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AN ASSESSMENT OF THE EFFECTS
OF STRUCTURE ON JOB DESIGN

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AN ASSESSMENT OF THE EFFECT OF STRUCTURE ON JOB DESIGN

By

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ABSTRACT

AN ASSESSMENT OF THE EFFECTS
OF STRUCTURE ON JOB DESIGN

By

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This study tested the main effects and interaction effects of (1) perceived structure; (2) growth-need strength; and, (3) perceived motivating potential of the job on job satisfaction. The sample consisted of a manufacturing firm (N = 185) and a hospital (n = 62). Employees were selected from all levels and from each department of the two organizations.

Four hypotheses were tested separately and in a combined form. The combination of the four hypotheses was used to derive expectations of the degree of satisfaction people receive from work. Testing of the first hypothesis provided information on whether workers that perceive the job to be high on the core job dimensions are more satisfied than workers that perceive the job to be low on the core job dimensions. The obtained Pearson product-moment correlation between the motivating-potential score of the job and job satisfaction supported the hypothesis.

The second hypothesis was based on only those people whose motivating-potential score fell above the sample median. Workers in this group who had individual differences congruent with the job (high-growth-need strength and motivating job) were expected to be more satisfied than those individuals whose growth-need strength were incongruent with the perceived job characteristics. Analysis of variance showed no support for hypothesis two.

Hypothesis three was restricted to individuals whose motivating-potential score was low. For these people, it was predicted that the person whose growth-need strength was congruent with perceived organizational structure (low-growth-need strength and high structure) would be more satisfied with work than the individual whose growth-need strength was incongruent with perceived structure. Analysis of variance showed no support for this prediction.

Hypothesis four concerned the congruent and incongruent states for jobs perceived to be both high and low in motivating potential. If the individual perceives organizational structure as low, then that individual will be more satisfied with the job than the individual that perceives the structure as high. Pearson product-moment correlations produced an overall lack of support for hypothesis four.

When the four hypotheses were tested in combined form using a Spearman rank correlation, the above findings were confirmed; i.e., support was found for only hypothesis one.

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CHAPTER I

INTRODUCTION

Goal accomplishment is attempted in organizations by the institution of control systems and the structuring of organizational life through such things as policy, budget, and job design. Ironically, these very things often stifle the innovative behavior necessary on the part of employees to accomplish organization goals (Pierce and Delberg, 1974). Because of this, it is necessary to understand how employee perceptions of (1) control systems and (2) structure interact with (3) the individual employee growth needs and (4) perceived job characteristics. This study investigates the relationships among these four variables.

Since the early seventies, Hackman has produced and tested models of job content. His findings, and his ability to pinpoint motivating job characteristics, have distinguished him in the area of job design. Hackman (1975) identified several factors that can negatively influence a job-change intervention. Two of these factors will be discussed as possible conditions contributing to the dampening effect on motivation in the manufacturing worker. Although this study will not be a job-change intervention, the findings may help contribute to the understanding of the job perceptions and the perceptions of the job environment.

"Readiness" of the individual is one of the factors that may inhibit the motivational process. If the worker is not ready for the change or does not truly desire the change, he/she will not respond positively (Hackman, 1975). A worker may have been pleased with a routine job and now may feel pressured by a complex job that requires more thought and skill. Similar outcomes may occur, even though the worker wants to work on a complex job, if he/she views the change as a management decision. When this is the case, Hackman (1975) observes that the change is perceived by the worker as an order by management. These two factors must, therefore, be considered when undertaking a job-change intervention. According to Hackman, one way to evaluate this problem is permit the worker to participate in the job redesign process, which decreases the workers feeling of being controlled by management.

Bureaucracy is a second situational issue discussed by Hackman as a possible deterrent to effective job design. If the structure of the organization is dominated by rules and regulations, it is difficult to design jobs with high flexibility. Hackman (1975) addresses this issue and points out that "expecting to achieve a flexible, employee-oriented work system with rigid, bureaucratic procedures that operate strictly from the top down is unrealistic." "Readiness" and bureaucracy emphasize the effect of organization structure and control systems on worker attitude. In

particular, control and structure appear to dampen the positive outcomes that are thought to be associated with an enriched job. This study will focus on the impending restraints of controls and bureaucracy in conjunction with the individual and his/her job.

The job characteristics model developed by Hackman and Oldham (1975) explains the relationship that exists between an individual and his/her job. Figure 1-1 provides a conceptualization of the job, the individual's psychological states, and the related outcomes of motivation, satisfaction, and turnover.

HACKMAN AND OLDHAM MODEL

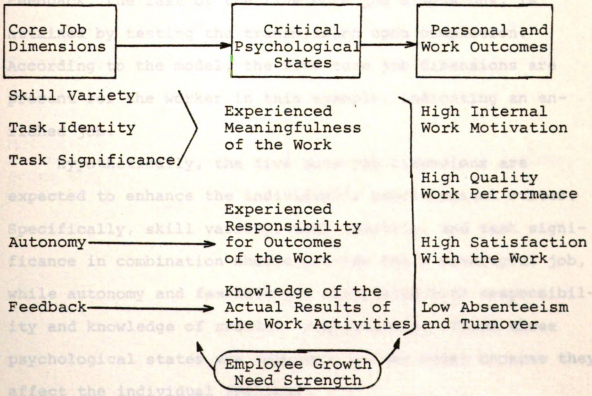

FIGURE 1-1

For example, when management chooses to enrich a worker's job, it initiates several job changes. Consider a worker assembling transmissions on an assembly line whose job is to be changed. The worker would assemble a whole transmission which requires varied skills in several areas. This is indicative of skill variety and task identity (for definitions see Table 1-1). Because the transmission plays a large role in the overall functioning of the vehicle being produced, the worker should be aware of the significance of his job. Autonomy is provided to the worker by permitting self-supervision, which gives the worker an opportunity to function independently. Feedback, the last of the five core job dimensions, is attained by testing the transmission upon completion. According to the model, the five core job dimensions are present for the worker in this example, indicating an enriched job.

Hypothetically, the five core job dimensions are expected to enhance the individual's psychological states. Specifically, skill variety, task identity, and task significance in combination should provide for a meaningful job, while autonomy and feedback are associated with responsibility and knowledge of results, respectively. These three psychological states are important to the model because they affect the individual feelings.

The psychological states facilitate certain outcomes, such as internal work motivation, job satisfaction, turnover, and absenteeism. Consequently, job design has become a vital area in management.

The job characteristics model does not apply equally well to all workers. Employee growth need has been shown to be a moderator between the core job dimensions and the psychological states, and between the psychological states and the personal and work outcomes (Hackman and Lawler, 1971; Hackman and Oldham, 1976; Oldham, 1976; Wanous, 1974). One way of assuring the "readiness" of an individual to accept a job change (Hackman, 1975) is to use employees that have a desire to grow at work.

Hackman and Oldham (1974) presented the following formula to compute a score that reflects the "motivating potential" of a job:

$$\text{Motivating Potential-Score (MPS)} = \frac{\text{Skill Variety} + \text{Task Identity} + \text{Task Significance}}{3} \times \text{Autonomy} \times \text{Feedback}$$

TABLE 1-1

DEFINITIONS OF VARIABLES IN THE
JOB DIAGNOSTIC SURVEY

Job Dimensions:

1. Skill Variety. The degree to which a job requires a variety of different activities in carrying out the work, which involves the use of a number of different skills and talents of the employee.

2. Task Identity. The degree to which the job requires completion of a "whole" and identifiable piece of work.

3. Task Significance. The degree to which the job has a substantial impact on the lives or work of other people--whether in the organization or in the external environment.

4. Autonomy. The degree to which the job provides substantial freedom, independence, and discretion of the employee.

5. Feedback from the job Itself. The degree to which carrying out the work activities required by the job results in the employee obtaining direct and clear information about the effectiveness of his/her performance.

6. Feedback from Agents. The degree to which the employee receives clear information about his/her performance from supervisors or from coworkers.

7. Dealing with Others. The degree to which the job requires the employee to work closely with other people in carrying out the work activities.

Critical Psychological States:

1. Experienced Meaningfulness of the work. The degree to which the employee experiences the job as one which is generally meaningful, valuable, and worthwhile.

2. Experienced Responsibility for work outcomes. The degree to which the employee feels personally accountable and responsible for the results of the work he/she does.

3. Knowledge of Results. The degree to which the employee knows and understands, on a continuous basis, how effectively he/she is performing the job.

Affective Reactions to the Job:

1. Global Satisfaction. An overall measure of the degree to which the employee is satisfied and happy with the job.

2. Internal Work Motivation. The degree to which the employee is self-motivated to perform effectively on the job.

3. Specific Satisfaction. A number of short scales which provide separate measures of satisfaction with:

   a. job security
   b. pay and compensation
   c. peers and coworkers
   d. supervision
   e. opportunities for personal growth and development

Individual Growth-Need Strength:

The strength of the respondent's desire to obtain "growth" satisfaction from his or her own work (Hackman and Oldham, 1974, pgs. 5 and 6).

These scores indicate motivational potential inherent in each job. This formula is only one of the many possible combinations of the five core job characteristics available to express the perceived motivating potential of the job.

The above discussion establishes a base for the factors developed by Hackman and Oldham (1974) that influence the job and the individual holding the job. The examples provided above concern themselves with yet two more factors: structure and control. These two variables will be discussed in order to get a clear understanding of their relationships.

The concept of structure as defined by Child (1972) has three elements: centralization, specialization, and formalization (See Table 1-2).

TABLE 1-2

DEFINITIONS OF STRUCTURAL VARIABLES

Centralization: The extent to which authority to make decisions affecting the organization is confined to higher levels of the hierarchy.

Specialization: The extent to which official duties are divided between and within functional areas.

Formalization: The extent to which procedures, rules, and instructions are written (Child, 1974, p. 166).

High scores on these elements indicate a high degree of perceived structure by the individual worker. This

exemplifies the bureaucratic state, discussed by Hackman, that may prove to stifle the positive effects of an enriched job. In particular, autonomy may be most affected by perceived structure, weakening the impact of the other core job dimensions that may be present in the task.

Control has two dimensions: (1) control of behavior; and (2) control of output (Ouchi, 1978).

TABLE 1-3

DEFINITIONS OF CONTROL VARIABLES

Behavior control: The extent to which observation is used as a basis for evaluation.

Output control: The extent to which records of output form the basis for evaluation (Ouchi, 1978, p. 174).

As with structure, employees that feel controlled by the organization may not respond positively to their jobs. Organizational control systems have been generally shown to foster dissatisfaction (Lawler, 1976). Therefore, it is prudent to include the control factor in a model of job design.

The above discussion and illustrations establish concern for the role played by organization structures and controls, although many unresolved questions remain. How do structure and control affect job design? Is there a particular core job dimension more affected by control and structure than other core dimensions? Do control and structure directly

affect psychological states? Can structure and/or control be thought of as a moderating variable similar to the role of growth-need strength in the model?

Job enrichment or job redesign has been the theme of many interventions in the last decade. Unfortunately, the outcomes of these interventions were not always successful. Some may have been due to a lack of readiness of the individuals, or because of the company's bureaucratic structure (Hackman, 1975). Interventions of this nature are costly and time consuming to the organization. For this reason it is important to find the answers to the questions raised above.

The variables involved can be considered to account for six possible relationships: (1) organization structure-control system; (2) individual difference-job characteristic; (3) the organization structure-job characteristic; (4) organization structure-individual difference; (5) individual difference-control system; and, (6) control system-job characteristic.

All six of these relationships will be explored in this study. The control system is considered to be a function of the organization's structure. Ouchi (1977) found that 33 percent of the variance in control could be accounted for by structural characteristics.

Because a control system is a function of structure, high organization structure implies maximum control in a system. Similarly, control is minimal in the presence of

low organizational structure. If an organization has a large number of rules and procedures, it is viewed by the workers as controlling (Ouchi, 1977). Figure 1-2 expresses the form the relationship takes when structure and control are viewed as dependent on one another.

INTERRELATIONS AMONG VARIABLES

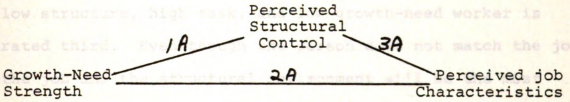

FIGURE 1-2

High structure will produce high control, and both fit best with a routine job (link 3A). The high structure-many controls would be most appropriate for low-growth employees (link 1A). The high-growth employees would best benefit from the low structure-less control organization.

The relationship labeled 2A is the job characteristic-growth-need strength match. The employee with high growth strength receives the most satisfaction from a highly motivating job (Wanous, 1974). The combination for this pair would be motivating job-high growth and routine job-low growth.

Table 1-4 describes the three possible combinations that can exist between structure, growth-need strength, and job characteristic. The three variables are given as either a match or a mismatch, in the columns to the right of the

situational variables. The degree of global satisfaction is ranked in order from highest to lowest. The rank of E is considered the highest because the situation lends itself to perfect congruence. A is ranked second because the person matches the job, which has been shown in the past to have positive results regardless of the structural system (Pierce, Dunham, and Blackburn, 1979). The combination of low structure, high task, and low-growth-need worker is rated third. Even though the person does not match the job, the job and the structural environment will be the most pleasant and motivating in which to work. Situation C ranks fourth because the job is going to be satisfying to the individual, even though perceived structure and growth needs are not perfect matches. Motivating jobs are considered to increase motivation even for the low-growth-need workers. The routine job in the low structure is a mismatch that ranks fifth, because the high-growth-need individual will be expected to be somewhat satisfied with the organizational environment. Situations D and H are difficult to rank because they are very close to providing the same degree of satisfaction, but situation D where the person matches both the job and the structure will have a slight edge and will be rated sixth. Situation B is ranked the lowest because the job is routine and consistent with the structure while the individual is high-growth need. The individual does not match the job and may perceive it as never changing because it suits the structure.

TABLE 1-4

RANK-ORDERED PREDICTIONS OF SATISFACTION

	Situation			Person-Job Match (yes-no)	Person-Structure Match (yes-no)	Job-Structure Match (yes-no)	Rank-ordered Predictions of Satisfaction
	Structure	Individual	Job				
A	high	high	high	yes	no	no	2
B	high	high	low	no	no	yes	8
C	high	low	high	no	yes	no	4
D	high	low	low	yes	yes	yes	6
E	low	high	high	yes	yes	yes	1
F	low	high	low	no	yes	no	5
G	low	low	high	no	no	yes	3
H	low	low	low	yes	no	no	7

CHAPTER II

LITERATURE REVIEW

The contingency view of management integrates the ideas from a wide range of disciplines to make possible a more prescriptive method for managing (Tosi and Carroll, 1976). Stated simply, the correct management response "depends" on the situation. Specific variables in the environment must be identified and then assessed to determine appropriate managerial actions. Upon recognition of these variables, the managerial ideology that best "fits" the situation can be adopted and used by others. The focus of this review will be to establish the relationships between the job, the structure, and the individual which combine to provide such a "best fit."

The person-job congruency, the person-structure match, and the job-structure match have all been tested separately. Research on individual differences and the job have examined the following moderating variables: authoritarianism, need for independence, urban/rural, alienation, Protestant Ethic, growth-need strength, education, and locus of control (White, 1978). Growth-need strength has shown to be the most effective moderator of satisfaction for enriched and routine jobs (Hackman and Oldham, 1976; Oldham, 1976; Sims and Szilagyi, 1976; and, Wanous, 1974). Because most

previous research did not account for structural variation, a full review of earlier studies will not be undertaken. For the present study, the variable growth-need strength will be expected to moderate the job satisfaction-perceived job characteristics relationship, but only in some instances (to be explained later).

The congruence between the person and the structure has been reviewed by Nemiroff and Ford (1976). They conclude that people with bureaucratic orientation prefer higher structure, thus creating a higher degree of satisfaction. The present study is concerned with growth-need strength, a variable that has not been tested with structure. Thus, the relationship to be tested has no past research from which to make a solid prediction.

The job and the structure have been investigated in various ways, as exemplified by two studies discussed below.

Burns and Stalker (1961) presented a study of 20 British firms. The Burns and Stalker evidence suggests that organizations are arranged on a continuum from "mechanistic" to "organic" structure. Burns and Stalker (1961) describe the mechanistic structure as:

(a) the specialized differentiation of functional tasks into which the problems and tasks facing the concern as a whole are broken down;

(b) the abstract nature of each individual task, which is pursued with techniques and purposes more or less distinct from those of the concern as a whole; i.e., the functionaries tend to pursue the technical improvement of means, rather than the accomplishment of the ends of the concern;

(c) the reconciliation, for each level in the hierarchy, of these distinct performances by the immediate superiors, who are also, in turn, responsible for seeing that each is relevant in his own special part of the task;

(d) the translation of rights and obligations and methods into the responsibilities of a functional position;

(e) the precise definition of rights and obligations and technical methods attached to each functional role;

(f) hierarchical structure of control, authority, and communications;

(g) a reinforcement of the hierarchic structure by the location of knowledge of actualities exclusively at the top of the hierarchy, where the final reconciliation of distinct tasks and assessment of relevance is made;

(h) a tendency for interaction between members of the concern to be vertical, i.e., between superior and subordinate;

(i) a tendency for operations and working behavior to be governed by the instructions and decisions issued by superiors;

(j) insistance on loyalty to the concern and obedience to superiors as a condition of membership;

(k) a greater importance and prestige attaching to internal (local) than to general (cosmopolitan) knowledge, experience, and skill (Tosi, 1975, pgs. 100 and 101).

They identify this structure as being very stable with little change in technology and little market change. By organizing in this fashion, a company may maximize utilization of its resources. The description provides for standardized procedures and guidelines, to saving time and

to reducing systematic error. Given a relatively stable environment, this organization need not change any of its policies quickly.

Under changing conditions, the organic structure must be flexible in order to adapt to new problems and unforeseen requirements. Under those conditions, it is impossible to have set procedures to follow when a problem arises. Burns and Stalker characterize the organic organization as:

(a) the contributive nature of special knowledge and experience to the common task of the concern;

(b) the "realistic" nature of the individual task, which is seen as set by the total situation of the concern;

(c) the adjustment and continual re-definition of individual tasks through interaction with others;

(d) the shedding of "responsibility" as a limited field rights, obligations, and methods (Problems may not be posted upward, downwards, or sideways as being someone else's responsibility);

(e) the spread of commitment to concern beyond any technical definition;

(f) a network structure of control, authority, and communication. The sanctions which apply to the individual's conduct in his working role derive more from presumed community of interest with the rest of the working organization in the survival and growth of the firm, and less from a contractual relationship between himself and a non-personal corporation, represented for him by an immediate superior;

(g) omniscience no longer attributed to the head of the concern; knowledge about the technical or commercial nature of the here and now task may be located anywhere in the network; this location becoming the ad hoc center of control authority and communication.

(h) a lateral rather than a vertical direction of communication through the organization, communication between people of different rank, also, resembling consultation rather than command;

(i) a content of communication which consists of information and advice rather than instructions and decisions;

(j) commitment to the concern's tasks and to the "technological ethos" of material progress and expansion is more highly valued than loyalty and obedience;

(k) importance and prestige attach to affiliations and expertise valid in the industrial and technical and commercial milieux external to the firm (Tosi, 1975, pgs. 101 and 102).

In the second study, Organizations in Action, (1967) J.D. Thompson hypothesized a series of propositions about the formation and workings of organizations. By combining the literature from several fields, Thompson provided a framework for management theory. His overriding theme was that the rational actions taken by organizations to protect themselves from environmental impacts caused structure to emerge. According to Thompson, the protection of the technological core was the highest goal, because that was where the greatest amount of capital investment could be found. Thompson defined the varied technologies as:

long-linked: involving serial interdependence;

mediating: requiring operating in standardized ways and extensively with multiple clients or customers widely distributed in time and space; and,

intensive: a custom technology which depends on the availability of potentially necessary resources and their suitable application in as individual case of project (Thompson, 1967, p. 16.17).

Thompson noted that three major components are involved with organizational rationality: (1) input activities; (2) technological activities; and, (3) output activities. These are seen as interdependent, with input and output activities also interdependent with the environment. Therefore, to protect the technological core, input and output activities must be adjusted to correspond with changes in environmental conditions. Thompson provided two propositions based on this logic.

> Under norms of rationality, organizations seek to buffer environmental influences by surrounding their technical cores with input and output components.
>
> Under norms of rationality, organizations seek to smooth out input and output transactions (Thompson, 1967, pgs. 20 and 21).

The production process functions "as if" there is a steady stream of raw material being filtered into the system, and "as if" there is a steady stream of production flowing out of it. To assure this steady stream, the operations of the company may be buffered. To buffer inputs the organization can stockpile items that fluctuate, and outputs may be buffered by warehousing finished products. Both techniques will help to provide that steady flow of materials into and out of the organization. Smoothing may be accomplished by leveling out sales during periods of reduced volume,

e.g., utility companies often provide reduced evening or weekend rates. The establishment of these techniques require departments and specialists to deal with the implementation. Thus, structure is being created by rational reaction to the environment.

Some of Thompson's propositions relate the structure of organizations to the market. Instead of simply providing inputs, the organization may rationally form structure to interface with market diversification.

> Under norms of rationality, organizations facing heterogeneous task environments seek to identify homogeneous segments and establish structural units to deal with each (Thompson, 1967, pg. 70).

This is illustrated in the divisionalization of a large firm. An electronics firm may serve a wide variety of needs for the public, yet some of these are directly related because they are produced for household consumption, and others may be related because they are sold to manufacturers. The electronics firm may set up divisions to deal with the separate markets by establishing the following divisions: Small Appliances, Large Appliances, Lighting, Generators, Military Equipment, etc. Within a division, e.g., Small Appliances, a homogeneous grouping of products--toasters, mixers, and blenders--would be expected. The type of market and channels of distribution for products of like kind are similar, and the rational organization structures itself accordingly.

The findings and research above have contributed to the production of many contingency models. In the area of task design, Porter, Lawler, and Hackman (1975) presented a conceptual model depicting the congruence of structure, task design, and individual attitudes. The model combines the organic and mechanistic concepts of Burns and Stalker with the job-characteristics model of Hackman and Oldham (See Figure 1-1). They hypothesized a relationship of congruence among the individual, the job, and the structure.

The organic organization, combined with a high-growth-need individual performing a complex job, is described as "perfect congruence" by Porter, et al. (1975). If the individual does not have a desire to grow, but performs complex jobs in an organic organization, the individual will be overwhelmed by the job and its environment. When the job is routine in the organic structure, it lessens the possibility of congruence. Both high- and low-growth-need individuals will be dissatisfied with this situation. In the mechanistic structure, the best "fit" is a routine job and a low-growth-need individual. The high-growth-need person would feel restricted by the job and the company. The complex job in the mechanistic environment may prove interesting to the high-growth-need individual, but the structure restricts organizational growth. Porter, et al. (1975) predicts just the reverse for the low-growth

individual. In the presence of congruence, workers are motivated and satisfied, while incongruence causes dissatisfaction, absenteeism, and turnover.

Pierce, Dunham, and Blackburn (1979) tested the Porter, et al. model, but they altered the predictions for two reasons: (1) past evidence supports a positive relationship between job design and worker responses for both high- and low-growth-need individuals; and, (2) workers are more concerned with the job design than with the design of the social system. To examine these differences, Pierce, et al. (1979) questioned 398 employees in the home office of an insurance company. This sample represented 19 different work units at all levels. The structural measures were: complexity, centralization, formalization, stratification, and coordination. The results indicated that 6 units were mechanistic and the rest organic. In addition:

1. Three of the 12 centralization items loaded on the autonomy factor as well as the centralization factor when a factor analysis was performed.

2. Three main effects (social system structure, job design, and individual differences) were significant ($p < .05$).

3. The job-design-by-social-system-structure and job-design-by-growth-need-strength interactions were also significant.

4. The main and interaction effects accounted for 21 percent of the variance in employee response.

5. Job complexity and the job-complexity-by-growth-need interaction were the major predictors of motivation and satisfaction.

6. Porter, et al. (1975) predicted that congruence of the person, the job, and the structure was found to be true for the high-growth-need worker with a job perceived as motivating in an organic structure. The low-growth-need worker--routine job--mechanistic structure congruence did not prove to be satisfying.

The findings suggest a strong relationship between unit structure and job design and add significantly to the congruence hypotheses.

Nemiroff and Ford (1976) proposed a model similar to the Porter, et al. model, with the addition of individual bureaucratic orientation. Previous research led them to believe that an individual with high bureaucratic orientation desired to work in mechanistic organizations. Nemiroff and Ford predicted congruence when an individual has high-growth needs with a low bureaucratic orientation, holding a complex job in an organic organization. This same individual would have difficulty with a routine job in an organic organization, even though he/she would enjoy the company. In the mechanistic structure, this same individual would be constantly restrained by the bureaucracy, regardless of the job. Interestingly, congruence exists in a mechanistic organization ofr a high-growth individual, high in bureaucratic orientation and working at a complex job. The bureaucratic orientation reduces the possibility of congruence in an organic organization. The situation predicted as the worst possible alternative is for the high-growth-high-bureaucratic individual to be holding a routine job in an organic environment. The

low-growth worker is best suited for a routine job regardless of bureaucratic orientation. But congruence can exist for low-growth individuals with low bureaucratic orientations in organic organizations and for high bureaucratic orientations in mechanistic organizations.

Rousseau (1977) classified 19 subunits from 13 organizations into three technological categories (long-linked, intensive, or mediating). When the three groups were tested, significant differences were found in all five of the core job characteristics, employee satisfaction, and motivation. A discriminant analysis was performed post hoc to clearly identify the differences between the three technologies. Units with long-linked technology (10 units) were lower on skill variety, task significance, autonomy, dealing with others, and learning, as compared to the other two. The three units of mediating technology possessed high task identity and feedback from agents.

Rousseau (1978) also studied 19 departments from two electronics firms and a radio station. Sampling 271 employees, she investigated the effect of physical departmental structure on the task design variables. The results provide several interesting conclusions: (1) a significant relationship existed between most perceived job characteristics and job satisfaction; (2) perceived skill variety was strongly related to departmental characteristics; (3) overall departmental characteristics (technology, centralization, formalization, hierarchy) were related to the

perceived job characteristics; (4) job satisfaction and innovative behavior of employees were related to the departmental structure independent of the job perceptions; (5) employee status and tenure related strongly to job characteristics; and, (6) perceived job characteristics accounted for 43 percent of the common variance of individual attitudes and behavior.

Rousseau concluded that job characteristics mediate the relationship of department characteristics, individual attitudes, and behaviors. She suggests that for future research in the area, a perceptual measure of structure should be included to identify features of emergent structure. Rousseau believes that emergent or perceived structure develops by social interaction which may not necessarily be a function of the physical environment. Under circumstances of this nature, one might expect a disgruntled work group to feel more structure than what actually exists.

In conclusion, the contingency view of management has led to a search for situations and ideologies that "fit" together in some congruent fashion. Although few studies have investigated the fit between the job, the individual, and the organization, a review of the literature illustrates the need for more research in this area. Pierce, et al. (1979) and Rousseau (1978) clearly show a link exists between the job and physical structure, but further investigation is needed to complete the link between the

worker and the environment. Rousseau suggested that due to social interaction, perceived structure may be more beneficial than physical structure to identify the job-by-worker-by-structure interaction. This is because peer group pressure may add or delete structure from the existing physical structure via a discussion of the likes and dislikes of the group.

Pierce, Dunham, and Blackburn (1979) used one perceptual measure of structure (centralization) which proved to be associated with autonomy. This shows that one area of the core job dimension is affected by one measure of perceived structure. Given this information and Rousseau's comments, it is apparent that perceived structure rather than physical structure should be used to find the best "fit." Using structure is quite different from previous studies. The works of Pierce, et al. (1975) and Rousseau (1978) could have been related to prior works in that they identify physical variables.

The current study differs in that the physical descriptions provided in the previous studies do not always reflect the structure perceived by the employee (Sathe, 1978). Thus, those works that did not directly address the organization's structure will not be reviewed. The strength of this study lies in the analysis of the perceived structure and its relationship to both the job and the worker.

CHAPTER III

METHODOLOGY

Research Design

The three broad categories of design that may be used to investigate an area are: pre-experimental designs; true experimental designs; and, quasi-experimental designs (Campbell and Stanley, 1963). Only one design type is feasible in the present study: the use of a pre-established setting and pre-established groupings of individuals. These settings and groupings take the form of organizations and departments within organizations. Pre-experimental designs are a "one-shot" examination of a situation. Because of the pre-established groupings that exist in the work setting, it is impossible to conduct an experiment in which the subjects are randomly assigned to "treatment groups." A quasi-experimental design, which allows the use of a nonrandom sample, normally entails some control over experimental stimuli. The research undertaken here did not manipulate the independent variable. Thus, the quasi-experimental design is eliminated as a potential design strategy.

Randomization is an important aspect of research design for two reasons. First, randomization of subjects assures that any difference detected between groups will be due to

the treatment effect. This reduces the possibility of having found an effect between groups because of some other variable common to both groups. This process forces any confounding variable to be distributed to all groups in an equal fashion. The second reason for randomizing is generalizability. If subjects are chosen randomly from a particular population, the overall results should be the same for the group regardless of who was chosen to be in the sample.

Generalizability is of particular importance when the purpose of the study is to build on a model that is to apply to several different situations. Cornfield and Tukey (1956, pgs. 912 and 913) present the following argument with regard to randomization and generalizability:

> In almost any practical situation where analytical statistics is applied, the inference from the observation to the real conclusion has two parts, only the first of which is statistical. A genetic experiment on Drosophilia will usually involve flies of a certain race of a certain species. The statistically based conclusion cannot extend beyond this race, yet the geneticist will usually, and often wisely, extend the conclusion to (a) the whole species, (b) all Drosphilia, or (c) a larger group of insects. This wider extension may be implicit or explicit, but is almost always present. If we take the simile of the bridge crossing a river by way of an island, there is a statistical span from the near bank to the island, and a subject-matter span from the island to the far bank.

The logic of the argument illustrates that a statistically-based study may be generalized beyond a specific group but that an accurate description of the sample is necessary so that others that wish to generalize from or reproduce

the study will know the appropriate population. Because of the importance of generalizability, the sample in this study is described in detail in a latter section of this chapter.

According to Campbell and Stanley,

> Internal validity is the basic minimum without which an experiment is uninterpretable; did in fact the experimental treatments make a difference in this specific experimental instance? (1963, p. 5)

They presented eight possible extraneous variables that, when not controlled, may produce an effect confounded with the experimental stimulus.

> History, the specific events occurring between the first and second measurement in addition to the experimental variables.
>
> Maturation, processes within the respondents operating as a function of the passage of time per se (not specific to the particular events), including growing older, growing hungrier, growing more tired, and the like.
>
> Testing, the effects of taking a test upon the scores of a second testing.
>
> Instrumentation, in which changes in the calibration of a measuring instrument or changes in the observers of scorers used may produce changes in the obtained measurements.
>
> Statistical regression, operating where groups have been selected on the basis of their extreme scores.
>
> Biases resulting in differential selection of respondents for the comparison groups.
>
> Experimental mortality, or differential loss of respondents for the comparison groups.

> Selection-maturation interaction, etc., which in certain of the multiple-group quasi-experimental designs is confounded with, i.e., might be mistaken for, the effect of the experimental variable.

The question of external validity is a question of generalizability. "To what populations, settings, treatment variables, and measurement variables can this effect be generalized?" (Campbell and Stanley, 1963, p. 5) The four factors that may jeopardize external validity of representativeness of the sample are:

> The reactive or interaction effect of testing, in which a pretest might increase or decrease the respondent's sensitivity or responsiveness to the experimental variable and thus make the results obtained for a pretested population unrepresentative of the effects of the experimental variable for the unpretested universe from which the experimental respondents were selected.
>
> The interaction effects of selection biases and the experimental variable.
>
> Reactive effects of experimental arrangements, which would preclude generalization about the effect of the experimental variable upon persons being exposed to it in nonexperimental settings.
>
> Multiple-treatment interference, likely to occur whenever multiple treatments are applied to the same respondents, because the effects of prior treatments are not usually erasable (Campbell and Stanley, 1963, pgs. 5 and 6).

Careful consideration must be given to all twelve of the aforementioned factors to protect the study from variables that may affect external or internal validity.

The "Static-Group Comparison" is the design most like the one to be used in this research. This design is characterized by the comparison of two groups: Group O, which has experienced the treatment; and, Group X, which

has not experience the treatment. This study will have more than one group, each of which will be subject to a different level of treatment. History, testing, instrumentation, and regression normally are not a threat to validity for the static-groups comparison design. Selection, mortality, the interaction of the two, and the interaction of selection by treatment are considered weaknesses in the design. The first three weaknesses concern with internal validity: the last deals with external validity.

External validity will be minimized by a precise description of the sample, facilitating the use of the Cornfield-Tukey "Bridge Argument." Thus, the sample may be clearly identified by those that may wish to replicate the study or generalize to a similar population.

Internal validity is controlled in a manner that will allow for the experiment to be conducted with few complications. Although the selection process is predetermined by the organizations studied, the sampling within the company may be accomplished randomly. This study was not performed over a period of time, so little emphasis is placed on mortality; any mortality that may have existed is considered to be due to either employees self-selecting themselves out, or being asked to leave in accordance to some preestablished method developed by the company. Having accounted for selection and mortality, it is unlikely that the interaction of the two will exist in this study. The selection by treatment interaction for this design may,

however, be a concern. Because both structure and control may be organizationally bound, special effort will be made to identify any confounding of the measures with the organizations. Should such confounding exist, it may then become necessary to analyze the data using the organization, rather than control and structure, as the independent variable.

This study will have hypotheses testing higher-order interactions. The more complex is the hypothesized interaction between two nonequivalent groups, the more a causal interpretation tends to be facilitated (Cook and Campbell, 1976). Causality provides a solid base to build theory for future similar research endeavors.

The Sample

The sample was drawn from two work organizations in different industries. One is a 77-bed hospital in a small community in the midwest. The hospital has 180 full-time employees, 63 of whom were randomly selected to complete the questionnaire. The employees sampled were a stratified group from the following departments: administrative, nursing, medical records, dietary, radiology, housekeeping, purchasing, pharmacy, pathology, pediatrics, respiratory therapy, operating room, anaesthesia, maintenance, emergency room, and medical/surgical. Depending on the size of the department, the number of employees ranged from one to seven. Table 3-1 provides more explicit information about the sample.

The second organization is a medium-sized manufacturing firm located in a midwestern rural community. The organization employs approximately 600 employees, 185 of whom were randomly selected to complete the questionnaire. Again, there is a stratified sample representing all levels of the organization, every department, and all shifts. In total, 28 departments were used in the study: machine shop, welding, quality control, tool and die, farm assembly, paint, fabrication, personnel, sales, data processing, accounting, cost accounting, engineering, product engineering, management systems, traffic, purchasing, inventory control, administration, safety, maintenance, manufacturing, assembly service, product support, shipping and receiving, records, and training.

Statistically significant differences between the two organizations were found for: management level, sex, age, and education. Management level differed between the two because the manufacturing firm has a greater number of non-managerial people. The manufacturing firm requires more unskilled and semi-skilled workers at the lowest level because of the nature of the product. Sex differences occur between the two because males have in the past considered machine work over patient care. Age and education may be somewhat related in that young people who do not go to school would work in an organization that requires skills and little or no formal education. The hospital would hire more highly educated people that are older.

TABLE 3-1

SAMPLE DESCRIPTION

	Hospital		Manufacturing Firm	
	Frequency	%	Frequency	%
Sample	62		185	
Shift Distribution				
1	46	74	121	65
2	8	13	32	17.5
3	8	13	32	17.5
Job Categories	10		31	
Management level**				
Non	31	50	134	72
Middle	23	37	42	23
Upper	7	11	8	4
Blanks	1	2	1	1
Sex**				
Male	12	19	134	72
Female	49	79	49	26
Blanks	1	2	2	2
Marital Status				
Married	39	63	128	69
Single	12	19	43	23
Divorced	10	16	14	8
Blanks	1	2	0	0
	Mean		Mean	
Age*	33		27	
Education*	two-year college degree		some college	

*Mean differences are significantly different.

**Distributions are significantly different.

Hypotheses

The total study may best be conceptualized in an analysis-of-variance framework. The task itself may be perceived as having higher motivational potential (non-routine jobs) or low motivating potential (routine jobs). The individual is either high-growth-need strength or low-growth-need strength, and the structure may be perceived as high or low. The dependent variable took the form of global work satisfaction as outlined in the job-characteristics model (Hackman and Oldham, 1975). The letters in each of the cells in Figure 3-1 correspond to those in Table 1-4 as can be seen below:

TABLE 1-4

RANK-ORDERED PREDICTIONS OF SATISFACTION

	Situation			Person-Job Match (yes-no)	Person-Structure Match (yes-no)	Job-Structure Match (yes-no)	Rank-ordered predictions of satisfaction
	Structure	Individual	Job				
A	high	high	high	yes	no	no	2
B	high	high	low	no	no	yes	8
C	high	low	high	no	yes	no	4
D	high	low	low	yes	yes	yes	6
E	low	high	high	yes	yes	yes	1
F	low	high	low	no	yes	no	5
G	low	low	high	no	no	yes	3
H	low	low	low	yes	no	no	7

ANALYSIS OF VARIANCE PRESENTATION
OF THE VARIABLES

		Structure or Control			
		High		Low	
		Task (MPS)		Task (MPS)	
		High	Low	High	Low
Growth Need	High	A	B	E	F
	Low	C	D	G	H

FIGURE 3-1

Other types of testing will be necessary to find those particular areas of the model in which control and structure play an influential role. The core dimensions of autonomy and feedback, for example, may yield less than satisfactory results when the individual employee perceives him/herself to be working under a high degree of control and/or structure.

Figure 3-1 provides for further discussion of each of the cells of the analysis-of-variance model. Of those people that view the organization as being high in structure (Cells A, B, C, and D), the workers that fall into cell D would be expected to be the most satisfied. The routine job linked with a structured environment is a good fit, because the individual has no particular desire to grow in the work place. Cells A, B, and C all have two mismatches between the three variables. Cell A has a very challenging job and

an individual that desires to grow at work, but the structure or control is such that it restrains growth and voids the job of its fullest autonomy. Cell B depicts the classic worker who has a desire to move ahead in the work place, but finds him/herself restrained by the job and the bureaucracy. Those in Cell C find themselves in a structure well suited to their own personalities, but their jobs have a great deal of unwanted latitude, and the jobs do not fit in with the rest of the work place.

When the structure and/or control are seen as being less inhibiting, cell E workers would find the greatest contentment with work. This cell represents the perfect match for low-structured organization because the job and the individual are creative and moving. The workers placed in cell F can become greatly frustrated by the jobs in that the latter do not fulfill the worker's interests, and are very routine, given the lack of organizational restrictions. The people in cell G have low-growth need and, therefore, have no desire to work at rewarding jobs. Cell H represents that segment of the population who desire more routine than is provided because of the lack of structure or control.

Cells D and E are opposites, but they both should afford the employee optimal satisfaction. In the first case, the individual has no desire to grow and has a routine job in a structured organization. These fulfill all the requirements for a perfect match. In the latter case, E, the worker is motivated by the job and the freedom because

of his/her individual desire to grow.

H_1: Workers that have jobs perceived to be high on core job dimensions will feel more job satisfaction than workers that have jobs perceived to be low on core job dimensions.

The job is the most significant variable for indicating employee satisfaction. Hackman, Oldham, Janson, and Purdy (1975) found that people with complex jobs are more motivated and satisfied than people scoring low on the core job dimensions. The relationship between the task and satisfaction is moderated by growth-need strength (Hackman and Oldham, 1976; Oldham, 1976; Sims and Szilagyi, 1976; and, Wanous, 1974).

H_2: For individuals that perceive the job to be high on core job dimensions, those individuals with high growth-needs will be more satisfied with the job than workers with low growth-needs.

Previous research led Nemiroff and Ford (1976) to conclude that a match between the person and the structure results in increased satisfaction.

H_3: For individuals that perceive the job to be low on core job dimensions, those individuals with growth-needs congruent with perceived structure will be more satisfied with the job than those that perceive the two as incongruent.

Structure has been found to relate negatively to innovative behaviors, climate, and satisfaction, and positively to tension (Child and Ellis, 1973; Inkson, Hickson, and Pugh, 1968; Payne, Pheysey, and Pugh, 1971; Pugh, et al., 1963; and, Vrendenburgh and Alutto, 1977).

H_4: When controlling for individual differences and perceived job characteristics, workers that perceive the structure to be low will be more satisfied with the job than workers that perceive the structure to be high.

The Venn diagrams (Figure 3-2) conceptualize the hypotheses.

VENN DIAGRAMS OF THE HYPOTHESES

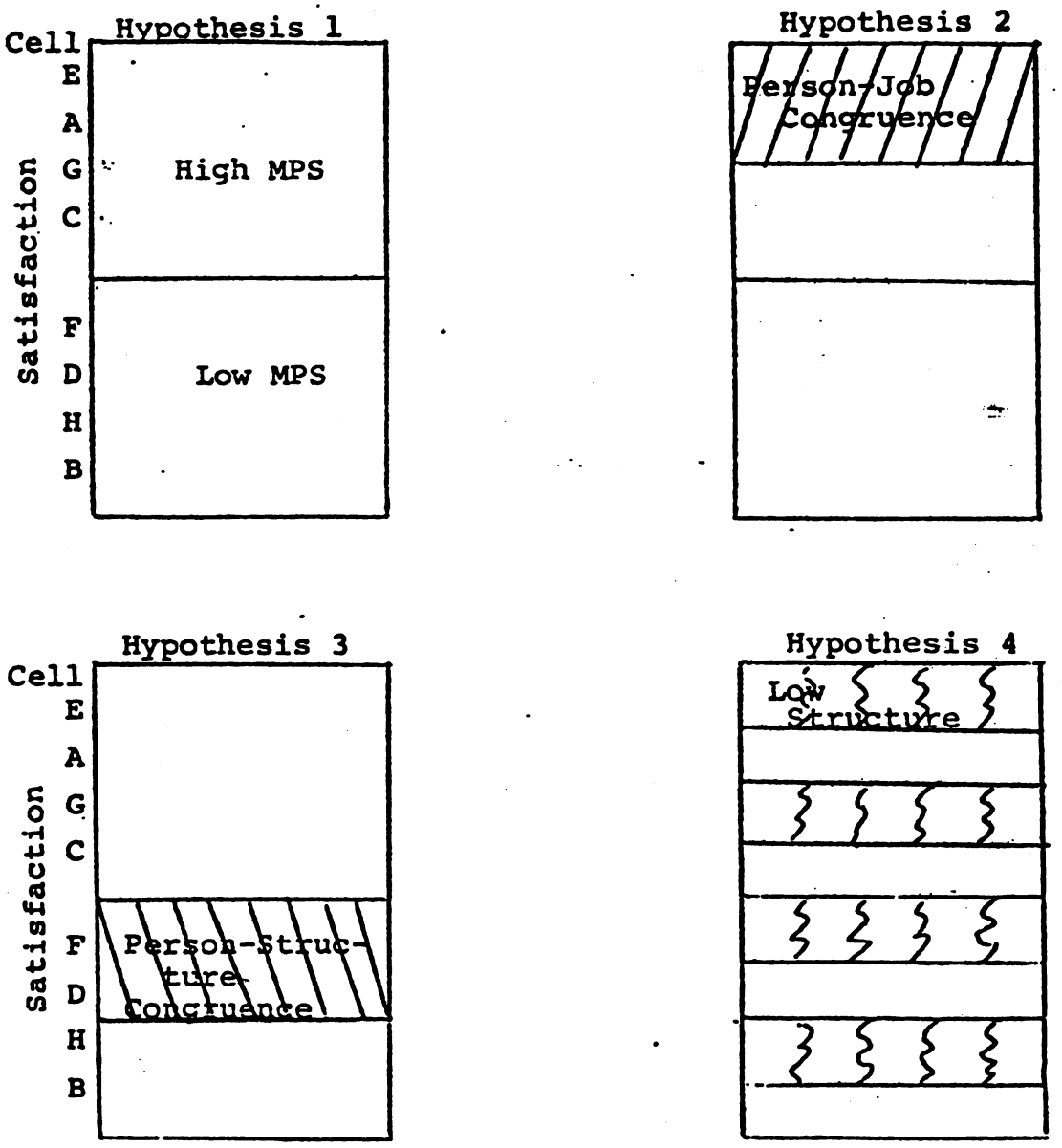

FIGURE 3-2

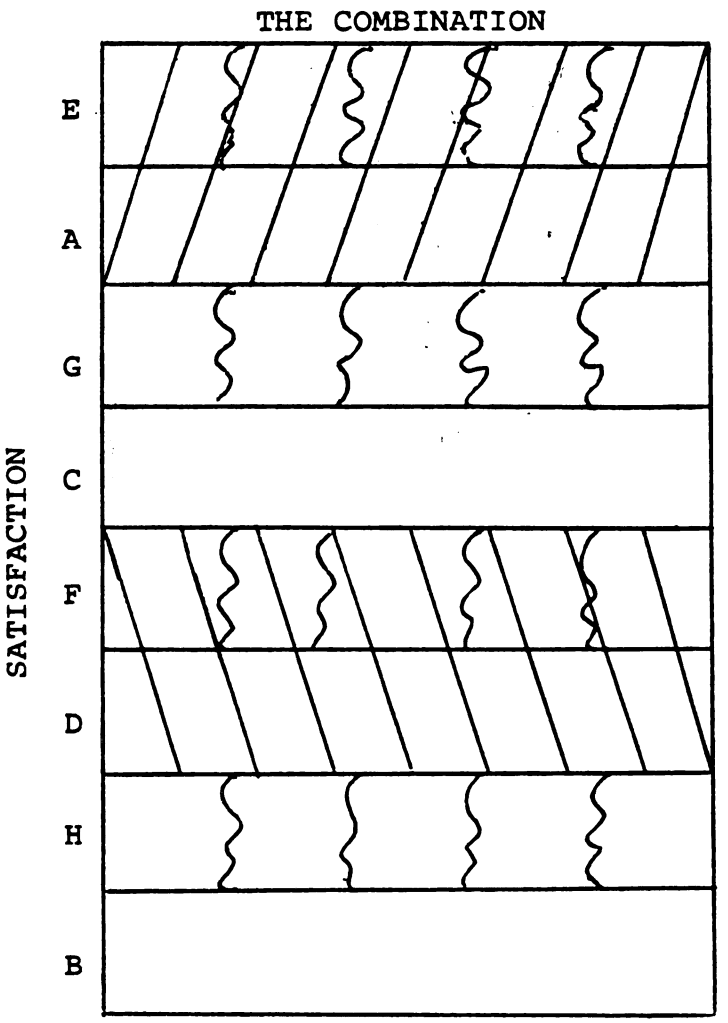

FIGURE 3-2 (continued)

Cells E, A, G, and C from Figure 3-1 represent motivating jobs and appear in the top half of the diagram in accordance with hypothesis 1. Of the four combinations involving jobs with a high motivating-potential score, situations E and A represent a match between the person and the job (high growth-needs and high MPS). Hypothesis 2 predicts these to be the most satisfying of the motivating jobs. Utilizing hypothesis four, the motivating jobs may be rank ordered from highest to lowest as: E, A, G, and C. The routine jobs are differentiated on degree of satisfaction by hypothesis three. Cells F and D illustrate the person-structure match (high structure-low-growth-need person and low structure-high-growth-need person) and will be ranked above cells H and B. Cells F and H are low in structure; therefore, the final rank order for routine jobs is: F, D, H, and B.

Figure 3-3 is provided as a tool for the purpose of assessing the level of job satisfaction that may be expected given a job and an individual. This model starts by asking the question: Does the worker perceive the job to be motivating? In accordance with the first hypothesis, it is expected that the jobs perceived as motivating will be more satisfying. If the worker perceives the job as motivating, then the focus rests with the growth-need strength of the worker. The high-growth workers are identified by question B as receiving greater satisfaction than the low-growth-need counterpart. If the job is perceived as low

in motivating potential, question C differentiates those that are congruent with the perceived structure from those that are incongruent. In this instance congruence between the person and the perceived structure will create the higher degree of satisfaction. Question D is applied to all four groups in order to differentiate on perceived structure. The worker that perceives the structure as low is expected to be more satisfied than those that perceive the structure as rigid.

MODEL OF PERCEIVED JOB CHARACTERISTICS,
GROWTH-NEED STRENGTH, AND PERCEIVED STRUCTURE

A. Does the worker perceive the job to be motivating?

B. Does congruence exist between the person's growth-needs and the perceived job characteristics?

C. Does congruence exist between the person's growth-needs and the perceived organization structure?

D. Does the worker perceive the structure to be lower than other workers?

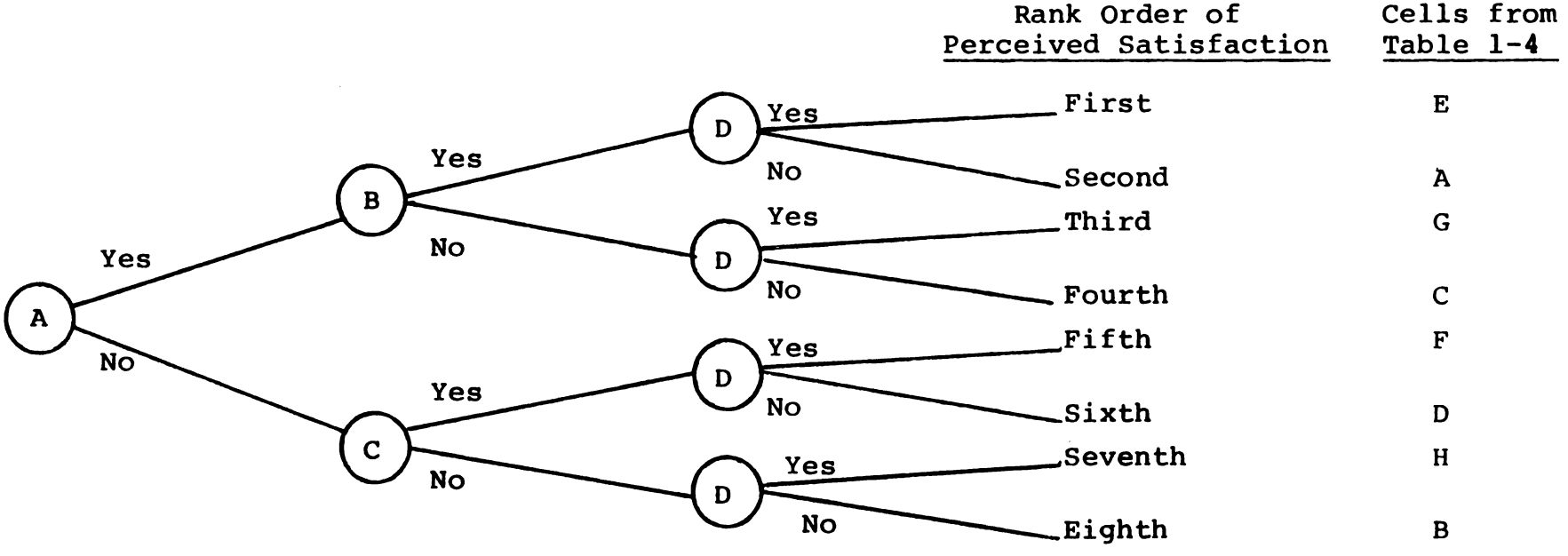

FIGURE 3-3

The Measurement Instruments

Task Design. The Hackman and Oldham (1974) Job Diagnostic Survey (JDS) was used for this study. The JDS measures three areas: (1) core job dimensions; (2) psychological states; and, (3) personal and work outcomes. The reliabilities reported by Hackman and Oldham are presented in Table 3-2, with a breakdown of all the subscales listed under the three main areas above.

Structure. Emergent (perceived) structure included three dimensions: (1) hierarchy of authority; (2) division of labor; and, (3) rules and procedures. A review of the literature revealed Hall's (1962) measure of structure as being used most often. In 1971 Duncan revised Hall's scale of perceived structure,

TABLE 3-2

RELIABILITIES OF THE JDS SCALES

	Hackman and Oldham (1974) Reliabilities	Present Reliabilities
JOB DIMENSIONS		
Skill Variety	.71	.73
Task Identity	.59	.60
Task Significance	.66	.70
Autonomy	.66	.77
Feedback from the Job Itself	.71	.73
Feedback from Agents	.78	.76
Dealing with Others	.59	.61
PSYCHOLOGICAL STATES		
Experienced Meaningfulness of the Work	.74	.75
Experienced Responsibility for the Work	.72	.79
Knowledge of Results	.76	.74
AFFECTIVE RESPONSES TO THE JOB		
General Satisfaction	.76	.80
Internal Work Motivation	.76	.76
Specific Satisfactions:		
Job Security	A	.75
Pay	A	.91
Social	.56	.58
Supervisory	.79	.85
Growth	.84	.79
GROWTH-NEED STRENGTH		
"Would-like" Format	.88	.88
Job-Choice Format	.71	.76

A--These scales were added to the JDS after the Hackman and Oldham (1974) publication.

and has since taken its place. Most recently, Sathe (1978, p. 231) again revised the scale in an attempt to strengthen Duncan's work. Sathe states two major reasons for the further revisions:

> First, some of his (Duncan) scales have items containing "can" (allowable or potential behavior), whereas others use "do" (actual behaviors). ... Since the present study attempted to tap the degree of structure actually experienced by individuals in the organization, the items in Duncan's questionnaire were formulated in behavioral terms ("do you," not "can you"). Second, his division of labor and rules and procedures scales had marginal reliabilities.

The reliability for Hierarchy of Authority decreased slightly, while Division of Labor and Rules and Procedures increased substantially.

Control

Although the structural measures include a dimension of control, more specific dimensions of control will be considered. Two types of control reported by McMahon and Ivancevich (1976) can be found by asking respondents: "How much say or influence do each of the three levels of the organization (upper management, middle management, and nonmanagement) have in determining the work goals in the departments in the plant. The response is on a five-point scale ranging from "usually a great deal to say" (1) to "usually no say at all" (5). Because both organizations had only two management levels, first-line supervisors were asked to respond as middle management. The two control dimensions are:

(1) Total control: The sum of the three points (top, middle, nonmanagement) that make up the control curve.

(2) Distribution of Control Indicator: Calculated by fitting a least-squares regression line to the three points that comprise the curve (McMahon and Ivancevich, 1976, pgs. 73 and 74).

Ouchi (1977 and 1978) identified two types of controls that exist in the work place: (1) behavior control and (2) output control. Behavior control is a function of more frequent contact between supervisors and subordinates. Ouchi states that the presence of the supervisor shapes subordinate behavior to reflect the behavior desired by the superior. Subordinates feel their behavior is controlled as a result of this form of supervision.

The second form of control is output control. Under this condition the control placed upon the worker comes in the form of units produced and quality of units. The questions developed by Ouchi (1978) were used for this research.

Other Variables

Propensity to leave was measured as a dependent variable to replace turnover. The scale was developed by Vroom (1964) and was used primarily to investigate its relationship to turnover. Because this study deals with perceptions of the workplace, it seems appropriate to tap perceptions of future work arrangements.

Finally, demographic information was collected on a self-report basis. The entire questionnaire appears as Appendix A.

Data Collection Method

Data were first collected at the hospital. All of the management people were brought together for an explanation of the study, the instrument, and the results reporting technique. These people were then asked to participate by filling out the questionnaire and by urging subordinates to participate. The management group were asked to read and initial a consent form approved by Michigan State University (see Appendix B). Two days later subordinates were asked to participate in the study. At 7 a.m. the third-shift employees were assembled as they left work and were asked to participate in the study. These workers were given a verbal explanation of the study and consent forms to be initialed. The questionnaire was administered, taking between 20 to 50 minutes to complete. The remainder of that day was spent by asking workers selected at random to participate in the study. When 8 to 12 participants were found, they were assembled together and given the questionnaire. This process was continued until the first and second shift had been tested.

The second data collection took place in the manufacturing firm. On the first day of data collection, the top management people were assembled and given an explanation

of the study. It was explained that the questionnaire would be administered at random on a voluntary basis. A brief handout that explained the questionnaire and its uses was given to them (see Appendix C) and its uses. These people were given consent forms to read and initial and were asked to fill out the questionnaire. The next group that was given an explanation of the study was the union officials. They were given the questionnaire and the consent form in order to gain their approval. After the union approved the study, workers were sought after to complete the questionnaires. A brief description of the questionnaire and the study were distributed to employees selected at random (see Appendix C), and they were asked to participate in the study. Groups of 10 to 15 were brought together, given an explanation of the study, a consent form to read and initial, and a questionnaire to fill out.

Conference rooms and lunch rooms throughout the plant were used to assemble the groups. On the first after the office and clerical people were sampled until they left at 5 p.m. Second-shift line workers were sampled between 5 and 9 p.m. At midnight the line workers from the third shift were administered questionnaires. On the following morning the first-shift line workers were sampled. Of the 190 employees approached, 185 participated in the study.

CHAPTER IV

RESULTS

SCALE RELIABILITIES AND VALIDITY

The frequency distributions, means, and variances for all the scales are presented in Appendix D. These statistics are reported for the total sample and both subsamples. Below is a summary of the scale reliabilities and validities for the three segments of the questionnaire: (1) Job Diagnostic Survey; (2) Structural variables; and, (3) Control variables.

Job Diagnostic Survey. Table 4-1 shows the correlation matrix among scales with the scale reliabilities, standardized alphas, in the diagonal. The reliabilities for the job ranged from .58 to .91. The reliabilities calculated here were similar to those presented by Hackman and Oldham (1974) (See Table 3-1). Similarly, the interscale correlations in Table 4-1 are comparable to those presented by Hackman and Oldham (1974).

The correlations between the core job dimensions ranged from .50 to .15 (See Table 4-1). The majority of the correlations between scales were moderately low, and all intrascale reliabilities exceeded the interscale correlations. This is evidence in support of the discriminant validity of the scales.

The psychological states were found to have the following reliabilities: (1) meaningfulness, .75; (2) responsibility for work outcomes, .79; and, (3) knowledge of results, .74. The correlation between responsibility and meaningfulness was .72 as shown in Table 4-1. In each case the correlation between the psychological states were exceeded by the reliability of each of the scales.

The personal and work outcome scales yielded reliabilities ranging from .58 for social satisfaction to .91 for pay satisfaction as shown in Table 4-1. The correlations between these scales were moderate to strong, with most of the correlations around .50. Scale reliabilities in each instance exceeded the correlations among the scales.

Growth-need strength was measured with two formats: (1) "would like" and (2) job choice. The correlation adjusted for attentuation was .49 and produced reliabilities of .88 for "would like" and .76 for job choice.

Structure. Structure was measured with the elements of: (1) hierarchy of authority; (2) division of labor; (3) rules and procedures; and, (4) a composite of all three. The reliabilities shown in Table 4-1 for these four were .55, .60, .71, and .75 respectively. These reliabilities are similar to those reported by Sathe (1978) as were the interscale correlations. Each of the individual subscales (Hierarchy of Authority, Division of Labor, and Rules and Procedures) produced correlations with the composite

TABLE 4-1

CORRELATION MATRIX OF ALL THE VARIABLES

N = 247

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1 Organization	100																														
2 Structure	-26	75																													
3 Hierarchy of Authority	-16	76	65																												
4 Division of Labor	-18	76	29	60																											
5 Rules and Procedures	-27	79	41	47	71																										
6 Education	-08	-20	-18	-14	-15	100																									
7 Level	-21	-30	-22	-31	-13	38	100																								
8 Skill Variety	-11	-23	-21	-22	-09	42	42	73																							
9 Task Identity	-21	-01	01	01	-04	17	06	23	60																						
10 Task Significance	-16	01	-03	-01	09	26	30	50	21	70																					
11 Autonomy	-08	-31	-27	-29	-13	34	37	46	26	39	77																				
12 Feedback from job	-11	09	05	03	13	09	13	25	25	38	30	73																			
13 Feedback from agents	-14	14	15	01	17	16	11	26	15	23	29	33	76																		
14 Dealing with others	-16	-02	07	-12	-00	38	33	49	16	49	31	27	25	61																	
15 Knowledge of Results	-07	15	12	11	11	-04	-05	07	23	27	23	53	36	08	74																
16 Responsibility	-24	10	16	-06	12	27	25	36	34	39	39	41	32	43	38	79															
17 Meaningfulness	-29	05	10	-05	-06	27	27	47	32	55	44	44	32	48	45	72	75														
18 Global Satisfaction	-15	11	16	-06	15	14	12	25	26	33	42	41	38	32	51	61	67	80													
19 Motivation	-22	10	15	-09	17	24	20	40	26	47	33	40	34	43	33	72	76	56	76												
20 Pay Satisfaction	-06	09	17	-04	06	13	16	-03	13	02	20	15	31	20	24	32	26	47	21	91											
21 Security Satisfaction	-20	15	21	00	14	05	08	12	24	21	30	30	32	18	38	53	46	58	43	54	78										
22 Social Satisfaction	-15	10	18	-07	12	10	15	17	17	23	31	29	32	32	36	49	48	56	48	25	45	58									
23 Supervisor Satisfaction	-13	17	24	-02	16	12	12	13	15	27	35	37	55	23	48	49	48	65	45	52	54	52	85								
24 Propensity to Leave	18	-11	-14	07	-21	-09	-19	-15	-11	-21	-24	-26	-24	-20	-19	-34	-34	-44	-28	-24	-28	-27	-38	57							
25 Growth Satisfaction	-17	01	12	-15	06	24	29	42	26	44	55	41	55	41	47	63	47	70	57	46	57	55	72	-36	79						
26 Would-like Growth	01	-07	-14	-02	00	37	15	40	13	30	26	20	24	26	20	33	30	14	44	-03	12	21	15	02	18	88					
27 Job-Choice Growth	-03	-28	-21	-23	-19	43	36	40	06	16	26	07	23	25	06	20	19	03	14	12	10	02	05	-06	13	40	76				
28 Motivating-Potential Score	-15	-20	-20	-20	-04	33	37	59	44	57	80	70	38	42	40	49	57	50	44	18	36	35	43	-31	61	33	28	83			
29 Total Control	11	-16	-13	-11	-12	-04	-00	-09	-10	-14	-12	-15	-22	-17	-05	-13	-15	-29	-11	-12	-18	-08	-17	22	-21	-03	01	-15	-14		
30 Behavior Control	12	20	19	10	18	-16	-23	-12	-12	-03	-16	02	09	-14	04	-11	-09	-13	-05	-08	-09	-08	05	01	-11	-00	-05	-12	16	04	
31 Output Control	05	14	15	02	14	-11	03	-04	-09	02	-03	07	05	-02	09	07	07	02	05	11	14	01	08	-06	10	-07	-05	-03	17	17	40

$.14 > R > .10$, $p < .05$; $R > .14$, $p < .01$

scale that exceeded the reliability of the composite scale, thus questionning the discriminate validity. The correlations between the subscales were moderate to low, and none of the interscale correlations exceeded the reliabilities for the scales.

Control. As shown in Table 4-1 the reliabilities for the control measures were: (1) total control, -.14; (2) behavior control, .04; and, (3) output control, .40. These scales were not used in any of the analysis because of the reliability problems. No other published reliabilities were available on these scales. Therefore, no comparative analysis could be made.

DIFFERENCES BETWEEN ORGANIZATIONS

Appendix D shows the t-tests between organizations for each of the scales. The t-tests indicate that several differences exist between means on the scales. In particular, the structural variables and the satisfaction variables had higher means than the means for the manufacturing firm. With the large number of rules and procedures that must be adhered to in the hospital, one would expect the structural differences to exist. Because of the differences between the two organizations, steps were taken to eliminate possible confounding. All scales that were used in this study were adjusted by adding a constant to each individual's score. By adding a constant, the variance and distribution of the item is not altered,

but the mean is increased by the constant added to equalize the subgroup means. This eliminates mean differences.

A further study of Tables 31 to 37 in Appendix D reveals that very few variables differ significantly when the variances are tested. Specifically, "would-like" growth is the only variable that will be used in this study that differs significantly in variance between the two organizations. The difference in educational level (see Table 3-1) between the two organizations may account for the variance differentiation in the "would-like" growth variable. The higher-educated individuals in the hospital may have stronger desires to grow at work. Further, there are some very low-level employees in the hospital who may have no desire at all for more growth at work. Therefore, it seemed appropriate to combine the two subsamples.

Table 4-2 shows the correlation matrix for each of the individual subgroups. In the top half of the matrix the correlations for the manufacturing firm are reported. The lower half of the matrix contains the correlations for the hospital. The scale reliabilities based on the entire sample are in the diagonal. Fisher R to Z transformations were performed, and the Z's were tested for significant differences. The correlations that have asterisks are significantly different ($p \leq .05$) between the two organizations. The majority of these differences were due to task significance and knowledge of results. The hospital

employees that perceived the job as being high on task significance also felt the job was meaningful. This would be expected with the type of work they perform in that they deal with people's lives. These same employees receive a good deal of feedback from patients, increasing the knowledge of results at work.

TABLE 4-2

CORRELATION MATRIX OF THE TWO SUBSAMPLES
MANUFACTURING FIRM IN THE TOP HALF, HOSPITAL IN BOTTOM HALF,
RELIABILITY COEFFICIENTS IN THE DIAGONAL

Manufacturing Firm N = 185
Hospital N = 62

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1 Organization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 Structure	-	75	76	75	78	-24	-37	-29	-09	-08	-37	03	12	-05	12	00	-06	03	03	07	12	08	12	-03	-06	-10	-32	-27	-12	23	16
3 Hierarchy of Authority	-	74	65	28	41	-17	-26	-23	-03	-11	-27	01	17	07	10	14	05	14	14	18	20	22	27	-15	14	-17	-23	-22	-10	17	19
4 Division of Labor	-	74	23	60	45	-20	-38	-27	-07	-06	-35	01	00	-15	10	-17	-15	-12	-16	-07	-01	-08	-08	16	-25	-01	-25	-25	-10	13	02
5 Rules and Procedures	-	74	33	42	71	-18	-20	-15	-11	11	-22	06	18	-05	06	02	-06	03*	18	04	08	03	07	07*	-03	-04	-24	-14	-06	23	14
6 Education	-	-20	-25	-04	-15	100	36	38	18	23	33	13	19	36	-06	24	23	13	23	04	03	08	13	-23	21	35	43	33	-09	-14	-10
7 Level	-	-38	-29	-33	-21	42	100	40	06	33	33	21	09	35	-01	32	31	16	25	16	02	15	14	-23	33	15	35	37	-00	-24	-02
8 Skill Variety	-	-22	-24	-18	-05	51	52	73	24	48	46	32	21	45	04	39	46	19	40	-06	10	12	06	-20	38	42	40	60	-12	-14	-07
9 Task Identity	-	01	-02	11	-08	09	-12	12	60	20	31	22	16	18	19	32	28	27	24	22	24	16	13	-13	26	13	08	45	-16*	-15	-10
10 Task Significance	-	13	09	01	19	32	17	53	09	70	37	38	15	47	17	35	47*	23*	39*	-08	10	14	19	-21	35*	27	14	56	-14	-01	02
11 Autonomy	-	-26	-36	-18	03	36	43	46	01	41	77	34	24	32	23	44*	48	43	35	17	28	30	32	-24	53	23	21	81	-16	-15	-06
12 Feedback from job	-	16	11	-01	28	-08	-17	-01	27	32	21	73	35	29	54	41	47	40	37	18	27	29	40	-28	46	20	08	72	-20*	03	-08
13 Feedback from agents	-	06	00	-08	25	05	06	36	01	40	40	22	76	26	36	33	32	35	34	34	29	23	52	-19	45	23	23	34	-28	07	-06
14 Dealing with others	-	-11	-02	-19	-03	40	18	58	-06	51	25	12	14	61	06	41	43	28	37	19	15	27	21	-27	38	24	25	44	-18	-13	01
15 Knowledge of Results	-	19	15	07	22	03	-19	14	34	55	22	50	36	11	74	32	39*	45*	23*	25	33	27	48	-21	40	13	07	38	-10	-06	09
16 Responsibility	-	15	08	07	21	31	-08	22	26	43	18*	34	18	39	54	79	69	60	68	31	52	43	51	-39	66	23	24	54	-17*	-10	09
17 Meaningfulness	-	09	08	03	11	33	01	46	25	74*	32	32	22	54	63*	74	75	65	73	22	40	43	48	-39	65	25	20	60	-18	-08	09
18 Global Satisfaction	-	22	12	02	40*	11	-08	36	13	59*	36	38	43	40	68*	58	71	80	53	50	60	52	64	-44	71	07	01	49	-30*	-19*	-03
19 Motivation	-	10	09	-05	20	24	-06	33	15	62*	23	44	24	55	60*	79	80	58	76	17	37	41	48	-36	56	36	15	46	-12	-04	08
20 Pay Satisfaction	-	08	09	02	07	-01	13	05	-27	32	27	03	18	24	18	33	37	35	28	91	57	25	55	-24	45	-10	14	18	-18	-07	05
21 Security Satisfaction	-	07	13	-11	15	07	10	10	09	54	34	34	37	17	53	45	52	41	55	47	78	44	53	-29	53	02	10	33	-22	-08	12
22 Social Satisfaction	-	03	04	-15	21	09	05	24	11	41	31	27	47	42	55	60	55	65	60	24	47	58	48	-27	55	07	02	35	-11	-11	01
23 Supervisor Satisfaction	-	19	11	05	30	08	02	28	13	45	40	25	63	23	46	38	41	67	33	43	56	59	85	-38	71	08	07	41	-23	04	01
24 Propensity to Leave	-	-18	-03	-01	-42*	30	-01	02	09	-13	-23	-17	-28	10	-10	-10	-11	-40	-01	-20	-15	-21	-34	57	-41	-07	-14	-31	22	05	04
25 Growth Satisfaction	-	04	-04	-00	16	30	12	50	12	71*	59	21	50	47	49	47	67	64	53	49	62	54	72	-19	79	10	12	61	-23	-10	09
26 Would-like Growth	-	-01	-06	-05	12	44	16	38	16	40	35	22	29	36	38	63	48	33	65	12	39	44	30	17	38	88	45	35	-06	02	-09
27 Job-Choice Growth	-	-21	-20	-19	-06	41	42	40	-04	25	43	05	22	20	03	03	17	07	09	04	09	01	-05	21	14	34	76	25	-01	-05	-00
28 Motivating-Potential Score	-	-15	-25	-16	15	30	29	52	30	55	79	59	47	27	44	25	42	49	32	15	38	33	45	-24	58	35	43	83	-23	-11	-06
29 Total Control	-	-21	-17	-08	-21	18	09	02	26*	-08	06	09*	-01	-08	13	13*	08	-02*	01	08	06	03	04	18	-08	03	09	15	-14	20	13
30 Behavior Control	-	29	34	10	20	-19	-14	-03	07	-05	-17	05	21	-09	02	-01	02	12*	03	-11	-05	03	12	-16	-09	-05	-04	-09	-01	04	21
31 Output Control	-	15	08	05	22	-15	17	08	-01	06	06	06	05	-07	10	04	09	16	03	30	24	02	30	-32	16	-04	-20	11	25	06	40
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Hospital: $29 > R > 21$, $p < .05$; $R > 29$, $p < .01$

Manufacturer: $19 > R > 12$, $p < .05$; $R > 19$, $p < .01$

*Significant z difference found when a Fisher R to z was performed.

HYPOTHESES

The four hypotheses were tested and the results are presented in this segment.

Hypothesis 1. Those people that perceive the job to be high on core job dimensions will be more satisfied with the job than those that perceive the job to be low on the core job dimensions. The Pearson product-moment correlation between the perceived motivating potential score and global satisfaction was .49 for the entire sample and both subsamples. All three correlations were significant beyond the .001 level of probability. These findings strongly support the prediction made by hypothesis 1.

Hypothesis 2. When the worker perceives the job to be high on job characteristics, it is expected that the high-growth-need employees will be more satisfied with the job than the low-growth-need employees. Four separate analyses of variance were used to test hypothesis 2 for each of the four structural variables. Each of the four ANOVAs were conducted using only those people whose perceived motivating-potential score was above the median for the entire sample. The analysis of variance in each case was a two by two with growth-need strength as an independent variable and one of the four structural scales as the other independent variable. Global satisfaction was used as the dependent variable for all the ANOVAs.

Table 4-3 shows the analysis of variance results when the independent variables were structure and growth-need

strength. A main effect was found for the independent variable, structure, on global satisfaction, but no other significant effects were found. Cell means and sizes are provided in Table 4-4.

When the structure variable was replaced with hierarchy of authority, the analysis of variance again produced only one main effect. As shown in Table 4-5, hierarchy of authority produced a main effect on global satisfaction. Table 4-6 reports the cell means for the analysis of variance in Table 4-5.

The analysis of variance with division of labor and growth-need strength as independent variables, with global satisfaction as the dependent variable, is shown in Table 4-7. No significant effects were found. An examination of the cell means in Table 4-8 indicates that three of the four cells had equal means, while the fourth cell varied from the other three by .16 standard deviations.

The final structural variable used as an independent variable was rules and procedures. As indicated in Table 4-9, there were no significant effects for the independent variables on global satisfaction. The cell means are reported in Table 4-10.

The results do <u>not</u> support hypothesis 2, which predicted a growth-need strength main effect. Instead, the structural variables produced main effects, or no effects were produced at all.

TABLE 4-3

HIGH MPS

ANALYSIS OF VARIANCE
Dependent Variable--Global Satisfaction

Source of Variation	DF	Mean Square	F	Sig.
Main Effects	2	2.500	2.464	.089
Structure (ST)	1	4.783	4.714	.032
Growth-need Strength (GS)	1	.122	.121	.729
2-Way Interactions	1	.104	.103	.749
ST by GS	1	.104	.103	.749
Explained	3	1.701	1.677	.176
Residual	120	1,015		
TOTAL	123	1.031		

TABLE 4-4

CELL MEANS FOR TABLE 4-3

		Structure: high	Structure: low
GNS	High	5.5 N = 32	5.2 N = 48
	Low	5.7 N = 20	5.2 N = 24

TABLE 4-5

HIGH MPS

ANALYSIS OF VARIANCE
Dependent Variable--Global Satisfaction

Source of Variation	DF	Mean Square	F	Sig.
Main Effects	2	3.937	3.974	.021
Hierarchy of Authority (HA)	1	7.656	7.729	.006
Growth-Need Strength (GS)	1	.067	.067	.796
2-Way Interactions	1	.109	.110	.741
HA by GS	1	.109	.110	.741
Explained	3	2.661	2.686	.050
Residual	120	.991		
TOTAL	123	1.031		

TABLE 4-6

CELL MEANS FOR TABLE 4-5

		Hierarchy of Authority: high	Hierarchy of Authority: low
GNS	High	5.6 N = 32	5.1 N = 48
	Low	5.7 N = 21	5.1 N = 23

TABLE 4-7

HIGH MPS

ANALYSIS OF VARIANCE
Dependent Variable--Global Satisfaction

Source of Variation	DF	Mean Square	F	Sig.
Main Effects	2	.159	.151	.860
Division of Labor (DL)	1	.101	.096	.758
Growth-Need Strength (GS)	1	.228	.216	.643
2-Way Interactions	1	.194	.184	.668
DL by GS	1	.194	.184	.668
Explained	3	.171	.162	.922
Residual	120	1.053		

TABLE 4-8

CELL MEANS FOR TABLE 4-7

		Division of Labor: high	Division of Labor: low
GNS	High	5.3 N = 37	5.3 N = 43
	Low	5.3 N = 22	5.5 N = 22

TABLE 4-9

HIGH MPS

ANALYSIS OF VARIANCE
Dependent Variable--Global Satisfaction

Source of Variation	DF	Mean Square	F	Sig.
Main Effects	2	.423	.403	.670
Rules and Procedures (RP)	1	.628	.598	.441
Growth-Need Strength (GS)	1	.271	.258	.612
2-Way Interactions	1	.009	.009	.925
RP by GS	1	.009	.009	.925
Explained	3	.285	.271	.846
Residual	120	1.050		
TOTAL	123	1.031		

TABLE 4-10

CELL MEANS FOR TABLE 4-9

GNS	Rules and Procedures: high	Rules and Procedures: low
High	5.4 N = 33	5.3 N = 47
Low	5.5 N = 15	5.4 N = 29

Hypothesis 3. When the individual perceives the job to below on core job dimensions, the workers that have growth-need strengths congruent with the perceived structure will be more satisfied with work than the employees with growth-need strengths incongruent with perceived structure. These analyses were performed only on those people that perceived their jobs as low in the core job characteristics. Four separate analyses of variance were performed using each of the four structural variables as an independent variable, and growth-need strength as the second independent variable with global satisfaction as the dependent variable.

Table 4-11 shows that when structure is used as the independent variable, no significant effects are found. Cell means for the ANOVA are reported in Table 4-12.

The analysis of variance with hierarchy of authority and growth-need strength on global satisfaction is shown in Table 4-13. The structural variable hierarchy of authority produced a significant main effect, but no other significant effects were encountered. Table 4-14 reports cell means and cell sizes for the ANOVA in the preceding table.

When division of labor is used as the structural variable, no significant effects are observed. The ANOVA is shown in Table 4-15, and the accompanying cell means are reported in Table 4-16.

The last test of hypothesis 3 used rules and procedures and growth-need strength as independent variables on global

satisfaction. Table 4-17 reports no significant effects for this ANOVA. The cell means and sizes are shown in Table 4-18.

The hypothesis predicted an interaction effect, and no interactions proved to be significant. An inspection of the cell means show that the low-growth-need people were always the most satisfied. The match of person and structure predicted to be second of the four was normally lowest. The structural main effect dampened the prediction of hypothesis 3 producing mixed results with no support of the hypothesis.

TABLE 4-11

LOW MPS

ANALYSIS OF VARIANCE
Dependent Variable--Global Satisfaction

Source of Variation	DF	Mean Square	F	Sig.
Main Effects	2	2.552	1.673	.192
Structure (ST)	1	2.699	1.770	.186
Growth-Need Strength (GS)	1	2.535	1.662	.200
2-Way Interactions	1	.307	.201	.655
ST by GS	1	.307	.201	.655
Explained	3	1.803	1.182	.320
Residual	119	1.525		
TOTAL	122	1.532		

TABLE 4-12

CELL MEANS FOR TABLE 4-11

		Structure: High	Structure: Low
GNS	High	4.1 N = 26	4.0 N = 19
	Low	4.5 N = 43	4.1 N = 35

TABLE 4-13

LOW MPS

ANALYSIS OF VARIANCE
Dependent Variable--Global Satisfaction

Source of Variation	DF	Mean Square	F	Sig.
Main Effects	2	6.980	4.811	.010
Hierarchy of Authority (HA)	1	11.557	7.965	.006
Growth-Need Strength (GS)	1	1.147	.791	.376
2-Way Interactions	1	.277	.191	.663
HA by GS	1	.277	.191	.663
Explained	3	4.746	3.271	.024
Residual	119	1.451		
TOTAL	122	1.532		

TABLE 4-14

CELL MEANS FOR TABLE 4-13

		Hierarchy of Authority: High	Hierarchy of Authority: Low
GNS	High	4.5 N = 19	3.7 N = 26
	Low	4.6 N = 44	4.0 N = 34

TABLE 4-15

LOW MPS

ANALYSIS OF VARIANCE
Dependent Variable--Global Satisfaction

Source of Variation	DF	Mean Square	F	Sig.
Main Effects	2	1.902	1.256	.288
Divison of Labor (DL)	1	1.400	.925	.338
Growth-Need Strength (GS)	1	2.367	1.564	.214
2-Way Interactions	1	2.940	1.942	.166
DL by GS	1	2.940	1.942	.166
Explained	3	2.248	1.485	.222
Residual	119	1.514		
TOTAL	122	1.532		

TABLE 4-16

CELL MEANS FOR TABLE 4-15

GNS	Division of Labor: High	Division of Labor: Low
High	3.8 N = 27	4.4 N = 18
Low	4.4 N = 46	4.3 N = 32

TABLE 4-17

LOW MPS

ANALYSIS OF VARIANCE
Dependent Variable--Global Satisfaction

Source of Variation	DF	Mean Square	F	Sig.
Main Effects	2	2.588	1.695	.188
Rules and Procedures (RP)	1	2.772	1.815	.180
Growth-Need Strength (GS)	1	2.302	1.508	.222
2-Way Interactions	1	.002	.001	.973
RP by GS	1	.002	.001	.973
Explained	3	1.726	1.130	.340
Residual	119	1.527		
TOTAL	122	1.532		

TABLE 4-18

CELL MEANS FOR TABLE 4-17

		Rules and Procedures: High	Rules and Procedures: Low
GNS	High	4.2 N = 21	3.9 N = 24
	Low	4.5 N = 38	4.2 N = 40

Hypothesis 4. To test hypothesis 4, the sample was broken down into four groups. The four groups are: (1) individuals that perceive the job to be high on core job dimensions and are high-growth-need people; (2) individuals that perceive the job to be high on core job dimensions and are low-growth-need people; (3) individuals that perceive the job as low on core job dimensions and are high-growth-need people in a structure they perceive as low, or are low-growth-need people in a structure they perceive as high; and, (4) individuals that perceive the job as low on core job dimensions and are low-growth-need people in a structure they perceive as low, or are high-growth-need people in a structure they perceive as high. The hypothesis predicted that in each of these four groups, the person that perceived the structure to be low would be more satisfied with the job than the person that perceived the structure as high.

Pearson product-moment correlations were calculated between each of the structural variables and global satisfaction within each group. For groups 3 and 4, when a specific structural variable was correlated with global satisfaction, the same structural variable was used to designate whether that person perceived the structure as high or low. Therefore, when division of labor was correlated with global satisfaction, the structural element used to classify the individual as perceiving the structure as high or low was also division of labor. The correlations are reported in Table 4-19.

Only the fourth group (Table 4-19) proved to support the hypothesis. The overall finding show no support for hypothesis 4.

TABLE 4-19

PEARSON PRODUCT-MOMENT CORRELATIONS WITH GLOBAL SATISFACTION

		Structural Variable	
High MPS	High GNS	Structure	.18
		Hierarchy of Authority	.16
		Division of Labor	.06
		Rules and Procedures	.17
	Low GNS	Structure	.12
		Hierarchy of Authority	.22
		Division of Labor	-.11
		Rules and Procedures	.14
	Person-Structure Congruence	Structure	.41**
		Hierarchy of Authority	.36**
		Division of Labor	.40**
		Rules and Procedures	.09
Low MPS	Person-Structure Incongruence	Structure	-.05
		Hierarchy of Authority	.03
		Divison of Labor	-.22
		Rules and Procedures	-.19

**$p < .01$

The Hypotheses Combined. To test the predicted rankings of global satisfaction in Table 1-4, the means for each of the eight combinations of high and low perceptions of motivating-potential scores, high and low perceived structure, and high- and low-growth-need strength were calculated. The means are presented in Tables 4-20 to 4-23. To distinguish each of the separate combinations, Figure 3-2 was used to report the means. The cells were rank ordered from highest (representing the greatest degree of global satisfaction) to lowest (representing the least degree of global satisfaction). The rank orders for each structural measure and the order predicted from Table 1-4 are shown in Table 4-24.

To test the accuracy of the predictions, a Spearman rank correlation was performed between the predicted rank order and the actual rank produced in the analysis for each of the four structural variables. Four significant correlations with the prediction were: (1) structure, .66, $p < .05$; (2) hierarchy of authority, .65, $p < .05$; (3) division of labor, .87, $p < .01$; and, (4) rules and procedures, .65, $p < .05$. These results support the predicted rank order based on the four hypotheses.

Because only one of the four hypotheses was supported by the sample data, further analysis was performed. Spearman rank correlations were conducted on the predicted order for those that perceive the job as high, and again for those

that perceive the job as low. The results, reported in Table 4-25, show negative correlations. This further analysis shows that the predicted order for the two sub-groups (low MPS-high MPS) was incorrect. These Spearman rank correlations parallel the tests of the hypotheses above and provide further support of hypothesis 1, but no support for the other three.

TABLE 4-20

CELL MEANS

		Structure			
		high		low	
		MPS High	MPS Low	MPS High	MPS Low
GNS	High	5.5 N = 32	4.1 N = 26	5.2 N = 48	4.0 N = 19
	Low	5.7 N = 20	4.5 N = 43	5.2 N = 24	4.1 N = 35

TABLE 4-21

CELL MEANS

		Hierarchy of Authority			
		high		low	
		MPS High	MPS Low	MPS High	MPS Low
GNS	High	5.6 N = 32	4.5 N = 19	4.1 N = 48	3.7 N = 26
	Low	5.7 N = 21	4.6 N = 44	5.1 N = 23	4.0 N = 34

TABLE 4-22

CELL MEANS

		Division of Labor			
		high		low	
		MPS High	MPS Low	MPS High	MPS Low
GNS	High	5.3 N = 37	3.8 N = 27	5.3 N = 43	4.4 N = 18
	Low	5.3 N = 22	4.4 N = 46	5.5 N = 22	4.3 N = 32

TABLE 4-23

CELL MEANS

		Rules and Procedures			
		high		low	
		MPS High	MPS Low	MPS High	MPS Low
GNS	High	5.4 N = 33	4.2 N = 21	5.3 N = 47	3.9 N = 24
	Low	5.5 N = 15	4.5 N = 38	5.4 N = 29	4.2 N = 40

TABLE 4-24

RANKINGS OF GLOBAL SATISFACTION
FOR EACH OF THE STRUCTURAL VARIABLES

		ACTUAL RANKINGS			
Cells	Predicted Rankings (Table 1-4)	Structure	Hierarchy of Authority	Division of Labor	Rules and Procedures
E	1	3.5	3.5	3	4
A	2	2	2	3	2.5
G	3	3.5	3.5	1	2.5
C	4	1	1	3	1
F	5	8	8	5.5	8
D	6	5	5	5.5	5
H	7	6.5	7	7	6.5
B	8	6.5	6	8	6.5

TABLE 4-25

SPEARMAN RANK
CORRELATIONS BETWEEN THE
RANK-ORDERED PREDICTIONS AND THE
RANK-ORDERED FINDINGS FOR THOSE
RANKING 1 TO 4 AND THOSE RANKING 5 TO 8

Structural Variable	High MPS First four	Low MPS Last four
Structure	-.63	-.32
Hierarchy of Authority	-.63	-.40
Division of Labor	-.26	.95*
Rules and Procedures	-.95*	-.32

*$p < .05$

CHAPTER V

DISCUSSION

The four hypotheses presented in Chapter Three in combined form may be used to predict the degree of job satisfaction people will receive with work. The first hypothesis should be applied first to separate the workers that perceive the jobs to be motivating from those that perceive the job as less motivating. This primary step will be essential for differentiation on the satisfaction variable. When the worker feels that the core job characteristics are high, the worker should also view him/herself as receiving satisfaction from the job.

Figure 5-1 illustrates the relationships among the four hypotheses.

RELATIONSHIPS AMONG THE FOUR HYPOTHESES

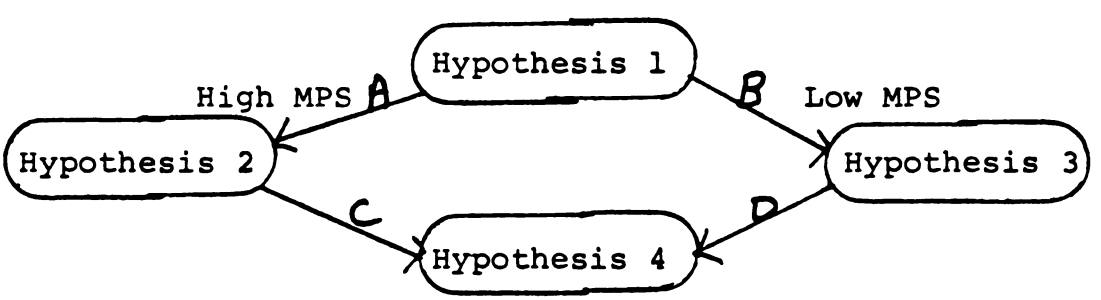

FIGURE 5-1

When the motivating-potential scores fall above the median for the sample, hypothesis two will be used to separate workers whose individual differences are congruent with the

job from those that have incongruent individual differences. The workers with high-growth-need strength will experience more global satisfaction than workers with low growth-needs for highly perceived job characteristics. The path labeled A represents the relationship between hypothesis one and hypothesis two.

The second group of people identified in hypothesis one are those that perceive their jobs as being low on the job characteristics. When the job is not considered to be very motivating to the individual, it is hypothesized that the individual will identify with the perceived structure in the organization. When this is the case, congruence between the person and the structure will lead to more positive outcomes.

Hypothesis four is applicable to congruent and incongruent jobs that have both perceived high and low motivating-potential scores. Paths C and D in Figure 5-1 illustrate that hypothesis four applies to each group of people after hypothesis two and three have been tested. If the individual perceives the structure to be low, then that individual will be more satisfied than the individual that perceives the organization as high in structure.

All four hypotheses interact in such a way as to predict the level of global satisfaction an individual perceives in the workplace. The perceived motivating job with a worker that has high growth-needs and perceives the structure to be low will derive the most job satisfaction. The

job-person congruence (high MPS-high growth-needs) with a structure viewed as high will rank second in global satisfaction. The next pair of workers perceive the job to be motivating, but the growth-need strength of these workers is low. Given this job-person incongruency, the worker that perceives the structure to be low will rank third in outcomes received and the worker that perceives the structure as high will rank fourth. The fifth and sixth ranked groups of workers represent a person-structure congruence (high growth-need with perceived low structure and low growth-need with a perceived high structure). For this congruent state the higher ranked of the two workers will view the structure as being low. The last pair of workers hold jobs that they rated as low in motivating potential, and incongruence existed between the person and the perceived structure. The worker that sees the organization's structure as low will be ranked seventh, and the person that perceived the structure as high will rank eighth.

HYPOTHESIS 1

> Workers that have jobs perceived to be high on core job dimensions will feel more job satisfaction than workers that have jobs perceived to be low on core job dimensions.

The basis for studying job design rests with the premise that some jobs produce desirable outcomes. Workers derive a positive attitude about work and the job if they perceive the job as having desirable characteristics. Past research

has identified the core job dimensions (task identity, task significance, skill variety, autonomy, and feedback) as the characteristics most likely to produce job satisfaction. In the presence of a job that the worker perceives as containing these elements, the worker should feel motivated and satisfied with the job and surrounding conditions. Hackman, Oldham, Janson, and Purdy (1975) studied perceptions of job content and found that jobs perceived to be complex were more satisfying to workers than were jobs perceived to be routine. The results indicate that the workers that perceive the job to be motivating did feel more satisfied than those that scored the job characteristics low ($r = .49$). This suggests that more favorable job characteristics, regardless of individual differences, produce workers that feel more satisfied about the task. Previous literature has indicated that only certain workers (e.g., high-growth-need individuals) have a greater desire for job enrichment. Yet, all of the workers that perceive the job to have high job characteristics were more satisfied than those that perceived the job to be low on core job dimensions (see Tables 4-20 to 4-23). This evidence supports the findings of Pierce, Dunham, and Blackburn (1979) which showed that people that perceived the job to be motivating were more satisfied than those people that perceived the job to be low on core job dimensions.

Past research and the present results show that perceived motivating tasks and perceived job characteristics relate to satisfaction. The evidence presented suggests that those that perceive the job to be high in core job dimensions derive more positive outcomes than the workers that perceive the job to be low in the five core job dimensions. These findings strongly support the prediction of Hypothesis 1--that people will be more satisfied with the job if they perceive the job to be high on the five core job dimensions.

HYPOTHESIS 2

> For individuals that perceive the job to be high on the core job dimensions, those individuals with high growth-needs will be more satisfied with the job than will workers with low growth-needs.

Congruence of the job and the individual has been a topic of many writers (White, 1978). Growth-need strength has been identified to be the most significant individual difference that moderates the relationship between the perceived job characteristic and satisfaction (Wanous, 1974). Pierce, Dunham, and Blackburn (1979) warn, however, that those differences are not always statistically significant.

The literature reveals that this moderating effect of growth-need strength is particularly strong for the individuals that perceive the tasks to be high on the job characteristic variables (Hackman and Oldham, 1976 and Oldham, 1976). Most of the past writings focused on the

perceived complex jobs, with little or no emphasis on the perceived routine jobs. A recent study by Pierce, Dunham, and Blackburn (1979) attempted to study both perceived complex and routine jobs. They found the complex job-individual difference interaction to be a significant indicator of satisfaction. These results indicate that the congruence of the individual difference and perceived job characteristics is a predictor for the jobs with high motivating-potential scores.

The current results are not consistent with those of Pierce, et al. (1979). Growth-need satisfaction in each instance produced results opposite of that which was expected (see Tables 4-3 to 4-10). Growth-need strength did not moderate the relationship, and an inspection of cell means shows that low-growth-need people were slightly more satisfied than the high-growth-need people. One possible reason for this may be that the high-growth-need people are not receiving growth fulfillment from the job. Even though they perceive the job to be high on core job dimensions, it is still possible that these individuals desire more valued outcomes from the job. The relationship between growth-need strength and growth satisfaction is low and positive for the entire sample (Table 4-1). An examination of the subsamples shows that the high-growth-need manufacturing firm people do not feel as satisfied with growth fulfillment as the high-growth-need hospital people (Table 4-2). A second possible reason for the inconsistency

of these findings with the others may be the sample. Three-fourths of the sample were drawn from a manufacturing firm, which is very different from the samples used by Hackman and Lawler (1971); Hackman and Oldham (1976); Oldham (1976); and, Wanous (1974). Two studies have shown that the JDS is not consistent across samples and production technologies (Dunham, Aldag, and Brief, 1977 and Rousseau, 1977). The current study produced mixed results with respect to hypothesis 2, which may be a function of the sample. This inability to generalize sample-specific results may be the reason for these mixed findings.

Contrary to hypothesis 2, structure provided a main effect on the dependent variable, global satisfaction (see Tables 4-3 to 4-6). Individuals that perceived the structure to be high were more satisfied than those that perceived the structure as low. The reduction of ambiguity provided by a highly-structured organization may account for this finding. In particular, the low-growth-need people may find a great deal of satisfaction in the presence of a perceived high structure. These findings are consistent with Keller, Szilagyi, and Holland (1975) who found the task characteristics to relate negatively to role ambiguity and positively to work satisfaction. A structure perceived by workers to be high would be low in ambiguity and the results show more satisfaction when this is the case.

HYPOTHESIS 3

> For individuals that perceive the job to be low on the core job dimensions, those individuals with growth-needs congruent with perceived structure will be more satisfied with the job than those that have growth-needs incongruent with perceived structure.

Congruence of the individual and the structure may be traced back to Vroom (1960) who found that not all individuals derive high satisfaction from a participative environment. The literature suggests that some structural characteristics are not considered desirable by all individuals (Hall, 1972 and Huse and Price, 1970).

Ivancevich and Donnelly (1975) indicated a congruence between self-actualization and organization structure affected satisfaction in sales personnel. Thus far, only one study has specifically looked at the growth-need strength variable as an individual difference for structures considered to be mechanistic or organic (Pierce, Dunham, and Blackburn, 1979). The results of the Pierce, et al. study are mixed with respect to the person-structure congruence. The structural measure used was primarily physical structural characteristics of the organization. Perceived structure in this study showed mixed results for the relationship with the individual difference variable, growth-need strength. When the workers perceived themselves as having motivating jobs, the workers that had individual differences congruent with the perceived structure were more satisfied than all of the other workers. The workers

with perceived routine jobs, and the workers that had individual differences congruent with structure, were the least satisfied in three of four statistical tests (see Tables 4-11 to 4-18). Overall, the results indicate minor differences exist between worker job satisfaction when the job is perceived to be low on core job dimensions. Hierarchy of authority as the structural variable moderated the relationship between MPS and global satisfaction. As discussed above, the reduced ambiguity of the workplace associated with a high structure may account for these findings. Thus, the hypothesis could not be fully supported by the findings in this study.

HYPOTHESIS 4

> When controlling for individual differences and perceived job characteristics, workers that perceive the structure to be low will be more satisfied with the job than those workers that perceive the structure to be high.

As used in this study, structure consists of individuals' perceptions of the hierarchy of authority, division of labor, and rules and procedures used in the organization. If workers perceive these factors to be very high, then they are likely to be less satisfied because of the constraints the structure places upon them. Innovative behaviors, satisfaction, climate, and work attitudes are related to perceived structure (Child and Ellis, 1973; Inkson, Hickson, and Pugh, 1968; Payne, Phesey, and Pugh, 1971; and, Vrendenburgh and Alutto, 1977).

The relationship between perceived structure and global satisfaction provided mixed results (see Table 4-19). It was expected that a structure perceived to be low would enhance global work satisfaction. In only one of the four situations (low MPS-person structure incongruence), was a structure perceived to be low related to global satisfaction. For the other three situations, (1) high MPS-high-growth-need strength, (2) high MPS-low-growth-need strength, and (3) low MPS-person structure congruence), the structure perceived to be high was the more satisfying. Given the structural main effects encountered in the above hypotheses, these results are not unexpected. Overall, the findings do not support the hypothesis that a structure perceived to be low will make people more satisfied with the job.

THE COMBINED HYPOTHESES

The four hypotheses in combination can be described in an analysis-of-variance framework. Figure 5-2 (a reproduction of Figure 3-1) will be described and referred to later in order to relate the present study to past research.

ANALYSIS-OF-VARIANCE PRESENTATION
OF THE VARIABLES

		Structure			
		High		Low	
		MPS High	MPS Low	MPS High	MPS Low
Growth Need	High	A	B	E	F
	Low	C	D	G	H

FIGURE 5-2

Cells A, C, E, and G are representative of the individuals that perceive their job to be high on the five core job dimensions. The people that rated these dimensions lower are represented in cells B, D, F, and H. Among the people with high motivating-potential scores, A and E would be considered to be congruent with respect to the job and the individual. Congruence among the lower-scoring motivating-potential-score people exists for cells F and D because the people match the perceived structure. Cells E, G, F, and H contain people that perceive the structure to be low.

Porter, Lawler, and Hackman (1975) made predictions about the degree of satisfaction that would be derived by congruence of the individual, the job, and the structure. Their model was an eight-cell model similar to Figure 5-2.

Perfect congruence exists in cell E (organic structure, complex job, and high-growth-need individual) and cell D (mechanistic structure, routine job, and low-growth-need individual). Pierce, Dunham, and Blackburn (1979) found support for cell E as a producer of satisfaction, but cell D was ranked far lower. Support was not shown for either of the findings (see Table 4-24) indicating the congruence hypothesis is not valid for the low perceived structure and high growth-need and perceived complex job situation, or the low perceived structure and low growth-need and perceived routine job.

Porter, Lawler, and Hackman (1975) and Pierce, Dunham, and Blackburn (1979) provided a rank order of the degree of satisfaction each of the eight situations would ascertain. Table 5-1 shows the rank orders predicted by Porter, et al. (1975), Pierce, et al. (1979), and the present study as well as the results produced by the latter two studies. Porter, et al. (1975) predicted congruence as the greatest indicator of satisfaction, and ranked cells E and D first and second, respectively. Cells F, A, H, and C were considered to be of equal value. Cells G and B were ranked seventh and eighth. Pierce, et al. (1979) ranked the first four cells (E, A, G, and C) identically to those in this study. The predictions differ in the cells representing routine jobs (F, D, H, and B), because the study at hand predicts a person-structure congruence as being a better predictor of satisfaction.

As shown in Table 5-1, the predictions of Pierce, et al. (1979) are similar to those made in this study. The results of Pierce, et al. (1979) are different from the results of this study. This could be because structure was measured in two different ways. Pierce, et al. (1979) used mostly physical measures of structure, while this study used entirely perceived structural measures. This basic difference constitutes the basis for the structure-individual congruence hypothesis. An emergent structure is a function of social interaction with which a person is more likely to identify. The individual filters all information provided to him/her thereby forming a judgment about the organization's structure. When this judgment of structure matches the individual's growth-needs, he/she feels more satisfaction.

The test of the prediction against the four sets of results all proved significant ($p < .05$). The strongest relationship was between the predictions and the results produced when division of labor was used to represent the perceived structural variable. Table 5-1 indicates that of the eight cells, ties were encountered for the cells ranking second, third, and fourth, and another tie was encountered between the fifth and sixth cells. The relationship proved strong because the jobs perceived to be high in core job dimensions were ranked one to four and they were in the top four. This was the primary cause of the predictions being

TABLE 5-1

COMPARISON OF RANK-ORDERED PREDICTIONS AND RESULTS

Rank-Ordered Predictions of Job Satisfaction							Results				
Cells from Figure 5-2	Job	Person	Structure	Table 1-4	Porter et al.	Pierce et al.	Pierce et al.	ST	HA	DL	RP
E	high	high	low	1	1	1	1	3.5	3.5	3	4
A	high	high	high	2	4.5	2	3	2	2	3	2.5
G	high	low	low	3	7	3	2	3.5	3.5	1	2.5
C	high	low	high	4	4.5	4	4	1	1	3	1
F	low	high	low	5	4.5	5	7	8	8	5.5	8
D	low	low	high	6	2	7	6	5	5	5.5	5
H	low	low	low	7	4.5	6	5	6.5	7	7	6.5
B	low	high	high	8	8	8	8	6.5	6	8	6.5

significant. Thus, the overall results of the rank-ordered predictions indicate the strength of hypothesis one and the mixed results found for the other three hypotheses.

CHAPTER VI

CONCLUSIONS

This study tested the main effects and interaction effects of perceived structure, growth-need strength, and perceived motivating potential of the job on job satisfaction. As predicted, those that perceived the job to be high on the core job dimensions ere more saitsfied than the individuals that perceived the job to be low on the core job dimensions. Thus, when a person perceives a job as having a high motivating potential, he/she is satisfied with the work involved.

Contrary to the predictions of the other hypotheses, the structural variables produced main effects. Past research shows that growth-need strength moderates the relationship between the perceived job characteristics and job satisfaction. These findings were not replicated in this study; rather, the structural variable proved to be a determinant of the relationship between perceived job characteristics and job satisfaction.

IMPLICATIONS FOR THE THEORY

These results emphasize the need for a more thorough investigation of the Hackman and Oldham Model (1975). In particular, the moderating effect of growth-need strength should be examined closely. (For a thorough analysis of

the problems connected with growth-need strength as a moderator between perceived job characteristics and satisfaction, see White, 1978). The lack of support of growth-need strength as a moderator in this study strengthens the conclusions of White (1978).

Structure is a relatively new variable in the job design literature, yet it has been shown to be a major influence on the perceived job characteristic-job satisfaction relationship (Pierce, Dunham, and Blackburn, 1979). This study differs from Pierce, et al. (1979) in that the structural measure was perceived structure, while Pierce, et al. (1979) used a combination of physical and perceived structure. This difference may account for the variation in the findings; in both instances, however, structure played a major role. Thus, structure is an important variable in a contingency model of job design. Further consideration must be given to better identification of the relationship it has in an overall model.

IMPLICATIONS FOR FUTURE RESEARCH

The results were in some instances contradictory to past writings. This may be a function of the Job Diagnostic Survey (JDS). The JDS has been shown to produce different results across samples and across organizational technological processes (Dunham, Aldag, and Brief, 1977 and Rousseau, 1978). The JDS appears to be sample specific with respect to the relationship among variables, which

restricts the generalizability of the research performed with the instrument. The motivating-potential score and the five core job dimensions correlated with the organizational level and the amount of education of the employees. This may limit the use of this instrument when the sample consists of many different job types that require varying degrees of education. Such a wide spectrum of jobs may cause the people with high-level and/or high-education jobs to be placed in the top end of the distribution of motivating-potential scores. If the research entails a median split, it may cause the sample to confound education and/or level with those in the upper half of the distribution. For future research using the JDS, it is recommended that the sample be drawn from a large number of jobs that would not be of varied education or varied level. This would maximize job variability, but not because of education and/or level.

Of the research performed to date using the JDS, few studies have involved an actual job change. This study, as do most studies, look at an already established setting with no actual job-change intervention. Yet, in discussing the findings, writers often generalize the results to the job-change literature. To resolve this problem, research involving a job change is needed to assess this ability to generalize.

Structure proved to be an important variable in this study and in the work of Pierce, Dunham, and Blackburn (1979). As mentioned above, structure was operationalized in two different ways and provided two different sets of results. Contrary and mixed results fill the structural literature because of the lack of standardization of the measures and the variance in the operational definitions. Standardization is necessary to direct the research toward a more common end result.

The operationalization of control in this study proved unsuccessful because of the poor reliabilities of the measures. This stems from a lack of research in this area. Further research on control is essential for the full comprehension of the function of control in organizations.

IMPLICATIONS FOR THE PRACTICE

The results indicate that perceptions of structure play a role in the relationship between the job perceptions and satisfaction. Careful consideration should be given to the structural aspects of the work environment in order to maximize work satisfaction.

Satisfaction is associated with the core job dimensions when they are perceived by the worker to be motivating. If this relationship heightens satisfaction, employers should help workers identify the core job dimensions and point out the importance of the job. Often the employee

may not know the importance of the job to the functioning of the product and plant. This can provide the employee with a more positive job attitude, because this will enhance the core job dimensions.

APPENDICES

APPENDIX A

THE QUESTIONNAIRE

Section One

This part of the questionnaire asks you to describe your job, as objectively as you can.

Please do not use this part of the questionnaire to show how much you like or dislike your job. Questions about that will come later. Instead, try to make your descriptions as accurate and as objective as you possibly can.

A sample question is given below.

A. To what extent does your job require you to work with mechanical equipment?

1--------2--------3--------4--------5--------(6)--------7

Very little; the job requires almost no contact with mechanical equipment of any kind.	moderately	Very much; the job requires almost constant work with mechanical equipment.

You are to circle the number which is the most accurate description of your job.

If, for example, your job requires you to work with mechanical equipment a good deal of the time--but also requires some paperwork--you might circle the number six, as was done in the example above. If you do not understand these instructions, please ask for assistance. If you do understand them, turn the page and begin.

1. To what extent does your job require you to work closely with other people (either clients or people in related jobs in your own organization)?

1--------2--------3--------4--------5--------6---------7

Very little; dealing with other people is not at all necessary in doing the job.	Moderately; some dealing with others is necessary.	Very much; dealing with other people is an absolutely essential and crucial part of doing the job.

2. How much autonomy is there in your job? That is, to what extent does your job permit you to decide on your own how to go about doing the work?

1--------2--------3--------4--------5--------6---------7

Very little; the job gives me almost no personal "say" about how and when the work is done.	Moderate autonomy; many things are standardized and not under my control, but I can make some decisions about the work.	Very much; the job gives me almost complete responsibility for deciding how and when the work is done.

3. To what extent does your job involve doing a "whole" and identifiable piece of work? That is, is the job a complete piece of work that has an obvious beginning and end? Or is it only a small part of the overall piece of work, which is finished by other people or by automatic machines?

1--------2--------3--------4---------5--------6--------7

My job is only a tiny part of the overall piece of work; the results of my activities cannot be seen in the final product or service.	My job is a moderate-sized "chunk" of the overall piece of work; my own contribution can be seen in the final outcome.	My job involves doing the whole piece of work, from start to finish; the results of my activities are easily seen in the final product or service.

4. How much variety is there in your job? That is, to what extent does the job require you to do many different things at work, using a variety of your skills and talents?

1--------2--------3--------4--------5--------6---------7

Very little; the job requires me to do the same routine things over and over again.	Moderate variety.	Very much; the job requires me to do many different things, using a number of different skills and talents.

5. In general, how significant or important is your job? That is, are the results of your work likely to significantly affect the lives or well-being of other people?

1--------2--------3--------4--------5--------6---------7

Not very significant; the outcomes of my work are not likely to have important effects on other people.	Moderately significant.	Highly significant; the outcomes of my work can affect other people in very important ways.

6. To what extent do managers or co-workers let you know how well you are doing on your job?

1--------2--------3--------4--------5--------6---------7

Very little; people almost never let me know how well I am doing.	Moderately; sometimes people may give me "feedback"; other times they may not.	Very much; managers or co-workers provide me with almost constant "feedback" about how well I am doing.

7. To what extent does doing the job itself provide you with information about your work performance? That is, does the actual work itself provide clues about how well you are doing--aside from any "feedback" co-workers or supervisors may provide?

1--------2--------3--------4--------5--------6---------7

Very little; the job itself is set up so I could work forever without finding out how well I am doing.	Moderately; sometimes doing the job provides "feedback" to me; sometimes it does not.	Very much; the job is set up so that I get almost constant "feedback" as I work about how well I am doing.

Section Two

Listed below are a number of statements which could be used to describe a job. You are to indicate whether each statement is an accurate or an inaccurate description of your job.

Once again, please try to be as objective as you can in deciding how accurately each statement describes your job--regardless of whether you like or dislike your job.

Write a number in the blank beside each statement, based on the following scale:

How accurate is the statement in describing your job?

1	2	3	4	5	6	7
Very Inaccurate			Uncertain			Very Accurate

____1. The job requires me to use a number of complex or high-level skills.

____2. The job requires a lot of cooperative work with other people.

____3. The job is arranged so that I do not have a chance to do an entire piece of work from beginning to end.

____4. Just doing the work required by the job provides many chances for me to figure out how well I am doing.

____5. The job is quite simple and repetitive.

____6. The job can be done adequately by a person working alone--without talking or checking with other people.

____7. The supervisors and co-workers on this job almost never give me any "feedback" about how well I am doing in my work.

____8. This job is one where a lot of other people can be affected by how well the work gets done.

____9. The job denies me any chance to use my personal initiative or judgment in carrying out the work.

___10. Supervisors often let me know how well they think I am performing the job.

___11. The job provides me the chance to completely finish the pieces of work I begin.

___12. The job itself provides very few clues about whether or not I am performing well.

___13. The job gives me considerable opportunity for independence and freedom in how I do the work.

___14. The job itself is <u>not</u> very significant or important in the broader scheme of things.

Section Three

Now please indicate how you personally feel about your job.

Each of the statements below is something that a person might say about his or her job. You are to indicate your own, personal feelings about your job by marking how much you agree with each of the statements.

Write a number in the blank for each statement, based on this scale:

How much do you agree with the statement?

1	2	3	4	5	6	7
Disagree Strongly			Neutral			Agree Strongly

____1. It's hard, on this job, for me to care very much about whether or not the work gets done right.

____2. My opinion of myself goes up when I do this job well.

____3. Generally speaking, I am very satisfied with this job.

____4. Most of the things I have to do on this job seem useless or trivial.

____5. I usually know whether or not my work is satisfactory on this job.

____6. I feel a great sense of personal satisfaction when I do this job well.

____7. The work I do on this job is very meaningful to me.

____8. I feel a very high degree of personal responsibility for the work I do on this job.

____9. I frequently think of quitting this job.

___10. I feel bad and unhappy when I discover that I have performed poorly on this job.

___11. I often have trouble figuring out whether I'm doing well or poorly on this job.

___12. I feel I should personally take the credit or blame for the results of my work on this job.

___13. I am generally satisfied with the kind of work I do in this job.

___14. My own feelings generally are not affected much one way or the other by how well I do on this job.

___15. Whether or not this job gets done right is clearly my responsibility.

Section Four

Now please indicate how satisfied you are with each aspect of your job listed below. Once again, write the appropriate number in the blank beside each statement.

How satisfied are you with this aspect of your job?

1	2	3	4	5	6	7
Extremely Dissatisfied			Neutral			Extremely Satisfied

____1. The amount of job security I have.

____2. The amount of pay and fringe benefits I receive.

____3. The amount of personal growth and development I get in doing my job.

____4. The people I talk to and work with on my job.

____5. The degree of respect and fair treatment I receive from my boss.

____6. The feeling of worthwhile accomplishment I get from my boss.

____7. The chance to get to know other people while on the job.

____8. The amount of support and guidance I receive from my supervisor.

____9. The degree to which I am fairly paid for what I contribute to this organization.

___10. The amount of independent thought and action I can exercise in my job.

___11. How secure things look for me in the future in this organization.

___12. The chance to help other people while at work.

___13. The amount of challenge in my job.

___14. The overall quality of the supervision I receive in my work.

Section Five

Now please think of the other people in your organization who hold the same job you do. If no one has exactly the same job as you, think of the job which is most similar to yours.

Please think about how accurately each of the statements describes the feelings of those people about the job.

It is quite all right if your answers here are different from when you described your own reactions to the job. Often different people feel quite differently about the same job.

Once again, write a number in the blank for each statement, based on this scale:

How much do you agree with the statement?

1	2	3	4	5	6	7
Disagree Strongly			Neutral			Agree Strongly

____1. Most people on this job feel a great sense of personal satisfaction when they do the job well.

____2. Most people on this job are very satisfied with the job.

____3. Most people on this job feel that the work is useless or trivial.

____4. Most people on this job feel a great deal of personal responsibility for the work they do.

____5. Most people on this job have a pretty good idea of how well they are performing their work.

____6. Most people on this job find the work very meaningful.

____7. Most people on this job feel that whether or not the job gets done right is clearly their own responsibility.

____8. People on this job often think of quitting.

____9. Most people on this job feel bad or unhappy when they find that they have performed the work poorly.

___10. Most people on this job have trouble figuring out whether they are doing a good or a bad job.

Section Six

Listed below are a number of characteristics which could be present on any job. People differ about how much they would like to have each one present in their own jobs. We are interested in learning how much you personally would like to have each one present in your job.

Using the scale below, please indicate the degree to which you would like to have each characteristic present in your job.

NOTE: The numbers on this scale are different from those used in previous scales.

4	5	6	7	8	9	10
Would like having this only a moderate amount (or less)			Would like having this very much			Would like having this extremely much

____1. High respect and fair treatment from my supervisor.

____2. Stimulating and challenging work.

____3. Chances to exercise independent thought and action in my job.

____4. Great job security.

____5. Very friendly co-workers.

____6. Opportunities to learn new things from my work.

____7. High salary and good fringe benefits.

____8. Opportunities to be creative and imaginative in my work.

____9. Quick promotions.

___10. Opportunities for personal growth and development in my job.

___11. A sense of worthwhile accomplishment in my work.

Section Seven

People differ in the kinds of jobs they would most like to hold. The questions in this section give you a chance to say just what it is about a job that is most important to you.

For each question, two different kinds of jobs are briefly described. You are to indicate which of the jobs you personally would prefer--if you have to make a choice between them.

In answering each question, assume that everything else about the jobs is the same. Pay attention only to the characteristics actually listed.

Two examples are given below.

Job A				Job B
A job requiring work with mechanical equipment most of the day				A job requiring work with other people most of the day
1	2	(3)	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

If you like working with people and working with equipment equally well, you would circle the number 3, as has been done in the example.

Here is another example. This one asks for a harder choice--between two jobs which both have some undesirable features.

Job A				Job B
A job requiring you to expose yourself to considerable physical danger.				A job located 200 miles from your home and family.
1	(2)	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

If you would slightly prefer risking physical danger to working far from your home, you would circle number 2, as has been done in the example. Please ask for assistance if you do not understand exactly how to do these questions.

Job A				Job B
1. A job where the pay is very good.				A job where there is considerable opportunity to be creative and innovative.
1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B
2. A job where you are often required to make important decisions.				A job with many pleasant people to work with.
1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B
3. A job in which greater responsibility is given to those who do the best work.				A job in which greater responsibility is given to loyal employees who have the most seniority.
1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B
4. A job in an o organization which is in financial trouble-- and might have to close down within the year.				A job in which you are not allowed to have any say whatever in how your work is scheduled, or in the procedures to be used in carrying it out.
1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B
5. A very routine job.				A job where your co-workers are not very friendly.
1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

	Job A				Job B
6.	A job with a supervisor who is often very critical of you and your work in front of other people.				A job which prevents you from using a number of skills that you worked hard to develop.
	1	2	3	4	5
	Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B
7.	A job with a supervisor who respects you and treats you fairly.				A job which provides constant opportunities for you to learn new and interesting things.
	1	2	3	4	5
	Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B
8.	A job where there is a real chance you could be be laid off.				A job with very little chance to do challenging work.
	1	2	3	4	5
	Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B
9.	A job in which there is a real chance for you to develop new skills and advance in the organization.				A job which provides lots of vacation time and an excellent fringe benefit package.
	1	2	3	4	5
	Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B
10.	A job with little freedom and independence to do your work in the way you think best.				A job where the working conditions are poor.
	1	2	3	4	5
	Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

	Job A				Job B
11.	A job with very satisfying teamwork.				A job which allows you to use your skills and abilities to the fullest extent.
	1	2	3	4	5
	Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B
12.	A job which offers little or no challenge.				A job which requires you to be completely isolated from coworkers.
	1	2	3	4	5
	Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

Section Eight

Biographical Background

1. Sex: Male ____ Female ____

2. Age (check one):

____under 20 ____40-49

____20-29 ____50-59

____30-39 ____60 or over

3. Education (check one):

____Grade School

____Some High School

____High School Degree

____Some Business College or Technical School Experience

____Some College Experience (other than business or technical school)

____Business College or Technical School Degree

____College Degree

____Some Graduate Work

____Master's

____Doctorate

4. A. What is your brief job title?_____

B. What is your department?_____

5. What is your level in the organization?

____nonmanagement

____middle management

____upper management

____physician

6. What is your marital status?

____married

____single

____divorced

7. How many dependents do you have? _____

Personal Job Data

8. Approximately how many days have you been absent from work in the past year?

_____

9. Which of the following statements best represents your general attitude about staying with your present company:

____I would not consider leaving under any circumstances.

____I would leave for a promotion and a 20 percent increase in pay.

____I would leave for a similar kind of job and a 20 percent pay increase.

____I would leave for a similar job and salary, which has more challenge.

____I would leave for a similar kind of job and pay.

10. What are your plans in regard to staying with your company:

____I would like to stay all my working life.

____I would leave only for an exceptional opportunity.

____I will leave if something better turns up.

____I hope for a chance to leave under favorable circumstances.

____I expect to leave as soon as possible.

Section Nine

Answer the questions below as to the frequency they occur at work.

RARELY		SOMETIMES		USUALLY ALWAYS
1	2	3	4	5
Low%		50%		High%

____1. When a new type of decision is to be made, how often do you get an approval from your boss before taking any action?

____2. How frequently do instructions come from your boss when existing rules and procedures are not adequate to make a decision?

____3. When problems arise, how often do you go to your boss for an answer?

____4. When an unusual situation is encountered, how frequently do you go ahead without checking with your boss?

____5. When a decision is to be made for which rules and procedures do not exist, how often do you act without referring the matter higher up?

____6. What percentage of employees in your department make decisions of the type usually made by you on the job?

____7. What percentage of the specific duties performed by you on the job change from one day to the next?

____8. What percentage of employees in your department perform the same function as you do?

____9. What percentage of your job duties are clearly specified?

___10. What percentage of the decisions made by you on the job are of the same type?

___11. What percentage of the decisions made by you on the job are handled adequately with existing rules and procedures.

___12. What percentage of the problems arising on your job do you handle by following written and verbal instructions previously given to you?

___13. Consider problems that cannot be handled with available instructions. What percentage of these problems do you take care of by reporting them in a standard way?

___14. How often do you handle problems by following a standard procedure?

Section Ten

What is the amount of influence of work goals by each of the following groups?

1	2	3	4	5
Usually a great deal to say		Usually some say		Usually no say at all

____1. How much say or influence does upper management have in determining the work goals in the departments in the plant?

____2. How much say or influence does middle management have in determining the work goals in the departments in the plant?

____3. How much say or influence do nonmanagement workers have in determining the work goals in the departments in the plant?

____4. How much say or influence do the physicians have in determining the work goals in the departments in the plant?

Answer the following questions as they relate directly to you and your present job.

---

1. When deciding on raises, promotions, and termination, how much weight is given to written records of output?

1	2	3	4	5
No weight at all		Some weight		A lot

2. How often are you seen by your immediate supervisor?

1	2	3	4	5
Almost never		A few times a week		Every day

3. In some departments, records are kept for each employee which shows his or her output; for example, production, sales volume, number of parcels handled, etc. Does your immediate superior keep such records of your individual output?

   Yes _____ No _____

4. How often does your immediate supervisor check to see what you are doing on the job?

1	2	3	4	5
Never		Occasionally		Always

APPENDIX B

SUBJECTS WAIVER FORM

An Assessment of the Impact of Structure and Control on Job Attitudes

I have agreed to participate in a study which I understand is for the purpose of assessing strengths and weaknesses in my work organization. I am further aware that Thomas L. Keon is collecting this information for the use of the organization and for analysis for a doctoral dissertation. While the results of the measure will not be reported to me on an individual basis, I understand that feedback will be made available at the organization level. Feedback of this nature will allow my results to be kept in strict confidence and my identity anonymous. Further, I understand that I may not in any way receive any benefit for having participated and that I may withdraw at any time.

Signature_____

APPENDIX C

HANDOUT DESCRIPTION OF THE SURVEY

The Management of _____ has been requested by Mr. Thomas Keon and Mr. Floyd Willoughby, students at Michigan State University, to conduct a survey on "HOW PEOPLE FEEL ABOUT THEIR JOBS."

The survey questionnaire:

1. will be strictly CONFIDENTIAL and totally ANONYMOUS
2. is VOLUNTARY
3. will take approximately 20 to 40 minutes to complete
4. will be conducted during working hours on Monday and Tuesday, April 2 and 3.

The Management supports this survey and requests your full cooperation from those who are asked to participate.

APPENDIX D

DESCRIPTIVE STATISTICS

Measures of Central Tendency

Table D1 shows the frequency and relative frequency of hierarchy of authority for the entire sample and the two organizations used in the study. The mean and variance for the total group were 16.6 and 17.4, respectively. The hospital had a mean of 17.7 and a variance of 17.1. A 16.2 mean and 17.1 variance were found to exist for the manufacturer. Items 1, 2, 3, 4, and 5 of Section Nine of the questionnaire were combined to formulate the scale. The hierarchy of authority scale produced the following reliability coefficients: alpha equal to .65 and a standardized item alpha of .65.

TABLE D1

FREQUENCY DISTRIBUTIONS

Hierarchy of Authority

Hierarchy of Authority Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
3						
4						
5	2	.8			2	1.1
6	1	.4			1	.5
7	1	.4	1	1.6		
8	1	.4			1	.5
9	3	1.2	1	1.6	2	1.1
10	6	2.4			6	3.2
11	11	4.5			11	5.9
12	19	7.7	4	6.5	15	8.1
13	18	7.3	2	3.2	16	8.6
14	17	6.9	6	9.7	11	5.9
15	22	8.9	7	11.3	15	8.1
16	24	9.7	5	8.1	19	10.3
17	26	10.5	6	9.7	20	10.8
18	13	5.3	5	8.1	8	4.3
19	23	9.3	3	4.8	20	10.8
20	14	5.7	6	9.7	8	4.3
21	16	6.5	5	8.1	11	5.9
22	8	3.2	1	1.6	7	3.8
23	6	2.4	3	4.8	3	1.6
24	6	2.4	3	4.8	3	1.6
25	10	4.0	4	6.5	6	3.2
Totals	247	100.0	62	100.0	185	100.0

Division of Labor was measured by combining items 6 through 10 from Section Nine of the questionnaire. The frequencies for each organization and the total sample are provided in Table D2. The coefficient Alpha was .59 and the standardized Alpha was .60 for the division of labor scale. For the entire sample the mean was 15.3 and the variance was 14.9. The manufacturing firm produced a 14.9 mean and a variance of 14.5, while the hospital had a mean and variance of 16.5 and 14.4.

Table D3 lists the frequencies for the scale measuring the degree of rules and procedures. The last four questions from Section Nine of the questionnaire were used for this scale. The mean of this scale for the total sample was 14.1, for the manufacturer 13.6, and for the hospital 15.7. The variances for the total sample, the hospital, and the manufacturer were 11, 9.4, and 10.5 respectively. The Alpha and the standardized Alpha produced a reliability of .71.

TABLE D2

FREQUENCY DISTRIBUTIONS

Division of Labor

Division of Labor Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
3	1	.4			1	.5
4						
5	1	.4			1	.5
6	3	1.2			3	1.6
7	2	.8			2	1.1
8	4	1.6	1	1.6	3	1.6
9	3	1.2			3	1.6
10	4	1.6	1	1.6	3	1.6
11	13	5.3	2	3.2	11	5.9
12	19	7.7	5	8.1	14	7.6
13	30	12.1	7	11.3	23	12.4
14	24	9.7	5	8.1	19	10.3
15	34	13.8	5	8.1	29	15.7
16	18	7.3	6	9.7	12	6.5
17	27	10.9	5	8.1	22	11.9
18	12	4.9	4	6.5	8	4.3
19	18	7.3	7	11.3	11	5.9
20	13	5.3	5	8.1	8	4.3
21	3	1.2	1	1.6	2	1.1
22	8	3.2	5	8.1	3	1.6
23	5	2.0	1	1.6	4	2.5
24	1	.4			1	.5
25	4	1.6	2	3.2	2	1.1
Totals	247	100.0	62	100.0	185	100.0

TABLE D3

FREQUENCY DISTRIBUTIONS

Rules and Procedures

Rules and Procedures Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
3						
4						
5	2	.8			2	1.1
6	2	.8			2	1.1
7	4	1.6			4	2.2
8	8	3.2	2	3.2	6	3.2
9	4	1.6	1	1.6	3	1.6
10	17	6.9	3	4.8	14	7.6
11	19	7.7	1	1.6	18	9.7
12	20	8.1	3	4.8	17	9.2
13	21	8.5	2	3.2	19	10.3
14	32	13.0	7	11.3	25	13.5
15	24	9.7	8	12.9	16	8.6
16	26	10.5	3	4.8	23	12.4
17	23	9.3	12	19.4	11	5.9
18	25	10.1	10	16.1	15	8.1
19	15	6.1	6	9.7	9	4.9
20	5	2.0	4	6.5	1	.5
Totals	247	100.0	62	100.0	185	100.0

All fourteen items from the three scales above were combined to illustrate an overall structural measure. The mean and variance for the entire sample were 46 and 76, for the hospital were 49.9 and 66.2, and for the manufacturer 44.7 and 73. The frequencies are provided in Table D4 for all groups. The reliability coefficients for the fourteen-item scale are both .75.

Table D5 shows a breakdown of the sample by number of people at each level of the organization. The levels were nonmanagement, middle management, and upper management. The frequencies include the total sample and that of each organization. This measures a physical aspect of structure in each of the organizations.

TABLE D4

FREQUENCY DISTRIBUTIONS

Structure

Structure Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
21	1	.4			1	.5
24	1	.4			1	.5
28	1	.4			1	.5
29	1	.4	1	1.6		
30	5	2.0			5	2.7
31	4	1.6			4	2.2
32	5	2.0	1	1.6	4	2.2
33	5	2.0			5	2.7
34	1	.4			1	.5
35	4	1.6			4	2.2
36	5	2.0			5	2.7
37	5	2.0			5	2.7
38	8	3.2	2	3.2	6	3.2
29	6	2.4			6	3.2
40	12	4.9	1	1.6	11	5.9
41	8	3.2	3	4.8	5	2.7
42	14	5.7	5	6.5	10	5.4
43	8	3.2	2	3.2	6	3.2
44	18	7.3	2	3.2	16	8.6
45	7	2.8	3	4.8	4	2.2
46	13	5.3	5	8.1	8	4.3
47	13	5.3	2	3.2	11	5.9
48	12	4.9	3	4.8	9	4.9

TABLE D4 (continued)

Structure Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
49	6	2.4	1	1.6	5	2.7
50	6	2.4	3	4.8	3	1.6
51	12	4.9	4	6.5	8	4.3
52	11	2.5	3	4.8	3	1.6
53	8	3.2	2	3.2	6	3.2
54	7	2.8	2	3.2	5	2.7
55	7	2.8	3	4.8	4	2.2
56	2	.8			2	1.1
57	3	1.2	1	1.6	2	1.1
58	7	2.8	4	6.5	3	1.6
59	5	2.0	2	3.2	3	1.6
60	3	1.2	2	3.2	1	.5
61	2	.8			2	1.1
62	4	1.6	3	4.8	1	.5
63	1	.4			1	.5
64	2	.8	2	3.2		
66	1	.4			1	.5
67	1	.4			1	.5
68	1	.4			1	.5
70	1	.4	1	1.6		
Totals	247	100.0	62	100.0	185	100.0

TABLE D5

FREQUENCY DISTRIBUTIONS

Organizational Level

	All		Hospital		Manufacturer	
Management	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
Non 1	165	66.8	31	50.0	134	72.4
Middle 2	65	26.3	23	37.1	42	22.7
Upper 3	12	6.1	7	11.3	8	4.3
Blank	2	.8	1	1.6	1	.4
Totals	247	100.0	62	100.0	185	100.0

The next set of variables presented will be job dimension scales. Table D6 reports frequencies for the skill variety job characteristic. The scale is the average of the following items:

Section One	#4
Section Two	#1
	#5 (Reverse scored)

These three items produced an Alpha and standardized Alpha of .72. The statistics were:

	Mean	Variance
Total Sample	4.9	2.4
Hospital	5.2	2.4
Manufacturer	4.8	2.4

Task Identity reliabilities were both .60. The total sample had a mean of 4.5 and a variance of 2.23. The hospital mean was 5.1 and the variance was 1.6. For the manufacturer the mean and variance were 4.3 and 2.3 respectively. The scale items that were averaged are:

Section One	# 3
Section Two	#11
	# 3 (Reverse scored)

Table D7 contains the frequencies for the sample and its subparts.

TABLE D6

FREQUENCY DISTRIBUTIONS

Skill Variety

Skill Variety Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
1.0	2	.8			2	1.1
1.3	5	2.0	2	3.2	3	1.6
1.6	2	.8	1	1.6	1	.5
2.0	8	3.2	2	3.2	6	3.2
2.3	4	1.6			4	2.2
2.6	8	3.2	1	1.6	7	3.8
3.0	12	4.9	2	3.2	10	5.4
3.3	9	3.6	2	3.2	7	3.8
3.6	9	3.6			9	4.9
4.0	16	6.5	5	8.1	11	5.9
4.3	21	8.5	2	3.2	19	10.3
4.6	15	6.1	5	8.1	10	5.4
5.0	15	6.1	2	3.2	13	7.0
5.3	18	7.3	5	8.1	13	7.0
5.6	17	6.9	3	4.8	14	7.6
6.0	20	8.1	7	11.3	13	7.0
6.3	27	10.9	12	19.4	15	8.1
6.6	20	8.1	7	11.3	13	7.0
7.0	19	7.7	4	6.5	15	8.1
Totals	247	100.0	62	100.0	185	100.0

TABLE D7

FREQUENCY DISTRIBUTIONS

Task Identity

Task Identity Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
1.0	3	1.2			3	1.6
1.3	3	1.2			3	1.6
1.6	7	2.8	1	1.6	6	3.2
2.0	5	2.0	2	3.2	3	1.6
2.3	6	2.4			6	3.2
2.6	18	7.3			18	9.7
3.0	9	3.6	1	1.6	8	4.3
3.3	15	6.1	3	4.8	6	3.2
3.6	9	3.6	3	4.8	6	3.2
4.0	22	8.9	6	9.7	16	8.6
4.3	20	8.1	2	3.2	18	9.7
4.6	14	5.7	5	8.1	9	4.9
5.0	22	8.9	6	9.7	16	8.6
5.3	18	7.3	4	6.5	14	7.6
5.6	24	9.7	13	21.0	11	5.9
6.0	18	7.3	5	8.1	13	7.0
6.3	11	4.5	4	6.5	7	3.8
6.6	12	4.9	2	3.2	10	5.4
7.0	11	4.5	5	8.1	6	3.2
Totals	247	100.0	62	100.0	185	100.0

Task significance was attained by averaging item 5 from section one with items 8 and 14 (Reverse scored) of section two. The sample statistics were:

	Mean	Variance
Total Sample	5.7	1.6
Hospital	6.1	1.3
Manufacturer	5.6	1.6

The Alpha coefficient was .69 and the standardized Alpha was .70. The frequency distribution for task significance is shown in Table D8.

The reliabilities associated with autonomy were .77 for both Alpha and standardized Alpha. The items used to calculate reliabilities were:

Section One	# 2
Section Two	# 9 (Reverse scored)
	#13

The frequency distributions for autonomy may be viewed in Table D9. The total sample had a mean of 4.7 and a variance of 2.2. The statistics for the hospital were a mean of 4.9 and a variance of 2.2. The manufacturing firm produced a mean of 4.7 and a variance of 2.2.

TABLE D8

FREQUENCY DISTRIBUTIONS

Task Significance

Task Significance Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
1.6	1	.4			1	.5
2.0	3	1.2	2	3.2	1	.5
2.3	3	1.2			3	1.6
2.6	2	.8			2	1.1
3.0	2	.8			2	1.1
3.3	7	2.8	2	3.2	5	2.7
3.6	6	2.4	1	1.6	5	2.7
4.0	8	3.2			8	4.3
4.3	6	2.4	1	1.6	5	2.7
4.6	13	5.3			13	7.0
5.0	18	7.3	2	3.2	16	8.6
5.3	16	6.5	4	6.5	12	6.5
5.6	21	8.5	5	8.1	16	8.6
6.0	26	10.5	6	9.7	20	10.8
6.3	30	12.1	9	14.5	21	11.4
6.6	33	13.4	16	25.8	17	9.2
7.0	52	21.1	14	22.6	38	20.5
Totals	247	100.0	62	100.0	185	100.0

TABLE D9

FREQUENCY DISTRIBUTIONS

Autonomy

Autonomy Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
1.0	4	1.6			4	2.2
1.3	4	1.6	1	1.6	3	1.6
1.6	2	.8			2	1.1
2.0	6	2.4	2	3.2	4	2.2
2.3	7	2.8	2	3.2	5	2.7
2.6	8	3.2	2	3.2	6	3.2
3.0	8	3.2	1	1.6	7	3.8
3.3	12	4.9	4	6.5	8	4.3
3.6	16	6.5	2	3.2	14	7.6
4.0	19	7.7	4	6.5	15	8.1
4.3	19	7.7	6	9.7	13	7.0
4.6	12	4.9	3	4.8	9	4.9
5.0	15	6.1	2	3.2	13	7.0
5.3	21	8.5	8	12.9	13	7.0
5.6	25	10.1	6	9.7	19	10.3
6.0	25	10.1	3	4.8	22	11.9
6.3	23	9.3	7	11.3	16	8.6
6.6	12	4.9	4	6.5	8	4.3
7.0	9	3.6	5	8.1	4	2.2
Totals	247	100.0	62	100.0	185	100.0

The last core job dimension is feedback. The Job Diagnostic Survey (JDS) provides for three distinct types of feedback: (1) Feedback from the job; (2) Feedback from agents; and, (3) Dealing with others. Alpha and standardized Alpha reliabilities for the first was .73 and the second .76, while Dealing with others had an Alpha of .57 and a standardized Alpha of .61. The frequency distributions for the three scales are given in Tables D10, D11, and D12.

Feedback from the job itself was derived by averaging question number 7 from Section one with questions 4 and 12 (Reverse scored) from Section two. The entire sample produced a mean of 4.9 and a variance of 1.7 on the Feedback from job scale. A mean of 4.8 and a variance of 1.8 were calculated from the manufacturing workers. The hospital produced a mean of 5.1 and a variance of 1.5.

Question 6 from Section one and questions 7 (Reverse scored) and 10 from Section two were averaged to measure Feedback from agents. The statistics for Feedback from agents were:

	Mean	Variance
Total Sample	3.9	2.4
Hospital	4.2	2.5
Manufacturer	3.8	2.3

Dealing with others was a combination of items: 1 from Section one; 2 from Section two and 6 (Reverse scored) from Section two.

TABLE D10

FREQUENCY DISTRIBUTIONS

Feedback From Job

Feedback from Job Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
1.0						
1.3	2	.8			2	1.1
1.6	1	.4	1	1.6		
2.0	6	2.4	2	3.2	4	2.2
2.3	4	1.6			4	2.2
2.6	6	2.4	1	1.6	5	2.7
3.0	11	4.5			11	5.9
3.3	15	5.1	2	3.2	13	7.0
3.6	11	4.5	1	1.6	10	5.4
4.0	11	4.5	4	6.5	7	3.8
4.3	24	9.7	6	9.7	18	9.7
4.6	22	8.9	7	11.3	15	8.1
5.0	22	8.9	6	9.7	16	8.6
5.3	22	8.9	5	8.1	17	9.2
5.6	24	9.7	7	11.3	17	9.2
6.0	26	10.5	7	11.3	19	10.3
6.3	14	5.7	6	9.7	8	4.3
6.6	14	5.7	3	4.8	11	5.9
7.0	12	4.9	4	6.5	8	4.3
Totals	247	100.0	62	100.0	185	100.0

TABLE D11

FREQUENCY DISTRIBUTIONS

Feedback from Agents

Feedback from Agents Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
1.0	8	3.2	2	3.2	6	3.2
1.3	7	2.8	2	3.2	5	2.7
1.6	16	6.5	3	4.8	13	7.0
2.0	11	4.5	1	1.6	10	5.4
2.3	12	4.9	1	1.6	11	5.9
2.6	14	5.7	2	3.2	12	6.5
3.0	16	6.5	4	6.5	12	6.5
3.3	16	6.5	5	8.1	11	5.9
3.6	16	6.5	2	3.2	14	7.6
4.0	26	10.5	4	6.5	22	11.9
4.3	14	5.7	7	11.3	7	3.8
4.6	20	8.1	6	9.7	14	7.6
5.0	13	5.3	6	9.7	7	3.8
5.3	18	7.3	4	6.5	14	7.6
5.6	13	5.3	3	4.8	10	5.4
6.0	11	4.5	3	4.8	8	4.3
6.3	6	2.4	2	3.2	4	2.2
6.6	2	.8	1	.6	1	.5
7.0	8	3.2	4	6.5	4	2.2
Totals	247	100.0	62	100.0	185	100.0

TABLE D12

FREQUENCY DISTRIBUTIONS

Dealing with Others

Dealing with Others Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
1.0						
1.3						
1.6	1	.4			1	.5
2.0	2	.8			2	1.1
2.3	4	1.6	1	1.6	3	1.6
2.6	3	1.2			3	1.6
3.0	1	.4			1	.5
3.3	3	1.2			3	1.6
3.6	6	2.4			6	3.2
4.0	9	3.6	2	3.2	7	3.8
4.3	13	5.3	3	4.8	10	5.4
4.6	16	6.5	3	4.8	13	7.0
5.0	12	4.9	3	4.8	9	4.9
5.3	22	8.9	6	9.7	16	8.6
5.6	22	8.9	5	8.1	17	9.2
6.0	24	9.7	4	6.5	20	10.8
6.3	18	7.3	4	6.5	14	7.6
6.6	39	15.3	11	17.7	28	15.1
7.0	52	21.1	20	32.3	32	17.3
Totals	247	100.0	62	100.0	185	100.0

The mean for the total sample regarding Dealing with others was 5.7, for the hospital 6.1, and for the manufacturer 5.6. The variance for the total sample was 1.5, for the hospital 1.1, and for the manufacturer 1.7.

The next major segment of variables are the psychological states: meaningfulness of work, responsibility, and knowledge of results. Meaningfulness values were derived by averaging questions 4 (Reverse scored) and 7 from Section three with questions 3 (Reverse scored) and 6 from Section five. The distribution of these scores are presented in Table D13. Both the Alpha and standardized Alpha reliability coefficients yield a value of .75. The total sample had a mean and variance of 5.3 and 1.3 respectively. This can be broken up into the two subsamples; (1) the hospital with a mean of 5.8 and a variance of 1.1; and, (2) the manufacturer with a mean of 5.1 and a variance of 1.2.

Table D14 reflects the frequency distributions of responsibility for the hospital, the manufacturer, and the combined group. The mean for the three distributions are: 5.9 for the hospital; 5.3 for the manufacturer; and, 5.4 for the total sample. The total sample had a variance of 1.2, the manufacturer had a variance of 1.2, and the hospital had a variance of 1.0. The items averaged for responsibility are:

TABLE D13

FREQUENCY DISTRIBUTIONS

Meaningfulness

Meaningfulness Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
0	1	.4	1	1.6		
2.25	1	.4			1	.5
2.5	1	.4			1	.5
2.75	5	2.0			5	2.7
3.0	4	1.6			4	2.2
3.25	7	2.8	1	1.6	6	3.2
3.5	6	2.4	1	1.6	5	2.7
3.75	6	2.4			6	3.2
4.0	12	4.9	1	1.6	11	5.9
4.25	12	4.9			12	6.5
4.5	13	5.3			13	7.0
4.75	14	5.7	3	4.8	11	5.9
5.0	18	7.3	4	6.5	15	7.6
5.25	14	5.7	1	1.6	13	7.0
5.5	18	7.3	2	3.2	16	8.6
5.75	22	8.9	6	9.7	16	8.6
6.0	28	11.3	13	21.0	15	8.1
6.25	24	9.7	12	19.4	12	6.5
6.5	26	10.5	12	19.4	14	7.6
6.75	13	5.3	4	6.5	9	4.9
7.0	2	.8	1	1.6	1	.5
Totals	247	100.0	62	100.0	185	100.0

Section Three	# 1 (Reverse scored)
	# 8
	#12
	#15
Section Five	# 4
	# 7

The reliability coefficients are an Alpha of .73 and a standardized Alpha of .79.

Items numbered 5 and 11 (Reverse scored) from Section three in combination with items numbered 5 and 10 (Reverse scored) were averaged to attain a value for knowledge of results. These items generated a standardized Alpha of .75 and a coefficient Alpha of .74 for reliability measures. The total sample mean was 4.9 and the variance was 1.3. For the manufacturing firm the mean and variance were 4.9 and 1.3. A mean of 5.1 and a variance of 1.3 were calculated for the hospital. Table D15 contains the distributions for knowledge of results.

Table D16 reports the frequencies related to global satisfaction. Global satisfaction is the average of 5 items from the questionnaire. The items are:

Section Three	# 3
	# 9
	#13 (Reverse scored)
Section Five	# 2
	# 8 (Reverse scored)

TABLE D14

FREQUENCY DISTRIBUTIONS

Responsibility

Respon-sibility Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
0	1	.4	1	1.6		
1.8	1	.4			1	.5
2.0	1	.4			1	.5
2.16	1	.4			1	.5
3.32	1	.4			1	.5
2.48	1	.4			1	.5
2.64	3	1.2			3	1.6
2.8	1	.4			1	.5
3.0	2	.8			2	1.1
3.16	1	.4			1	.5
3.32	1	.4			1	.5
3.48	1	.4			1	.5
3.64	1	.4			1	.5
3.8	8	3.2			8	4.3
4.0	3	1.2			3	1.6
4.16	7	2.8	1	1.6	6	3.2
4.32	3	1.2			3	1.6
4.48	14	5.7	3	4.8	11	5.9
4.64	4	1.6			4	2.2

TABLE D14 (continued)

Respon-sibility Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
4.8	8	3.2	1	1.6	7	3.8
5.0	10	4.0	2	3.2	8	4.3
5.16	15	6.1	2	3.2	13	7.0
5.32	11	4.5	2	3.2	9	4.9
5.48	19	7.7	3	4.8	16	8.6
5.64	16	6.5	3	4.8	13	7.0
5.8	18	7.3	6	9.7	12	6.5
6.0	16	6.5	8	12.9	8	4.3
6.16	23	9.3	9	14.5	14	7.6
6.32	14	5.7	3	4.8	11	5.9
6.48	14	5.7	3	4.8	11	5.9
6.64	21	8.5	12	19.4	9	4.9
6.8	5	2.0	3	4.8	2	1.1
7.0	2	.8	—	—	2	1.1
Totals	247	100.0	62	100.0	185	100.0

TABLE D15

FREQUENCY DISTRIBUTIONS

Knowledge of Results

Knowledge of results Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
0	1	.4	1	1.6		
1.25	1	.4			1	.5
1.5	1	.4			1	.5
1.75	1	.4	1	1.6		
2.0	2	.8			2	1.1
2.25	2	.8			2	1.1
2.5	1	.4			1	.5
2.75	5	2.0			5	2.7
3.0	5	2.0	1	1.6	4	2.2
3.25	4	1.6	1	1.6	3	1.6
3.5	10	4.0	3	4.8	7	3.8
3.75	10	4.0			10	5.4
4.0	15	6.1	1	1.6	14	7.6
4.25	13	5.3	4	6.5	9	4.9
4.5	14	5.7	3	4.8	11	5.9
4.75	14	5.7	2	3.2	12	6.5
5.0	22	8.9	9	14.5	13	7.0
5.25	21	8.5	10	16.1	11	5.9
5.75	19	7.7	6	9.7	13	7.0
6.0	22	8.9	4	6.5	18	9.7

TABLE D15 (continued)

Knowledge of results Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
6.25	39	15.8	9	14.5	30	16.2
6.5	17	6.9	4	6.5	13	7.0
6.75	7	2.8	3	4.8	4	2.5
7.0	1	.4	—	—	1	.5
Totals	247	100.0	62	100.0	185	100.0

The reliability coefficients for global satisfaction were computed as an Alpha of .81 and a standardized Alpha of .80. The total sample statistics were: mean of 4.5 and a variance of 1.6. The manufacturer's sample contained a mean of 4.4 and a variance of 1.6. The mean and variance for the hospital was 4.8 and 1.5.

Internal work motivation statistics were:

Tota	Mean	Variance
Total Sample	5.5	.92
Hospital	5.9	.91
Manufacturer	5.4	.87

These statistics were developed from the questionnaire items numbered 2, 6, 10, and 14 (Reverse scored) from Section three and items 1 and 9 from Section five. A .76 reliability coefficient was found for both Alpha and standardized Alpha. The frequency distributions for the total sample, the manufacturing firm, and the hospital are presented in Table D17.

The next five scales deal with specific dependent variables: (1) social satisfaction at work; (2) supervisory satisfaction; (3) security satisfaction with work; (4) pay satisfaction; and, (5) propensity to leave. The frequency distributions for these five variables are in Tables D18, D19, D20, D21, and D22. The first four

TABLE D16

FREQUENCY DISTRIBUTIONS

Global Satisfaction

Global Satis-faction Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
0	1	.4	1			
1.2	1	.4			1	.5
1.4	1	.4			1	.5
1.6	3	1.2			3	1.6
1.8	1	.4			1	.5
2.0	1	.4			1	.5
2.2	8	3.2	1	1.6	7	3.8
2.4	6	2.4	1	1.6	5	2.7
2.6	4	1.6			4	2.2
2.8	7	2.8	1	1.6	6	3.2
3.0	6	2.4			6	3.2
3.2	3	1.2			3	1.6
3.4	12	4.9	2	3.2	10	5.4
3.6	11	4.4	4	6.5	7	3.8
3.8	11	4.4	5	8.1	6	3.2
4.0	6	2.4	1	1.6	5	2.7
4.2	17	6.9	2	3.2	15	8.1
4.4	17	6.9	5	8.1	12	6.5
4.6	12	4.9	1	1.6	11	5.9

TABLE D16 (continued)

Global Satis-faction Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
4.8	14	5.7	3	4.8	11	5.9
5.0	15	6.1	3	4.8	12	6.5
5.2	12	4.9	4	6.5	8	4.3
5.4	16	6.5	8	12.9	8	4.3
5.6	16	6.5	5	8.1	11	5.9
5.8	12	4.9	5	8.1	7	3.8
6.0	14	5.7	4	6.5	10	5.4
6.2	10	4.0	3	4.8	7	3.8
6.4	5	2.0	1	1.6	4	2.2
6.6	4	1.6	1	1.6	3	1.6
6.8	1	.4	1	1.6		
7.0						
Totals	247	100.0	62	100.0	185	100.0

TABLE D17

FREQUENCY DISTRIBUTIONS

Motivation

Motivation Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
0	1	.4	1	1.6		
2.8					1	.5
3.0	5	2.4	1	1.6	5	2.7
3.16						
3.32	2	.8			2	1.1
3.48	2	.8			2	1.1
3.64	2	.8			2	1.1
3.8	4	1.6			4	2.2
4.0	4	2.0			5	2.7
4.16	4	1.6			4	2.2
4.32	4	1.6			4	2.2
4.48	4	1.6			4	2.2
4.64	7	2.8			7	3.8
4.8	11	4.4			11	5.9
5.0	11	4.4	1	1.6	10	5.4
5.16	11	4.4	1	1.6	10	5.4
5.32	13	5.3	6	9.7	7	3.8
5.64	17	6.9	2	3.2	15	8.1
5.8	25	10.1	6	9.7	19	10.2
6.0	28	11.3	10	16.1	18	9.7
6.16	24	9.7	12	6.5	12	6.5
6.32	17	6.9	7	11.3	10	5.4

TABLE D17 (continued)

Motivation Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
6.48	12	4.9	4	6.5	8	4.3
6.64	13	5.3	4	6.5	9	4.9
6.8	7	2.8	2	3.2	5	2.7
7.0	2	.8	1	1.6	1	.5
Totals	247	100.0	62	100.0	185	100.0

satisfaction scales come from items in Section four. The scales are the average of the following items: social satisfaction #2 and #9; supervisory satisfaction #5, #8, and #14; security satisfaction, #1 and #11; and, pay satisfaction #2 and #9. The propensity to leave scale is the combination of items numbered 9 and 10 in Section eight. Social satisfaction reliability coefficients were Alphas of .58, while supervisory satisfaction items produced Alphas of .85. The other three variables were two scale items. Therefore, correlations between items were calculated and adjusted to reliability coefficients using Spearman and Brown's formula

$$R = \frac{2r}{r + 1} .$$

The reliabilities were .78 for security satisfaction, .91 for pay satisfaction, and .57 for propensity to leave. The mean and variance for these five scales for the three samples are provided in Table D23.

Growth satisfaction plays a major role in the job characteristics model. In the Job Diagnostic Survey, it is measured three ways: (1) growth satisfaction; (2) "would-like" growth; and, (3) job-choice growth. Growth satisfaction is a function of averaging items numbered 3, 6, 10, and 13 in Section Four. The Alpha and standardized Alpha coefficients were both .79. The mean for the total sample was 4.7 and a variance of 1.8.

TABLE D18

FREQUENCY DISTRIBUTIONS

Social Satisfaction

Social Satisfaction Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
0	1	.4	1	1.6		
1.0						
1.3						
1.6						
2.0	1	.4			1	.5
2.3	1	.4	1	1.6		
2.6	2	.8	2	3.2		
3.0	2	.8			2	1.1
3.3	2	.8			2	1.1
3.6	4	1.6	1	1.6	3	1.6
4.0	8	3.2			8	4.3
4.3	17	6.9	2	3.2	15	8.1
4.6	15	6.1			15	8.1
5.0	21	8.5	3	4.8	18	9.7
5.3	25	10.1	2	3.2	23	12.4
5.6	33	13.4	7	11.3	26	14.1
6.0	59	23.9	19	20.6	40	21.6
6.3	27	10.9	10	16.1	17	9.2
6.6	19	7.7	10	16.1	9	4.9
7.0	10	4.0	4	6.5	6	3.2
Totals	247	100.0	62	100.0	185	100.0

TABLE D19

FREQUENCY DISTRIBUTIONS

Supervisory Satisfaction

Supervisory Satisfaction Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
0	1	.4	1	1.6		
1.0	6	2.4	1	1.6	5	2.7
1.3	4	1.6	1	1.6	3	1.6
1.6	3	1.2			3	1.6
2.0	6	2.4	3	4.8	3	1.6
2.3	7	2.8	1	1.6	6	3.2
2.6	9	3.6			9	4.9
3.0	12	4.9	2	3.2	10	5.4
3.3	7	2.8	1	1.6	6	3.2
3.6	12	4.9	3	4.8	9	4.9
4.0	11	4.5	2	3.2	9	4.9
4.3	13	5.3	1	1.6	12	6.5
4.6	12	4.9	2	3.2	10	5.4
5.0	19	7.7	3	4.8	16	8.6
5.3	19	7.7	6	9.7	13	7.0
5.6	28	11.3	8	12.9	20	10.8
6.0	35	14.2	10	16.1	25	13.5
6.3	22	8.9	9	14.5	13	7.0
6.6	14	5.7	5	8.1	9	4.9
7.0	7	2.8	3	4.8	4	2.2
Totals	247	100.0	62	100.0	185	100.0

TABLE D20

FREQUENCY DISTRIBUTIONS

Security Satisfaction

Security Satisfaction Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
0	1	.4	1	1.6		
1.0	8	3.2			8	4.3
1.5	4	1.6	1	1.6	3	1.6
2.0	11	4.5	3	4.8	8	4.3
2.5	9	3.6			9	4.9
3.0	13	5.3			13	7.0
3.5	13	5.3			13	7.0
4.0	19	7.7	4	6.5	15	8.1
4.5	24	9.7	4	6.5	20	10.8
5.0	31	12.6	11	17.7	20	10.8
5.5	26	10.5	7	11.3	19	10.3
6.0	71	28.7	24	38.7	47	25.4
6.5	11	4.5	6	9.7	5	2.7
7.0	6	2.4	1	1.6	5	2.7
Totals	247	100.0	62	100.0	185	100.0

TABLE D21

FREQUENCY DISTRIBUTIONS

Pay Satisfaction

Pay Satisfaction Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
0	1	.4	1	1.6		
1.0	27	10.9	4	6.5	23	12.4
1.5	10	4.0			10	5.4
2.0	28	11.3	9	14.5	19	10.3
2.5	16	6.5	4	6.5	12	6.5
3.0	27	10.9	6	9.7	21	11.4
3.5	7	2.8	1	1.6	6	3.2
4.0	11	4.5	4	6.5	7	3.8
4.5	16	6.5	4	6.5	12	6.5
5.0	30	12.1	12	19.4	18	9.7
5.5	23	9.3	3	4.8	20	10.8
6.0	39	15.8	12	19.4	27	14.6
6.5	8	3.2	1	1.6	7	3.8
7.0	4	1.6	1	1.6	3	1.6
Totals	247	100.0	62	100.0	185	100.0

TABLE D22

FREQUENCY DISTRIBUTIONS

Propensity to Leave

Propensity to Leave Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
0	1	.4	1	.6		
1	1	.4			1	.5
2	19	7.7	12	19.4	7	3.8
3	5	2.0	1	1.6	4	2.2
4	38	15.4	6	9.7	32	17.3
5	53	21.5	19	30.6	34	18.4
6	53	21.5	10	16.1	43	23.3
7	37	15.0	5	8.1	32	17.3
8	26	10.5	4	6.5	22	11.9
9	10	4.0	2	3.2	8	4.3
10	4	1.6	2	3.2	2	1.1
Totals	247	100.0	62	100.0	185	100.0

TABLE D23

STATISTICS FOR
SOCIAL SATISFACTION, SUPERVISORY SATISFACTION,
SECURITY SATISFACTION, PAY SATISFACTION, AND
PROPENSITY TO LEAVE

	Mean	Variance
Social Satisfaction		
All	5.5	1.0
Hospital	5.8	1.5
Manufacturer	5.4	.82
Supervisory Satisfaction		
All	4.8	2.5
Hospital	5.1	2.7
Manufacturer	4.6	2.4
Security Satisfaction		
All	4.7	2.3
Hospital	5.2	1.8
Manufacturer	4.5	2.4
Pay Satisfaction		
All	3.8	3.3
Hospital	4.0	3.1
Manufacturer	3.8	3.4
Propensity to Leave		
All	5.6	3.5
Hospital	5.0	4.8
Manufacturer	5.8	3.0

For the hospital the mean was 5.1 and the variance 1.7. The manufacturer had a mean and variance of 4.6 and 1.8 respectively. The frequency distributions for growth satisfaction is displayed in Table D24.

"Would-like" growth produced a mean of 5.6 and a variance of 1.6 for the entire sample. When broken into its subparts the mean and variance turn out to be 5.6 and 1.3 for the manufacturer and 5.5 and 2.5 for the hospital. The scale is the average of items numbered 2, 3, 6, 8, 10, and 11 from Section six. The reliabilities for "would-like" growth are Alpha .88 and standardized Alpha of .88. For the distribution of "would-like" growth refer to Table D25.

Job-choice growth is computed using twelve pairs of jobs that the subjects are asked to choose between from Section seven. The items scored in a reverse fashion are numbered 2, 3, 4, 6, 8, and 9. The items that are direct scored are numbered 1, 5, 7, 10, 11, and 12. The frequency distributions for job-choice growth is reported in Table D26. A .76 reliability was obtained by both Alpha and standardized Alpha coefficients. The statistics for job choice were:

	Mean	Variance
Total Sample	3.1	.28
Hospital	3.1	.19
Manufacturer	3.1	.31

TABLE D24

FREQUENCY DISTRIBUTIONS

Growth Satisfaction

Growth Satisfaction Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
0	1	.4	1	1.6		
1.0	1	.4			1	.5
1.25	3	1.2	1	1.6	2	1.1
1.5	2	.8			2	1.1
1.75	4	1.6			4	2.2
2.0	3	1.2			3	1.6
2.25	2	.8			2	1.1
2.5	2	.8	2	3.2		
2.75	5	2.0			5	2.7
3.0	10	4.0	1	1.6	9	4.9
3.25	7	2.8			7	3.8
3.5	14	5.7			14	7.6
3.75	5	2.0	2	3.2	3	1.6
4.0	12	4.9	2	3.2	10	5.4
4.25	10	4.0	2	3.2	8	4.3
4.5	16	6.5	5	8.1	11	5.9
4.75	17	6.9	5	8.1	12	6.5
5.0	11	4.5	3	4.8	8	4.3
5.25	15	6.1	3	4.8	12	6.5
5.5	32	13.0	12	19.4	20	10.8
5.75	25	10.1	4	6.5	21	11.4

TABLE D24 (continued)

Growth Satisfaction Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
6.0	26	10.5	7	11.3	19	10.3
6.25	9	3.6	5	8.1	4	2.2
6.5	9	3.6	4	6.5	5	2.7
6.75	4	1.6	1	1.6	3	1.6
7.0	2	.8	2	3.2		
Totals	247	100.0	62	100.0	185	100.0

TABLE D25

FREQUENCY DISTRIBUTIONS

"Would-Like" Growth

"Would-like" Growth Score Intervals	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
0	1	.4	1	1.6		
1.5-2.4	1	.4			1	.5
2.5-3.4	9	3.6	2	3.2	7	3.8
3.5-4.4	35	4.2	9	14.5	26	14.1
4.5-5.4	55	22.3	12	19.4	43	23.2
5.5-6.4	67	27.1	14	22.7	53	28.6
6.5-7.0	77	31.2	22	35.5	55	29.7
Totals	247	100.0	62	100.0	185	100.0

TABLE D26

FREQUENCY DISTRIBUTIONS

Job-Choice Growth

Job-Choice Growth Score Intervals	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
2.0-2.4	23	9.3	23.2	21.0	11	.4
2.5-3.4	162	65.5	44.0	71.6	118	63.8
3.5-4.4	58	23.5	16.0	25.8	42	22.7
4.5-5.0	4	1.6			4	2.2
Totals	247	100.0	62.0	100.0	185	100.0

The Motivating-Potential Score (MPS) is calculated by the formula below:

$$MPS = \frac{\text{Skill Variety} + \text{Task Identity} + \text{Task Significance}}{3} \times \text{Autonomy} \times \text{Feedback from job}$$

Table D27 shows the frequency distribution for the motivating-potential score. The reliability of the motivating-potential score was .83. The total sample mean was 124.9 and a variance of 4,967.8. The mean and variance for the hospital were 142.7 and 4,348.7, and for the manufacturer are 118.9 and 5,056.2.

The last set of scales are those that deal with control: total control, output control, and behavior control. Total control like the MPS is a conceptual measure which is the combination of first set of items numbered 1, 2, and 3 in Section ten of the questionnaire. The total control measure produced a reliability of -.14. The distributions of scores are reported in Table D28. The mean and variance for the total sample are 8.2 and 3.1. For the hospital they are 7.9 and 3, and for the manufacturer they are 8.3 and 3.1.

Table D29 shows the frequency distributions of output control for the total sample, the hospital, and the manufacturer. The reliability coefficient produced using the Spearman-Brown formula was determined to be .04. Output control was the combination of items 1 and 3 of the

TABLE D27

FREQUENCY DISTRIBUTIONS

MPS

MPS Score Collapsed	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
1-30	19	7.7	2	3.2	17	9.2
31-60	37	15.0	5	8.1	32	17.3
61-90	34	13.8	7	11.3	27	14.9
91-120	34	13.8	11	17.7	23	12.4
121-150	40	16.2	11	17.7	29	15.7
151-180	24	9.7	6	9.7	18	9.7
181-210	23	9.3	9	14.5	14	7.7
211-240	17	6.9	4	6.5	13	7.0
241-270	15	6.1	7	11.7	8	4.3
271-300	4	1.6	—	—	4	2.2
Totals	247	100.0	62	100.0	185	100.0

TABLE D28

FREQUENCY DISTRIBUTIONS

Total Control

Total Control Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
0	1	.4			1	.5
1						
2						
3	1	.4			1	.5
4	1	.4	1	1.6		
5	11	4.5	6	9.7	5	2.7
6	21	8.5	6	9.7	15	8.1
7	49	19.8	13	21.0	36	19.5
8	50	20.2	11	17.7	39	21.1
9	68	27.5	15	24.2	53	28.6
10	20	8.1	6	9.7	14	7.6
11	20	8.1	4	6.5	16	8.6
12	3	1.2			3	1.6
13	1	.4			1	.5
14	1	.4			1	.5
15						
Totals	247	100.0	62	100.0	185	100.0

second set of questions in Section ten. A mean of 4.3 and a variance of 2.1 were calculated for the total sample. The hospital produced a mean of 4.2 and a variance of 2.4. The manufacturer was found to have a mean of 4.3 and a variance of 2.

Items numbered 2 and 4 of the second part of Section ten were used to measure behavior control. The Spearman-Brown formula was used to calculate a reliability of .40. The frequency distributions for behavior control are shown in Table D30. The mean and variance for the total sample were 7.9 and 3.2, for the hospital 7.5 and 3, and for the manufacturer 8.0 and 3.2.

TABLE D29

FREQUENCY DISTRIBUTIONS

Output Control

Output Control Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
0	2	.8			2	1.1
1	2	.8	1	1.6	1	.5
2	28	11.3	12	19.4	16	8.6
3	38	15.4	7	11.3	31	16.8
4	56	22.7	11	17.7	45	24.3
5	70	28.3	19	30.6	51	27.6
6	38	15.4	9	14.5	29	15.7
7	13	5.3	3	4.8	10	5.4
Totals	247	100.0	62	100.0	185	100.0

TABLE D30

FREQUENCY DISTRIBUTIONS

Behavior Control

Behavior Control Score	All		Hospital		Manufacturer	
	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent	Frequency	Relative Frequency Percent
0	1	.4			1	.5
1						
2	1	.4	1	1.6		
3	4	1.6			4	2.2
4	7	2.8	4	6.5	3	1.6
5	17	6.9	3	4.8	14	7.6
6	14	5.7	6	9.7	8	4.3
7	31	12.6	11	17.7	20	10.8
8	69	27.9	18	29.0	51	27.6
9	59	23.9	13	21.0	46	24.9
10	44	17.8	6	9.7	38	20.5
Totals	247	100.0	62	100.0	185	100.0

T-Tests and F-Tests

The two samples were compared on each variable discussed above using t-tests on means to see where differences lie between the samples. Table D31 reports t-tests for the structural items of Hierarchy of Authority, Division of Labor, Rules and Procedures, and Structure. All of the structural items were found to have significantly different means.

TABLE D31

T-TESTS AND F-TESTS

Hospital N = 62
Manufacturer N = 185
DF 245

	X	SD	SE	Pooled Variance t	P	F value	2-tailed prob.
Hierarchy of Authority							
Hospital	17.7	4.1	.5	2.46	.01*	1.0	1.0
Manf.	16.2	4.1	.3				
Division of Labor							
Hospital	16.5	3.8	.48	2.89	.00*	1.0	1.0
Manf.	14.9	3.8	.28				
Rules and Procedures							
Hospital	15.7	3.1	.39	4.38	.00*	1.11	.64
Manf.	13.6	3.2	.24				
Structure							
Hospital	49.9	8.1	1.0	4.17	.00*	1.1	.67
Manf.	44.7	8.5	.63				

*Significant

Four of the five core job characteristics are shown in Table D32. Task identity and task significance were found to be significantly different, while skill variety and autonomy did not differ between the subsamples.

TABLE D32

T-TESTS AND F-TESTS

Hospital N = 62
Manufacturer N = 185
DF 245

	X	SD	SE	Pooled Variance t	P	F value	2-tailed prob.
Skill Variety							
Hospital	5.2	1.5	.20	1.81	.07	1.0	.96
Manf.	4.8	1.5	.11				
Task Identity							
Hospital	5.07	1.3	.16	3.4	.00*	1.45	.09
Manf.	4.34	1.5	.11				
Task Significance							
Hospital	6.06	1.2	.15	2.5	.01*	1.22	.38
Manf.	5.6	1.3	.09				
Autonomy							
Hospital	4.9	1.5	.19	1.27	.21	1.01	.97
Manf.	4.7	1.5	.11				

*Significant

The last core variable, feedback, is recorded in three different ways: (1) feedback from the job; (2) feedback from agents; and, (3) dealing with others. When comparing the hospital to the manufacturing firm in this area, it was found that feedback from agents and dealing with others differ significantly. As shown in Table D33, feedback from job does not differ significantly between the two.

TABLE D33

T-TESTS AND F-TESTS

Hospital N = 62
Manufacturer N = 185
DF 245

	X	SD	SE	Pooled Variance t	P	F value	2-tailed prob.
Feedback from job							
Hospital	5.1	1.2	.16	1.81	.07	1.16	.51
Manf.	4.8	1.3	.10				
Feedback from Agent							
Hospital	4.2	1.6	.2	2.21	.03*	1.09	.66
Manf.	3.8	1.5	.11				
Dealing with Others							
Hospital	6.1	1.0	.13	2.6	.01*	1.5	.07
Manf.	5.6	1.3	.09				

*Significant

Of the three psychological states, meaningfulness and responsibility are found to be different, but knowledge of results means are not different. The results are presented in Table D34.

TABLE D34

T-TESTS AND F-TESTS

Hospital N = 62
Manufacturer N = 185
DF 245

	X	SD	SE	Pooled Variance t	P	F value	2-tailed prob.
Meaningfulness							
Hospital	5.8	1.1	.14	4.65	.00*	1.1	.68
Manf.	5.1	1.1	.08				
Responsibility							
Hospital	5.9	1.0	.13	3.9	.00*	1.24	.34
Manf.	5.3	1.1	.08				
Knowledge of Results							
Hospital	5.1	1.1	.15	1.11	.27	1.02	.96
Manf.	4.9	1.2	.09				

*Significant

As shown in Table D35, global satisfaction and motivation are both significantly different between the hospital and the manufacturer.

TABLE D35

T-TESTS AND F-TESTS

Hospital N = 62
Manufacturer N = 185
DF 245

	X	SD	SE	Pooled Variance t	P	F value	2-tailed prob.
Global Satisfaction							
Hospital	4.8	1.2	.15	2.42	.01*	1.11	.65
Manf.	4.4	1.3	.09				
Motivation							
Hospital	5.9	.95	.12	3.49	.00*	1.05	.80
Manf.	5.4	.93	.07				

*Significant

Table D36 is divided into three parts: (1) specific dependent variables; (2) Motivating-Potential Score; and, (3) the growth-strength scales. For the specific dependent variables, all but one were significantly different. Security Satisfaction, Social Satisfaction, Supervisory Satisfaction, and Propensity to leave all differed, while Pay Satisfaction did not show a difference. The MPS's produced significant differences between the hospital and the manufacturer. Of the three growth-strength measures, only growth satisfaction differed between the two subsamples. The results are reported in Table D36.

TABLE D36

T-TESTS AND F-TESTS

Hospital N = 62
Manufacturer N = 185
DF 245

	X	SD	SE	Pooled Variance t	P	F value	2-tailed prob.
Pay Satisfaction							
Hospital	4.0	1.7	.22	.89	.38	1.12	.61
Manf.	3.8	1.9	.14				
Security Satisfaction							
Hospital	5.2	1.3	.17	3.2	.00*	1.33	.19
Manf.	4.5	1.5	.11				
Social Satisfaction							
Hospital	5.8	1.2	.16	2.39	.02*	1.88	.00*
Manf.	5.4	.9	.07				
Supervisory Satisfaction							
Hospital	5.1	1.6	.21	2.01	.05*	1.13	.54
Manf.	4.6	1.5	.11				
Propensity to Leave							
Hospital	5.0	2.2	.28	-2.92	.00*	1.59	.02*
Manf.	5.8	1.7	.13				
Motivating-Potential Score							
Hospital	142.7	65.9	8.4	2.33	.02*	1.16	.50
Manf.	118.9	71.1	5.2				
Growth Satisfaction							
Hospital	5.7	1.3	.16	2.75	.01*	1.06	.82
Manf.	4.6	1.3	.10				
"Would-like" Growth							
Hospital	5.5	1.6	.20	-.20	.84	1.89	.00*
Manf.	5.6	1.1	.08				
Job-Choice Growth							
Hospital	3.1	.43	.06	.43	.67	1.67	.02*
Manf.	3.1	.56	.04				

*Significant

The measures of control were tested with t-tests and are shown in Table D37. None of the three control measures was significantly different between the two organizations.

TABLE D37

T-TESTS AND F-TESTS

Hospital N = 62
Manufacturer N = 185
DF 245

	X	SD	SE	Pooled Variance t	P	F value	2-tailed prob.
Total Control							
Hospital	7.9	1.7	.22	-1.72	.09	1.82	.00*
Manf.	8.3	1.8	.13				
Behavior Control							
Hospital	7.5	1.7	.22	-1.88	.96	1.05	.84
Manf.	8.0	1.8	.13				
Output Control							
Hospital	4.19	1.5	.20	- .74	.458	1.14	.55
Manf.	4.35	1.4	.10				

*Significant

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