and democratic leadership. Shaw introduced two concepts, "saturation" and "independence," to predict his results. Independence refers to the amount of freedom with which a group member may operate, while saturation refers to the communication requirements placed upon him.

The author then goes on to relate these two concepts to leadership style and its effect upon group performance. Authoritarian leadership should decrease independence for most of its members (and hence decrease morale), and should decrease saturation for all group members (and hence improve performance). Non-authoritarian leadership should increase independence for all group members (and hence increase morale) and should increase saturation for all group members (and hence lower performance). As predicted, problems presented to the experimental

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groups were solved faster and with fewer errors under autocratic leadership, but expressed satisfaction was higher under democratic leadership.

Day and Hamblin (1964) investigated the closeness of supervision in a laboratory simulation of an assembly line. They manipulated the closeness of supervision by varying the amount of detail in instructions given to the subjects by their supervisors. The average productivity in the closely supervised groups was 25% less than those which were more "generally" supervised. In addition, aggressive feelings toward both co-workers and supervisors were higher in the closely supervised groups.

Survey Studies

One of the classic surveys on the effects of participation was conducted by Katz et al. (1950). The investigators set out to determine: (1) Employee attitudes related to productivity, and (2) Supervisory practices related to productivity. Twelve work group pairs were surveyed in a large insurance company. Each member of a pair did essentially the same work, but differed in productivity. All supervisory and nonsupervisory personnel were interviewed. The supervisors of the high-producing groups reported spending more of their time planning the work of their subordinates. These supervisors were also coded by the interviewer as being employee-oriented and employing general supervision, as opposed to the supervisors of the low-producing groups who were coded as being primarily production-oriented and employing close supervision.

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Vroom (1959) set out to examine the interaction between participation and personality. Specifically, Vroom hypothesized that participation would be more positively related to performance for persons with strong independence needs and low authoritarianism. The data were collected from two sections of a delivery company. Need for independence was measured with a questionnaire developed by Tannenbaum and Allport (1956), while authoritarianism was measured with the California F scale (Adorno et al., 1950). Participation was measured with questionnaire items, and performance was assessed through superior ratings. Participation was correlated positively and significantly with performance (.20) for the entire sample. The correlation was higher, however, for supervisors high in need for independence (.25), than for supervisors low in need for independence (.01). Further, the correlation between participation and performance were lower for high authoritarian supervisors (.06) than for low authoritarian supervisors (.27). Vroom was able to explain his results by postulating a motive for independence and power-equality. Assuming that some persons derive satisfaction from participating in joint decision-making and that the more these people influence a joint decision, the more satisfaction they obtain from its execution, then the more they can satisfy their need for independence and power-equality through participation.

Ritchie and Miles (1970) tried to separate the effects of the quantity and quality of participation upon subordinate satisfaction. Arguing from the human resources (Miles, 1965) standpoint, the authors point out that a superior may weigh his concept and practice of PDM

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according to his basic assumption about his subordinate's abilities. That is, superiors who believe that their subordinates wish to participate but lack the capability to contribute effectively will tend to limit participation to peripheral issues or consult with their subordinates with no real intentions of utilizing their inputs. Conversely, superiors who have a higher evaluation of their subordinates' abilities will tend to involve them in more important issues and utilize their contributions. Thus, the authors designed their study to measure the effects of the quantity and quality of participation upon subordinates, satisfaction, utilizing the superior's basic assumptions about his subordinates' abilities as an indicator of the quality of participation. Their two major hypotheses were: A subordinate's satisfaction with his immediate superiors will vary directly with: (1) The extent to which they feel they are consulted by their superiors, and (2) The extent to which their capabilities are valued by their superiors. Ritchie and Miles found support for both hypotheses in a sample of 330 managers from five levels of a large organization. In addition, they found indirect evidence that the quantity and quality dimensions of participation are practically indistinct. That is, while these two dimensions did not statistically interact to produce the highest overall level of satisfaction, an examination of pattern scores suggested that they were definitely additive. Finally, the qualitative dimension of participation seemed to be prepotent over the quantitative. Although they presented no data directly bearing on the question the authors expressed the opinion that if quantity of participation were held constant,

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Tannenbaum (1968) has presented a definition and method of measuring control which is quite relevant to the consideration of PDM:

> The meaning of control, as we define it, [begins] . . . with the intent on the part of one person, followed by an influence attempt addressed to another person, who then acts in some way that fulfills the intent of the first [p. 5].

The relation between control and influence as Tannenbaum uses the terms, is essentially that of a control process incorporating necessary influence activities. In the simplest case, the intent of person A leads him to make an influence attempt resulting in behavior of person B that fulfills A's intent. This cycle is the control process. In practice, Tannenbaum uses the concepts of control and influence interchangeably.

Tannenbaum's method of measuring the total amount of control in an organization is to survey members of each echelon on the issue of how much control they exercise at all levels in the organization, and then plot the combined results on a "control graph." A hypothetical control graph is shown in Figure 1. It is clear from this graph that a number of curves are possible. Curve A represents the case of decreased control as one moves down the organization hierarchy. Curve B illustrates the opposite case. Tannenbaum's major point is that control curves may not only differ in slope, but also in average height, as curve X differs from curve A. In other words, he contends that organizations may differ in their total amount of control, as well as in the relative amount exercised by each hierarchical echelon. He thus

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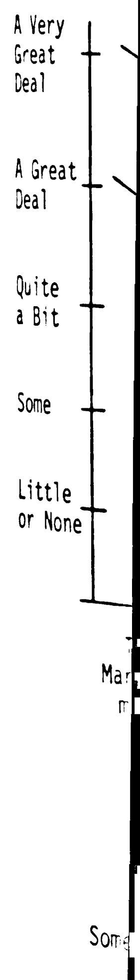

challenges the "fixed pie" assumption of control and asserts that both managers and workers can increase their control within the organization and thereby enhance its effectiveness.

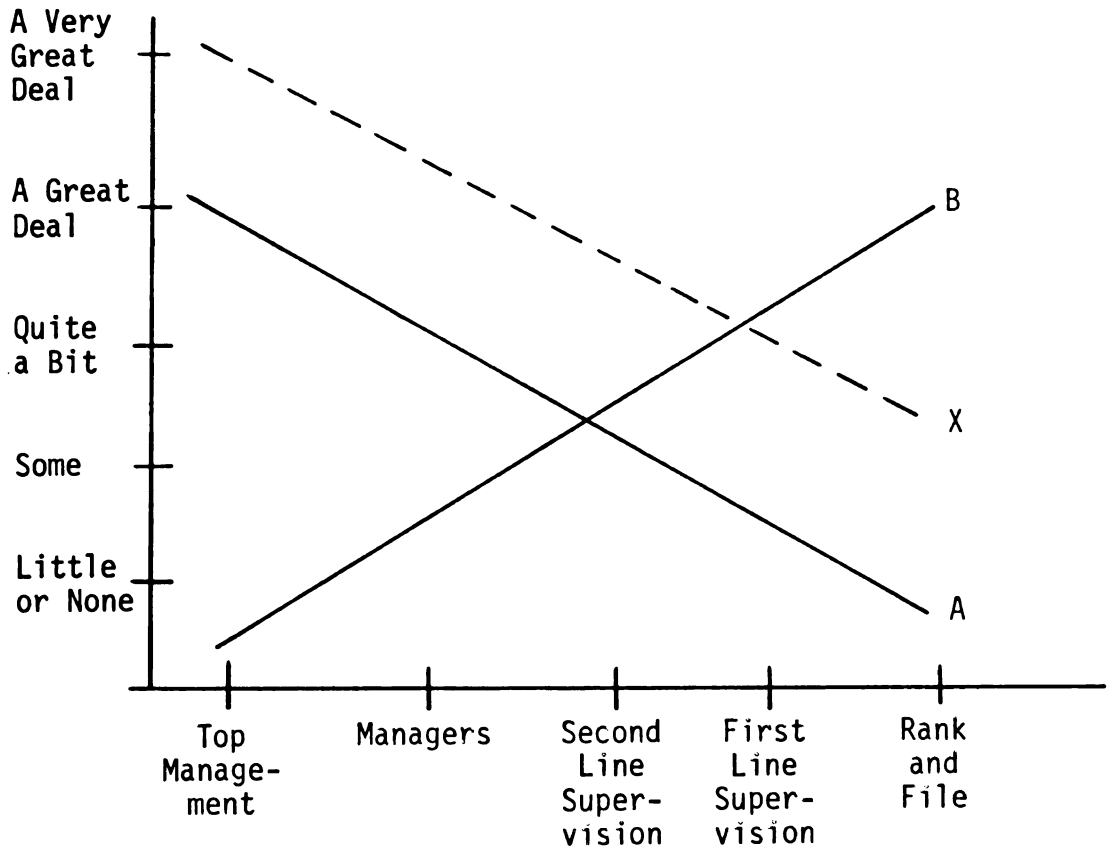

Figure 1

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A study by Smith and Tannenbaum (1963) is a fairly typical example of the kind of research which has been done in Tannenbaum's conception of organizational control. This study presents comparisons between a number of organizations in terms of the control graph. The organizations studied were 112 chapters of a voluntary organization, 32 separate outlets of a delivery company, 33 automobile sales dealerships, and 4 union locals. Employing the survey method, similar questions were asked of members in different hierarchical levels in each organization. Respondents were asked to rate the amount of influence that each of several hierarchical groups (or persons) has upon the organization's activities. The same respondents were asked parallel questions concerning how much influence each of these groups or persons should have. The amounts of "actual" and "ideal" control exercised by each hierarchical level was computed by averaging the judgments of the respondents regarding each level. The slope of the resulting control graph was derived by computing the average of the algebraic differences between the amounts of influence reported to be exercised by each successive level. Organizational effectiveness was defined as the extent to which an organization achieves its goals. Measures of effectiveness in the voluntary organization were based on the ratings of 29 experts who were familiar with its activities. The effectiveness of the delivery company was assessed in terms of the total time required to accomplish standard units of work. The sales organization was judged to be effective to the extent that its actual sales volume met assigned quotas. The effectiveness of the four unions was measured in terms of

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the judgments of the original researchers (Tannenbaum and Kahn, 1957) of the unions' power in relation to their managements. Finally, member loyalty and morale were measured for each organization through a variety of questionnaire items.

The authors made a number of comparisons between the organizations studied. First, they noted certain similarities in the control structure of the organizations. A negatively sloped distribution of control was found in all organizations. The ideal distribution of control was found in all organizations. The ideal distribution of control tended to be less negatively sloped and the ideal level of control tended to be higher than the actual. In essence, most levels wanted to increase the control of all groups, especially their own. This resulted in both the elevated ideal curve at all levels, and the actual curve being at less variance with the ideal at the higher levels of the organizations. Secondly, they noted a major difference between the organizations. Members of the voluntary organization desired a positively sloped curve, while the members of the two business-industrial organizations desired, perhaps with more realism, a negatively sloped curve, although less negatively sloped than the existant curve.

The relationships between several aspects of control in the organizations studied and their effectiveness are shown in Table 1. A positive relationship between the amount of total actual control and organizational effectiveness was found for the voluntary organization, the delivery company and the unions. The degree of positive slope, however, is related to effectiveness only for the chapters of the

Correlation

Independent variables	Voluntar
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Degree of actual total control members,	.29
Ideal minus actual slope members,	-.13
Ideal minus actual total control members,	-.26
Member-officer agreement actual slope	-.03
Member-officer agreement ideal slope	.01
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Table 1[a]

Correlations of Aspects of Control with Organizational Effectiveness and Member Attitudes[b]

Independent Variables	Voluntary Association[c] N = 112		Delivery[d] N = 32		Automobile Sales N = 33		Unions[e] N = 4	
	Dependent Variables							
	Effectiveness (expert rater judgments)	Member Loyalty	Effectiveness (company time standard records)	Member Morale	Effectiveness (company sales records)	Member Attrac-tion	Effectiveness (researcher judgments)	Member Loyalty
Degree of actual plus slope (members)	.31***	.26***	.14	.55***	-.18	.03	R = .40	R = .40
Degree of actual total control (members)	.29***	.23**	.43***	.72***	.00	.21	R = 1.00†	R = 1.00†
Ideal minus actual slope (members)	-.13	-.21**	-.24	-.35**	-.08	-.05		
Ideal minus actual total control (members)	-.26***	-.25***	-.31**	-.26	.05	-.22		
Member-officer agreement actual slope	-.03	-.16	.00	-.09	-.09	.19	R = .20	R = .20
Member-officer agreement ideal slope	.01	-.02	.49***	.06	.03	.13		
Member-officer agreement actual total control	.15*	.05	.34**	.11	.27	.03	R = 1.00**	R = 1.00**
Member-officer agreement ideal total control	.08	-.05	.38**	-.12	-.14	.12		

[a]After Tannenbaum, 1968, p. 83.

[b]Hypotheses relating total control and slope to effectiveness and member loyalty were first suggested in the union study, and two-tailed tests are employed to assess the significance of these relationships. Directional predictions were made in the subsequent studies and one-tailed tests are employed here.

[c]Since log size is highly related to the measures of control and of effectiveness and member loyalty in the League, but not in the other organizations studied, the relationships in question were computed with log size partialled out.

[d]Total control and degree of positive slope are highly related among the stations in the delivery organization, but not in the other organizations studied. To assess the independent effects of total control and of degree of positive slope on the dependent variables, the correlations with slope are partial correlations holding total control constant, while the correlations with total control hold slope constant.

[e]Measures of ideal total control were not obtained.

*Significant at .10 level, 1-tailed test
**Significant at .05 level, 1-tailed test
***Significant at .01 level, 1-tailed test
†Significant at .10 level, 2-tailed test

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voluntary organization. Relationships between the discrepancy between actual and ideal control and effectiveness are also apparent in the voluntary organization and the delivery company. Further, the discrepancy between ideal and actual slope is negatively related to member attitudes, but not to organizational effectiveness in these two organizations.

Smith and Tannenbaum interpret their results as contradicting the notion of a fixed quantity of control within an organization. The positive relationships they found between control, effectiveness and morale suggested to them that high total control leads to increased interaction and influence within and between hierarchical levels, greater mutual understanding, higher motivation and better coordination of activities. The absence of these correlations in the sales organization was explained in terms of the relatively independent, non-coordinated activities required in such organizations.

Bowers (1964) carries the Smith and Tannenbaum research a step further by posing three questions: (1) Is total control related to derived components of this success? (2) How is total control related to derived components of this success? (3) Is it the total amount of influence, or primarily the amount attributed to certain levels, which is positively related to organizational success? Bowers sampled 40 life insurance agencies, of which 20 were rated by top management as extremely successful and 20 as only moderately successful. There were four hierarchical levels within each agency. Questionnaires were mailed out to all personnel in the agencies asking them to rate the amount of

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influence the persons at various levels had on their performance. Mean total control was computed for each agency by summing the respondent's mean control attribution to each of the four levels across all four levels and dividing by four. Futher, 70 actual performance measures were factor analyzed, resulting in seven orthogonal factors: (1) agency development, (2) growth of business, (3) business costs, (4) manpower development, (5) volume of business, (6) manpower turnover, and (7) regional manager's personal performance. Five indices of organizational member satisfaction were also devised as measures of organizational effectiveness.

Bowers considers his data in accordance with the three questions posed above. With regards to his first question, Bowers found that total control related positively and significantly to overall agency excellency. The control curve was consistently and significantly higher for the top 20 agencies, as opposed to the moderately successful 20. Turning to his second question, Bowers found that total control related positively to all five indices of satisfaction, but only to performance factors one and three. Finally, Bowers answers question three by correlating overall effectiveness, as a combined measure of satisfaction and performance, with the amount of control which agents attribute to each of the four levels. Only the correlation with regional manager was significant.

On the surface, this finding would seem to argue that overall effectiveness is nothing but a reflection of a basic relationship between the control of the regional manager and that component measure

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of effectiveness, business costs, which correlated most highly (.55) with actual control. Bowers goes on, however, to correlate overall effectiveness with each component. Four components were significantly related: (1) Business costs (-.44), (2) Volume of business (.53), (3) Satisfaction with regional manager (.53), and (4) Satisfaction with fellow agents (.81). He then correlated each effectiveness measure with the amount of control attributed to each hierarchical level. He found that business costs related significantly to all hierarchical levels, except regional manager. Further, a similar relationship was found with regards to satisfaction with regional manager and with fellow agents in relation to hierarchical level. In sum, Bowers argues that ". . . in three out of the four cases, it is the general level of total control, more than any specific attribution, which relates significantly to the subsidiary measures of effectiveness. In the fourth case, that of volume of business, nothing but a negative relationship of marginal significance with control attributed to the home office is generated. It would appear, therefore, that overall effectiveness relates as strongly as it does to the control attributed by agents to the regional manager because both these variables relate to a third pair of variables, satisfaction with fellow agents and satisfaction with the regional manager [p. 238]."

Bowers concludes, therefore, that his study supports the contention that "the better coordination, improved communication, and whatever other intermediate results are presumed to flow from greater total actual control depend upon a higher level of this control at all levels in the organization [p. 240]."

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Smith and Ari (1964) set out to test two general hypotheses:

> Hypothesis I: Concensus within the work group and between members and supervisors will be related directly to the degree to which the control curve is positively sloped.
>
> Hypothesis II: Concensus within the work group and between members and supervisors will be related directly to the total amount of control.

The rationale underlying the first hypothesis involved several processes. The authors contended that rank-and-file involvement in decision-making tends to foster increased motivation and identification with the aims of the organization. These conditions should give rise to increased uniformity with respect to organizational goals because they promote high levels of communication, participation, and mutual influence in the determination of these goals and execution of goal-directed activities. The second hypothesis was derived from Likert's (1961) interaction-influence system. Briefly, the argument was made that high total control reflects a situation in which there is high reciprocal influence throughout the organization permitting members to jointly determine and enforce organizational norms. As a consequence, there should be a wider acceptance of policies and practices between members of differing hierarchical levels. The research site was a nation-wide service organization. Each geographical area had a "plant," with two or more divisions, and each division had several "stations." The investigators administered questionnaire items designed to measure control and consensus to both supervisory and non-supervisory personnel at 32 stations. The two major hypotheses of the study assume that slope and total control are independent. A high negative correlation (-.67) was found

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between them, however, necessitating partial correlations to be computed between consensus and slope, holding control constant, and consensus and control, holding slope constant. Out of ten possible correlations testing Hypothesis I, only two, averaging .36, supported it, while five, averaging .51, supported Hypothesis II. The authors concluded therefore, that Hypothesis I was not substantiated, while Hypothesis II was supported. In general, the authors conclude that a high amount of control exercised by members at all levels tend to promote consensus. They are quick to qualify their major finding. The results suggest that high total control facilitates consensus among rank-and-file members particularly with respect to highly salient aspects of the work situation, such as attitudes towards supervision. These are areas in which the rank-and-file respondents would presumably be most likely to hold common views, regardless of the control structure. Further, high total control tends to promote consensus between members at all levels with respect to those areas, such as work standards, which are both highly relevant to the operation of the station and are likely to have already formalized procedures for reaching consensus.

Tannenbaum and Smith (1964) examined the relative plausibility of the structural and phenomenological explanations of the effect of control structure upon attitudes and performance. The structural view argues that the objective control structure is the major determinant of relationships between reported control and performance. The phenomenological view holds that it is the respondent's perception of the control structure which accounts for this relationship. The data employed to

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assess the relative validity of these two explanations came from a sample of 104 leagues of the League of Women Voters. Essentially, the authors' analysis involved two comparisons. First, objective structure was held constant by correlating degree of slope with member activity and loyalty within each league. The phenomenological position would predict a preponderance of positive relationships in this analysis. Second, member perception was held constant by correlating slope with the loyalty and activity of members reporting identical perceptions of member influence. The phenomenological position would predict zero relationships in this instance, while the structural position would predict positive relationships. In the first comparison, the average correlation was .00 for activity and .12 for loyalty. In the second comparison, rank-order correlations of .55 for activity and .45 for loyalty were found. Tannenbaum and Smith interpret these results as favoring the structural explanation of the effects of control structure. They go on to imply that the survey methods they used for assessing control structure do, in fact, measure that structure objectively. Finally, they point out that it is not warranted to assume that the phenomenological and structural viewpoints are mutually exclusive in all cases, and give two examples:

> (1) The phenomenological hypothesis may be more appropriate in relation to a highly subjective dependent variable such as loyalty, but not to a more objective and behavioristic one such as amount of activity. The converse may be true for the structural hypothesis.
> (2) The phenomenological hypothesis may be more appropriate in relation to a relatively "distant" and ambiguous independent variable referent, such as influence in a national organization, as compared to a less "distant" referent such as influence in a local organization of which one is a member. The converse may be true for the structural hypothesis [p. 399].

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Limits to PDM

The foregoing discussion of participation should be tempered with the realization that PDM is limited in its application. Simon (1957) has pointed out that the logic of participation hinges on the assumption that a substantial communality of interest exists between employer and employee. This assumption may or may not hold in a given organization. As Simon puts it:

> The employer can tolerate genuine participation in decision making only when he believes that reasonable men, knowing the relevant facts and thinking through the problem will reach a decision that is generally consistent with his goals and interests in the situation [p. 111].

Strauss (1963) has voiced two major objections to PDM. First, he questions the assumption that workers want to participate at all. He calls the desire to participate, to have control over one's environment, a "professor's value," and seriously questions its applicability to the working man. Secondly, he points up a number of by-products which PDM may bring up and limit its applicability. Group meetings may solve some problems, but they may also create new ones. Strauss has summarized a number of these:

> (1) Individuals whose opinions have been rejected by the group may become alienated from it; (2) participation may lead to greater cohesion, but it may be cohesion against management; (3) participation may set up expectations of continued participation which management may not be able to satisfy; and (4) participation often takes a great deal of time, can be frustrating to those involved, and frequently results in watered-down solutions [p. 70].

Strauss goes on to point out that the seriousness of these problems depends largely on the human-relations skills and inter-personal sophistication of the organization's leaders. The necessary skills

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are not widely held. For participation to be successful, supervisors and managers often have to learn new styles of leadership. For example, questioning by subordinates should not be construed as disrespect, but rather as interest in an effective organizational effort.

It should also be noted, however, that Strauss's assertion that the desire to participate is a "professor's value" is open to question on empirical grounds. One of the major findings of the research on control in organization (e.g., Tannenbaum, 1968) has been that persons at all levels in the organization desire greater influence over their environment than they now have. It would appear, then, that the desire to participate is not peculiar to college-educated workers, but is a rather general need at all socioeconomic levels within an organization.

Scanlon Plan

Broadly speaking, the Scanlon Plan is a system of participative decision-making coupled to an incentive payment for taking action which promotes organizational efficiency. Like most theorists, advocates of the Plan assert that all members of the organization have a need to participate, and that such participation can yield increased organizational effectiveness. A further similarity to the general line of PDM reasoning and the Scanlon Plan lies in the provisions which the Plan makes for the diffusion of decision-making throughout the organization. Perhaps its most fundamental proposition is that an organization's effectiveness ultimately rests on the diffusion of decision-making to activity centers in the organization which are most ultimately effected by those decisions.

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There are several good descriptions of the Scanlon Plan (e.g., Whyte, 1955), but the most comprehensive treatment of the workings and results of the Plan are to be found in Lesieur (1958). The actual workings of the Plan vary considerably from company to company, but the basic mechanisms are the same. In essence, the installation of a Scanlon Plan involves profound changes in both the reward and power systems of an organization.

The reward system revolves about the generation of the "bonus" payment through cost reduction. A ratio is established on the basis of the firm's financial history between the cost of producing a product and its sales value. This ratio may include only labor costs, or labor and overhead costs. Once the Plan is in operation, if actual costs for any particular month are below this ratio, the difference goes into a "bonus pool." Typically, before the monthly bonus is paid out, some percentage of the total pool is set aside as a reserve to protect the company against months when actual costs exceed the ratio. The balance is paid to the employees in accordance with the percentage of their individual wages to the total payroll.

Katz and Kahn (1966) point up three primary aspects of this reward system. First, everyone in the organization is included in the same system in order to promote maximum cooperation and equity. The thought is that since everyone must contribute to the bonus if it is to be earned, everyone must cooperate, and such cooperative effort should be rewarded universally. Second, the bonus is based on increased efficiency because the employees of an organization, as a group, have a

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The primary concern here is with the changes in the organization's power or influence structure which the installation of the Scanlon Plan tends to bring about. The basic assumption of the Plan is that the employee, who has spent eight hours a day performing a job for a considerable period, probably knows a great deal about the intricacies of actually doing the work. Thus, if given the opportunity, as well as the incentive, the employee is capable of considerably improving the efficiency of his job.

Production committees, consisting of elected employee representatives and their foremen, are therefore established in each operating department. These committees meet once a month. They are empowered to put any worker's suggestion for improved efficiency into effect if it does not involve another department or entail a substantial outlay of capital.

A screening committee has power over the production committees. It is composed of representatives of both top management and labor, and rules on those suggestions affecting more than one department, those involving considerable capital outlay, and those not enacted by the production committees.

At both committee levels, definite feedback is given to the employee making the suggestion. If the idea is accepted, a member of

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Katz and Kahn (1966) sum up the impact of the Scanlon Plan committees upon an organization's power structure:

> From our point of view the outstanding characteristic of these procedures of representative election, initiation of suggestions, and review and decision-making is a tremendous change in the power structure of the organization which they represent. New organizational units (departmental committees and screening committees) have been created and major decisions are being made by these units. The total effect is to move downward in the organization many decisions relating to its specific operations; moreover, this delegation or downward movement of authority and decision-making is carried out by means of formal changes in the organizational structure [p. 382].

Tait (1951) outlined the early experiences of the Stromberg-Carlson Company with the Scanlon Plan. In 1949, the company was losing money and the employees, who were unionized, agreed to forego a wage increase and look into a "profit sharing" plan. After several months of study by a joint labor-management committee, the Scanlon Plan was installed. During the first eighteen months of the Plan's operation, 1,300 suggestions were received from all the company's three divisions. Half of these suggestions were accepted and put into practice. During the first six months bonuses averaged 12% and the company began showing profits. The following year, however, market conditions became very bad for one of the three divisions, and its members earned no bonuses while the members of the other two plants continued to earn bonuses. Tait reported that there were some feelings of inequity, but that these were mitigated by a larger understanding of the total welfare of the company.

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Puckett (1958) studied changes in productivity following the installation of the Plan in a sample of ten firms. He felt that his sample was representative of the situations in which the Plan has been implemented. Employees were unionized in nine out of ten cases. The number of employees in a firm ranged from 30 to 1,200. The labor content in relation to the sales value of production ranged from 10 to 60%. Production processes varied from mass production to job-shop situations. Productivity was measured by computing the ratio of sales value of production to total payroll costs for the first two years of operation under the Plan and at least one year prior to the Plan's installation. Productivity change was assessed by comparing these two periods. Productivity increased in all ten firms. For the first year following the installation of the Plan, productivity increases ranged from 6.8% to 38.7%, with an average of 23.1%. In the second year, productivity increased from 10.9% to 49.4%, with an average increase of 23.7%.

Lesieur and Puckett (1969) described the experiences of three organizations in which the Plan had been in effect for at least ten years. The first case presented by the authors was the Atwood Vacuum Machine Company. The firm operated six plants and employed 2,000 people. The employees were represented by three different unions. During the fourteen years following the installation of the plan, over 25,000 suggestions were submitted. Bonuses were earned in 162 out of 187 calculation periods and the annual average ranged from 50 to 20%. According to Lesieur and Puckett, there was close correlation between

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Lesieur and Puckett conclude that the primary benefits of the Scanlon Plan to these three organizations were: (1) Increased efficiency and productivity, (2) Increased labor-management cooperation, and (3) Increased employee willingness to implement technological change. With the exception of the bonus data presented above, which certainly has a bearing on their first conclusions, the authors present no further concrete evidence for their second and third assertions.

Gilson and Lefcowitz (1957) have reported a case in which the installation of a Scanlon Plan was not successful. The Plan remained in effect for only six months, and after a careful review of the case, the authors presented several reasons for its failure: (1) there was a chronic lack of trust between management and labor, (2) management was basically autocratic and actively resisted influence attempts by

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Helfgott (1962) studied the case histories of six organizations who adopted the Plan. He concluded that the successful installation of the Plan requires the presence of four organizational conditions. First, there must be a basic need for the Plan. A severe financial crisis, for example, might precipitate the necessary labor-management cooperation for the success of the Plan. Second, full and enthusiastic support must exist for the basic concepts of the Plan among top management. According to the author, the zeal of the Scanlon Plan supporters and their power in the organization make the installation successful. Third, the cooperation of the employees must be secured in doing their jobs efficiently. Fourth, employees must feel that regular bonuses will be forthcoming. If the Plan does not produce high bonuses, the employees will lose faith in it, and it will fail.

Strauss and Sayles (1957) discussed several factors which they felt affected the success of the Plan. First, the success of the Plan depended heavily upon the increased interaction of all members of the organization. Second, management must be able to accept and realistically evaluate criticisms from persons or groups at lower organizational levels. First level supervisors may be most strongly affected because they may see many suggestions as reflecting poorly on their competence as managers. Third, management must be willing to freely share information with the rank-and-file. For example, cost and sales data must be made available and explained carefully if the employees are to understand the necessity of their efforts.

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Influence and Effectiveness

Thus far, a fairly general discussion has been presented regarding influence, participative decision-making, and the Scanlon Plan. The purpose of this section is to narrow the focus of inquiry to demonstrate the nature of personal influence and its importance to organizational effectiveness. Put a different way, the purpose of this section is to define what was studied and why it was studied.

To answer the question of why personal influence was chosen for study, one must first examine the relationships between participation and personal influence. As should be apparent from the preceding literature review, all participative decision-making actually involves participation in both decision-making and decision implementation by those persons whose talents are most relevant to the successful execution of the chosen course of action. As several writers have pointed out (e.g., Likert, 1961; Tannenbaum, 1968) personal influence is implicit in all actual participation. The basic premise here, then, is that personal influence is inherent in participation.

From this premise it is asserted that increasing influence through participation increases organizational effectiveness. This is not to say, however, that increased effectivenes must always be mediated by increased influence. It is logical to assume that participation may increase effectiveness in several other ways. The focus here, however, is upon the mediation of personal influence upon effectiveness.

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Influence can increase effectiveness through a variety of mechanisms. As noted repeatedly in the preceding discussion of participative decision-making, an increase in an organization member's influence tends to increase his motivation and identification with the goals of the organization. The basis of this increase in motivation and identification is the increase in constructive, task-enhancing, communication between and within levels of the organizationl hierarchy necessitated by an active program of participation. Increased motivation and identification leads to an increase in appropriate employee efforts to further the goals of the organization. The net result of increased personal influence in a participative environment is, therefore, an increased quality of decision-making and decision-implementation.

The next point is that, within the context of the present discussion, the Scanlon Plan is an example of PDM. It should be apparent from the preceding discussion of the workings of the Plan that it tends to diffuse decision-making and decision-implementation throughout an organization. A major impact of the Plan is that it moves decision-making both downward throughout the organization's hierarchy and laterally from one functional department to another. It is probably this diffusion of decision-making and decision-implementation which is most important in making the Plan work, because it fosters the cooperation both between and within hierarchical levels necessary to generate the bonus through increased efficiencies.

A more complete elaboration of the connection between the working of the Scanlon Plan and personal influence should be made.

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The Scanlon Plan acts as a vehicle for the exercise of personal influence. Basically, it is contended here that both decision-making and decision-implementation under the Plan enhance personal influence.

There are two important aspects to the decision-making process in a Scanlon company which enhance personal influence. First, there is a strong inducement for various members of the organization to communicate on work-related matters. The monthly bonus is created out of the decisions to implement suggestions to increase efficiency. Second, as noted above, decision-making is diffused throughout the organization, thereby providing greater opportunities for its members to influence each other.

There are also two aspects of the decision-implementation process which should enhance influence in a Scanlon company. First, control is basically internal because the individual has assimilated the goals of the group during the decision-making process. Thus, he is inclined both to commit himself to the attainment of these goals and to encourage others to do so because the choice was made for the good of all. Secondly, the heavy emphasis which the Plan places on cooperation should lead to a general group orientation on the part of the individual, and eventually to the development of real teamwork.

In short, it would be expected that a successfully working Scanlon Plan would of necessity involve a high degree of personal influence throughout the organization. While this influence may not be a necessary cause for the success of the Plan, it is definitely a sufficient one. Thus, personal influence should be studied because

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it is a highly necessary element in any viable PDM program. The degree to which that program progresses as expected may be gauged by changes in the types of influence operating in the organization. More specifically, if a Scanlon Plan is to be truly implemented, it must enhance personal influence.

We should now turn to the question: What is influence? Basically, Cartwright's (1965) definition of influence will be used here. The essence of Cartwright's idea is that influence occurs if an agent (A) performs an act which results in some change in another agent (B). This definition must be expanded, however, if personal influence is to be meaningfully studied as a function of a participative-type organizational change.

First, it should be noted that B need not necessarily be a single person. Agent A can conceivably perform acts which change groups, the functioning of departments, the allocation of material resources, or the dissemination of information.

Second, a distinction can be made between actual and ideal influence of agent A. Actual personal influence is defined as the amount of influence A perceives himself to have in relation to B. Ideal personal influence is the amount of influence A believes he should have over B. These concepts are derived from Tannenbaum's (1968) discussion of actual and ideal control under the assumption that there is no fundamental difference between his use of the term "control" and Cartwright's use of the term "influence." He operationalized actual perceived control in an organization through the question, "In general, how much

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influence do you think the following groups or persons actually have in determining the policies and actions of your Local League [p. 63]?" The question designed to measure ideal control was "In your opinion, how much influence do you think each of these groups should have in determining the policies and actions of your Local League [p. 62]?" These two forms of personal influence are schematically represented in Figure 2.

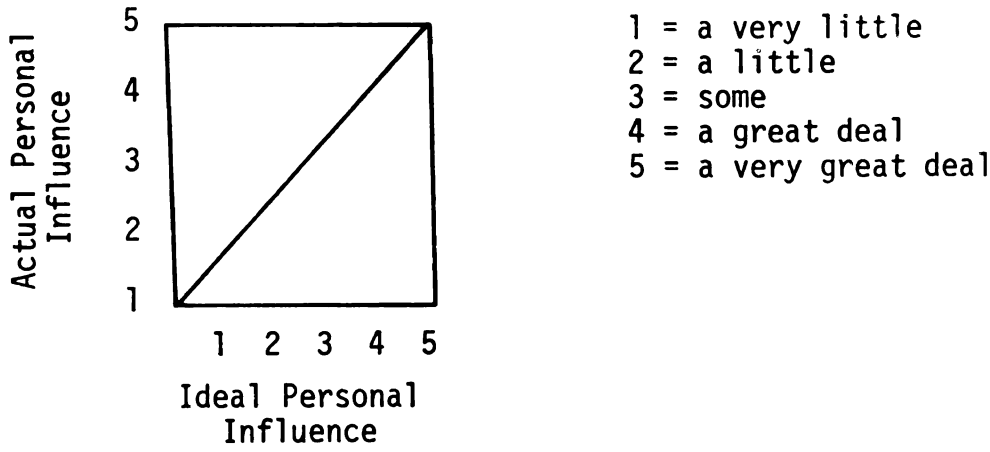

Figure 2

Model of Actual and Ideal Influence

It is to be assumed that any individual in an organization may score differently on a number of such "influence rectangles," depending upon the functional area being measured. For example, it seems likely that he would perceive his actual and ideal influences over his own job differently from his influences over the jobs of other persons in his department.

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Further, it should be pointed out that the level of perceived personnel importance of influence may differ with regards to separate areas of influence in the organization. For example, a worker on the floor may attach much greater importance to the influence he exerts upon his own work activities, as opposed to the activities of his department or the company as a whole. The perceived importance of influence is, of course, an attribute of personal influence, and not a type of influence per se.

Any point along the diagonal of Figure 2 represents a balance between perceived actual and ideal influence. In other words, the individual in this condition sees himself as actually possessing the amount of influence which he feels he should possess with reference to a given functional area. Thus, all positions off the diagonal may be considered conditions of influence mismatch, while those on the diagonal may be considered conditions of influence congruence.

Finally, it is expected that as a Scanlon Plan is implemented, the perceived appropriateness of personal influence, both laterally and vertically in the organization, should increase. In other words, to the extent that the Plan fosters true participation, it seems likely that the individuals involved in it would have more of a "say" in the activities of all members of the organization. Therefore, as the Plan is implemented, there would be fewer influence mismatches and all actual-ideal influence comparisons would move from lower left to upper right of the model shown in Figure 2.

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Hypotheses

As stated in the previous section, the reason for examining influence in a PDM-type organizational change is that it is central to the success of that change. The previous section also defined the types of influence which will be discussed here. It was postulated that there can be at least two types of personal influence of interest, actual and ideal. It was also postulated that these two types are fairly independent. The task now is to specify the hypothetical relationships between perceived personal influence and a set of organizational conditions which affect it as a firm implements the Scanlon Plan.

In light of the discussion in the previous section, the basic rationale for the hypotheses presented here may be made. It seems reasonable to suppose that as a Scanlon Plan is implemented, the typical individual in the organization should perceive his influence to increase as he interacts in joint decision-making and implementation with other members of the firm. Similarly, he should increasingly come to expect to influence others on work-related matters in which he can make high quality contributions because the Plan encourages cooperative effort. Further, as the Plan is implemented, it may be expected that an employee will begin to see his personal influence as becoming more important because he is able to affect a wider domain in the organization. Put another way, he should be able to influence more people on a greater array of organization issues which are highly salient to him. Finally, he should eventually reach a point where he will feel he is exercising

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personal influence in accordance with his expertise in the organizational functions which are most relevant to his job. In other words, the Plan encourages him to learn how to actually exercise influence where he is most competent through the give-and-take of joint effort on the job.

No organizational change occurs in a psychological vacuum. Invariably, forces exist in the organization which promote or retard change. It seems reasonable to suppose that the members of an organization learn to exert or to withhold personal influence according to the reinforcements they receive from the organizational environment. This network of supporting and opposing environmental factors form the conditions within which a given organizational change will manifest itself.

As has been shown above, personal influence is an important variable in participative decision-making. Therefore, the model of personal influence which has been advanced here should represent at least part of the influence patterns implicit in PDM. To this extent, the environmental factors which effect PDM should also effect personal influence patterns. Lowin (1968) generated a series of hypotheses regarding the most important parameters of PDM effectiveness. Several of these are reviewed below.

First, Lowin notes that an organization deeply committed to PDM should better satisfy ego motives than one practicing PDM in a peripheral manner. If the range of PDM activities is restricted by such social structure as a staff engineer's reluctance to stoop to participation, the PDM program is severely limited.

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> To the extent to which ego motives are important, actor attitudes and organizational effectiveness under PDM will vary directly with . . . the extent of PDM activities [and] . . . the relevance and importance of PDM activities [p. 80].

Second, ego motives are supported by feedback from the organization which indicates that one's participative contributions are taken seriously and given public notice. Thus, PDM effectiveness varies directly with the visibility of PDM activities.

Third, since ego motives are especially sensitive to the successful resolution of difficult problems, PDM practiced only with regard to trivial issues will do little to meet ego needs. Thus, PDM effectiveness varied directly with the saliency of the issues settled by PDM.

Fourth, a PDM program which generates only broad statements of good intentions will be ineffective because it cannot generate a viable operational control system. Thus, to the extent to which the opportunity ". . . to set goals is a strong motive among subordinates, PDM effectiveness will vary directly with . . . the clarity of those goals [p. 81]."

Fifth, the greater the financial reward for participation and the more closely participation and financial reward are associated, the more effective will be the reinforcement effect of the financial reward upon the tendency to participate. Thus, "to the extent to which financial motives are important, PDM effectiveness will vary directly with the degree of coupling of financial rewards with PDM activities [p. 81]."

A further point should be made regarding the choice of each of these five variables. They were chosen out of a total of 14 advanced by Lowin (1968), who does not pretend to exhaust the domain of inquiry,

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because the PDM literature repeatedly named them as being crucial to the effective implementation of a participative program. It has been repeatedly stated, for instance, that the entire organization must be deeply committed to a participative change if it is to be effective (Likert, 1961; Gilson & Lefcowitz, 1957; Lesieur, 1958). The importance of public feedback was heavily emphasized by Lesieur (1958) in terms of its tendency to reinforce suggestion generation. Strauss and Sayles (1957) emphasized that it is the very difficulty of the problems solved through participation, especially to the extent that those problems involve criticism of management, that help perpetuate the participative process. McGregor (1960) and Puckett (1958) have pointed up the need for mutual agreement on goals as a necessary condition for effective participation. Katz and Kahn (1966) and Helfgott (1962) have remarked on the tendency of an immediate financial reward for effective participation to enhance this participation, especially in the Scanlon Plan. Thus, it appears that the five variables chosen here are considered quite important for the effectiveness of a PDM program by writers in the area.

It should be emphasized that these five parameters are organizational-level variables. They indicate the state of the organization as a whole with reference to each of the five dimensions. Ideally, one would wish to assess the position of an organization with respect to these variables before testing hypotheses regarding personal influence. Conceptually, an organizational-level variable must vary between organizations, and so its measurement should be made in a sample

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of organizations. In the present case this assessment is impossible because there is only one organization available to be studied. As a substitute for a set of measures on a sample of organizations, the perceptions of the individuals in the organization studied will be used to assess its status with regards to the five organizational variables considered here.

The essential theoretical nature of the relationship between organizational variables and influence variables should be pointed out. It seems logical to presume that organizational variables are the predominant causes of influence variables. It seems likely, for example, that a climate of commitment to the Scanlon Plan would cause perceived influence. The basic thrust of Lowin's argument is that organizational variables logically precede PDM variables. An organization must have created a climate in which PDM can operate before true participation can occur. The argument is merely made more explicit here by asserting the organizational climate, as indicated by five selected variables, causes perceived individual influence.

The notion of causality, as it is used here, should be explicated. First, all hypotheses listed below refer to the perceived level of an organizational variable at one point in time causing the perceived level of an influence variable at a subsequent point in time. No hypothetical statement is made regarding changes in magnitude over time. Second, the preponderant direction of causality is being predicted. More specifically, it is predicted that the perceived state of an organizational variable at "time one" is the greater cause of

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the perceived state of an influence variable at "time two" than is the perceived state of the influence variable at "time one" the cause of the perceived state of the organizational variable at "time two." Third, it is assumed that both the perceived level of the environmental variable at "time one" and the perceived level of the influence at "time two" may be the effect of some more general cause. There is no way to overrule this possibility with data collected at only two points in time (Sandell, 1971). Fourth, it is realized that the perceived initial level of the environmental variable specified in each hypothesis may not be the sole cause of the perceived subsequent level of the influence variable discussed. It may, in fact, be a contributing cause specified from a set of co-acting causes. Fifth, each hypothesis can be stated in terms of four competing interpretations (Rozelle and Campbell, 1969):

1. High levels of an environmental variable cause high levels of an influence variable, and low levels of an environmental variable cause low levels of an influence variable.
2. High levels of an influence variable cause subsequent high levels of an environmental variable, and low levels of an influence variable cause low levels of an environmental variable.
3. High levels of an environmental variable cause subsequent low levels of an influence variable, and low levels of an environmental variable cause subsequent high levels of an influence variable.
4. High levels of an influence variable cause subsequent low levels of an environmental variable, and low levels of an environmental variable cause subsequent high levels of an influence variable.

It is asserted here that in light of the foregoing theoretical discussion, the hypotheses of this study should be stated in terms of the first interpretation. The two "incongruent" (Yeeand Gage, 1968)

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interpretations, three and four, can be rejected on the basis of the expected direction of effect (Howard and Krause, 1970). It seems unlikely, for example, to suppose that a high level of perceived organizational commitment to the Scanlon Plan would cause a subsequent low level of perceived actual influence, and, conversely, that a low level of perceived commitment would cause a high level of subsequent perceived actual influence. The second interpretation can be rejected on the basis of the expected source of effect. It has been argued that a perceived level of an environmental variable acts as the preponderate cause of a perceived level of an influence variable in any particular comparison.

The following hypotheses were derived by considering the possible causal relations between the set of five organizational variables discussed above and (1) Actual influence--hypotheses one through five, (2) Ideal influence--hypotheses six through ten, (3) Importance of influence--hypotheses eleven through fifteen, and (4) Influence congruence--hypotheses sixteen through twenty. It should be noted that each of the five organizational variables is considered to be a contributing cause of each of the four influence variables, but that each causal relation is considered independently. The basic proposition underlying all hypotheses is simply that the perceived level of a certain organizational climate variable at one point in time is a contributing cause of the perceived level of a certain influence variable at a subsequent point in time during the implementation of a Scanlon Plan.

Hypothesis 1. The perceived level of commitment to the Scanlon Plan at one point in time is the predominant cause of the level of perceived actual influence at a subsequent point in time.

Hypothesis 2. The perceived level of importance attached to public feedback of individual suggestions at one point in time is the predominant cause of the level of influence at a subsequent point in time.

Hypothesis 3. The perception of settling difficult issues through participation at one point in time is the predominant cause of the level of perceived actual influence at a subsequent point in time.

Hypothesis 4. The perceived level of goal clarity at one point in time is the predominant cause of the level of perceived actual influence at a subsequent point in time.

Hypothesis 5. The perception of an explicit link between suggestions and bonus payments at one point in time is the predominant cause of the level of perceived actual influence at a subsequent point in time.

Hypothesis 6. The perceived level of commitment to the Scanlon Plan at one point in time is the predominant cause of the level of perceived ideal influence at a subsequent point in time.

Hypothesis 7. The perceived level of importance attached to public feedback of individual suggestions at one point in time is the predominant cause of the level of perceived ideal influence at a subsequent point in time.

Hypothesis 8. The perception of settling difficult issues through participation at one point in time is the predominant cause of the level of perceived ideal influence at a subsequent point in time.

Hypothesis 9. The perceived level of goal clarity at one point in time is the predominant cause of the level of perceived ideal influence at a subsequent point in time.

Hypothesis 10. The perception of an explicit link between suggestions and bonus payments at one point in time is the predominant cause of the level of perceived ideal influence at a subsequent point in time.

Hypothesis 11. The perceived level of commitment to the Scanlon Plan at one point in time is the predominant cause of the level of importance attached to perceived influence at a subsequent point in time.

Hypothesis 12. The perceived level of importance attached to public feedback of individual suggestions at one point in time is the predominant cause of the level of the importance attached to perceived influence at a subsequent point in time.

Hypothesis 13. The perception of settling difficult issues through participation at one point in time is the predominant cause of the level of the importance attached to perceived influence at a subsequent point in time.

Hypothesis 14. The perceived level of goal clarity at one point in time is the predominant cause of the level of the importance attached to perceived influence at a subsequent point in time.

Hypothesis 15. The perception of an explicit link between suggestions and bonus payments at one point in time is the predominant cause of the level of the importance attached to perceived influence at a subsequent point in time.

Hypothesis 16. The perceived level of commitment to the Scanlon Plan at one point in time is the predominant cause of the level of perceived congruence between actual and ideal influence at a subsequent point in time.

Hypothesis 17. The perceived level of importance attached to public feedback of individual suggestions at one point in time is the predominant cause of the level of perceived congruence between actual and ideal influence at a subsequent point in time.

Hypothesis 18. The perception of settling difficult issues through participation at one point in time is the predominant cause of the level of perceived congruence between actual and ideal at a subsequent point in time.

Hypothesis 19. The perceived level of goal clarity at one point in time is the predominant cause of the level of perceived congruence between actual and ideal at a subsequent point in time.

Hypothesis 20. The perception of an explicit link between suggestions and bonus payments at one point in time is the predominant cause of the level of perceived congruence between actual and ideal influence at a subsequent point in time.

CHAPTER II

METHODOLOGY

Questionnaire Construction

The overall psychometric consideration which guided the construction of the questionnaire instrument was validity of measurement. For example, the question arises in regard to the measurement of influence: What is the most valid way in which one can measure perceived personal influence? Obviously, the answer to this question has a strong bearing on the construct validity of the influence measure.

Methodologically, a highly attractive answer to the qeustion of valid measuring traits has come from the so-called "behavior-based" measures (Flanagan, 1954; Smith & Kendall, 1963; Dunnette, 1966; Campbell et al., 1970). The basic argument behind behavior-based measures is that respondents can accurately report actual behaviors, but are extremely inaccurate in reporting feelings, attitude, etc. To the extent that these behaviors are truly representative of the trait which is hopefully being measured, such behavior-based responses are highly valid measures of that trait.

There is an obvious lack of generality, however, in measures which are based on highly specific behaviors, even though their measurement accuracy may be high. On the other hand, a greater generality of

theoretical interest may lie in more global description of behavior, despite the concomitant loss of accuracy.

The questionnaire instrument used in this study (Appendix A) represents an attempt to anchor questions in behaviors which should represent the traits being measured. An effort was also made to pick behaviors which are generalizable across jobs, departments, and organizational levels.

The questionnaire shown in Appendix A is divided into four sections. The first section gathers a few items of information regarding the respondent's role in the organization. The data gathered in this section, therefore, sheds some light on the organizational vantage point from which the respondent might exert personal influence.

The second section deals with personal influence. There are three types of questions in this section, dealing with main areas to which an individual may relate his personal influence. These are to his own job, to his department, and to the company as a whole. The items are designed to tap those aspects of his activities and environment which he might want to influence and which are probably most relevant to overall work efficiency. Each item has parts, dealing with (1) How much influence the respondent feels he has now, (2) How much he would like to have, and (3) How important it is to him to have influence over the activity or environmental condition referenced in each item.

The third section of the questionnaire is concerned with the five boundary variables discussed above. The first four questions in the section deal with the firm's commitment to PDM as reflected in

management's attitudes toward the workings of the Scanlon Plan. Questions five and six attempt to measure the amount of public feedback present in the suggestion system. Item seven asks the respondent to rate the difficulty of the issues settled through participation. Items eight and nine are designed to assess goal clarity. Finally, questions ten and eleven deal with the linkage between suggestions and bonus payments.

The first part of the fourth section contains a job motivation scale which is an adaption of Porter's (1962) instrument. Two major changes have been made. First, only the needs for security, socialization, esteem and autonomy are represented. Second, the questions and response alternatives have been presented in accordance with the instrumentality approach to motivation (Peak, 1955; Vroom, 1964; Graen, 1969).

The basic contention of this approach is that the motivation to work stems from the perceived instrumentality of certain job behaviors to meet the needs for security, socialization, esteem and autonomy. This is similar to the conceptions of Porter (1962), Porter and Lawler (1968) and Lawler (1971).

The first section of six questions are presented so that they ascend Maslow's (1954) need hierarchy.

Questions one and two are devoted to security needs, questions three and four tap socialization needs, question five relates to the esteem need, question six measures the autonomy need. Essentially, the questions ask the respondent to rate the chances of his finding

satisfaction for these needs if he does his job well. The parallel second set of six items asks the respondent to rate the subjective importance of satisfying each need.

The scale for identification with the organization in the second part of section four is a simple adaption of Patchen's (1965) instrument. Patchen defined the construct of identification with the organization as:

> A sense of solidarity (i.e., common interest or purpose) with other members of the organization, especially the top leaders. Such a sense of solidarity will usually be accompanied by a willingness to label oneself as an organizational member and by a willingness to defend and support the organization [p. 55].

The two deleted items dealt with situations which were peculiar to the companies studied by Patchen. The remaining items were rephrased so that they would clearly reference situations which were unique to the company studied. For example, the question: "If you could begin working again in the same occupation, how likely would you be to choose TVA as a place to work?" was rephrased to read: "If you could begin working over again in the same occupation, what are the chances you would choose to work at the _____ _____ Company?" It was felt that these rephrased items would still tap the dimension of organizational identification.

In addition, items five and eight were added to the original scale on the basis of their face validity.

A final note regarding the definition of terms throughout the questionnaire is in order. Those words pertaining to the major variable of interest in a given section--personal influence, for instance--are

not formally defined in the body of the instrument. There are two reasons for this: (1) a formal definition would simply add "noise" to the instrument, because (2) the most accurate definition of the variable should lie in the behaviorally-based questionnaire items themselves.

Site

The site for the research reported here was a small company. During the period of the study, the work force varied between approximately 185 to 205 employees at all hierarchical levels. Although the firm produces several product lines, its technological level is very consistent throughout all departments. There are only three hierarchical levels in the firm, and the vast majority of employees are rank-and-file workers.

The company had been moving toward the Scanlon Plan for several years. Production and screening committees were set up two months prior to the first bonus calculation period. The bonus system went into effect on the first of the calendar year 1972. There was considerable enthusiasm for the adoption of the Plan among managerial personnel, but considerable doubt as to its workability existed at the foreman and worker levels. A definite "we-they" atmosphere of distrust was also apparent among the rank-and-file regarding management's motives on many issues, including the installation of the Scanlon Plan. Basically, however, most departments seemed to be willing to give the Plan a "try."

Survey

The method of data collection was a survey run at two points in time approximately six months apart during the implementation of the Scanlon Plan. The same questionnaire was used at both points in time, once in February 1972 and again in August, 1972.

A letter (Appendix B) was sent out to all employees explaining the reason and nature of the coming survey. It was placed in their pay envelopes one week before the survey was administered. Since many of the company's employees were Mexican-American, a Spanish as well as an English version of the letter was included in the envelopes of all employees with Spanish surnames.

The survey itself was administered through the same pay envelope system. A large (12 1/2" x 9 1/2") envelope was addressed to each employee. A smaller (9 x 12) envelope, the questionnaire, and the employee's paychecks were placed inside this envelope. Again, since many of the employees were Mexican-American, a Spanish as well as an English version of the questionnaire was sent out to all employees with Spanish surnames. Since the paychecks went out on a Friday, the employees had a week-end to fill out the questionnaire.

The respondents were instructed to fill out the questionnaire completely, seal it in the smaller envelope, and give it to their foremen. The smaller envelope was stamped "CONFIDENTIAL" in red ink and addressed to the "Division of Organizational Research, Department of Psychology, Michigan State University."

On the following Monday, a researcher visited each foreman. He carried a large box marked "MSU SURVEY." Each foreman deposited the envelopes from his group into the box. Inevitably, many people neglected to fill out the questionnaire, or, having filled it out, forgot it at home. The research urged each foreman to ask his subordinates to return the completed questionnaires on the following day. On Tuesday, the researcher again visited each foreman and collected the second set of returned questionnaires.

Exactly the same procedure was used in both February and August, with one exception. The pre-survey letter was altered to further emphasize that feedback from the entire survey would be given to all employees shortly after the second measurement was taken (Appendix B).

Data Coding

Each questionnaire was coded according to the coding scheme shown in Appendix C. The response to each item of a usable questionnaire was manually coded onto optical mark-sense sheets and then converted into punched cards. As can be seen from the card layout in Appendix D, each subject required two cards, and each card had a number of columns devoted to card identification. Exactly the same coding procedure was used for the data gathered in both February and August.

Data Analysis

The data analysis pursued here falls into two major categories: (1) Construct or scale validation, and (2) Hypothesis testing. The data analyses done under the first heading were designed to simply answer the question: Did the questionnaire scales actually measure what they were designed to measure? The analyses pursued in the second category were meant to answer the question: What support is there in the data from the valid scales for the relationships hypothesized in Chapter I? Obviously, the answer to this second question depends upon the answer to the first, and the data analysis was conducted accordingly.

A construct has been defined as "some postulated attribute of people assumed to be reflected in test performance [Cronback & Meehl, 1955, p. 283]." It may be assumed that persons who possess this attribute will, in situation X, act in manner Y. In the case discussed here, questionnaire responses regarding perceived influence are substituted for traditional test performance, but the assumption remains that persons who give high-influence responses to the questionnaire do in fact see themselves as influential, and vice versa.

One means of assessing the validity of a construct is through the discriminant-convergent validity procedure (Campbell & Fiske, 1959). In order to examine discriminant validity and convergence validity completely, a multitrait-multimethod matrix should be set up. A synthetic matrix is reproduced in Table 1. This illustration involves three different traits, measured by three different methods. Campbell and Fiske have attached labels to the various portions of the matrix.

Reliability coefficients are found in the "reliability diagonals" and are enclosed in parentheses. The reliabilities are also called "monotrait-monomethod values." Adjacent to each reliability diagonal is the "heterotrait-monomethod triangle," shown in solid lines. A reliability diagonal and the adjacent heterotrait-monomethod triangle constitutes a "monomethod block." A "heteromethod block" is made up of a "validity diagonal," whose coefficients are underlined and the two heterotrait-heteromethod triangles, shown in broken lines, lying on each side of the diagonal.

The authors list three criteria for discriminant validity: (1) A validity diagonal value should be higher than the values lying in its column or row in the heterotrait-heteromethod triangles, (2) For a given variable, its validity coefficients should exceed the coefficients in the heterotrait-monomethod triangles, (3) The same pattern of trait interrelationship should be shown in all the heterotrait triangles of both the monomethod and heteromethod blocks.

Another means of assessing construct validity is through a convergent validity procedure. This approach is essentially a confirmation of a construct through comparison of independent measurement procedures. More specifically, the entries on the validity diagonal in Table 2 should be significantly different from zero and sufficiently large to justify further construct validity examination.

It should be noted that the data to be gathered in this study will fill out only that portion of the multitrait-multimethod matrix shown in the solid rectangle. Thus, strictly speaking, the Campbell

Table 2

A Synthetic Multitrait-Multimethod Matrix

Traits		Method 1			Method 2			Method 3		
		A_1	B_1	C_1	A_2	B_2	C_2	A_3	B_3	C_3
Method 1	A_1	(.89)								
	B_1	.51	(.89)							
	C_1	.38	.37	(.76)						
Method 2	A_2	.57	.22	.09	(.93)					
	B_2	.22	.57	.10	.68	(.94)				
	C_2	.11	.11	.46	.59	.58	(.84)			
Method 3	A_3	.56	.22	.11	.67	.42	.33	(.94)		
	B_3	.23	.58	.12	.43	.66	.34	.67	(.92)	
	C_3	.11	.11	.45	.34	.32	.58	.58	.60	(.85)

Note: The validity diagonals are the three sets of underlined values. The reliability diagonals are the three sets of values in parentheses. Each heterotrait-monomethod triangle is enclosed by a solid line. Each heterotrait-heteromethod triangle is enclosed by a broken line. (Campbell & Fiske, 1959.)

and Fiske criteria of discriminant validity cannot be met. Some discriminant validity can be demonstrated within the solid rectangle, however, because the values on the reliability diagonal should exceed those in the monomethod-multitrait triangle.

The argument here is if a scale purporting to measure a given trait shares as much variance with a scale purporting to measure a different trait as the "true" variance estimated by the appropriate reliability coefficient, the scales do, in fact, measure the same construct. The null hypothesis under this model is that any pair of scales and the appropriate reliability coefficient for one of them are conceptually identical in the parallel test sense. In order to reject this null hypothesis, a significant and meaningful difference must be found between the inter-scale correlations and the appropriate reliability estimate. It was felt that the appropriate reliability estimate would be the lowest internal reliability coefficient of the two scales because any comparison between inter-scale correlations and the lowest reliability coefficient would be the most conservative test of the null hypothesis.

A further test of the construct validity of the scales used in this study was carried out through a cross validation procedure. Since data had been collected at two points in time, the findings made on the data available from the first questionnaire administration could be validated against those of the second administration. The construct validation procedure outlined above was, therefore, carried out on both sets of data. It was expected that although the numerical values of

interscale correlations and their reliabilities would change between data bases, the significant and meaningful differences should hold for the same scales on both administrations, provided the sample sizes were reasonably comparable. Only those scales surviving both construct validity tests were used in hypothesis testing.

A multivariate analysis followed by a univariate analysis of simple main effects (Hummel & Sligo, 1971; Bock & Haggard, 1968) was conducted. The multivariate analysis served the purpose of controlling alpha levels during the univariate tests. Put simply, a significant multivariate test indicates that the subsequent univariate tests are not spuriously significant due to inflated alpha levels resulting from intercorrelated dependent variables. The univariate tests indicate, of course, both direction and significance of change in the mean scores of the remaining valid scales over time.

Hypothesis testing utilized a two-wave cross-lagged panel correlation technique (Campbell & Stanley, 1963; Pelz & Andrews, 1964). This technique allows one to infer the preponderance of causality. This inference is based on the assumption that if a given even consistently precedes another either: (a) The first event is the cause of the second, or (b) Both events are the result of some more general cause. Thus if the correlation between event 1 at time 1 and event 2 at time 2 exceeded the complimentary correlation between event 2 at time 1 and event 1 at time 2, it is possible to infer that the state of event 1 at time 1 is the preponderant cause of the state of event 2 at time 2.

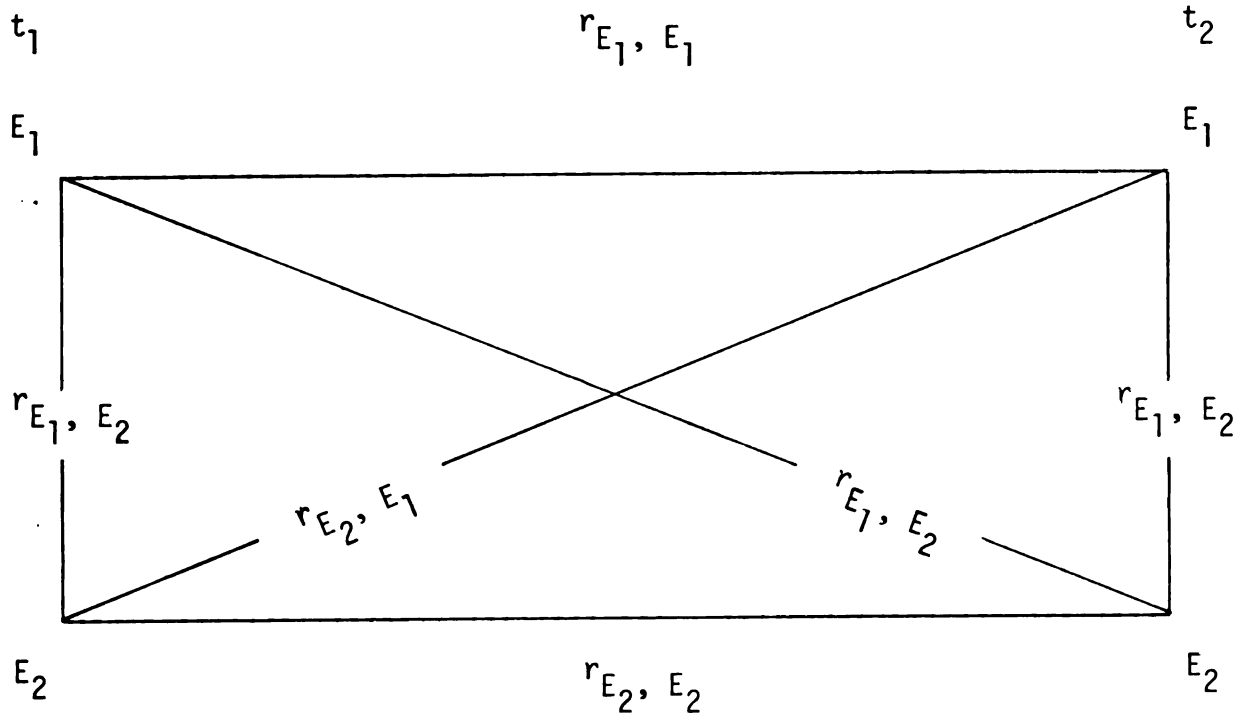

Figure 3

Hypothetical Cross-Lagged Correlation Panel

It should be noted that such a finding does not eliminate the possibility that event 2 is partially the cause of event 1, but it does argue that the preponderance of causality runs from event 1 to event 2. Further, such a finding does not rule out the possibility that both events are the result of some more general cause. Rather, it provides evidence of only one determinant of event 2.

It should be noted that changes in reliability and/or factor specificity over time in the scales used in hypothesis testing can produce a significant difference between cross-lagged correlations in the complete absence of any causal relationship (Crano et al., 1972). Suppose, for example, that over time the reliability of the measure of event 1 increased (or its specificity decreased), while the reliability

of the measure of event 2 decreased (or its specificity increased). The result of such shifts would be to reduce r_{E_1,E_2} and concomitantly increase r_{E_2,E_1}, regardless of the true predominant direction of causal relationship. Crano et al. have described a method which corrects for such shifts in reliability and/or specificity. A ratio of the synchronous correlations (r_{E_1,E_2}) for each variable pair at each point in time is computed. The total set of these ratios is then factor analyzed to determine the communalities for each measure at each point in time. The fourth root of a complex ratio of these communalities is then taken and multiplied by each of the two cross-lagged correlations. The corrected cross-lagged correlations are then tested for significance of difference to determine the preponderant direction of causality.

CHAPTER III

RESULTS

Sample Characteristics

The population of interest was the work force of the entire company, which was sampled at two points in time, six months apart. At t_1, 189 questionnaires were distributed, of which 170 were returned or 90%. A subset of 139 questionnaires were suitable for coding, yielding a usable return rate of 74%. At t_2, 203 questionnaires were distributed, of which 149 were returned or 73%. A subset of 88 questionnaires were suitable for coding, yielding a usable rate of 43%. It may be noted in passing that the single greatest cause of sample shrinkage amongst returned questionnaires at both points in time was caused by the refusal of the respondents to fill out any portion of the instrument.

A third sample of matched respondents was constructed. Although questionnaires were anonymous, it was possible to match respondents according to four criteria: (1) Age, (2) Tenure, (3) Sex, (4) Plant location. The first two criteria were considered the most definitive because they were expressed in both years and months. The six month increment in these values between t_1 and t_2 was, of course, included in the matching process. The second two criteria acted mainly as checks

on possible matching errors resulting from the use of the first two. A total of 47 respondents were matched and their questionnaire responses therfore provided the data for hypothesis testing. Assuming that the average employment at the company could be estimated by the simple average of the numbers of questionnaires given out at the two points in time (196), the matched sample return rate was 24%.

Considering the low matched sample return rate reported above, the obvious question comes to mind regarding its representativeness. The data bearing on this question is presented in Table 3.

Table 3 shows a remarkable stability with regards to ethnicity, hierarchical position and sex. Systematic differences were found between the t_1 sample and the matched sample. The respondents in the matched sample tended to be older ($t = 2.57$, $p < .01$) and to have greater tenure ($t = 2.01$, $p < .05$) than the respondents in the t_1 sample. Considering that the sample at t_1 represented a 74% return rate, it is reasonable to assume that its sample characteristics are most representative of the population characteristics of the company's employees. It appears, therefore, that the matched sample shows a definite bias toward older, more tenured employees.

Scale Validation

The scale validation procedure followed the discriminant validity strategy outlined in the previous chapter. A total of 18 scales were designed into the questionnaire instrument. The particular items designated to measure a theoretical dimension were included originally

Table 3

Sample Characteristics of Ethnicity, Hierarchical Position, Sex, Age, and Tenure

Sample t	Ethnicity (percent)	Position (percent)	Sex (percent)	Age (years)	Tenure (years)
t_1	95% English 5% Spanish	5% Managers 7% Foremen 87% Rank-and-file	75% Males 25% Females	Mean: 38 SD: 16	Mean: 9 SD: 9
t_2	97% English 3% Spanish	6% Managers 9% Foremen 85% Rank-and-file	81% Males 19% Females	Mean: 42 SD: 13	Mean: 12 SD: 10
Matched	98% English 2% Spanish	8% Managers 12% Foremen 80% Rank-and-file	80% Males 20% Females	Mean: 43 SD: 13	Mean: 12 SD: 11

on the basis of apparent content validity. Table 4 details all 18 scales and the items which defined them on an a priori basis.

A cluster analysis (Tryon and Bailey, 1970) was performed on both t_1 and t_2 samples. Thus, the findings of the analysis on the t_1 sample were cross-validated on the t_2 sample. An examination of the item-scale correlation matrix (Appendix E) for both samples led to the conclusion that item-scale correlations were sufficiently high so as to preclude the reassignment of items to different scales. The results of the cluster analysis which had a primary bearing on scale validation were, therefore, the inter-scale correlations. These correlations for the sample at t_1 are shown in Table 5, while the comparable correlations for the sample at t_2 are shown in Table 6.

A comparison between the highest inter-scale correlations and the lowest of the two relevant alpha coefficients was made for each scale at both points in time. It was felt that this particular comparison would be the most conservative test of discriminant validity. An inferential approach was also taken to these inter-correlation and alpha differences by applying a t-test appropriate for the differences between two variables which have a third variable in common (Guilford, 1965). In this case, the third variable was, of course, the higher of the two relevant alpha coefficients. These two sets of comparisons are detailed in Tables 7 and 8.

Table 4

Scale and Questionnaire Items

Scale No.	Scale Name	Questionnaire Items*
1	Perceived actual influence over one's own job.	2-1A, 2-2A, 2-3A, 2-4A, 2-5A
2	Perceived actual influence over activities of one's department.	2-6A, 2-7A, 2-8A, 2-9A, 2-10A, 2-11A
3	Perceived actual influence over activities of company.	2-12A, 2-13A, 2-14A, 2-15A, 2-16A, 2-17A, 2-18A, 2-19A
4	Perceived ideal influence over one's own job.	2-1B, 2-2B, 2-3B, 2-4B, 2-5B
5	Perceived ideal influence over activities of one's department.	2-6B, 2-7B, 2-8B, 2-9B, 2-10B, 2-11B
6	Perceived ideal influence over activities of company.	2-12B, 2-13B, 2-14B, 2-15B, 2-16B, 2-17B, 2-18B, 2-19B
7	Perceived importance of influence over one's own job.	2-1C, 2-2C, 2-3C, 2-4C, 2-5C
8	Perceived importance of influence over activities in one's department.	2-6C, 2-7C, 2-8C, 2-9C, 2-10C, 2-11C
9	Perceived importance of influence over activities of company.	2-12C, 2-13C, 2-14C, 2-15C, 2-16C, 2-17C, 2-18C, 2-19C
10	Perceived commitment to the Scanlon Plan.	3-1, 3-2, 3-3, 3-4
11	Perceived public feedback.	3-5, 3-6
12	Perceived frequency of difficult issue settlement through participation	3-7
13	Perceived goal clarity.	3-8, 3-9
14	Linkage between bonuses and suggestions.	3-10, 3-11
15	Instrumentality of job behaviors	4-P1-A-1, 4-P1-A-2, 4-P1-A-3, 4-P1-A-4, 4-P1-A-5
16	Valence of job outcome.	4-P1-B-1, 4-P1-B-2, 4-P1-B-3, 4-P1-B-4, 4-P1-B-5, 4-P1-B-6
17**	Job motivation.	
18	Identification with company.	4-P2-1, 4-P2-2, 4-P2-3, 4-P2-4, 4-P2-5, 4-P2-6, 4-P2-7, 4-P2-8

*Questionnaire items are identified according to where they appear in the questionnaire according to the following format: Section-Part-Subpart-Question Number, where a section number and a question number are always designated.

**Scale 17 is a composite of scores on Scales 15 and 16 and therefore has no unique questionnaire items.

Table 5

Inter-Scale Correlation Matrix with Alpha in Diagonal
(Sample at t_1)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	.79																	
2	.67	.88																
3	.51	.66	.86															
4	.79	.54	.42	.78														
5'	.54	.84	.58	.60	.87													
6'	.42	.56	.76	.48	.67	.89												
7	.63	.47	.42	.79	.59	.53	.79											
8	.44	.76	.58	.54	.90	.69	.65	.89										
9	.37	.55	.67	.43	.64	.88	.55	.75	.92									
10	.27	.41	.33	.18	.30	.24	.13	.25	.21	.80								
11	.26	.36	.30	.23	.29	.27	.17	.27	.23	.64	.64							
12	.21	.28	.22	.21	.21	.16	.21	.16	.09	.50	.54	1.0						
13	.18	.09	.09	.02	.05	-.08	.06	.05	-.06	.33	.24	.19	.72					
14	.02	.15	.24	.00	.16	.17	.11	.19	.18	.38	.35	.25	.30	.87				
15	.38	.30	.35	.33	.28	.31	.38	.35	.30	.28	.26	.29	.34	.39	.89			
16	.26	.26	.17	.29	.25	.21	.37	.30	.29	.20	.18	.19	.26	.37	.80	.89		
17	.32	.28	.26	.31	.28	.27	.39	.35	.31	.22	.19	.24	.30	.41	.95	.92	.91	
18	.25	.21	.24	.18	.15	.06	.22	.16	.06	.37	.21	.30	.42	.39	.56	.51	.58	.86

Table 6

Inter-Scale Correlation Matrix with Alpha in Diagonal
(Sample at t_2)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	.82																	
2	.61	.90																
3	.52	.70	.87															
4	.80	.54	.44	.76														
5	.55	.87	.63	.61	.86													
6	.37	.57	.82	.41	.69	.89												
7	.65	.46	.38	.77	.57	.45	.82											
8	.45	.75	.59	.49	.85	.64	.62	.88										
9	.27	.54	.69	.29	.60	.81	.40	.76	.91									
10	.48	.47	.37	.37	.37	.19	.34	.29	.14	.84								
11	.26	.34	.26	.24	.32	.23	.27	.23	.14	.67	.69							
12	.40	.43	.37	.33	.35	.23	.28	.26	.15	.64	.66	1.0						
13	.43	.40	.32	.43	.34	.16	.34	.27	.09	.56	.46	.62	.68					
14	.33	.32	.21	.30	.31	.13	.32	.26	.10	.57	.59	.50	.53	.91				
15	.43	.34	.33	.44	.31	.23	.33	.28	.18	.54	.38	.44	.69	.55	.88			
16	.35	.43	.26	.28	.44	.22	.38	.51	.33	.46	.29	.31	.52	.37	.68	.88		
17	.45	.41	.32	.43	.40	.24	.40	.39	.24	.57	.40	.42	.67	.55	.93	.86	.88	
18	.38	.42	.37	.39	.38	.27	.37	.29	.17	.51	.46	.45	.68	.51	.70	.58	.71	.90

Table 7

Highest Inter-Scale Correlation at t_1
Compared with
Lowest Alpha Coefficients

Scales	Correlation	Low Alpha/Scale	Difference	High Alpha/Scale	t	p
1 & 4	.79	.78/4	.01	.79/1	.31	n.s.
2 & 5	.84	.88/5	.03	.87/2	-2.02	.05
3 & 6	.76	.86/3	.10	.89/6	-6.59	.001
4 & 7	.79	.78/4	.01	.79/7	.31	n.s.
5 & 8	.90	.87/5	.03	.89/8	2.33	.05
6 & 9	.88	.89/6	.01	.92/9	- .66	n.s.
7 & 4	.79	.78/4	.01	.79/7	.31	n.s.
8 & 5	.90	.87/5	.03	.89/8	2.33	.05
9 & 6	.88	.89/6	.01	.92/9	- .66	n.s.
10 & 11	.64	.64/11	.00	.80/10	0.0	n.s.
11 & 10	.64	.64/11	.00	.80/10	0.0	n.s.
12 & 11	.54	.64/11	.10	1.0 /12	-8.24	.001
13 & 18	.42	.72/13	.30	.86/18	-6.92	.001
14 & 17	.41	.87/14	.46	.91/17	51.17	.001
15 & 17	.95	.89/15	.06	.91/17	4.71	.001
16 & 17	.92	.89/16	.03	.91/17	1.67	n.s.
17 & 15	.95	.89/15	.06	.91/17	4.71	.001
18 & 17	.58	.86/18	.28	.91/17	31.14	.001

Table 8

Highest Inter-Scale Correlation at t_2
Compared with
Lowest Alpha Coefficients

Scale	Correlation	Low Alpha/Scale	Difference	High Alpha/Scale	t	p
1 & 4	.80	.76/4	.04	.82/1	.98	n.s.
2 & 5	.87	.86/5	.01	.90/2	.31	n.s.
3 & 6	.82	.87/3	.05	.89/6	-1.54	n.s.
4 & 1	.80	.76/4	.04	.82/1	.98	n.s.
5 & 2	.87	.86/5	.01	.90/2	.31	n.s.
6 & 3	.82	.87/3	.05	.89/6	-1.54	n.s.
7 & 4	.77	.76/4	.01	.82/7	.22	n.s.
8 & 5	.85	.86/5	.01	.88/8	.27	n.s.
9 & 6	.81	.89/6	.08	.91/9	-2.87	.01
10 & 11	.67	.69/11	.02	.84/10	- .33	n.s.
11 & 10	.67	.69/11	.02	.84/10	- .33	n.s.
12 & 11	.66	.69/11	.03	1.0 /12	- .62	n.s.
13 & 15	.69	.68/13	.01	.88/15	.16	n.s.
14 & 11	.59	.69/11	.10	.91/14	2.07	.01
15 & 17	.93	.88/15	.05	.88/17	1.79	n.s.
16 & 17	.86	.88/16	.02	.88/17	- .44	n.s.
17 & 15	.93	.88/15	.05	.88/17	1.79	n.s.
18 & 17	.71	.88/17	.17	.90/18	6.82	.001

Given the data shown in Tables 7 and 8, three decision rules were set up to determine which scale would be retained for further analysis. A scale was retained if it (1) showed a significant difference between its highest inter-scale correlation and the lowest alpha coefficient in both samples; (2) showed an absolute difference of five or more correlation units between its highest inter-scale correlation and the lowest alpha coefficient in both samples; or (3) was the most psychologically meaningful scale of a set of theoretically and empirically related scales. Decision criteria (1) and (2) are, of course, operational definitions of discriminant validity. The difference between them is that (1) is entirely an inferential approach, while (2) involves practical considerations. In essence, to show discriminant validity a scale must not only show statistical significance, but must also show sufficient absolute difference to support the contention that it is usefully distinctive. According to these decision rules, seven out of the original eighteen scales were retained for further analyses.

It was decided to retain scale one (perceived actual influence over one's own job). This scale failed to meet the first two criteria listed above, as did the two scales which are theoretically related to it; scale four (ideal influence over one's own job) and scale seven (importance of influence over one's own job). There is a marked clustering of these three scales in both samples. Scales one and four correlated .79 at t_1 and .80 at t_2, scales seven and four correlated .79 at t_1 and .77 at t_2.

It seems likely, therefore, that all three scales are measuring the same construct at both points in time. If it is assumed that actual influence is likely to be most psychologically salient in everyday activity, it may be asserted that the subjects were responding to all three scales in terms of their actual influence. Thus, it was decided to retain scale one as a valid measure of actual influence over one's own job.

Scale two (perceived actual influence over the activities of one's own department) was also retained for further analysis. Again, this scale failed to meet the first two decision criteria, as did scales five (ideal influence over activities of one's department) and eight (importance of influence over activities of one's department), which are logically related. There was, however, marked clustering amongst these three scales, in both samples. Scales two and five correlated .84 at t_1 and .87 at t_2. Scales eight and five correlated .90 at t_1 and .85 at t_2. As in the case of scale one, it seems likely that all three scales are measuring the same construct at both points in time. Further, the same argument can be made that actual influence is the most psychologically salient, and therefore the subjects were responding to all three scales in terms of the actual influence. It was decided, therefore, to retain scale two as a valid measure of actual influence over the activities of one's own department.

Scale three (perceived actual influence over activities of company) was retained. Like scales one and two, both scale three and its logically related scales, six (ideal influence over activities of company) and nine (importance of influence over activities of company),

failed to meet the first two decision criteria. Scales three and six correlated .76 at t_1 and .82 at t_2. Scales nine and six correlated .88 at t_1 and .81 at t_2. As in the previous two cases, it seems likely that all three of these scales are measuring the same construct. In addition, the same argument for retaining the actual influence scale over the others may be applied. Thus, it was decided to retain scale three as a valid measure of actual influence over the activities of the company.

Scale ten (commitment to the Scanlon Plan) was retained. This scale failed to meet the first two decision criteria, as did scales eleven (public feedback) and twelve (frequency of difficult issue settlement through participation). Scales ten and eleven correlated .64 at t_1 and .67 at t_2. Scales twelve and eleven correlated .54 at t_1 and .66 at t_2. Again, it appears these three scales are measuring the same construct. An examination of the item content of scales revealed that they all dealt with the communication of suggestion and/or the communication of actions taken on suggestions. Thus, it seems likely that the psychological dimension being tapped by these three scales is the commitment of the company to the Scanlon Plan as reflected in perceived communications relationships in the suggestion-implementation process. It was felt that the content of scale ten best reflected this notion of commitment to the Scanlon Plan and the scale was retained for further analysis.

Scale fourteen (linkage between suggestions and bonuses) was retained. It showed discriminant validity according to both decision criteria.

Scale seventeen (job motivation) was retained. This scale met both discriminant validity criteria with respect to scale eighteen (identification with the company). It did not, however, meet either criteria with respect to scale fifteen (instrumentality of job behaviors) or scale sixteen (valence of job outcomes). This finding is to be expected because scale seventeen is the product of scores on scales fifteen and sixteen. Further, it should be noted that although scale thirteen (goal clarity) showed discriminant validity at t_1, its second highest correlation was with scale fifteen at t_1, and that it failed to show discriminant validity with scale fifteen at t_2. An examination of the items on each scale indicates that scale thirteen most likely tapped the same psychological dimension as scale fifteen. The relatively high correlation ($r = .67$) between scale thirteen and scale seventeen at t_2 supports this interpretation.

Scale eighteen (identification with the company) was retained. It showed discriminant validity according to both decision criteria.

The net result of the foregoing scale validation procedure is a marked reduction in the number of scales available for further analysis. Out of an original set of eighteen scales, seven have managed to demonstrate sufficient validity according to the three decision rules utilized above to be retained. These seven scales are listed in Table 9 below.

Table 9

Remaining Valid Questionnaire Scales

Scale No.	Scale Name
1	Perceived actual influence over one's own job.
2	Perceived actual influence over activities of one's own dept.
3	Perceived actual influence over activities of the company.
10	Perceived commitment to the Scanlon Plan.
14	Perceived linkage between bonuses and suggestions.
17	Job motivation.
18	Identification with company

A further result of the scale validation procedure is to reduce the number of testable hypotheses from twenty to two. The hypotheses put forth in Chapter I may be divided into four groups: (1) Five dealing with actual influence; (2) Five dealing with ideal influence; (3) Five dealing with the importance of influence, and (4) Five dealing with influence congruence. None of the hypotheses made in group two and three may be tested because no valid scales were found for perceived ideal influence or for the judged importance of influence. None of the hypotheses in group four may be tested because no valid measure of ideal influence was found. At first it would appear that the five remaining hypotheses in group one may be tested because three valid scales of perceived actual influence were found. All five of these hypotheses dealt with a causal relationship between five organizational variables and one actual influence variable, however, and only two scales (ten

and fourteen) were found to be valid measures of two out of the five organizational variables. Since only two valid measures of organizational variable were found, only two hypotheses out of the first group of five may be tested. Specifically, hypothesis 1 may be tested using scales one, two, three, and ten, while hypothesis 5 may be tested using scales one, two, three, and fourteen. All other hypotheses are untestable.

Mean Differences

While they do not bear directly upon the hypotheses to be tested, changes in the mean values of the remaining valid scales are of interest. The question being asked here is: what significant changes took place in the variables measured by the remaining seven scales between t_1 and t_2?

The amount and direction of change in each of the seven variables of interest is shown in Table 10. A multivariate F-ratio was computed for all seven scales and was considered significant ($F = 3.44$, $df = 7$ and 40, $p < .006$). The univariate tests which were subsequently conducted are shown in Table 10.

Two conclusions may be drawn from the consideration of the results presented in Table 10. First, there were significant changes in the means of scales fourteen, seventeen and eighteen between t_1 and t_2. Second, all three changes were <u>decreases</u>. In other words, to the extent that these three scales have construct validity, it appears that there were decreases in the perceived explicitness of the linkage

Table 10

Amount and Direction of Change in Mean Scale Values

Scale	Mean t_1	Mean t_2	Difference	F
1	3.38	3.53	+0.14	0.92
2	2.69	2.92	+0.23	2.56
3	1.97	1.92	-0.05	0.13
10	3.48	3.25	-0.23	2.44
14	2.81	2.23	-0.58	6.61*
17	18.65	16.33	--2.32	13.45**
18	3.75	3.51	-0.24	7.19*

*$p < .01$

**$p < .001$

between the suggestions and bonuses, job motivation, and identification with the company during the lapse between questionnaire administrations.

Hypothesis Testing

As was noted in Chapter I, all cross-lagged panel analyses involve four competing interpretations. It was asserted that three of these relationships are patently implausible. Thus, the analyses presented below may be assumed to be testing the one of the two "congruent" interpretations. These two interpretations are: (a) The state of event 1 at time 1 causes the state of event 2 at time 2 or (b) The state of event 2 at time 1 causes the state of event 1 at time 2. Figures 2 through 9 present the results of the cross-lagged panel analysis.

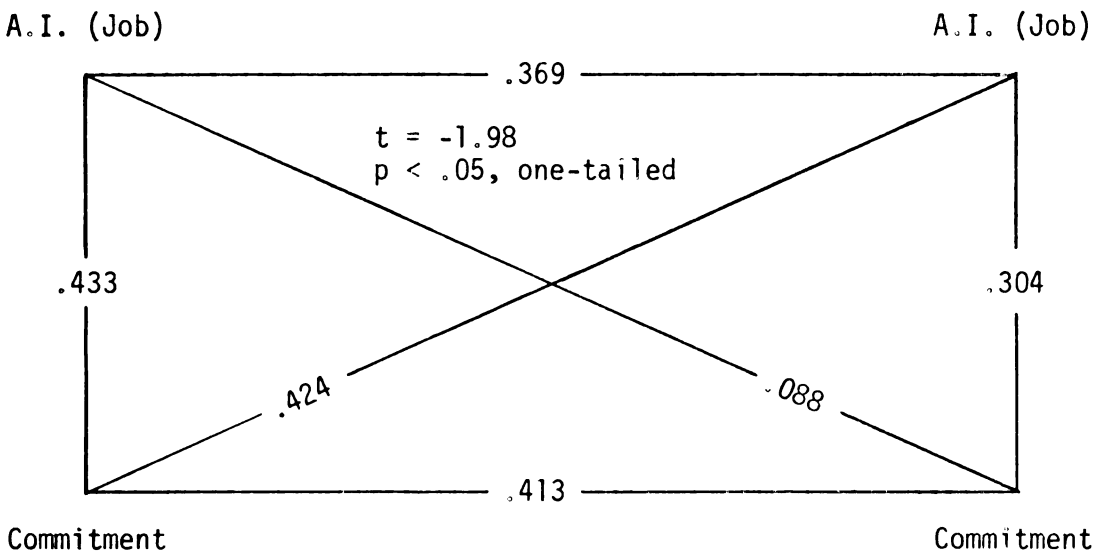

Figure 4

Cross-Lagged Correlation Panel for
Organizational Commitment to the
Scanlon Plan and Actual Influence over One's Own Job

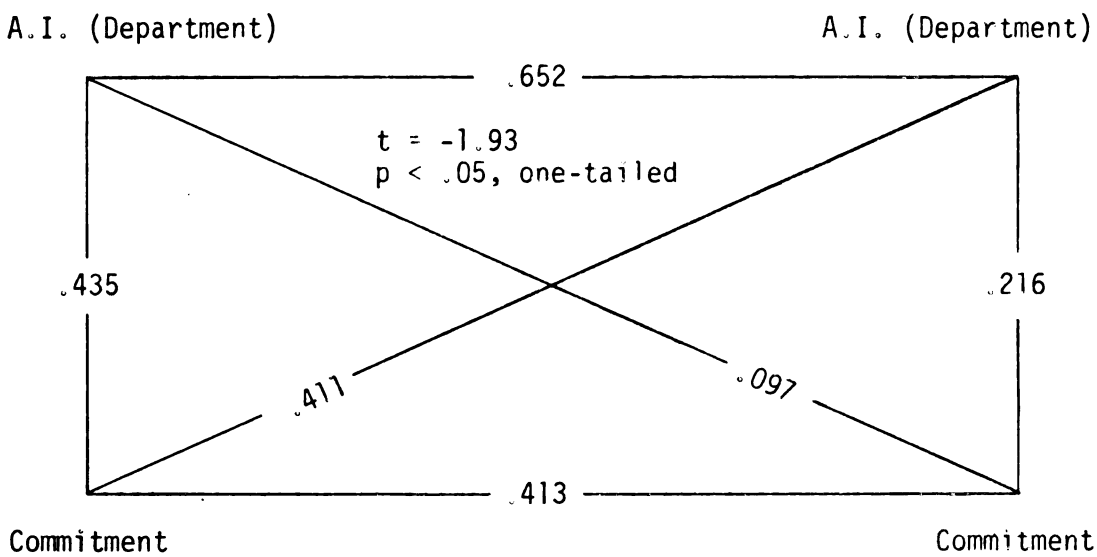

Figure 5

Cross-Lagged Correlation Panel for
Organizational Commitment to the
Scanlon Plan and
Actual Influence over the Activities of One's Own Department

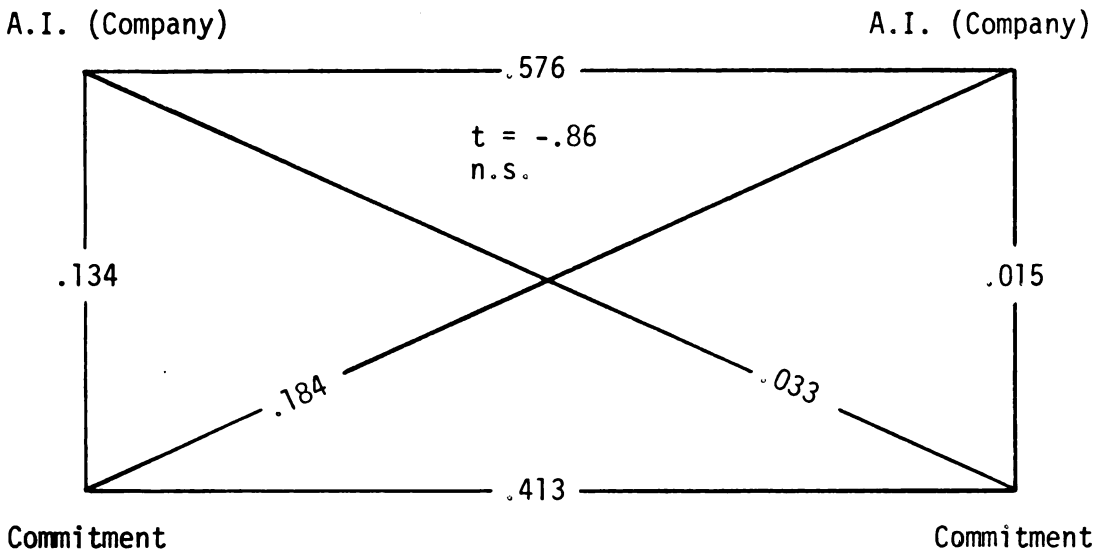

Figure 6

Cross-Lagged Correlation Panel for
Organizational Commitment to the
Scanlon Plan and
Actual Influence over the Activities of the Company

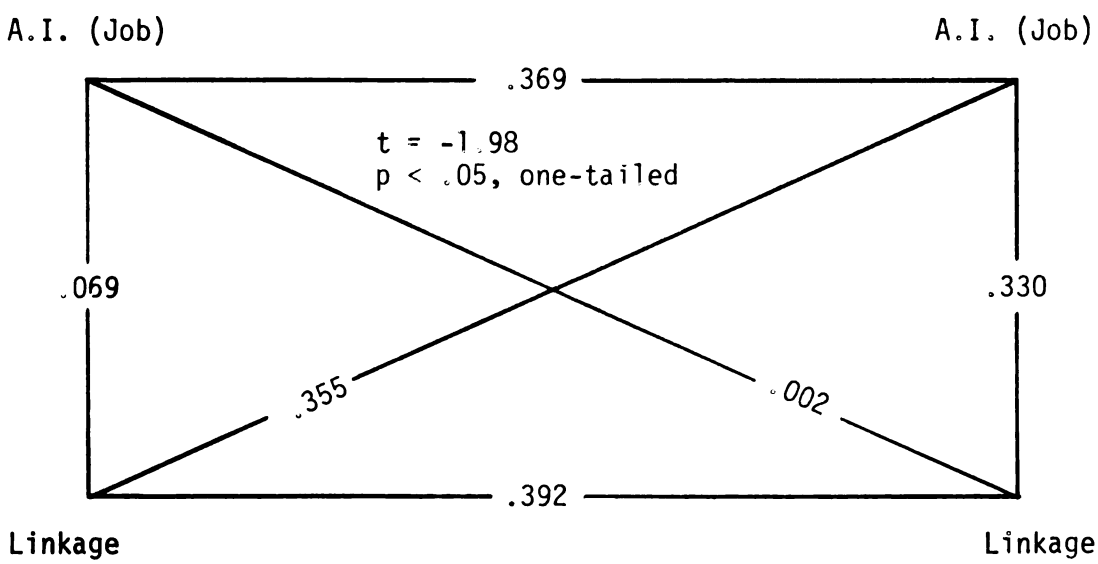

Figure 7

Cross-Lagged Correlation Panel for
the Organizational Bonus-Suggestion Linkage and
Actual Influence over One's Own Job

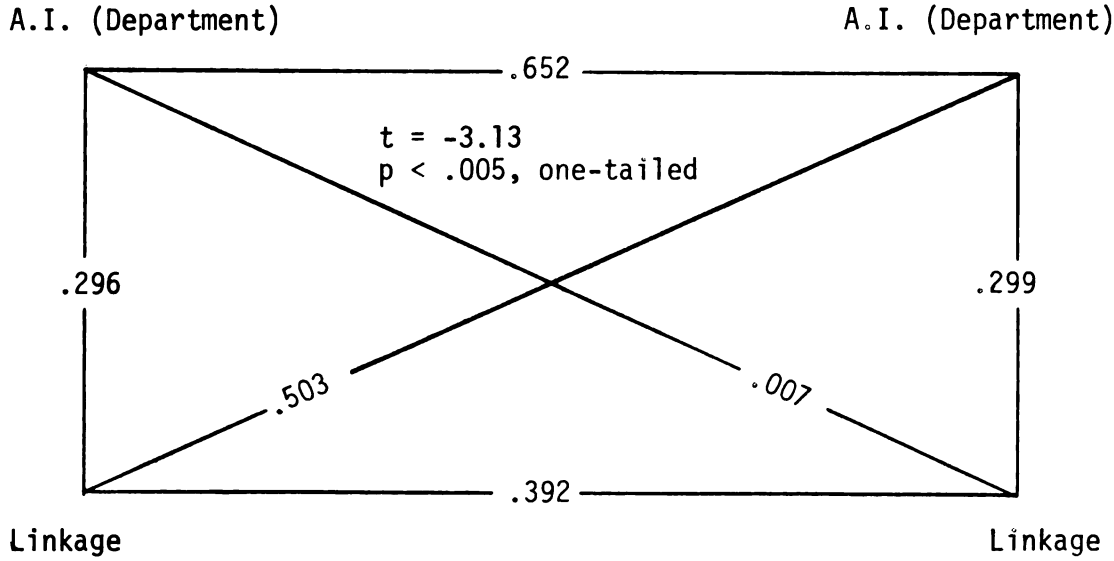

Figure 8

Cross-Lagged Correlation Panel for
the Organizational Bonus-Suggestion Linkage and
Actual Influence over the Activities of One's Own Department

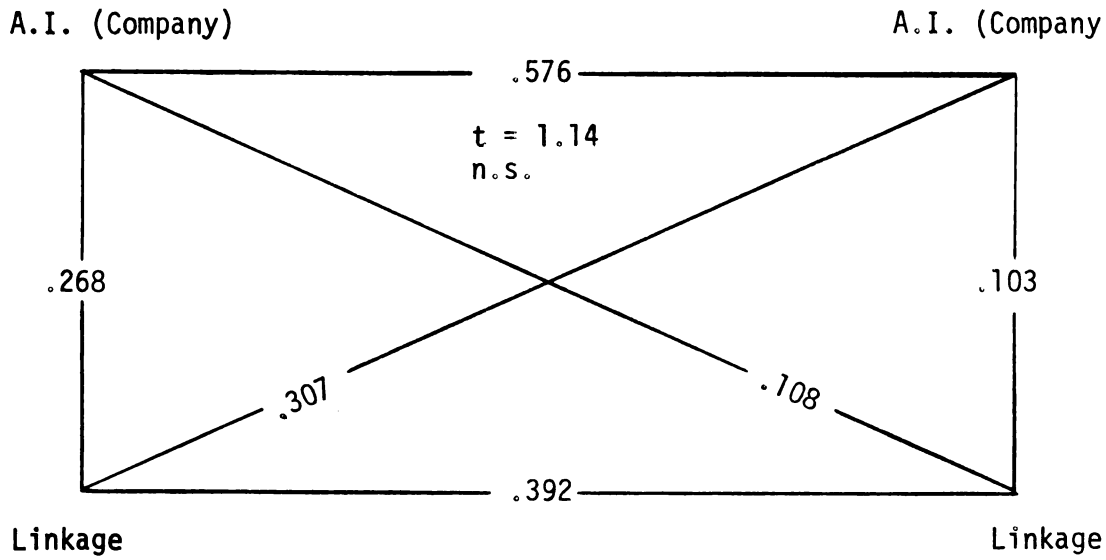

Figure 9

Cross-Lagged Correlation Panel for
the Organizational Bonus-Suggestion Linkage and
Actual Influence over the Activities of the Company

Figures 4, 5, and 6 display the results of the three separate tests of hypothesis 1. Figures 7, 8, and 9 display the results of the three tests of hypothesis 5. All six sets of cross-lagged correlations have been corrected utilizing the method described by Crano, Kenny and Campbell (1970).

As may be seen in the figures above, the correlation coefficients between scales measuring organizational variables at t_1 and the scales measuring the influence variable at t_2 were significantly larger than their complimentary cross-lagged correlations in four out of six cases. The remaining two comparisons were not significantly different, although the correlations between the organizational variables and the influence variables were consistently greater than the complimentary cross-lagged correlations. These findings are summarized in Tables 11 and 12.

Support was found for both hypotheses 1 and 5. Apparently the level of organizational commitment to the Scanlon Plan at t_1 is the predominant cause of the level of perceived actual influence at t_2 with respect to both the respondents' own job and the activities of their own department. This finding does not hold for the activities of the company. Secondly, an explicit link between the suggestion process and bonus payments at t_1 is the predominant cause of the level of perceived actual influence at t_2 with respect to the respondents' own jobs and the activities of their departments. Again this finding does not hold for the activities of the company.

Table 11

Cross-Lagged Correlations
Testing Hypothesis One

Influence Area	Variables	Correlation	t	p*
Own Job	Commitment t_1 & Actual Influence t_2	.411	-1.925	.05
	Actual Influence t_1 & Commitment t_2	.097		
Department	Commitment t_1 & Actual Influence t_2	.424	-1.996	.05
	Actual Influence t_1 & Commitment t_2	.088		
Company	Commitment t_1 & Actual Influence t_2	.184	- .855	n.s.
	Actual Influence t_1 & Commitment t_2	.033		

*One-tailed test.

Table 12

Cross-Lagged Correlations
Testing Hypothesis Five

Influence Area	Variables	Correlation	t	p*
Own Job	Linkage t_1 & Actual Influence t_2	.355	-1.984	.05
	Actual Influence t_1 & Linkage t_2	.002		
Department	Linkage t_1 & Actual Influence t_2	.503	-3.133	.005
	Actual Influence t_1 & Linkage t_2	.007		
Company	Linkage t_1 & Actual Influence t_2	.307	-1.144	n.s.
	Actual Influence t_1 & Linkage t_2	.108		

*One-tailed test.

In sum, out of six possible tests of the two remaining hypotheses, each hypothesis was significantly supported twice. All significant results were derived from the same areas of possible influence--an employee's own job and the activities of his department. Both non-significant results were derived from possible influence over activities of the company. Even in the latter cases, however, the direction of difference supported the hypotheses.

CHAPTER IV

DISCUSSION

The central variable of this study is personal influence, and it is quite logical to wonder why the study of personal influence should be undertaken at all. In essence, the reason is simply that the exercise of personal influence in the work situation is an antidote to the feelings alienation brought about by the fractionation effect of modern technology. One of the tendencies of current technology is to isolate the worker from the total organizational effort. In today's parlance, he is becoming irrelevant. The fundamental contention here is that all members of an organization are highly relevant to its success in the market place and that this success can only be assured by creating organizational environments which enhance their dignity and personal integrity. A critical component in promoting the self-respect of organizational members is to maximize their opportunities and abilities to exert personal influence over those aspects of the work situation which are important to them.

In recent years, a prominent means of enhancing personal influence has been through promotion of participative managerial styles. The contention of those theorists and investigators advocating participation is that enhancing a person's influence over those aspects of organizational activities which are most salient to him will increase his own

effectiveness and thereby contribute to the effectiveness of the entire organization. There has been, therefore, considerable research into the dynamics and results of participation in general and participative decision-making (PDM) systems in particular.

The Scanlon Plan is an example of participation in action. From a participative philosophy, a set of PDM mechanics has been devised which hinge on the increased exertion of personal influence throughout the organization. The fundamental objective in implementing a Scanlon Plan is to charge everyone in the firm with greater mutual responsibility for the organization's welfare. If the Plan is to be successfully implemented, therefore, everyone in the organization must exert personal influence in order to achieve this objective. Thus, the exercise of personal influence is central to the implementation of a Scanlon Plan in particular and PDM in general.

Given this central importance of personal influence, it seems quite appropriate to study it during the implementation of a Scanlon Plan. It should be pointed out that the exercise of personal influence called for by the Scanlon Plan is typically not found in most organizations and therefore the people at all levels in a firm implementing the Plan must learn appropriate influence styles. This principle holds true regardless of organizational rank. So long as influence is work-related and basically intended to enhance the organization's effectiveness, it must flow upward and downward as well as laterally in the firm's hierarchy. With regards to operations, there can be no sacred cows taking shelter under managerial prerogatives. Naturally, during the

implementation of a Scanlon Plan, there are likely to be sharp confrontations within the company as its personnel redefine their roles under a highly participative system. Thus, there is a strong need in any company implementing a Scanlon Plan for periodic program evaluation to gain insight into the ongoing organizational dynamics as the Plan is implemented.

The logical focus of this study is the set of hypotheses generated in Chapter I, and it seems appropriate to review the assumptions and assertions which lead to them. First, a model of personal influence was generated based on Cartwright's (1965) theoretical work and Tannenbaum's (1968) empirical studies. It was assumed that there are at least two types of personal influence, actual and ideal. As corollaries, it was asserted that: (a) Personal influence may be more or less important to an individual, and (b) Actual and ideal influence may be more or less congruent. Secondly, the social-psychological nature of participative decision-making was explicated through the theoretical analysis presented by Lowin (1968) and the numerous field, laboratory and survey studies reviewed in Chapter I. Following Lowin, it was assumed that PDM was a mode of organizational operations in which decisions are made by those persons who are most likely to execute them. Three corollaries follow: (1) It is generally asserted by pro-PDM theorists and investigators that a highly participative organization tends to be a highly effective organization, (2) Participation necessarily involves personal influence, and (3) The Scanlon Plan is a specific case of PDM. Thirdly, a logical extension of the

corollary that participation necessarily involves personal influence is that any causes of a successful PDM program are also causes of personal influence. Thus a list of five organizational causes of a successful PDM program was generated from Lowin's discussion and applied to the model of personal influence. Finally, on the assumption that the Scanlon Plan is a special case of PDM, twenty hypotheses were generated regarding the causal relationships between the perceived level of the five organizational variables described by Lowin and the subsequent perceived level of the personal influence variables drawn from the influence model.

The basic proposition underlying all twenty hypotheses is really quite simple. It is that the perceived level of an organizational variable of theoretical importance to the implementation of a Scanlon Plan is a contributing cause of the subsequent perceived level of a personal influence variable. Implicit in this statement is the assumption that there may be a set of co-acting causes of perceived personal influence which are not specified here. Each of the twenty hypotheses listed in Chapter I amounted to a separate and highly specific statement of this proposition. Support for any or all of these hypotheses amounts to support for the basic proposition of this study.

It was found in Chapter III that two hypotheses out of the original twenty could actually be tested. The reason for this reduction was that the scales needed to measure the variables specified by these hypotheses were invalid. This finding should not be too surprising, however, in light of the fact no previous scales had been constructed

to measure the causal variables postulated by Lowin and no attempt has been made to validate the influence scales used by Tannenbaum. Enough scales were found to be valid, however, to test the following hypotheses:

1. The level of perceived commitment to the Scanlon Plan at one point in time is the predominant cause of the level of perceived actual influence at a subsequent point in time.

2. The perception of an explicit link between suggestions and bonus payments at one point in time is the predominant cause of the level of perceived actual influence at a subsequent point in time.

It should be noted with respect to hypothesis 1 that the perceived commitment of the organization to the Scanlon Plan was operationalized in terms of the perceptions of how committed management was to the Plan.

Three tests of each of these two hypotheses were made. First, each hypothesis was tested with regards to actual influence over one's own job. Second, it was tested regarding actual influence over the activities of one's own department. Third, it was tested regarding actual influence over the activities of the entire company. All six tested utilized the cross-lagged panel correlation technique.

The first hypothesis listed above, delineating the causal relationship between perceived organizational commitment to the Scanlon Plan and perceived actual influence, was supported with regards to the respondents' own jobs and their own departments. It was not supported regarding the activities of the company. The predominant cause of the level of subsequent perceived actual influence over one's own job and the activities of one's own department was the previous level of perceived managerial commitment to the Scanlon Plan.

The second hypothesis, dealing with the causal relationship between the explicitness of the link between suggestion and bonus payments on the one hand and perceived actual influence on the other was also supported with regards to the respondent's own jobs and the activities of their own departments. Again, this hypothesis was not supported with regards to the activities of the entire company. Thus, the explicitness of the link between suggestions and bonuses was the predominant cause of the level of subsequent perceived actual influence over one's own job and the activities of one's own department.

Although neither hypothesis was supported with regards to the activities of the company, it should be pointed out that the difference between the cross-lagged correlations were found to be in the predicted direction. The cross-lagged correlation between commitment and actual influence was .184, while the complimentary correlation between actual influence and commitment was .033. The cross-lagged correlation between suggestion-bonus linkage and actual influence was .307, while the complimentary correlation between actual influence and suggestion-bonus linkage was .108. As was pointed out in Chapter I, causation is conceived of here as a matter of degree, and to the extent that this conception is a meaningful interpretation of the "real world," it seems plausible to argue that in regard to the activities of the company the trend of causation is from organizational variable to influence variable, rather than vice versa.

Thus, all of the findings reviewed here support the basic contention of this study. Positive evidence has been found that an

organizational variable of presumed importance to the implementation of a Scanlon Plan is a contributing cause of subsequent perceived personal influence. In fact, no evidence to the contrary was found.

There are implications in this finding for Lowin's theoretical work on PDM. As was discussed in Chapter I, Lowin visualizes greater participation resulting from a shift in attitudes throughout the organization from an hierarchical (HIER) to a participative decision-making (PDM) mode. Such a shift must occur at all levels and in all areas of the organization. The findings of this study have two important implications for Lowin's argument. First, they openly assert the validity of the causative nature of the parameters of PDM which he discusses. His treatment seems to imply that these parameter conditions must be satisfied, at least to some extent before meaningful HIER-PDM shift can occur. The basic proposition supported in this study is that at least two of his parameters are actually causes. Lowin's logic can therefore be revised such that an organizational parameter variable is a cause of personal influence and thereby a cause of a successful HIER-PDM shift. Second, the causative nature of Lowin's parameters has consequence for an external change agent. In essence, to the extent that he can effect a parameter variable, he will cause the organization to shift in a PDM direction. Lowin's discussion and the research reported here should give him a better idea of the organizational variables to which he might most profitably devote his energies.

There are further implications for the Scanlon Plan. As was pointed out in Chapter I, the Scanlon Plan is an example of PDM. It

acts as a vehicle to foster participation and personal influence, thereby shifting an organization from an HIER mode to a PDM mode of operations. Thus, as was the case for Lowin's discussion of PDM, the causative nature of the variables investigated here are of central importance to the successful implementation of a Scanlon Plan. It appears that a company's perceived commitment to the philosophy and practices of the Scanlon Plan is a contributing cause of an important aspect of its implementation--the level of perceived personal influence enjoyed by its members. Further, the linkage between suggestions and bonuses is a contributing cause of this same variable of perceived personal influence.

Finally, there is a clear implication here for Tannenbaum's work on influence in organizations. Tannenbaum has demonstrated a correlational linkage between perceived personal influence and such variables as job satisfaction, motivation and organizational efficiency. This study has demonstrated a causal linkage between two organizational states and perceived personal influence. In effect, the results of this study point up two areas of organizational climate which effect personal influence and thereby effect the outcomes which Tannenbaum has demonstrated.

It should be mentioned that the findings reported in Chapter III must be treated with some caution. There was a wage disagreement between the president of the company and some of the employees the day before the second questionnaire was sent out. This disagreement prompted the president to draft a letter to all employees regarding this disagreement (Appendix F). This letter was attached to the questionnaires that

were mailed out. The attitudes reported above could have resulted partially from temporary feelings on the part of the employees toward the letter, rather than toward the Scanlon Plan.

Although they were tangential to the main concern of this research, mean differences on the seven valid scales did occur and three of them were significant. Specifically (1) There was a significant decrease of .58 points on a five point scale measuring the linkage between suggestions and bonueses; (2) There was a significant decrease of 2.32 points on a twenty-five point scale measuring job motivation; and (3) There was a significant decrease of .24 points on a five point scale measuring identification with the company.

It seems likely that the only one bonus being paid during the period between surveys may have had a considerable effect upon the employees' attitudes. As was shown above, employees felt it was less likely that their suggestions would result in a Scanlon bonus at the time of the second survey than they did at the time of the first survey. These employees may have lost confidence in their ability to generate bonuses through the Scanlon suggestion procedure. The more negative attitude toward the job may have a similar basis. Job motivation was defined in terms of getting certain rewards, including a Scanlon bonus, for working more efficiently. Employees may have begun to doubt that working more efficiently would actually result in a Scanlon bonus. Finally, the decrease in positive attitude toward the degree to which the goals of the company are also the goals of its employees may reflect a heightened mistrust in management's intentions regarding the Scanlon

Plan. Although only one bonus had been paid, many employees may have felt that they have been giving the plan a "good try." It is possible, therefore, that some employees feel that management had manipulated the Plan so that it would not "pay off" as frequently as expected.

All three of the attitudes which showed a decrease may also have been effected by the changes in employee expectations of how well they could make the Plan work. It is likely that at the beginning of the implementation of the Plan, many employees expected that they would begin producing financial benefits for themselves in a short period. As time passed between surveys, these expectations were probably not realized. Some employees may have become disillusioned with the Scanlon Plan in general, and with their ability to exert influence in particular. This disillusionment could be reflected in the decrease in positive attitudes reported above.

Support for both these avenues of interpretation can be found in the employees' written comments in Appendix G. Many employees in the matched sample chose to include notes or essays along with their completed questionnaires. All the comments reported in Appendix G are from the August survey; there were no written comments in the February survey. A casual content analysis of these comments reveals disappointment with the lack of bonus payments and a generalized suspicion of management's intentions. In reviewing the comments, it seems that much of the complaining about wages can also be attributed to a disappointment with the lack of bonus payments. Further, many of the complaints about "poor management" are linked to inuendos or outright statements

that the Scanlon Plan was instituted by management to "rip off" the employees. Also, it is apparent that many employee expectations regarding the success of the Plan were dashed. Invidious comparisons between the financial outcomes of the Plan in the company studied and at other companies in the area are made. Several employees seem to feel that the Plan is strictly "for management," in contrast to what they had been told when the Plan was first introduced.

The implementation of any PDM program takes time, often a long period of time. As Lowin (1968) has pointed out, not only must the PDM structure be fostered, but the HIER structure must be altered. A PDM program will not be fully implemented until it meets the needs of all members of the organization. In the case of the company studied, it seems likely that not enough time has passed, and possibly not enough effort has been exerted, to replace the HIER structure with a PDM structure. Lawler (1968) has clearly pointed up the criticality of measuring variables at optimal points in time to accurately gauge their causal relations. The contention here is that, provided valid scales can be constructed, another survey at a later time would support the causal relationships hypothesized above because of the lengthy time delay inherent in an HIER-PDM organizational change. In particular, during the application of the Scanlon Plan in changing from HIER system to PDM system, the management of a company implementing the Plan should be perceived as being committed to the philosophy and practices of the Plan if it is to work properly. Further, effective screening committee meetings should give all employees concrete evidence of the suggestion-bonus linkage. These meetings should be aimed at two other goals:

(1) Providing all participants with feedback regarding the levels of actual influence they exert in the organization; and (2) Giving a clear indication of management's commitment to the Plan by their willingness to take cooperative action. Production committee meetings should result in action at levels most immediate to the rank-and-file. In this way, employees can experiment with constructive innovations in those aspects of their jobs with which they are most familiar. Acceptance and trust should be demonstrated by the openness of exchanges and influence among all hierarchical levels. Task-oriented communications channels should be established throughout the organization as vehicles for employees to express their ideas on how to improve operations. The experiences of employees should confirm the linkage between their suggestions to improve efficiency and bonuses. These experiences are important because they fulfill the employees' expectancy of equitable treatment. If they feel they have cooperated with the Scanlon Plan system, they feel they should receive the financial rewards resulting from their efforts. This point is logically parallel to Lawler's (1971) notion that an important component of organizational effectiveness is the subjective certainty of receiving financial rewards for a higher level and/or quality of effort.

The most important contribution of this study has been the identification of the causal importance of managerial commitment and suggestion-bonus linkage to the implementation of the Scanlon Plan. It can now be asserted with reasonable confidence that both these variables are contributing causes to the success of the Plan and should therefore be attended to in any attempt to implement it.

This line of correlational-causal research should be pursued in order to identify further contributing causes of successful Scanlon Plan installation. There are at least three steps involved in this continuing research: (1) More valid scales of presumed cause and effect variables should be constructed; (2) More sophisticated research methods should be applied. A more sophisticated approach might be modeled after the thoughts and efforts of Sandel (1971) and Vroom (1966). Two objectives of such research would be to partially eliminate the possibility of a third causal variable determining the levels of both specified variables and discovering the optimal time lag between cause and effect. (3) To the degree that more valid scales are devised and applied in more revealing research paradigms, the student and practitioner of organizational change, would have a far better idea of what issues are most important in bring about an HIER-PDM shift in conjunction with the efforts of all members of the organization.

Some final comments on organizational change and research are in order. Whenever a change agent enters an organization, he is faced with an ongoing situation with both an intrinsic and an extrinsic history. At first, both the organization and the change agent are only vaguely aware of the dimensions of this social-psychological situation. This situation is, nevertheless, highly important to the effectiveness of any proposed change. An assessment of the present situation is therefore highly desirable from both the organization's and change agent's standpoints. Thus, the question to which the organizational researcher must address himself arises: What is the current social-

psychological milieu in this organization which is pertinent to the proposed organizational change?

Of particular importance is variability expectations in the organizational members concerning changes. This variability arises from the different perspectives of organizational members. Management, for example, typically has a broader array of information relevant to the organizational change than does the rank-and-file. It is quite possible, therefore, that management's expectations regarding change may differ sharply from those of the line workers. The process of becoming aware of these differences in expectation and accommodating them is a necessary discipline for any viable organizational change.

As the efforts toward organizational change proceed, the researcher has the opportunity to repeatedly assess the fulfillment of these expectations and to measure the degree and type of change which has occurred. It is in this role of "assessment agent" that the organizational researcher can make considerable contributions to the change program. He can provide both the organization and the external change agent with a reasonably accurate picture of what the change effort had produced up to a given point in time. More specifically, he can give all members of the organization a better idea of what their expectations of the change program were and to what degree they have been fulfilled. On the basis of this objective assessment, appropriate decisions can be made to guide future change efforts.

In sum, the functions of organizational change and research are complimentary. A change effort brings about excellent opportunities for research, while accurate research findings, properly fed back, provide the basis for further constructive change.

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APPENDIX A

MICHIGAN STATE UNIVERSITY
Department of Psychology

YOUR JOB AND THE COMPANY

The purpose of this study is to learn more about how the people in the Company work together and influence each other's decisions and actions. More specifically, the aim is to learn how the Scanlon plan can make working in the company even more rewarding.

If this study is to be helpful, it is important that you answer each question as thoughtfully and frankly as possible. This is not a test; there are no right or wrong answers. The important thing is that you answer the questions the way you really see things or the way you really feel about them.

Your responses to these questions are completely confidential. None of the questionnaires, once they are filled out, will ever be seen by anyone in the company.

When you have completed your questionnaire, put it in the envelope marked CONFIDENTIAL. Seal this envelope and turn it in to your foreman or supervisor on Monday. A researcher from Michigan State University, Mr. Gerry Burtnett, will pick up the envelopes that day.

PLEASE ANSWER EACH QUESTION COMPLETELY.

SECTION I.

In this section of the questionnaire, a few quations are asked about where you work and what your position is at the Company.

1. Which plant do you work in? (Please check one)

☐ ☐ ☐ ☐

2. Which department do you work in? (Please check one)

a.	b.	c.	d.
____Office	____Rough mill	____Machine	
____Machine	____Machine	____Cabinet	____Trim
____Quonset hut	____Cabinet		____Packing
____Cabinet	____Finishing		____Finishing
____Finishing	____Trim		
____Trim			

3. Your sex: _____Male _____Female

4. Your age: _____years, _____months.

5. The term "supervisor" is used in several places in this questionnaire. This term refers to the person to whom you directly report. For example, if you are a production employee, your supervisor would be your foreman. If you are a foreman, your supervisor would be the plant manager.

Please write in the name of your supervisor:_____

6. How long have your worked at the Company

_____years, _____months.

7. Are you an elected member of a Production Committee? ____Yes ____No

8. Are you a member of the Screening Committee? ____Yes ____No

SECTION II.

Each question in this section can be answered by filling in the circle which most closely corresponds to what you think. The questions ask you about how much influence you have in your job over your own work, over the activities of your department, or over the actions of the company. Each question is divided into three parts: (a) How much influence you have now, (b) how much influence you think you should have, and (c) how important each action or activity is to you in your job.

FILL IN 3 CIRCLES PER QUESTION, 1 EACH FOR a, b, AND c.

	To a very little extent	To a little extent	To some extent	To a great extent	To a very great extent
1. I decide how much I am going to turn out.					
a. This is the way it is now:	①	②	③	④	⑤
b. This is the way it should be:	①	②	③	④	⑤
c. This part of my job is important to me:	①	②	③	④	⑤
2. I determine the quality level of my output.					
a. This is the way it is now:	①	②	③	④	⑤
b. This is the way it should be:	①	②	③	④	⑤
c. This part of my job is important to me:	①	②	③	④	⑤
3. I determine how much effort I will exert.					
a. This is the way it is now:	①	②	③	④	⑤
b. This is the way it should be:	①	②	③	④	⑤
c. This part of my job is important to me:	①	②	③	④	⑤

	To a very little extent	To a little extent	To some extent	To a great extent	To a very great exten
4. I have a say in deciding who I will work with.					
a. This is the way it is now:	①	②	③	④	⑤
b. This is the way it should be:	①	②	③	④	⑤
c. This part of my job is important to me:	①	②	③	④	⑤
5. I determine the methods I use to do my job.					
a. This is the way it is now:	①	②	③	④	⑤
b. This is the way it should be:	①	②	③	④	⑤
c. This part of my job is important to me:	①	②	③	④	⑤
6. I influence how much my department turns out.					
a. This is the way it is now:	①	②	③	④	⑤
b. This is the way it should be:	①	②	③	④	⑤
c. This part of my job is important to me:	①	②	③	④	⑤
7. I determine the quality of my department's output.					
a. This is the way it is now:	①	②	③	④	⑤
b. This is the way it should be:	①	②	③	④	⑤
c. This part of my job is important to me:	①	②	③	④	⑤
8. I influence the number of suggestions coming out of my department.					
a. This is the way it is now:	①	②	③	④	⑤
b. This is the way it should be:	①	②	③	④	⑤
c. This part of my job is important to me:	①	②	③	④	⑤
9. I influence the order in which my department takes on its tasks.					
a. This is the way it is now:	①	②	③	④	⑤
b. This is the way it should be:	①	②	③	④	⑤
c. This part of my job is important to me:	①	②	③	④	⑤
10. I help determine which people are assigned to certain jobs in my department.					
a. This is the way it is now:	①	②	③	④	⑤
b. This is the way it should be:	①	②	③	④	⑤
c. This part of my job is important to me:	①	②	③	④	⑤

		To a very little extent	To a little extent	To some extent	To a great extent	To a very great extent
11.	I influence how machines are used in my department.					
	a. This is the way it is now:	①	②	③	④	⑤
	b. This is the way it should be:	①	②	③	④	⑤
	c. This part of my job is important to me:	①	②	③	④	⑤
12.	I influence how much the company produces.					
	a. This is the way it is now:	①	②	③	④	⑤
	b. This is the way it should be:	①	②	③	④	⑤
	c. This part of my job is important to me:	①	②	③	④	⑤
13.	I help determine the quality of the company's products.					
	a. This is the way it is now:	①	②	③	④	⑤
	b. This is the way it should be:	①	②	③	④	⑤
	c. This part of my job is important to me:	①	②	③	④	⑤
14.	I help choose what machines the company will buy.					
	a. This is the way it is now:	①	②	③	④	⑤
	b. This is the way it should be:	①	②	③	④	⑤
	c. This part of my job is important to me:	①	②	③	④	⑤
15.	I have a say in determining what raw materials the company will buy.					
	a. This is the way it is now:	①	②	③	④	⑤
	b. This is the way it should be:	①	②	③	④	⑤
	c. This part of my job is important to me:	①	②	③	④	⑤
16.	I have a say in how well the company maintains production machinery.					
	a. This is the way it is now:	①	②	③	④	⑤
	b. This is the way it should be:	①	②	③	④	⑤
	c. This part of my job is important to me:	①	②	③	④	⑤
17.	I influence the way work is scheduled through the plant.					
	a. This is the way it is now:	①	②	③	④	⑤
	b. This is the way it should be:	①	②	③	④	⑤
	c. This part of my job is important to me:	①	②	③	④	⑤

	To a very little extent	To a little extent	To some extent	To a great extent	To a very great extent
18. I help determine what products the company produces.					
a. This is the way it is now:	①	②	③	④	⑤
b. This is the way it should be:	①	②	③	④	⑤
c. This part of my job is important to me:	①	②	③	④	⑤
19. I have control over the way this company trains its people on their jobs.					
a. This is the way it is now:	①	②	③	④	⑤
b. This is the way it should be:	①	②	③	④	⑤
c. This part of my job is important to me:	①	②	③	④	⑤

SECTION III.

In this section, there are several questions regarding the Scanlon plan in the Company. Place an "X" in the blank which corresponds to your answer.

1. My immediate supervisor is receptive to my ideas and suggestions on important matters.

___To a very little extent ___To a little extent ___To some extent ___To a great extent ___To a very great extent

2. Management is receptive to my suggestions and ideas on important matters.

___To a very little extent ___To a little extent ___To some extent ___To a great extent ___To a very great extent

3. How seriously do you think your suggestions on important matters are taken by the Production Committee?

___Not very seriously ___A little ___Somewhat ___Seriously ___Very seriously

4. How seriously do you think your suggestions on important matters are taken by the Screening Committee?

___Not very seriously ___A little ___Somewhat ___Seriously ___Very seriously

5. How often do you find out what action has been taken on your suggestions?

_____Rarely _____Seldom _____Sometimes _____Often _____Very Often

6. How often do other people around you know that you thought of a particular suggestion?

_____Rarely _____Seldom _____Sometimes _____Often _____Very often

7. How often are difficult problems settled by suggestions?

_____Rarely _____Seldom _____Sometimes _____Often _____Very often

8. How clear are your own performance goals to you?

_____Not clear at all _____Not very clear _____Somewhat clear _____Clear _____Very clear

9. How clear are the performance goals of the people in your department?

___Not clear at all ___Not very clear ___Somewhat clear ___Clear ___Very clear

10. To what extent do ideas and suggestions help bring about bonus payments?

___To a very little extent ___To a little extent ___To some extent ___To a great extent ___To a very great extent

11. To what extent do <u>your</u> suggestions and ideas help bring about bonus payments?

___To a very little extent ___To a little extent ___To some extent ___To a great extent ___To a very great extent

SECTION IV.

In this section, there are two sets of questions. The two areas covered are (1) how you feel about your job, and (2) how you feel about the Company.

Part 1. The following set of questions askes you about the consequences you would expect to result from doing your job well. Please rate the chances of each consequence coming about if you do your job well.

	To a very little extent	To a little extent	To some extent	To a great extent	To a very great extent
1. Doing my job well increases my job security.	①	②	③	④	⑤
2. Doing my job well increases my chances of getting a Scanlon bonus.	①	②	③	④	⑤
3. Doing my job well benefits my co-workers.	①	②	③	④	⑤
4. Doing my job well helps me to get along with my co-workers.	①	②	③	④	⑤
5. Doing my job well increases my chances of being recognized as a good worker.	①	②	③	④	⑤
6. Doing my job well gives me a feeling of accomplishment.	①	②	③	④	⑤

Six consequences of doing your job well are listed below. Please rate each consequence according to how important it is to you in your job.

	Of very little importance	Of little importance	Of some importance	Of great importance	Of very great importance
1. Job security:	①	②	③	④	⑤
2. Scanlon bonus:	①	②	③	④	⑤
3. Benefits to co-workers:	①	②	③	④	⑤

	Of very little importance	Of little importance	Of some importance	Of great importance	Of very great importance
4. Getting along with co-workers:	①	②	③	④	⑤
5. Being recognized as a good worker:	①	②	③	④	⑤
6. A feeling of accomplishment:	①	②	③	④	⑤

Part 2. Please describe how you feel about the Company by answering the questions below. Place an "X" in the blank wnich corresponds to your answer.

1. If you could begin working over again in the same occupation, what are the chances you would choose to work at the Company?

_____Very low____Low____About even ____High____Very high

2. To waht extent do both the company and the employees at the Company work together toward the same goals?

___To a very little extent___To a little extent___To some extent___To a great extent___To a very great extent

3. To what extent is the well-being of the Company related to your own personal well-being?

___To a very little extent___To a little extent___To some extent___To a great extent___To a very great extent

4. To what extent are you bothered when you hear about someone criticizing the Company?

___To a very little extent___To a little extent___To some extent___To a great extent___To a very great extent

5. To what extent are you bothered when you hear about someone criticizing the products of the Company?

___To a very little extent___To a little extent___To some extent___To a great extent___To a very great extent

6. If a job were open at the Company and you knew a friend who could fill it, what are the chances that you'd advise him to apply?

_____Very low____Low____About even____High____Very high

7. How often do you tell somebody outside your immediate family about a product that is being made at the Company?

_____Rarely____Seldom____Sometimes____Often____Very often

8. How often do you discuss your job at the Company in your immediate family?

_____Rarely____Seldom____Sometimes____Often____Very often

THANK YOU FOR YOUR HELP

MICHIGAN STATE UNIVERSITY
Department of Psychology

SU TRABAJO Y "THE COMPANY"

El propósito de este estudio es saber más de cómo los empleados de The Company trabajan y cómo se influyen. Especificamente, el propósito es saber cómo el plan "Scanlon" pueda mejorar las condiciones de su trabajo.

Si este estudio va a ser útil, es necesario que Ud. conteste cada pregunta cuidadosamente. Lo más importante es que Ud. conteste con toda sinceridad.

Sus respuestas a estas preguntas son completamente confidenciales. Ningún cuestionario, una vez contestada, llegará a manos de ninguna persona que trabaje para la compañía.

Cuando Ud. haya contestado su cuestionario, póngalo en el sobre marcado "Confidential." Cierre este sobre y devuélvalo a su "foreman" capataz o su supervisor "superintendiente" el lunes. Un investigador de la Universidad del Estado de Michigan, Sr. Gerry Burtnett, recogerá los sobres ese día.

Haga el favor de contestar cada pregunta completamente.

SECCIÓN I.

En esta sección del cuestionario, se le pregunta dónde trabaja y qué posición Ud. tiene en la compañía

1. ¿ En qué fábrica (plant) trabaja Ud. ?

___ ___ ___

___

2. ¿ En qué departamento (department) trabaja Ud. ?

a.)
___ Oficina (office)
___ Máquina (machine)
___ Quonset hut
___ Ebanistería (cabinet)
___ Finishing
___ Trim

b.)
___ "Rough mill"
___ Máquina (machine)
___ Ebanistería (cabinet)
___ Finishing
___ Trim

c.)
___ Máquina (machine)
___ Ebanistería (cabinet)

d.)
___ Trim
___ Empaquetamiento (packing)
___ Finishing

3. Su sexo: ___ Masculino ___ Femenino

4. Su edad: ___ años, ___ meses

5. El término "supervisor" se usa en diversos lugares en este cuestionario. El término quiere decir la persona a quien Ud. debe una responsabilidad directa e inmediata. Por ejemplo, si Ud. fuera un obrero, su "supervisor" sería su "foreman." Si Ud. fuera "foreman," su "supervisor" sería director de la fábrica.

   Haga el favor de escribir aquí el nombre de su supervisor:

   _____

6. ¿ Cuánto tiempo hace que Ud. trabaja para Company

   ___ años, ___ meses

7. ¿ Es Ud. miembro del "Production Committee" (comité de producción)?

   ___ Sí ___ No

8. ¿ Es Ud. miembro del Screening Committee? ___ Sí ___ No

SECCIÓN II.

Se puede contestar cada pregunta en esta sección por llenar el circulo que más corresponda a lo que Ud. piense. Las preguntas tratan de su propio trabajo, otras actividades de su departamento y las acciones de la compañía. Cada pregunta se divide en tres partes: (a) Cuánta influencia Ud. tiene, (b) Cuánta influencia Ud. cree Ud. debe tener y, (c) Cuán importante cada acción o actividad es para Ud. en su trabajo.

Llene tres círculos para cada pregunta, uno para a, b, y c.

	Muy rara vez	Rara vez	A veces	A menudo	Muy a menudo
1. Yo determino cuánto voy a producir.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)
2. Yo determino el nivel de calidad de mi producción.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)
3. Yo determino cuánto voy a esforzarme en mi trabajo.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)
4. Yo puedo sugerir con quien yo prefiriría trabajar.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)
5. Yo determino los métodos que emplearé en mi trabajo.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)

	Muy rara vez	Rara vez	A veces	A menudo	Muy a menudo
6. Yo influyo la producción de mi departamento.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)
7. Yo determino la calidad de la producción de mi departamento.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)
8. Yo influyo el número de sugerencias que salen de mi departamento.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)
9. Yo influyo el orden de la producción de mi departamento.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)
10. Yo ayudo determinar cuales personas son asignados a cierto trabajo en mi departamento.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)

	Muy rara vez	Rara vez	A veces	A menudo	Muy a menudo
11. Yo influyo cómo se usan las máquinas en mi departamento.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)
12. Yo influyo la producción de la compañía.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)
13. Yo auyda determinar la calidad de los productos de la compañía.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)
14. Yo asisto en la selección de nuevas máquinas.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)
15. Yo asisto en la determinación de qué materias primas la compañía comprará.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)

	Muy rara vez	Rara vez	A veces	A menudo	Muy a menudo
16. Yo determino en parte la calidad de mantenimiento de la maquinaria.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)
17. Yo influyo la manera en que se fijan las horas del trabajo en la fábrica.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)
18. Yo determino en parte qué producto la compañía producirá.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)
19. Yo controlo el método de entrenamiento que esta compañía emplea para entrenar a sus empleados en la fábrica.					
a. Esto es el estado actual:	(1)	(2)	(3)	(4)	(5)
b. Esto es como debe ser:	(1)	(2)	(3)	(4)	(5)
c. Esta parte de mi trabajo me es importante:	(1)	(2)	(3)	(4)	(5)

SECCIÓN III.

En esta sección, hay varias preguntas que tratan del plan "Scanlon" y Company. Ponga una "X" en el espacio en blanco que corresponda a su respuesta.

1. Mi capataz "supervisor" siempre escucha con sinceridad mis ideas y sugerencias sobre cosas importantes.

___ Muy rara vez ___ Rara vez ___ A veces ___ A menudo ___ Muy a menudo

2. La administración escucha mis ideas y sugerencias sobre cosas importantes.

___ Muy rara vez ___ Rara vez ___ A veces ___ A menudo ___ Muy a menudo

3. ¿Cuánta importancia tienen sus sugerencias sobre asuntos importantes discutidos por el comité de producción (Production Committee)?

___ Muy poca ___ Poca ___ Alguna ___ Mucha ___ Muchísima

4. ¿Cuánta importancia tienen sus sugerencias sobre asuntos importantes discutidos por "the Screening Committee"?

___ Muy poca ___ Poca ___ Alguna ___ Mucha ___ Muchísima

5. ¿Cuántas veces se le informa de las reacciones a sus sugerencias?

___ Muy rara vez ___ Rara vez ___ A veces ___ A menudo ___ Muy a menudo

6. ¿Cuántas veces saben otras personas que trabajan con Ud. que Ud. inició cierta idea?

___ Muy rara vez ___ Rara vez ___ A veces ___ A menudo ___ Muy a menudo

7. ¿Cuántas veces se resuelven problemas difíciles por medio de sugerencias?

___ Muy rara vez ___ Rara vez ___ A veces ___ A menudo ___ Muy a menudo

8. ¿Con cuánta claridad ve Ud. los objetos, el propósito, de su trabajo?

___ Muy poca ___ Poca ___ Alguna ___ Hastante ___ Mucha

9. ¿Con cuánta claridad ve Ud. los objetos, los propósitos, de su departamento?

___ Muy poca ___ Poca ___ Alguna ___ Hastante ___ Mucha

10. ¿Cuántas veces recibe Ud. u otros "bonus payments" después de sugerir algo?

___ Muy rara vez ___ Rara vez ___ A veces ___ A menudo ___ Muy a menudo

11. ¿Cuántas veces recibe Ud. "bonus payments" a causa de sus sugerencias?

___ Muy rara vez ___ Rara vez ___ A veces ___ A menudo ___ Muy a menudo

SECCIÓN IV.

En esta sección, hay dos partes. Las tópicos tratados en la primera parte son: (1) Su actitud hacia su trabajo, y (2) Su actitud hacia Company.

Parte 1. Las preguntas siguientes tratan de las consecuencias que Ud. espera después de hacer bien su trabajo. Haga el favor de calificar la posibilidad de cada consecuencia solamente si Ud. hace bien su trabajo.

	Muy poco	Poco	Algo	Mucho	Muchísimo
1. El trabajar bien aumentará mi seguridad en mi puesto.	(1)	(2)	(3)	(4)	(5)
2. El trabajar bien me ayudará obtener un bonus "Scanlon."	(1)	(2)	(3)	(4)	(5)

	Muy poco	Poco	Algo	Mucho	Muchísimo
3. El hacer bien mi trabajo ayuda a los otros labradores.	(1)	(2)	(3)	(4)	(5)
4. El hacer bien mi trabajo me ayuda llevarlo bien con mis amigos en la fábrica.	(1)	(2)	(3)	(4)	(5)
5. El hacer bien mi trabajo aumenta la posibilidad de recibir reconocimiento como buen labrador.	(1)	(2)	(3)	(4)	(5)
6. El hacer bien mi trabajo me da la satisfacción de haber cumplido algo.	(1)	(2)	(3)	(4)	(5)

Seis consecuencias de hacer bien su trabajo. Haga el favor de indicar la importancia de cada una de las consecuencias en su trabajo.

	De muy poca importancia	De poca importancia	De alguna importancia	De mucha importancia	De muchísima importancia
1. Seguridad en su puesto:	(1)	(2)	(3)	(4)	(5)
2. "Bonus Scanlon":	(1)	(2)	(3)	(4)	(5)
3. Beneficios a otros labradores:	(1)	(2)	(3)	(4)	(5)
4. Llevarse bien con otros labradores:	(1)	(2)	(3)	(4)	(5)
5. Ser reconocido como buen trabajador:	(1)	(2)	(3)	(4)	(5)
6. Satisfacción de haber cumplido algo:	(1)	(2)	(3)	(4)	(5)

Parte 2. Haga el favor de describir cómo Ud. siente acerca de Company por contestar lar siguientes preguntas. Ponga una "X" en el espacio en blanco que corresponda a su respuesta.

1. Si Ud. pudiera empezar de nuevo el mismo clase de trabajo, trabajaría para Company?

___ Nunca jamás ___ Probablemente no ___ Quizá ___ Probablemente sí ___ Sí

2. ¿Trabajan la compañía y los empleados para llevar al cabo los mismos fines?

___ Nunca ___ Casi nunca ___ A veces ___ A menudo ___ Casi siempre

3. ¿Qué relación hay entre el bienestar de y su propio bienestar?

___ Ninguna ___ Muy poca ___ Poca ___ Mucha ___ Muchísima

4. ¿Hasta qué punto le molesta oír otros criticar a Company?

___ Muy muy poco ___ Muy poco ___ Poco ___ Mucho ___ Muchísimo

5. ¿Hasta que punto le molesta oír otros criticar los productos de la compañía?

___ Muy muy poco ___ Muy poco ___ Poco ___ Mucho ___ Muchísimo

6. Si hubiera nuevos puestos en Company, le aconsejaría a un amigo pedir trabajo?

___ De ninguna manera ___ Probablemente no ___ Quizá ___ Probablemente sí ___ Seguramente

7. ¿Cuántas veces habla Ud. con personas que no son miembros de su familia acerca de los productos de Company?

___ Muy rara vez ___ Rara vez ___ A veces ___ A menudo ___ Muy a menudo

8. ¿Cuántas veces habla de su trabajo en Company con los miembros de su familia?

___ Muy rara vez ___ Rara vez ___ A veces ___ A menudo ___ Muy a menudo

* * * *

MUCHÍSIMAS GRACIAS POR HABERNOS AYUDADO.

* * * *

APPENDIX B

MICHIGAN STATE UNIVERSITY EAST LANSING · MICHIGAN 48823

DEPARTMENT OF PSYCHOLOGY · OLDS HALL

February 11, 1972

Dear Employee:

One week from today you will be asked to participate in an attitude survey concerning the Company and the Scanlon plan. The survey will be sponsored jointly by the Midwest Scanlon Associates and Michigan State University.

Both the Midwest Scanlon Associates and Michigan State University have been interested for many years in how the Scanlon plan helps make companies better places to work. The Company has recently installed the Scanlon plan and therefore offers an opportunity to study how the plan enables people to work together more effectively.

The survey asks your opinions about your job, the Scanlon plan, and the Company. This information will be summarized and explained to everyone in the company. In this way, everybody will have a chance to reach a common understanding of what problems need to be solved to make the Company more effective under the Scanlon plan.

The survey will be distributed at two separate times. The first time will be next Friday, and the second time will be about six months from now. In this way, changes in your attitudes between these two times will act as a barometer of how well the Company is doing in implementing the Scanlon plan.

If the results of this survey are going to be useful, it is important that you feel free to answer all questions frankly. Your answers will be kept strictly confidential. No one inside the company will ever see them. Next Friday you will receive a large envelope containing your paycheck, the survey questionnaire, and an envelope in which to return your completed questionnaire. When you have answered all the questions in the questionnaire, please put it in the return envelope, seal the envelope, and return it to your foreman or supervisor. On Monday, a researcher from Michigan State University, Mr. Gerry Burtnett, will pick up the sealed envelopes.

We need your help and cooperation to make this survey a good barometer. Please answer all the questions and turn in your questionnaire. Thank you for your help.

Sincerely,

Robert Ruh
Executive Director,
Midwest Scanlon Associates

MICHIGAN STATE UNIVERSITY EAST LANSING • MICHIGAN 48823

DEPARTMENT OF PSYCHOLOGY • OLDS HALL

11 de agosto de 1.972

Estimado empleado:

De hoy en ocho días se le pedirá su participación en nuestro estudio de actitudes. Este estudio está patrocinado por Midwest Scanlon Associates y La Universidad del Estado de Michigan los cuales se han interesado muchos años en la eficacia del Plan "Scanlon" en su mejoramiento de companias.

Este estudio le pide su opinión acerca de su trabajo, el Plan "Scanlon," y Company. Esta información será resumida y explicada a todos los miembros de la compañia. De esta manera, todos tendrán la oportunidad de llegar a un acuerdo en cuanto a cuáles son los problemas de la compañia y cómo resolverlos para poner en práctica el Plan "Scanlon."

Este es el segundo estudio que se ha hecho aquí. El primero se hizo en febrero. Los cambios en sus actitudes nos indicarán cuánto éxito la compañia ha tenido en poner en práctica el "Plan Scanlon."

Para que los resultados de este estudio sean útiles, es necesario que Ud. se sienta libre para contestar las preguntas francamente. Sus respuestas serán confidenciales. Ningún miembro de la compañia las verá.

El viernes que viene Ud. recibirá un sobre grande que contendrá su cheque, el cuestionario del estudio y otro sobre en el cual lo devolverá. Cuando Ud. haya completado todo el cuestionario, haga el favor de ponerló en el sobre especial, cerrarlo y devolverlo a su "foreman," capataz. El lunes, un investigador de la Universidad del Estado de Michigan, Sr. Gerry Burtnett, recogerá los sobre sellados.

Cuando se haya terminado la análisis de los dos estudios, serán resumidos en un report de dos páginas el cual será enviado a cada empleado. Ud. recibirá este report antes del fin de octubre. Después de enviar el report, Sr. Burtnett les visitará varias veces para contestar cualquier pregunta que tenga en cuanto al estudio y sus resultados.

Necesitamos su ayuda y cooperación para que esta investigación sea válida. Haga el favor de entregar su cuestionario. Mil gracias por todo.

Sinceramente

Gerry Burtnett
La Universidad del Estado de Michigan

APPENDIX C

APPENDIX C

Questionnaire Coding Scheme

Section and Questions	Foils	Code
I - 1,2	Office	11
	Machine	12
	Quonset	13
	Cabinet	14
	Finishing	15
	Trim	16
	Rough mill	21
	Machine	22
	Cabinet	23
	Finishing	24
	Trim	25
	Machine	31
	Cabinet	32
	Trim	41
	Packing	42
	Finishing	43
I - 3	Male	1
	Female	2
	No response	0
I - 4	Years, months	Direct
I - 5	Manager	1
	Foremen	2
	Line workers	3
I - 6	Years, months	Direct
I - 7	Yes	1
	No	2
	No response	0

Section and Questions	Foils	Code
I - 8	Yes	1
	No	2
	No response	0
II - 1 through 19	To a very little extent	1
	To a little extent	2
	To some extent	3
	To a very great extent	4
	To a very great extent	5
	No response	0
III - 1,2	To a very little extent	1
	To a little extent	2
	To some extent	3
	To a great extent	4
	To a very great extent	5
	No response	0
III - 3,4	Not very seriously	1
	A little	2
	Somewhat	3
	Seriously	4
	Very seriously	5
	No response	0
III - 5,6,7	Rarely	1
	Seldom	2
	Sometimes	3
	Often	4
	Very often	5
	No response	0
III - 8,9	Not clear at all	1
	Not very clear	2
	Somewhat clear	3
	Clear	4
	Very clear	5
	No response	0
III - 10,11	To a very little extent	1
	To a little extent	2
	To some extent	3
	To a great extent	4
	To a very great extent	5
	No response	0

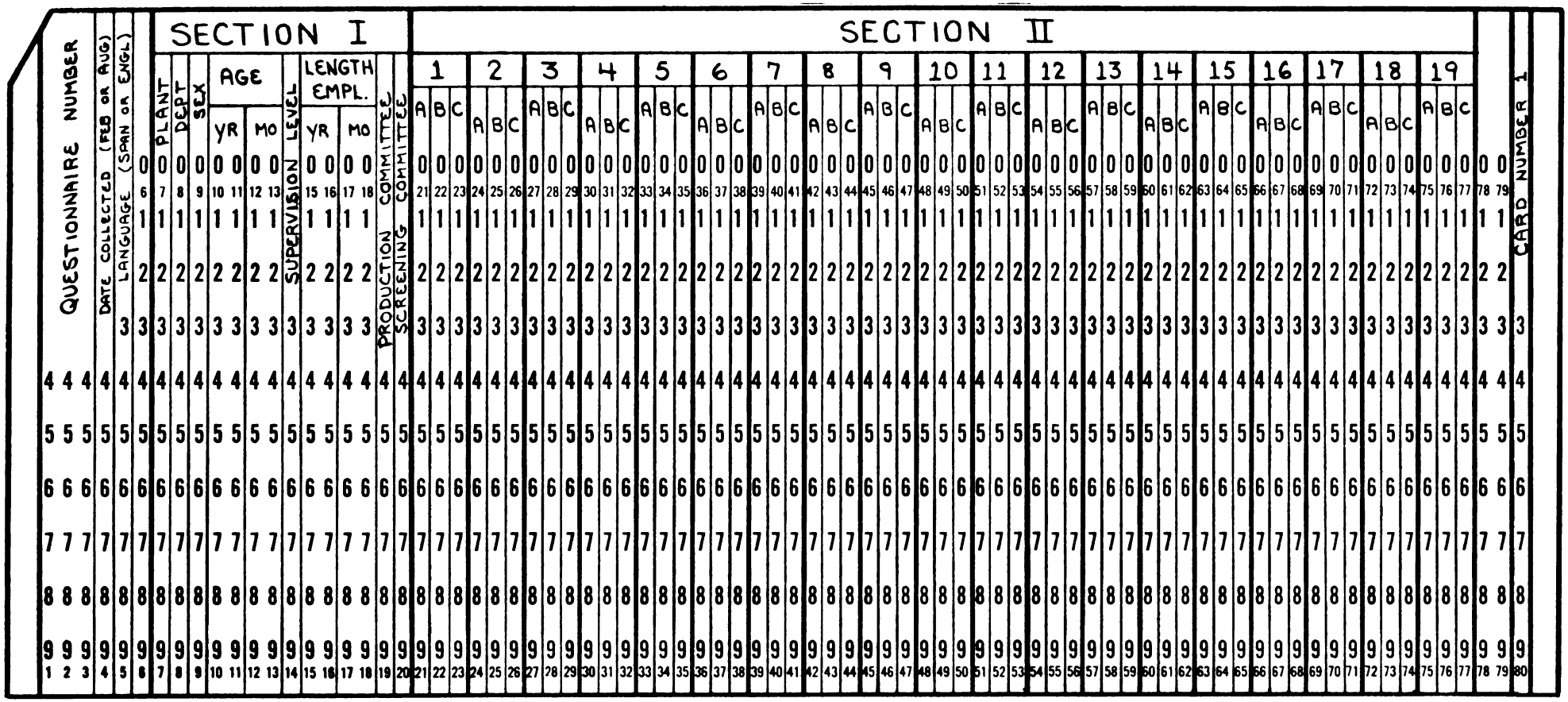
Section and Questions	Foils	Code
IV - Part I, both sets of six questions	To a very great extent	1
	To a little extent	2
	To some extent	3
	To a great extent	4
	To a very great extent	5
	No response	0
IV - Part 2,1	Very low	1
	Low	2
	About even	3
	High	4
	Very high	5
	No response	0
IV - Part 2, 2,3,4,6	To a very little extent	1
	To a little extent	2
	To some extent	3
	To a great extent	4
	To a very great extent	5
	No response	0
IV - Part 2;6	Very low	1
	Low	2
	About even	3
	High	4
	Very high	5
	No response	0
IV - 2;7,8	Rarely	1
	Seldom	2
	Sometimes	3
	Often	4
	Very often	5
	No response	0

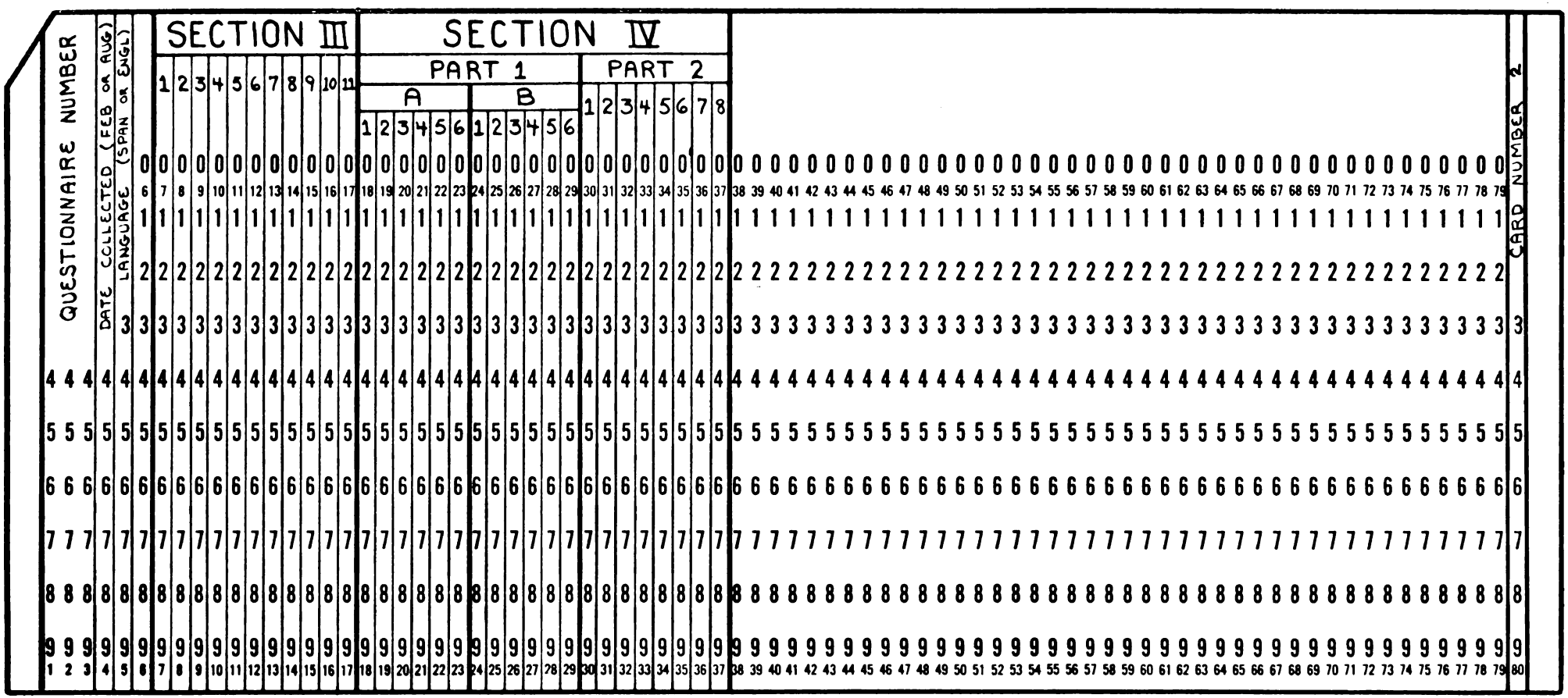
Additional codes:

Collection period: February (t_1) = 1, August (t_2) = 2

Questionnaire language: English = 1, Spanish = 2

APPENDIX D


QUESTIONNAIRE NUMBER
DATE COLLECTED (FEB OR AUG)
LANGUAGE (SPAN OR ENGL)
SECTION I
PLANT
DEPT
SEX
AGE
YR
MO
SUPERVISION LEVEL
LENGTH EMPL.
YR
MO
PRODUCTION COMMITTEE
SCREENING COMMITTEE
SECTION II
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
A B C
CARD NUMBER 1


QUESTIONNAIRE NUMBER
DATE COLLECTED (FEB OR AUG)
LANGUAGE (SPAN OR ENGL)
SECTION III
SECTION IV
PART 1
A
B
PART 2
CARD NUMBER 2

APPENDIX E

APPENDIX E

Item-Scale Intercorrelations

In order to relate the item-scale correlation matrix to the actual questionnaire items, a conversion scale has been constructed. This scale is displayed in the following table (Table 13). The first entry is the item number as it appears in the matrix. The second entry is a code locating that item in the questionnaire. The code is in the format: Section-Part-Subpart-Question Number where a section number and a question number are always designated.

Tables 14 and 15 present the entire item-scale correlation matrices for both t_1 and t_2. These correlations which lie within the solid rectangles are the item-scale coefficients which were computed for the items designated for the specified scale on an a priori basis during questionnaire construction.

Table 13

Conversion Scale from Matrix Item Numbers to Questionnaire Item Location Code

Matrix Number	Location Code	Matrix Number	Location Code	Matrix Number	Location Code
1	2-1A	32	2-13B	64	3-7
2	2-2A	33	2-14B	65	3-8
3	2-3A	34	2-15B	66	3-9
4	2-4A	35	2-16B	67	3-10
5	2-5A	36	2-17B	68	3-11
6	2-6A	37	2-18B	69	4-P1-A-1
7	2-7A	38	2-19B	70	4-P1-A-2
8	2-8A	39	2-1C	71	4-P1-A-3
9	2-9A	40	2-2C	72	4-P1-A-4
10	2-10A	41	2-3C	73	4-P1-A-5
11	2-11A	42	2-4C	74	4-P1-A-6
12	2-12A	43	2-5C	75	4-P1-B-1
13	2-13A	44	2-6C	76	4-P1-B-2
14	2-14A	45	2-7C	77	4-P1-B-3
15	2-15A	46	2-8C	78	4-P1-B-4
16	2-16A	47	2-9C	79	4-P1-B-5
17	2-17A	48	2-10C	80	4-P1-B-6
18	2-18A	49	2-11C	*81	*
19	2-19A	50	2-12C	82	
20	2-1B	51	2-13C	83	
21	2-2B	52	2-14C	84	
22	2-3B	53	2-15C	85	
23	2-4B	54	2-16C	86	
24	2-5B	55	2-17C	87	
25	2-6B	56	2-18C	88	4-P2-2
26	2-7B	57	2-19C	89	4-P2-3
27	2-8B	58	3-1	90	4-P2-4
28	2-9B	59	3-2	91	4-P2-5
29	2-10B	60	3-3	92	4-P2-6
30	2-11B	61	3-4	93	4-P2-7
31	2-12B	62	3-5	94	4-P2-8
		63	3-6		

Table 14

Item-Scale Correlations for Sample t_1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	.75	.78	.84	.63	.70	.55	.63	.50	.53	.46	.43	.49	.50	.35	.30
2	.47	.37	.50	.57	.55	.78	.82	.80	.84	.78	.69	.53	.57	.52	.42
3	.37	.27	.33	.50	.41	.47	.49	.51	.58	.59	.47	.67	.73	.81	.63
4	.58	.55	.67	.54	.58	.42	.53	.36	.46	.39	.38	.40	.39	.29	.28
5	.38	.28	.42	.44	.48	.66	.76	.62	.71	.63	.57	.49	.49	.43	.35
6	.33	.21	.30	.37	.35	.38	.47	.43	.48	.52	.37	.65	.63	.53	.41
7	.49	.43	.53	.42	.47	.38	.48	.33	.40	.31	.32	.39	.39	.27	.23
8	.34	.13	.34	.42	.41	.58	.65	.54	.65	.60	.56	.47	.46	.43	.33
9	.35	.15	.30	.32	.25	.32	.44	.43	.48	.49	.44	.56	.56	.46	.35
10	.14	.12	.23	.29	.22	.24	.32	.34	.34	.30	.38	.19	.21	.30	.24
11	.09	.13	.20	.36	.16	.16	.19	.39	.29	.40	.24	.14	.22	.26	.18
12	.07	.11	.16	.23	.21	.24	.21	.29	.15	.22	.20	.06	.15	.18	.25
13	.13	.16	.20	.10	.06	.18	.08	.05	.03	.06	.16	.08	.06	.05	.04
14	.01	.06	.03	.02	.05	.02	.07	.18	.18	.10	.17	.06	.16	.19	.25
15	.36	.26	.31	.21	.26	.29	.37	.23	.25	.18	.12	.37	.38	.19	.17
16	.28	.20	.25	.11	.14	.20	.33	.18	.17	.16	.19	.28	.21	.08	-.03
17	.32	.22	.28	.17	.20	.25	.35	.19	.21	.16	.16	.35	.31	.14	.06
18	.26	.18	.23	.16	.11	.23	.25	.11	.19	.11	.10	.19	.21	.16	.20

Table 14 (continued)

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	.32	.35	.28	.33	.63	.61	.63	.44	.56	.34	.46	.45	.53	.35	.38
2	.38	.47	.34	.53	.42	.30	.38	.40	.47	.60	.65	.70	.73	.61	.61
3	.73	.78	.64	.70	.37	.24	.23	.37	.32	.37	.38	.47	.52	.50	.47
4	.24	.32	.24	.26	.80	.73	.80	.64	.67	.34	.57	.48	.58	.42	.43
5	.39	.39	.28	.49	.44	.28	.42	.51	.53	.74	.82	.80	.86	.74	.71
6	.59	.56	.42	.52	.38	.24	.29	.51	.32	.42	.43	.49	.57	.62	.60
7	.28	.30	.27	.27	.58	.56	.60	.60	.53	.39	.51	.49	.51	.40	.45
8	.41	.44	.31	.48	.43	.22	.35	.54	.42	.66	.69	.73	.76	.66	.69
9	.48	.54	.37	.48	.38	.21	.29	.47	.23	.37	.41	.50	.55	.57	.59
10	.20	.20	.19	.35	.08	.12	.19	.10	.15	.12	.28	.22	.28	.20	.30
11	.16	.26	.20	.29	.12	.19	.21	.25	.08	.12	.21	.23	.24	.34	.22
12	.20	.12	.11	.20	.15	.08	.16	.20	.18	.13	.23	.27	.08	.09	.15
13	.10	-.04	.07	.14	.04	.09	.07	-.04	-.06	.07	.10	.02	.01	-.04	.06
14	.21	.11	.31	.08	-.03	.07	-.03	.02	-.03	.07	.11	.18	.21	.03	.13
15	.28	.22	.17	.19	.32	.24	.24	.24	.18	.16	.34	.28	.24	.16	.15
16	.13	.05	.03	.13	.26	.27	.24	.23	.14	.07	.34	.20	.19	.15	.24
17	.22	.14	.12	.16	.27	.24	.24	.23	.14	.13	.34	.26	.23	.14	.20
18	.17	.14	.14	.18	.23	.12	.22	.06	.01	.08	.27	.16	.13	.05	.03

Table 14 (continued)

	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
1	.43	.43	.29	.28	.27	.33	.20	.33	.54	.56	.52	.30	.43	.36	.42	.38
2	.52	.50	.42	.42	.29	.43	.30	.51	.36	.33	.39	.29	.39	.63	.62	.60
3	.65	.65	.56	.52	.54	.55	.51	.59	.33	.27	.28	.36	.31	.46	.44	.48
4	.41	.43	.36	.32	.32	.39	.25	.42	.62	.62	.59	.49	.60	.42	.50	.41
5	.55	.55	.51	.47	.40	.59	.37	.61	.43	.35	.45	.45	.50	.75	.75	.72
6	.70	.73	.79	.71	.81	.83	.67	.79	.40	.34	.36	.45	.40	.54	.53	.50
7	.45	.48	.37	.38	.35	.41	.35	.41	.77	.79	.80	.64	.69	.58	.62	.54
8	.55	.55	.54	.50	.45	.53	.42	.61	.46	.40	.48	.54	.52	.84	.81	.80
9	.64	.65	.69	.62	.70	.72	.61	.70	.41	.39	.42	.42	.38	.54	.55	.56
10	.16	.17	.21	.22	.16	.16	.14	.23	.04	.14	.16	.04	.11	.19	.23	.26
11	.11	.23	.18	.16	.16	.24	.17	.40	.08	.19	.17	.13	.03	.19	.18	.27
12	.01	.12	.07	.21	.10	.19	.07	.19	.17	.18	.22	.11	.12	.17	.21	.26
13	-.00	.04	-.13	-.06	-.12	.11	-.05	-.03	.09	.12	.09	.01	-.07	.07	.11	.16
14	.08	.17	.01	.09	.07	.10	.40	.11	.07	.16	.14	.02	.04	.15	.14	.25
15	.33	.39	.17	.24	.15	.19	.20	.21	.28	.37	.29	.23	.25	.35	.41	.35
16	.27	.29	.13	.13	.06	.11	.13	.17	.25	.39	.34	.12	.26	.24	.34	.26
17	.31	.36	.15	.20	.11	.16	.17	.19	.27	.39	.33	.19	.27	.32	.40	.34
18	.12	.18	-.10	.06	-.03	.03	.05	.05	.24	.18	.30	.02	.05	.14	.24	.22

Table 14 (continued)

	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62
1	.47	.27	.26	.34	.40	.20	.27	.26	.30	.27	.33	.28	.20	.21	.17	.16
2	.69	.59	.54	.52	.53	.37	.42	.33	.46	.36	.57	.34	.34	.29	.31	.31
3	.52	.51	.42	.54	.58	.51	.49	.51	.53	.57	.59	.26	.33	.20	.26	.24
4	.54	40	.34	.36	.40	.31	.37	.31	.37	.28	.39	.13	.11	.15	.16	.12
5	.79	.69	.66	.59	.58	.44	.54	.41	.53	.39	.65	.25	.27	.21	.22	.24
6	.55	.66	.56	.68	.72	.72	.69	.75	.75	.64	.74	.23	.24	.09	.20	.20
7	.55	.45	.41	.49	.55	.37	.42	.39	.43	.41	.47	.14	.09	.07	.11	.09
8	.84	.78	.76	.65	.65	.54	.62	.52	.62	.53	.74	.24	.27	.10	.18	.20
9	.63	.70	.68	.77	.77	.78	.81	.83	.89	.74	.86	.25	.20	.06	.16	.15
10	.18	.13	.23	.18	.23	.13	.21	.15	.14	.16	.18	.75	.76	.81	.84	.70
11	.16	.31	.18	.14	.25	.13	.19	.14	.16	.20	.26	.31	.46	.63	.61	.86
12	.01	.05	.08	.04	.18	.07	.05	.09	.08	-.01	.10	.35	.40	.46	.38	.48
13	-.00	-.09	.01	.03	.11	-.15	-.01	-.11	-.13	-.04	-.08	.09	.35	.35	.24	.22
14	.14	.09	.17	.19	.23	.02	.17	.06	.07	.30	.12	.16	.37	.29	.37	.40
15	.23	.21	.14	.37	.41	.18	.23	.23	.19	.22	.14	.19	.25	.21	122	.24
16	.18	.21	.22	.40	.38	.18	.21	.17	.21	.16	.18	.14	.19	.11	.18	.18
17	.22	.21	.20	.40	.42	.19	.22	.22	.21	.20	.15	.16	.21	.14	.20	.19
18	.11	.02	.06	.14	.22	-.13	.07	-.01	.04	.07	-.01	.24	.33	.31	.31	.27

Table 14 (continued)

	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78
1	.28	.21	.21	.10	-.02	-.02	.30	.27	.30	.28	.30	.37	.31	.01	.16	.18
2	.30	.28	.11	.05	.14	.15	.21	.20	.22	.24	.27	.31	.23	.10	.18	.18
3	.28	.22	.07	.09	.19	.26	.32	.30	.29	.24	.28	.23	.14	.03	.15	.13
4	.28	.21	.03	.01	.00	-.01	.27	.25	.26	.20	.28	.34	.30	.07	.24	.17
5	.26	.21	.02	.06	.13	.16	.18	.20	.21	.18	.24	.34	.16	.08	.16	.16
6	.27	.16	-.15	.02	.12	.20	.24	.25	.28	.22	.26	.25	.14	.09	.19	.10
7	.21	.21	.06	.05	.10	.12	.31	.34	.27	.24	.27	.41	.33	.16	.25	.19
8	.25	.16	.00	.09	.14	.22	.24	.26	.25	.24	.29	.39	.19	.13	.23	.18
9	.24	.09	-.15	.05	.14	.20	.22	.25	.24	.22	.23	.30	.20	.17	.27	.14
10	.39	.50	.24	.34	.35	.37	.20	.27	.23	.19	.22	.22	.18	.14	.05	.16
11	.86	.54	.19	.24	.29	.38	.18	.20	.24	.22	.19	.21	.18	.16	.09	.13
12	.44	1.00	.11	.22	.18	.29	.23	.26	.25	.30	.18	.18	.13	.06	.12	.19
13	.19	.19	.88	.88	.30	.25	.25	.22	.32	.35	.21	.29	.15	.16	.16	.31
14	.20	.25	.21	.31	.94	.94	.29	.35	.28	.23	.34	.35	.28	.36	.31	.28
15	.20	.29	.24	.37	.36	.37	.82	.81	.85	.75	.82	.75	.61	.54	.68	.65
16	.13	.19	.15	.31	.36	.34	.63	.62	.64	.56	.67	.71	.78	.76	.85	.80
17	.13	.24	.20	.33	.39	.38	.77	.77	.79	.69	.79	.75	.70	.67	.79	.74
18	.10	.30	.32	.42	.39	.35	.48	.53	.47	.38	.47	.46	.43	.41	.44	.39

Table 14 (continued)

	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94
1	.23	.37	.32	.11	.24	.25	.29	.39	.19	.03	.16	.28	.28	.15	.20	.18
2	.22	.34	.23	.13	.20	.23	.26	.35	.07	.08	.20	.25	.33	.07	.13	.08
3	.11	.24	.26	.15	.24	.21	.21	.25	.18	.13	.20	.18	.27	.15	.21	.07
4	.27	.37	.29	.13	.26	.20	.31	.37	.14	.03	.05	.14	.19	.10	.17	.19
5	.28	.37	.20	.13	.19	.20	.28	.39	.00	.04	.14	.18	.26	.05	.10	.10
6	.21	.29	.20	.17	.25	.21	.25	.29	-.00	-.08	.19	.08	.19	.00	.04	.01
7	.35	.48	.35	.25	.28	.25	.34	.48	.11	.07	.11	.18	.27	.10	.22	.19
8	.31	.40	.26	.21	.26	.26	.33	.43	-.00	.00	.15	.20	.28	.06	.14	.12
9	.28	.35	.23	.22	.27	.23	.26	.35	-.05	-.15	.12	.11	.23	-.01	.07	.03
10	.13	.28	.19	.19	.14	.16	.19	.25	.32	.27	.34	.25	.29	.26	.24	.17
11	.07	.24	.16	.16	.15	.14	.13	.22	.25	.10	.22	.13	.18	.07	.16	.10
12	.15	.25	.21	.17	.21	.23	.17	.21	.26	.26	.29	.20	.24	.17	.17	.13
13	.23	.24	.23	.20	.25	.33	.22	.28	.29	.30	.39	.32	.32	.36	.23	.19
14	.23	.30	.33	.41	.35	.30	.32	.35	.25	.23	.38	.37	.36	.32	.26	.07
15	.66	.68	.81	.76	.86	.79	.80	.74	.49	.25	.40	.55	.50	.50	.39	.26
16	.82	.78	.74	.76	.80	.75	.79	.77	.39	.25	.28	.48	.52	.37	.40	.25
17	.76	.74	.83	.83	.89	.83	.85	.78	.46	.27	.37	.56	.53	.46	.42	.25
18	.30	.48	.51	.51	.52	.43	.42	.50	.79	.56	.65	.80	.74	.82	.76	.60

Table 15

Item-Scale Correlations for Sample t_2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	.84	.82	.77	.58	.80	.59	.52	.54	.57	.34	.41	.26	.47	.41	.36
2	.43	.57	.31	.49	.52	.77	.78	.84	.89	.77	.81	.40	.53	.64	.53
3	.33	.34	.25	.59	.45	.47	.47	.61	.59	.61	.64	.61	.61	.77	.77
4	.73	.59	.61	.46	.64	.50	.47	.46	.55	.31	.32	.22	.30	.39	.29
5	.39	.47	.26	.43	.52	.67	.69	.75	.78	.65	.72	.38	.41	.54	.45
6	.21	.19	.11	.43	.45	.31	.38	.51	.47	.56	.55	.60	.50	.61	.58
7	.57	.47	.51	.37	.56	.45	.40	.38	.46	.24	.34	.25	.31	.30	.23
8	.34	.33	.27	.36	.41	.64	.50	.64	.70	.54	.65	.34	.36	.48	.39
9	.20	.07	.13	.32	.32	.38	.22	.50	.45	.54	.54	.48	.37	.56	.45
10	.33	.42	.29	.44	.34	.34	.41	.38	.42	.39	.34	.22	.30	.28	.16
11	.17	.16	.15	.31	.20	.18	.33	.28	.25	.39	.20	.19	.36	.19	.18
12	.30	.31	.28	.28	.36	.29	.45	.30	.36	.34	.35	.24	.45	.24	.25
13	.39	.37	.34	.26	.30	.34	.37	.36	.33	.25	.32	.19	.26	.21	.31
14	.23	.31	.26	.15	.29	.31	.30	.41	.29	.15	.13	.09	.25	.05	.25
15	.38	.38	.40	.16	.33	.33	.28	.39	.31	.15	.18	.16	.29	.19	.29
16	.31	.36	.27	.14	.25	.48	.33	.39	.37	.23	.32	.20	.22	.20	.15
17	.38	.40	.41	.19	.33	.43	.33	.42	.37	.20	.26	.18	.29	.20	.24
18	.33	.33	.25	.28	.24	.33	.37	.41	.36	.32	.28	.20	.18	.34	.41

Table 15 (continued)

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	.36	.40	.37	.37	.66	.66	.63	.32	.58	.48	.42	.46	.53	.31	.30
2	.44	.48	.48	.56	.40	.46	.31	.36	.39	.68	.63	.63	.76	.63	.68
3	.70	.82	.76	.78	.33	.28	.21	.35	.38	.43	.37	.50	.50	.50	.56
4	.32	.33	.32	.37	.83	.77	.76	.52	.70	.50	.56	.52	.59	.34	.30
5	.44	.44	.47	.52	.43	.49	.30	.43	.53	.75	.77	.74	.83	.71	.77
6	.57	.64	.59	.69	.26	.24	.07	.40	.48	.44	.42	.49	.50	.64	.67
7	.29	.27	.30	.29	.60	.51	.47	.45	.70	.52	.51	.45	.52	.28	.38
8	.48	.43	.45	.49	.36	.28	.18	.43	.51	.71	.61	.58	.74	.58	.69
9	.55	.54	.49	.60	.18	.02	.04	.37	.41	.47	.26	.41	.46	.56	.58
10	.32	.27	.24	.35	.24	.32	.37	.16	.24	.27	.29	.29	.32	.28	.25
11	.14	.09	.17	.21	.16	.12	.24	.21	.15	.17	.29	.24	.22	.34	.21
12	.22	.21	.22	.34	.25	.24	.36	.10	.23	.22	.32	.23	.32	.26	.29
13	.23	.18	.19	.31	.38	.45	.50	-.00	.21	.25	.28	.34	.31	.17	.20
14	-.03	.23	.30	.11	.24	.36	.27	-.04	.23	.29	.27	.37	.31	.09	.08
15	.33	.27	.22	.20	.36	.51	.50	-.07	.27	.30	.28	.30	.29	.13	.14
16	.25	.12	.18	.19	.19	.28	.26	.03	.25	.40	.33	.31	.43	.27	.27
17	.31	.22	.22	.21	.32	.47	.48	-.04	.31	.38	.33	.34	.38	.19	.21
18	.20	.24	.27	.29	.35	.41	.42	.05	.16	.29	.33	.37	.33	.23	.17

Table 15 (continued)

	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
1	.30	.40	.28	.27	.16	.26	.23	.32	.53	.64	.59	.20	.51	.41	.31	.41
2	.43	.46	.55	.43	.31	.37	.34	.57	.34	.46	.33	.32	.31	.57	.55	.62
3	.57	.62	.61	.67	.62	.64	.59	.65	.30	.31	.26	.29	.29	.40	.34	.51
4	.32	.44	.30	.30	.22	.26	.25	.37	.65	.66	.61	.38	.62	.45	.36	.47
5	.50	.45	.65	.51	.43	.51	.47	.65	.45	.54	.31	.42	.50	.69	.65	.67
6	.70	.62	.81	.80	.76	.83	.73	.80	.33	.35	.19	.42	.43	.47	.38	.48
7	.32	.35	.35	.35	.29	.35	.31	.42	.79	.85	.81	.62	.74	.56	.49	.53
8	.48	.40	.38	.47	.49	.48	.40	.59	.50	.53	.33	.50	.49	.83	.83	.81
9	.59	.45	.73	.58	.66	.66	.52	.71	.36	.24	.14	.42	.35	.60	.52	.61
10	.25	.26	.12	.05	.09	.12	.07	.20	.19	.34	.39	.16	.23	.19	.26	.26
11	.18	.35	.20	.14	.08	.20	.10	.15	.14	.21	.30	.24	.16	.12	.20	.15
12	.24	.46	.14	.13	.08	.11	.11	.15	.23	.25	.32	.03	.25	.17	.26	.19
13	.14	.36	.07	.15	.09	.06	.08	.04	.31	.35	.33	.05	.27	.22	.22	.31
14	.10	.30	.03	.14	-.10	.15	.20	-.05	.22	.33	.32	.09	.25	.22	.28	.24
15	.17	.41	.07	.20	.21	.15	.14	.02	.32	.36	.36	-.01	.22	.27	.26	.23
16	.26	.19	.20	.15	.14	.12	.12	.15	.34	.41	.37	.12	.20	.49	.47	.45
17	.22	.36	.12	.19	.20	.15	.15	.09	.35	.43	.43	.06	.26	.38	.35	.37
18	.17	.30	.24	.26	.14	.10	.23	.16	.35	.36	.39	.15	.18	.22	.23	.25

Table 15 (continued)

	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62
1	.40	.24	.35	.11	.28	.31	.34	.11	.17	.21	.13	.43	.35	.41	.37	.23
2	.70	.52	.62	.40	.44	.57	.49	.24	.42	.41	.40	.43	.43	.36	.32	.32
3	.49	.49	.55	.44	.56	.61	.65	.46	.60	.54	.49	.34	.38	.22	.27	.21
4	.42	.32	.32	.18	.22	.28	.38	.14	.21	.23	.17	.33	.21	.32	.35	.24
5	.76	.60	.69	.44	.42	.61	.49	.34	.50	.45	.48	.32	.29	.32	.29	.23
6	.48	.64	.61	.55	.58	.74	.69	.57	.70	.57	.66	.15	.11	.17	.19	.08
7	.46	.44	.45	.30	.36	.37	.41	.23	.26	.30	.26	.22	.20	.34	.36	.19
8	.84	.71	.75	.59	.58	.65	.61	.53	.60	.60	.61	.25	.19	.25	.26	.15
9	.58	.68	.64	.72	.71	.80	.79	.78	.83	.79	.84	.09	.07	.17	.16	.02
10	.21	.19	.28	.12	.14	.12	.15	.08	.05	.10	.11	.77	.82	.83	.85	.68
11	.19	.28	.17	.04	.22	.09	.16	.04	.12	.13	.06	.32	.44	.66	.77	.87
12	.23	.11	.27	.13	.35	.11	.19	.09	-.02	.08	.03	.48	.46	.58	.58	.57
13	.24	.05	.23	.03	.13	.04	.24	.09	.03	.08	-.10	.55	.45	.41	.41	.40
14	.30	.05	.14	.04	.18	.03	.17	-.08	.14	.25	-.11	.46	.49	.42	.51	.52
15	.23	.08	.23	.05	.22	.08	.27	.17	.13	.22	-.01	.55	.41	.38	.42	.23
16	.43	.27	.31	.32	.28	.24	.29	.25	.15	.32	.20	.38	.35	.42	.37	.20
17	.32	.17	.28	.16	.24	.14	.29	.19	.14	.27	.06	.54	.42	.45	.46	.30
18	.26	.20	.21	.08	.11	.21	.27	.04	.10	.25	.01	.44	.48	.33	.41	.26

Table 15 (continued)

	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78
1	.17	.40	.33	.42	.30	.33	.42	.23	.41	.38	.36	.27	.25	.20	.32	.23
2	.26	.43	.22	.49	.28	.34	.22	.19	.31	.32	.28	.27	.33	.20	.43	.42
3	.25	.37	.18	.38	.14	.27	.23	.19	.29	.39	.32	.15	.23	.11	.19	.27
4	.19	.33	.42	.33	.30	.27	.36	.29	.41	.46	.34	.23	.18	.10	.21	.19
5	.33	.35	.21	.38	.28	.31	.24	.22	.21	.30	.28	.24	.34	.18	.33	.41
6	.32	.23	.05	.23	.06	.18	.11	.14	.20	.33	.22	.08	.18	.05	.07	.24
7	.29	.28	.38	.22	.30	.31	.24	.20	.29	.29	.26	.30	.23	.13	.22	.23
8	.26	.26	.17	.29	.25	.25	.18	.14	.23	.29	.22	.20	.42	.31	.35	.43
9	.23	.15	.03	.12	.05	.14	.02	.07	.23	.27	.11	.15	.32	.24	.26	.31
10	.49	.64	.39	.58	.52	.57	.46	.43	.39	.48	.47	.33	.33	.27	.42	.33
11	.87	.67	.30	.51	.53	.61	.28	.48	.28	.32	.25	.20	.21	.21	.25	.14
12	.59	1.00	.48	.60	.46	.49	.31	.43	.32	.37	.36	.29	.30	.13	.30	.10
13	.41	.62	.87	.87	.48	.54	.50	.56	.62	.59	.55	.46	.43	.37	.41	.34
14	.52	.50	.40	.53	.96	.96	.46	.64	.38	.40	.45	.31	.26	.36	.30	.23
15	.39	.44	.62	.58	.54	.52	.85	.81	.84	.84	.82	.62	.53	.53	.49	.51
16	.31	.31	.44	.47	.35	.36	.58	.45	.61	.60	.51	.52	.82	.77	.83	.78
17	.40	.42	.57	.59	.52	.52	.79	.72	.80	.81	.74	.60	.67	.68	.66	.66
18	.54	.45	.60	.59	.49	.49	.59	.61	.60	.54	.56	.51	.46	.47	.47	.31

Table 15 (continued)

	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94
1	.30	.36	.43	.28	.42	.39	.34	.38	.25	.23	.25	.20	.21	.28	.47	.43
2	.35	.35	.32	.23	.41	.40	.34	.37	.19	.31	.30	.40	.41	.23	.44	.31
3	.25	.19	.26	.14	.28	.39	.33	.22	.21	.33	.28	.31	.34	.21	.30	.26
4	.28	.39	.36	.26	.39	.43	.30	.41	.24	.24	.31	.23	.24	.35	.38	.38
5	.41	.40	.34	.25	.30	.37	.35	.39	.17	.29	.19	.34	.34	.25	.43	.28
6	.27	.24	.15	.12	.19	.33	.24	.19	.12	.19	.18	.26	.29	.12	.30	.17
7	.43	.55	.31	.22	.32	.32	.30	.53	.21	.16	.32	.29	.30	.26	.34	.40
8	.48	.42	.31	.24	.31	.36	.34	.42	.13	.19	.13	.22	.30	.20	.35	.23
9	.23	.19	.13	.14	.26	.30	.17	.19	.06	.10	.08	.13	.21	.08	.21	.17
10	.44	.40	.48	.43	.49	.53	.51	.43	.41	.47	.43	.40	.39	.36	.35	.29
11	.27	.32	.29	.44	.34	.32	.30	.31	.29	.40	.38	.42	.35	.32	.28	.36
12	.32	.34	.33	.36	.35	.32	.38	.35	.36	.32	.45	.34	.38	.32	.31	.27
13	.48	.45	.53	.53	.59	.58	.60	.51	.58	.53	.55	.51	.53	.58	.48	.39
14	.32	.29	.45	.64	.40	.41	.47	.36	.36	.52	.35	.42	.34	.40	.45	.29
15	.60	.58	.82	.77	.76	.82	.82	.68	.59	.57	.53	.55	.57	.61	.57	.35
16	.82	.73	.75	.66	.79	.74	.70	.70	.41	.37	.48	.51	.57	.43	.41	.33
17	.74	.69	.87	.82	.86	.88	.84	.75	.54	.54	.55	.60	.63	.57	.55	.38
18	.49	.54	.62	.60	.63	.53	.58	.62	.76	.75	.76	.84	.85	.79	.71	.63

APPENDIX F

August 17, 1972

MEMO TO ALL EMPLOYEES:

SUBJECT: General Wage Increase

This is to acknowledge having received a petition signed by many employees, asking for higher wages. The newer employees might not know that we last had a general wage increase less than a year ago, which became effective November 15, 1971.

We have told you in the past and will repeat at this time that we do not intend to take a hind seat to other wood furniture manufacturers in the areas, so far as wages and fringe benefits are concerned. On the other hand we cannot pay a lot higher than the others and hope to continue to sell our product against their competition and the competition of wood furniture manufacturers in other areas of the country.

We have been in the process of surveying wages in wood furniture manufacturing plants in the areas and have received two. By the way, both plants happen to be unionized. We eliminated upholsterers and carvers and took an average in each of these plants. The average of these two plants is 3¢ per hour <u>less</u> than our average. In other words, we are continuing to stay ahead without a union, without union dues, and by working together as a team.

We will continue to survey wage scales in these and other wood furniture manufacturing plants to be sure we do not fall behind. We recognize that although the rate of inflation has slowed down, it is still very much a concern to all of us. Our best hope of licking this is still the Scanlon Plan. By getting this going we can get farther out in front. This is evidenced by other successful Scanlon Plans in the area. We are disappointed not to have had results faster, but are confident that with the help of all we will end up with a successful plan.

In summary: For all the above reasons there can be no general increase at this time. We will continue to survey and review to keep pace with any changes. We intend to stay ahead of the union shops, but we could certainly not hope to stay in business by being as far ahead of other area wood furniture manufacturing plants, as, for instance, fifty cents per hour. We feel the big majority of our employees see this as being impossible.

Sincerely yours,

President -

APPENDIX G

APPENDIX G

Comments from Employees

To the Scanlon Plan:

Here's a few of my thoughts on the above.

There's no cooperation between the Company and the employees.

Why should the common worker and assistant foreman do all the work when foreman and men labeled as Quality Control walk around doing nothing. I was given to understand that all work and cooperate is the only way a bonus system pays off.

There's too many employees loafing or working only part time.

I can't see that it has improved one bit from the first paper we had to fill out. If anything it's worse.

* * * * * * * * * * * *

Scanlon Plan will never work in this plant.

Plant management is too poor.

[The plant manager] cuts wages and he promises wages be same a year from now. It never happen!!

How can we believe the management?

We had promise's and promise's

The management has driven the morale to rock bottom.

I think your Scanlon Plan will work if we had good plant management.

* * * * * * * * * * * *

This Scanlon Plan is absolutely for the Company only. We the employee have nothing to say how it is run or anything. Why do we always run behind when other company's pay a good bonus on this plan.

* * * * * * * * * * * *

_____ and the Scanlon bonus plan do not seem to be made for each other.

Many promises have been made by _____ to its employees and very few have been kept. For example, I was a piece worker along with many others. We were promised that we would be making back the 10% that most of us lost most of last year and all of this year and we all can see this is nothing but a lie.

Many of us wonder what _____ does for us and Scanlon in his so called Quality Control department. I believe as do many others that I have talked to that Quality Control is very important and a full time job of it is done correctly. Quality Control should be investigating problems from start to finish and in our opinion _____ is a waste of time and money and should be investigated by the Company president namely.

Many of us also wonder how important are Machine Room foreman job is. _____ as he is seen most every day walking from one dept to another with his hands in his pockets.

* * * * * * * * * * * *

This plan will never work, unless the foremans and management straighten out first. Some foreman do to much swearing and don't treat the employees equally. For instance, me. I've been trying to get a different job for 6 months, but they just keep putting me off. No more money, or different job. I'm not getting anywhere. Some guys been here 2 or 3 years and their income is more than some guys who have worked here 10 years or more and they don't work any harder.

* * * * * * * * * * * *

I suggest _____ be put on a production job, one that would be of more value to the company!

The communication and coordination between plant manager, foreman and plants could be improved.

We would like to see more of management concern for production and human welfare.

Management should be informed of the basic's of the Scanlon Plan.

* * * * * * * * * * * *

Dear Sir

There is very poor supervision all over the plant. The Supertendent is a very poor man and we hardly ever see him. There is a man for Quality Control _____ is no good at all and should be thrown out right away. The foremen don't care what happens, the employee's come and go just the way they please. Some are only there two or three days a week. And in the Cabinet room there is a woman inspector that should be dismissed right away, the whole job is not necessary. There is a man that inspects and repairs and he has to handle every price and has a lot more experience then this woman has. You can put out 28 pieces a day or 40 and nobody pays any attention to it. This plan of yours could work but we need new supervision and better help that is willing to work and put out production. I have a big family and I sure would like more money. So please come in this plant and clean house once.

Thank you

* * * * * * * * * * * *

We were told when the Scanlon plan was installed that one of the real ways to make a bonus was to "work smarter not harder". This makes good sense and as a screening committee member in the Zeeland machine room. I have suggested several ideas on my set up work which has saved many hours of set up work plus many less hours of sanding sharp corners on furniture in the cabinet room. We also have had ideas which really saved time for several other men in the machine room which are being used on many jobs. The majority of thses ideas have been used for at least 4 months. It has now been about 8 months since we have had the plan and so far I have collected $22.00 before taxes. We were told that the bonus would start after we produced far less labor than 1971 labor costs verses value of goods produced. So with all the ideas for labor saving the least we should expect is at least no deficit and no bonus but all we hear is more deficit. The very strong feeling among the fellas is we have too much "brass" running around the plant not serving any real purpose. Number one is our quality control man _____. We say put him on production most of the time. Foreman and workers alike complain about him flirting with girls, etc., holding up production. I have come in the office several times and saw him smoking, drinking coffee with his feet on desk at 2 oclock which is not break time. I have been told to try to get the fellas' on production not to waste time, they laughed in my face they see all this going on as well as I. Also I have never worked in a plant where top foremen pass so much of responsibility unto assistant foreman. The company also seems to specialize in hiring people who have marriage problems, resulting in very much absenteeism among these people. Hiring should be left up to foreman who live in the area. For an example, a college graduate was hired recently for rough mill with a B.A. degree, he has no intentions of staying more than 4 weeks.

As far as I can see this Scanlon Plan is just a bunch of bull. Because no matter how hard we work we still don't get a thing. So I think you're just wasting your time and mine. And as for _____ Company. It's OK if you don't mind low wages.