EMPLOYEE PERCEPTIONS OF THE SCANLON PLAN

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ABSTRACT

EMPLOYEE PERCEPTIONS OF THE SCANLON PLAN

By

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This study presents empirical data on how employees operating within a Scanlon System perceive various features of it, and also presents empirical data on how specific demographic variables relate to these perceptions.

Attitudinal and biographic data were obtained by means of a questionnaire survey administered at twenty-one plant sites of six Midwestern organizations, which were operating under some form of the Scanlon Plan.

A cross-validation design was used to establish the following results:

1. Certain features of the plan are perceived positively, e.g., its ability to improve a company's efficiency.
2. Certain features of the plan are perceived negatively, e.g., its intent, in that employees see the plan as a gimmick to get more out of the workers.

3. Employees consistently ordered these features positively and negatively.
4. Employees from the twenty-one plant sites differed in favorableness of perceptions toward the various features of the plan.
5. Employees operating under a system that is consistent with the intent of the plan are more favorably disposed than those employees operating under a system which is inconsistent with the intent of the plan.
6. Employees at higher levels in the organizational structure are more favorably disposed to the plan than those at lower levels.
7. Employees with more than ten years' tenure are more favorably disposed to the plan than employees with less than ten years' tenure.
8. Males are more favorably disposed than females.
9. Employees with twelve years of education are less favorably disposed than those with more or less education.
10. Older employees are more favorably disposed to the plan than younger employees.

These findings were related to previous research and suggestions for further research were offered.

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By

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INTRODUCTION

An Organizational Goal: Cooperative Effort

Organizations as defined by Etzioni (1966) ". . . are social units (or human groupings) constructed and reconstructed to seek specific goals. . . ." (p. 3). To a lesser or greater extent the achievement of these goals is determined by the coordination of effort within organizations, because it is only through the coordination of effort that outcomes are made possible which the individual would be unable to achieve alone. For this reason, the investigation of how to best "coordinate efforts" within organizations has been and still is the focal point for a great deal of time and effort. A variety of plans, programs, strategies, and formulas have been generated from this effort; each attempted to solve the problem, or portions of the problem, and provided mechanisms to coordinate efforts.

The purpose of the present study is to investigate one such approach, the Scanlon Plan. Specifically, the study reports empirical information on how employees operating within such a system perceive it, and also assesses the degree to which employee characteristics are related to these perceptions.

Non-Scanlon Approaches

Other approaches to the coordination of effort within organizations such as ideal bureaucracy, scientific management, the scalar principle, principles of management, principal functions, and span of control (Pugh, 1966) have made tremendous contributions. Various combinations of these approaches have traditionally provided the solution to the organization problem of developing cooperative effort.

As each of the above emerged they were slowly absorbed in whole or part by industry with the result that the "traditional" approaches, and the mechanisms which operationalize them, have become firmly ingrained in the fabric of organizational structure. The industrial subculture in the same manner as other cultures passed on to succeeding generations the knowledge and practices which were successful for them. Neophyte managers typically modelled their predecessors and used the traditional strategies of management in guiding the organization toward its intended purpose.

Today the typical organization places primary emphasis on the structural aspects such as who reports to whom, who does what job, are the jobs designed properly in terms of efficiency and economy, and so on (Schein, 1965). Secondary concern is given to the employee, and even then it is largely in the light of the above.

The emphasis on structural development of organizations has by design or oversight created an implicit dualistic theory of man whereby one group, management, is the creative, directing force totally responsible for the burden of organizational performance while a second group, the mass of workers, is basically hands whose sole duties are to carry out the directives of management. The essence of this dualistic theory of man is captured in what McGregor refers to as Theory X (Schein, 1965):

1. Man is inherently lazy and therefore must be motivated by outside incentives.
2. Man's natural goals run counter to those of the organization, hence man must be controlled by external forces to insure his working toward organizational goals.
3. Because of his irrational feelings, man is basically incapable of self discipline and self control.
4. But, all men are divided roughly into two groups--those who fit the assumptions outlined above and those who are self-motivated, self-controlled, and less dominated by their feelings. This latter group must assume the management responsibilities for all others. (p. 48)

Schein (1965) comments that the greatest danger for an organization operating under these assumptions is that they tend to be self-fulfilling. If people are expected to be indifferent, hostile, motivated only by economic incentives, then managerial strategies used to deal with them are very likely to train them to behave in precisely this fashion.

Schein's emphasis does not deny the basics of organization such as: a system of rules and regulations, a hierarchy of authority,

planning, specialized functions, and so on. These basics permit the organization to fulfill its stated purpose. The point of contention arises when these mechanisms are used in dysfunctional ways. When they become central to the functioning of an organization and build erroneous assumptions about the nature of man, they may well detract from far more than they facilitate cooperative effort.

The Scanlon Approach

A very different approach to "coordination of effort" was formulated by Joseph Scanlon in the late thirties. The basis of his plan was a monistic theory of man which is in sharp contrast to the dualistic theory of man. He believed that if an organization was to achieve true efficiency, then everyone in the organization, from the top to the bottom, must be actively involved. He believed that "all" men were basically responsible and, if given the proper circumstances, could and would make important contributions to the ultimate goal of organizational efficiency. Through his plan he attempted to generate the proper circumstances by creating specific structural mechanisms which would release the untapped potential lying dormant within employees. His intention was to build a system which maximized cooperative effort by focusing the energies of each organizational member towards the common goal of maximum organizational efficiency.

Although the plan in reality is a total system, it can be viewed as three separable but interdependent ingredients: a theory of man, participation, and equity. The following description of these components or ingredients of the plan is basically a composite drawn from a variety of sources: Chamberlain, 1946; Davenport, 1950; Scanlon, 1948; Schultz, 1951; Doud, 1955; Whyte, 1955; Martucci, 1957; Torbert, 1958; McGregor, 1958; Lesieur, 1958, 1959, 1968; Katz and Kahn, 1966; and Ruh, 1970.

Theory of Man

Scanlon as such never explicitly stated a theory of man but he had a deep and fundamental belief in the worth of the human individual, in his capacity for growth and learning, in his ability to contribute with his head as well as his hands to the success of the company which employs him (McGregor, 1958). With this basic premise, of the worth of people, Scanlon set about formulating specific structural aspects of the organization which would allow the potential in people to be realized.

Unfortunately, when organizations incorporate the plan, their definition of the plan is frequently limited to the structural mechanisms and not to the underlying premise. For this reason it is imperative not only to put the premise in its proper perspective

but also to state more specifically what the basic premise is. Ideally, it would be very similar to what McGregor (1958) refers to as Theory Y:

1. The expenditure of physical and mental effort in work is as natural as play or rest. The average human being does not inherently dislike work. Depending upon controllable conditions, work may be a source of satisfaction (and will be voluntarily performed) or a source of punishment (and will be avoided if possible).
2. External control and the threat of punishment are not the only means for bringing about effort toward organizational objectives. Man will exercise self-direction and self-control in the service of those objectives to which he is committed.
3. Commitment to objectives is a function of the rewards associated with their achievement. The most significant rewards, e.g. the satisfaction of ego and self-actualization needs, can be direct products of effort directed toward organizational objectives.
4. The average human being learns under proper conditions not only to accept but to seek responsibility. Avoidance of responsibility, lack of ambition, and emphasis on security are general consequences of experience, not inherent human characteristics.
5. The capacity to exercise a relatively high degree of imagination, ingenuity, and creativity in the solution of organizational problems is widely, not narrowly distributed in the population.
6. Under the conditions of modern industrial life, the intellectual potentialities of the average human being are only partially utilized.

These assumptions involve sharply different implications for managerial strategy than do those of Theory X. They are dynamic rather than static: They indicate the possibility of human growth and development; they stress the necessity for selective adaptation rather than for a single absolute form of control. They are not framed in the least common denominator of the factory hand, but in terms of a resource which has substantial potentialities.

> Above all, the assumptions of Theory Y point up the fact that the limits on human collaboration in the organizational setting are not limits of human nature but of management's ingenuity in discovering how to realize the potential represented by its human resources . . . Theory Y . . . places the problems squarely in the lap of management. If employees are lazy, indifferent, unwilling to take responsibility, intransigent, uncreative, uncooperative, Theory Y implies that the causes lie in management's methods of organization and control. (pp. 47-48)

Whether the premise is referred to as Theory Y, A Philosophy of Management (McGregor, 1958), Scanlon's Basic Philosophy (Lesieur et al., 1968), or Theory of Man, this component is the essential foundation for the development of the truly cooperative system Scanlon had in mind. Without it the other mechanisms of the plan create systems which are empty shells that "look like" but do not represent the Scanlon Plan. If an organization is to attain its potential, management must not only be aware of, but also act to develop the potential of its people.

Participation

Participation, the second component of the plan, is an extension of the theory of man. If employees have the ability to make significant contributions to the organization, then mechanisms which inhibit employee participation must be altered or supplanted by mechanisms which open up an opportunity for employees to make contributions to organizational efficiency. Scanlon did not mean

token participation in the form of "new suggestion boxes," but true participation in the form of decentralization whereby decision-making was pushed down to the very bottom of the organization. Only through decentralization could the organization hope to tap the unused resources lying within its physical confines.

The primary mechanism which facilitates the decentralization and subsequent participation of employees is a committee structure. Through the committees, subordinates participate in the decision-making process along with their superiors.

Committees are set up at two levels within the company: the departmental and the organizational. The former are generally referred to as production committees. Each functional department forms a committee composed of a company representative, usually the supervisor, and one or more employees elected by his peers. The number and size of the committees vary with the number and size of the departments within the company.

The primary functions of the production committees include (Ruh, 1970): handling of employee suggestions, discussing ways of increasing the efficiency of the department, and solving current production problems. They are authorized by the organization to put into effect any employee suggestions which do not affect other departments or require substantial outlays of money. Suggestions

with the above restrictions are referred to the screening committee.

The screening committee sits above the production committee as a coordinative body composed of an equal number of representatives from the production committees and top management. Its functions include: acting on suggestions referred to them from the production committees; discussing the performance of the total organization; specifically identifying problems, discussing bonuses, bonus distributions, and the reasons for the distributions; and communicating the substance and outcomes of their discussions to the total organization.

Equity

Again in a contingency context the third component of the plan is simply an extension of the first two in that if employees have the ability to contribute to the organization and if they are allowed to contribute, then they should also share in the rewards generated from their efforts. There must be equity within the system in order to direct and maintain those behaviours which result in the common goal of increased organizational efficiency. A system of equity is established through two mechanisms: the Scanlon ratio and bonus distribution.

The ratio defines organizational efficiency and is typically derived by calculating the ratio of total payroll costs for a particular time period, and sales value of what was produced by that payroll. To establish the ratio a time period is chosen that does not disadvantage either the employees or the company; the time period and the ratio generated from this time period reflects, as accurately as possible, the organization's overall efficiency. This ratio becomes the standard against which future organizational performance is compared.

The extent to which the base rate of efficiency is exceeded, either by increased productivity at the same cost or the same productivity at reduced cost, represents increases in organizational efficiency. Since the ratio was derived from dollar values, any change in the ratio can be converted back to dollar values; therefore the increases in efficiency are represented by a specific amount of money which is termed the bonus pool.

Once the bonus pool is established, the plan also provides an equitable means of bonus distribution. The first step in the distribution is to set aside a certain proportion of the bonus pool to cover any future deficit, i.e., a time period in which the base rate is not achieved. This ensures equity for the organization. Once this reserve has been set aside, the remaining bonus pool is divided

between the company and the employees. Splits range between 0 to 60 per cent to the company and 100 to 40 per cent to the employees. The actual amount received by an individual is a percentage of his wages or salary for the time period on which the ratio was computed. For any given bonus period each member of the organization receives an identical percentage. Wages and salaries differ in relation to an individual's contribution to the organization, and the dollar value of the bonus an individual receives reflects this difference.

At the end of the Scanlon Plan year, if bonus pool reserves exist, the money is paid out in the same manner as a regular time period bonus. If at the end of the year there is a deficit balance, the organization absorbs the deficit and the next year begins with a clean slate.

Problem Definition

The preceding section presents a general and somewhat idealized overview of what the Scanlon Plan is. Detailed coverage of the plan and information about practical applications of the plan can be found in the empirical and case study literature cited above. However, the literature does not deal with questions of how employees perceive various aspects of the Scanlon Plan. The literature does contain testimonials from employees but little, if any, empirical evidence.

This void in the literature seems almost paradoxical in that the majority, if not all, of the authors cited above imply that the key to true organizational efficiency lies with the employees; but they fail to generate any information on this key element.

The purpose of the present study is to present empirical information on the key ingredient of the Scanlon Plan: the employee. Specifically, the study will attempt to present empirical data on how employees perceive various aspects such as participation, committee efficiency, and the utility of the plan, and, also, to present empirical data on how specific demographic variables relate to these perceptions.

The general and specific questions which guide this study include the following:

A. How do employees operating within a Scanlon system perceive it?

   1. Do employees perceive various aspects of the plan favorably or unfavorably?
   2. Do employees perceive the various aspects of the plan differently?

B. Are demographic variables related to employee perceptions of the Scanlon Plan?

1. Do employees operating under independent plans differ in perceptions of the Scanlon Plan?
2. Do employees operating under a system that is consistent with the intent of the plan differ in perceptions from those employees operating under a system which is inconsistent with the intent of the plan?
3. Do employees from different hierarchical levels differ in perceptions of the Scanlon Plan?
4. Do employees with different amounts of tenure differ in perceptions of the plan?
5. Do males and females differ in perceptions of the plan?
6. Do employees with different educational backgrounds differ in perceptions of the plan?
7. Do employees from various age groups differ in perceptions of the plan?

METHOD

This study obtained attitudinal and biographical data from several hundred people working in Scanlon Plan companies. These data provided the bases for answering the questions stated in the previous section.

Respondent Sample

The sample used in this study consisted of all employees who completed the Michigan State University "You and Your Job" survey questionnaire administered in 1968. The survey covered twenty-one plant sites of six Midwestern organizations, all of which were operating under some form of the Scanlon Plan.

Of 4,162 questionnaires given out, 2,755 questionnaires were returned, providing a return rate of 66 per cent. Not all questionnaires returned were complete. In this study all respondents who answered an item were included in the analysis of that item. Thus, the N for each item analyzed varied, and even identical N's might represent different subgroups. This decision resulted from the belief that using only complete forms (N = 1,886), or 45 per cent

of the original population, might seriously restrict the generalizability of the results.

Instrument

The "You and Your Job" questionnaire was composed of both attitudinal and demographic measures, but for the purpose of the present study only selected portions of each section were used. The specific attitudinal measure used was the eighteen-item Scanlon Perception Scale (see Appendix A) and the demographic items were plant site, age, sex, number of years of education, job level, and tenure.

Data Coding

In order to facilitate the interpretation and analysis of the data, it was necessary to recode portions of both the attitudinal and demographic measures.

Attitudinal Measures: The Scanlon Perception Scale

First, within the Scanlon Perception Scale, selected items were reflected so that all items were of comparable directionality with the most favorable response coded "5" and least favorable coded "1." (See Appendix B, Part 1.)

Second, in order to facilitate interpretation, items 128 and 136 were dichotomized. (See Appendix B, Part 2.)

Third, based on the assumption that the scale was homogeneous, a composite measure was created which was an estimate of favorableness toward, or satisfaction with, the Scanlon Plan. The resulting measure, which was a mean estimate, was labeled the Scanlon Plan Perception Index and referred to as SPPI. (See Appendix B, Part 3.)

Demographic Measures

Tables C1-C7 of Appendix C represent the distributions of demographic variables as they were used in the present study. Included in each of the tables are the code assigned to each subgroup, an interpretation of each code (where appropriate), the number of respondents on the SPPI in each subgroup for both the Primary and Validation Groups (these groups are defined in the Design section), and the number of respondents who were omitted because of incomplete responses.

Design of the Analysis of Data

This study used a systematic exploratory phase and a validation phase. The primary reasons for the former were threefold: first, the lack of any data, whatsoever, in regard to how

employees perceive the plan; second, the lack of any firm "a priori" hypotheses regarding employee perceptions; and third, a lack of knowledge about the distributions of data. To a certain extent the distributions may well limit, if not totally determine, the analysis techniques used in generating the empirical data.

In order to investigate the distributions and also give credibility to any results, a cross-validation paradigm was utilized whereby the entire sample of respondents was divided into two groups: the Primary Group and the Validation Group. (See Appendix D.) The Primary Group was not only used in an exploratory fashion to investigate the distributions of both the attitudinal and demographic variables but also to subgroup on the demographic variables and test various analysis methods. It is important to note that all analyses were completed on the Primary Group before cross-validation was attempted on the Validation Group. The Validation Group, which theoretically could be viewed as an independent sample, was used to separate "spurious" results, due to data manipulation, from "real" results which reflect true findings.

Specific Questions and Procedures for Analysis

The analysis section is portioned into two parts in relation to the two primary goals of the study: the first part reports empirical data on how employees operating within a Scanlon System perceive

various aspects of it, whereas the second part assesses the degree to which employee perceptions are related to specific demographic variables.

A. Employee Perceptions of Various Aspects of the Scanlon Plan

The data base (or dependent variables) used was the individual items of the Scanlon Perception Scale. More specifically, the analysis used only the fifteen Likert-type items and omitted the three dichotomous items (128, 131, and 136).

Two questions were answered using the above data base:

(1) Do employees perceive the various aspects of the plan favorably or unfavorably?

(2) Do employees perceive the various aspects of the plan differently?

Analysis. --(1) To answer the first question each item was tested for significant differences ($p < .05$) from the "neutral response" of "3.00."

(2) To answer the second question a Spearman Rank Order correlation (Guilford, 1965) was computed between item means of the Primary Group and Validation Group.

B. The Relationship between Employee Perceptions and Certain Demographic Variables

The second part of the study was directed at assessing the degree to which certain demographic variables are related to employee perceptions of the Scanlon Plan. Within this part of the study the primary data base (or dependent variable) was the SPPI, which is a mean estimate of overall perceptions toward the plan. Secondary analyses were also run using individual items as the data base.

1. Plant Site: Independent Scanlon Systems

Since the Scanlon Plan is frequently referred to as an organizational incentive system, the first analysis was directed at assessing the degree to which employees operating within independent Scanlon systems differed in perceptions of the plan. At the time of the survey, each of the twenty-one sites was operating under its own individual variation of the plan. Each site had its own committee structure, ratio, and bonus distribution mechanism. Structurally each site "had" the Scanlon Plan. Theoretically, the expectations would be that, since the various sites "have" the plan, there would be no differences among the sites in overall perceptions of the Scanlon Plan. Basically, the question was: Do independent Scanlon

sites perceive the plan in a similar fashion? (Table C1 of Appendix C presents the distributions.)

Analysis. -- To test for mean differences among the twenty-one plant sites, a one-way analysis of variance design was used. Nineteen separate analyses, using the SPPI and the eighteen individual items as dependent variables, were run for both the Primary and Validation Groups.

2. Plant Site: One-Plan, One-Process vs. Multiple-Plan, One-Process

The second analysis in regard to plant site was directed at the question of the compatibility of the existing incentive systems with the overall intent of the plan.

Within the present sample of plans it was found that the sites could be separated into two groups: those sites whose plans were in concert with the intent of the plan (one-plan, one-process), and those sites whose plans appeared to be in conflict with the intent of the plan (multiple-plan, one-process). In the latter group, production within any given site was in part or, in some instances, totally dependent upon materials or services from a sister site. These sites were subunits of one overall process. The basic question was whether there were different overall perceptions toward the Scanlon

Plan between those sites whose plans were in concert with the intent of the plan and those sites whose systems appeared in conflict with the intent of the plan. (The actual distributions are presented in Table C2 of Appendix C.)

Analysis. -- To test for mean differences between those employees operating within a one-plan, one-process system and those employees operating within a multiple-plan, one-process system, a one-way analysis of variance design was used. Nineteen separate analyses, using the SPPI and the eighteen individual items as dependent variables, were run on both the Primary and Validation Groups.

3. Hierarchical Level

The next analysis was directed at assessing whether employees at different hierarchical levels differed in perceptions of the plan. Three levels (managerial, supervisory, and rank and file) were used. (The distributions are presented in Table C3 of Appendix C.)

Analysis. -- To test for mean differences among the three hierarchical levels, a one-way analysis of variance design was used. The dependent variables were the SPPI and the eighteen individual

items. Nineteen separate analyses were run on the Primary and Validation Groups.

4. Tenure

Here, the basic question was whether employees with different amounts of tenure differ in perceptions of the plan. Tenure was measured in months and subgrouped according to 1-3, 4-13, 14-25, 26-48, 49-73, 74-121, 122-181, 182-241, and more than 241 months. (See Table C4 in Appendix C.)

Analysis. --A one-way analysis of variance design was used to test for mean differences among the nine tenure groups. The dependent variables were the SPPI and the eighteen individual items of the Scanlon Perception Scale. Nineteen analyses were run on the Primary and Validation Groups.

5. Sex

The basic question here was whether males and females differ on perceptions of the Scanlon Plan. (See Table C5 of Appendix C for the actual distributions.)

Analysis. --To test for mean differences between males and females, a one-way analysis of variance design was used. Nineteen

separate analyses, using the SPPI and the eighteen individual items as dependent variables, were run for both the Primary and Validation Groups.

6. Education

The question here was whether employees with different educational backgrounds differ in perceptions of the Scanlon Plan. Four levels of education were used: grade eight or less, some high school, high school graduate, and some college. (See Table C6 of Appendix C.)

Analysis. -- To test for mean differences among the four education groups, a one-way analysis of variance design was used. Nineteen separate analyses, using the SPPI and the eighteen individual items as dependent variables, were run for both the Primary and Validation Groups.

7. Age

Do employees from different age groups differ in perceptions of the Scanlon Plan? In order to answer this specific question, the employees were subgrouped into the following six age categories: 18-21, 22-26, 27-33, 34-42, 43-53, and 54-68. (See Table C7 of Appendix C.)

Analysis. -- To test for mean differences among the six age groups, a one-way analysis of variance design was used. Nineteen separate analyses, using the SPPI and the eighteen individual items as dependent variables, were run on each of the Primary and Validation Groups.

The results and brief discussions of these analyses are presented in the following chapter.

RESULTS AND DISCUSSION

The results of the analyses for each question and a brief discussion are presented in this section. A general discussion of the results across all questions will be included in the last chapter.

A. Employee Perceptions of Various Aspects of the Scanlon Plan

1. Do employees perceive various aspects of the plan favorably or unfavorably?

Results. -- Table 1 contains the summary data pertaining to the above question and includes item means and the corresponding symbols of (+) if the mean was significantly greater than 3.00, (-) if the mean was significantly less than 3.00, and (0) if the mean was not significantly different from 3.00.

Identical patterns of results for both the Primary and Validation Groups indicated twelve items or aspects (121, 122, 123, 124, 125, 126, 127, 129, 130, 134, 135, 138) were perceived favorably and three (132, 133, 137) were perceived unfavorably.

Discussion. -- Two major conclusions can be drawn from the above results: first, that employees are not neutral about

Table 1

Summary of t-tests on Individual Items

Item	Primary Group			Validation Group		
	Mean	N	t	Mean	N	t
121	3.61	1291	(+)	3.63	1289	(+)
122	3.44	1288	(+)	3.56	1277	(+)
123	3.36	1293	(+)	3.42	1286	(+)
124	3.77	1285	(+)	3.78	1283	(+)
125	3.15	1274	(+)	3.24	1280	(+)
126	3.47	1293	(+)	3.50	1291	(+)
127	3.16	1277	(+)	3.28	1274	(+)
128						
129	3.12	1229	(+)	3.16	1214	(+)
130	3.16	1244	(+)	3.24	1222	(+)
131						
132	2.80	1262	(-)	2.88	1252	(-)
133	2.81	1278	(-)	2.83	1275	(-)
134	3.25	1263	(+)	3.26	1277	(+)
135	3.32	1264	(+)	3.36	1275	(+)
136						
137	2.84	1261	(-)	2.85	1244	(-)
138	3.36	1271	(+)	3.42	1270	(+)

various aspects of the plan; in general they tend to respond either positively or negatively. Second, when an overview of the fifteen items is taken, employees seem somewhat favorably disposed to the plan.

2. Do employees perceive various aspects of the plan differently?

Results. --The data pertaining to this question are presented in Table 2, which contains the item means and ranks (rank 1 = largest) for both the Primary and Validation Groups. A Spearman rho of .98 ($p < .01$) was obtained using the item ranks from the two groups.

Discussion. --From the above analyses it is evident that employees in the present samples not only perceive the various aspects of the plan differently, but they also consistently order these differences. More importantly, however, is what they order differently.

From the data on Tables 1 and 2, it appears that there is a trichotomy on the general dimension of favorableness toward the Scanlon Plan. First, there are those items which reflect very positive attitudes (means > 3.50) and indicate that the majority of employees surveyed "agree" the Scanlon Plan has practical utility (122, 124) and also "agree" that the plan "encourages them to work hard" (121).

Table 2

Means and Ranks of Items for the Primary and Validation Groups

Item	Primary Group		Validation Group	
	Mean	Rank	Mean	Rank
121	3.61	2	3.63	2
122	3.44	4	3.56	3
123	3.36	5.5	3.42	6
124	3.77	1	3.78	1
125	3.15	11	3.24	10.5
126	3.47	3	3.50	4
127	3.16	9.5	3.28	8
128				
129	3.12	12	3.16	12
130	3.16	9.5	3.24	10.5
131				
132	2.80	15	2.88	13
133	2.81	14	2.83	15
134	3.25	8	3.26	9
135	3.32	7	3.36	7
136				
137	2.84	13	2.85	14
138	3.36	5.5	3.43	5

The second group of items, those which were statistically positive (means greater than 3.00, but less than 3.50), reflects a "lukewarm" endorsement of specific aspects of the plan. Included are such diverse areas as the value of committees (126, 127, 129, 130), the plan as an instrument which helps employees do their jobs better (134, 135) and increases knowledge about the company (123), the utility of the plan (138), and lastly the plan as a mechanism for improving trust and confidence in management (125).

The third group of items which reflect mildly unfavorable attitudes (means less than 3.00 but greater than 2.75) implies that the employees see the intent of the plan as somewhat exploitative (133), not increasing learning about their jobs (137), and not allowing sufficient influence over decisions related to their jobs (132). Items 132 and 133 appear to be tapping two of the three components of the plan, "participation" and "theory of man," and indicate that the plan as seen by the present population is operating at a less than ideal state.

B. The Relationship of Demographic Variables to Perceptions of the Scanlon Plan

Within the second part of the study the basis for analysis included both a mean estimate of overall "favorableness toward" or "satisfaction with" the Scanlon Plan: the SPPI, and individual items.

In reference to the former, identical alpha estimates of 0.90 on the Primary and Validation Groups indicated a high degree of homogeneity within the scale and supported the use of a single measure.

In order to facilitate the interpretation of the data in this section, it is important to note the general format of data presentation. First, the analysis of variance summary tables for the SPPI and demographic variable of interest will be presented. Following these will be the analysis of variance results for the individual items. Included in the latter table(s) will be all means (item and SPPI) relevant to the demographic variable of interest.

1. Do employees operating under independent plans differ in perceptions of the Scanlon Plan?

Results. --Tables 3-6 contain the information necessary to answer the above. Tables 3 and 4 indicate highly significant differences on the SPPI among sites for both the Primary and Validation Groups. Tables 5 and 6 show similar results when the basis for the analysis was the individual items. All results were significant at less than the .0005 level.

Discussion. --From the above, it is apparent that simply having the mechanisms (committee structures, ratio, and bonus distribution) isn't sufficient to generate uniform responses from

Table 3

Primary Group: Summary of Analysis of Variance for the Relationship of Plant Site and SPPI

Source	df	MS	F
Plant Site	20	4.33	10.27*
Error	1301	.42	
Total	1321		

*p < .0005

Table 4

Validation Group: Summary of Analysis of Variance for the Relationship of Plant Site and SPPI

Source	df	MS	F
Plant Site	20	3.98	8.98*
Error	1303	.44	
Total	1323		

*p < .0005

Table 5

Primary Group: Plant Site Means and Probability of F Value for Each Item

Item	Plant Site																					P of F
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
121	3.97	3.75	4.05	3.31	3.59	3.09	4.05	3.65	3.36	3.31	3.07	3.48	3.37	3.80	3.41	2.38	4.00	3.56	3.94	3.45	3.89	<.0005
122	3.82	3.83	4.21	3.45	3.74	3.73	3.80	3.39	2.91	3.59	2.61	2.87	3.00	3.60	3.78	2.63	3.60	3.22	3.43	3.21	3.61	<.0005
123	3.60	4.25	3.95	3.02	3.40	3.45	3.73	3.33	3.14	3.33	3.10	3.17	2.91	3.20	3.29	3.13	3.80	3.17	3.51	3.02	3.65	<.0005
124	3.89	4.42	4.08	3.16	3.66	3.09	4.35	4.28	3.60	3.60	3.52	3.59	3.66	3.70	3.53	3.38	4.20	3.68	3.97	3.48	4.06	<.0005
125	3.61	3.92	3.74	2.78	3.07	3.55	3.57	2.93	2.88	3.00	2.41	2.81	2.67	3.10	3.09	2.25	3.20	3.24	3.33	3.13	3.06	<.0005
126	3.61	4.42	4.03	4.06	3.77	3.36	3.36	3.62	2.89	3.64	3.10	2.90	3.11	3.10	3.33	3.13	4.20	3.28	3.58	3.38	3.89	<.0005
127	3.53	4.17	3.66	3.44	3.27	3.55	2.95	3.33	2.59	3.24	2.83	2.73	2.78	3.10	2.96	3.25	3.80	3.05	3.37	2.72	3.95	<.0005
128	4.72	4.75	4.76	4.72	4.64	4.80	4.66	4.50	4.55	4.59	4.41	4.44	4.50	4.70	4.50	4.63	4.80	4.43	4.50	4.56	4.70	<.0005
129	3.40	3.67	3.38	3.20	3.37	3.12	3.36	3.37	2.69	3.18	2.75	2.81	2.71	2.90	2.91	2.88	3.75	3.09	2.92	2.98	3.56	<.0005
130	3.31	3.67	3.86	3.52	3.72	3.56	2.70	3.19	2.87	3.54	3.21	2.55	2.83	2.90	3.11	3.83	4.00	2.82	2.95	2.58	3.88	<.0005
131	4.51	4.33	4.45	4.55	4.40	4.80	4.53	4.48	4.20	4.41	4.21	4.32	4.28	4.56	4.37	4.50	4.20	4.29	4.43	4.14	4.56	<.0005
132	3.16	3.45	3.29	2.67	2.71	3.10	3.04	2.80	2.48	2.90	2.57	2.44	2.54	3.22	2.60	2.86	3.40	2.75	2.70	2.62	3.32	<.0005
133	3.00	4.09	3.24	2.94	3.03	4.09	2.99	2.54	2.68	2.93	1.93	2.47	2.53	3.11	2.98	2.00	2.60	2.64	2.76	2.84	2.50	<.0005
134	3.48	3.45	3.65	2.92	3.25	3.20	3.54	3.25	2.93	2.98	2.72	3.03	3.29	3.60	2.93	3.38	3.80	3.26	3.57	3.27	3.39	<.0005
135	3.64	3.91	3.72	3.04	3.33	3.40	3.70	3.30	3.01	3.09	2.71	3.03	3.20	3.60	3.07	3.25	4.40	3.28	3.63	3.34	3.39	<.0005
136	4.67	4.91	4.79	4.57	4.58	4.70	4.63	4.51	4.37	4.55	4.29	4.42	4.53	4.40	4.50	4.33	4.50	4.55	4.63	4.43	4.71	<.0005
137	3.24	3.67	3.28	2.63	2.76	3.40	2.99	2.86	2.59	2.72	2.39	2.56	2.55	3.00	2.79	2.13	2.80	2.80	3.06	2.64	3.00	<.0005
138	3.79	4.36	3.97	3.06	3.40	3.50	4.15	3.57	2.86	3.12	2.26	2.94	3.04	3.40	3.05	3.00	4.00	3.24	3.59	3.18	3.89	<.0005
SPPI	3.49	3.83	3.67	3.16	3.31	3.42	3.44	3.26	2.88	3.18	2.72	2.86	2.96	3.26	3.09	2.91	3.58	3.09	3.29	3.03	3.55	<.0005

Table 6

Validation Group: Plant Site Means and Probability of F Value for Each Item

Item	Plant Site																				P of F
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
121	3.91	3.58	4.00	3.09	3.46	3.54	4.11	3.58	3.53	3.28	3.39	3.33	3.76	3.00	3.61	3.63	4.40	3.78	3.67	3.66	4.05	<.0005
122	4.13	4.17	4.43	2.87	3.73	4.46	3.70	3.71	3.45	3.85	3.13	3.00	3.10	2.67	3.61	3.25	3.75	3.17	3.55	3.18	3.79	<.0005
123	3.67	4.42	4.14	2.93	3.28	3.69	3.89	3.61	3.24	3.46	3.34	3.11	3.18	2.78	3.41	2.63	3.20	3.20	3.40	3.29	3.37	<.0005
124	4.07	4.33	4.15	3.22	3.48	3.92	4.12	4.03	3.66	3.79	3.75	3.68	3.59	4.09	3.87	2.50	4.40	3.60	3.75	3.86	4.21	<.0005
125	3.56	3.83	4.02	2.85	3.15	3.62	3.70	3.19	3.32	2.82	3.03	2.89	2.83	2.45	3.45	3.25	3.00	3.05	3.12	3.33	3.58	<.0005
126	3.74	3.25	3.96	3.52	3.61	4.38	3.54	3.68	3.23	3.75	3.28	3.01	3.14	2.88	3.51	3.13	3.50	3.33	3.40	3.54	3.84	<.0005
127	3.54	4.00	3.69	3.30	3.08	3.62	3.58	3.56	2.97	3.56	2.87	2.86	2.88	3.11	3.02	4.14	3.20	3.22	3.28	3.00	3.83	<.0005
128	4.73	4.70	4.79	4.76	4.63	5.00	4.69	4.54	4.60	4.57	4.52	4.44	4.62	4.30	4.48	4.75	4.75	4.46	4.52	4.59	4.72	<.0005
129	3.25	3.75	3.44	2.86	3.29	3.36	3.32	3.43	3.00	3.21	2.90	2.85	3.09	2.44	3.05	3.13	3.40	2.99	3.12	3.26	3.32	<.0005
130	3.42	3.58	3.83	3.16	3.57	3.60	2.96	3.31	2.94	3.91	3.47	2.91	3.07	2.71	2.95	3.14	3.40	2.84	2.94	3.04	3.76	<.0005
131	4.46	4.83	4.53	4.47	4.35	4.58	4.52	4.41	4.31	4.42	4.29	4.33	4.27	4.67	4.25	4.75	4.25	4.34	4.29	4.20	4.41	<.0005
132	2.87	3.25	3.36	2.58	2.66	2.67	3.24	3.09	2.63	2.99	2.87	2.64	2.63	2.44	2.87	3.38	3.20	2.81	2.91	2.87	3.05	<.0005
133	2.90	3.08	3.41	3.07	3.01	3.00	3.10	2.66	2.69	3.22	2.58	2.65	2.45	2.11	2.88	1.63	2.40	2.57	2.70	2.49	2.58	<.0005
134	3.41	3.33	3.82	2.82	3.12	3.15	3.62	3.28	3.01	2.89	2.97	3.06	3.28	2.70	3.34	3.25	4.33	3.23	3.30	3.38	3.67	<.0005
135	3.61	3.25	3.87	2.78	3.20	3.23	3.73	3.53	3.21	3.34	3.03	3.16	3.31	2.50	3.48	3.50	4.33	3.20	3.25	3.60	3.72	<.0005
136	4.72	4.67	4.80	4.62	4.57	4.83	4.62	4.49	4.40	4.65	4.35	4.45	4.42	4.11	4.61	4.38	4.67	4.67	4.49	4.53	4.50	<.0005
137	3.04	3.17	3.47	2.58	2.60	2.92	3.22	3.03	2.51	2.70	2.71	2.75	2.74	2.25	3.08	2.88	4.00	2.70	2.60	2.89	3.00	<.0005
138	3.54	4.08	4.23	2.93	3.39	4.00	3.99	3.68	3.08	3.39	2.91	2.96	3.06	2.50	3.20	2.38	4.00	3.25	3.48	3.77	3.72	<.0005
SPPI	3.47	3.64	3.79	3.02	3.20	3.52	3.53	3.34	3.06	3.30	3.04	2.96	2.98	2.72	3.20	3.08	3.46	3.10	3.17	3.21	3.47	<.0005

employees. There are apparently other factors operating within these individual systems which account for these vast differences in not only overall favorableness of perceptions toward the operations of the plan (SPPI), but also favorableness of perceptions about individual aspects (items).

2. Do employees operating under a one-plan, one-process system differ in perceptions from those employees operating under a multiple-plan, one-process system?

Results. -- Tables 7 and 8 contain the summary data of the one-way analysis of variances run on the Primary and Validation Groups. Both tables reveal significantly different ($p < .0005$) perceptions between the two groups on the SPPI.

Similar findings were noted when the basis used for the one-way analysis of variances was the individual items. Table 9 presents the item and SPPI means as well as the resulting probability for each individual F for both the Primary and Validation Groups.

Discussion. -- From the above analysis it can be concluded that the employees within the one-plan, one-process system are more favorably disposed to the Scanlon Plan than those employees within the multiple-plan, one-process system.

Table 7

Primary Group: Summary of Analysis of Variance for the Relationship of Plan Type and SPPI

Source	df	MS	F
Plan Type	1	44.91	100.39*
Error	1320	.45	
Total	1321		

*p < .0005

Table 8

Validation Group: Summary of Analysis of Variance for the Relationship of Plan Type and SPPI

Source	df	MS	F
Plan Type	1	30.14	63.53*
Error	1322	.47	
Total	1323		

*p < .0005

Table 9

Primary and Validation Groups:
Plan Type Means and Probability of F Value for Each Item

Item	Primary Group			Validation Group		
	Multi Plan	Single Plan	P of F	Multi Plan	Single Plan	P of F
121	3.50	3.81	<.0005	3.57	3.74	.016
122	3.21	3.86	<.0005	3.36	3.92	<.0005
123	3.22	3.61	<.0005	3.29	3.66	<.0005
124	3.71	3.86	.013	3.74	3.85	.047
125	3.00	3.41	<.0005	3.07	3.52	<.0005
126	3.29	3.79	<.0005	3.37	3.71	<.0005
127	3.01	3.41	<.0005	3.18	3.45	<.0005
128	4.50	4.70	<.0005	4.52	4.72	<.0005
129	2.99	3.36	<.0005	3.07	3.30	<.0005
130	2.96	3.50	<.0005	3.11	3.47	<.0005
131	4.33	4.48	<.0005	4.34	4.47	<.0005
132	2.68	3.01	<.0005	2.83	2.97	.032
133	2.64	3.11	<.0005	2.67	3.11	<.0005
134	3.17	3.40	.001	3.17	3.40	.001
135	3.21	3.52	<.0005	3.30	3.48	.005
136	4.49	4.67	<.0005	4.50	4.68	<.0005
137	2.73	3.03	<.0005	2.75	3.02	<.0005
138	3.17	3.71	<.0005	3.26	3.71	<.0005
SPPI	3.07	3.45	<.0005	3.13	3.45	<.0005

3. Do employees from different hierarchical levels differ in perceptions of the Scanlon Plan?

Results. --Tables 10-12 contain the data pertaining to the above question. From Tables 10 and 11, which contain the summary data of the one-way analysis of variances for the Primary and Validation Groups, it appears that there are significant differences ($p < .0005$) on the SPPI among managers, supervisors, and rank-and-file workers. Similar findings occurred when the three groups were compared on the individual items. Table 12 presents the corresponding probability of the resulting F statistic found for each item; also included in Table 12 are the item and SPPI means.

Discussion. --From Tables 10-12 two conclusions can be drawn: first, there are significant differences among employees from different hierarchical levels; and second, there is a linear pattern in these differences, with managers responding more favorably than supervisors, who in turn respond more favorably than rank-and-file workers (see Table 12).

4. Do employees with different amounts of tenure differ in perceptions of the Scanlon Plan?

Results. --One-way analysis of variance on the Primary Group (Table 13) and Validation Group (Table 14) indicated that there are significant differences on the SPPI among the nine tenure groups tested.

Table 10

Primary Group: Summary of Analysis of Variance for the Relationship of Hierarchical Level and SPPI

Source	df	MS	F
Hierarchical Level	2	20.27	47.39*
Error	1226	.43	
Total	1228		

*p < .0005

Table 11

Validation Group: Summary of Analysis of Variance for the Relationship of Hierarchical Level and SPPI

Source	df	MS	F
Hierarchical Level	2	24.42	54.44*
Error	1237	.45	
Total	1239		

*p < .0005

Table 12

Primary and Validation Groups:
Hierarchical Level Means and Probability of F Value for Each Item

Item	Primary Group				Validation Group			
	Hierarchical Level			P of F	Hierarchical Level			P of F
	5	7	9		5	7	9	
121	3.66	3.69	3.64	.937	3.64	3.72	3.65	.822
122	4.45	4.23	3.33	<.0005	4.66	4.49	3.41	<.0005
123	4.00	3.75	3.32	<.0005	3.91	3.83	3.38	<.0005
124	4.19	3.93	3.73	<.0005	4.03	3.92	3.76	.025
125	3.70	3.48	3.13	<.0005	3.52	3.64	3.21	<.0005
126	4.26	4.08	3.20	<.0005	4.29	4.30	3.36	<.0005
127	4.14	3.70	3.09	<.0005	3.90	3.96	3.19	<.0005
128	4.85	4.78	4.56	<.0005	4.90	4.78	4.57	<.0005
129	3.47	3.40	3.10	<.0005	3.34	3.29	3.14	.050
130	3.82	3.76	3.08	<.0005	4.09	3.88	3.14	<.0005
131	4.76	4.61	4.35	<.0005	4.75	4.68	4.34	<.0005
132	3.33	3.12	2.76	<.0005	3.41	3.18	2.84	<.0005
133	3.74	3.18	2.75	<.0005	3.79	3.28	2.72	<.0005
134	3.68	3.29	3.23	.009	3.51	3.46	3.23	.026
135	3.94	3.41	3.30	<.0005	3.88	3.70	3.31	<.0005
136	4.76	4.69	4.55	<.0005	4.84	4.68	4.54	<.0005
137	3.48	3.07	2.80	<.0005	3.52	3.27	2.77	<.0005
138	4.23	3.92	3.30	<.0005	4.05	4.01	3.34	<.0005
SPPI	3.82	3.56	3.17	<.0005	3.81	3.67	3.18	<.0005

Table 13

Primary Group: Summary of Analysis of Variance for the Relationship of Tenure and SPPI

Source	df	MS	F
Tenure	8	2.81	6.18*
Error	1256	.46	
Total	1264		

*$p < .0005$

Table 14

Validation Group: Summary of Analysis of Variance for the Relationship of Tenure and SPPI

Source	df	MS	F
Tenure	8	2.27	4.77*
Error	1266	.48	
Total	1274		

*$p < .0005$

Tables 15 and 16, which present the summary data for the individual items, indicate that differences in overall perceptions (SPPI) among the tenure groups are item specific. That is, significant differences ($p < .05$) were found, for both the Primary and Validation Groups, on items 122, 123, 124, 125, 127, 131, 133, 134, 135, 137, and 138, whereas reproducable significant differences were not found on items 121, 126, 128, 129, 130, 132, and 136.

Discussion. --The above results indicate there are differences among the nine tenure subgroups when an overall perceptual estimate is used; but it appears that when the overall estimate is reduced to its component parts, then differences appear to be content-oriented. For example, in regard to such areas as working hard (121), committees (126, 128, 129, 130), participation (132), and who benefits from the plan (136), the tenure groups as a whole do not really differ in perceptions.

On the remaining twelve items which tap such areas as the utility of the plan (122, 123, 124, 125, 127, 134, 135, 137, and 138), the intent of the plan (133), and the desire to serve on a committee (131), there are differential perceptions among the tenure groups. More important than "differences" is the pattern of responses of the various subgroups. By referring to Tables 15 and 16 it is apparent that the differences found across all subgroups are largely

Table 15

Primary Group: Tenure Subgroup Means and Probability of F Value for Each Item

Item	Tenure (Months)									P of F
	2	8	18	36	60	96	150	210	300	
121	3.44	3.70	3.54	3.60	3.56	3.70	3.84	3.56	3.85	.159
122	3.10	3.21	3.43	3.33	3.43	3.60	3.75	3.83	4.26	<.0005
123	3.19	3.19	3.37	3.40	3.38	3.16	3.65	3.48	4.12	<.0005
124	3.43	3.57	3.56	3.74	3.85	3.89	3.91	4.09	4.36	<.0005
125	3.26	3.24	3.10	3.15	2.93	2.99	3.20	3.30	3.74	<.0005
126	3.46	3.55	3.47	3.53	3.51	3.30	3.40	3.38	4.10	.009
127	3.12	3.07	3.12	3.24	3.12	3.04	3.20	3.20	3.93	<.0005
128	4.73	4.58	4.57	4.59	4.51	4.50	4.61	4.52	4.75	.001
129	3.29	3.22	3.22	3.07	3.01	2.91	3.18	3.23	3.45	<.0005
130	2.93	3.03	3.29	3.27	2.98	3.17	3.30	3.06	3.81	<.0005
131	4.34	4.26	4.38	4.38	4.46	4.43	4.56	4.50	4.42	.003
132	2.78	2.79	2.78	2.84	2.76	2.78	2.86	2.78	3.09	.720
133	2.88	2.70	2.82	2.96	2.66	2.66	2.83	2.99	3.30	.009
134	3.13	3.23	3.20	3.21	3.23	3.21	3.48	3.31	3.71	.038
135	3.41	3.32	3.27	3.29	3.20	3.17	3.56	3.44	3.80	.003
136	4.66	4.54	4.56	4.59	4.44	4.52	4.62	4.53	4.72	.003
137	2.87	2.75	2.82	2.92	2.79	2.68	2.91	2.90	3.37	.008
138	3.37	3.32	3.24	3.35	3.33	3.26	3.45	3.62	4.13	<.0005
SPPI	3.18	3.15	3.17	3.23	3.14	3.14	3.33	3.30	3.72	<.0005

Table 16

Validation Group: Tenure Subgroup Means and Probability of F Value for Each Item

Item	Tenure (Months)									P of F
	2	8	18	36	60	96	150	210	300	
121	3.45	3.76	3.65	3.63	3.75	3.49	3.74	3.60	3.80	.175
122	3.02	3.25	3.48	3.55	3.89	3.53	4.10	4.02	4.15	<.0005
123	3.16	3.28	3.54	3.40	3.47	3.32	3.68	3.85	3.78	<.0005
124	3.45	3.62	3.83	3.74	3.82	3.81	3.89	4.08	4.06	<.0005
125	3.22	3.39	3.44	3.11	3.11	2.98	3.40	3.50	3.60	<.0005
126	3.43	3.44	3.63	3.45	3.47	3.47	3.51	3.75	3.69	.457
127	3.25	3.24	3.48	3.13	3.31	3.17	3.40	3.53	3.69	.009
128	4.71	4.68	4.64	4.60	4.55	4.50	4.53	4.61	4.64	.005
129	3.06	3.17	3.32	3.19	3.16	3.06	3.12	3.22	3.32	.230
130	3.04	3.16	3.31	3.30	3.25	3.18	3.51	3.38	3.48	.113
131	4.34	4.35	4.32	4.35	4.41	4.42	4.54	4.41	4.45	.026
132	2.91	2.93	2.93	2.83	2.93	2.71	3.04	3.03	3.05	.230
133	2.68	2.66	2.72	2.76	2.92	2.78	3.03	3.25	3.38	<.0005
134	3.13	3.21	3.31	3.25	3.35	3.01	3.42	3.49	3.55	.008
135	3.34	3.33	3.55	3.34	3.42	3.14	3.38	3.52	3.69	.014
136	4.62	4.53	4.58	4.53	4.52	4.53	4.63	4.66	4.67	.107
137	2.86	2.80	2.94	2.67	2.81	2.76	3.10	3.09	3.14	.011
138	3.25	3.44	3.51	3.40	3.43	3.13	3.72	3.81	3.92	<.0005
SPPI	3.14	3.21	3.32	3.20	3.28	3.13	3.39	3.49	3.52	<.0005

due to differences between those employees with less than 150 months' tenure and those with more than 150 months' tenure. It appears there is little difference among those groups with less than 150 months' (approximately ten years) tenure; but then there appears a sharp increase in favorableness toward specific aspects of the plan. It is also interesting to note that those employees with the most tenure (over twenty years) appear to be most favorably disposed.

5. Do males and females differ in perceptions of the Scanlon Plan?

Results. --The differences between males and females were explored first on the SPPI with one-way analysis of variance. Tables 17 and 18 present the respective summaries for the Primary and Validation Groups; both indicate significantly different ($p < .0005$) responses for males and females.

Table 19 presents the summary data for the analysis of variance on individual items and indicates that differential perceptions on the SPPI are due to specific items. Statistically significant ($p < .05$) differences were found on items 122, 123, 124, 126, 127, 131, and 138 for both the Primary and Validation Groups, while reproducible significant differences were not found on the remaining ten items.

Table 17

Primary Group: Summary of Analysis of Variance for the Relationship of Sex and SPPI

Source	df	MS	F
Sex	1	11.90	25.27*
Error	1318	.47	
Total	1319		

*$p < .0005$

Table 18

Validation Group: Summary of Analysis of Variance for the Relationship of Sex and SPPI

Source	df	MS	F
Sex	1	7.58	15.43*
Error	1321	.49	
Total	1322		

*$p < .0005$

Table 19

Primary and Validation Groups:
Sex Means and Probability of F Value for Each Item

Item	Primary Group			Validation Group		
	Male	Female	P of F	Male	Female	P of F
121	3.61	3.61	.894	3.59	3.68	.161
122	3.54	3.34	.009	3.70	3.41	<.0005
123	3.48	3.24	<.0005	3.49	3.35	.036
124	3.96	3.57	<.0005	3.89	3.64	<.0005
125	3.20	3.10	.110	3.23	3.25	.786
126	3.59	3.34	.001	3.62	3.35	<.0005
127	3.32	2.98	<.0005	3.44	3.10	<.0005
128	4.60	4.55	.120	4.61	4.58	.264
129	3.18	3.06	.019	3.15	3.16	.874
130	3.29	3.02	<.0005	3.30	3.17	.064
131	4.51	4.26	<.0005	4.51	4.26	<.0005
132	2.92	2.68	<.0005	2.95	2.81	.026
133	2.81	2.81	.901	2.87	2.79	.221
134	3.31	3.19	.063	3.27	3.24	.703
135	3.39	3.26	.040	3.39	3.33	.387
136	4.55	4.56	.770	4.57	4.55	.386
137	2.90	2.78	.066	2.91	2.77	.022
138	3.54	3.19	<.0005	3.55	3.29	<.0005
SPPI	3.30	3.11	<.0005	3.32	3.17	<.0005

Discussion. -- From the above results it is apparent that males perceive the plan more favorably than females when an overall measure is used. At first glance, this overall difference appears to be the results of specific items, but a closer look at the individual means (Table 19) reveals that sex differences, for both the Primary and Validation Groups, occur on every item with the sole exception of item 121. Although differences between the means for males and females are not significant for all items, the pattern of differences is consistent with males responding more favorably than females.

6. Do employees with different educational backgrounds differ in perceptions of the Scanlon Plan?

Results. -- Tables 20 and 21 present the summaries of the one-way analysis of variances for the Primary and Validation Groups. Both analyses indicate that there are significant differences ($p < .01$) on the SPPI among the four educational groups.

Table 22, which contains the summary data for the analysis on the individual items, indicates that differences on the SPPI are largely due to specific items (125, 126, 128, 130, 131, 133, 137). Analyses on these items indicated significant differences ($p < .05$) for both the Primary and Validation Groups. Reproducible significant differences among the four groups were not found on the remaining eleven items.

Table 20

Primary Group: Summary of Analysis of Variance for the Relationship of Education and SPPI

Source	df	MS	F
Education	3	1.93	4.02*
Error	1257	.48	
Total	1260		

*p = .007

Table 21

Validation Group: Summary of Analysis of Variance for the Relationship of Education and SPPI

Source	df	MS	F
Education	3	2.23	4.46*
Error	1256	.50	
Total	1259		

*p = .004

Table 22

Primary and Validation Groups:
Education Subgroup Means and Probability of F Value for Each Item

Item	Primary Group					Validation Group				
	Education (Years)				P of F	Education (Years)				P of F
	8	10	12	14		8	10	12	14	
121	3.86	3.75	3.57	3.35	<.0005	3.78	3.67	3.62	3.47	.063
122	3.61	3.40	3.37	3.59	.108	3.78	3.55	3.40	3.83	<.0005
123	3.55	3.37	3.29	3.40	.087	3.67	3.49	3.35	3.34	.006
124	3.89	3.83	3.73	3.71	.170	3.95	3.80	3.76	3.67	.042
125	3.34	3.22	3.03	3.19	.012	3.41	3.38	3.15	3.10	.003
126	3.35	3.53	3.36	3.79	<.0005	3.52	3.45	3.38	3.90	<.0005
127	3.06	3.27	3.07	3.28	.041	3.41	3.27	3.23	3.35	.339
128	4.55	4.58	4.53	4.72	<.0005	4.62	4.61	4.53	4.71	<.0005
129	3.13	3.21	3.07	3.14	.171	3.33	3.17	3.08	3.21	.014
130	3.23	3.12	3.04	3.45	<.0005	3.24	3.25	3.15	3.55	.003
131	4.25	4.34	4.39	4.55	<.0005	4.23	4.32	4.41	4.57	<.0005
132	2.74	2.87	2.74	2.82	.329	2.75	2.94	2.87	2.92	.378
133	2.83	2.75	2.73	3.08	.005	2.90	2.84	2.68	3.17	<.0005
134	3.33	3.35	3.20	3.15	.170	3.33	3.35	3.22	3.20	.389
135	3.44	3.35	3.25	3.34	.277	3.44	3.44	3.31	3.31	.275
136	4.55	4.53	4.54	4.64	.059	4.56	4.60	4.52	4.61	.072
137	3.06	2.92	2.73	2.79	.009	2.99	2.96	2.73	2.93	.010
138	3.36	3.48	3.27	3.42	.134	3.55	3.37	3.33	3.69	.003
SPPI	3.25	3.25	3.13	3.29	.007	3.32	3.28	3.17	3.35	.004

Discussion. -- From the above it is apparent that employees with different educational backgrounds do differ in perceptions of the Scanlon Plan, but the exact nature of these differences is not as clear as previous demographic variables investigated. According to the means of items 125, 126, 128, 130, 133, 137, and the SPPI (see Table 22), there is an apparent curvilinear relationship, with those employees who have twelve years of education generally responding more unfavorably than the other three groups. Basically, the other three groups responded similarly.

The only other item which indicated significant differences among the four groups deviated from the above pattern. This was item 131, which taps the desire or interest to be a member of a committee. A linear relationship was found in that the more education, the greater the possibility of a "yes" response.

7. Do employees of different age groups differ in perceptions of the Scanlon Plan?

Results. -- Data from Tables 23 and 24 reveal that there are significantly different ($p < .0005$) responses on the SPPI among the six age groups.

Table 25, which represents the results of one-way analysis of variances on each of the items, indicates that the differences in overall perceptions are a function of specific items. Items on which

Table 23

Primary Group: Summary of Analysis of Variance for the Relationship of Age and SPPI

Source	df	MS	F
Age	5	3.58	7.87*
Error	1234	.46	
Total	1239		

*$p < .0005$

Table 24

Validation Group: Summary of Analysis of Variance for the Relationship of Age and SPPI

Source	df	MS	F
Age	5	3.09	6.51*
Error	1256	.48	
Total	1261		

*$p < .0005$

Table 25

Primary and Validation Groups:
Age Subgroup Means and Probability of F Value for Each Item

Item	Primary Group							Validation Group						
	Age Groups						P of F	Age Groups						P of F
	19	24	30	38	47	59		19	24	30	38	47	59	
121	3.56	3.51	3.63	3.62	3.67	3.89	.078	3.50	3.58	3.51	3.68	3.68	3.96	.003
122	3.07	3.11	3.49	3.58	3.61	4.13	<.0005	3.18	3.23	3.41	3.82	3.97	3.97	<.0005
123	3.10	3.09	3.40	3.53	3.43	3.86	<.0005	3.06	3.27	3.38	3.57	3.63	3.78	<.0005
124	3.38	3.60	3.83	3.87	3.91	4.09	<.0005	3.55	3.67	3.68	3.86	3.99	3.96	<.0005
125	3.11	2.95	3.08	3.20	3.20	3.68	<.0005	3.22	3.09	3.04	3.29	3.43	3.57	<.0005
126	3.43	3.33	3.71	3.50	3.39	3.60	.027	3.25	3.57	3.61	3.63	3.44	3.51	.043
127	3.00	3.10	3.26	3.12	3.24	3.48	.014	3.11	3.21	3.27	3.41	3.40	3.42	.074
128	4.62	4.54	4.56	4.65	4.55	4.61	.227	4.55	4.61	4.57	4.61	4.61	4.65	.489
129	3.22	3.04	3.09	3.13	3.12	3.35	.033	3.08	3.16	3.11	3.18	3.17	3.35	.126
130	2.77	3.14	3.24	3.24	3.27	3.46	<.0005	2.93	3.27	3.23	3.37	3.38	3.37	.005
131	4.28	4.39	4.51	4.50	4.35	4.25	<.0005	4.24	4.42	4.48	4.44	4.38	4.29	<.0005
132	2.81	2.84	2.93	2.76	2.69	2.92	.138	2.88	2.92	2.91	2.94	2.91	2.81	.925
133	2.62	2.66	2.74	3.03	2.92	3.05	.001	2.72	2.73	2.52	2.98	3.09	3.05	<.0005
134	3.14	3.26	3.26	3.16	3.25	3.60	.014	3.11	3.30	3.22	3.22	3.32	3.38	.320
135	3.34	3.30	3.37	3.29	3.23	2.59	.093	3.24	3.32	3.34	3.39	3.41	3.56	.193
136	4.59	4.48	4.57	4.59	4.56	4.67	.018	4.52	4.54	4.51	4.61	4.62	4.63	.061
137	2.75	2.72	2.84	2.86	2.86	3.11	.029	2.70	2.71	2.70	3.03	3.02	3.00	.001
138	3.18	3.31	3.52	3.36	3.37	3.70	.005	3.20	3.42	3.37	3.55	3.49	3.63	.035
SPPI	3.08	3.11	3.27	3.26	3.22	3.49	<.0005	3.07	3.20	3.19	3.34	3.36	3.41	<.0005

there were significantly different responses ($p < .05$), for both the Primary and Validation Groups, are 122, 123, 124, 125, 126, 130, 131, 137, and 138. Reproducible significant differences were not found on the remaining eight items.

Discussion. -- From the above results on the SPPI and items 122, 123, 124, 125, 126, 130, 137, and 138, it appears that older employees respond more favorably than younger employees. A comparison of the means on Table 25 clearly evidences this linear trend.

The sole exception to this linear pattern of responses across age groups is item 131, which assesses the predisposition of employees to become committee members. On this item there appears to be a curvilinear relationship whereby older (54-68) and younger (18-21) employees indicate less of a tendency to want to be committee representatives than those employees from the 22-53 age bracket.

SUMMARY AND CONCLUSIONS

Table 26 presents a capsule summary of the major questions asked and the conclusions reached in the present study of the Scanlon Plan. Although the conclusions are limited to the organizations surveyed, they may well have validity in other Scanlon systems.

The answer to the three specific questions of Part A imply that the Scanlon Plan, as perceived by the employees working under it, is a real multidimensional factor within the organizations surveyed. Employees are not neutral about the plan. They consistently perceive some aspects positively and others negatively. They make consistent judgments about which aspects work well and which work poorly. For the total scale, twelve aspects were perceived positively and only three negatively. Thus it appears that, overall, employees are favorably disposed to the plan. They appear to be very favorable toward the plan as an alternative to a "union" system, and as a system for improving the financial positions of the companies. Employees are mildly favorable toward the plan as a vehicle for increasing knowledge about the company, increasing

Table 26

Summary of Results

A. How do employees perceive various aspects of the Scanlon Plan?

1. Are specific aspects perceived positively? . . . . . Yes
2. Are specific aspects perceived negatively? . . . . . Yes
3. Are these aspects consistently ordered? . . . . . Yes

B. Are demographic variables related to these perceptions?

1. Do employees operating under independent plans differ in perceptions of the Scanlon Plan? . . . . . Yes
2. When the plans are classified as consistent or inconsistent with the "intent" of the plan, are there differential perceptions? . . . . . Yes
3. Is hierarchical level related to perceptions of the plan? . . . . . Yes
4. Is tenure related to perceptions of the plan? . . . . . Yes*
5. Are there male-female differences in perceptions of the plan? . . . . . Yes
6. Is education related to perceptions of the plan? . . . Yes*
7. Is age related to perceptions of the plan? . . . . . Yes*

*Relationships are weaker or less evident.

trust in management, increasing organizational efficiency, incorporating employee suggestions, and helping employees do their jobs better. Employees are slightly negative about the extent to which the plan allows them to really influence decisions which affect their jobs, provides them with an opportunity to learn more about their jobs, and is used by management as a way to "get more out of the workers."

These findings indicate that the plan does have practical utility as an organizational system and that the mechanics of the plan (e.g., suggestions and committees) are functioning fairly well. However, the underlying intent of the plan, at least as the employees see it, appears to be a gimmick for increasing efficiency rather than a system which releases the potential of the employees. This latter statement is further evidenced by the fact that the employees do not see themselves as really participating within the system.

Overall, the data indicate that the plan is working, but at a less than ideal state.

Part B of the study clearly evidenced the fact that employees' perceptions are related to demographic variables; specifically the study has shown that:

1. Employees operating under independent plans differ in perceptions.

2. Employees operating under a system that is consistent with the intent of the plan are more favorably disposed than those employees operating under a system which is inconsistent with the intent of the plan.

3. Employees at higher levels in the organizational structure are more favorably disposed to the plan than those at lower levels.

4. Employees with more than ten years' tenure are more favorably disposed to the plan than employees with less than ten years'.

5. Males are more favorably disposed than females.

6. Employees who have twelve years of education are less favorably disposed than those employees with more or less education.

7. Older employees are more favorably disposed to the plan than younger employees.

The data obtained on independent plans indicate that simply having the mechanisms of the plan does not ensure similar or favorable responses from the employees. Obviously there are other factors operating within these sites which account for these differences in perceptions. One explanation for the different responses would be to attribute them to the different contextual variables which impinge on any given site, e.g. different production problems, markets, and processes. But it is equally, if not more, likely that these differences in perceptions reflect very different management strategies being used within the various sites.

If it is true, as McGregor implies, that employee behavior is a result of managerial strategies, then it is only a short step to inferring the same with attitudes.

Within the present study, evidence for the impact of different strategies on attitudes was noted from the results of the analysis which compared the one-plan, one-process group of sites with the multiple-plan, one-process group of sites. It was found that employees within the former group, whose systems were in concert with the intent of the plan, were far more favorably disposed to the plan than those employees within the latter system. The fact that there are two systems suggests different strategies in implementing the plan which implies differences in the understanding by management of what the plan is. If the implementation of the plan can be considered representative of management's concept of the plan, then in all probability there are also differences in the implementation and application of other more central tenets of the plan--specifically, participation and the operationalization of the theory of man.

Unfortunately, with the present data the issue cannot be resolved, but the above does indicate where future research may be most productive, and that is to investigate the various strategies being used within the sites surveyed.

In regard to the last five findings (3-7), it is interesting to note that the same demographic variables appear to hold similar relationships when other attitudinal measures are used with non-Scanlon employees. For example, Porter et al. (1965) concluded from a literature review on hierarchical level that the evidence shows that perceived job and need satisfaction increase not only from rank and file positions to management positions but also from lower management positions to middle- and upper-level management. This is precisely the relationship found in the present study.

In regard to tenure, job satisfaction literature indicates somewhat similar relationships. Specifically, Hull et al. (1942) found that job satisfaction rises to a peak before the end of the first year, hits a low between the fifth and eighth years, and rises steadily until the twentieth year. Although this exact relationship was not found in the present study, the trend of steadily rising attitudes for those employees with more than ten years' tenure seems to indicate some similarities to Hull's findings.

In the present study males respond more favorably than females. Again similar findings have been recorded in other studies and imply that male-female differences in perceptual measures appear to be a function of the work itself. Bass (1962) states that

> studies suggest that women at all age levels are more interaction-oriented while men are more task-oriented. As a whole, women

> prefer to work in groups, to converse, to have social opportunities; . . . they also put a premium on cleanliness and pleasant surroundings. (p. 422)

Since the majority of employees surveyed were working in "older factories" on "line jobs" where social interaction would be minimized, the results of the present study appear very much in concert with Bass' s observations.

Literature in regard to education implies that controlling on job and wage levels, the more education an employee had the less satisfied he was with his pay and promotional opportunities (Singh et al., 1966). Hinrichs (1966) found similar results in a study which investigated the perceptions of salary increments. Specifically, he noted that college educated employees have significantly higher expectations and are less satisfied with similar salary increases than non-college graduates. Although the curvilinear relationship found in the present study appears to contradict the above, the results could be compatible with the existing literature since the previous studies controlled on job level, whereas job level was not controlled in the present study.

Literature in regard to age implies that overall satisfaction of employees appears lowest among younger workers (20-29) and climbs thereafter (Berge, 1947). In general, a similar trend was observed in the present study.

The similarities of the correlative relationships found in the present study and previous research seem to imply that Scanlon employees respond in a similar manner to employees in non-Scanlon companies. It appears that specific demographic variables (age, education, sex, tenure, and job level) are inherently related to organizationally related attitude measures. But what the above does not tell us is whether the relationships have the same strength with Scanlon and non-Scanlon employees. Theoretically, one expectation would be that the plan would ameliorate, if not eliminate, the differences between various levels of the demographic variables. For example, if the plan is functioning at an ideal state, then hierarchical differences would be greatly reduced. The basis for this argument stems from the intent of the plan to redefine the roles of all the members of the organization by redistributing responsibility and decision-making more equitably at lower levels, thereby creating an overall sense of partnership among the participants. The differential perceptions between managers and workers might indicate that traditional dualistic roles are still prevalent.

The above explanation asks the basic question of whether the organizations surveyed really "have" the Scanlon Plan. It is clear that they have the "mechanisms": the committees, the ratio, and bonus distribution. Further, the results of this study show

acknowledgment of the mechanisms and favorable attitudes toward them, and acknowledgment of the practical utility of the plan; but the results also indicate that the intent is not being fulfilled. To derive a clear answer to the question requires the establishment of whether they have the other essential ingredient of the plan: the theory of man. It is the operationalization of this fundamental element of the plan which determines whether a given organization "has" the plan.

Future research would be most fruitful if focused on those behaviors or managerial strategies within organizations which are more or less consistent with the basic tenets of the plan. In order to pursue the above necessitates the removal of the essence of the plan (the theory of man) from the realm of the philosopher to the domain of the behavioral scientist. What is needed is a model which differentiates between this component as concept and the application of this component. Because the concept as applied is <u>not</u> an approach, a philosophy, or even a theory. Rather, it is a set of behaviors (or strategy) which reflect(s) a given approach, philosophy, or theory. Until adequate, objectives measures are derived of these behaviors (or strategies), we simply are left to guess at which organizations really "have" the Scanlon Plan.

BIBLIOGRAPHY

BIBLIOGRAPHY

Bass, B. M., and Dunteman, G. Behaviors in groups as a function of self-, interaction, and task orientation. Journal of Abnormal and Social Psychology, 1963, 66, 419-428.

Benge, E. J., and Copell, D. F. Employee morale survey. Modern Management, 1947, 7, 19-22.

Chamberlain, J. Everyman a capitalist. Life, 1946, December 23, 93-94.

Davenport, R. W. Enterprise for everyman. Fortune, 1950, 41, 55.

Doud, E. M. The Scanlon Plan. Management Record, 1955, 17, 236-239.

Etzioni, A. Modern Organizations. Englewood Cliffs: Prentice-Hall, 1964.

Guilford, J. P. Fundamental Statistics in Psychology and Education. New York: McGraw-Hill, 1965.

Hinrichs, J. R. Correlates of employee evaluations of pay increases. Journal of Applied Psychology, 1969, 53, 481-489.

Hull, R. L., and Kolstad, A. Morale on the job. In G. Watson, Civilian Morale. New York: Reynal and Hitchcock, 1942, 362-364.

Katz, D., and Kahn, R. L. The Social Psychology of Organization. New York: Wiley, 1966, 380-388.

Lesieur, F. G. The Scanlon Plan. Cambridge: MIT Press, 1958.

Lesieur, F. G., and Puckett, E. S. The Scanlon Plan--past, present and future. Industrial Relations Research Association Proceedings, 1968, December, 71-80.

Martucci, N. L. A. Productivity and incentive pay. Management Record, 1957, 19, 346-349.

McGregor, D. The Scanlon Plan through a psychologist's eyes. In F. Lesieur, The Scanlon Plan. Cambridge: MIT Press, 1958, 89-99.

Porter, L. W., and Lawler, E. E. Properties of organization structure in relation to job attitudes and job behavior. Psychological Bulletin, 1965, 64, 23-51.

Pugh, D. S. Modern organization theory: a psychological and sociological study. Psychological Bulletin, 1966, 66, 235-251.

Ruh, R. The Scanlon Plan. Unpublished manuscript: Michigan State University, 1970.

Scanlon, J. N. Profit-sharing under collective bargaining: three case studies. Industrial Labor Relations Review, 1948, 2, 58-75.

Schein, E. H. Organizational Psychology. Englewood Cliffs: Prentice-Hall, 1965.

Schultz, G. P. Worker participation on production problems, a discussion of the Scanlon Plan. Personnel, 1951, 28, 201-211.

Singh, T. N., and Baumgartel, H. Background factors in airline mechanics' work motivation. Journal of Applied Psychology, 1966, 50, 357-359.

Torbert, F. Making incentives work. Harvard Business Review, 1959, 37, 81-92.

Weinimont, P. F. Intrinsic and extrinsic factors in job satisfaction. Journal of Applied Psychology, 1966, 50, 41-50.

Whyte, W. F. Money and Motivation: An Analysis of Incentives in Industry. New York: Harper, 1955.

APPENDICES

APPENDIX A

SCANLON PERCEPTION ITEMS AND INSTRUCTIONS TO SUBJECTS

The questions on the following pages deal with many different aspects of you and your job.

The questions are asked in different ways so you should read each one carefully. While reading through the questions, please remember that there are no right or wrong answers. For each question or statement, you should choose the answer which best describes your opinion or your judgment on the subject. The best answer is your own opinion or judgment.

121. The Scanlon Plan encourages me to work hard.

1	2	3	4	5
I disagree strongly	I disagree somewhat	I'm undecided	I agree somewhat	I agree strongly

122. Workers would be just as well off here if we had a union and not the Scanlon Plan.

1	2	3	4	5
I disagree strongly	I disagree somewhat	I'm undecided	I agree somewhat	I agree strongly

123. The Scanlon Plan helps me learn more about the whole company.

1	2	3	4	5
I disagree strongly	I disagree somewhat	I'm undecided	I agree somewhat	I agree strongly

124. The Scanlon Plan has helped this company's financial position.

1	2	3	4	5
I disagree strongly	I disagree somewhat	I'm undecided	I agree somewhat	I agree strongly

125. The Scanlon Plan increases my trust and confidence in management.

1	2	3	4	5
I disagree strongly	I disagree somewhat	I'm undecided	I agree somewhat	I agree strongly

126. It's not really worth the trouble to offer suggestions to the production and screening committees.

1	2	3	4	5
I disagree strongly	I disagree somewhat	I'm undecided	I agree somewhat	I agree strongly

127. How much is it worth your effort to think up and offer suggestions to the screening committees?

1	2	3	4	5
very much	much	some	little	very little

128. How do you decide who to vote for when the representatives to the production and screening committees are elected?

1. I vote for the man who can best "stand up to" the management.
2. I vote for the man who will do the best job of improving company efficiency.
3. I vote for whomever wants the job.
4. I don't give much thought to whom I vote for.
5. I vote for whomever has not yet had the job.

129. How effective are the Scanlon Plan production and screening committees in improving company efficiency?

1	2	3	4	5
not at all effective	not very effective	somewhat effective	quite effective	very effective

130. How often are the people in your work group given the real reasons why their suggestions were not acted on?

1	2	3	4	5
always	often	occasionally	seldom	never

131. Would you like to be a representative to a production committee?

Yes 4 No 5

132. How much does the Scanlon Plan provide you with an opportunity to really influence decisions which affect your job?

1	2	3	4	5
very much	much	some	little	very little

133. The Scanlon Plan is basically a way for management to "get more out of the workers."

1	2	3	4	5
I disagree strongly	I disagree somewhat	I'm undecided	I agree somewhat	I agree strongly

134. The Scanlon Plan helps me to do my job better.

1	2	3	4	5
I disagree strongly	I disagree somewhat	I'm undecided	I agree somewhat	I agree strongly

135. The Scanlon Plan helps my work group to do a better job.

1	2	3	4	5
I disagree strongly	I disagree somewhat	I'm undecided	I agree somewhat	I agree strongly

136. Generally, who benefits the most from the Scanlon Plan, management or the workers?

1	2	3	4
management	the workers	both benefit about equally	neither benefits very much

137. The Scanlon Plan helps me learn more about my job.

1	2	3	4	5
I disagree strongly	I disagree somewhat	I'm undecided	I agree somewhat	I agree strongly

138. The Scanlon Plan is a nice idea but it really doesn't accomplish much of anything.

1	2	3	4	5
I disagree strongly	I disagree somewhat	I'm undecided	I agree somewhat	I agree strongly

APPENDIX B

RECODING OF THE SCANLON PERCEPTION SCALE AND THE CREATION OF A NEW VARIABLE: SPPI

1. Reflecting items

Within the Scanlon Perception Scale, items 122, 126, 127, 130, 132, 133, and 138 were reflected so that the most favorable response received a score of "5" and the least favorable a score of "1." Item 131 was reflected such that a "YES" response received a score of "5" and a "NO" response a score of "4."

2. Dichotomizing items

Items 128 and 136 were dichotomized. For item 128, the response "I vote for the man who will do the best job of improving company efficiency" was coded "5" whereas any other response received a value of "4." Item 136 was dichotomized in a similar fashion with the response "both benefit about equally" being coded "5" and any other response "4."

3. Creating a new variable: SPPI

Finally, based on the assumption that the Scale was homogeneous, a composite measure was created which was an overall measure of favorableness toward, or satisfaction with, the plan. Since the items were of comparable directionality, a simple sum appeared to be an ideal measure; but due to the nature of the data, a simple summation of items was inappropriate for the following reasons: unequal item variances and missing data.

In reference to the former, it is essential to note that when items are summed they are weighted according to their standard deviations, which, in this case, would have meant that the dichotomous items (128, 131, and 136) would have contributed proportionally less than the Likert-type items. Since the goal was to generate an overall estimate, then it was important to have each item contribute as equally as possible in the determination of the overall measure.

The solution to the problem was to respectively transform the values of the dichotomized items from "5" and "4" to "4" and "2." This in part solved the variance problem, and also yielded a response range that bracketed the "neutral" response of "3," similar to the Likert items. It is important to note that the above transformation applied only to the creation of the overall estimate.

The second reason for not using a simple sum was missing data, which, in this case, would have resulted in those respondents with missing data receiving a total score not representative of their overall attitude toward the plan.

Therefore the estimate utilized was a form of mean estimate which was simply the sum of those items answered divided by the number of questions answered. This estimate was called the Scanlon Plan Perception Index and denoted SPPI.

APPENDIX C

DISTRIBUTIONS OF DEMOGRAPHIC VARIABLES

The following distributions represent the data as used in the present study. Included in the tables are: the code assigned to each subgroup, an interpretation of each code (where appropriate), the number of respondents, on the SPPI, in each subgroup for both the Primary and Validation Groups (these groups are defined in the Design section), and the number of respondents who were omitted. The "N" for all tables represents the number of respondents on which a SPPI estimate was obtained. This value is an upper bound of the number of respondents to the individual items.

Table C1

Plant Site (Independent Plans)

Code	Primary Group N	Validation Group N
1	75	77
2	12	12
3	121	120
4	50	46
5	134	135
6	11	13
7	76	76
8	83	82
9	88	88
10	84	89
11	30	32
12	121	123
13	54	54
14	10	11
15	46	44
16	8	8
17	5	5
18	176	172
19	69	68
20	49	50
21	20	19
Omits	57	51

Table C2

Plan Type

Code	Interpretation	Primary Group N	Validation Group N
1	multiple-plan, one-process*	843	807
2	one-plan, one-process**	479	463
	omits	58	105

*sites 1-8

**sites 9-21

Table C3

Job Level

Code	Interpretation	Primary Group N	Validation Group N
5	managerial	72	77
7	supervisory	106	115
9	rank and file	1051	1048
	omits	151	135

Table C4

Tenure

Code	Interpretation	Primary Group N	Validation Group N
2	1 through 3 months	123	137
8	4 through 13 months	180	183
18	14 through 25 months	142	142
36	26 through 48 months	246	222
60	49 through 73 months	135	127
96	74 through 121 months	174	199
150	122 through 181 months	104	97
210	182 through 241 months	90	100
300	more than 241 months	71	68
	omits	115	100

Table C5

Sex

Code	Interpretation	Primary Group N	Validation Group N
1	male	661	694
2	female	659	629
	omits	60	52

Table C6

Years of Education

Code	Interpretation	Primary Group N	Validation Group N
8	eighth grade or less	153	184
10	some high school	315	294
12	high school graduate	553	561
14	some college	240	221
	omits	119	115

Table C7

Age

Code	Interpretation	Primary Group N	Validation Group N
19	ages 18 through 21	190	173
24	ages 22 through 26	213	218
30	ages 27 through 33	242	254
38	ages 34 through 42	210	222
47	ages 43 through 53	239	231
59	ages 54 through 68	146	164
	omits	140	113

APPENDIX D

FORMATION OF

PRIMARY AND VALIDATION GROUPS

From the total sample of respondents two subgroups were formed and denoted as the Primary Group and Validation Group. The determining factor in the assignment of subjects to groups was the last digit of the respondent's identification number. Those respondents whose identification numbers ended in 0, 2, 4, 6, or 8 were assigned to the Primary Group (N = 1380) while the remaining respondents, with identification numbers ending in 1, 3, 5, 7, or 9 were assigned to the Validation Group (N = 1375).